

Parks, Buildings and Grounds Commission Meeting Agenda



August 11, 2025 - 5:30 PM
Mayor's Conference Room
3805 S. Casper Dr.

Published 08/05/2025

Amended 08/05/2025

Amended 08/07/2025

Amended 08/08/2025

AGENDA

1. **CALL TO ORDER**
2. **ROLL CALL; DECLARATION OF QUORUM; PUBLIC NOTICE**
3. **APPROVAL OF MINUTES**
 - A. July 14, 2025 Meeting Minutes
4. **NEW BUSINESS**
 - A. Discussion and possible recommendation to the Common Council to approve the DPW Fueling Station Reconstruction Project
 - B. Discussion and possible recommendation to the Common Council to approve the Fire Station #7 Lateral replacement Project
 - C. Discussion and possible action to approve the request from Midwest Guardians Inc. to sell concessions and team merchandise at Malone Park on Saturday, September 6th during the Guardian Games volleyball tournament. (Subject to special event approval through DCD).
 - D. Discussion and possible action to approve the request from the New Berlin Soccer Club to sell concessions at Valley View Park on Friday, September 5th-Sunday, September 7th during their soccer tournament. (Subject to special event approval through DCD).
 - E. Discussion and possible action to approve the request from Fine Designs custom apparel services to sell merchandise for the 2025 New Berlin Fall Classic at Valley View Park on Friday, September 5th-Sunday, September 7th during the NBSC soccer tournament. (Subject to approval and issuance of necessary licenses).
 - F. Discussion and possible recommendation to Common Council to approve a donation agreement between resident Jim McGinnis and the City of New Berlin the addition of a bench at the New Berlin Valley View Disc Golf Course.
5. **UPDATES**
6. **ADJOURN**

Additional Information

- The agenda packet, including supplemental information related to agenda items, is available online at www.NewBerlinWI.gov. Once finalized by the governing body, approved meeting minutes will also be posted online.
- Agenda items may be taken out of order at the governing body's discretion.
- Members, and possibly a quorum, of other municipal governmental bodies may attend this meeting to gather information. However, no action will be taken by any governmental body other than the one referenced in this notice.
- Accommodations will be provided under the Americans with Disabilities Act (ADA) to meet the needs of individuals with disabilities. If you require assistance or appropriate aids and services, please contact the Office of the City Clerk at (262) 786-8610 with reasonable notice.

Parks, Buildings and Grounds Commission MEETING MINUTES



July 14, 2025 - 5:30 PM
Mayor's Conference Room
3805 S. Casper Dr.

MINUTES

1. CALL TO ORDER

Mayor Ament called the meeting to order at 5:32 PM

2. ROLL CALL; DECLARATION OF QUORUM; PUBLIC NOTICE

Present: Mayor Ament, Commissioner Ferrante, Commissioner Rafel, Commissioner Wicichowski, Alderperson La Fever

Staff Present: Deputy Director of Public Works Mike Eder, Facility Supervisor Bob Loohaus, Parks Supervisor Josh Fabian

3. APPROVAL OF MINUTES

A. May 12, 2025 Meeting Minutes

MOTION: Motion to Approve

VOTE: Motion by: Commissioner Ferrante
Second by: Commissioner Wicichowski
Motion Passed 5-0

4. NEW BUSINESS

A. Recommend to the Common Council the award of a contract to the GRAEF Engineering Firm in the amount of \$30,000 for facility assessment work at the New Berlin Safety Building and the New Berlin Public Library.

Josh Fabian explained the project and how the need for the facility assessment came from the growing project scopes for the Library HVAC as well as the generator replacement project.

MOTION: Motion to Approve

VOTE: Motion by: Mayor Ament
Second by: Commissioner Wicichowski
Motion Passed 5-0

5. UPDATES

Bob Loohauis and Josh Fabian provided verbal updates on the ongoing projects. Bids are due for the fueling station by the end of this month. The one issue that may delay the fuel station project will be delivery of the tank.

6. ADJOURN

MOTION: Motion to Adjourn at 6:00 PM

VOTE: Motion by: Commissioner Wicichowski
Second by: Commissioner Ferrante
Motion Passed 5-0

Respectfully Submitted,

*Robert T. Rafel MBA
PB & G Commission Secretary*

PROJECT MANUAL

**City of New Berlin
DPW Fueling Station**

16550 W. National Ave.
New Berlin, Wisconsin 53151

Owner Project No. BG-2025-02
June 17, 2025

CONSTRUCTION MANAGER'S SUPPLEMENT

SECTION INCLUDES

- A. Bid Advertisement
 - 1. Request for Bids

- B. Instructions to Bidders
 - 1. Contract Time
 - 2. Queries/Addenda
 - 3. Pre-Bid Conference
 - 4. Bid Submission
 - 5. Bid Enclosures/Requirements
 - 6. Offer Acceptance/Rejection
 - 7. Work Sequence

- C. Bid Form
 - 1. Bid Form

REQUEST FOR BIDS

**City of New Berlin
New Berlin DPW Fueling Station
New Berlin, WI**

Sealed bids are invited for the New Berlin DPW Fueling Station project located at 16550 W National Ave, New Berlin, Wisconsin 53151. Bids will be received through the Clerk's office of the City of New Berlin, Wisconsin, **by 10:00 AM (CT), July 30, 2025**. Bids will be publicly opened and recorded at City Hall in the Common Council Chambers at 3805 S. Casper Drive, New Berlin, Wisconsin 53151, following the bid due date and time.

Contact the Construction Manager, City of New Berlin – Robert Loohaus at (262) 797-2467 or rloohaus@newberlin.org with any questions.

Bidders will be responsible to execute entire scope of project work per plans and specifications (included on plans). Bidders must also obtain all permits required in order to complete project scope.

Prevailing wage rates will not be required for the work.

Bids shall be prepared in accordance with contact documents and associated plans prepared by the **Perspective Design Inc.** dated May 28, 2025. Bids shall be made on the forms furnished with the project manual. **Bid security shall be by a qualified surety in the form of a bid bond or certified check in the amount of five percent (5%) of the bid amount, and shall be submitted with the bid.** Performance Bond is requested as an alternate.

New Berlin reserves the right to waive any formalities and to reject any and all bids deemed to be unsatisfactory or not in the City's best interest. Furthermore, New Berlin reserves the right to cancel any order or contract for failure of the successful bidder to comply with the terms, conditions and specifications of the bid request and/or contract. New Berlin reserves the right to award the bid in the aggregate or by item or like item groups (where applicable) to the lowest responsible, responsive bidder who complies with the specifications, service and can meet the requirements of this request. Bids may not be withdrawn for 60 days after the opening.

PROCUREMENT OF DOCUMENTS:

Beginning July 9, 2025

BIDDING DOCUMENTS: You may download the digital plan documents by inputting Quest project #9701969 on the website's Project Search page. Please contact QuestCDN.com at 952-233-1632 or info@questcdn.com for assistance in free membership registration, downloading, and working with this digital project information. No paper plan sets will be provided. Please contact Robert Loohaus at (262) 797-2467 or rloohaus@newberlin.org if you have any questions.

INSTRUCTIONS TO BIDDERS

1. CONTRACT TIME

The number of days within which, or the date by which, the Work is to be completed (the Contract Time) is set forth in the Bid and will be included in the Agreement.

2. QUERIES/ADDENDA

A. All questions about the meaning or intent of the Contract Documents shall be submitted to Construction Manager in writing **prior to RFI deadline of July 25, 2025**. Replies will be issued by Addenda. Only questions answered by Formal written addenda will be binding. Oral and other Interpretations or clarifications will be without legal effect.

B. Interpretation of bid documents

1. Bidders shall promptly notify the Architect of any ambiguity, inconsistency, or error, which they may discover upon examination of the Bid documents, site, or local conditions.
2. Bidders requiring clarification or interpretation of the Bid Documents shall make a request to the Architect no later than **5** calendar days prior to the date on which bids are due.
3. No oral interpretation of Bid Documents will be made.
4. Clarification to all Bidders shall be by Addendum, issued no later than **3** calendar days prior to the date on which bids are due.
5. In the event that conflicts exist within the bid documents, Bidders shall include in their bid the item(s) of higher value and/or quantity or the most restrictive method on installation. The Architect shall provide final interpretation and directions after Contract award.
6. Receipt of Addenda must be acknowledged by the Bid and Contract Documents.

C. Substitutions prior to bidding.

1. Materials, products, and equipment described in the Bid Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.
2. Request for Substitution shall be submitted to the Architect no later than **5** calendar days prior to the date on which bids are due.
3. Approvals, if granted, shall appear in the Addendum issued no later than **3** calendar days prior to the date on which bids are due.
4. Request for Substitution shall include the following:
 - a. Name of material or equipment originally specified.
 - b. Description of proposed substitution including:
 - 1) Drawings
 - 2) Performance or test data.
 - 3) Other relevant data.
 - c. Description of changes in other materials or equipment or other portions of the Work, including that of other contracts, made necessary by the incorporation of the substitution.
5. Burden of proof of merit of the proposed substitution is on the proposer.

6. The Architect's decision of approval or disapproval is final.

3. PRE-BID CONFERENCE

- A. There will be one non-mandatory pre-bid site walkthrough to be held on **July 16, 2025** at **10:00 AM** (CT) at the project address of 16550 W National Ave, New Berlin, WI 53151.

4. BID SUBMISSION

- A. Bids shall be submitted at the time indicated in the advertisement. No Proposal will be accepted after the time stated on the Advertisement for Bid.
- B. The Bid, Bid Security and other required documents shall be inserted in an envelope marked with project title and submitted to the place of Bid as indicated in the advertisement.
- C. It shall be the sole responsibility of the Bidder to deliver his Bid at the time and place indicated in the Advertisement for Bids.
- D. The document deposit will be refunded as defined in the Advertisement for Bids.

5. BID ENCLOSURES/REQUIREMENTS

A. BID SECURITY

1. Bid Security shall be made payable to City of New Berlin, in an amount of percent (5%) of the Bidder's maximum Bid price and in the form of a certified or bank check or a Bid Bond issued by a Surety lawfully authorized to do business in the jurisdiction in which the project is located.

B. LIQUIDATED DAMAGES

1. No provisions for liquidated damages are to be included.

C. PROPOSAL

1. The Bid Form is attached hereto; additional copies may be obtained from the Construction Manager
2. Bids must be manually signed on the forms provided to be considered. Standard Terms and Conditions are included with this request and are hereby made a part of it.
3. Proposals must be completed in ink or by typewriter. The Bid price of each item on the form must be stated in words and numerals in the spaces provided; in case of a conflict, words will take precedence. The bidder shall make no additional stipulations on the bid form or qualify the bid in any manner.

4. Bids by corporation must be executed in the corporate name by the president or a vice-president (or other corporate office accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.
5. Bids by partnership must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.
6. All names must be typed or printed below the signature.
7. All addenda received shall be acknowledged in the spaces provided for in the Bid Form. Failure to acknowledge addenda may result in rejection of bid.
8. The address, to which communications regarding the Bid are to be directed, must be shown.

D. WITHDRAWAL AND MODIFICATIONS OF BIDS

1. Bids may be withdrawn by a signed and notarized notice delivered to the New Berlin City Hall Clerk of Courts and presenting proper identifications upon request prior to the time of opening. Partial Bid withdraw is not acceptable and once the bid is withdrawn it may not be resubmitted. **Faxed and emailed bids will be rejected. Late bids will not be accepted and will remain unopened and returned to sender.**
2. No bid can be withdrawn, changed or amended after the published time of receipt of bids.

E. SPECIAL LEGAL REQUIREMENTS

Bidders shall NOT include in their bid, all applicable taxes, including, but not limited to, Federal Tax, County Tax, and Local Taxes.

The unit prices or lump sum prices as submitted in the proposal schedule shall be the total price for materials and/or services to be paid to the Owner.

New Berlin is a tax-exempt municipality under WI State Statutes 77.53(9a) (b). Upon award the City will provide the contractor the tax-exempt number.

1. Bidder shall provide a certificate of insurance upon award as stated in Exhibit "A" attached. Proof of insurance is required when award is made.
2. This project is not subject to Prevailing Wages as determined by the Wisconsin Department of Workforce Development, see attachment in specifications.

3. No reimbursement will be made by the City for any cost incurred in preparing responses to this solicitation, or for cost incurred before a formal notice to proceed is issued if a contract is awarded.

4. BIDDERS REPRESENTATIONS - GENERAL

In submitting a Bid, the Bidder represents that:

- a. The Bidder has read and understands all the Bid Documents to the extent that the Documents relate to the Work for which the Bid is submitted and that the Bid is made in accordance therewith.
- b. The Bidder has become familiar with the site and local conditions under which the work is to be performed and has correlated to the Bidder's observations with the requirements of the Bid Documents.
- c. The Bid is based on the materials, equipment, and systems required by the Bid Documents without exception.
- d. The Bid will remain open for sixty (60) days after the date of Bid opening.

5. BIDDERS REPRESENTATIONS - WISCONSIN

Required Bidder Certifications: By submission of a Bid, each Bidder and each person signing on behalf of any Bidders certifies, and in the case of a joint bid, each party certifies as to his own organization, under penalty of perjury, that to the best of his or her knowledge and belief:

- a. The prices in this Bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition as to any other competitor.
- b. Unless otherwise required by law, the prices which have been quoted in this Bid have not been knowingly disclosed by the Bidder and will not knowingly be disclosed by the Bidder prior to opening, directly or indirectly, to any other Bidder or to any competitor; and,
- c. No attempt has been made or will be made by the Bidder to induce any other person, partnership or corporation to submit or not to submit a Bid for the purpose of restricting competition.

6. OFFER ACCEPTANCE/REJECTION

A. OPENING OF BIDS

When Bids are opened publicly, they will be read aloud, a tabulation of the amounts of the base Bids and major alternates (if any) will be made available after the opening of Bids.

All bids shall be binding for sixty (60) days following the bid opening date unless the bidder(s), upon request of the City, agree to an extension.

B. AWARD OF CONTRACT

Awards will be based on the Base Bid plus the sum of all accepted alternates.

1. Construction Manager and the City of New Berlin reserves the right to reject any and all Bids, to waive any and all informalities and to negotiate contract terms with the Successful Bidder, and the right to disregard all non-conforming, non-responsive or conditional Bids. Discrepancies between words and figures will be resolved in favor of words. Discrepancies between the indicated use of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
2. It is the intent of the Construction Manager to award Contract to the lowest responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and do not exceed the funds available. The City of New Berlin shall have the right to waive informalities or irregularities in a Bid received, and/or reject any or all, or accept any Bid which, in the Owner's judgement, is in the Owner's best interests.
3. Construction Manager may conduct investigations as deemed necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications, and financial ability of the Bidder, proposed Subcontractors and other person and organizations to do the Work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time. Construction Manager reserves the right to reject the Bid of any Bidder who does not pass any such evaluation.

D. PERFORMANCE AND OTHER BONDS

1. Bid surety required with sealed bids; performance bond requested as Alternate #2 on the bid form.

E. SIGNING OF AGREEMENT

1. The City of New Berlin will deliver signed Agreement to the successful bidder. The Contractor shall sign and deliver the Agreement to the City contact with all other required contract requirements attached within ten days thereafter.

7. WORK SEQUENCE

- | | |
|------------------------------|---------------|
| A. Bid Due Date | July 30, 2025 |
| B. Construction Commencement | Summer 2025 |

Fueling system must be operational between November 15, 2025 and April 15, 2026. Any project work that would cause the fuel station to be down between these dates must be scheduled to occur after April 15, 2026.

Bid Form Instructions
New Berlin DPW Fueling Station
New Berlin, WI

1. General Directions to Bidders

- A. All Bids must be submitted on this bid form without modification.
- B. Base bids plus all Alternate Bids must be included on the bid form.
- C. Bidders shall not add any qualifying statements, conditions or escalator clauses to the bid form, or their proposal may be declared irregular.
- D. Bidders shall examine the provisions of Division 1 thoroughly to ensure compliance with all bidding requirements.
- E. Bidders shall ensure that all items in the proposal forms such as work schedule, Bidder's official Title, Signature and Affidavit are properly executed.
- F. The requested Bid Guarantee (Bid Bond, or Certified Check) must be submitted with the proposal form. Said Bid guarantee shall be in an amount of Five Percent (5%) of the base bid amount. If bid security is missing, it will be rejected.
- G. Bids not conforming to the above directions may be declared irregular and may be disqualified at the discretion of the Owner.
- H. No faxed bids will be accepted.
- I. Attach a list of Sub-Bidders/Subcontractors and Material Suppliers and associated bid amounts.
- J. Bid Bonds, Certified Checks or Bank Drafts of unsuccessful bidders will be held until successful bidders enter into a contract or 60 days, whichever is shorter.
- K. Bidders are responsible for visiting the site to get fully acquainted with conditions, as they exist so that bidders fully understand the facilities, difficulties, and possible restriction related to the execution of the work under contract. Bidders, upon request, may be provided with the opportunity to conduct any and all testing, at its sole expense, such that it is fully able to perform the work outlined in the bid pricing to be submitted.

2. Bid Submittal Procedure

- A. Place the original completed bid form and bid guarantee in an opaque envelope.
- B. **Address the envelope to:** **City of New Berlin Clerk's Office**
 3805 S. Casper Drive
 New Berlin, Wisconsin 53151

- C. Bidders shall affix their name and address to the front lower left-hand corner of the envelope along with the project name for which the bid is being submitted.
- D. Bid envelopes which are mailed shall be enclosed in a separate mailing envelope with the words "Sealed Bid Enclosed" written on the outside.

3. Bid Closing

Bids must be submitted by **10:00 AM (CT)** on or before **July 30, 2025** at New Berlin City Hall, 3805 S. Casper Drive, New Berlin, Wisconsin 53151.

4. Bid Opening

- A. A public bid opening will be held following the bid due date on **July 30, 2025** in City Hall Common Council Chambers at 3805 S. Casper New Berlin, Wisconsin 53151.

BID FORM
New Berlin DPW Fueling Station
New Berlin, WI

Company Name: _____

Contact(s): _____
(Name and E-mail Address)

Addendum(s) Acknowledged: _____ through _____.

Base Bid Amount: State the amount to provide all labor and materials to furnish and install the work described herein, exclusive of sales tax per State law. The lump sum cost below included any allowances, materials and equipment provided by the bidders.

Base Bid Amount: _____ Dollars
(Amount in Words)

(Repeat in Figures) \$ _____

- A. The undersigned Bidder proposes the amount below be added to or deducted from the Base Bid if particular alternates are accepted by Owner. Amounts listed for each alternate include costs of related coordination, modification, or adjustment.
- B. If the alternate does not affect the Contract Sum, the Bidder shall indicate "NO CHANGE."
- C. If the alternate does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."
- D. The Bidder shall be responsible for determining from the Contract Documents the effects of each alternate on the Contract Time and the Contract Sum.
- E. Owner reserves the right to accept or reject any alternate, in any order, and to award or amend the Contract accordingly within 60 days of the Notice of Award unless otherwise indicated in the Contract Documents.
- F. Acceptance or non-acceptance of any alternates by the Owner shall have no effect on the Contract Time unless the "Schedule of Alternates" Article below provides a formatted space for the adjustment of the Contract Time.

1.2 SCHEDULE OF ALTERNATES

A. Alternate No. 1 – Alternate bid to have electric service & back-up generator power come from existing equipment. Alternate bid for new back-up generator for fuel station & DEF building. Verify w/ Owner if alt bid is selected.

1. ADD_____.
2. _____ Dollars (\$_____).

B. Alternate No. 2 – Alternate bid to add a Performance Bond:

1. ADD_____.
2. _____ Dollars (\$_____).

Statement of Bidder

1. I have examined and carefully prepared this bid from the Drawings, Project Manual and other Contract documents and have checked the same in detailed before submitting this proposal.
2. I am financially able and have under my jurisdiction, the organization and the personnel to complete the work as shown and specified in strict accordance with the terms of the Contract Documents.
3. This bid is based upon and conforms to all requirements shown on the bid documents prepared by Perspective Design Inc., May 28, 2025 and all addenda acknowledged herein.
4. This statement is hereby made a part of the foregoing bid.

SUBMISSION OF BID SUPPLEMENT

- A. Respectfully submitted this _____ day of _____, 2025.
- B. Submitted By: _____ (Insert name of bidding firm or corporation).
- C. Authorized Signature: _____ (Handwritten signature).
- D. Signed By: _____ (Type or print name).
- E. Title: _____ (Owner/Partner/President/Vice President).
- F. Contact Phone Number: _____

SECTION 33 50 00
FUELING STATION SYSTEM

PART 1 GENERAL

1.1 GENERAL

- A. Related Documents: Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Specifications on drawings apply to this section.
- B. Comply with Wisconsin Commercial Building Codes / International Building Code (IBC).
- C. Comply with Americans with Disabilities Architectural Guidelines, and ICC / ANSI A117.1, latest edition.

1.2 WORK INCLUDED

- A. Furnish and install complete fueling system.
- B. Work includes all required (listed equipment), electrical connections, sitework, and repair of existing canopy as specified in drawings.
- C. Secure all necessary state and local permits.
- D. Notification of inspectors and completion of required paperwork.
- E. Owner, Supplier, and Construction Manager to review all options included in this section prior to ordering the Fuel System and accessories.

1.3 RELATED WORK IN OTHER SECTIONS

- A. Division 26 Electrical Sections (on electrical drawings).

1.4 DESCRIPTION OF WORK

- A. This section sets forth the requirements for an above-grade fueling station. The station shall be furnished and installed complete as specified in the following paragraphs:
 - B. General. Equipment furnished and installed under this section shall be assembled, erected, and placed in proper operating condition in full conformity with drawings, specifications, engineering data, instructions, and recommendations of all equipment manufacturers unless exceptions are noted.
 - 1. General Equipment Stipulations. The General Equipment Stipulations shall apply to all equipment furnished under this Section.

2. Power Supply. Refer to electrical drawings for existing & new power supplies, feeder schedule, and panel schedule.

C. Pre-construction activities:

1. Notify Diggers' Hotline.
2. Obtain related tank permit(s) and Notification to the Inspector.
3. Site safety plan.
4. Jobsite meeting prior to starting work.

1.5 SUBMITTALS

A. Complete installation drawings, together with detailed specifications and data covering material, parts, devices, and accessories forming a part of the equipment furnished. Drawings shall cover all component and detail information necessary for the design.

B. Owner, Supplier, and Construction Manager to review all options included in this section prior to ordering the Fueling System and accessories.

1.6 QUALITY ASSURANCE

A. Coordination of Work: Coordinate layout and installation of fueling system with other adjacent work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver work cartoned or crated to provide protection during transit and job storage.

B. Inspect material upon delivery for damage. Minor damages may be repaired provided refinished items are equal in all respects to new work and acceptable to Construction Manager, Owner, and Architect / Engineer; otherwise, remove and replace damaged items as directed.

C. Store all materials at building site under cover. Coordinate with Owner for storage within DPW building premises or place components on minimum 4" high wood blocking if stored outside.

1.8 PROJECT WARRANTY

A. Provide written warranty, signed by contractor for the work in this Section.

B. One (1) year parts and labor from date of substantial completion.

PART 2 PRODUCTS

2.1 FUELING STATION MANUFACTURING EQUIPMENT

A. Anything within the specification that is propriety, provide with equal items.

2.2 ABOVE GROUND FUELING TANKS

A. (2) - 12,000-Gallon Vertical AST 12'D to match existing Tank Footprint.
(Gasoline & Diesel)

B. Coated white and warranted for one year.

2.3 TANK ACCESSORIES AND FILL PIPING

A. Tank fittings to meet State WI-DATCP requirements. Components listed below are for each of (2) tanks:

1. (1) Franklin Electric FE Petro Submersible Pump, 1 ½ HP.
2. (1) 3" remote fill piping with valves and drop pipe (anti-siphon hole).
Includes 25-gallon remote spill container
3. (1) Morrison # 9095 6" x 3" positive shut-off overfill valve
4. (1) Morrison Clock style mechanical gauge
5. (1) 2" standpipe with leak gauge or sensor for electronic monitor
(interstitial space)
6. (1) 4" riser for tank probe
7. (2) Morrison # 244F - 8" 8 Oz. Emergency Vent 1 for primary, 1 for
interstitial.
8. (1) Morrison # 354 0300" standard working vent for diesel
primary/secondary tanks
9. (1) Morrison # 800A / 800 DC 3" Fill Cap & Adapter (inside spill
containers)
10. (1) 3" ball valve for positive shut off (inside spill containers)
11. Ground rod & cable for tank
12. (2) Morrison # 910 2" Anti-Siphon Valve (1-required per pump)
13. All other valves & fittings required per code for "vehicle fueling"
14. EVO600 / EVO6000 Series Electronic Line Leak Detection.

2.4 DISPENSING EQUIPMENT

A. (1) Bennett 3712SNR-22 Diesel Dispenser:

1. Low cabinet
2. Single product, dual output
3. Two-sided
4. Electronic, gallons only displays
5. Single product dispenser
6. Front mount nozzle boot
7. Flow rated at 18-23GPM
8. Pulse output communication
9. Black with green lower door

B. (1) Bennett 3712SNR-22 Gasoline Dispenser:

1. Low cabinet
2. Single product, dual output
3. Two-sided
4. Electronic, gallons only displays
5. Single product dispenser
6. Front mount nozzle boot
7. Flow rated at 18-23GPM
8. Pulse output communication
9. Black with red lower door

C. Decal Package (contains all required decals)

2.5 DIESEL EXHAUST FLUID (DEF)

A. Existing dispenser at existing DEF building to remain.

B. New DEF equipment, housing, and dispenser at fuel island:

1. Blue Energy Equipment Commercial Platinum, 500 gallon capacity.
2. Associated fuel dispenser.

3. New DEF equipment tied to FuelMaster system for Security and Tracking with pulse output and hose controller.

2.6 CANOPY STRUCTURE

A. Existing Canopy Structure to remain

1. Refer to drawings for repair work to be done on canopy.

2.7 CANOPY LIGHTING

A. New canopy lighting with dusk / dawn and motion sensors.

2.8 TANK LEVEL MONITOR

A. Equal to Franklin Electric.

B. EVO 400 Series Automatic Tank Gauge.

2.9 FUEL MANAGEMENT SYSTEM

A. Fuel Master. Exact system to be determined, but shall include:

1. Island terminal unit
2. Software
3. Vehicle Identification Capability.
4. Remote Monitor System for Fuel Vendor refueling.
5. Key system based on System selected.
6. Fuel Master training

2.10 EMERGENCY / SAFETY EQUIPMENT AND SIGNAGE

A. (1) – Fire Extinguisher and Cabinet.

B. Emergency Stop and Safety / Warning Signs located in same location as existing (refer to drawings).

2.11 CONCRETE AND COLLISION PROTECTION

A. Site prep, fill and prepare for new concrete as specified on civil and architectural drawings.

B. 6"x 6' pipe bollards for collision protection (up to 20).

C. 7" yellow PVC bollard covers with reflective stripes

PART 3 EXECUTION

3.1 INSTALLATION

- A. Provide labor, tools, and equipment to plumb and install all proposed equipment.
- B. Provide and install all necessary decals.
- C. Setup, startup, testing, and calibration of equipment.
- D. Submit warranty paperwork.
- E. Complete and Submit State Petroleum Tank Installation Application, Permit Drawings.
- F. Notification and Coordination with Tank Inspector.
- G. Provide crane to unload and place tank.
- H. Licensed Installers to install piping and equipment on new tank.
- I. Licensed Installers to install and calibrate dispensers and DEF tote.
- J. Labor to install signage and fire extinguisher.
- K. Startup and training for Fuelmaster by factory trained technician.
- L. Submit final paperwork for tank inspector approval.

3.2 PERSONNEL TRAINING

- A. An experienced, competent, and authorized representative of the manufacturer shall train the Owner's personnel in operating, maintaining, and repairing the equipment specified in this section.

END OF SECTION 33 50 00

BIDDER'S QUALIFICATION STATEMENT - CONFIDENTIAL

Submitted to: **City of New Berlin**

Date:

RE: SUBMISSION OF PREQUALIFICATION FORMS FOR THE YEAR

Gentlemen & Ladies:

Submitted herewith please find our statement for your consideration in determining whether our firm is qualified and capable to bid, perform and furnish the necessary labor, materials and skill on the basis of our work record, experience, equipment and staff as required to enter upon and complete those various types of projects indicated below as may be awarded by the municipality during the current year.

It is understood that the determination and decisions of the Municipality with regard to qualifications shall be final, and further, that the information herein **will** be considered confidential. A finding of "Qualified" for one project does not bind the Municipality on other projects, and that the Municipality expressly reserves the right to review and reserve its findings on later projects.

Sincerely,

Signature

Printed Name

PRE-QUALIFICATION STATEMENT- CONFIDENTIAL DATA

TO: CITY OF NEW BERLIN, WAUKESHA COUNTY, WISCONSIN

There is submitted herewith for your consideration, pursuant to Section 66.29, Wisconsin Statutes, a Statement of Qualifications of the undersigned to furnish the necessary labor, materials, equipment and skills required to enter upon the complete public works contract to be let by the Municipality through its several departments.

IDENTIFICATION

Official Firm Name _____

Mailing Address: _____

Telephone No. (____) _____

Fax No. (____) _____

Number of Years in Business under Present Firm Name: _____

Classification of Work for Which Your Firm is seeking Qualification:

CITY OF NEW BERLIN
PRE-QUALIFICATION STATEMENT
IDENTIFICATION SECTION

Please CHECK Type of Firm Organization:

- Corporation
- Partnership
- Individual
- Joint – Venture

List Principle Individual Names:

(IF Individual, Answer Below)

Sole Trader _____

(IF Partnership, Answer Below)

Partner _____

Partner _____

(IF Corporation, Answer Below)

President _____

Vice-President _____

Secretary _____

Treasurer _____

Licensed to do business in Wisconsin on _____

In what State Incorporated _____ When _____

EXPERIENCE

Tabulation of Major Contracts (over \$25,000) which the Firm has completed during past 5 Years

Year	Class of Work	Amount	Location of Work	For Whom Performed & Contact Name/Phone

Tabulation of Construction Experience of Principle Individuals in Organization

Individual's Name	Title or Present Position	Years of Experience	Class of Work

List Below Major Pieces of Equipment Owned (or Leased) and
Available when needed for the Proposed Work

Item Description	Qty	Size/ Capacity/ Etc	Condition (Good or Fair)	Years of Service

CONTRACTUAL RESPONSIBILITY

List the trade and percentage of work normally performed with your own work force

Trade	Percentage of Work

Have you (or your Firm) ever failed to complete any work awarded to you?

Yes

No

If so, state: when, where, and why:

When	Where	Why

Has any officer or partner of your organization ever been an officer or partner of another organization that failed to complete on time a construction contract?

Yes

No

If so, state: firm name(s), when, where, and why:

Firm Name(s)	When	Where	Why

CITY OF NEW BERLIN
 PRE-QUALIFICATION STATEMENT
 CONTRACTUAL RESPONSIBILITY SECTION

Have you (or firm) asked to be relieved from a bid submitted by it to a public awarding authority during the past ten years?

Yes

No

If so, state: when, where, and why:

When	Where	Why

Have you (firm) been charged with or convicted of a violation of any wage schedule?

Yes

No

If so, state: when, where, and why:

When	Where	Why

List those projects that you (or firm) expect to have in progress at the time of the major performance period for this project:

Project	Location

BONDING RESPONSIBILITY

Name(s) and address of bonding company(ies) which generally execute Bid and Surety bonds:

Name	Address

Name(s) and addresses of all bonding companies other than those listed above, which have written Bid and Surety bonds for your firm during the last five (5) years:

Name	Address

Has any bonding company ever taken over a contract or make any payments, because of your firm's failure to carry out a contract?

- Yes
 No

If so, state: when, where, and why.

When	Where	Why

List current limits of bonding capacity: _____

List your current average bond premium cost: _____ %

CONTRACTOR'S FINANCIAL STATEMENT

Attach your Statement of Financial Conditions, including the latest regular dated financial statement or balance sheet, which must contain the following items:

1. Current Assets: Cash joint-venture accounts, accounts receivable, notes receivable, accrued interest on notes, deposits, materials, and prepaid expenses, net fixed assets, and other assets.
2. Current Liabilities: Accounts payable, notes payable, accrued interest on notes, provision for income taxes, advances received from owner, accrued salaries, accrued payroll taxes, other liabilities, and capital (stock, authorized and outstanding shares par values, and earned surplus).

Name of firm preparing statement: _____

Are any of the firm's assets assigned?

Yes

No

If so, state which are assigned and for what purpose they are assigned:

Assigned Asset	Purpose

GENERAL DATA

List below all previous work experience with the City of New Berlin:

Project	Trade	Year

Are you familiar with the provisions of the Agreement Form used by the City's?

- Yes
- No

Are you familiar with its terms and conditions?

- Yes
- No

Are you familiar with the City's specifications?

- Yes
- No

Are you familiar with the regulations of the City relating to bidding and awarding of contracts'?

- Yes
- No

AFFIDAVIT

STATE OF WISCONSIN

_____ } ss
_____ County

_____, being duly sworn, deposes and says that he is the _____ (Official capacity/title) of the firm _____ and that the answers to the foregoing questions and all statements therein contained are true and correct, and that any Owner, Bonding Company, or other agency herein named is hereby authorized to supply the City of New Berlin with any information deemed necessary to verify this statement.

Subscribed and sworn to before me

This ___ day of _____, 20__

_____ Notary Public

_____ County, Wisconsin

My Commission Expires: _____

ATTACH
STATEMENT OF FINANCIAL CONDITIONS

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

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NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Endorsed by



CONSTRUCTION SPECIFICATIONS INSTITUTE

These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor (EJCDC C-520 or C-525, 2007 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the Narrative Guide to the EJCDC Construction Documents (EJCDC C-001, 2007 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (EJCDC C-800, 2007 Edition).

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
 5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 6. *Bidder*—The individual or entity who submits a Bid directly to Owner.
 7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
 8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.
 9. *Change Order*—A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.
 10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
 11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).
14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.
15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.
16. *Cost of the Work*—See Paragraph 11.01 for definition.
17. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
18. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
19. *Engineer*—The individual or entity named as such in the Agreement.
20. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
21. *General Requirements*—Sections of Division 1 of the Specifications.
22. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.
23. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
24. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed*—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
30. *PCBs*—Polychlorinated biphenyls.
31. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
32. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
34. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
35. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
36. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.
37. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
39. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
41. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
43. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
44. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.
46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.
47. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.
48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
49. *Unit Price Work*—Work to be paid for on the basis of unit prices.
50. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an

addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 Terminology

A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives:*

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day:*

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective:*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:

- a. does not conform to the Contract Documents; or
- b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
- c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide:*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:
 - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.07 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
 - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on

Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

- A. Standards, Specifications, Codes, Laws, and Regulations
 1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.
2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;
2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or
3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or
2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

**ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS;
HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS**

4.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 - 1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any “technical data” on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer’s Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner’s obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer’s findings and conclusions.

C. *Possible Price and Times Adjustments:*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
 - a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
 - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and

contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

- c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and
2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all such information and data;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents;
 - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and
 - d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated:*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the

consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.
- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.
- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also

meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.
- B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.
- C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
 - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
 - 3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
 - 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

- a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
 - b. by any other person for any other reason;
5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
 6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- B. The policies of insurance required by this Paragraph 5.04 shall:
1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
 2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
 3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
 4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
 5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
 6. include completed operations coverage:
 - a. Such insurance shall remain in effect for two years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;
 2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.
 3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
 4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
 5. allow for partial utilization of the Work by Owner;
 6. include testing and startup; and
 7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.
- B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors,

members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.

- C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
- D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.
- E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.
- B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

- A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's

interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

- A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner’s written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.
 - 1. "*Or-Equal*" Items: If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and
- 3) it has a proven record of performance and availability of responsive service.

b. Contractor certifies that, if approved and incorporated into the Work:

- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
- 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items:*

- a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
- c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.
- d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - 1) shall certify that the proposed substitute item will:
 - a) perform adequately the functions and achieve the results called for by the general design,
 - b) be similar in substance to that specified, and
 - c) be suited to the same use as that specified;
 - 2) will state:
 - a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,
 - b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

- c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
- 3) will identify:
- a) all variations of the proposed substitute item from that specified, and
 - b) available engineering, sales, maintenance, repair, and replacement services; and
- 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.
- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.
- C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
- D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be

required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.
- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor
 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner,

Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

- A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas:*

- 1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
- 2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
- 3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought

by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and

shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is

required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*

- a. Submit number of copies specified in the General Requirements.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples:*

- a. Submit number of Samples specified in the Specifications.
- b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Submittal Procedures:*

1. Before submitting each Shop Drawing or Sample, Contractor shall have:

- a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
- b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
- c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
- d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer's Review:

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures:

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 - 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 - 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
 - 1. observations by Engineer;
 - 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 - 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 - 4. use or occupancy of the Work or any part thereof by Owner;
 - 5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;
 - 6. any inspection, test, or approval by others; or
 - 7. any correction of defective Work by Owner.

6.20 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
 - 1. written notice thereof will be given to Contractor prior to starting any such other work; and
 - 2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.
- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:
 - 1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
 - 2. the specific matters to be covered by such authority and responsibility will be itemized; and
 - 3. the extent of such authority and responsibilities will be provided.

- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

- A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

- A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.D.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or

continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

- A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.
- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.
- D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not

exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).
- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.

10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:
 - 1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
 - 2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
 - 3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

- A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.
- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data

shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
1. deny the Claim in whole or in part;
 2. approve the Claim; or
 3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.
- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of

said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
- e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not

limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.

C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances:*

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. *Contingency Allowance:*

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to

the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 Change of Contract Price

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:
 - 1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
 - 2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
 - 3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
 - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or

neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.
- D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 Notice of Defects

- A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 Access to Work

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

- A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
 - 1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
 - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and
 - 3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.
- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.
- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).
- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
 2. correct such defective Work; or
 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.
- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

- A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. *Applications for Payments:*

- 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an

Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. Review of Applications:

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or

- involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or
- b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
 5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
 - d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due:

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. *Reduction in Payment:*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
 - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
 - b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - c. there are other items entitling Owner to a set-off against the amount recommended; or
 - d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.
3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before

final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

- D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.
- E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

14.05 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 - 1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.
 - 2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;
 - b. consent of the surety, if any, to final payment;
 - c. a list of all Claims against Owner that Contractor believes are unsettled; and
 - d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying

documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due:*

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
 1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
 2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will justify termination for cause:
1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
 2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
 3. Contractor's repeated disregard of the authority of Engineer; or
 4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:
1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);
 2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and
 3. complete the Work as Owner may deem expedient.
- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when

so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
 - 3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
 - 4. reasonable expenses directly attributable to termination.
- B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days

to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.01 Methods and Procedures

- A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
- B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
 - 1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or
 - 2. agrees with the other party to submit the Claim to another dispute resolution process; or
 - 3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.01 Giving Notice

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or
2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

- A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

**CITY OF NEW BERLIN
GENERAL TERMS and CONDITIONS
FOR THE NEW BERLIN DPW FUELING STATION**

1. Introduction. This document (hereinafter referred to as “Terms and Conditions”) is hereby incorporated and part of the contract between the City of New Berlin (hereinafter referred to as “City”) and the vendor identified below (hereinafter referred to as “Vendor”). These Terms and Conditions, along with the Bid Instructions, Bid Forms, Specification, City of New Berlin Insurance Requirements, Certificates of Insurance, Policy Endorsements, bid, payment and performance bonds shall constitute the entire contract for materials, work and other goods and services, collectively referred to as the “Contract” between the City and the Vendor. The work that is being performed herein shall collectively be referred to as the “Project”. It is expressly agreed that no statement, arrangement, warranty or understanding, oral or written, expressed or implied, will be recognized unless it is stated in or otherwise permitted by these Terms and Conditions, and the aforementioned invoices and specifications. These Terms and Conditions are solely for the benefit of the City and the Vendor, and are not intended for the benefit of any other party.

2. Goods and/or Equipment. The goods, services and materials being furnished under this contract shall be as identified in Bid Instructions, Bid Forms and Specifications that are incorporated herewith.

The City shall not be deemed to have accepted the Goods until they have been provided the opportunity to inspect them and to acknowledge, in writing, that they are in accordance with the specifications/invoice and without damage or defect.

3. Contract Time. Time is of the essence with respect to all time limits, milestones (if any), as well as deadlines for substantial completion and completion of the work provided for in the specifications.

The work will be substantially completed on or before November 15, 2025, and completed and ready for final acceptance and payment in accordance with this Agreement on or before December 12, 2025, subject to conditions beyond the control of the Contractor, such as labor or material shortages, weather conditions, strikes, civil unrest or wars. The fueling station shall be operational between November 15, 2025 and April 15, 2026. The Owner shall make the final decision as to the adequacy of the justification for the delay. Contractor and Owner recognize that time is of the essence and that the Owner will suffer financial and other losses if the work is not completed and the milestones are not achieved within the time limits specified above. The parties also recognize that delays, expense and difficulties involved in proving, in a legal or arbitration proceedings, of the actual loss suffered by the Owner if not completed on time. As a consequence and not as a penalty, but rather to cover the City’s costs if the milestones are not achieved and the work causing alternative fueling sources to be needed is not completed by the completion date, the parties agree that the City shall be entitled to liquidated damages in the sum of \$250.00 (two hundred fifty dollars) per day as to when substantial completion is delayed.

4. Contract Price. The City shall pay the Vendor for the completion of the work in accordance with the Contract in the amounts that follow, subject to any applicable adjustments under the Contract:
 - a. For all unit price work in an amount equal to the sum of the established unit prices for each separately identified item of unit price work times the actual quantity of that time.
 - b. The estimated total of all unit price work for the base bid is \$_____ . These prices are based on estimated quantities.
 - c. These quantities shall be adjusted based upon the actual work performed.
 - d. For all work at the price as stated in the Contract Bid attached hereto as Exhibit A.

5. Payment Procedures. Contractors shall submit applications for payments in accordance with the terms of this Agreement upon final completion and acceptance of the work. Owner shall have thirty (30) days after receipt of such request to review the request for correctness and to obtain approval for such payment by its Common Council. The Owner may withhold payment for any portion of the work which is not completed in accordance with the specifications, and shall pay for the work related to any undisputed charges. Upon the successful completion of the work and the acceptance of that work as provided for hereunder, the Owner shall pay the remainder of the contract price.

Upon substantial completion of the work, the owner shall pay an amount sufficient to increase the total payments to the Contractor to one hundred (100%) percent of the work completed, but less such amount set off by Owner as provided for herein, less two hundred (200%) percent of the estimated value of the work to be completed or corrected in accordance with a punch list to be completed prior to final payment. Upon the successful completion of the work and the acceptance of that work as provided for hereunder, the Owner shall pay the remainder of the contract price.

6. Vendor's Representations. In order to induce the City to enter into this Contract, the Vendor makes the following representations:
 - a. The Vendor has examined and carefully studied the Contract documents and any data and referenced items included in the Contract documents.
 - b. The Vendor has visited the site, conducted a thorough visual examination of the site and adjacent areas, and has become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress and performance of the work.
 - c. The Vendor is familiar with and is satisfied as to all laws and regulations that may affect cost, progress and performance of the work.

- d. The Vendor has carefully studied all reports and expirations and tests related to the conditions in which the work will be performed, as well as reports and drawings related to the work and technical data in such reports and drawings.
- e. The Vendor has considered the information known to the Vendor itself, including information commonly known to vendors doing business in the Milwaukee metropolitan area, as well as information and observations obtained from visits to the site; the Contract documents; site related reports and drawings in the Contract documents with respect to the impact of such information; observations and documents on the cost, progress and performance of the work; the means, methods, techniques, sequences and procedures of construction; and the Vendor's safety, precautions and programs.

Based on the information and observation referred to in the preceding paragraph, Vendor agrees that no further examinations, investigations, explorations, tests, studies or data are necessary for the performance of the work of the Contract price within the Contract times in accordance with the other terms and conditions of the Contract.

The Vendor has given the City written notice of all conflicts, errors, ambiguities or discrepancies which the Vendor has discovered in the Contract documents and the Vendor certifies that the written resolution thereof by the City is acceptable to the Vendor.

The Contract documents are sufficient to indicate and convey understanding of all terms and conditions for performance in the furnishing of the work.

The Vendor is entering into this Contract and this constitutes an incontrovertible representation by the Vendor that, without exception, all prices in the Contract are premised upon performing and furnishing the work requirement by the Contract documents.

7. Assignment of Contract. Unless expressly agreed to by the City, no assignment may be made of the rights and responsibilities of the Vendor under this agreement.

8. Successors and Assigns. The City and Vendor each binds themselves, their successors, agents, legal representatives and assigns with respect to all covenants, agreements and obligations contained in the Contract documents.

9. Severability. Any provision or part of the Contract documents held to be void or unenforceable under any law or regulation shall be deemed stricken and all remaining provisions shall continue to be valid and binding upon the City and Vendor, which do hereby agree that the Contract documents shall be performed or replaced as to such stricken revision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10. Taxes, Social Security and Government Reporting. Personal income tax payments, social security contributions, insurance, payroll taxes and all other governmental reporting and

contributions required as a consequence of the Contract or receiving payment for this Contract shall be the sole responsibility of the Vendor.

11. Advertising. The Vendor shall not identify the City as a client or customer of the Vendor or utilize the name of the City or its logo in any advertisements or other documents placed in the public domain without the express written consent of the City.

12. Modification. In the event that the parties determine that a modification to the Terms and Conditions of the providing of these goods and services are necessary, such change shall not be effective unless executed by authorized representatives of both parties.

13. Delivery. The goods provided hereunder shall be delivered to the City within the number of working days set forth in the contract or otherwise as soon as reasonably practicable unless delay occurs due to work stoppage, adverse weather conditions, labor disputes or modifications to the Terms and Conditions of the contract. In the event that the goods are not delivered within a reasonable period of time, the City shall have the right to cancel this contract without fee or penalty.

14. Insurance. Vendor shall maintain workers compensation, automobile liability and commercial general liability insurance coverage with carriers licensed to do business in the State of Wisconsin, and with such limits as the City may establish and require from time to time:

- a. General Aggregate: \$2,000,000.00
- b. Personal Advertising Injury: \$1,000,000.00
- c. Each occurrence: \$1,000,000.00
- d. Fire damage: \$50,000.00
- e. Medical Expense, any one person: \$5,000.00
- f. Automobile liability: CSL \$1,000,000.00
- g. Excess liability umbrella form: \$1,000,000.00 per occurrence
- h. Excess liability umbrella form: \$2,000,000.00 in the aggregate with a self-insured retention limit of not greater than \$10,000.00
- i. Professional Liability, General Aggregate: \$2,000,000.00
- j. Professional Liability, Each Occurrence: \$1,000.00.00

Vendor shall furnish a Certificate of Insurance evidencing the types and amounts of coverage. Said coverage shall be on an occurrence basis and the limits identified in the general liability coverage shall be for this project and not the policy as a whole. Vendor agrees to require that the insurer list the City as an Additional Insured on a primary and non-contributory basis and to provide adequate evidence of said status through the liability insurance endorsement. Vendor shall further obtain an endorsement from the insurance carrier indicating that any material changes to the policy or any cancellation of the coverage subsequent to the issuance of the Certificate, and until the completion of the services hereunder, shall necessitate that the insurer provide not less than thirty (30) days notice to the City of said fact. Clauses such as that the insurer will endeavor to notify the City are unacceptable and will be rejected.

15. Dispute. These Terms and Conditions shall be deemed to have been made and governed by the laws of the State of Wisconsin. Any legal suit or action with regard to these Terms and Conditions or the project as a whole shall be venued in the Waukesha County Circuit Courts, Waukesha County, Wisconsin, unless the parties mutually agree to arbitration and/or mediation in place of civil litigation.

16. Limitation on Liability. The City's liability to the Vendor shall not exceed the sums paid by the City to the Vendor under this contract. In addition, to the extent that the Vendor seeks indemnification from the City, that indemnity shall be subject to the limitations set forth herein. No indemnity provided under any contract hereunder shall be construed to be a waiver or estoppel of the City of New Berlin or its insureds' ability to rely upon the limitations, defenses and immunities contained within Wisconsin law, including, but not limited to those set forth in Wisconsin Statute §893.80, §895.52 and §345.05. To the extent indemnification is available and enforceable, the City of New Berlin or its insured shall not be liable in indemnity or contribution for any amount greater than the limits of liability for municipal claims established by Wisconsin law. The City's obligations to indemnify hereunder are further subject to the availability and limits of applicable insurance coverage. Under no circumstances shall the City be required to indemnify the Vendor for its own negligence or intentional conduct.

17. Protection of the Project Site. Vendor agrees to post signage and to appropriately guard the area in which the contract work is being performed, and to take all other steps that may be necessary in accordance with requirements of OSHA and/or other governmental agencies with jurisdiction to ensure that the project site is maintained in a safe manner to as to prevent workers and passersby from entering the project site.

18. Warranty. Vendor warrants and guarantees to City that all goods and/or equipment to be supplied hereunder will be of good quality and free from faults and defects. This warranty shall cover materials for the manufacturer stated warranty period and workmanship for two (2) year from the date of substantial completion or as provided in the specifications/invoice attached hereto, whichever is greater.

19. Conflicts. If there is any inconsistency between these Terms and Conditions and the specifications/invoice or any attachments thereto, these Terms and Conditions shall apply.

20. Hold Harmless. The Vendor shall indemnify and hold harmless the City and its agents, employees, elected officials, representatives and assigns (hereinafter referred to as the "Indemnified Parties") as and against any and all claims, demands, actions, causes of action, losses, costs, expense, including, but not limited to actual attorney fees, arising out of our resulting from the performance of the work. Said indemnity shall include both the Vendor, as well as any subcontractors working under them, regardless of whether or not such claims, demands, losses or expenses are caused in whole, or in part, by the parties that are being indemnified. Such obligation shall not be considered to negate, abridge or reduce other rights or obligations of indemnity which would otherwise exist as to a party or persons described in this paragraph. To the extent that the Vendor retains subcontractors for the performance of the work, or any portion thereof, the Vendor and/or subcontractors shall provide evidence of the insurance coverages set forth above, as well as

the terms of this indemnification provision shall be applicable to such Vendor and/or subcontractors.

21. Modification and Assignability. This contract, including all documents incorporated by reference herein, may not be enlarged, modified or altered except upon written agreement signed by both parties. The Vendor may not subcontract or assign its rights, including rights to compensation, or terms of performance arising hereunder without the prior written consent of the City. Any subcontractor or assignee shall be bound by all of the terms and conditions of the contract, and will be required to enter into a written agreement with the City.

22. Termination of Contract. This contract may be terminated as follows:

- a. *Termination for Convenience.* City may terminate this contract in whole or in part for the convenience of the City when the City determines that the continuation of the project is not in the best interests of the City. Vendor shall be entitled to payment for all of the services performed at the date of the termination, together with its direct costs of termination. Under no circumstances shall the Vendor be entitled to any penalty for the termination nor shall the Vendor be entitled to any payment for lost profits.
- b. *Termination for Cause.* If the City determines that the Vendor has failed to comply with any of the terms and conditions of the contract and the scope of services and related documents thereto, the City may give written notice to the Vendor of any such deficiency and in the event that the Vendor fails to cure said deficiency within ten (10) days of the notice of such failure, the City may, with no further notice, declare this contract to be terminated. Vendor will therefore be entitled to receive payment for those services performed at the date of termination, plus the amount of reasonable damages suffered by the City by reason of the Vendor's failure to comply with the terms of the contract. Under no circumstances shall the Vendor be entitled to any lost profits arising from the contract.

23. Ongoing Services. This is also a contract for ongoing preventative maintenance services, as provided for in the Project Specifications. The parties agree that these Terms and Conditions shall be applicable to these ongoing Services.

24. Relationship of the Parties. The Vendor agrees to perform the services as provided for hereunder as an independent contractor, not as an employee of the City. The Vendor shall furnish all services, labors, materials and equipment necessary to conduct and complete the work. The work shall be performed in accordance with the specifications subject to the satisfaction of the City.

25. Delay. The Contractor shall not be liable for delays or failure to perform the services necessary to complete the work which are caused directly or indirectly by circumstances beyond the Contractor's control, including but limited to, acts of God, fire, flood, war, sabotage, accident, labor dispute, material shortage, governmental action, including regulatory requirements, change conditions, delays resulting from actions of the Owner or third parties not under control of

the Contractor, site inaccessibility or inability of others to obtain materials, labor, equipment or transportation. Should any of the above occur, then the date for completion of the services shall be adjusted for such delay, provided that the Contractor reports the delay, both verbally and in writing, to the Owner within a reasonable time of its discovery. The Owner shall determine whether or not the cause of delaying or not completing a duty or obligation under this Agreement is under the control of the Contractor.

The Contractor acknowledges that in December of 2019 a novel strain of the Coronavirus (now referenced as COVID-19) was detected and has now spread throughout many countries, including the United States. Based upon this, the World Health Organization has declared a Public Health Emergency of international concern; and the United States Department of Health and Human Services has declared a Public Health Emergency. The Contractor further acknowledges that it is aware of the COVID-19 pandemic and that the existence of said pandemic will not constitute a force majeure or otherwise preclude the Contractor's ability to perform the terms of this agreement absent the issuance of any Order by a governmental entity with jurisdiction that would preclude such performance

The Contractor acknowledges that it must perform the work and services hereunder, pursuant to the terms and conditions of this Agreement and that such work shall conform to the recognized standards in the Milwaukee Metropolitan Area for the performance of this work as are prevalent in this field of endeavor and like services. Also, its work shall be performed in a good and workmanlike manner.

26. Regulations. The Vendor agrees to comply with all the requirements of applicable federal, state and local laws, as well as Codes and Specification requirements related to the performance of the work under this Contract.

27. Records and Reports. Records relating to the performance of the services under this Contract must be retained for seven (7) years after final disposition. However, if any litigation claim or audit has started before the expiration of the seven (7) year period, then records shall be retained for five (5) years after the litigation or audit is resolved. Notwithstanding any other clause written herein, Vendor understands and agrees that the City is a municipal entity and therefore, is subject to the Open Records Law of the State of Wisconsin. Wisconsin Statute §19.36(3) requires governmental entities to make available for inspection a copy of any records produced or collected under a contract entered into by the municipal entity to the same extent as if the record were maintained by the municipality. Therefore, in the event there is a request for any other documentation pertaining to this Contract, Vendor shall provide the information as requested and charge no more than the cost to copy said information. The parties agree that upon completion or termination of this Contract, all project contract documents or instruments of service, including electronic files of computer-aided record drawings and field inspection reports shall be delivered to and shall become the property of the City. These records, drawings, reports, etc. may be used without restriction by the City for any public purpose and to implement construction and use of the project. Any such use or reuse of these documents outside the scope of the project shall be without compensation or liability to the Vendor, excepting for errors and omissions associated with the completed project, services and documents performed under this Contract.

28. Governing Law; Entire Agreement. This Contract shall be governed and construed in accordance with the laws of the State of Wisconsin. These Contract documents represent the complete understanding of the parties with respect to the subject matter set forth herein and may only be amended in a subsequent agreement executed by all parties.

29. Relationship of the Parties. The contractor agrees to perform the services as provided for hereunder as an independent contractor, not as an employee of the owner. The contractor shall furnish all services and labors and materials and equipment necessary to conduct and complete the work. The work shall be performed in accordance with the specifications subject to the satisfaction of the owner.

FINANCE DIRECTOR:
City of New Berlin

MAYOR:
City of New Berlin

By: _____

By: _____

[Print Name & Title]

[Print Name & Title]

CITY CLERK:
City of New Berlin

CITY ATTORNEY:
City of New Berlin

By: _____

By: _____

[Print Name & Title]

[Print Name & Title]

VENDOR:

[Insert Vendor Name]

By: _____

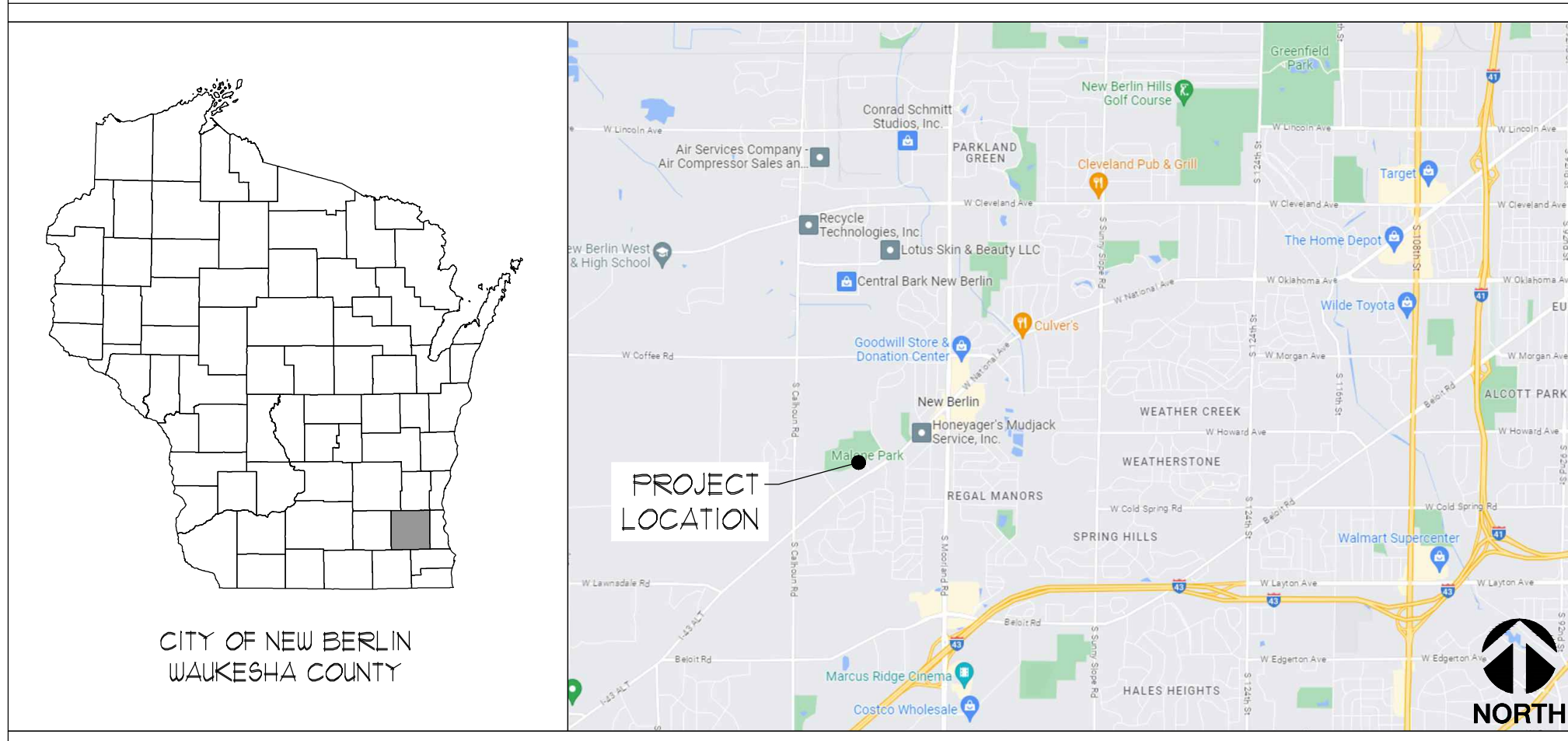
[Print Name & Title]

City of New Berlin DPW Fueling Station

Site Improvements & Reconstruction for:

16550 W National Ave New Berlin, WI 53151

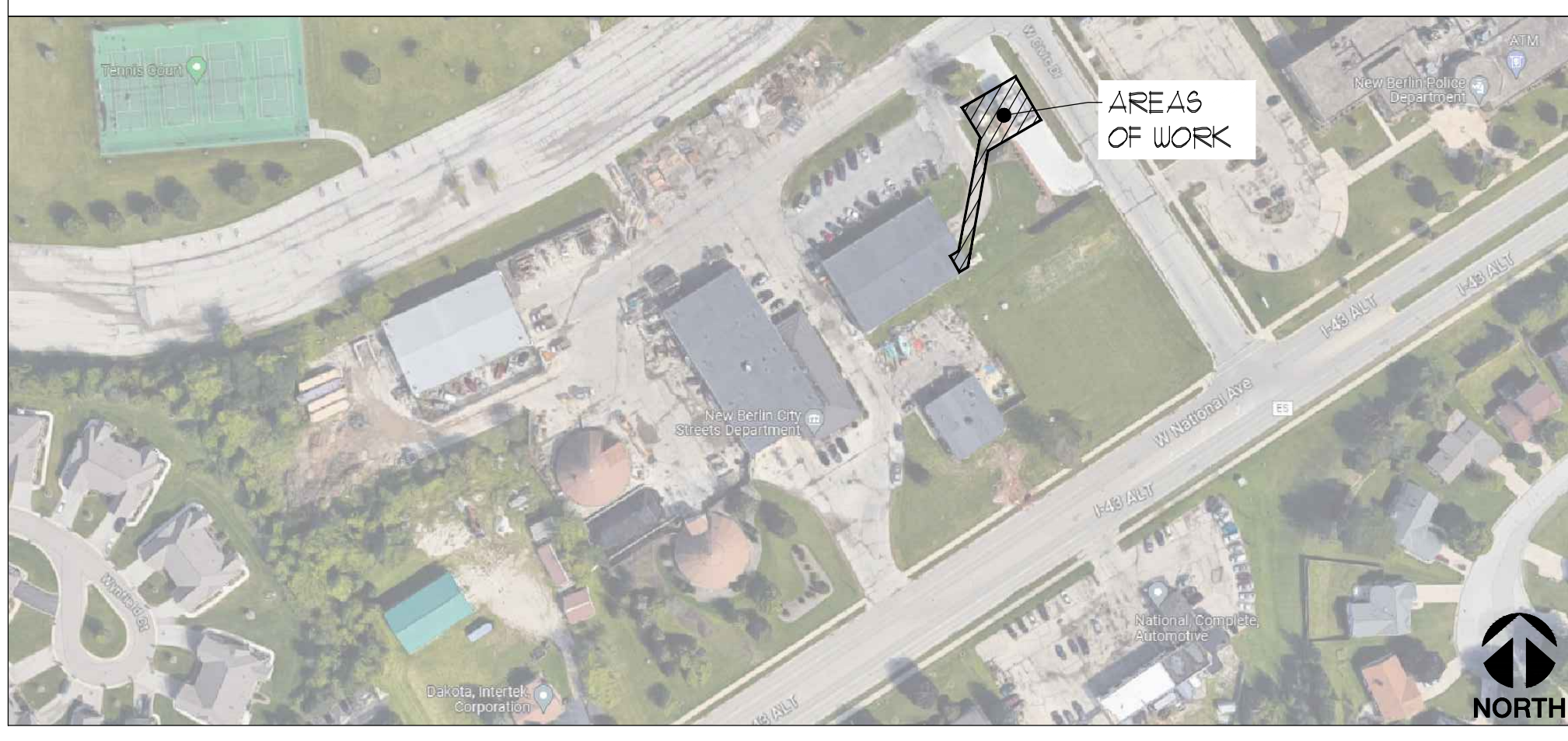
VICINITY MAP



ABBREVIATION KEY

A/C	AIR CONDITIONING	EJ	EXPANSION JOINT(S)	INT	INTERIOR	REC	RECESSED
ACT	ACOUSTIC CEILING TILE	ELEC	ELECTRICAL	JNT	JOINT	REG	REGULAR
ADJ	ADJUSTABLE OR	ELEV	ELEVATION OR	JST	JOIST	REIN	REINFORCE
ADJ	ADJACENT	ELEV	ELEVATION OR	LAM	LAMINATE	RD	ROUGH OPENING
AF	ABOVE FINISH FLOOR	EQ	EQUAL	LAV	LAVATORY	RTU	ROOF TOP UNIT (HVAC)
ALT	ALTERNATE	EQUIP	EQUIPMENT	LVL	LAMINATED	R/T	REFER TO
ALUM	ALUMINUM	EQUIV	EQUIVALENT	LV	LEAD VENEER LUMBER	SC	SOLID CORE
APPROX	APPROXIMATE	ETR	EXISTING TO REMAIN	MATL	MATERIAL	SECT	SECTION
ARCH	ARCHITECTURAL	EXP	EXPANSION OR EXPOSED	MAX	MAXIMUM	SIM	SIMILAR
#	ARCHITECTURAL	EXST	EXISTING	MDF	MEDIUM-DENSITY FIBERBOARD	SPEC	SPECIFICATION
BD	BOARD	EXT	EXTERIOR	MECH	MECHANICAL	SQ.FT. SF.	SQUARE FOOT
BLDG	BUILDING	FD	FLOOR DRAIN	MECH	MECHANICAL	SQ-IN	SQUARE INCH
B/O	BOTTOM OF	FDN	FOUNDATION	MED	MEDIUM	SS	STAINLESS STEEL
BRG	BEARING	FF	FINISH FLOOR	MAN	MANUFACTURER	SM	SOLID SURFACE
CB	CEMENT BOARD	FIN	FINISH	MIN	MINIMUM	STL	STEEL
CF	COLD FORMED STEEL	FIXT	FIXTURE	MISC	MISCELLANEOUS	STR	STRUCTURAL
CJ	CONSTRUCTION JOINT(S)	FLR	FLOOR	MO	MASONRY OPENING	STN	STAIN
CL	CENTER LINE	FRP	FIBERGLASS REINFORCED PLASTIC	MUR	MUZZY RESISTANT GUB	STRCT	STRUCTURAL
CLG	CEILING	FRP	FIBERGLASS REINFORCED PLASTIC	MTL	METAL	SV	SHEET VINYL
CLST	CLOSET	FRP	FIBERGLASS REINFORCED PLASTIC	NC	NOT IN CONTRACT	TBD	TO BE DETERMINED
CMU	CONCRETE MASONRY UNIT	FTG	FOOTING	NO *	NIPPER	TBD	TO BE DETERMINED
COL	COLUMN	FURN	FURNACE	NOM	NOMINAL	TIB	TOP & BOTTOM
CONC	CONCRETE	GA	GALVANE	NTS	NOT TO SCALE	TELE	TELEPHONE
CONST	CONSTRUCTION	GALV	GALVANIZED	OA	OVERALL	TG	TONGUE & GROOVE
CONT	CONTINUOUS	GC	GENERAL CONTRACTOR	OC	ON CENTER	TJ	T-JOIST
CPET	EGRESS TRAVEL	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	OHD	OVERHEAD DOOR	T/O	TOP OF
CPT	CERAMIC TILE	GLULAM	GLUE LAMINATED TIMBER	OPF	OPPOSITE	TYP	TYPICAL
CTB	CERAMIC TILE BASE	GRT	GROUT	OPT	OPTIONAL	UC	UNDER COUNTER
DEMO	DEMOLITION	GWB	GYPSPUM WALL BOARD	PERF	PERFORATED	UNO	UNLESS NOTED OTHERWISE
DIA	DIAMETER	HC	HOLLOW CORE	FL	FLUTE	VB	VINYL BASE
DM	DIMENSION	HDR	HEADER	FLAM	FLAME	VBC	VINYL BASE COVE
DIV	DIVISION	HDW	HARDWARE	FLYUD	FLYWOOD	VBS	VINYL BASE STRAIGHT
DN	DOWN	HGT	HEIGHT	PREFIN	PREFINISHED	VCT	VINYL COMPOSITION TILE
D/S	DOWNSPOUT	HM	HOLLOW METAL	FSF	FOUNDS PER SQ FT	VERT	VERTICAL
DW	DISHWASHER	HORIZ	HORIZONTAL	FSF	FOUNDS PER SQ IN	VF	VERIFY IN FIELD
DWG	DRAWINGS	HR	HOOR	PT	PAINT	W	WOOD
EA	EACH	HVAC	HEAT, VENT, & AIR CONDITIONING	P/T	PRESERVATIVE TREATED	WB	WOOD BASE
EATD	EXIT ACCESS TRAVEL DISTANCE	IHM	INSULATED HOLLOW METAL	PVC	POLYVINYLCHLORIDE	WD	WOOD
EF	EPOXY FLOORING	IN	IN LIEU OF	Q	QUARRY TILE	WH	WATER HEATER
EP	EXTERIOR INSULATION FINISH SYSTEM	ILO	INSULATION OR INSULATE	QT	QUARRY TILE BASE	WIC	WALK-IN CLOSET
EP	EXTERIOR INSULATION FINISH SYSTEM	INSUL	INSULATION OR INSULATE	R	RADIUS	W/O	WITHOUT
				RD	ROOF DRAIN	WUF	WELDED WIRE FABRIC

ACCESSIBILITY ROUTE



PARTICIPANTS

OWNER:
City of New Berlin
3805 S Casper Drive
New Berlin, WI 53151
Tele: (262) 780-4609
Contact: Lucas Pichler
E-mail: lpichler@newberlin.org

ARCHITECT:
Perspective Design, Inc.
11525 W. North Avenue
Wauwatosa, WI 53226
Tele: (414) 302-1780 x210
Fax: (414) 302-1781
Contact: Kurt Johansen / Peter Ogorek
E-mail: kurtj@pdi-arch.com / pogorek@pdi-arch.com

GENERAL CONTRACTOR / CONSTRUCTION MANAGER:

TBD

CIVIL ENGINEER:

raSmith
16745 W Bluemound Rd
Brookfield, Wisconsin 53005
Tele: (262) 371-3266
Contact: Christopher White
E-mail: christopher.white@rasmith.com

ELECTRICAL ENGINEER:

Harwood Engineering
235 N 21st St
Milwaukee, Wisconsin 53233
(414) 918-1225
Contact: Tom Petersen
Email: Tom.Petersen@hecl.com

PETROLEUM VENDOR:

TBD

ALTERNATE BIDS

ALT BID #1: BASE BID TO HAVE ELECTRIC SERVICE & BACK-UP GENERATOR POWER COME FROM EXISTING EQUIPMENT. ALTERNATE BID FOR NEW BACK-UP GENERATOR FOR FUEL STATION & DEF BUILDING. VERIFY LOCATION W/ OWNER IF ALT BID IS SELECTED.

DRAWING INDEX

GENERAL:
TI TITLE SHEET

CIVIL:
C100 SITE PLAN
C200 SITE DETAILS

ARCHITECTURAL:

DSPII ARCHITECTURAL DEMOLITION SITE PLAN
ASPII ARCHITECTURAL SITE PLAN

ELECTRICAL:

EL ELECTRICAL SYMBOLS, ABBREVIATIONS, NOTES AND SPECS
ESD100 ELECTRICAL DEMO SITE PLAN
ES100 ELECTRICAL SITE PLAN
E100 ELECTRICAL DETAILS
E101 ELECTRICAL DETAILS
E200 ELECTRICAL ONE-LINE DIAGRAM AND PANEL SCHEDULE

PETROLEUM VENDOR:

TO BE PREPARED & SUBMITTED BY PETROLEUM VENDOR UNDER SEPARATE COVER FOLLOWING WI-ATCP 93 REQUIREMENTS

STRUCTURAL:

TO BE PREPARED & SUBMITTED BY PETROLEUM VENDOR UNDER SEPARATE COVER

MECHANICAL:

NO MECHANICAL MODIFICATIONS TO BE MADE WITH THIS SUBMITTAL

PLUMBING:

NO PLUMBING MODIFICATIONS TO BE MADE WITH THIS SUBMITTAL

CODE REFERENCE

BUILDING CODE:
WI COMMERCIAL BUILDING CODE ADOPTION OF THE INTERNATIONAL CODES SUBJECT TO THE MODIFICATION SPECIFIED BY WI DEPARTMENT OF SAFETY & PROFESSIONAL SERVICES, CHAPTER 361-366
• INTERNATIONAL BUILDING CODE - 2015
• INTERNATIONAL ENERGY CONSERVATION CODE - 2015
• COMCHECK (LATEST WEB RELEASE)
• INTERNATIONAL MECHANICAL CODE - 2015
• INTERNATIONAL FUEL GAS CODE - 2015
• INTERNATIONAL EXISTING BUILDING CODE - 2015
• AGRICULTURE, TRADE AND CONSUMER PROTECTION - WI-ATCP 93

ACCESSIBILITY CODES:
• INTERNATIONAL BUILDING CODE - 2015, CHAPTER II
• ICC A111 - 2009
• D.O.J. - 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

MECHANICAL CODE:
• INTERNATIONAL MECHANICAL CODE - 2015
• INTERNATIONAL FUEL GAS CODE - 2015
• WI SAFETY & PROFESSIONAL SERVICES, CHAPTERS 364 & 365

ELECTRICAL CODE:
• INTERNATIONAL BUILDING CODE - 2015, CHAPTER 21
• WI SAFETY & PROFESSIONAL SERVICES, CHAPTER 316
• REFERENCE NATIONAL ELECTRIC CODE
• NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) - 2017, SUBJECT TO THE CHANGES, ADDITIONS OR OMISSIONS SPECIFIED IN SUB CHAPTER III OF SP9 CHAPTER 316

PLUMBING CODE:
• INTERNATIONAL BUILDING CODE - 2015, CHAPTER 29
• WI SAFETY & PROFESSIONAL SERVICES, CHAPTER 381-387

FIRE PREVENTION:
• WI SAFETY & PROFESSIONAL SERVICES, CHAPTER 314
• REFERENCE NFPA
• NFPA 1 FIRE CODE - 2017 AND/OR LOCAL FIRE ORDINANCE IF APPLICABLE
• SUBJECT TO THE MODIFICATIONS AS SPECIFIED IN SP9 CHAPTER 314
• INTERNATIONAL FIRE CODE - 2015 (AS REFERENCED BY THE IBC - 2015)

CIVIL ENGINEER:
CIVIL ENGINEER IS RESPONSIBLE FOR ALL FEDERAL, STATE AND LOCAL CODES RELATED TO STORM WATER MANAGEMENT, EROSION CONTROL, SOIL DISTURBANCE AND NATURAL RESOURCE PROTECTION.

EMERGENCY EGRESS LIGHTING:
- THESE DOCUMENTS DENOTE AN EGRESS PLAN SHOWING THE PATH WHERE EXIT LIGHTS & EMERGENCY EGRESS LIGHTING MAY BE REQUIRED.
- FOR NEW BUILDINGS, ADDITIONS OR ALTERATIONS THAT CREATE NEW EGRESS PATHS, THE ELECTRICAL DESIGNER SHALL PROVIDE, AT THE PROJECT SITE DURING CONSTRUCTION, EMERGENCY LIGHTING CUT-SHEETS, CALCULATIONS, PHOTOMETRICS OR OTHER MEANS TO SHOW COMPLIANCE WITH APPLICABLE CODES.

LIGHTING & ENERGY CONSERVATION:
ELECTRICAL DESIGNER SHALL PREPARE A LIGHTING PLAN AND PROVIDE, AT THE PROJECT SITE DURING CONSTRUCTION, LIGHTING PLANS AS WELL AS FIXTURE CUT-SHEETS AND ENERGY CALCULATIONS TO SHOW COMPLIANCE WITH THE ENERGY CODE.

BUILDING DATA

PROJECT DESCRIPTION: CITY OF NEW BERLIN
BUILDING CODE: IBC / IBCB / WI-SPS 361-366 / WI-ATCP 93
CLASSIFICATION OF WORK: REPAIRS
USE & OCCUPANCY: M (MERCANTILE)
MAJOR USE: FUEL DISPENSING STATION
TYPE OF CONSTRUCTION: REPAIRS

1. SHIELDED FROM THE PUMPS BY A NONCOMBUSTIBLE ELEMENT OF THE CANOPY OR WOOD OF THE IV SIZES
2. PLASTICS COVERED BY ALUMINUM FACING HAVING A THICKNESS OF NOT LESS THAN 0.016 INCH (0.30 MM) OR CORROSION-RESISTANT STEEL HAVING A BASE METAL THICKNESS OF NOT LESS THAN 0.016 INCH (0.41 MM). THE PLASTIC SHALL HAVE A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE-DEVELOPED INDEX OF 450 OR LESS WHEN TESTED IN THE MANNER INTENDED FOR USE IN ACCORDANCE WITH ASTM E84 OR UL 133 AND A SELF-IGNITION TEMPERATURE OF 480°F (243°C) OR GREATER WHEN TESTED IN ACCORDANCE WITH ASTM D1819

3. PANELS CONSTRUCTED OF LIGHT-TRANSMITTING PLASTIC MATERIALS SHALL BE PERMITTED TO BE INSTALLED IN CANOPIES SITUATED OVER MOTOR VEHICLE FUEL-DISPENSING STATION FUEL DISPENSERS, PROVIDED THE PANELS ARE LOCATED NOT LESS THAN 10 FEET (3.05 M) FROM ANY BUILDING ON THE SAME LOT AND FACE YARDS OR STREETS NOT LESS THAN 40 FEET (12.20 M) IN WIDTH ON THE OTHER SIDES. THE AGGREGATE AREA OF PLASTICS SHALL BE NOT GREATER THAN 1000 SQUARE FEET (93 M²). THE MAXIMUM AREA OF ANY INDIVIDUAL PANEL SHALL BE NOT GREATER THAN 100 SQUARE FEET (9.3 M²).

CONSTRUCTION SET
USE NO OTHER

DO NOT SCALE THESE DRAWINGS

Site Improvements & Reconstruction For
City of New Berlin DPW Fueling Station
16550 W National Ave
New Berlin, WI 53151

PERSPECTIVE DESIGN, INC.
11525 W. North Avenue
Wauwatosa, WI 53226
Tel: (414) 302-1780 Fax: (414) 302-1781

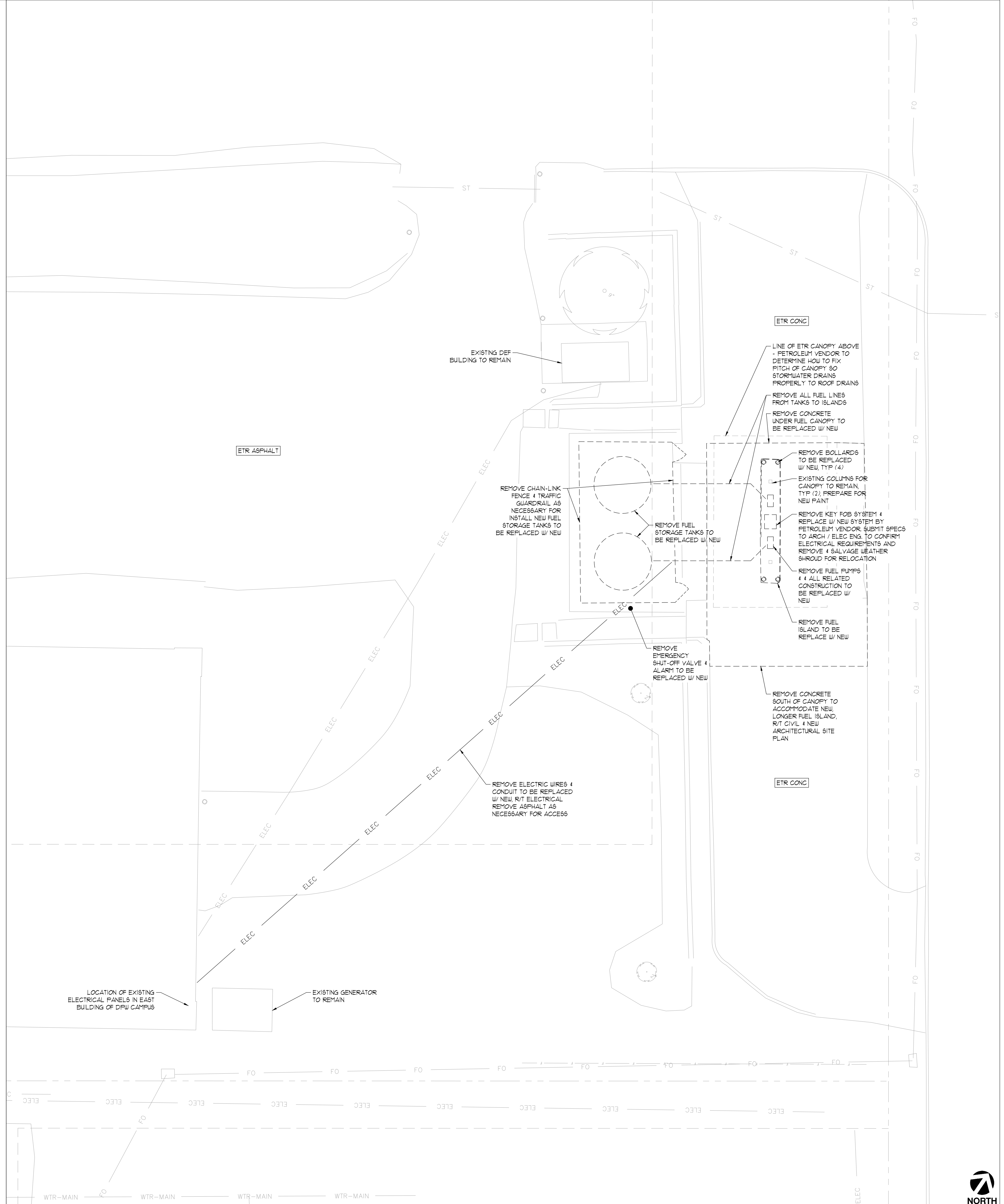
City of New Berlin
3805 S Casper Drive
New Berlin, WI 53151
Tel: (262) 786-8610

REV #	REV DATE	DESCRIPTION	REV BY
05/30/25		ISSUED FOR BID / PERMIT	KEJ

DRAWING TITLE: TITLE SHEET
THIS BOX IS 1/2" x 1/2"

Date: 05/30/25
SCALE: NONE
Drawn: KBJ
Job: 25-004
SHEET: T1

- EXISTING SITE PLAN NOTES:**
- EXISTING SITE PLANS & CIVIL INFORMATION FOR REFERENCE ONLY. EXISTING SITE PLAN BASED ON SURVEYOR'S INFORMATION. VERIFY WITH SURVEY FOR ALL EXISTING SITE CONDITIONS. REFER TO CIVIL PLANS FOR ADDITIONAL INFORMATION. ALL CONDITIONS MUST BE VERIFIED IN FIELD BEFORE BIDDING / CONSTRUCTION BEGINS. CONTACT ARCHITECT WITH ANY AND ALL DISCREPANCIES PRIOR TO CONTINUING WITH WORK.
 - VERIFY ALL PUBLIC & PRIVATE UTILITY LOCATIONS & SIZES (ELECTRICAL, GAS, SANITARY, STORM WATER, ETC.) WITH LOCAL MUNICIPALITY & OWNER PRIOR TO DEMOLITION. UTILITY SERVICES EXIST AT EXISTING STRUCTURE. MODIFY AS NECESSARY.
 - REVIEW ALL DRAWINGS INCLUDING DRAWING DIMENSIONS PRIOR TO BIDDING, FABRICATING OR CONSTRUCTING ANY WORK. ALL SUBCONTRACTORS TO RECEIVE COMPLETE SETS OF DRAWINGS FOR PROJECT.
- GENERAL DEMOLITION NOTES:**
- GENERAL CONTRACTOR (GC) IS RESPONSIBLE FOR PROJECT SAFETY. ALL STATE AND LOCAL PRACTICES & REGULATIONS, INCLUDING BUT NOT LIMITED TO OSHA REGULATIONS, FOR DEMOLITION SHALL BE FOLLOWED FOR SAFETY & ALL OTHER MEASURES ASSOCIATED WITH DEMOLITION. IF ANY HAZARDOUS MATERIALS ARE FOUND AFTER THE INITIAL SURVEY OF EXISTING CONDITIONS OCCUR, IMMEDIATELY CONTACT THE GC & STOP WORK FOR ASSESSMENT.
 - ALL UTILITY EQUIPMENT & RELATED COMPONENTS SHALL BE VERIFIED BY SUB-CONTRACTOR & GC PRIOR TO ANY REMOVAL OF SUCH ITEMS. MAINTAIN EXISTING UTILITIES IN SERVICE & PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION OPERATIONS.
 - ALL ELECTRICAL EQUIPMENT & RELATED COMPONENTS (INCLUDING BUT NOT LIMITED TO PANELS, FIXTURES, OUTLETS, SWITCHES, ETC.) SHALL BE VERIFIED BY ELECTRICAL CONTRACTOR & GENERAL CONTRACTOR PRIOR TO ANY REMOVAL.
 - CARE SHOULD BE TAKEN DURING DEMOLITION TO LEAVE EXISTING STRUCTURES UNDISTURBED AND STILL ACCOMMODATE NEW WORK.
 - ALL DEMOLITION SHOULD BE EXECUTED TO THE MINIMUM EXTENTS REQUIRED TO ACCOMMODATE THE NEW CONSTRUCTION.
 - ITEMS TAGGED FOR DEMO SHOULD BE CONSIDERED FOR REFERENCE ONLY. ALL CONDITIONS SHOULD BE VERIFIED IN FIELD BEFORE WORK BEGINS.
 - ENGAGE A PROFESSIONAL ENGINEER TO SURVEY CONDITION OF FUEL CANOPY TO DETERMINE WHETHER REMOVING AN ELEMENT MIGHT RESULT IN STRUCTURAL DEFICIENCY OR UNPLANNED COLLAPSE OF ANY PORTION OF STRUCTURE OR ADJACENT STRUCTURES DURING SELECTIVE DEMOLITION OPERATIONS.
 - USE REPAIR MATERIALS IDENTICAL TO EXISTING MATERIALS. IF IDENTICAL MATERIALS ARE UNAVAILABLE OR CANNOT BE USED FOR EXPOSED SURFACES, USE MATERIALS THAT VISUALLY MATCH EXISTING ADJACENT SURFACES TO THE FULLEST EXTENT POSSIBLE.
 - PROTECT CONSTRUCTION INDICATED TO REMAIN AGAINST DAMAGE & SOILING DURING SELECTIVE DEMOLITION. WHEN PERMITTED BY ARCHITECT, ITEMS MAY BE REMOVED TO A SUITABLE PROTECTED STORAGE LOCATION DURING SELECTIVE DEMOLITION & CLEANED & REINSTALLED IN THEIR ORIGINAL LOCATIONS AFTER SELECTIVE DEMOLITION OPERATIONS ARE COMPLETE.
 - ERECT & MAINTAIN DUST-PROOF PARTITIONS & TEMPORARY ENCLOSURES TO LIMIT DUST & DIRT MIGRATION AND TO SEPARATE AREAS FROM FUMES & NOISE.
 - DO NOT SCALE THESE DRAWINGS. IF A NECESSARY DIMENSION IS MISSING, CONTACT ARCHITECT.



NOT USED 3

DEMOLITION SITE PLAN NOTES 2

ARCHITECTURAL DEMOLITION SITE PLAN 1

SCALE: 1" = 10'

CONSTRUCTION SET
USB, NO OTHER

DO NOT SCALE THESE DRAWINGS

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<p>City of New Berlin 3805 S Casper Drive New Berlin, WI 53151 Tel: (262) 786-8610</p>	<p>PERSPECTIVE DESIGN, INC. 11525 W. North Avenue Wauwatosa, WI 53226 Tel: (414) 302-1780 Fax: (414) 302-1781</p>	<p>City of New Berlin DPW Fueling Station 18560 W. National Ave New Berlin, WI 53151</p>	<p>Project:</p>
<p>DRAWING TITLE: ARCHITECTURAL DEMOLITION SITE PLAN</p>	<p>THIS BOX IS 1/2" x 1/2"</p>	<p>Date: 05/30/25</p>	<p>REV. BY: (KEJ)</p>
<p>Scale: 1" = 10'</p>	<p>Drawn: KBJ</p>	<p>Job: 25-004</p>	<p>REV. DATE: 05/30/25</p>
<p>Sheet: DSP1.1</p>	<p>DESCRIPTION: ISSUED FOR BID / PERMIT</p>	<p>ISSUED FOR BID / PERMIT</p>	<p>DESCRIPTION: ISSUED FOR BID / PERMIT</p>

ABBREVIATIONS

Table with 3 columns: Abbreviation, Description, and Symbol. Includes entries like ARCHITECT/ENGINEER, AMP FUSE, AVAILABLE FAULT CURRENT, etc.

SECTION 26 00 00 ELECTRICAL WORK

- 1. GENERAL
1A. The Contractor shall provide all labor and materials to affect a complete electrical installation in accordance with the plans and specifications.
1B. All work shall be in accordance with local, state, International Building, and National Electrical Codes.
1C. All equipment shall be new and UL listed for the intended purpose.
1D. The Contractor shall apply for all permits and pay all fees.
1E. The electrical contractor shall submit a Bill of Material and shop drawings upon request of the A/E.
1F. The Contractor shall conduct final tests to demonstrate compliance with plans and specifications. Owner shall be present for demonstration of all special systems.
1G. All work shall be guaranteed for one year after date of final acceptance.
1H. All electrical equipment shall be indexed. Provide nameplates describing panel name, usage, voltage, phase, # of wires, and equipment. Update existing and new panel directories (typed, not free hand) where affected by work.
1I. Cutting, Patching and Refinishing: The Contractor shall provide all openings in new and existing construction except where noted on the plans. The Contractor shall caulk and seal all penetrations and do all patching and refinishing of existing surfaces.
1.J. Definitions
1.J.A. A/E: Architect and/or Engineer
1.J.B. Provide: Furnished, installed, wired and connected by the Contractor.
1.J.C. Contractor: The person or group responsible for project construction.
1.K. Demolition, Renovation and Disposition of Existing Equipment
1.K.A. All work required in the existing building shall be done in a manner and time acceptable to the Owner and shall be acceptable as to time and duration. Existing electrical equipment not otherwise noted, or in conflict with construction, shall be removed and/or relocated as indicated on the drawings, as directed or required. Remove all electrical equipment released from service as a result of construction, and no equipment removed shall be reused except as specifically directed on the drawing or elsewhere herein. All electrical equipment, apparatus and hardware removed and not reused, and not retained by the Owner, shall become the property of the contractor and shall be removed from the site.
1.K.B. Any existing circuits or equipment not shown on the drawings and which are logically expected to be continued in service, and which may be interrupted or disturbed during construction, shall be reconnected in an approved manner. In addition, any existing circuit or equipment which may require relocation or reworking as a result of construction shall be considered a part of the work of this branch and shall be done by the Contractor with no additional compensation.
1.K.C. The Contractor shall be the necessary work in the affected areas including the removal of lighting fixtures, boxes, wiring devices, wiring and electrical equipment. In addition, and preceding demolition work, de-energize all circuits in the affected areas where wiring is routed through these areas serving areas of the building remaining in service, provide temporary and/or permanent wiring as required. Also, where necessary to maintain service in other areas, provide necessary and required sources of power and temporary work.
1.L. Shop Drawings and Maintenance Manuals:
1.L.A. All shop drawings when submitted shall bear the contractor's name, date and approval. Shop drawings will not be reviewed by the A/E if this requirement is not met.
1.L.B. Shop drawings shall be submitted electronically in pdf format with an index sheet describing contents therein.
1.M. Warranty:
1.M.A. The Contractor, in full knowledge of requirements of the contract documents relative to electrical work, guarantees that the electrical installation has been done in full accordance with the same. Additionally, the Contractor shall warrant and maintain, remedy and/or replace at its expense any work or materials which may become defective within one year from date of substantial completion, provided such defects are not due to "Acts of God" or abuse/misuse by agents of the owner.
2. RACEWAY
2.A. Raceway shall be concealed wherever possible.
2.B. Use rigid steel or intermediate metal conduit, or EMT 1/2" minimum for all conduit above grade or concrete. Use flexible metal conduit, liquid tight and grounded where required.
2.C. Conduit installed in concrete or underground shall be heavy wall schedule 40 PVC. Install no conduit larger than 3/4" in floor slab.
2.D. Seal conduits that run through different temperature or atmospheric conditions to prevent condensation or moisture from entering electrical equipment and devices.
2.E. Install wall entrance seal where conduits or direct burial conduits pass through foundation walls below grade.
2.F. Couplings, connectors and fittings shall be standard devices to properly attach conduit to outlet boxes, panel enclosures, all steel, rain tight, and concrete type, specifically designed for the application and bearing the UL label.
2.G. Outlet boxes shall be 4" square minimum, 2-1/2" deep unless noted otherwise
2.H. Exterior underground conduit shall be heavy wall Schedule 40 PVC.
2.H.A. Underground conduit runs which enter or exit the building envelope shall utilize rigid conduit from the point of penetration of the building envelope and the next 3' portion of the run in direct contact with the earth. Exterior underground conduit shall be buried at a depth of not less than 30" in below grade. Provide conduits or ducts terminating below grade with means to prevent entry of dirt or moisture. Underground conduits shall slope 1/8" per foot for proper drainage. Conduits shall drain toward manholes and junction boxes, not the electrical equipment.
3. CONDUCTOR
3.A. All conductors shall be stranded copper with Types THW, THHN or THW (No. 12 and larger) 600 volt insulation.
4. TRANSIENT VOLTAGE SURGE SUPPRESSION
4.A. The unit shall be rated for service entrance Category C location per ANSI/IEEE C62.41-1991 and for 150,000 amperes per phase. Phase should be measured between (L-N & L-G). The TVSS shall provide protection modes to L-N, L-G, L-L, N-G. The unit shall have indicator status lights for the TVSS device, verifying proper operation. The internal design of the unit shall incorporate surge wave tracking and have EMI/RFI filtering for high frequency purposes. Acceptable manufacturer's: Curtin Technology, Tri-Sense or Intermatic-PSC or SO series.
4.B. The specified system shall be installed no further than twelve (12) inches in total wire lead length distance from the panel board it is protecting, and shall avoid any unshielded items. Insulated conductors shall be provided for all necessary power and ground connections. System shall be complete, including status indicator lights providing, with independent protection circuit status
4.C. Manufacturer shall provide a product warranty for 5 YEARS from date of installation. Warranty shall cover unlimited replacement of system components during the warranty period.
5. WIRING DEVICES
5.A. Verify color of all devices and faceplates with Architect. Adjustment in color shall be made in the field without additional compensation.
5.B. Local Switches:
5.B.A. Hubbell 1221, 1223, 1224 series with single pole, three-way and four-way, as required.
5.B.B. Overmie Switch: Hubbell 1556 momentary contact, three position, center off.
5.C. Receptacles:
5.C.A. In General: All receptacles shall be rated for the capacity and characteristics of the equipment served and shall be complete with one additional pole for grounding.
5.C.A.1. 15 Amp 125 Volt Duplex: Hubbell 5302.
5.C.A.2. 20 Amp 125 Volt Duplex: Hubbell 5302.
5.C.A.3. Ground Fault Interrupter: 15 Amp, with built-in ground fault interruption, 5 mA sensitivity, LED indicator light (ON when operable) and reset, UL 2003 compliant, Duplex, Leviton 8998.
5.C.A.4. TSSS 10a 20 Amp 125 Volt Duplex with light and alarm: Hubbell 5305.
5.C.B. All connections to wiring devices must be made by the bonding screws only.
5.C.C. Mounting height:
5.C.C.1. Receptacles: 18" up
5.C.C.2. Switches: 48" up

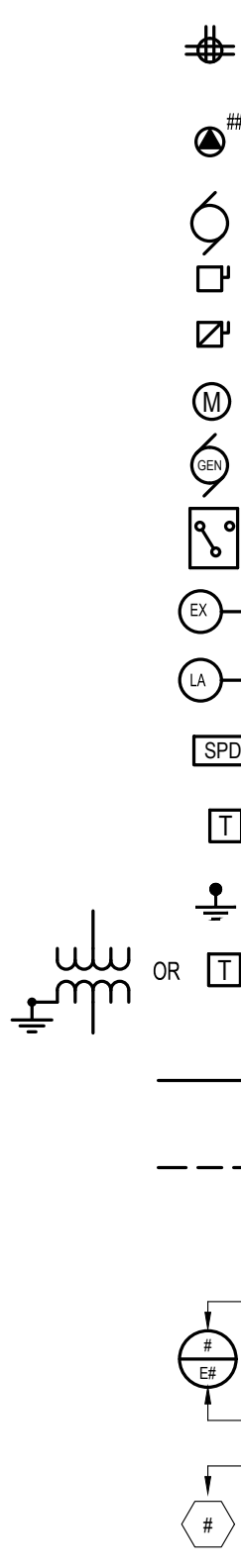
- 5.C.C.3. Receptacles Above Counters: 6" up above counter
5.D. Furnish combination, multi-gang and special plates as required.
5.D.A. In general: PMS 346 smooth thermoset plastic.
5.D.B. Unfinished areas: Sain Stainless Steel with plate screws of similar material, Same Type 302.
5.D.C. Weatherproof: Of type indicated by symbol on the drawings with Hubbell GF3302, 20 amp 125 volt ground fault receptacle with white-n-rose metal cover thermoset WP series.
6. WIRING DEVICES
6.A. Verify color of all devices and faceplates with Architect. Adjustment in color shall be made in the field without additional compensation.
6.B. Local Switches:
6.B.A. Hubbell 1221, 1223, 1224 series with single pole, three-way and four-way, as required.
6.B.B. Overmie Switch: Hubbell 1556 momentary contact, three position, center off.
6.C. Furnish combination, multi-gang and special plates as required.
6.C.A. In general: PMS 346 smooth thermoset plastic.
6.C.B. Unfinished areas: Sain Stainless Steel with plate screws of similar material, Same Type 302.
6.C.C. Weatherproof: Of type indicated by symbol on the drawings with Hubbell GF3302, 20 amp 125 volt ground fault receptacle with white-n-rose metal cover thermoset WP series.
7. MOTOR WIRING
7.A. Applicable motors furnished under General Construction: Heating, Ventilating, Air Conditioning and Plumbing branches of the work. Motor starters and controllers shall be erected by the Contractor in an approved manner at locations established by contractor supplying the equipment. The Contractor shall extend motor circuit connections in each instance. All the voltage motor control wiring from starter to motor controllers and all incidental line voltage motor control wiring from starter to motor controllers and all incidental line voltage control wiring shall be done by the Contractor. Low voltage wiring (less than 120 volts) shall be by mechanical trade contractor. Provide IP rated motor disconnect switches as required by Code. Provide NEMA 1 enclosures in general, NEMA 3 enclosures wherever exposed to weather. The Contractor shall verify that all materials are provided for a complete electrical installation.
8. SPECIAL PURPOSE OUTLETS
8.A. Special Purpose outlet shall be located as required by equipment. The Contractor shall be responsible for verifying electrical characteristics of the actual equipment being furnished for the proper prior to installation of outlets. The Contractor shall verify that all materials are provided for a complete electrical installation.
9. EXCAVATION
9.A. The contractor shall perform all excavation, and furnish and install all cable and make terminals as detailed on drawings.
9.B. Measurements: the contractor shall lay out the work and make all measurements required to fit the work to field conditions. He shall take all levels necessary and establish proper grade. The contractor shall verify all dimensions at the site and be responsible for their accuracy and coordination with all existing trees, streets, etc.
9.C. Excavation shall include all necessary clearing of the site, all grubbing and all wet, dry rock excavation and all incidental work such as sheet piling, shoring, plumbing and tiling, all preparation and backfilling.
9.D. The Contractor shall obtain final grades from the owner before proceeding with trench work.
9.E. Where the earth trench meets conduit either above or below the trench line, the trench shall be sloped at a grade of not more than two inches per foot to meet the conduit. Do not trench to meet the trench.
9.F. The material excavated from the trench may be stored or soil banked adjacent to trench. During the period that trenches may be left open, the trench shall either be covered or barricaded with warning lights to the satisfaction of the engineer.
9.G. The trench shall be cleaned of large stones, or large objects such as described under "Backfill". The trench bed shall be relatively clean, of debris and firm.
9.H. During excavation, the Contractor shall exercise care to avoid injuring to existing trees, utilities, connections, etc. The expense of repairing any damage and restoring same shall be borne by the Contractor.
9.I. All conduit shall drain to junction boxes. No pockets shall be permitted in conduit lines.
10. BACK FILL
10.A. The excavated material adjacent to the trench may be used as back fill except for hard chunks of earth broken concrete, bricks, stones, or other objects larger than 2" in diameter which might damage the duct system.
10.B. Additional back fill may be required to supplement excavated material in order to restore trench to meet pre-condition and allow for setting.
10.C. Back fill shall be firmly tamped and solidly packed. However, do not tamp on top of PVC conduit.
10.D. Inspect installation after 30 days with the Owner and perform such additional work as necessary and directed by Owner.
11. BIDDING PROCEDURES
11.A. Base Bid
11.A.A. Base Bid shall include all labor required and all materials and equipment as shown on the contract drawings and hereafter specified.
11.A.B. Base Bid shall not include any conditions or qualifying statements, shall be in strict accordance with specification requirements and shall be based upon the installation of materials and equipment as specified.
12. PANELBOARDS
12.A. General
12.A.A. UL listed short circuit rating: 65,000 RMS symmetrical amperes minimum or as indicated on panel schedule.
12.B. Bussing
12.B.A. Ratings per panel schedule
12.B.B. Plated copper construction
12.B.C. Bolt-on circuit breaker construction
12.C. Boxes:
12.C.A. Nema 1 enclosure where indicated on drawings
12.C.B. Minimum 20" wide
12.C.C. Minimum 5-8 1/4" deep.
12.D. Fittings:
12.D.A. Dead front safety type
12.D.B. Concoiled adjustable trim clamps
12.D.C. Concoiled hinges
12.D.D. Panel front shall be hinged door-in-door type.
12.E. Circuit Directory:
12.E.A. Clear Plastic Cover
12.E.B. Typewritten Card
12.E.C. Provide steel frame holder on inside cover of door to hold directory. Cover directory with a sheet of clear plastic.
12.F. Install in accordance with manufacturer's written instructions.
12.G. Provide a nameplate on the outside face of the cover
12.H. Provide three 3/4" conduits stubbed into adjacent ceiling space for future circuits.
12.I. Adjustments and Cleaning: Adjust doors and operating mechanism. Tighten lugs and bus connections. Clean interior of panelboard. E.C. shall provide a temporary cover as necessary during construction.
12.J. Acceptable Manufacturer's Square D, GE & Cutler Hammer

GENERAL RENOVATION/DEMOLITION NOTES:

- 1. ELECTRICAL DRAWINGS ARE BASED ON THE BEST INFORMATION AVAILABLE. FOR AREAS BEING REMODELED, WORK SHOWN REFLECTS INFORMATION SHOWN ON AS-BUILT PLANS AND FIELD OBSERVATION. IT IS NOT GUARANTEED 100% ACCURATE. THIS CONTRACTOR MUST FIELD VERIFY CONDITIONS AND MAKE NECESSARY ADJUSTMENTS WITHOUT EXTRA COSTS TO THE PROJECT TO SUIT ACTUAL NEEDS.
2. THE CONTRACTOR SHALL REWIRE/REROUTE/RELOCATE, AS REQUIRED DUE TO CONSTRUCTION, ALL EXISTING CIRCUITS AND EQUIPMENT WHICH ARE TO CONTINUE IN OPERATION.
3. MAINTAIN THE INTEGRITY OF ALL SYSTEMS AFFECTED BY THE REMOVAL OR ADDITION OF ELECTRICAL DEVICES AND CONTROLS IN REMODELED AREAS.
4. ALL ELECTRICAL PANELS SHALL REMAIN IN PLACE AS IS, UNLESS INDICATED OTHERWISE. PANELS EXPOSED TO PUBLIC SHALL BE PROVIDED WITH A LOCKABLE COVER. TURN KEYS OVER TO OWNER. PROVIDE GROUND TERMINATE BUS IN A FLUSH JUNCTION BOX ABOVE PANEL BOARD TO ACCOMMODATE ISOLATED GROUNDING TYPE RECEPTACLES.
5. PROVIDE COMPLETE UPDATED DIRECTORIES FOR ALL PANELS AND SWITCHBOARD AFFECTED BY CONSTRUCTION. BREAKERS RELIEVED FROM DUTY AND NOT BEING USED SHALL BE SWITCHED OFF AND LABELED "SPARE".
6. CIRCUITS INDICATED ARE INTENDED TO DENOTE WHICH DEVICES/FIXTURES ARE TO BE WIRED TO A COMMON CIRCUIT BREAKER, AND NOT ITS POSITION IN THE PANEL. UTILIZE RELEVATED/SPARE CIRCUIT BREAKER MOUNTING SPACES; PROVIDE CIRCUIT BREAKERS AS REQUIRED. RESERVE LUGS BETWEEN PHASES (MAX. 7.5") UPON COMPLETION OF WIRING.
7. ALL EXISTING DEVICES WHICH ARE TO REMAIN AND ARE LOCATED ON NEW FURRED OUT WALLS SHALL BE PROVIDED WITH APPROPRIATE EXTENSION RINGS. REFER TO ARCHITECTURAL DRAWINGS FOR SPECIFIC WALLS.
8. ALL EXISTING DEVICES WHICH ARE NOT SHOWN ON THESE DRAWINGS OR DIRECTED BY A/E SHALL REMAIN IN PLACE AS IS.
9. ALL EXISTING RECEPTACLES WHICH WOULD BE RENDERED INACCESSIBLE, DUE TO THE PLACEMENT OF NEW CASEWORK, SHALL BE RELOCATED TO THE KICK PLATE OF THE CASEWORK, OR OTHERWISE RELOCATED SUCH THAT RECEPTACLES ARE ACCESSIBLE.
10. ALL NEW DEVICES AND COVER PLATES SHALL MATCH EXISTING UNLESS OTHERWISE DIRECTED BY A/E. COVER PLATES IN KITCHEN AREAS SHALL BE STAINLESS STEEL.
11. ALL REMOVED DEVICES AND NOT REPLACED IN ANY WAY EXPOSING AN EMPTY BACK BOX, THE CONTRACTOR SHALL PROVIDE A STAINLESS STEEL COVER PLATE.
12. ELECTRICAL RACEWAYS AND BOXES SHALL BE CONCEALED IN CEILING CAVITY OR IN WALLS (WHERE POSSIBLE OTHERWISE RACEWAY SHALL BE EXPOSED WIREMOLD TYPE 200, 300 OR 700 AS NECESSARY TO ACCOMMODATE WIRES.
13. ELECTRICAL RACEWAYS AND BOXES SHALL BE CONCEALED IN CEILING CAVITY OR IN WALLS. EXPOSED RACEWAYS ARE NOT ACCEPTABLE UNLESS SPECIFICALLY INDICATED AND/OR APPROVED BY A/E.
14. EXACT LOCATION OF SPECIAL PURPOSE OUTLETS SHALL BE VERIFIED IN FIELD. VERIFY SPECIFIC WIRING REQUIREMENTS WITH VENDORS DRAWINGS/INSTRUCTION, COORDINATING ELECTRICAL WORK WITH WORK OF VENDOR AND OTHER TRADES.
15. INCLUDE FISH WIRE IN ALL NON-POWER CONDUITS.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY DISCONNECTING POWER AND REMOVING THE EXISTING FIXTURES FOR REUSE. ANY FIXTURES, ELECTRICAL DEVICES, NOT INDICATED TO BE REUSED SHALL BE PROPERLY DISPOSED OF AND/OR IN ACCORDANCE WITH THE SPECIFICATIONS.
17. IN ALL LOCATIONS WHERE REUSE OR EXTENDING OF AN EXISTING CIRCUIT IS INDICATED ON THE PLANS, THE CONTRACTOR SHALL VERIFY THAT THE EXISTING CIRCUIT HAS ENOUGH CAPACITY TO HANDLE THE ADDITIONAL LOAD. IF REQUIRED CAPACITY DOES NOT EXIST, THE CONTRACTOR SHALL EXTEND A NEW CIRCUIT TO FEED THE NEW EQUIPMENT. NO MORE THAN 6 DUPLEX RECEPTACLES SHALL BE ON ONE CIRCUIT.
18. FIRE AND/OR SMOKE BARRIERS OF WALLS, FLOORS AND CEILINGS SHALL BE MAINTAINED. IF THE INTEGRITY IS SACRIFICED THEN THE BARRIER SHALL BE REPAIRED TO ITS ORIGINAL RATING. ALL PENETRATIONS SHALL BE PROPERLY SEALED.
19. THE CONTRACTOR SHALL NOTE THAT THE EXISTING BUILDING WILL REMAIN IN SERVICE DURING CONSTRUCTION. AREAS OF THE BUILDING WILL BE VACATED AS REQUIRED TO FACILITATE CONSTRUCTION. PROCEED WITH THE COMPLETION OF THE WORK IN SUCH A MANNER AS TO CAUSE THE LEAST POSSIBLE INTERFERENCE WITH OWNERS OPERATION. ALL WORK SHALL BE DONE IN A MANNER AND TIME ACCEPTABLE TO OWNER. OUTAGES AND OTHER WORK RENDERING EXISTING EQUIPMENT INOPERATIVE SUCH AS BUT NOT LIMITED TO THE FIRE ALARM SYSTEM SHALL BE HELD TO A MINIMUM. PRIOR ARRANGEMENTS FOR EACH SHALL BE MADE WITH OWNER AND SHALL BE ACCEPTABLE AS TO TIME AND DURATION. ALL SHUTDOWNS SHALL BE COORDINATED WITH OWNER 2 WEEKS IN ADVANCE. ALL EXISTING SYSTEMS BEING MODIFIED SHALL BE OPERABLE WHEN CONTRACTOR MODIFYING THE SYSTEM IS NOT ON-SITE.
20. THE CONTRACTOR SHALL DO THE NECESSARY DEMOLITION WORK IN THE AFFECTED AREAS INCLUDING THE REMOVAL OF LIGHTING FIXTURES, LAMPS, WIRING, ACCESSIBLE CONDUIT, AND ELECTRICAL EQUIPMENT. IN ADDITION, PRECEDING DEMOLITION WORK, HE SHALL DE-ENERGIZE ALL CIRCUITS IN THE AFFECTED AREAS AND WHERE WIRING IS ROUTED THROUGH THESE AREAS SERVING AREAS OF THE BUILDING REMAINING IN SERVICE, PROVIDE TEMPORARY AND/OR PERMANENT WIRING AS REQUIRED. ALSO, WHERE NECESSARY TO MAINTAIN SERVICE IN OTHER AREAS, PROVIDE NECESSARY AND REQUIRED SOURCES OF POWER AND TEMPORARY WIRING. REMOVE ALL CONDUIT AND WIRING OF EQUIPMENT BEING REMOVED AND/OR ABANDONED BACK TO SOURCE. REMOVE ALL LOW-VOLTAGE CABLES NOT BEING REUSED.
21. VERIFY LOCATION OF MARKER BOARDS, TACK BOARDS, ARTWORK, SIGNS AND ANY OTHER WALL MOUNTED ITEMS PRIOR TO ROUGH-IN OF FIRE ALARM DEVICES AND ANY OTHER WALL MOUNTED DEVICE. DO NOT ROUGH-IN BEHIND BOARDS.
22. SEE DEMOLITION DRAWINGS OF OTHER TRADES. THIS CONTRACTOR IS RESPONSIBLE FOR DISCONNECTION, REMOVAL AND RE-ROUTING OF EXISTING ELECTRICAL WORK.
41. JUNCTION BOXES INSTALLED IN EXTERIOR WALLS SHALL NOT PENETRATE THE VAPOR BARRIER. IF THE INTEGRITY IS SACRIFICED THEN THE BARRIER SHALL BE REPAIRED TO ITS ORIGINAL RATING.
42. ANY EXISTING CODE VIOLATIONS CONCEALED DURING PRE-BID WALK THROUGH SHALL BE BROUGHT TO A/E'S ATTENTION FOR EVALUATION. ANY EXISTING CODE VIOLATIONS EXPOSED TO VIEW SHALL BE THE RESPONSIBILITY OF THE E.C. TO CORRECT AT NO ADDITIONAL CHARGE TO OWNER.
43. PLASTIC TIE WRAPS SHALL NOT BE USED TO SUPPORT ANY RACEWAYS OR OPEN AIR WIRING.
44. FIRE ALARM DEVICES MAY BE SHOWN OFF CENTERED SO THAT ROOM NAMES AND NUMBERS ARE VISIBLE. CONTRACTOR SHALL CENTER THESE DEVICES IN THE ROOMS ACCORDINGLY.
45. ALL NEW CIRCUIT BREAKERS BEING INSTALLED IN EXISTING PANELS SHALL MATCH EXISTING BREAKERS INCLUDING AIC RATINGS.

SYMBOLS LIST NOTE:

ANY SYMBOLS LISTED ON THE FLOOR PLANS NOT OTHERWISE ON THE SYMBOLS LIST SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEERS PRIOR TO BIDDING FOR CLARIFICATION.
POWER & DIAGRAMS
DUPLEX RECEPTACLE - MOUNTED 18" AFF.
DUPLEX RECEPTACLE - GROUND FAULT CIRCUIT INTERRUPTER TYPE.
DUPLEX RECEPTACLE - WEATHER PROOF. GFI WEATHER RESISTANT WITH METAL WHILE-IN-USE. COVER AS SPECIFIED.
QUADRUPLEX RECEPTACLE - TWO DUPLEX RECEPTACLES UNDER A COMMON COVER PLATE.
SPECIAL PURPOSE OUTLET - SEE SCHEDULE.
MOTOR - SEE SCHEDULE. SEE MECHANICAL/ELECTRICAL SHEETS FOR ELECTRICAL INFORMATION OF HVAC EQUIPMENT INDICATED ON DRAWINGS.
DISCONNECT SWITCH.
DISCONNECT SWITCH - FUSIBLE.
METER.
GENERATOR.
AUTOMATIC TRANSFER SWITCH.
ELECTRICAL DISTRIBUTION PANEL - EXISTING PANEL.
ELECTRICAL DISTRIBUTION PANEL - NEW PANEL.
SURGE PROTECTION DEVICE.
TRANSFORMER.
GROUND.
TRANSFORMER.



CIRCUIT DESIGNATIONS

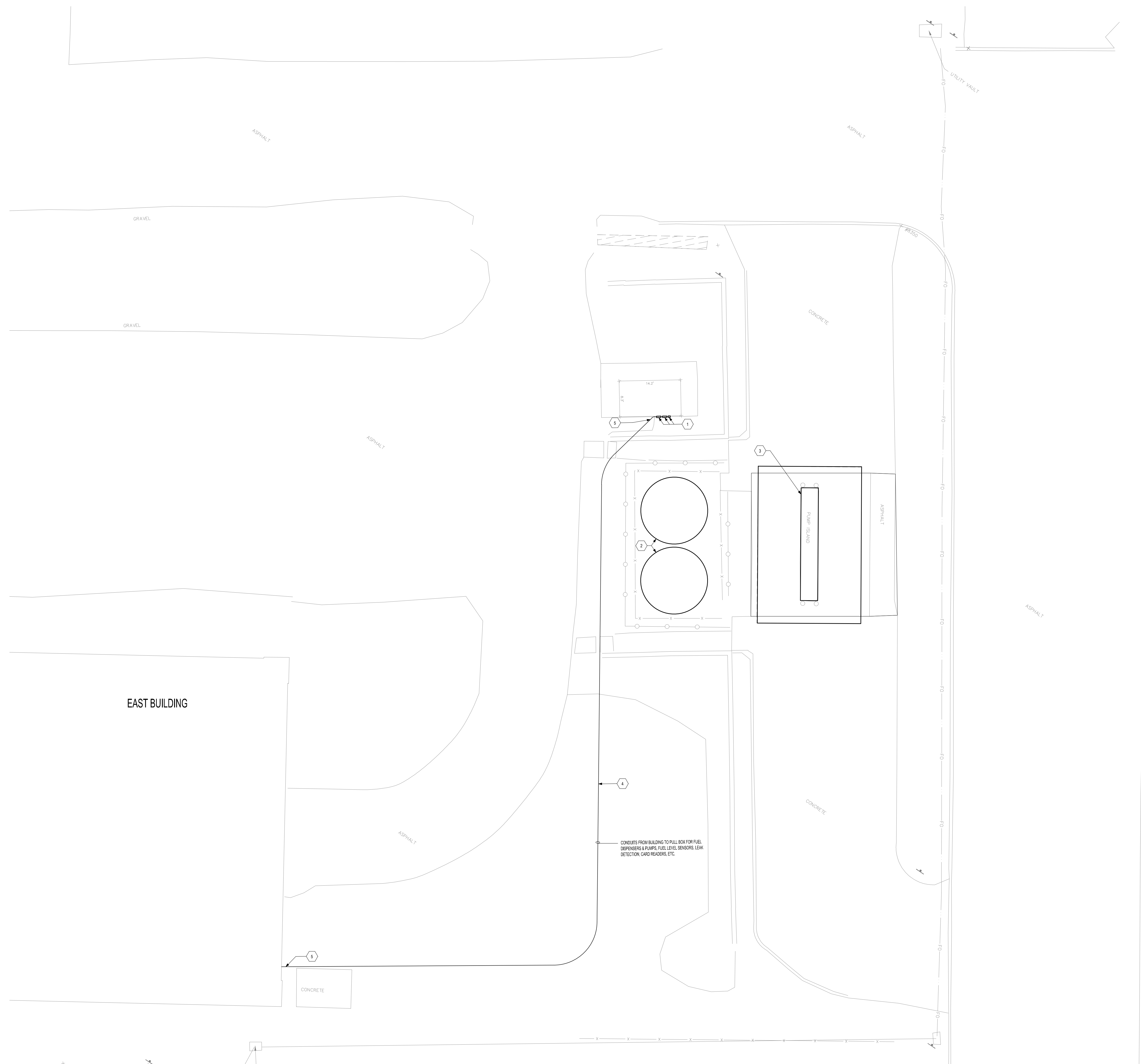
MISCELLANEOUS SYMBOLS

- BRANCH CIRCUIT - COMMON CONTROL, INCLUDES GREEN GROUND WIRE, NEUTRAL AND PHASE WIRES.
BRANCH CIRCUIT - SEPARATE CONTROL, INCLUDES GREEN GROUND WIRE, NEUTRAL AND PHASE WIRES.
INDICATES DETAIL NUMBER
SEE DETAIL.
INDICATES SHEET NUMBER
INDICATES NOTE NUMBER
SEE NOTE.

SHEET INDEX

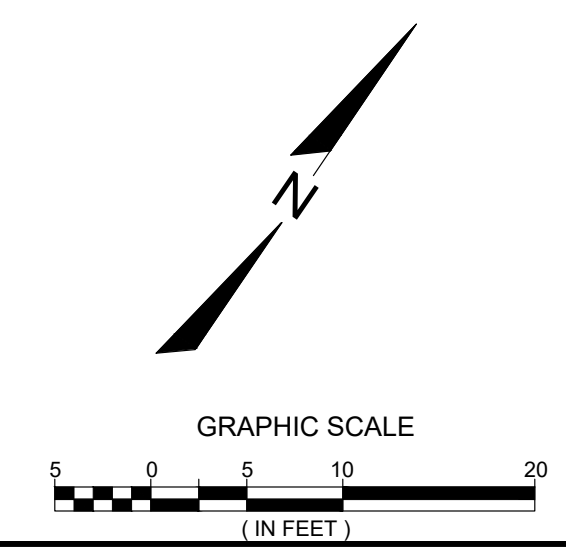
Table with 2 columns: Symbol and Description. Includes E1 (ELECTRICAL SYMBOLS, ABBREVIATIONS, NOTES AND SPECS), ESD100 (ELECTRICAL DEMO SITE PLAN), ESI100 (ELECTRICAL SITE PLAN), E100 (ELECTRICAL DETAILS), E101 (ELECTRICAL DETAILS), E200 (ELECTRICAL ONE-LINE DIAGRAM AND PANEL SCHEDULE).

Project: City of New Berlin DPW Fueling Station
Site Improvements & Reconstruction For:
PERSPECTIVE DESIGN, INC.
3805 S Casper Drive
New Berlin, WI 53151
Tel: (262) 786-8610
Date: 03/14/25
Scale: NTS
Drawn: D.A.
Job: 3240225
SHEET: EL



1 ELECTRICAL SITE PLAN
1" = 10'

- GENERAL NOTES:**
- ELECTRICAL CONTRACTOR TO COORDINATE CONDUIT, RACEWAYS, PULL BOXES AND OTHER ELECTRICAL EQUIPMENT WITH FUEL SYSTEMS CONTRACTOR FOR CORRECT SIZING AND MATERIALS.
 - ROUTE ALL UNDERGROUND CONDUITS TO AVOID STRUCTURAL FOOTINGS WHERE APPLICABLE.
 - DATA COMMUNICATIONS CABLING BACK TO EAST BUILDING IS PROVIDED AND INSTALLED BY SELECTED FUEL SYSTEMS VENDOR.
 - SELECTED FUEL SYSTEM VENDOR IS RESPONSIBLE FOR ALL POWER AND CONTROLS WIRING, EQUIPMENT AND TERMINATIONS AT THE PROPOSED FUEL ISLAND.
 - FOLLOW ARTICLE 514 OF NEC (MOTOR FUEL DISPENSING FACILITIES).
- SHEET NOTES:**
- 3 NEW NEMA-4X PULL BOXES MOUNTED ON SIDE OF DEP BUILDING. FUEL SYSTEM CONTRACTOR TO EXTEND CONDUIT & WIRING TO ALL FUEL DISPENSING EQUIPMENT.
 - NEW 1200 GALLON FUEL TANKS.
 - PROPOSED FUEL ISLAND AND SYSTEMS BY OTHERS. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION. COORDINATE REQUIREMENTS WITH SELECTED FUEL SYSTEM VENDOR PRIOR TO ROUGH-IN.
 - WHERE TYPE PVC CONDUIT IS USED FOR UNDERGROUND WIRING, THREADED RIGID METAL CONDUIT OR THREADED STEEL INTERGRATE METAL CONDUIT MUST BE USED FOR THE LAST 2 FEET OF THE UNDERGROUND RUN TO THE POINT OF EMERGENCE.
 - SEAL-OFF FITTING ARE REQUIRED IN ALL CONDUITS ENTERING OR LEAVING A DISPENSER, FUEL TANK OR OTHER CLASS I LOCATION. CONDUITS PASSING UNDER THE BOUNDARIES OF THE HAZARDOUS LOCATIONS (2 FT RADII FROM DISPENSER, 10 FT RADII FROM GROSS-FILL TANK CONNECTION AND 4 FT RADII FROM A TIGHT-FILL TANK CONNECTION) ARE CONSIDERED TO BE IN A CLASS I LOCATION, AND THE SEALS TO BE THE FIRST FITTING AT THE POINT OF EMERGENCE.



HARWOOD
255 N 21st Street, Milwaukee, WI 53233 | 414-475-5554
HEC Project No: 025-1014.00

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REV. #	REV. DATE	DESCRIPTION	REV. BY

Project: **City of New Berlin DPW Fueling Station**
16560 W National Ave
New Berlin, WI 53151

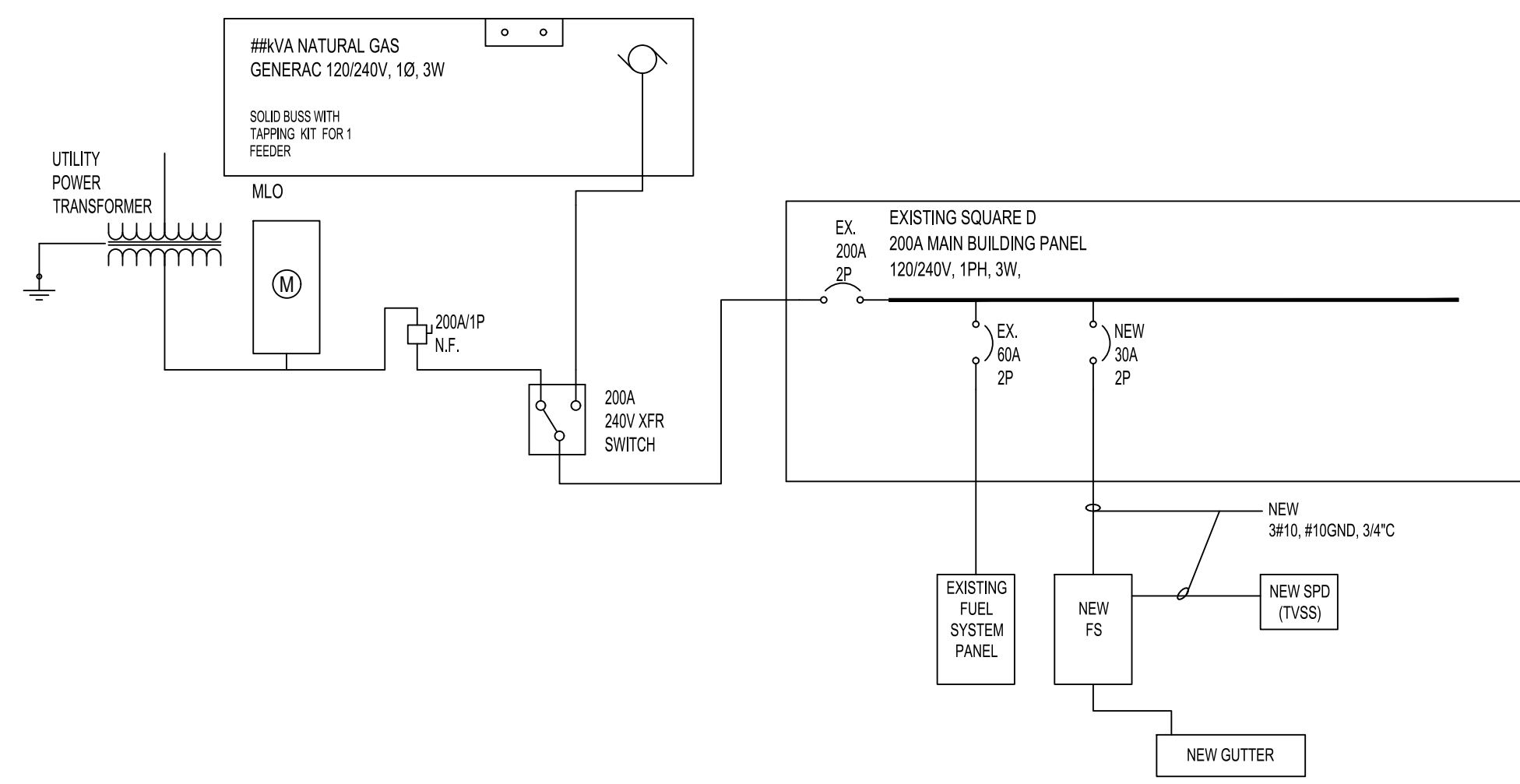
Site Improvements & Reconstruction For:

PERSPECTIVE DESIGN, INC.
11625 W. North Avenue
Wauwatosa, WI 53226
Tel: (414) 302-1780 Fax: (414) 302-1781

City of New Berlin
3805 S Casper Drive
New Berlin, WI 53151
Tel: (262) 786-8610

DRAWING TITLE: **ELECTRICAL SITE PLAN**

Date: 03/14/25
SCALE: 1" = 10'
Drawn: D.A.
Job: 3240225
SHEET: **ES100**



1 ELECTRICAL ONE-LINE DIAGRAM
NTS

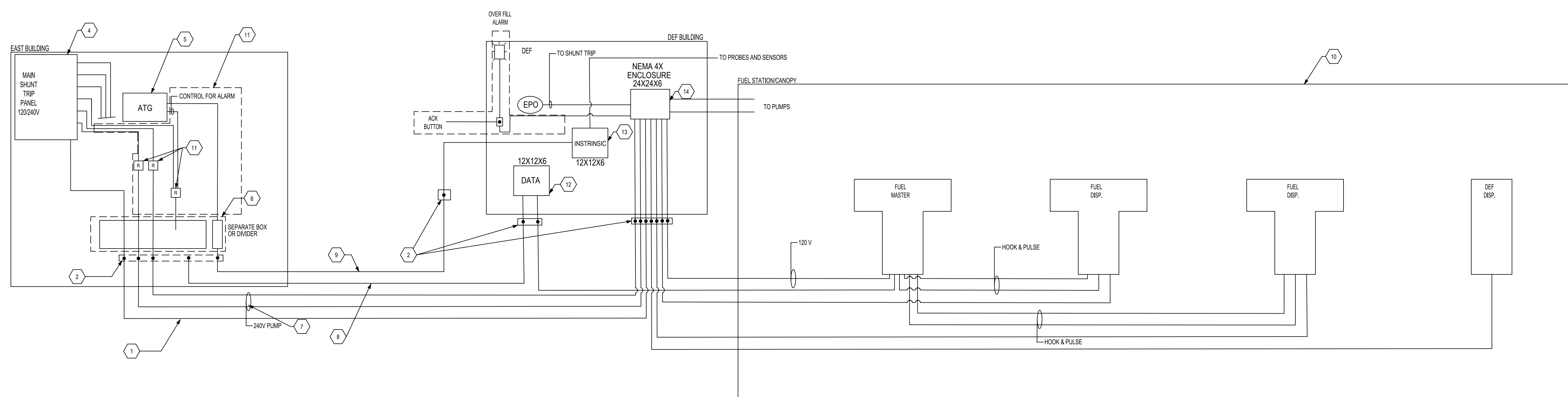
- NOTES:
- SEE DETAIL #7, SHEET E101 FOR OTHER CONDUITS TO BE ROUTED BETWEEN EAST BUILDING AND DEF BUILDING.
 - ALL ITEMS EXISTING UNLESS STATED OTHERWISE.

FS		JOB NUMBER: 025-1014.00	
CONNECTED KVA		PANEL: FS	
CONNECTED AMPS		TUB NUMBER: 1	
DEMAND KVA		ROOM LOCATION: EAST BUILDING	
DEMAND AMPS		STARTING CIRCUIT: 1	
120	VOLTAGE L-G	SUBFEED:	CONNECTED KVA
240	VOLTAGE L-L	1	0
1	PHASE	2	0
3	WIRE	3	0
30	BUS RATING (AMPS)	4	0
MCO (SHUNT TRIP) MAIN DEVICE TYPE (MCB/MLO)			
30	MAIN CIRCUIT BREAKER (AMPS)		
10	FAULT DUTY (KAIC RATING)		
Surface	MOUNTING (SURFACE/FLUSH)		

COM	CIRCUIT BREAKER	LOAD DESCRIPTION	LOAD KVA	PANEL LOAD	A	B	PANEL LOAD	LOAD DESCRIPTION	CIRCUIT BREAKER	COM
					0.00	0.00				
1	2	20	0.0	0.00	0.0	0.0	0.0	Gasoline Pump	20	2
3	2	15	0.0	0.00	0.0	0.0	0.0	Gasoline Dispenser	15	2
7	2	15	0.0	0.00	0.0	0.0	0.0	Gasoline Dispenser	15	2
9	1	20	0.0	0.00	0.0	0.0	0.0	Canopy Lighting	20	1
11	2	30	0.0	0.00	0.0	0.0	0.0	SPARE	20	1
13	1	20	0.0	0.00	0.0	0.0	0.0		20	1
15	1	20	0.0	0.00	0.0	0.0	0.0		20	1
17	1	20	0.0	0.00	0.0	0.0	0.0		20	1
19	1	20	0.0	0.00	0.0	0.0	0.0		20	1
21	1	20	0.0	0.00	0.0	0.0	0.0		20	1
23	1	20	0.0	0.00	0.0	0.0	0.0		20	1

2 NEW PANEL "FS"
NTS

- NOTES:
- MAIN BREAKER SHALL BE SHUNT TRIP.



3 ELECTRICAL POWER AND FUEL SYSTEMS COORDINATION PLAN
NTS

- KEY NOTES:
- ELECTRICAL CONTRACTOR PROVIDES SIX EMPTY CONDUITS FOR POWER TO DISPENSERS, CANOPY, DEF DISPENSER AND FUTURE.
 - ELECTRICAL CONTRACTOR PROVIDES SEAL-OFFS.
 - EC TO FURNISH AND INSTALL EIGHT 3/4" CONDUITS FROM PANEL TO GUTTER.
 - ELECTRICAL CONTRACTOR PROVIDES MAIN SHUNT TRIP PANEL, 24 CKTs. PROVIDE TWO 202 AND TWENTY 201 BRANCH BREAKERS.
 - FUEL SYSTEMS CONTRACTOR PROVIDES WIRES, INSTALLS, AND ATG.
 - ELECTRICAL CONTRACTOR PROVIDES GUTTER WITH INTERNAL SPACER SEPARATING 120/240V FROM CONTROL WIRING.
 - ELECTRICAL CONTRACTOR PROVIDES EMPTY CONDUIT FOR POWER TO TANK PUMPS.
 - PROVIDE TWO CONDUITS.
 - PROVIDE TWO CONDUITS.
 - FUEL SYSTEMS CONTRACTOR TO PROVIDE FUEL MASTER, PUMPS, DISPENSERS, CONDUIT AND WIRING TO ALL DEVICES.
 - FUEL SYSTEMS CONTRACTOR TO PROVIDE CONDUIT AND WIRING AND RELAYS.
 - ELECTRICAL CONTRACTOR PROVIDES NEMA 4X ENCLOSURE 12X12X6 BOTTOM OF BOX TO BE AT LEAST 24" AFG.
 - ELECTRICAL CONTRACTOR PROVIDES NEMA 4X ENCLOSURE 12X12X6 BOTTOM OF BOX TO BE AT LEAST 24" AFG.
 - ELECTRICAL CONTRACTOR PROVIDES NEMA 4X ENCLOSURE 24X24X6 BOTTOM OF BOX TO BE AT LEAST 24" AFG.

- GENERAL NOTES:
- ALL CONDUITS ARE 3/4" UNLESS STATED OTHERWISE.
 - THE GENERAL INTENT IS FOR THE EC TO PROVIDE CONDUIT PATHS FOR THE FUEL SYSTEMS CONTRACTOR TO GET WIRING FROM THE EAST BUILDING TO THE NEMA 4X ENCLOSURES. ALL WIRING SHALL BE BY THE FUEL SYSTEMS CONTRACTOR. ALL CONDUIT AND WIRING DOWNSTREAM OF THE PULL BOXES IS BY THE FUEL SYSTEMS CONTRACTOR.
 - DO NOT FILL ANY SEAL-OFFS. THE FUEL SYSTEMS CONTRACTOR SHALL FILL THEM AFTER WIRES ARE PULLED.



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REV. BY	DESCRIPTION
REV. #	
REV. DATE	
Project:	Site Improvements & Reconstruction For: City of New Berlin DPW Fueling Station 16550 W National Ave New Berlin, WI 53151
 PERSPECTIVE DESIGN, INC. 11825 W. North Avenue Wauwatosa, WI 53226 Tel: (414) 302-1780 Fax: (414) 302-1781	
City of New Berlin 3805 S Casper Drive New Berlin, WI 53151 Tel: (262) 786-8610	
DRAWING TITLE:	THIS BOX 8 1/2" X 11"
ELECTRICAL ONE-LINE DIAGRAM AND PANEL SCHEDULE	
Date:	03/14/25
SCALE:	NTS
Drawn:	D.A.
Job:	3240225
SHEET:	E200



REQUESTED ACTION STATEMENT

DATE: August 1, 2025
TO: Mayor
 Common Council
 Parks, Buildings and Grounds Commission
FROM: Lucas Pichler –Director of Public Works
ISSUE: DPW Fueling Station Reconstruction Project

REQUESTED:

Recommend to Common Council to award project BG-2025-02 DPW Fueling Station Reconstruction to the most responsive and responsible bidder, Walts Petroleum Service, Inc. in the amount of \$436,260.00, and to reject Alternate #1. The total project cost, including contingencies, is not to exceed \$500,000.00 from account 04056200 61215 C2025 and 04251300 61215 C2024.

FISCAL IMPACT:

Funding Source:

04056200 61215 C2025	Fuel Station Reconstruction	Remaining Balance:	\$461,267.00
04251300 61215 C2024	Fueling Station Reconstruction	Remaining Balance:	\$60,007.00
		Total:	\$521,274.00

Project Costs:

Construction: \$436,260.00
 Contingency (~15%): \$63,740.00

Total Cost: \$500,000.00

RATIONALE:

The Department recommends award of the DPW Fueling Reconstruction Project to the lowest, responsive, responsible bidder, Walt’s Petroleum Service, Inc., including the base bid and Alternate 2. The Department recommends rejection of Alternate 1, which consists of replacement of the existing generator. The generator is currently functional, and with possible reconstruction of the DPW campus, replacing the generator at this time is unnecessary. The Department recommends acceptance of Alternate 2, which consists of furnishing a performance bond, which is bid as an alternate for informational purposes to identify the cost of the bond. A 15% contingency is included in the total project cost to account for the potential of possible soil remediation if contamination is found during construction.

BG-2025-2 DPW Fueling Station
 Bid Results
 July 30, 2025 @ 10:00 AM

BIDDER	BID BOND	BASE BID	ALT #1	ALT #2	TOTAL	RANKING
Walt's Petroleum Service, Inc.	X	\$ 430,068.00	\$ 15,850.00	\$ 6,192.00	\$ 452,110.00	1
Interstate Pump & Tank	X	\$ 440,000.00	\$ 16,500.00	\$ 10,120.00	\$ 466,620.00	3
EnergiTech Services, LLC	X	\$ 435,000.00	\$ 16,100.00	\$ 4,350.00	\$ 455,450.00	2



REQUESTED ACTION STATEMENT

DATE: August 1, 2025
TO: Mayor
Common Council
Parks, Buildings and Grounds Commission
FROM: Lucas Pichler –Director of Public Works
ISSUE: Fire Station #7 Lateral Replacement Project

REQUESTED:

Recommend to Common Council to award project BG-2025-04 Fire Station #7 Lateral Replacement to the most responsive and responsible bidder, Veit & Company, Inc.. in the amount of \$158,549.00. The total project cost, including contingencies, is not to exceed \$175,000.00 from account 04251300 61313 C2024.

FISCAL IMPACT:

Funding Source:

04251300 61313 C2024 Fire Station #1 Lateral Remaining Balance: \$248,540.00

Project Costs:

Construction: \$158,549.00
Contingency (~10%): \$16,451.00

Total Cost: \$175,000.00

RATIONALE:

The Department recommends award of the Fire Station #7 Lateral Replacement Project to the lowest, responsive, responsible bidder, Veit & Company, Inc. This project includes the replacement of the water lateral on Casper Drive to Fire Station #7. This lateral previously broke and was found to be in need of replacement. The project also includes relocation of the sprinkler lateral within the building, and the installation of an additional hydrant on Casper Drive to meet code requirements.

BG-2025-4 Fire Station #7 Lateral Replacement
Bid Results
July 30, 2025 @ 11:00 AM

BIDDER	BID BOND	BASE BID	TOTAL	RANKING
Veit & Company, Inc.	X	\$ 158,549.00	\$ 158,549.00	1
Mid City Corporation	X	\$ 198,000.00	\$ 198,000.00	2

PROJECT MANUAL

**City of New Berlin
Fire Station #7 Water Lateral
Replacement**

16260 West National Ave.
New Berlin, Wisconsin 53151

Harwood Engineering Consultants Ltd.
Owner Project No. BG-2025-4
HEC Project No. 19-1011.26
June 13, 2025

Project Name	City of New Berlin
	Fire Station #7 Water Lateral Replacement
HECL Project No.	19-1011.26
Owner Project No.	BG2025-4

INDEX Specification Sections

DIVISION 21 – Fire Suppression

- 21 05 00 Common Work Results for Fire Suppression
- 21 05 29 Hangers and Supports for Fire Suppression Piping and Equipment
- 21 10 00 Water Based Fire Suppression Systems

DIVISION 22 – Plumbing

- 22 05 00 Common Work Results for Plumbing
- 22 05 23 General Duty Valves for Plumbing Piping
- 22 05 29 Hangers and Supports for Plumbing Piping and Equipment
- 22 07 00 Plumbing Insulation
- 22 11 00 Facility Water Distribution

INVITATION TO BID

Project: **BG-2025-4**
City of New Berlin
Fire Station #7 Water Lateral Replacement.
New Berlin, WI 53151

1. Bids will be prepared in accordance with Contract Documents prepared by Harwood Engineering Consultants, Ltd. Phone 414-475-5554, 255 N. 21st St., Milwaukee, WI 53233.
2. Notice is hereby given that sealed Bids are due in the New Berlin City Hall – City Clerk office, by 11:00 a.m. CST/CDT on July 30, 2025. (Reference Bid Form, Item 2)
3. Bids will be publicly read at 11:00 a.m. on July 30, 2025 in the Council Chambers at New Berlin City Hall located at 3805 S. Casper Dr.
4. Oral, faxed or e-mailed Bids will be rejected.
5. All blanks on the Bid Form shall be filled in by typewriter print or manually in ink. If the filled areas are illegible, the Bid shall be rejected. The Bidder shall make no additional stipulations on the Bid Form or qualify the Bid in any manner.
6. Where so indicated on the Bid Form, the values shall be expressed in both words and figures. In the event of discrepancy between the words and figures, the amount written in words shall govern.
7. Bids will be submitted using the Bid Forms provided herein. Bid security shall be by a qualified surety in the form of a bid bond, in the amount of ten percent (10%) of Bid amount, /and shall be submitted with the Bid. Bidders shall agree to not withdraw the Bid for a period of ninety (90) days after due date of Bids.
8. Accepted Bidders will be required, as a condition precedent to award of Contract, to furnish in the amount of 100% of the contract prices, satisfactory Performance Bond, Labor and Material Payment Bond and Certificate of Insurance.
9. Bidding Documents will be available on July 9, 2025. Bidders may obtain Bidding Documents only from the following site: Quest ebid doc #9738190 - Bid/RFP Listing. Documents will be available for download. Documents will not be mailed. **It is the responsibility of prospective Bidders to check this website for any future amendments, questions, revisions, etc., prior to the opening date. All addenda must be acknowledged on the signature page in the area provided. Failure to do so may result in your response being rejected.**

10. Pre-Bid meeting and walkthrough on July 23, 2025 at 10:00 AM. Meeting location is at Fire Station #7 located at 16260 W. National Ave, New Berlin, WI 53151. **Please be on time as no accommodations will be made for late arrivals. NOTE: This will be the only opportunity for a walk through, therefore, be sure to bring all potential subcontractors. Vendors are also reminded to review all Bid Documents, etc. prior to arrival.**

12. The right to reject any or all Bids, either in whole or in part, or to waive any informalities or irregularities is reserved by City of New Berlin.

Published by Order of:
City of New Berlin
Buildings and Grounds
(262) 786-8610
3805 S Casper Dr
New Berlin, WI 53151

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

GENERAL:

Carefully review Project Manual, including Bidding Requirements, General Requirements, Specifications, Alternates, and Amendments, all of which contain provisions applicable to all Bidders. Successful Bidder will be required to execute all Work belonging to their Contract which is stated in the Specifications, or reasonably implied as necessary to complete their Contract, including removal of existing work and preparing present work to receive new, if such be the requirements of actual job conditions.

Visit site to become acquainted with: Adjacent areas; means of approach to the site; present conditions of project site; and facilities for delivering, storing, placing and handling of materials and equipment. Compare Specifications with existing work in place, inspect demolition requirements and inform yourself of all conditions affecting execution of Work, including other new work, if any, being performed.

WORKSITE AVAILABILITY:

A specific window of opportunity exists for completion of the Work, therefore Work shall commence on the date noted in the Bid Form. Construction activities may take place between **7:00 AM and 7:00 PM Monday through Friday, 8:00 AM – 5:00 PM on Saturday and no work will be allowed on Sundays.**

DOCUMENTS:

Bidders shall be familiar with all Bidding Requirements and proposed Contract Documents. See General Conditions for definition of Contract Documents.

BID FORM:

Alterations of or amendments to Bid Form, attachments thereto, or inclusion of any correspondence, or other written or printed matter or details of any nature other than that specifically called for may disqualify Bid. No e-mailed alterations to the Bid will be accepted.

Only Bids which are made on regular Bid Form will be considered. No Bids for any arbitrary subdivision or sub classification of Work required by requested Bid(s) will be accepted.

Requirements of Signing: Include with each Bid full business address of Bidder. Bids by corporations shall be executed in the full legal name of the corporation, giving State of incorporation and be signed by an authorized officer or officers, who shall, in each case, type or print name and corporate title beneath the signature. Partnership Bids shall state the full name of all partners, e.g., “Smith and Jones, a partnership of John S. Smith and William B. Jones”. Such Bids must also be signed by an authorized partner or other representative, typing or printing the name and title of the signer beneath the signature. Individuals operating as a business shall sign Bids, typing or printing the individuals name followed by the words “Sole Proprietor” beneath the signature. When requested by Owner, furnish satisfactory evidence of agency or authority of any person signing on behalf of another.

Submission of Bids: Reference Bid Form, Section 2.

CONTRACT AND CONTRACT DOCUMENTS:

The Contract into which successful Bidder will be required to enter is based on City of New Berlin General Terms and Conditions of Service (as modified by Owner). Familiarize yourself with the provisions of this document.

ACCEPTANCE OF BID (AWARD):

It is the intent of the Owner to award a Contract or accept any Bid which will be in the best interests of the Owner, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner reserves the right to waive informalities or irregularities in a Bid received and to accept the Bid, which in the Owner's judgment, is in the Owner's best interests.

The Owner reserves the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsible Bidder on the basis of the Base Bid and Alternates accepted.

WITHDRAWAL OF BIDS:

Matters pertaining to the withdrawal of a Bid and to claims of error, omission or mistake in preparing or submitting a Bid shall be governed by Section 66.0901 of the Wisconsin Statutes.

All Bids shall be effective and open for acceptance for a period of ninety (90) days after date set for opening of Bids.

RESERVATION:

Owner reserves the right to: reject any or all Bids, reject a Bid not accompanied by a required bid security or by other data required by the Bidding Documents, reject a Bid which is in any way incomplete or irregular, waive any irregularities in any Bid, accept any Bid which will be in best interests of Owner.

INADEQUACIES AND OMISSIONS:

Failure to request timely clarification or interpretation of Bidding Documents shall not relieve Bidder/Contractor of responsibility to execute the Work in accordance with the intent of the Contract Documents. Signing of Contract means that the Contractor has thorough comprehension of full intent and scope of Contract Documents.

The Owner and his consultants are not responsible for oral instructions.

INTERPRETATIONS AND CORRECTIONS:

Carefully review and compare all parts of the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is being submitted. Examine the site and local conditions, and immediately report to the Owner errors, inconsistencies or ambiguities discovered.

Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall submit a written request to the Owner, received in Owner's office at least seven (7) days prior to the date set for receipt of Bids.

Interpretations and corrections of and changes to the Bidding Documents will be made in writing by Addendum only. Interpretations and corrections made in any other manner are not binding. Bidders shall not rely upon verbal instructions or information.

POWER OF ATTORNEY AND BOND REQUIREMENTS:

Submit with each Bid a bond executed by an attorney-in-fact, including a certified and effectively dated copy of his power of attorney. Where the certification is by facsimile, or otherwise does not bear an original signature, the bonding company must be qualified for recognition under facsimile execution.

City of New Berlin
Fire Station #1 Water Lateral Replacement
Project #BG2025-4
16260 W. National Ave., New Berlin, WI 53151

BID FORM

1. GENERAL DIRECTIONS TO BIDDERS

- A. All Bids must be submitted on these standard form sheets inclusive without modification. Fill out all blanks on the Bid Form by typing or writing in ink. Sign in ink. Erasures or other changes in Bid must be explained or noted over signature of Bidder. Enter Bid amount in both written words and printed figures in spaces provided on Bid Form. In case of conflict, amount given in written words will govern.
- B. Base Bid(s) must be for Work bid in strict accordance with the Drawings and Specifications. **INCLUDE BOND COSTS IN THE BASE BID(S)**. Bid all requested Alternates. If no change to the Base Bid applies, enter “No Change.”
- C. Bid Forms containing qualifications, conditions, omissions, unexplained erasures, alterations or items not called for in Bid Form or other irregularities of any kind may be rejected at the discretion of the Owner.
- D. Bidders shall examine the provisions of the Project Manual thoroughly to ensure compliance with all bidding requirements.
- E. Bidders shall only submit the Bid Forms included in the Project Manual – DO NOT return the Project Manual.
- F. Bidders shall ensure that all items in the Bid Form such as Work Schedule, Bidders Official Title and Signature, and Proof of Responsibility are properly executed.
- G. A bid must be accompanied by a bid security made payable to Owner in an amount of 10% of bidder’s maximum bid price (determined by adding the base bid and all alternates), and in the form of a certified check, bank money order or a bid bond issued by a surety acceptable to the City. The bid security will be retained by the City until the City awards the contract to such bidder and such bidder has executed the contract documents and met the other conditions of the Notice of Award, where upon the bid security will be released. If the successful bidder fails to execute and deliver the contract documents and furnish the requirements contract security within 15 days after the Notice of Award, the Owner may consider the bidder to be in default and annul the Notice of Award and the bid security of that bidder will be forfeited. Such forfeiture shall be the Owner’s exclusive remedy if the bidder defaults.

- H. The Bidder shall be required to identify any subcontractor, suppliers, individuals or entities to be submitted to the Owner 14 days in advance of the City's acceptance of the agreement. The apparent successful bidder shall, within 5 days after the bid opening, submit to the Owner a list of all such subcontractors, suppliers, individuals or other entities that will be utilized in the completion of the work. An experience statement with pertinent information regarding similar projects and other evidence of qualification for the work that the subcontractor will be performing is required. If the Owner, after review of such information, determines, in its sole discretion, that such subcontractor, supplier, individual or entity is not satisfactory, the Owner, prior to the Notice of Award, shall give notice to the successful bidder requiring that an acceptable substitute be provided. In the event there is any adjustment to the cost as a result of said substitution, Owner may take that into consideration in making the contract award. In the event that the contractor fails to make the substitution requested, the Owner may award the contract to the next lowest responsive responsible bidder.
- I. Bids not conforming to the above directions may be declared irregular and are subject to disqualification at the discretion of the Owner.

THE BIDDER HEREBY AGREES THAT THIS BID IS INVALID WITHOUT BIDDER'S SIGNATURE APPEARING IN THE SIGNATURE BLOCK ON THE LAST PAGE OF THIS BID FORM.

2. BID SUBMITTAL PROCEDURE

In submitting a Bid, the Bidder represents that:

- He/She thoroughly reviewed and understood the Bidding and Contract Documents and the Bid is made in full accordance with these documents and amendments issued thereto.
- He/She has thoroughly reviewed and understands the Bidding and Contract Documents related to the Work of other portions of the Project, if any, being bid concurrently or presently under construction.
- He/She has thoroughly reviewed informational reports and documents available to him/her, visited the project site, become familiar with actual local conditions under which the Work is to be performed and has correlated his/her evaluations and personal observations with the requirements of the Bidding and Contract Documents.
- The contract for the work, if awarded, will be on the basis of materials and equipment specified or described in the bidding documents, and those or equal or substitute or materials and equipment subsequently approved by the Owner prior to the submittal of bids and identified by addendum. No item of material or equipment will be considered by Owner as an or equal or substitute unless written requests for approval has been submitted by the bidder and has been received by the Owner at least 10 days prior to the date of receipt of bids in the case of a proposed substitute. The burden of proof on the merit of the proposed item is upon the bidder. The Owner's decision of approval or disapproval of a proposed item will be final. If the Owner approves any such proposed items, such approval will be set forth as an addendum issued to all perspective bidders. Bidder shall not rely upon approvals made in any other manner. All prices that Bidder sets forth in this bid shall be based on the presumption that the contractor will furnish

the materials and equipment specified or described in the bidding documents as supplemented by any addenda.

- A. After Bid Forms are completed, place one (1) set of signed originals and the Bid Bond in a sealed envelope. Oral, telephonic, e-mailed, or faxed Bids are invalid and will not be considered.
- B. Address the envelope to:
City of New Berlin
Fire Station #1 Water Lateral and Fire Protection Replacement
City Clerks Office
3805 S Casper Dr
New Berlin, WI 53151
- C. Bidders shall affix their name and address to the front upper left-hand corner of the envelope with the words "Sealed Bid Enclosed" written on the outside. Identified in lower left corner should be: Bid number, project name and opening date.

3. BID CLOSING

- A. Bids must be received on or before 11:00 a.m. on July 30, 2025. The Bidder assumes full responsibility for timely delivery at the location designated for receipt of Bids. **Bids received after the time and date for receipt of Bids will be rejected and returned unopened.**

4. BID OPENING

- A. Bids will be publicly read at 11:00 a.m. on July 30, 2025 in the New Berlin City Hall – Common Council Chambers.

(a corporation)

We _____ (a partnership)
 _____ (an individual)
 _____ (Cross out inapplicable)

Of _____
 Street City County State Zip

hereby agree to execute the proposed Contract and to furnish a satisfactory Public Improvement Performance/Labor and Material Payment Bond, in the amount of one hundred percent (100%), and to provide all labor and material required for the construction of the designated Work, for the prices hereinafter set forth, in strict accordance with the Construction Documents released by: **City of New Berlin**, address: 3805 S. Casper Dr, New Berlin, WI dated August 09, 2024.

Including Amendment Nbr(s). _____ dated _____.

5. BASE BID

Base Bid includes all work required to complete the Project, including Building Permits, General Conditions, overhead, profit, insurance, bonds, taxes, and all other expenses. Bid Guarantee ten percent (10%) Bid Bond Cost, Public Improvement Performance Bond and Labor and Materials Payment Bond Cost one hundred percent (100 %) for the sum of:

_____ Dollars (\$ _____)

6. SCHEDULE OF VALUES

- A. Submit schedule of standard rates for all personnel, including personnel of subcontractors, involved with project.
- B. Include schedule of standard markups.

7. COMMENCEMENT, PROGRESS AND COMPLETION OF WORK

- A. If written Notice of Intent to Award Contract is issued not later than August 26, 2025 with a Project commencement of September 18, 2025 can you complete the Work in compliance with the requirements of the Contract Documents by December 5, 2025, in full cooperation and coordination with other Contractors, if any.

Yes ___ No ___ .

If "No", state additional calendar days required _____.

- B. The undersigned understands that time is of the essence and agrees that the specified time period for completion stated above is a reasonable time for the completion of the Work. All time limits shall be binding.

8. BID ACCEPTANCE:

- A. All Bids as stated above are effective and open for acceptance by the Owner for a period of ninety (90) days after date set for opening of Bids.

FIRM NAME _____

BY SIGNATURE _____

TITLE _____

DATED _____

TELEPHONE _____

FAX NBR _____

EMAIL ADDRESS: _____

If a corporation, answer the following:

Incorporated under laws of what state?

SEAL _____ (If Bid is by Corporation)

**CITY OF NEW BERLIN
GENERAL TERMS and CONDITIONS
FOR THE CITY OF NEW BERLIN FIRE STATION #7 WATER LATERAL
REPLACEMENT**

1. Introduction. This document (hereinafter referred to as “Terms and Conditions”) is hereby incorporated and part of the contract between the City of New Berlin (hereinafter referred to as “City”) and the vendor identified below (hereinafter referred to as “Vendor”). These Terms and Conditions, along with the Bid Instructions, Bid Forms, Specification, City of New Berlin Insurance Requirements, Certificates of Insurance, Policy Endorsements, bid, payment and performance bonds shall constitute the entire contract for materials, work and other goods and services, collectively referred to as the “Contract” between the City and the Vendor. The work that is being performed herein shall collectively be referred to as the “Project”. It is expressly agreed that no statement, arrangement, warranty or understanding, oral or written, expressed or implied, will be recognized unless it is stated in or otherwise permitted by these Terms and Conditions, and the aforementioned invoices and specifications. These Terms and Conditions are solely for the benefit of the City and the Vendor, and are not intended for the benefit of any other party.

2. Goods and/or Equipment. The goods, services and materials being furnished under this contract shall be as identified in Bid Instructions, Bid Forms and Specifications that are incorporated herewith.

The City shall not be deemed to have accepted the Goods until they have been provided the opportunity to inspect them and to acknowledge, in writing, that they are in accordance with the specifications/invoice and without damage or defect.

3. Contract Time. Time is of the essence with respect to all time limits, milestones (if any), as well as deadlines for substantial completion and completion of the work provided for in the specifications.

The work will be substantially completed on or before October 17, 2025, and completed and ready for final acceptance and payment in accordance with this Agreement on or before October 24, 2025, subject to conditions beyond the control of the Contractor, such as labor or material shortages, weather conditions, strikes, civil unrest or wars. The Owner shall make the final decision as to the adequacy of the justification for the delay. Contractor and Owner recognize that time is of the essence and that the Owner will suffer financial and other losses if the work is not completed and the milestones are not achieved within the time limits specified above. The parties also recognize that delays, expense and difficulties involved in proving, in a legal or arbitration proceedings, of the actual loss suffered by the Owner if not completed on time. As a consequence and not as a penalty, but rather to cover the City’s costs if the milestones are not achieved and the work causing baseball games to be moved or cancelled is not completed by the completion date, the parties agree that the City shall be entitled to liquidated damages in the sum of \$250.00 (two hundred fifty dollars) per day as to when substantial completion is delayed.

4. Contract Price. The City shall pay the Vendor for the completion of the work in accordance with the Contract in the amounts that follow, subject to any applicable adjustments under the Contract:
 - a. For all unit price work in an amount equal to the sum of the established unit prices for each separately identified item of unit price work times the actual quantity of that time.
 - b. The estimated total of all unit price work for the base bid is \$_____ . These prices are based on estimated quantities.
 - c. These quantities shall be adjusted based upon the actual work performed.
 - d. For all work at the price as stated in the Contract Bid attached hereto as Exhibit A.

5. Payment Procedures. Contractors shall submit applications for payments in accordance with the terms of this Agreement upon final completion and acceptance of the work. Owner shall have thirty (30) days after receipt of such request to review the request for correctness and to obtain approval for such payment by its Common Council. The Owner may withhold payment for any portion of the work which is not completed in accordance with the specifications, and shall pay for the work related to any undisputed charges. Upon the successful completion of the work and the acceptance of that work as provided for hereunder, the Owner shall pay the remainder of the contract price.

Upon substantial completion of the work, the owner shall pay an amount sufficient to increase the total payments to the Contractor to one hundred (100%) percent of the work completed, but less such amount set off by Owner as provided for herein, less two hundred (200%) percent of the estimated value of the work to be completed or corrected in accordance with a punch list to be completed prior to final payment. Upon the successful completion of the work and the acceptance of that work as provided for hereunder, the Owner shall pay the remainder of the contract price.

6. Vendor's Representations. In order to induce the City to enter into this Contract, the Vendor makes the following representations:
 - a. The Vendor has examined and carefully studied the Contract documents and any data and referenced items included in the Contract documents.
 - b. The Vendor has visited the site, conducted a thorough visual examination of the site and adjacent areas, and has become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress and performance of the work.
 - c. The Vendor is familiar with and is satisfied as to all laws and regulations that may affect cost, progress and performance of the work.

- d. The Vendor has carefully studied all reports and expirations and tests related to the conditions in which the work will be performed, as well as reports and drawings related to the work and technical data in such reports and drawings.
- e. The Vendor has considered the information known to the Vendor itself, including information commonly known to vendors doing business in the Milwaukee metropolitan area, as well as information and observations obtained from visits to the site; the Contract documents; site related reports and drawings in the Contract documents with respect to the impact of such information; observations and documents on the cost, progress and performance of the work; the means, methods, techniques, sequences and procedures of construction; and the Vendor's safety, precautions and programs.

Based on the information and observation referred to in the preceding paragraph, Vendor agrees that no further examinations, investigations, explorations, tests, studies or data are necessary for the performance of the work of the Contract price within the Contract times in accordance with the other terms and conditions of the Contract.

The Vendor has given the City written notice of all conflicts, errors, ambiguities or discrepancies which the Vendor has discovered in the Contract documents and the Vendor certifies that the written resolution thereof by the City is acceptable to the Vendor.

The Contract documents are sufficient to indicate and convey understanding of all terms and conditions for performance in the furnishing of the work.

The Vendor is entering into this Contract and this constitutes an incontrovertible representation by the Vendor that, without exception, all prices in the Contract are premised upon performing and furnishing the work requirement by the Contract documents.

7. Assignment of Contract. Unless expressly agreed to by the City, no assignment may be made of the rights and responsibilities of the Vendor under this agreement.

8. Successors and Assigns. The City and Vendor each binds themselves, their successors, agents, legal representatives and assigns with respect to all covenants, agreements and obligations contained in the Contract documents.

9. Severability. Any provision or part of the Contract documents held to be void or unenforceable under any law or regulation shall be deemed stricken and all remaining provisions shall continue to be valid and binding upon the City and Vendor, which do hereby agree that the Contract documents shall be performed or replaced as to such stricken revision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10. Taxes, Social Security and Government Reporting. Personal income tax payments, social security contributions, insurance, payroll taxes and all other governmental reporting and

contributions required as a consequence of the Contract or receiving payment for this Contract shall be the sole responsibility of the Vendor.

11. Advertising. The Vendor shall not identify the City as a client or customer of the Vendor or utilize the name of the City or its logo in any advertisements or other documents placed in the public domain without the express written consent of the City.

12. Modification. In the event that the parties determine that a modification to the Terms and Conditions of the providing of these goods and services are necessary, such change shall not be effective unless executed by authorized representatives of both parties.

13. Delivery. The goods provided hereunder shall be delivered to the City within the number of working days set forth in the contract or otherwise as soon as reasonably practicable unless delay occurs due to work stoppage, adverse weather conditions, labor disputes or modifications to the Terms and Conditions of the contract. In the event that the goods are not delivered within a reasonable period of time, the City shall have the right to cancel this contract without fee or penalty.

14. Insurance. Vendor shall maintain workers compensation, automobile liability and commercial general liability insurance coverage with carriers licensed to do business in the State of Wisconsin, and with such limits as the City may establish and require from time to time:

- a. General Aggregate: \$2,000,000.00
- b. Personal Advertising Injury: \$1,000,000.00
- c. Each occurrence: \$1,000,000.00
- d. Fire damage: \$50,000.00
- e. Medical Expense, any one person: \$5,000.00
- f. Automobile liability: CSL \$1,000,000.00
- g. Excess liability umbrella form: \$1,000,000.00 per occurrence
- h. Excess liability umbrella form: \$2,000,000.00 in the aggregate with a self-insured retention limit of not greater than \$10,000.00
- i. Professional Liability, General Aggregate: \$2,000,000.00
- j. Professional Liability, Each Occurrence: \$1,000.00.00

Vendor shall furnish a Certificate of Insurance evidencing the types and amounts of coverage. Said coverage shall be on an occurrence basis and the limits identified in the general liability coverage shall be for this project and not the policy as a whole. Vendor agrees to require that the insurer list the City as an Additional Insured on a primary and non-contributory basis and to provide adequate evidence of said status through the liability insurance endorsement. Vendor shall further obtain an endorsement from the insurance carrier indicating that any material changes to the policy or any cancellation of the coverage subsequent to the issuance of the Certificate, and until the completion of the services hereunder, shall necessitate that the insurer provide not less than thirty (30) days notice to the City of said fact. Clauses such as that the insurer will endeavor to notify the City are unacceptable and will be rejected.

15. Dispute. These Terms and Conditions shall be deemed to have been made and governed by the laws of the State of Wisconsin. Any legal suit or action with regard to these Terms and Conditions or the project as a whole shall be venued in the Waukesha County Circuit Courts, Waukesha County, Wisconsin, unless the parties mutually agree to arbitration and/or mediation in place of civil litigation.

16. Limitation on Liability. The City's liability to the Vendor shall not exceed the sums paid by the City to the Vendor under this contract. In addition, to the extent that the Vendor seeks indemnification from the City, that indemnity shall be subject to the limitations set forth herein. No indemnity provided under any contract hereunder shall be construed to be a waiver or estoppel of the City of New Berlin or its insureds' ability to rely upon the limitations, defenses and immunities contained within Wisconsin law, including, but not limited to those set forth in Wisconsin Statute §893.80, §895.52 and §345.05. To the extent indemnification is available and enforceable, the City of New Berlin or its insured shall not be liable in indemnity or contribution for any amount greater than the limits of liability for municipal claims established by Wisconsin law. The City's obligations to indemnify hereunder are further subject to the availability and limits of applicable insurance coverage. Under no circumstances shall the City be required to indemnify the Vendor for its own negligence or intentional conduct.

17. Protection of the Project Site. Vendor agrees to post signage and to appropriately guard the area in which the contract work is being performed, and to take all other steps that may be necessary in accordance with requirements of OSHA and/or other governmental agencies with jurisdiction to ensure that the project site is maintained in a safe manner to as to prevent workers and passersby from entering the project site.

18. Warranty. Vendor warrants and guarantees to City that all goods and/or equipment to be supplied hereunder will be of good quality and free from faults and defects. This warranty shall cover materials for the manufacturer stated warranty period and workmanship for two (2) year from the date of substantial completion or as provided in the specifications/invoice attached hereto, whichever is greater.

19. Conflicts. If there is any inconsistency between these Terms and Conditions and the specifications/invoice or any attachments thereto, these Terms and Conditions shall apply.

20. Hold Harmless. The Vendor shall indemnify and hold harmless the City and its agents, employees, elected officials, representatives and assigns (hereinafter referred to as the "Indemnified Parties") as and against any and all claims, demands, actions, causes of action, losses, costs, expense, including, but not limited to actual attorney fees, arising out of our resulting from the performance of the work. Said indemnity shall include both the Vendor, as well as any subcontractors working under them, regardless of whether or not such claims, demands, losses or expenses are caused in whole, or in part, by the parties that are being indemnified. Such obligation shall not be considered to negate, abridge or reduce other rights or obligations of indemnity which would otherwise exist as to a party or persons described in this paragraph. To the extent that the Vendor retains subcontractors for the performance of the work, or any portion thereof, the Vendor and/or subcontractors shall provide evidence of the insurance coverages set forth above, as well as

the terms of this indemnification provision shall be applicable to such Vendor and/or subcontractors.

21. Modification and Assignability. This contract, including all documents incorporated by reference herein, may not be enlarged, modified or altered except upon written agreement signed by both parties. The Vendor may not subcontract or assign its rights, including rights to compensation, or terms of performance arising hereunder without the prior written consent of the City. Any subcontractor or assignee shall be bound by all of the terms and conditions of the contract, and will be required to enter into a written agreement with the City.

22. Termination of Contract. This contract may be terminated as follows:

- a. *Termination for Convenience.* City may terminate this contract in whole or in part for the convenience of the City when the City determines that the continuation of the project is not in the best interests of the City. Vendor shall be entitled to payment for all of the services performed at the date of the termination, together with its direct costs of termination. Under no circumstances shall the Vendor be entitled to any penalty for the termination nor shall the Vendor be entitled to any payment for lost profits.
- b. *Termination for Cause.* If the City determines that the Vendor has failed to comply with any of the terms and conditions of the contract and the scope of services and related documents thereto, the City may give written notice to the Vendor of any such deficiency and in the event that the Vendor fails to cure said deficiency within ten (10) days of the notice of such failure, the City may, with no further notice, declare this contract to be terminated. Vendor will therefore be entitled to receive payment for those services performed at the date of termination, plus the amount of reasonable damages suffered by the City by reason of the Vendor's failure to comply with the terms of the contract. Under no circumstances shall the Vendor be entitled to any lost profits arising from the contract.

23. Ongoing Services. This is also a contract for ongoing preventative maintenance services, as provided for in the Project Specifications. The parties agree that these Terms and Conditions shall be applicable to these ongoing Services.

24. Relationship of the Parties. The Vendor agrees to perform the services as provided for hereunder as an independent contractor, not as an employee of the City. The Vendor shall furnish all services, labors, materials and equipment necessary to conduct and complete the work. The work shall be performed in accordance with the specifications subject to the satisfaction of the City.

25. Delay. The Contractor shall not be liable for delays or failure to perform the services necessary to complete the work which are caused directly or indirectly by circumstances beyond the Contractor's control, including but limited to, acts of God, fire, flood, war, sabotage, accident, labor dispute, material shortage, governmental action, including regulatory requirements, change conditions, delays resulting from actions of the Owner or third parties not under control of

the Contractor, site inaccessibility or inability of others to obtain materials, labor, equipment or transportation. Should any of the above occur, then the date for completion of the services shall be adjusted for such delay, provided that the Contractor reports the delay, both verbally and in writing, to the Owner within a reasonable time of its discovery. The Owner shall determine whether or not the cause of delaying or not completing a duty or obligation under this Agreement is under the control of the Contractor.

The Contractor acknowledges that in December of 2019 a novel strain of the Coronavirus (now referenced as COVID-19) was detected and has now spread throughout many countries, including the United States. Based upon this, the World Health Organization has declared a Public Health Emergency of international concern; and the United States Department of Health and Human Services has declared a Public Health Emergency. The Contractor further acknowledges that it is aware of the COVID-19 pandemic and that the existence of said pandemic will not constitute a force majeure or otherwise preclude the Contractor's ability to perform the terms of this agreement absent the issuance of any Order by a governmental entity with jurisdiction that would preclude such performance

The Contractor acknowledges that it must perform the work and services hereunder, pursuant to the terms and conditions of this Agreement and that such work shall conform to the recognized standards in the Milwaukee Metropolitan Area for the performance of this work as are prevalent in this field of endeavor and like services. Also, its work shall be performed in a good and workmanlike manner.

26. Regulations. The Vendor agrees to comply with all the requirements of applicable federal, state and local laws, as well as Codes and Specification requirements related to the performance of the work under this Contract.

27. Records and Reports. Records relating to the performance of the services under this Contract must be retained for seven (7) years after final disposition. However, if any litigation claim or audit has started before the expiration of the seven (7) year period, then records shall be retained for five (5) years after the litigation or audit is resolved. Notwithstanding any other clause written herein, Vendor understands and agrees that the City is a municipal entity and therefore, is subject to the Open Records Law of the State of Wisconsin. Wisconsin Statute §19.36(3) requires governmental entities to make available for inspection a copy of any records produced or collected under a contract entered into by the municipal entity to the same extent as if the record were maintained by the municipality. Therefore, in the event there is a request for any other documentation pertaining to this Contract, Vendor shall provide the information as requested and charge no more than the cost to copy said information. The parties agree that upon completion or termination of this Contract, all project contract documents or instruments of service, including electronic files of computer-aided record drawings and field inspection reports shall be delivered to and shall become the property of the City. These records, drawings, reports, etc. may be used without restriction by the City for any public purpose and to implement construction and use of the project. Any such use or reuse of these documents outside the scope of the project shall be without compensation or liability to the Vendor, excepting for errors and omissions associated with the completed project, services and documents performed under this Contract.

28. Governing Law; Entire Agreement. This Contract shall be governed and construed in accordance with the laws of the State of Wisconsin. These Contract documents represent the complete understanding of the parties with respect to the subject matter set forth herein and may only be amended in a subsequent agreement executed by all parties.

29. Relationship of the Parties. The contractor agrees to perform the services as provided for hereunder as an independent contractor, not as an employee of the owner. The contractor shall furnish all services and labors and materials and equipment necessary to conduct and complete the work. The work shall be performed in accordance with the specifications subject to the satisfaction of the owner.

FINANCE DIRECTOR:
City of New Berlin

MAYOR:
City of New Berlin

By: _____

By: _____

[Print Name & Title]

[Print Name & Title]

CITY CLERK:
City of New Berlin

CITY ATTORNEY:
City of New Berlin

By: _____

By: _____

[Print Name & Title]

[Print Name & Title]

VENDOR:

[Insert Vendor Name]

By: _____

[Print Name & Title]

ADDENDUM TO CITY OF NEW BERLIN CONTRACTS

This Addendum is made and entered into and shall be considered an attachment to all contracts entered into by the City of New Berlin for so long as the City of New Berlin is subject to the U.S. Department of Treasury Restrictions, as well as other federal regulations related to the City's receipt of American Rescue Plan Act Funds. The following Terms and Conditions shall be included in each such agreement and are incorporated as though fully set forth in the original contract.

1. The contractor agrees to comply with the applicable requirements of Section 603 of the American Rescue Plan Act (hereinafter referred to as the "Act") regulations adopted by the US Department of Treasury (hereinafter referred to as the "Treasury") pursuant to Section 603(f) of the Act and the guidance issued by the Treasury regarding the foregoing. The contractor also agrees to comply with all other applicable federal statutes, regulations and executive orders and shall provide for such compliance by other parties, including subcontractors in any agreements it enters into with other parties related to this award.
2. Statutes and regulations prohibiting discrimination and applicable to this contract include, but are not limited to the following:
 - a. Title VI of the Civil Rights Act of 1964 (42 USC, §2000 D, et. seq.) and Treasury's implementing regulations at 31 CFR, Part 22, which prohibit discrimination on the basis of race, color or national origin under programs or activities receiving federal financial assistance.
 - b. Fair Housing Act. Title VIII of the Civil Rights Act of 1968 (42 USC, §3601, et. seq.) which prohibits discrimination in housing on the basis of race, color, religion, national origin, sex, familial status or disability.
 - c. Section 504 of the Rehabilitation Act of 1973, as amended, (29 USC, §794), which prohibits discrimination on the basis of disability under any program or activity receiving federal financial assistance.
 - d. The Age Discrimination Act of 1975, as amended (42 USC, §6101, et. seq.) and Treasury's implementing regulations at 31 CFR, Part 23, which prohibit discrimination on the basis of age and programs or activities receiving federal financial assistance; and
 - e. Title II of the Americans with Disabilities Act of 1990, as amended (42 USC, §12, 12101 et. seq.), which prohibits discrimination on the basis of disability under programs, activities and services provided or made available by state and local governments or instrumentalities or agencies thereto.
3. Equal Employment Opportunity. During the performance of the contract, the contractor will be required to comply with Equal Opportunity Employment Statutes as outlined in 47 CFR, §90.168.
4. Copeland Anti-Kickback Act. The contractor shall comply with 18 USC, § 874, 40 USC, §3145 and the requirements of 29 CFR, Part 3, as may be applicable, which are incorporated by reference into this contract.

5. Contract Work Hours of the Safety Standards Act.
 - a. Overtime Requirements. No contract or subcontract contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any work week in which he/she is employed on such work to work in excess of 40 hours in such work week unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such work week.
 - b. Violation. Liability for unpaid wages; liquidated damages: In the event a violation of the clause set forth in (a) above, the contractor or any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards employed in violation of this section.
 - c. Withholding fund paid wages and liquidated damages: The City of New Berlin shall, upon its own action or upon written request of an authorized representative of the US Department of Labor, withhold or cause to be withheld from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other federal contract with the same contractor or any other federally assisted contract subject to the contract work hours and Safety Standards Act, which is held by the same contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractors or subcontractors or unpaid wages and liquidated damages as provided in the clause set forth in this section.
 - d. Subcontract. The contractors or subcontractors shall insert in any contract the clauses set forth in Paragraph B, 1-4 of 29 CFR §5.5 and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in Paragraphs B, 1-4 of 21 CFR, §5.5.
6. Clean Air Act and Federal Water Pollution Control Act. Contractor needs to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 USC, §7401, et. seq.
7. Debarment and Suspension. This award is a covered transaction for purposes of 2 CFR, Part 180 and 2 CFR, Part 3000. As such, the contractor is required to verify that none of the contractors principals (defined in 2 CFR, §180.995) or its affiliate (defined in 2 CFR, §180.1.905) are excluded (defined in 2 CFR, §180.940) or disqualified (defined in 2 CFR, §180.935). Selected contractors must comply with 2 CFR, Part 180, Subpart C and 2 CFR, Part 3000, Subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into. This certification is a material representation of fact relied upon by the City of New Berlin. If it is later determined that the contractor did not comply with 2 CFR, Part 180, Subpart C and 2 CFR, Part 3000, Subpart C, in addition to remedies available to the City of New Berlin, the federal government may pursue available remedies including, but not limited to, suspension and/or

disbarment. The contractor and the bidder or proposer agree to comply with the requirements of 2 CFR, Part 180, Subpart C and 2 CFR, Part 3000, Subpart C, while this offer is valid and throughout the period of any contract that may arise from this offer. This contractor and the bidder or proposer further agrees to provide a provision requiring such compliance in its lower tier covered transactions.

8. Byrd Anti-Lobbying Amendment. The contractor shall file the required certification. The contractor and all subcontractors certify that they will not and have not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress or an employee of a member of Congress, or employees of the City of New Berlin in connection with obtaining any federal contract, grant or any award covered by 31 USC, §1352. Each tier, including the contractor and all subcontractors, shall also disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier up to the recipient, who in turn will forward the certifications to the awarding agency. If the agreement exceeds \$100,000.00, the contractor must certify compliance with the Byrd Anti-Lobbying Amendment.
9. Procurement of Recovered Materials. Contractor shall comply with 2 CFR, §200.323 as applicable.
10. Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment. Contractor shall comply with 2 CFR, §200.216, as applicable.
11. Domestic Preferences for Procurements. Contractor shall comply with 2 CFR, §200.322.
12. This Exhibit A is intended to incorporate those federal laws and regulations that apply to this contract. If the contractor believes that any law or regulation described herein is not applicable in this contract per the terms of the federal law or regulation, the contractor shall present their position in that regard to the City of New Berlin with a written change order request. The laws cited herein shall be followed by the contractor and all subcontractors unless the municipality agrees that the cited federal law or regulation does not apply, and the change order is approved by the City of New Berlin Common Council.

ADDENDUM TO CITY OF NEW BERLIN CONTRACTS

This Addendum is made and entered into and shall be considered an attachment as Exhibit B to all contracts entered into by the City of New Berlin for so long as the City of New Berlin is subject to the U.S. Department of Treasury Restrictions, as well as other federal restrictions related to the City's receipt of Federal Funds. The following Terms and Conditions shall be included in each such agreement and are incorporated as though fully set forth in the original contract.

1. No City contractor or employee shall operate any machinery or vehicle while utilizing a smart phone, including, but not limited to, the use of any cellular phone or texting.
2. All City employees and contractors, while engaged in the performance of City business or acting consistent with the performance of services under a contract with the City shall utilize seatbelts and any other safety devices related to the operation of a motor vehicle.
3. City employees or contractors whose duties and responsibilities are funded through the Coronavirus State and Local Fiscal Recovery Funds agree that they will not engage in any lobbying activities while in the course of providing services on behalf of the City of New Berlin, as restricted under the Hatch Act, 5 USC Sec. 1501-1508. No funds appropriated under the Coronavirus State and Local Fiscal Recovery Act shall be utilized for lobbying, and no political payments shall be made through the use of said funds.
4. All City employees and contractors, while in the performance of duties on behalf of the City shall abide by all local, state and federal regulations concerning the ingestion of controlled substances and shall not violate such Statutes or Ordinances. The City shall enforce drug free workplace standards and provide awareness programs for Staff. The City shall further agree to take action regarding individuals using drugs in the workplace according to law.
5. All City employees and contractors, in the course of performing of their duties on behalf of the City, shall, to the extent applicable, comply with the provisions in Wisconsin Statute §19.59 regarding conflicts of interest, as well as City of New Berlin Municipal Code Chapter 28 regarding ethics. Specifically, no City employee or contractor shall accept or solicit money or tangible personal property or otherwise receive consideration in exchange for the agreement to enter into a contract with a third party.
6. City employees shall avoid the acquisition of unnecessary items or property on behalf of the City.
7. City employees shall, to the extent applicable, engage in value engineering as part of any construction work performed on behalf of the City.
8. Contracts shall only be awarded to responsible contractors with experience in performing the services being contracted for.

9. City contracts shall avoid compensating for contractor work performed on a time and material basis and, to the extent practicable, shall have fixed-price contracts.
10. The selection of a contractor by the City should be done in an atmosphere of open and honest competition.
11. In the course of public bidding involving the purchase of equipment, the City shall not specify only a brand name for the purpose of limiting potential contracting parties. The City may include a clause, however, that any equipment being supplied under a City contract must interface well and be compatible with existing equipment utilized by the City of New Berlin, which is identified as the following: _____.
12. The City shall verify that any entity with which it is contracting has not been excluded for contracting pursuant to 2 CFR §180.
13. City contractors do hereby certify that they are not designated by the federal government as being precluded from engaging in federal contracts.
14. The City of New Berlin, its employees, officers, agents, contractors and assigns may not discharge, demote or otherwise discriminate against an employee in reprisal for disclosing information that the employee reasonably believes is evidence of gross mismanagement of a Federal, State or City contract or grant; a gross waste of Federal, State or City funds; an abuse of authority relating to Federal, State or Local Contractor Grant; a substantial and specific danger to public health, safety or welfare; or a violation of law, rule or regulation related to a Federal, State or City contract (including, but not limited to, the competition for or negotiation of a contract) or Grant. The entities to which disclosure of such information includes, but is not limited to the following entities:
 - a. A member of Congress or a representative of a committee of Congress;
 - b. An Inspector General;
 - c. The Government Accountability Office;
 - d. A Treasury employee responsible for contract grant oversight or management;
 - e. An authorized official of the Department of Justice or other law enforcement agency;
 - f. A Court or Grand Jury;
 - g. A management official or other employee of the City;
 - h. A contractor of the City;
 - i. A subcontractor of the City, which has the responsibility to investigate, discover or address misconduct;
 - j. An official of the State of Wisconsin, or other employee, agent or contractor of the State who has the responsibility to investigate, discover or address misconduct.
15. This Policy shall be disclosed to all City officers, agents, contractors or assigns and shall be included as part of the City's Addendum for City contract.
16. The City shall engage in a cost and price evaluation analysis to include independent estimates of the cost of the equipment or service before placing the matter out for bid.

17. When the City is engaged in negotiating purchase of goods and services, the profit in the contract shall be negotiated independently from the materials and labor. In any contract entered into by the City of New Berlin for the acquisitions of goods and services shall require remedies in the event of a breach of the agreement and shall include provisions for termination as to cause.

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SECTION 21 05 00

COMMON WORK RESULTS FOR FIRE SUPPRESSION

PART 1 - GENERAL

1.01 SCOPE

- A. This section includes information common to two or more technical fire protection specification sections or items that are of a general nature, not conveniently fitting into other technical sections. Included are the following topics:
- B. The specifications and drawings are scope documents based on the Owner's requirements for the fire protection systems. It is the intent of the documents to detail and specify the minimum requirements and components. It is the responsibility of the Contractor to design and install a complete fire protection system in compliance with NFPA, State, and the Local Authority Having Jurisdiction codes and requirements. Pipe and equipment sizing shown in the documents is the minimum allowed. If larger size is required, it is to be included in the bid.

PART 1 - GENERAL

- Scope
- Related Work
- Reference
- Reference Standards
- Quality Assurance
- Continuity of Existing Services
- Protection of Finished Surfaces
- Sleeves and Openings
- Sealing and Fire Stopping
- Equipment Furnished By Others
- Provisions for Future
- Off Site Storage
- Codes
- Design Criteria
- Certificates, Inspections, and Permits
- Existing Buildings
- Submittals
- Operating and Maintenance Instructions
- Warranty

PART 2 - PRODUCTS

- Access Panels and Doors
- Identification
- Sealing and Fire Stopping

PART 3 - EXECUTION

- Demolition
- Concrete Work
- Building Access
- Coordination
- Identification
- Sealing and Fire Stopping

1.02 RELATED WORK

- A. This Section applies to all Division 21 Sections of Fire Suppression.

1.03 REFERENCE STANDARDS

- A. Abbreviations of standards organizations referenced in this and other sections are as follows:

AGA	American Gas Association
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ASPE	American society of Plumbing Engineers
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
AWS	American Welding Society
CGA	Compressed Gas Association
CS	Commercial Standards, Products Standards Sections, Office of Engineering Standards Service, NBS
EPA	Environmental Protection Agency
FM	FM Global
FS	Federal Specifications, Superintendent of Documents, U.S. Government Printing Office
IAPMO	International Association of Plumbing & Mechanical Officials
IEEE	Institute of Electrical and Electronics Engineers
ISA	Instrument Society of America
ILHR/ SPS	State of Wisconsin Industry, Labor and Human Relations and/or Wisconsin Department of Safety and Professional Services
MCA	Mechanical Contractors Association
MICA	Midwest Insulation Contractors Association
MSS	Manufacturer's Standardization Society of the Valve & Fitting Industry, Inc.
NBS	National Bureau of Standards
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
STI	Steel Tank Institute
UL	Underwriters Laboratories Inc.

1.04 QUALITY ASSURANCE

- A. Refer to Division 00 and 01, Approved Equals, Substitutions, and Design Clarifications.
- B. All products and materials used are to be new, undamaged, clean and in good condition. Existing products and materials are not to be reused unless specifically indicated.
- C. Where equipment or accessories are used which differ in arrangement, configuration, dimensions, ratings, or engineering parameters from those indicated on the contract documents, the contractor is responsible for all costs involved in integrating the equipment or accessories into the system and for obtaining the intended performance from the system into which these items are placed.

1.05 CONTINUITY OF EXISTING SERVICES

- A. Do not interrupt or change existing services without prior written approval from the Owner's Project Representative. When interruption is required, coordinate scheduling of down-time with the Owner to minimize disruption to his activities. Unless specifically stated, all work involved in interrupting or changing existing services is to be done during normal working hours.

1.06 SEALING AND FIRE STOPPING

- A. Sealing and fire stopping of sleeves/openings between piping, etc. and the sleeve or structural opening shall be the responsibility of the contractor whose work penetrates the opening. The contractor responsible shall hire individuals skilled in such work to do the sealing and fireproofing.

1.07 CODES

- A. Comply with requirements of the Wisconsin Administrative Code, Wisconsin Department of Safety and Professional Services (SPS), NFPA Standards, Owner's Insurance Carrier, local Fire Chief or Fire Marshal, Authority Having Jurisdiction (AHJ) regarding design, materials and installation.

1.08 DESIGN CRITERIA

- A. Design fire protection systems in accordance with codes, standards and regulations noted above.
 - 1. The term "This Contractor" in Division 21 shall mean "Fire Protection Contractor".
- B. This specification for the Fire Protection Work is a "performance" specification. It is intended to establish a general design criteria for the work. The Fire Protection Contractor shall assume full responsibility for design, hydraulic calculations, layout, details, final selection & sizing of all equipment, components, etc. No adjustment in compensation shall be made for any required adjustments to design, to incorporate all additional requirements of the Owner, Architect, Insurance Authorities, State, and Local Codes.
 - 1. The fire protection contractor shall submit plans and calculations sealed by a professional engineer or designer, to the State of Wisconsin Department of Commerce and local fire inspector for approval.
- C. The work of this section includes the furnishing of all labor, tools, fabricated materials, equipment and performing all operations necessary to install the fire protection system, including but not limited to shop drawings, piping, fittings, sprinkler heads, valves, controls, alarms, hangers, and other supplemental items necessary to complete the system in accordance with these specifications.
- D. It shall be the responsibility of the Fire Protection Contractor to review the construction documents of all trades involved to determine incidental fire protection required, visit the site and to verify all existing conditions affecting the work and he shall adapt the new work and meet with the approval of all governing bodies. Failure to do so will not result in award of additional payment, for it is to be understood that tender of proposal carries with the agreement a system whole and complete, ready for test and operation and duly approved by agencies as previously noted herein.
- E. Prior to installation, complete working drawings must be approved by the Engineer, Owner, Architect, State and Local Authorities. Verify all measurements, distances, levels, etc. before starting work.
- F. Include all taxes, plan approval fees, permits and tests required for the Fire Protection Work.
- G. Notify all authorities whenever sprinkler system valves are closed.
- H. Unless otherwise noted, all materials and equipment used in this installation shall be new and of best quality of their respective kinds, and all work shall be executed in a neat and workmanlike manner. All materials to be UL listed.
- I. In the event specifications are not in full accord and changes, alterations, additions or deductions are necessary, or any exceptions in regard to size of equipment, pipe sizes, etc. or layout are taken by this Contractor, notify the Engineer or Owner immediately, in writing and wait his decision. Such exceptions must be submitted ten days prior to date set for receiving of proposal.
- J. Whenever the location of piping or equipment is governed by architectural features, this Contractor shall establish their locations by referring to the architectural drawings. Any offsets or relocating of piping shall be done by this Contractor at no additional cost to the Owner. He shall not scale the drawings for exact dimensions.
- K. After proposals are accepted by Owner, it shall be understood that this Contractor has studied the drawings, specifications, job site, and no further exceptions will be taken affecting contract amount due to his failure to comply herewith.
- L. This Contractor shall inspect all conditions and where possible, field measure for sizing, routing and installation of all equipment and material.
- M. Measurements and determination of routing must be complete prior to ordering any equipment or fabricating any materials.

- N. Coordinate with all other trades prior to installation to determine locations and methods for installation of equipment and materials.
- O. This Contractor shall be responsible for all openings, sleeves, patching, pipe concealment, and finishing required for the installation of the automatic sprinkler systems.

1.09 CERTIFICATES, INSPECTIONS, AND PERMITS

- a. Obtain and pay for all required State or local installation inspections except those provided by the Architect/Engineer in accordance with Wisconsin Department of Safety and Professional Services Section ILHR/SPS 350.12. Deliver originals of these certificates to the Division's Construction Representative. Include copies of the certificates in the Operating and Maintenance Instructions.

1.10 EXISTING BUILDINGS

A. VISIT TO SITE

1. Before submitting the proposal for this Division, the Contractor shall satisfy himself as to the nature and location of this work and the general and local conditions. He shall have full knowledge of conditions relative to transportation, handling and storage of materials, availability of electrical power of all other facilities in the area which will have a bearing on the performance of his work and the contract for which he submits his proposal. Pay special attention to existing items to be reused and relocated.
2. Existing Conditions
 - a. This Contractor shall field verify existing conditions related to the requirements of this Division **prior** to submission of bid. This includes field verification of existing actual installed systems, equipment, ductwork, piping, etc. to ascertain locations, sizes and quantities. These documents depict existing conditions based on the best information available but may not accurately represent the actual installed as-built condition. In the event the plans and specification are **not** representative of the actual installed conditions, this Contractor shall notify Engineer immediately at which time an addendum will be issued for clarification. If an addendum is **not** issued due to the bid submission date, this Contractor shall include in bid **all** necessary modifications necessary to meet the intent of the plans and specifications.
 - b. If during the course of construction it is determined that the existing installed condition is not representative of the plans and specifications, this Contractor shall provide a written description identifying proposed modification and/or revisions to the system and/or design to meet the intent of the plans and specifications. No additional compensation shall be allowed.
3. Failure by the Contractor to acquaint himself with all the available information shall not relieve him from any responsibility for performing his work properly.
4. No additional compensation shall be allowed because of conditions that occur due to this Contractor's failure to become thoroughly familiar with the job site and other work, as previously described, for this project.
5. Submission of a bid will be considered an acknowledgment on the part of the bidder of his site verification for this project.
6. This Contractor shall arrange and provide all necessary equipment required to rig, lift or move equipment into final location. All work and equipment shall strictly comply with applicable OSHA regulations.

B. DIMENSIONS AND LOCATIONS

1. Verify measurements at the building check levels and grades and be responsible for grading, fitting, joining or adjusting of work to adjoining work by other Contractors.
2. Before the work is installed, the Architects reserve the right to slightly change location of piping and equipment, etc., without additional pay to the Contractor.

1.11 SUBMITTALS

- A. Refer also to Division 00 and 01.
- B. Shop drawing submittals are to be bound, labeled, contain the project manual cover page and a material index list page showing item designation, manufacturer and additional items supplied with the installation. Submit for all equipment and systems as indicated in the respective specification sections, marking each submittal with that specification section number. Mark general catalog sheets and drawings to indicate specific items being submitted and proper identification of equipment by name and/or number, as indicated in the contract documents. Include wiring diagrams of electrically powered equipment.
- C. Submittals shall be sent to the Wisconsin Department of Safety and Professional Services, the local Fire Chief or Fire Marshal for review prior to the Architect/Engineer. Include copy of approval letter and copy of approved drawings in submission to Architect/Engineer.
- D. Plan submittal for review and approval to the Department of Safety and Professional Services is required for all state buildings with the exception of the replacement in kind of equipment and projects that include 20 or fewer sprinkler heads. Licensed health care facilities require submittal and approval from the Department of Health Services. Submittals shall be sent to the local Fire Chief or Fire Marshal for review prior to the Architect/Engineer. Include a copy of all review/approval letters in submission to Architect/Engineer.
- E. Submit plans indicating water supply location and size, piping layout and size, sprinkler locations and type, hanger locations and type, equipment locations and type, valve locations and type, occupancy classes, hydraulic reference points, design areas and discharge densities.
- F. Submit hydraulic calculations for water supply and sprinkler systems. Include summary sheet and detailed work sheets. Describe characteristics of water supply and location of effective point used in calculations. Include graph illustration of water supply, hose demand, sprinkler demand and in-rack sprinkler demand. Where a fire pump is used, graph primary rating point, secondary rating point and churn pressure of pump and combined water supply.

1.12 OPERATING AND MAINTENANCE INSTRUCTIONS

- A. Assemble material in three-ring or post binders, using an index at the front of each volume and tabs for each system or type of equipment. In addition to the data indicated in the General Requirements, include the following information:
 - Copies of all approved submittals along with approval letters.
 - Manufacturer's wiring diagrams for electrically powered equipment.
 - Records of tests performed to certify compliance with system requirements.
 - Certificates of inspection by regulatory agencies.
 - Additional information as indicated in the technical specification sections

PART 2 – PRODUCTS

2.01 IDENTIFICATION

- A. **STENCILS:**
Not less than 1/2" high letters for pipe sizes 1" through 2-1/2" and 1 inch high letters/numbers for pipe sizes 3" and above for marking pipe and equipment. Apply flow arrows to piping.
- B. **ADHESIVE LABELS:**
Pressure-sensitive, adhesive backed, vinyl pipe markers with applicable labeling, 3/4" min. size for lettering and surrounding tape on both ends. With flow arrows on piping. Conforming to ANSI, ANSI and NFPA standards. Seton Opti-Code, or equal. Clean piping before application.
- C. **SNAP-AROUND MARKERS:**

One-piece, pre-formed, vinyl construction, snap-around or strap-around pipe markers with applicable labeling, 3/4" min. size for lettering. Provide nylon ties on each end of pipe marker.

- D. **SIGNS:**
Metal construction, baked porcelain enamel finish signs, sizes conforming to NFPA No. 13 and 7-1.2, with holes and s-hooks/chains for hanging or securing. With applicable labeling. Seton or equal.
- E. **ENGRAVED NAME PLATES:**
White letters on a black background, 1/16" thick plastic laminate, beveled edges, screw mounting, Setonply Style 2060 by Seton Name Plate Company or Emedolite Style EIP by EMED Co., or equal by W. H. Brady.
- F. **VALVE TAGS:**
Round brass tags with 1/2 inch numbers, 1/4" system identification abbreviation, 1-1/4" minimum diameter, with brass jack chains with brass "S" hooks or one piece nylon ties around the valve stem, available from EMED Co., Seton Name Plate Company, or W. H. Brady.

2.02 SEALING AND FIRESTOPPING

- A. **FIRE AND/OR SMOKE RATED PENETRATIONS:**
 - 1. Provide all fire stopping of fire rated penetrations and sealing of smoke rated penetrations in compliance with Section 07 84 00 Fire Stopping.
- B. **NON-RATED PENETRATIONS:**
 - 1. At pipe penetrations of interior partitions, floors and exterior walls, use urethane caulk in annular space between pipe insulation and sleeve.

PART 3 - EXECUTION

3.01 DEMOLITION

- A. Perform all demolition to accomplish new work. Where demolition work is to be performed adjacent to existing work that remains in an occupied area, construct temporary dust partition to minimize the amount of contamination of the occupied space. Where pipe is removed and not reconnected with new work, cap ends of existing services as if they were new work. Coordinate work with the Owner to minimize disruption to the existing building occupants.
- B. All pipe, sprinklers, equipment, wiring, associated conduit and similar items demolished, abandoned, or deactivated are to be removed from the site by the Contractor except as specifically noted otherwise. All designated equipment is to be turned over to the Owner for his use at a place and time he so designates. Maintain the condition of material and/or equipment that is indicated to be reused equal to that existing before work began.

3.02 CONCRETE WORK

- A. Provide cast in place concrete for equipment pads and pump bases. Concrete to be 3,000 psi at 28 days, 3/4 inch aggregate, five bags cement, three inch slump, air entraining admixture. The ACI 614 Recommended Practice for Measuring, Mixing and Placing of Concrete shall constitute the execution requirements.

3.03 BUILDING ACCESS

- A. Arrange for the necessary openings in the building to allow for admittance of all apparatus. When the building access was not previously arranged and must be provided by this contractor, restore any opening to its original condition after the apparatus has been brought into the building.

3.04 COORDINATION

- A. Coordinate all work with other Contractors prior to installation. Any work that is not coordinated and that interferes with other Contractor's work shall be removed or relocated at the installing Contractor's expense.
- B. Verify that all devices are compatible for the type of construction and surfaces on which they will be used.

3.05 IDENTIFICATION

- A. Identify equipment in mechanical equipment rooms by stenciling equipment number and service with one coat of black enamel against a light background or white enamel against a dark background. Use a primer where necessary for proper paint adhesion.
- B. Where stenciling is not appropriate for equipment identification, engraved name plates may be used.
- C. Identify interior piping mains not less than once every 25 feet, not less than once in each room, adjacent to each access door or panel, and on both sides of the partition where exposed piping passes through walls or floors. Place flow directional arrows at each pipe identification location. Use one coat of black enamel against a light background or white enamel against a dark background or approved pipe marking label systems.
- D. Identify valves with signs per NFPA rulings.
- E. Provide hydraulic design information sign of permanently marked weatherproof metal or engraved nameplate material. Secure to alarm valve with brass chain. Information to include location of the design areas, discharge densities, required flow and residual pressure at the base of riser, hose stream demand and sprinkler demand.

3.06 SEALING AND FIRESTOPPING

- A. **FIRE AND/OR SMOKE RATED PENETRATIONS:**
Provide all fire stopping of fire rated penetrations and sealing of smoke rated penetrations in compliance with section 07 84 00 Fire Stopping.
- B. **NON-RATED PARTITIONS:**

At all interior partitions and exterior walls, pipe penetrations are required to be sealed. Apply sealant to both sides of the penetration in such a manner that the annular space between the pipe sleeve or cored opening and the pipe or insulation is completely blocked.

END OF SECTION

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SECTION 21 05 29

HANGERS AND SUPPORTS FOR FIRE SUPPRESSION PIPING AND EQUIPMENT

PART 1 – GENERAL

1.01 SCOPE

- A. This section includes specifications for supports of all fire protection equipment and materials as well as piping system anchors. Included are the following topics:

- PART 1 - GENERAL
 - Scope
 - Related Work
 - Reference
 - Reference Standards
 - Quality Assurance
 - Description
 - Shop Drawings
 - Design Criteria
- PART 2 - PRODUCTS
 - Manufacturers
 - Structural Supports
 - Pipe Hangers and Supports
 - Pipe Hanger Rods
 - Beam Clamps
 - Anchors
- PART 3 - EXECUTION
 - Installation
 - Hanger and Support Spacing
 - Anchors

1.02 RELATED WORK

Section 21 10 00 Water Based Fire Suppression Systems

1.03 REFERENCE

- A. Applicable provisions of Division 01 shall govern work under this section.

1.04 REFERENCE STANDARDS

NFPA 13	Installation of Sprinkler Systems (Latest prevailing edition)
NFPA 14	Installation of Standpipe and Hose Systems (Latest prevailing edition)
NFPA 20	Installation of centrifugal fire pumps (Latest prevailing edition)
UL	Underwriter's Laboratories Listed
FM	Factory Mutual Approved

1.05 DESCRIPTION

- A. Provide all supporting devices as required for the installation of mechanical equipment and materials. All supports and installation procedures are to conform to the latest requirements of the ANSI Code for building piping.
- B. Do not hang any mechanical item directly from a metal deck or run piping so its rests on the bottom chord of any truss or joist.
- C. Fasteners depending on soft lead for holding power or requiring explosive powder actuation will not be accepted.

- D. Support apparatus and material under all conditions of operation, variations in installed and operating weight of equipment and piping, to prevent excess stress, and allow for proper expansion and contraction.

1.06 SHOP DRAWINGS

- A. Schedule of all hanger and support devices indicating attachment methods and type of device for each pipe size and type of service. Provide details on the working drawings submitted for approval with all pertinent information listed.

1.07 DESIGN CRITERIA

- A. Materials and application of pipe hangers and supports shall be in accordance with MSS Standard Practice SP-58 and SP-69 unless noted otherwise. Materials and application of pipe hangers and supports shall be in accordance with NFPA rulings and be UL/FM listed and approved.
- B. Piping connected to pumps, compressors, or other rotating or reciprocating equipment is to have vibration isolation supports for a distance of one hundred pipe diameters or three supports away from the equipment, whichever is greater. Standard pipe hangers/supports as specified in this section are required beyond the 100 pipe diameter/3 support distance.
- C. Conform to Specification Section 05 05 30, "Post Installed Anchors In Concrete and Masonry (CMU)" for connections of hangers and supports to the structure.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. B-Line, Anvil, Erico, G-STRUT, Tolco, Afcon, Roof Products & Systems, or approved equal.

2.02 STRUCTURAL SUPPORTS

- A. Provide all supporting steel required for the installation of mechanical equipment and materials, including angles, channels, beams, etc. to suspended or floor supported tanks and equipment. All of this steel may not be specifically indicated on the drawings.

2.03 PIPE HANGERS AND SUPPORTS

- A. HANGERS FOR PIPE SIZES 1/2" THROUGH 4":
Carbon steel, adjustable swivel ring with 3/8" min. UL/FM approved hanger rods. B-Line B3170NF, Anvil 69 or 70.
Carbon steel, adjustable clevis, standard, with UL/FM approved size hanger rods. B-Line B3100, Anvil 260.
- B. HANGERS FOR PIPE SIZES 4" THROUGH 8":
Carbon steel adjustable swivel ring with 1/2" min. UL/FM approved hanger rods. B-Line B3170NF, Anvil 69 or 70.
Carbon steel, adjustable clevis, standard with UL/FM approved size hanger rods. B-Line B3100, Anvil 260.

2.04 PIPE HANGER RODS

- A. STEEL HANGER RODS:
Threaded both ends, threaded one end, or continuous threaded, complete with adjusting and lock nuts.
- B. Size rods for individual hangers and trapeze support as indicated in the following schedule.

Pipe Size	Diameter Of Rod
Up to and including 4" 5", 6", and 8"	3/8" or 9.5 mm min. 1/2" or 12.7 mm min.

2.05 BEAM CLAMPS

- A. MSS SP-69 Types 19 & 23 malleable black iron clamp for attachment to beam flange to 0.62 inches thick with a retaining ring and threaded rod of 3/8", 1/2", and 5/8" diameter. Furnish with a hardened steel cup point set screw. B-Line B3036L/B3034, Anvil 86/92.
- B. MSS SP-69 Type 28 or Type 29 forged steel jaw type clamp with a tie rod to lock clamp in place, suitable for rod sizes to 1-1/2" diameter. B-Line B3054, Anvil 228.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Size, apply and install supports and anchors in compliance with manufacturer's recommendations.
- B. Install supports to provide for free expansion of the piping system. Support all piping from the structure using concrete inserts, beam clamps, ceiling plates, wall brackets, or floor stands. Fasten ceiling plates and wall brackets securely to the structure and test to demonstrate the adequacy of the fastening.
- C. Coordinate hanger and support installation to properly group piping of all trades.
- D. Where piping can be conveniently grouped to allow the use of trapeze type supports, use standard structural shapes or continuous insert channels for the supporting steel. Where continuous insert channels are used, pipe supporting devices made specifically for use with the channels may be substituted for the specified supporting devices provided that similar types are used and all data is submitted for prior approval.
- E. Perform welding in accordance with standards of the American Welding Society.

3.02 HANGER AND SUPPORT SPACING

- A. Use hangers with minimum vertical adjustment.
- B. Where several pipes can be installed in parallel and at the same elevation, provide multiple or trapeze hangers.
- C. Support riser piping independently of connected horizontal piping.
- D. Adjust hangers to obtain the slope specified in the piping section of these specification.
- E. Space hangers for pipe as follows:

Pipe Material	Pipe Size	Maximum Horizontal Spacing	Maximum Vertical Spacing
Copper	3/4" through 1"	8'-0"	10'-0"
Copper	1-1/4" through 1-1/2"	10'-0"	10'-0"
Copper	2" through 6"	12'-0"	10'-0"
Copper	8"	15'-0"	10'-0"
Steel	1" through 1-1/4"	12'-0"	15'-0"
Steel	1-1/2" through 8"	12'-0"	15'-0"

- F. Hangers, supports and hanger spacing for CPVC plastic piping systems shall conform to the requirements of NFPA 13 and the manufacturer's requirements. Contractor shall provide details on the installation drawings for all proposed means of support.

1. Restraint hangers shall be installed at all sprinkler head locations within 1'-0" for a single restraint and within 5'-0" for two points of restraint. The requirements for hanger restraint for systems in excess of 100 PSI pressure shall be followed.
- G. Hangers for CPVC systems shall not compress, distort, cut or abrade the piping, and shall allow free movement of the pipe to permit thermal expansion and contraction.
- H. Unsupported length from the last hanger and an end sprinkler for steel piping system shall be as follows:

1" piping	Not greater than 36"
1-1/4" piping	Not greater than 48"
1-1/2" piping or larger	Not greater than 60"

END OF SECTION

SECTION 21 10 00

WATER BASED FIRE SUPPRESSION SYSTEMS

PART 1 – GENERAL

1.01 SCOPE

- A. This section contains specifications for fire protection pipe and pipe fittings for this project. Included are the following topics:

PART 1 - GENERAL

- Scope
- Related Work
- Reference
- Reference Standards
- Shop Drawings
- Quality Assurance
- Delivery, Storage, and Handling
- Design Criteria
- Welder Qualifications

PART 2 - PRODUCTS

- Fire Protection Piping
- Unions and Flanges
- Mechanical Grooved Pipe Connections
- Flow Switches
- Local Alarm
- Valves
- Fire Department Connection

PART 3 - EXECUTION

- General
- Preparation
- Erection
- Copper Pipe Joints
- Welded Pipe Joints
- Threaded Pipe Joints
- Mechanical Grooved Pipe Connections
- Unions and Flanges
- Piping System Leak Tests
- Installation

1.02 RELATED WORK

Section 21 05 00	Common Work Results for Fire Suppression
Section 21 05 29	Hangers and Supports for Fire Suppression Piping and Equipment

1.03 REFERENCE STANDARDS

ANSI B16.1	Cast Iron Pipe Flanges and Flanged Fittings
ANSI B16.3	Malleable Iron Threaded Fittings
ANSI B16.4	Cast Iron Threaded Fittings
ANSI B16.5	Pipe Flanges and Flanged Fittings
ANSI B16.9	Factory Made Wrought Steel Buttweld Fittings
ANSI B16.11	Forged Steel Fittings, Socket Welded and Threaded
ANSI B16.18	Cast Bronze Solder Joint Pressure Fittings
ANSI B16.22	Wrought Copper and Wrought Copper Alloy Solder Joint Pressure Fittings
ANSI B16.29	Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings - DWV
ASTM A53	Pipe, Steel, Black and Hot-Dipped, Zinc Coated Welded and Seamless
ASTM A105	Forgings, Carbon Steel, for Piping Components

ASTM A126	Gray Cast Iron Castings for Valves, Flanges, and Pipe Fittings
ASTM A135	Electric Resistance Welded Steel Pipe
ASTM A181	Forgings, Carbon Steel for General Purpose Piping
ASTM A234	Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures
ASTM A536	Ductile Iron Castings
ASTM A795	Black and Hot Dipped Zinc Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use
ASTM B88	Seamless Copper Water Tube
AWWA C606	Grooved and Shouldered Joints
AWS A5.8	Brazing Filler Metal
AWS D10.9	Qualification of Welding Procedures and Welders for Piping and Tubing, Level AR3
NFPA 13	Installation of Sprinkler Systems. (Latest prevailing edition)
NFPA 14	Installation of Standpipe and Hose Systems. (Latest prevailing edition)
UL	Underwriters Laboratories
FM	Factory Mutual Approval

1.04 SHOP DRAWINGS

- A. Schedule from the Contractor indicating the ANSI/ASTM specification number of the pipe being proposed along with its type and grade if known at the time of submittal, and sufficient information to indicate the type and rating of fittings for each service.
- B. Grooved joint couplings and fittings shall be shown on drawings and product submittals, and be specifically identified with the applicable Victaulic style or series number.
- C. Sprinklers shall be referred to on drawings, submittals and other documentation, by the sprinkler identification or model number as specifically published in the appropriate agency listing or approval. Trade names or other abbreviated designations shall not be allowed.

1.05 QUALITY ASSURANCE

- A. Order all copper and steel pipe with each length marked with the name or trademark of the manufacturer and type of pipe; with each shipping unit marked with the purchase order number, metal or alloy designation, temper, size, and name of supplier.
- B. Any installed material not meeting the specification requirements must be replaced with material that meets these specifications without additional cost to the Owner.
- C. To assure uniformity and compatibility of piping components in grooved end piping systems, all grooved product utilized shall be supplied by Victaulic. Grooving tools shall be supplied by the same manufacturer as the grooved components.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Promptly inspect shipments to insure that the material is undamaged and complies with specifications.
- B. Cover pipe to prevent corrosion or deterioration while allowing sufficient ventilation to avoid condensation. Do not store materials directly on grade. Protect pipe, tube, and fitting ends so they are not damaged. Where end caps are provided or specified, take precautions so the caps remain in place. Protect fittings, flanges, and unions by storage inside or by durable, waterproof, above ground packaging.
- C. Offsite storage agreements will not relieve the Contractor from using proper storage techniques.
- D. Storage and protection methods must allow inspection to verify products.

1.07 DESIGN CRITERIA

- A. Use only new material, free of defects, rust and scale, and meeting the latest revision of ASTM specifications as listed in this specification.
- B. Construct all piping systems for the highest pressures and temperatures in the respective system but not less than 175 psig.
- C. Where weld fittings or mechanical grooved fittings are used, use only long radius elbows having a centerline radius of 1.5 pipe diameters.
- D. Where ASTM A53 or A795 type F pipe is specified, grade A type E or S, or grade B type E or S may be substituted at Contractor's option. Where ASTM A135 grade A pipe is specified, grade B pipe may be substituted at Contractor's option. Where the grade or type is not specified, Contractor may choose from those commercially available.
- E. Where ASTM B88, type L H (drawn) temper copper tubing is specified, ASTM B88, type K H (drawn) temper copper tubing may be substituted at Contractor's option.

PART 2 – PRODUCTS

2.01 FIRE PROTECTION PIPING

- A. STEEL PIPE:
 - 1. Black steel pipe welded and seamless, Type F, Grade A, ASTM A53; black welded and seamless steel pipe for fire protection use, Type F, ASTM A795; electric resistance welded steel pipe, Grade A, ASTM A135.
 - 2. Threaded light wall pipe and plastic pipe are not acceptable.
- B. Pipe Wall Thickness: Threaded pipe shall have a minimum wall thickness of Schedule 40. All other pipe shall have a minimum wall thickness of Schedule 10. Piping 2" and under shall be minimum Schedule 40 unless stated otherwise herein.
- C. Fittings: Cast iron threaded fittings, Class 125 or 250, ASTM A126/ANSI B16.4. Malleable iron threaded fittings, Class 150 or 300, ASTM A197/ANSI B16.3. Standard weight seamless carbon steel weld fittings, ASTM A234 grade, ANSI B16.9. Mechanical grooved fittings with EPDM Type A gaskets, ASTM A536 ductile iron, or ASTM A53 fabricated steel. Externally zinc-electroplated carbon steel Pressfit® fittings with EPDM o-rings.
- D. Welding Materials: Comply with Section II, Part C, ASME Boiler and Pressure Vessel Code for welding materials.

2.02 UNIONS AND FLANGES

- A. 2" AND SMALLER STEEL:
ASTM A197/ANSI B16.3 malleable iron unions with brass seats. Use black malleable iron on black steel piping and galvanized malleable iron on galvanized steel piping.
- B. 2" AND SMALLER COPPER:
ANSI B16.18 cast bronze union coupling or ANSI B15.24 Class 150 cast bronze flanges.
- C. 2-1/2" AND LARGER:
ASTM A181 or A105, Class 150, grade 1 hot forged steel flanges of threaded, welding neck, or slip-on pattern on black steel and threaded only on galvanized steel. ANSI B16.1 or ANSI B16.5, Class 150 cast iron threaded flanges. Use raised face flanges ANSI B16.5 for mating with other raised face flanges or equipment with flat ring or full face gaskets. Use ANSI B16.1 flat face flanges with full face gaskets for mating with other flat face flanges on equipment.
- D. 2-1/2" AND LARGER COPPER:
ANSI B16.24, Class 150 cast bronze flanges with raised face.

2.03 MECHANICAL GROOVED PIPE CONNECTIONS

- A. Mechanical grooved pipe couplings and fittings, ASTM F1476, as manufactured by Victaulic, Anvil, or Tyco may be used with steel or copper pipe. Mechanical grooved components and assemblies to be rated for minimum 175 psi working pressure unless noted otherwise. Victaulic Style 009V.
- B. All mechanical grooved pipe material including gaskets, couplings, fittings and flange adapters to be from the same manufacturer. Grooving tools shall be of the same manufacturer as the grooved components.
- C. Steel pipe Fittings to be ductile iron A536, short radius, full flow FireLock® fittings with painted finish; where ductile iron fitting pattern not available, fabricated steel fittings shall be used. Fittings used on galvanized steel pipe to have galvanized finish, ASTM A153. Fittings shall be supplied with factory grooved ends designed to accept Victaulic couplings.
 - 1. Installation-Ready™ fittings for Schedule **[40] [10]** grooved end steel piping in sizes NPS 1-1/4 through 2-1/2 inch. Fittings shall consist of a ductile iron housing conforming to ASTM A536, Grade 65-45-12, with Installation-Ready™ ends, prelubricated Grade “E” EPDM Type ‘A’ gasket; and ASTM A449 electroplated steel bolts and nuts. UL listed for a working pressure of 300 psi (2065 kPa) and FM approved for working pressure to 365 psi (2517kPa).
 - 2. In lieu of threaded steel piping systems, the Victaulic FireLock IGS System with “Installation-Ready™ fittings and couplings may be used for 1 inch Schedule 10 and Schedule 40 carbon steel pipe in fire protection applications. System rated for a working pressure to 365 psi (2517 kPa).
 - a. Groove: IGS “Innovative Groove System” groove with shortened “A” dimension and tapered groove backside for ease of installation.
- D. Steel pipe couplings shall consist of two ductile iron housings conforming to ASTM A536, pressure-responsive, synthetic rubber gasket, and plated steel bolts and nuts.
 - 1. Rigid Type: Housings shall be cast with offsetting, angle-pattern bolt pads to provide system rigidity and support and hanging in accordance with NFPA 13. Tongue and recess rigid type couplings shall only be permitted if a torque wrench is used for installation. Required torque shall be in accordance with manufacturer’s recommendations.
 - a) 1-1/4 inch through 12 inch: “Installation ready” rigid joint designed for direct “stab” installation onto grooved end pipe without disassembling the coupling. Victaulic FireLock® EZ Style 009N, 108, 109, 005h and 107N.
 - 2. Flexible Type: Use in seismic areas where required by NFPA 13. Victaulic Installation-Ready Style 004, 177N or Style 75 and 77.
- E. Gaskets to be EPDM, Type A, ASTM D2000. Gaskets for dry systems to be flushseal® or Style 009 EZ center-leg design with pipe stop to ensure proper groove engagement, alignment, and pipe insertion depth. Heat treated carbon steel oval neck track bolts and nuts, ASTM A183 or ASTM A449, with zinc electroplated finish.
- F. Flange adapters to be ductile iron, ASTM A536; flat faced with Class 125, 150 or 300 bolt-hole patterns, Victaulic Style 741, 744, or 743; except at lug type butterfly valves where standard threaded flanges shall be used.
- G. Copper tube fittings shall be wrought copper conforming to ANSI B16.22 or cast bronze to ANSI B16.18 with grooved ends designed to accept Victaulic couplings. Flaring of tube and fitting ends to IPS dimensions is not permitted.
- H. Copper tube couplings shall consist of two ASTM A536 ductile iron housings cast with offsetting, angle-pattern bolt pads coated with copper-colored enamel, a pressure-responsive synthetic rubber center-leg gasket with pipe stop to ensure proper groove engagement, alignment, and pipe insertion depth,, and plated steel bolts and nuts conforming to ASTM A183 or A449. Installation-Ready, for direct stab installation without field disassembly. Victaulic Style 607.
- I. Copper tube flange adapters shall be ASTM A536 ductile iron casting coated with copper-colored enamel, flat faced for direct connection to flanges with ANSI Class 125 and 150 bolt-hole patterns. Victaulic Style 641.

- J. Credit for the inherent flexibility of mechanical grooved pipe connections when used for expansion joints or flexible connectors may be allowed upon specific application by the Contractor. Three flexible couplings at first three connection points both upstream and downstream of pumps may be used in lieu of flexible connectors. Request for expansion joints shall be made in writing and shall include service, location, line size, proposed application and supporting calculations for the intended service.

2.04 FLOW SWITCHES

- A. Vane type water flow switch with metal enclosure, adjustable pneumatic retard and electrical characteristics compatible with alarm system. System Sensor WFD Series.

2.05 VALVES

- A. Manufacturer: Kennedy, Milwaukee, Nibco, Stockham, Victaulic (all grooved end valves), Viking, and Watts.
- B. BALL VALVES:
2" and smaller: Bronze, 2-piece, threaded, grooved, or sweat ends, standard port, blowout proof stem, chrome plated brass ball, glass reinforced or TFE seats, UL approved @ 250 psi or UL and FM approved @ 350 psi. Watts No. B-6000 UL or Victaulic FireLock® Series 728.
- C. SUPERVISORY/TAMPER SWITCHES:
For O S & Y valve or butterfly valve installations, UL/FM listed/approved, to monitor position of valve, tamper resistant cover screws, single or double SPDT switch contacts, corrosion resistant, for indoor or outdoor use, NEMA 4 & 6P enclosures.
- D. SPRING LOADED CHECK VALVES:
1. 2" and smaller: Bronze body, threaded ends, bronze trim, stainless steel spring, stainless steel center guide pin, 175 psig, Teflon seat unless only bronze available.
2. 2-1/2" and larger: Cast or ductile iron body, wafer or globe type, bronze trim, bronze or EPDM seat, stainless steel spring, stainless steel stem if stem is required, 175 psig.
3. 2-1/2" and larger: Ductile iron body, non-slam, silent type check valve with aluminum bronze or elastomer coated ductile iron disc, stainless steel spring and stem, PPS coated or welded-in nickel seat, grooved ends, 250 psig. Victaulic FireLock® Series 717 or 717R with riser check kit.
- E. DRAIN VALVES:
3/4" min. two or three piece bronze body ball valve; threaded ends, chrome plated bronze ball; glass filled Teflon seat; Teflon packing and threaded packing nut; blowout-proof stem; 400 psig WOG, with hose thread outlet and cap.
- F. DOUBLE CHECK VALVES:
1. Manufacturer: Beeco, Cla-Val, Conbraco, Febco, Watts, and Wilkinson.
2. ASSE 1015 double check backflow preventer with 2 independent spring loaded check valves, 2 isolation ball or gate valves with normally open tamper switch with double wire leads, 4 valved test ports. Constructed of bronze or epoxy coated cast iron or stainless steel body with bronze and plastic internal parts, stainless steel springs, silicone rubber valve discs, bronze seats, rated for 175 psig.
3. Provide detector type where required by Authority having jurisdiction.

2.06 FIRE DEPARTMENT CONNECTION

- A. Manufacturer: Badger-Powhatan, Croker, Elkhart Brass, J.W. Moon, Potter-Roemer, and W.D. ALLEN
- B. EXPOSED:
5" Storz or as directed by AHJ

PART 3 – EXECUTION

3.01 GENERAL

- A. Install pipe and fittings in accordance with reference standards, manufacturer's recommendations and recognized industry practices.
- B. All piping in areas with ceilings shall be concealed unless indicated otherwise.

3.02 PREPARATION

- A. Cut pipe ends square. Ream ends of piping to remove burrs. Clean scale and dirt from interior and exterior of each section of pipe and fitting prior to assembly.

3.03 ERECTION

- A. Install all piping parallel to building walls and ceilings and at heights which do not obstruct any portion of a window, doorway, stairway, or passageway. Where interferences develop in the field, offset or reroute piping as required to clear such interferences. Coordinate locations of fire protection piping with piping, ductwork, conduit and equipment of other trades to allow sufficient clearances. In all cases, consult drawings for exact location of pipe spaces, ceiling heights, ceiling grid layout, light fixtures and grilles before installing piping.
- B. Where copper or steel piping is embedded in masonry or concrete, provide protective sleeve covering of elastomeric pipe insulation.
- C. Provide 3/32" min. thickness steel nailing plates behind or on either side of piping where the possibility of penetration from nails or drywall screws exists.
- D. Maintain piping in clean condition internally during construction.
- E. Provide clearance for access to valves and piping specialties.
- F. Provide anchors, expansion joints, swing joints and/or expansion loops so that piping may expand and contract without damage to itself, equipment, or building.
- G. Install piping so that system can be drained. Where possible, slope to main drain valve. Slope dry pipe and preaction systems subject to freezing at minimum 1/4"/10' on mains and 1/2"/10' on branches. Where piping not susceptible to freezing cannot be fully drained, install nipple and cap for drainage of less than 5 gallons or ball valve with hose thread outlet and cap for drainage over 5 gallons. Pipe main drain valve to grade. Install auxiliary drains as required.
- H. Mitered ells, notched tees, and orange peel reducers are not acceptable. On threaded piping, bushings are not acceptable.
- I. Do not route piping within exterior walls.
- J. Do not route piping through transformer vaults or above transformers, panel boards, or switchboards, including the required service space for this equipment, unless the piping is serving this equipment.
- K. Install all valves and piping specialties, including items furnished by others, as specified and/or detailed. Provide access to valves and specialties for maintenance. Make connections to all equipment, fixtures and systems installed by others where same requires the piping services indicated in this section.

3.04 COPPER PIPE JOINTS

- A. Remove all slivers and burrs remaining from the cutting operation by reaming and filing both pipe surfaces. Clean fitting and tube with metal brush, emery cloth or sandpaper. Remove residue from the cleaning operation and assemble joint to socket stop. Apply flame to fitting until brazing alloy melts when placed at joint. Wipe excess alloy from joint.

3.05 WELDED PIPE JOINTS

- A. Make all welded joints by fusion welding in accordance with ASME Codes, ANSI B31, and State Codes where applicable. "Weldolets" and "Threadolets" may be used for branch takeoffs up to one-half (1/2) the diameter of the main.

3.06 THREADED PIPE JOINTS

- A. Use a thread lubricant or Teflon tape when making joints; no hard setting pipe thread cement or caulking will be allowed.

3.07 MECHANICAL GROOVED PIPE CONNECTIONS

- A. Use pipe factory grooved in accordance with the coupling manufacturer's (Victaulic) specifications or field grooved pipe in accordance with the same specifications using specially designed tools available for the application. Lubricate pipe and coupling gasket, align pipe, and secure joint in accordance with the coupling manufacturer's (Victaulic) specifications.
- B. The gasket style and elastomeric material (grade) shall be verified as suitable for the intended service as specified. Gaskets shall be supplied by Victaulic. Grooved end shall be clean and free from indentations, projections, and roll marks in the area from pipe end to groove for proper gasket sealing. A Victaulic factory trained field representative (direct employee) shall provide on-site training to contractor's field personnel in the proper use of grooving tools and installation of grooved piping products. Factory trained representative shall periodically review the product installation. Contractor shall remove and replace any improperly installed products.

3.08 UNIONS AND FLANGES

- A. Install a union, flange or grooved coupling combination at each connection to each piece of equipment and at other items which may require removal for maintenance, repair, or replacement. Where a valve is located at a piece of equipment, locate the flange or union or grooved coupling combination connections on the equipment side of the valve. Concealed unions, flanges or couplings are not acceptable.

3.09 PIPING SYSTEM LEAK TESTS

- A. Conduct pressure test with test medium of water. If leaks are found, repair the area with new materials and repeat the test; caulking will not be acceptable.
- B. Test piping in sections or entire system as required by sequence of construction. Do not conceal pipe until it has been successfully tested. If required for the additional pressure load under test, provide temporary restraints at fittings or expansion joints. Entire test must be witnessed by the Division's representative.
- C. Use clean water and remove air from the piping being tested where possible. Measure and record test pressure at the high point in the system.
- D. Test system at 200 psi for 2 hours showing no leakage. Where system design is in excess of 150 psig, test at a pressure 50 psig above system design pressure.
- E. All pressure tests are to be documented on NFPA Contractor's Material and Test Certificate forms.

3.10 INSTALLATION

- A. Install fire protection system components in accordance with NFPA rulings, listings and manufacturer's recommendations. Locate where accessible for servicing and replacement.
- B. Sprinkler Heads: Locate sprinkler heads maintaining minimum clearances from obstructions, ceilings and walls. Install sprinkler heads level in locations not subject to spray pattern interference. Provide fire sprinkler head installations below ductwork, soffits, etc. Install guards on sprinkler heads within mechanical rooms, boiler rooms, and gymnasiums.
- C. The sprinkler bulb protector must remain in place until the sprinkler is completely installed and before the system is placed in service. Remove bulb protectors carefully by hand after installation. Do not use any tools to remove bulb protectors. Do not install sprinklers that have been dropped, damaged, or show a visible loss of fluid. Never install sprinklers with cracked bulbs.
- D. Switches: Locate flow and pressure switches where indicated and where required to obtain specified zoning to isolate floors and major areas of floors. Provide valved test connection for flow switch adjacent to flow switch. Pipe to floor drain. Test flow switch to verify proper operation.
- E. Gauges: Provide a valved pressure gauge in main fire protection riser, at the top of each piping riser, at inlet and outlet of pump and elsewhere as indicated.
- F. Valves: Properly align piping before installation of valves. Do not support weight of piping system on valve ends. Mount valves in locations which allow access for operation, servicing and replacement. Install all valves with the stem in the upright or horizontal position. Valves installed with the stems down will not be accepted. Provide a riser shutoff valve and a capped hose thread drain valve at the bottom of each riser. Provide capped hose thread drain valves to allow draining of each portion of piping.
- G. Fire Department Connection: Mount on wall where indicated. Support from structure independent of piping. Locate between 2' to 3' above grade. Fill wall penetration with insulation and caulk exterior and interior face of wall opening weather tight.

END OF SECTION

SECTION 22 05 00

COMMON WORK RESULTS FOR PLUMBING

PART 1 - GENERAL

1.01 SCOPE

- A. This section includes information common to two or more technical plumbing specification sections or items that are of a general nature, not conveniently fitting into other technical sections. Included are the following topics:

PART 1 - GENERAL

- Scope
- Related Work
- Standards
- Lead Free Requirements
- Quality Assurance
- Continuity of Existing Services
- Protection of Finished Surfaces
- Sleeves and Openings
- Sealing and Fire Stopping
- Codes
- Certificates, Inspections, and Permits
- Existing Buildings
- Submittals
- Record Drawings
- Warranty

PART 2 - PRODUCTS

- Access Panels and Doors and Valve Boxes
- Identification
- Bedding and Backfill
- Sealing and Fire Stopping

PART 3 - EXECUTION

- Demolition
- Surface Restoration
- Concrete Work
- Cutting and Patching
- Building Access
- Coordination
- Identification
- Sleeves and Openings
- Sealing and Fire Stopping

1.02 RELATED WORK

- A. This section applies to all Division 22 Sections of Plumbing.

1.03 STANDARDS

- A. Abbreviations of standards organizations referenced in this and other sections are as follows:

ABMA	American Boiler Manufacturers Association
ACPA	American Concrete Pipe Association
AGA	American Gas Association
AMCA	Air Movement and Control Association
ANSI	American National Standards Institute
ARI	Air Conditioning and Refrigeration Institute
ASME	American Society of Mechanical Engineers

ASPE	American society of Plumbing Engineers
ASSE	American Society of Sanitary Engineering
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
AWS	American Welding Society
CISPI	Cast Iron Soil Pipe Institute
CGA	Compressed Gas Association
CS	Commercial Standards, Products Standards Sections, Office of Engineering Standards Service, NBS
EPA	Environmental Protection Agency
FS	Federal Specifications, Superintendent of Documents, U.S. Government Printing Office
GAMA	Gas Appliance Manufacturers Association
IAPMO	International Association of Plumbing & Mechanical Officials
IEEE	Institute of Electrical and Electronics Engineers
ISA	Instrument Society of America
MCA	Mechanical Contractors Association
MICA	Midwest Insulation Contractors Association
MSS	Manufacturer's Standardization Society of the Valve & Fitting Industry, Inc.
NBS	National Bureau of Standards
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NSF	National Sanitation Foundation
PDI	Plumbing and Drainage Institute
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association. Inc.
STI	Steel Tank Institute
UL	Underwriters Laboratories Inc.

Standards referenced in this section:

ACI 614	Recommended Practice for Measuring, Mixing and Placing of Concrete
ASTM D1557	Standard Test Method for Moisture-Density Relations of Soils
ASTM E814	Standard Test Method for Fire Tests of Through-Penetration Fire Stops
ASTM E84	Standard Test Method for Surface Burning Characteristics of Building Materials
DOT	Standard Specifications for Road and Bridge Construction, State of Wisconsin, Department of Transportation
UL1479	Fire Tests of Through-Penetration Firestops
UL723	Surface Burning Characteristics of Building Materials

1.04 LEAD FREE REQUIREMENTS

- A. All materials that contact potable water shall be lead free. Lead free refers to the wetted surface of pipe, fittings and fixtures in potable water systems that have a weighted average lead content $\leq 0.25\%$ per the Federal Safe Drinking Water Act as amended January 4th 2011 Section 1417.
- B. This requirement applies to all of the subsequent Plumbing Specification Sections and Plumbing Drawings and supersedes any part or model number that may conflict with this requirement.

1.05 QUALITY ASSURANCE

- A. All products and materials used are to be new, undamaged, clean and in good condition. Existing products and materials are not to be reused unless specifically indicated.
- B. Where equipment or accessories are used which differ in arrangement, configuration, dimensions, ratings, or engineering parameters from those indicated on the contract documents, the Contractor is responsible for all costs involved in integrating the equipment or accessories into the system and for obtaining the intended performance from the system into which these items are placed.

1.06 CONTINUITY OF EXISTING SERVICES

- A. Do not interrupt or change existing services without prior written approval from the Owner's Project Representative. When interruption is required, coordinate scheduling of down-time with the Owner to minimize disruption to his activities. Unless specifically stated, all work involved in interrupting or changing existing services is to be done during normal working hours.

1.07 SEALING AND FIRE STOPPING

- A. Sealing and firestopping of sleeves/openings between piping, etc. and the sleeve or structural opening shall be the responsibility of the contractor whose work penetrates the opening. The contractor responsible shall hire individuals skilled in such work to do the sealing and fireproofing.

1.08 CODES

- A. Comply with requirements of Wisconsin Department of Safety and Professional Services (SPS).
- B. Comply with requirements of local or other governmental agencies having jurisdiction.

1.09 CERTIFICATES, INSPECTIONS, AND PERMITS

- A. Obtain and pay for all required State installation inspections, permits or recording fees for documents of other governmental agencies having jurisdiction except those provided by the Architect/Engineer in accordance with Wisconsin Department of Safety and Professional Services Section ILHR 350.12. Deliver originals of these certificates to the Owner's Project Representative. Include copies of the certificates in the Operating and Maintenance Instructions.

1.10 EXISTING BUILDINGS

- A. VISIT TO SITE
 1. Before submitting the proposal for this Division, the Contractor shall visit the site and shall satisfy himself as to the nature and location of his work and the general and local conditions. He shall have full knowledge of conditions relative to transportation, handling and storage of materials, availability of electrical power of all other facilities in the area which will have a bearing on the performance of his work and the contract for which he submits his proposal. Pay special attention to existing items to be reused and relocated.
 2. Existing Conditions
 - a. This Contractor shall field verify existing conditions related to the requirements of this Division prior to submission of bid. This includes field verification of existing actual installed systems, equipment, ductwork, piping, etc. to ascertain locations, sizes and quantities. These documents depict existing conditions based on the best information available but may not accurately represent the actual installed condition. In the event the plans and specification are not representative of the actual installed conditions, this Contractor shall notify Engineer immediately at which time an addendum will be issued for clarification. If an addendum is not issued due to the bid submission date, this Contractor shall include in bid all necessary modifications necessary to meet the intent of the plans and specifications.
 - b. If during the course of construction it is determined that the existing installed condition is not representative of the plans and specifications, this Contractor shall provide a written description identifying proposed modification and/or revisions to the system and/or design to meet the intent of the plans and specifications. No additional compensation shall be allowed.
 3. Failure by the Contractor to acquaint himself with all the available information shall not relieve him from any responsibility for performing his work properly.
 4. No additional compensation shall be allowed because of conditions that occur due to this Contractor's failure to become thoroughly familiar with the job site and other work, as previously described, for this project.
 5. Submission of a bid will be considered an acknowledgment on the part of the bidder of his site verification for this project.

6. This Contractor shall arrange and provide all necessary equipment required to rig, lift or move equipment into final location. All work and equipment shall strictly comply with applicable OSHA regulations.

B. DIMENSIONS AND LOCATIONS

1. Verify measurements at the building, check levels and grades and be responsible for grading, fitting, joining or adjusting of work to adjoining work by other Contractors.
2. Before the work is installed, the Architects reserve the right to slightly change location of piping and equipment, etc., without additional pay to the Contractor.
3. Plumbing drawings are based on the best information available. For areas being remodeled, work shown reflects information shown on as-built plumbing plans (where available) and field observation; it is not guaranteed 100% accurate. This Contractor shall field verify existing conditions and make necessary adjustments without extra costs to the project to suit actual needs. This shall include, but not be limited to, televising existing underground storm and/or sanitary building drain piping to determine location, elevation, and condition and x-raying floor slabs to determine the location of structural steel reinforcing and electrical conduit.

1.11 SUBMITTALS

- A. Shop drawing submittals are to be bound, labeled, contain the project manual cover page and a material index list page showing item designation, manufacturer and additional items supplied with the installation. Submit for all equipment and systems as indicated in the respective specification sections, marking each submittal with that specification section number. Mark general catalog sheets and drawings to indicate specific items being submitted and proper identification of equipment by name and/or number, as indicated in the contract documents. Include wiring diagrams of electrically powered equipment. Electronic submittals may be acceptable.

1.12 OPERATING AND MAINTENANCE DATA

- A. Assemble material in three-ring or post binders, using an index at the front of each volume and tabs for each system or type of equipment. In addition to the data indicated in the General Requirements, include the following information:
- Copies of all approved shop drawings.
 - Manufacturer's wiring diagrams for electrically powered equipment
 - Records of tests performed to certify compliance with system requirements
 - Certificates of inspection by regulatory agencies
 - Parts lists for fixtures, equipment, valves and specialties.
 - Valve schedules
 - Warranties
 - Additional information as indicated in the technical specification sections

1.13 RECORD DRAWINGS

- A. Refer to Division 01.
- B. Contractor shall provide Engineer with dimensional and graphic representation of all deviations from plans prior to concealment of piping. Failure to notify Engineer of deviations may result in removal and reinstallation of piping at Contractor's cost for compliance with plans and specifications.

PART 2 – PRODUCTS

2.01 IDENTIFICATION

- A. **STENCILS:**
Not less than 1 inch high letters/numbers for marking pipe and equipment.
- B. **ADHESIVE LABELS:**

Pressure-sensitive, adhesive backed, vinyl pipe markers with applicable labeling, 3/4" min. size for lettering and surrounding tape on both ends. With flow arrows on piping. Conforming to ANSI, ANSI and NFPA standards. Seton Opti-Code, or equal. Clean piping before application.

- C. **ENGRAVED NAMEPLATES:**
White letters on a black background, 1/16 inch thick plastic laminate, beveled edges, screw mounting, Setonply Style 2060 by Seton Name Plate Company or Emedolite Style EIP by EMED Co., or equal by W. H. Brady.
- D. **SNAP-AROUND PIPE MARKERS:**
One-piece, preformed, vinyl construction, snap-around or strap-around pipe markers with applicable labeling and flow direction arrows, 3/4" min. size for lettering. Provide nylon ties on each end of pipe markers. Equal to Seton Setmark.
- E. **VALVE TAGS:**
Round brass tags with 1/2 inch numbers, 1/4 inch system identification abbreviation, 1-1/4 inch minimum diameter, with brass jack chains or brass "S" hooks around the valve stem, available from EMED Co., Seton Name Plate Company, or W. H. Brady.
- F. **UNDERGROUND WARNING TAPE:**
Detectable underground warning tape, 5.0 mil overall thickness, 6" width, .0035" thick aluminum foil core with polyethylene jacket bonded to both sides. Color code tape and print caution along with name of buried service in bold letters on face of tape. Thor Enterprises Magnatek or equal by Carlton, MSI Marking Services, Seton.

2.02 SEALING AND FIRE STOPPING

- A. **NON-RATED PENETRATIONS:**
 - 1. At pipe penetrations of non-rated interior partitions, floors and exterior walls, use urethane caulk in annular space between pipe insulation and sleeve. For non-rated drywall, plaster or wood partitions where sleeve is not required use urethane caulk in annular space between pipe insulation and wall material

PART 3 - EXECUTION

3.01 DEMOLITION

- A. Perform all demolition as indicated on the drawings and as required to accomplish new work. Where demolition work is to be performed adjacent to existing work that remains in an occupied area, construct temporary dust partition to minimize the amount of contamination of the occupied space. Where pipe is removed and not reconnected with new work, cap ends of existing services as if they were new work. Coordinate work with the Owner to minimize disruption to the existing building occupants.
- B. All pipe, fixtures, equipment, wiring and associated conduit, insulation and similar items demolished, abandoned, or deactivated are to be removed from the site by the Contractor except as specifically noted otherwise. All designated equipment is to be turned over to the user agency for their use at a place and time so designated. Maintain the condition of material and/or equipment that is indicated to be reused equal to that existing before work began.

3.02 SURFACE RESTORATION

- A. Completely restore the surface of all disturbed areas to a like condition of the surface prior to the work. Level off all waste disposal areas and clean up all areas used for the storage of materials or the temporary deposit of excavated earth. Remove all surplus material, tools and equipment.

3.03 COORDINATION

- A. Coordinate all work with other contractors and field conditions prior to installation. Any work that is not coordinated and that interferes with other contractor's work shall be removed or relocated at the installing contractor's expense.
 - 1. Prefabrication of piping shall be done at Contractor's risk. Extra compensation for modifications to prefabricated piping shall not be permitted.
- B. Verify that all devices are compatible for the type of construction and surfaces on which they will be used.

3.04 IDENTIFICATION

- A. Identify interior piping with snap around pipe markers not less than once every 30 feet, not less than once in each room, adjacent to each access door or panel, and on both sides of the partition where accessible piping passes through walls or floors. Place flow directional arrows at each pipe identification location.
- B. Identify valves with brass tags bearing a system identification and a valve sequence number. Valve tags are not required at a terminal device unless the valves are greater than ten feet from the device, located in another room or not visible from device. Provide a typewritten valve schedule and pipe identification schedule indicating the valve number and the equipment or areas supplied by each valve and the symbols used for pipe identification; locate schedules in mechanical room and in each Operating and Maintenance manual. Schedule in mechanical room to be framed under clear plastic.

3.05 SEALING AND FIRE STOPPING

- B. NON-RATED PARTITIONS:
 - 1. At all interior partitions and exterior walls, pipe penetrations are required to be sealed. Apply sealant to both sides of the penetration in such a manner that the annular space between the pipe sleeve or cored opening and the pipe or insulation is completely blocked.

END OF SECTION

SECTION 22 05 23

GENERAL DUTY VALVES FOR PLUMBING PIPING

PART 1 - GENERAL

1.01 SCOPE

- A. This section includes valve specifications for all Plumbing systems except where indicated under Related Work. Included are the following topics:

PART 1 - GENERAL

Scope
Related Work
Reference
Quality Assurance
Submittals
Design Criteria

PART 2 - PRODUCTS

Water System Valves
Ball Valves

PART 3 - EXECUTION

General
Shut-off Valves

1.02 RELATED WORK

Section 22 05 00 Common Work Results for Plumbing

1.03 LEAD FREE REQUIREMENTS

- A. All materials that contact potable water shall be lead free. Lead free refers to the wetted surface of pipe, fittings and fixtures in potable water systems that have a weighted average lead content $\leq 0.25\%$ per the Federal Safe Drinking Water Act as amended January 4, 2011 Section 1417.

1.04 SUBMITTALS

- A. Schedule of all valves indicating type of service, dimensions, materials of construction, and pressure/temperature ratings for all valves to be used on the project. Temperature ratings specified are for continuous operation.

1.05 DESIGN CRITERIA

ANSI Z21.22 Relief Valves and Automatic Gas Shutoff Devices for Hot Water Supply Systems
ASSE 1003 Water Pressure Reducing Valves for Domestic Water Supply Systems

- A. Where valve types (ball, butterfly, etc.) are specified for individual plumbing services (i.e. domestic water, gas, etc.), each valve type shall be of the same manufacturer unless prior written approval is obtained from the Owner.
- B. Valves to be line size unless specifically noted otherwise.
- C. Valves shall be manufactured in the United States of America, (USA).

PART 2 - PRODUCTS

2.01 WATER SYSTEM VALVES

19-1011.26

22 05 23 - 1

General Duty Valves For Plumbing
Piping

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- A. All water system valves to be rated at not less than 125 water working pressure at 240°F unless noted otherwise.
- B. BALL VALVES
 - 1. 3" and smaller: Two piece bronze body; full port, sweat threaded or ASTM F1960 joint connection ends, stainless steel ball and stem; glass filled Teflon seat; Teflon packing and threaded packing nut; blowout-proof stem; 600 psig CWP. Provide valve stem extensions for valves installed in all piping with insulation. NIBCO T/S-585-66-LF-NS or T/S-585HP-66-LS-NS, Apollo, Milwaukee, Jomar T-200 Series.

PART 3 - EXECUTION

3.01 GENERAL

- A. Properly align piping before installation of valves. Install and test valves in strict accordance with valve manufacturer's installation recommendations. Do not support weight of piping system on valve ends.
- B. Mount valves in locations which allow access for operation, servicing and replacement.
- C. Provide valve handle extensions for all valves installed in insulated piping.
- D. Install all valves with the stem in the upright or horizontal position. If possible, install butterfly valves with the stem in the horizontal position. Valves installed with the stems down will not be accepted.
- E. Prior to flushing of piping systems, place all valves in the full-open position.

3.02 SHUT-OFF VALVES

- A. Install shut-off valves at each piece of equipment, at each branch take-off from mains for isolation or repair and elsewhere as indicated.

END OF SECTION

SECTION 22 05 29

HANGERS AND SUPPORTS FOR PLUMBING PIPING & EQUIPMENT

PART 1 - GENERAL

1.01 SCOPE

- A. This section includes specifications for supports of all plumbing equipment and materials as well as piping system anchors. Included are the following topics:

PART 1 - GENERAL

Scope
Related Work
Reference
Reference Standards
Quality Assurance
Description
Shop Drawings
Design Criteria

PART 2 - PRODUCTS

Manufacturers
Structural Supports
Pipe Hangers and Supports
Pipe Hanger Rods
Beam Clamps

PART 3 - EXECUTION

Installation
Hanger and Support Spacing

1.02 DESCRIPTION

- A. Provide all supporting devices as required for the installation of mechanical equipment and materials. All supports and installation procedures are to conform to the latest requirements of the ANSI Code for building piping.
- B. Do not hang any mechanical item directly from a metal deck or run piping so it rests on the bottom chord of any truss or joist.
- C. Fasteners depending on soft lead for holding power or requiring powder actuation will not be accepted.
- D. Support apparatus and material under all conditions of operation, variations in installed and operating weight of equipment and piping, to prevent excess stress, and allow for proper expansion and contraction and vibration control.
- E. Protect insulation at all hanger points; see Related Work above.
- F. For piping hung from open-web steel joists, the following is required:
1. All hung equipment shall be supported within 3" of the structural joist panel points or this contractor shall provide joist stiffeners as indicated on the structural plans.
 2. For 6" diameter or larger pipes, or combinations of pipes with a load equal to or greater than a 6" diameter.
 - a. If the pipe runs parallel to joists, locate the pipe midway between and support equally off of two joists. Locate supports at joist panel points at maximum spacing of 8'-0" on center.
 - b. If the pipe runs perpendicular to joists, provide supports at 10' to 12' on center maximum spacing.

1.03 SHOP DRAWINGS

- A. Schedule of all hanger and support devices indicating attachment methods and type of device for each pipe size and type of service.

1.04 DESIGN CRITERIA

- A. Materials and application of pipe hangers and supports shall be in accordance with MSS Standard Practice SP-58 and SP-69 unless noted otherwise.
- B. Piping connected to pumps, compressors, or other rotating or reciprocating equipment is to have vibration isolation supports for a minimum distance of one hundred pipe diameters or three supports away from the equipment, whichever is greater. Vibration of piping systems shall not be permitted. Adjust extent of vibration isolators as necessary. Standard pipe hangers/supports as specified in this section are required beyond the 100 pipe diameter/3 support distance.
- C. Conform to Specification Section 05 05 30, "Post Installed Anchors in Concrete and Masonry (CMU)" for connections of hangers and supports to the structure.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. B-Line, Anvil, Pate, Piping Technology, Roof Products & Systems or approved equal.

2.02 PIPE HANGERS AND SUPPORTS

- A. HANGERS FOR PIPE SIZES 1/2" THROUGH 2":
Carbon steel, adjustable swivel ring. B-Line B3170NF, Anvil 69 or 70. Carbon steel, adjustable clevis, standard. B-Line B3100, Anvil 260.
- B. HANGERS FOR PIPE SIZES 2" AND LARGER:
Carbon steel, adjustable clevis, standard. B-Line B3100, Anvil 260.
- C. MULTIPLE OR TRAPEZE HANGERS:
Steel channels with welded spacers and hanger rods.
- D. WALL SUPPORT:
Carbon steel welded bracket with hanger. B-Line 3068 Series, Anvil 194 Series.
 - 1. Perforated, epoxy painted finish, 16-12 gauge, min., steel channels securely anchored to wall structure, with interlocking, split-type, bolt secured, galvanized pipe/tubing clamps. B-Line type S channel with B-2000 series clamps, Anvil type PS 200 H with PS 1200 clamps. When copper piping is being supported, provide flexible elastomeric/thermoplastic isolation cushion material to completely encircle the piping and avoid contact with the channel or clamp, equal to B-Line B1999 Vibra Cushion or provide manufacturers clamp and cushion assemblies, B-Line BVT series, Anvil PS 1400 series.All supports, clamps, etc. directly connected to glass piping shall be fully lined with 1/4" neoprene padding.

2.03 PIPE HANGER RODS

- A. STEEL HANGER RODS:
Threaded both ends, threaded one end, or continuous threaded, complete with adjusting and lock nuts.
- B. Size rods for individual hangers and trapeze support as indicated in the following schedule.
- C. Total weight of equipment, including valves, fittings, pipe, pipe content, and insulation, are not to exceed the limits indicated.

Maximum Load (Lbs.) (650°F Maximum Temperature)	Rod Diameter (Inches)
610	3/8
1130	1/2
1810	5/8
2710	3/4

2.04 BEAM CLAMPS

- A. MSS SP-69 Types 19 & 23 malleable black iron clamp for attachment to beam flange to 0.62 inches thick with a retaining ring and threaded rod of 3/8, 1/2, and 5/8 inch diameter. Furnish with a hardened steel cup point set screw. B-Line B3036L/B3034, Anvil 86/92.
- B. MSS SP-69 Type 28 or Type 29 forged steel jaw type clamp with a tie rod to lock clamp in place, suitable for rod sizes to 1-1/2 inch diameter. B-Line B3054, Anvil 228.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Size, apply and install supports and anchors in compliance with manufacturer's recommendations.
- B. Install supports to provide for free expansion of the piping system. Support all piping from the structure using concrete inserts, beam clamps, ceiling plates, wall brackets, or floor stands. Fasten ceiling plates and wall brackets securely to the structure and test to demonstrate the adequacy of the fastening.
- C. Coordinate hanger and support installation to properly group piping of all trades.
- D. Where piping can be conveniently grouped to allow the use of trapeze type supports, use standard structural shapes or continuous insert channels for the supporting steel. Where continuous insert channels are used, pipe supporting devices made specifically for use with the channels may be substituted for the specified supporting devices provided that similar types are used and all data is submitted for prior approval.
- E. Size and install hangers and supports, except for riser clamps, for installation on the exterior of piping insulation.
- F. Perform welding in accordance with standards of the American Welding Society.

3.02 HANGER AND SUPPORT SPACING

- A. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
- B. Place a hanger within 12 inches of each horizontal elbow, valve, strainer, or similar piping specialty item.
- C. Use hangers with 1-1/2 inch minimum vertical adjustment.
- D. Where several pipes can be installed in parallel and at the same elevation, provide multiple or trapeze hangers.
- E. Support riser piping independently of connected horizontal piping.
- F. Adjust hangers to obtain the slope specified in the piping section of these specifications.

Space hangers for pipe as follows:

Pipe Material	Pipe Size	Maximum Horizontal Spacing	Maximum Vertical Spacing
Cast Iron	2" and Larger	5'-0"	15'-0"
Copper	1/2" through 3/4"	5'-0"	10'-0"
Copper	1" through 1-1/4"	6'-0"	10'-0"
Copper	1-1/2" through 2-1/2"	8'-0"	10'-0"

END OF SECTION

SECTION 22 07 00

PLUMBING INSULATION

PART 1 - GENERAL

1.01 SCOPE

- A. This section includes insulation specifications for plumbing piping and equipment. Included are the following topics:

PART 1 - GENERAL

Scope
Related Work
Reference
Reference Standards
Quality Assurance
Description
Definitions
Shop Drawings
Operation and Maintenance Data

PART 2 - PRODUCTS

Materials
Insulation and Jackets
Insulation Inserts and Pipe Shields
Accessories

PART 3 - EXECUTION

Installation
Piping, Valve and Fitting Insulation
Equipment Insulation

1.02 RELATED WORK

Section 22 05 00 Common Work Results for Plumbing
Section 22 11 00 Facility Water Distribution

1.03 REFERENCE STANDARDS

ASTM B209	Aluminum and Aluminum Alloy Sheet and Plate
ASTM C165	Test Method for Compressive Properties of Thermal Insulations
ASTM C177	Heat Flux and Thermal Transmission Properties
ASTM C195	Mineral Fiber Thermal Insulation Cement
ASTM C240	Cellular Glass Insulation Block
ASTM C302	Density of Preformed Pipe Insulation
ASTM C303	Density of Preformed Block Insulation
ASTM C449	Mineral Fiber Hydraulic Setting Thermal Insulation Cement
ASTM C518	Heat Flux and Thermal Transmission Properties
ASTM C533	Calcium Silicate Block and Pipe Thermal Insulation
ASTM C534	Preformed Flexible Elastomeric Thermal Insulation
ASTM C547	Mineral Fiber Preformed Pipe Insulation
ASTM C552	Cellular Glass Block and Pipe Thermal Insulation
ASTM C553	Mineral Fiber Blanket and Felt Insulation
ASTM C578	Preformed, Block Type Cellular Polystyrene Thermal Insulation
ASTM C591	Preformed Rigid Cellular Polyurethane Thermal Insulation
ASTM C610	Expanded Perlite Block and Thermal Pipe Insulation
ASTM C612	Mineral Fiber Block and Board Thermal Insulation
ASTM C921	Properties of Jacketing Materials for Thermal Insulation
ASTM C1136	Flexible Low Permeance Vapor Retarders for Thermal Insulation
ASTM E84	Surface Burning Characteristics of Building Materials
MICA	National Commercial & Industrial Insulation Standards

1.04 DESCRIPTION

- A. Furnish and install all insulating materials and accessories as specified or as required for a complete installation. The following types of insulation are specified in this section:
- Pipe Insulation
 - Equipment Insulation
- B. Install all insulation in accordance with the latest edition of MICA (Midwest Insulation Contractors Association) Standard and manufacturer's installation instructions. Exceptions to these standards will only be accepted where specifically modified in these specifications, or where prior written approval has been obtained from the DFD Project Representative.

1.05 SHOP DRAWINGS

- A. Submit a schedule of all insulating materials to be used on the project, including adhesives, fastening methods, fitting materials along with material safety data sheets and intended use of each material. Include manufacturer's technical data sheets indicating density, thermal characteristics, jacket type, and manufacturer's installation instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Materials or accessories containing asbestos will not be accepted.
- B. Use composite insulation systems (insulation, jackets, sealants, mastics, and adhesives) that have a flame spread rating of 25 or less and smoke developed rating of 50 or less, with the following exception:
1. Insulation which is not located in an air plenum may have a flame spread rating not over 25 and a smoke developed rating no higher than 150.

2.02 INSULATION AND JACKETS

- A. Manufacturers: Armstrong, Certainteed Manson, Childers, Dow, Extol, Halstead, H.B. Fuller, Imcoa, Knauf, Owens-Corning, Pittsburgh Corning, Rubatex, Johns-Mansville, or approved equal.
- B. Insulating materials shall be fire retardant, moisture and mildew resistant, and vermin proof. Insulation shall be suitable to receive jackets, adhesives and coatings as indicated.
- C. RIGID FIBERGLASS INSULATION:
1. Minimum nominal density of 3 lbs. per cu. ft., and thermal conductivity of not more than 0.23 at 75 degrees F, minimum compressive strength of 25 PSF at 10% deformation, rated for service to 450 degrees F.
 2. White kraft reinforced foil vapor barrier all service jacket, factory applied to insulation with a self-sealing pressure sensitive adhesive lap, maximum permeance of .02 perms and minimum beach puncture resistance of 50 units.
- D. SEMI-RIGID FIBERGLASS INSULATION:
1. Minimum nominal density of 3 lbs. per cu. ft., thermal conductivity of not more than 0.28 at 75 degrees F, minimum compressive strength of 125 PSF at 10% deformation, rated for service to 450 degrees F. Insulation fibers perpendicular to jacket and scored for wrapping cylindrical surfaces.
 2. White kraft reinforced foil vapor barrier all service jacket, factory applied to insulation with a maximum permeance of .02 perms and minimum beach puncture resistance of 50 units.

2.03 INSULATION INSERTS AND PIPE SHIELDS

- A. Manufacturers: B-Line, Pipe Shields, Value Engineered Products
- B. Construct inserts with calcium silicate, minimum 140 psi compressive strength. Piping 12" and larger, supplement with high density 600 psi structural calcium silicate insert. Provide galvanized steel shield. Insert and shield to be minimum 180 degree coverage on bottom of supported piping and full 360 degree coverage on clamped piping. On roller mounted piping and piping designed to slide on support, provide additional load distribution steel plate.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install insulation, jackets and accessories in accordance with manufacturer's instructions and under ambient temperatures and conditions recommended by manufacturer. Surfaces to be insulated must be clean and dry.
- B. Do not insulate systems or equipment which are specified to be pressure tested or inspected, until testing, inspection and any necessary repairs have been successfully completed.
- C. Install insulation with smooth and even surfaces. Poorly fitted joints or use of filler in voids will not be accepted. Cover and seal exposed fiberglass insulation when insulation is terminated, no raw fiberglass insulation is allowed. Provide neat and coated terminations at all nameplates, uninsulated fittings, or at other locations where insulation terminates. Install with longitudinal joints facing wall or ceiling.
- D. Install fabric reinforcing without wrinkles. Overlap seams a minimum of 2 inches.
- E. Use full-length material (as delivered from manufacturer) wherever possible. Scrap piecing of insulation or pieces cut undersize and stretched to fit will not be accepted.
- F. Insulation shall be continuous through sleeves and openings. Vapor barriers shall be maintained continuous through all penetrations.

3.02 PIPING, VALVE, AND FITTING INSULATION

- A. GENERAL:
 1. Install insulation with butt joints and longitudinal seams closed tightly. Provide minimum 2" lap on jacket seams and 2" tape on butt joints, firmly cemented with lap adhesive. Additionally secure with staples along seams and butt joints. Coat staples with vapor barrier mastic on systems requiring vapor barrier.
 2. Water supply piping insulation shall be continuous throughout the building and installed adjacent to and within building walls to a point directly behind the fixture that is being supplied.
 3. Install insulation continuous through pipe hangers and supports with hangers and supports on the exterior of insulation. Where a vapor barrier is not required, hangers and supports may be attached directly to piping with insulation completely covering hanger or support and jacket sealed at support rod penetration. Where riser clamps are required to be attached directly to piping requiring vapor barrier, extend insulation and vapor barrier jacketing/coating around riser clamp.
- B. INSULATION INSERTS AND PIPE SHIELDS:

Provide insulation inserts and pipe shields at all hanger and support locations. Inserts may be omitted on 3/4" and smaller copper piping provided 12" long 22 gauge pipe shields are used.
- C. FITTINGS AND VALVES:

Fittings, valves, unions, flanges, couplings and specialties may be insulated with factory molded or built up insulation of the same thickness as adjoining insulation. Cover insulation with fabric reinforcing and mastic or where temperatures do not exceed 150 degrees, PVC fitting covers.

Secure PVC fitting covers with tack fasteners and 1-1/2" band of mastic over ends, throat, seams or penetrations. On systems requiring vapor barrier, use vapor barrier mastic.

- H. PIPE INSULATION SCHEDULE:
Provide insulation on new and existing remodeled piping as indicated in the following schedule:

Service	Insulation Types	Insulation Thickness By Pipe Size				
		<u>1" & Smaller</u>	<u>1-1/4" to 2"</u>	<u>2-1/2" to 3"</u>	<u>4" to 6"</u>	<u>8" & Larger</u>
Cold Water	Rigid Glass Fiber	1/2"	1/2"	1"	1"	1"

END OF SECTION

SECTION 22 11 00

FACILITY WATER DISTRIBUTION

PART 1 – GENERAL

1.01 SCOPE

- A. This section contains specifications for plumbing pipe and pipe fittings for this project. Included are the following topics:

PART 1 - GENERAL

- Scope
- Related Work
- Reference
- Reference Standards
- Shop Drawings
- Quality Assurance
- Delivery, Storage, and Handling
- Design Criteria
- Welder Qualifications

PART 2 - PRODUCTS

- Domestic Water
- Dielectric Unions and Flanges
- Unions and Flanges
- Mechanical Grooved Pipe Connections

PART 3 - EXECUTION

- General
- Preparation
- Erection
- Copper Pipe Joints
- Threaded Pipe Joints
- Mechanical Joint Pipe Connections
- Push-On Gasketed Pipe Connections
- Mechanical Grooved Pipe Connections
- Domestic Water
- Flushing and Disinfection of Potable Water Systems
- Underground Pipe Wrap
- Dielectric Unions and Flanges
- Unions and Flanges
- Piping System Leak Tests

1.02 RELATED WORK

Section 22 05 29 Hangers and Supports for Plumbing Piping and Equipment

1.03 REFERENCE STANDARDS

ANSI B16.22	Wrought Copper and Wrought Copper Alloy Solder Joint Pressure Fittings
ANSI B16.29	Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings – DWV
ANSI B16.3	Malleable Iron Threaded Fittings
ANSI B16.4	Cast Iron Threaded Fittings
ANSI B16.5	Pipe Flanges and Flanged Fittings
ASTM A105	Forgings, Carbon Steel, for Piping Components
ASTM A126	Gray Cast Iron Castings for Valves, Flanges, and Pipe Fittings
ASTM A234	Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures
ASTM A53	Pipe, Steel, Black and Hot-Dipped, Zinc Coated Welded and Seamless
ASTM A536	Ductile Iron Castings
ASTM B280	Seamless Copper Tube for Air Conditioning and Refrigeration Field Service
ASTM B32	Solder Metal

ASTM B813	Liquid and Paste Fluxes for Soldering Applications of Copper and Copper Alloy Tube
ASTM B88	Seamless Copper Water Tube
ASTM D1785	Poly Vinyl Chloride (PVC) Plastic Pipe
ASTM F1960	Standard Specification for Cold Expansion Fittings with PEX Reinforcing Rings for Use with Crosslinked Polyethylene (PEX) Tubing.
ASTM 2023	Standard Test Method for Evaluating the Oxidative Resistance of Crosslinked Polyethylene (PEX) Pipe, Tubing and Systems to Hot
ASTM D2241	Poly Vinyl Chloride (PVC) Pressure-Rated Pipe (SDR Series)
ASTM D2464	Threaded Poly Vinyl Chloride (PVC) Plastic Pipe Fittings, Schedule 80
ASTM D2466	Poly Vinyl Chloride (PVC) Plastic Pipe Fittings, Schedule 40
ASTM D2513	Thermoplastic Gas Pressure Pipe, Tubing, and Fittings
ASTM D2564	Solvent Cements for Poly Vinyl Chloride (PVC) Plastic Pipe and Fittings
ASTM D2657	Heat Fusion Joining of Polyolefin Pipe and Fittings
ASTM D2774	Recommended Practice for Underground Installation of Thermoplastic Pressure Piping
ASTM D2846	Chlorinated Poly Vinyl Chloride (CPVC) Plastic Pipe and Fittings, SDR 11
ASTM D2855	Making Solvent Cemented Joints with Poly Vinyl Chloride (PVC) Pipe and Fittings
ASTM D3139	Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
ASTM D3222	Unmodified Poly Vinylidene Fluoride (PVDF) Molding Extrusion and Coating Materials
ASTM D4101	Propylene Plastic Injection and Extrusion Materials
ASTM E84	Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM E119	Standard Test Methods for Fire Tests of Building Construction and Materials
ASTM F1476	Performance of Gasketed Mechanical Couplings for Use in Piping Applications
ASTM F2389	Standard Specification for Pressure-rated Polypropylene (PP) Piping Systems
ASTM F437	Threaded Chlorinated Poly Vinyl Chloride (CPVC) Plastic Pipe Fittings, Schedule 80
ASTM F438	Socket Type Chlorinated Poly Vinyl Chloride (CPVC) Plastic Pipe Fittings, Schedule 40
ASTM F441	Chlorinated Poly Vinyl Chloride (CPVC) Plastic Pipe, Schedules 40 and 80
ASTM F493	Solvent Cements for Chlorinated Poly Vinyl Chloride (CPVC) Plastic Pipe and Fittings
ASTM F656	Primers for Use in Solvent Cement Joints of Poly Vinyl Chloride (PVC) Plastic Pipe and Fittings
ASTM F876	Standard Specification for Crosslinked Polyethylene (PEX) Tubing.
ASTM F877	Standard Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems.
ASME B16.5	Pipe Flanges and Flanged Fittings: NPS 1/2 through NPS 12 Metric/Inch Standard.
AWS A5.8	Brazing Filler Metal
AWWA C104	Cement Mortar Lining for Ductile Iron Pipe and Fittings for Water
AWWA C105	Polyethylene Encasement for Ductile Iron Piping for Water
AWWA C110	Ductile Iron and Gray Iron Fittings, 3 In. Through 48 In., for Water and Other Liquids
AWWA C111	Rubber Gasket Joints for Ductile Iron and Gray Iron Pressure Pipe and Fittings
AWWA C151	Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds for Water or Other Liquids
AWWA C153	Ductile Iron Compact Fittings, 3 In. Through 48 In., for Water and Other Liquids
AWWA C600	Installation of Ductile Iron Water Mains and Their Appurtenances
AWWA C606	Grooved and Shouldered Joints
AWWA C651	Disinfecting Water Mains
AWWA C900	Polyvinyl Chloride (PVC) Pressure Pipe, 4 In. Through 12 In., for Water Distribution
CGA G-4.1	Equipment Cleaned for Oxygen Service
CGA G-4.4	Industrial Practices for Gaseous Oxygen Transmission and Distribution Piping Systems
CGA G-6.1	Standard for Low Pressure Carbon Dioxide Systems at Consumer Sites
CGA G-8.1	Standard for Nitrous Oxide Systems at Consumer Sites
CGA P-2.1	Standards for Medical-Surgical Vacuum Systems in Health Care Facilities
NFPA 50	Bulk Oxygen Systems at Consumers Sites
NFPA 54	National Fuel Gas Code
NFPA 99	Health Care Facilities

1.04 SHOP DRAWINGS

- A. Schedule from the contractor indicating the ASTM, AWWA or CISPI specification number of the pipe being proposed along with its type and grade if known at the time of submittal, and sufficient information to indicate the type and rating of fittings for each service.

- B. Statement from manufacturer on his letterhead that pipe furnished meets the ASTM, AWWA or CISPI specification contained in this section.
- C. Grooved joint couplings and fittings shall be shown on product submittals, and shall be specifically identified with the applicable style or series designation.

1.05 QUALITY ASSURANCE

- A. Order all copper, cast iron, steel, CPVC, PVC and polyethylene pipe with each length marked with the name or trademark of the manufacturer and type of pipe; with each shipping unit marked with the purchase order number, metal or alloy designation, temper, size, and name of supplier. All piping shall be manufactured in the United States of America (USA).
- B. All grooved joint couplings, fittings, valves, and specialties shall be the products of a single manufacturer. Grooving tools shall be of the same manufacturer as the grooved components.
- C. All castings used for coupling housings, fittings, valve bodies, etc., shall be date stamped for quality assurance and traceability.
- D. Any installed material not meeting the specification requirements must be replaced with material that meets these specifications without additional cost to the Owner.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Promptly inspect shipments to insure that the material is undamaged and complies with specifications.
- B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Cover pipe to prevent corrosion or deterioration while allowing sufficient ventilation to avoid condensation. Do not store materials directly on grade. Protect pipe, tube, and fitting ends so they are not damaged. Where end caps are provided or specified, take precautions so the caps remain in place. Protect fittings, flanges, and unions by storage inside or by durable, waterproof, above ground packaging.
- D. Offsite storage agreements will not relieve the contractor from using proper storage techniques.
- E. Storage and protection methods must allow inspection to verify products.

1.07 DESIGN CRITERIA

- A. Use only new material, free of defects, rust and scale, and meeting the latest revision of ASTM, AWWA or CISPI specifications as listed in this specification.
- B. Construct all piping for the highest pressures and temperatures in the respective system.
- C. Where weld fittings or mechanical grooved fittings are used, use only long radius elbows having a centerline radius of 1.5 pipe diameters.
- D. Where ASTM A53 type F pipe is specified, grade A type E or S, or grade B type E or S may be substituted at Contractor's option. Where the grade or type is not specified, Contractor may choose from those commercially available.
- E. Where ASTM B88, type L H (drawn) temper copper tubing is specified, ASTM B88, type K H (drawn) temper copper tubing may be substituted at Contractor's option.

PART 2 – PRODUCTS

2.01 DOMESTIC WATER

- A. ABOVE GROUND
 - 1. Type L copper water tube, H (drawn) temper, ASTM B88; wrought copper pressure fittings, ANSI B16.22; lead free (<.2%) solder, ASTM B32; flux, ASTM B813; copper phosphorous brazing alloy, AWS A5.8 BCuP.
 - a. Copper mechanical grooved fittings and couplings on roll grooved pipe may be used in lieu of soldered fittings.

- C. BELOW GROUND 3" AND LARGER
 - 1. Ductile iron pipe, mechanical or push on joint, thickness Class 52, AWWA C151; with standard thickness cement mortar lining, AWWA C104; ductile iron or gray iron mechanical joint cement mortar lined fittings, Class 250, AWWA C110; ductile iron mechanical joint compact fittings, Class 350, AWWA C153; rubber gasket joints with non-toxic gasket lubricant, AWWA C111. Provide 8 mil tube or sheet polyethylene encasement of iron pipe and pipe fittings, AWWA C105.
 - 2. PVC pressure pipe, DR 18, Class 150, AWWA C900 and C905; with integral bell and elastomeric gaskets, ASTM D3139. Fittings and fitting polyethylene encasement to be same as noted above for ductile iron.
 - 3. Underground to interior building entrance piping 3" and larger to be ductile iron as specified above with factory threaded and machined flanges.
 - 4. PP-RCT cold potable pipe: SDR 7.4, 9 or 11 with socket-fusion type fittings up to 4 inch (125 mm) and butt fusion type connections for 6 inch (160 mm) and larger.
 - 5. PP-RCT hot potable pipe: SDR 7.4, 9 or 11 with socket-fusion type fittings up to 4 inch (125 mm) and butt fusion type connections for 6 inch (160 mm) and larger.
 - 6. Corzan CPVC (IPS Sch. 80); socket fittings and solvent welded joints.

2.02 MECHANICAL GROOVED PIPE CONNECTIONS

- A. Mechanical grooved pipe couplings and fittings, ASTM F1476, as manufactured by Victaulic may be used with roll groove stainless steel, cut groove ductile iron pipe or roll groove copper pipe where noted. Mechanical grooved components and assemblies to be rated for minimum 250 psi working pressure.

- B. All mechanical grooved pipe material including gaskets, couplings, fittings, flange adapters, and tools to be from the same manufacturer.

- C. Couplings consist of two ductile iron ASTM A536 housings with painted finish. Reducing couplings are not acceptable.
 - 1. Steel Pipe:
 - a. Rigid Type: Housing shall be cast with offsetting angle pattern bolt pads to provide rigidity and system support and hanging in accordance with ANSI B31.1 and B31.9.
 - 1) 2" through 6": Installation Ready, for direct stab installation without field disassembly. Victaulic Style 107.
 - 2) Victaulic Zero Flex Style 07
 - b. Flexible Type: For use in locations where vibration attenuation and stress relief are required. Three flexible couplings may be used in lieu of a flexible connector. The couplings shall be placed in close proximity to the source of the vibration. Victaulic Style 77.
 - 2. Copper Tube: Housings shall be cast with offsetting angle pattern bolt pads to provide rigidity, manufactured to copper tube dimensions. (Flaring of tube or fitting ends to accommodate alternate sized couplings is not allowed). Victaulic Style 606.
 - 3. Ductile Iron (AWWA) Pipe: Victaulic Style 31.
 - a. For transition between IPS steel and AWWA ductile iron pipe sizes, with housings cast with offsetting angle pattern bolt pads to provide rigidity. Victaulic Style 307.

- D. Fittings used on ductile iron pipe to be cement mortar lined ductile iron with coal tar coating, ASTM A536; conforming to requirements of AWWA C110/C153 and AWWA C606. Fittings used on copper tube to be copper tube dimensioned wrought copper ANSI B16.22 or cast bronze ANSI

B16.18. Fittings used on stainless steel shall be ASTM A403 or factory fabricated ASTM A312.

- E. Gaskets to be EPDM, ASTM D2000. Gaskets for hot water systems and dry pipe systems to be flush seal design. Heat treated carbon track bolts and nuts, ASTM A183, with zinc electroplated finish ASTM B633, or stainless steel ASTM F593.
 - 1. Gaskets used on potable water systems shall be UL classified in accordance with ANSI/NSF-61 for potable water service.
- F. Flange adapters to be ductile iron, ASTM A536; except at lug type butterfly valves where standard threaded flanges shall be used. Victaulic Style 741 (steel pipe), 341 (AWWA ductile iron pipe) or 641 (copper tubing).
- G. Credit for the inherent flexibility of mechanical grooved pipe connections when used for expansion joints or flexible connectors may be allowed upon specific application by the Contractor and in accordance with the coupling manufacturer's recommendations. Three flexible couplings at first three connection points both upstream and downstream of pumps may be used in lieu of flexible connectors. Request for expansion joints shall be made in writing and shall include service, location, line size, proposed application and supporting calculations for the intended service.

PART 3 – EXECUTION

3.01 GENERAL

- A. Install pipe and fittings in accordance with reference standards, manufacturer's recommendations and recognized industry practices.

3.02 PREPARATION

- A. Cut pipe ends square. Ream ends of piping to remove burrs. Clean scale and dirt from interior and exterior of each section of pipe and fitting prior to assembly.

3.03 ERECTION

- A. Install all piping parallel to building walls and ceilings and at heights which do not obstruct any portion of a window, doorway, stairway, or passageway. Where interferences develop in the field, offset or reroute piping as required clearing such interferences. Coordinate locations of plumbing piping with piping, ductwork, conduit and equipment of other trades to allow sufficient clearances. In all cases, consult drawings for exact location of pipe spaces, ceiling heights, door and window openings, or other architectural details before installing piping. All piping shall be concealed in areas with ceilings.
- B. Where copper or steel piping is embedded in masonry or concrete, provide protective sleeve covering of elastomeric pipe insulation.
- C. Install underground warning tape 6"-12" below finished grade above all exterior below ground piping. Where existing underground warning tape is encountered, repair and replace.
- D. Maintain piping in clean condition internally during construction.
- E. Provide clearance for installation of insulation, access to valves and piping specialties.
- F. Provide anchors, expansion joints, swing joints and/or expansion loops so that piping may expand and contract without damage to itself, equipment, or building.
 - 1. For water systems, use adequate numbers of Victaulic Style 77 flexible couplings in header piping to accommodate thermal growth and contraction, and for the elimination of expansion loops. (In accordance with Victaulic instructions and as approved by the Engineer). Where expansion loops are required, use Victaulic Style 77 couplings on the loops.

- G. Do not route piping through transformer vaults or above transformers, panelboards, or switchboards, including the required service space for this equipment, unless the piping is serving this equipment
- H. Install all valves and piping specialties, including items furnished by others, as specified and/or detailed. Provide access to valves and specialties for maintenance. Make connections to all equipment, fixtures and systems installed by others where same requires the piping services indicated in this section.

3.04 COPPER PIPE JOINTS

- A. Remove all slivers and burrs remaining from the cutting operation by reaming and filing both pipe surfaces. Clean fitting and tube with metal brush, emery cloth or sandpaper. Remove residue from the cleaning operation, apply flux and assemble joint to socket stop. Apply flame to fitting until solder melts when placed at joint. Remove flame and feed solder into joint until full penetration of cup and ring of solder appears. Wipe excess solder and flux from joint.
- B. Grooved joints for copper tubing shall be made at copper tube dimensions. (Flaring of tube ends to accommodate alternate sized couplings is not permitted).

3.05 THREADED PIPE JOINTS

- A. Use a thread lubricant or teflon tape when making joints; no hard setting pipe thread cement or caulking will be allowed.

3.06 MECHANICAL JOINT PIPE CONNECTIONS

- A. Comply with AWWA C600/C605 installation requirements. Clean pipe end and socket. Clean and lubricate pipe end, socket and gasket with soapy water or gasket lubricant. Place gland and gasket, properly oriented, on pipe end. Insert pipe end fully into socket and press gasket evenly into recess keeping joint straight. Press gland evenly against gasket, insert bolts and hand tighten nuts. Make joint deflection prior to tightening bolts. Evenly tighten bolts in sequence to recommended torque.

3.07 DOMESTIC WATER

- A. Maintain piping system in clean condition during installation. Remove dirt and debris from assembly of piping as work progresses. Cap open pipe ends where left unattended or subject to contamination.
- B. Install exterior water piping below predicted frost level in accordance with Wisconsin Department of Safety and Professional Services, ChapterSPS382, SPS Table 382.30-6, but in no case less than 6' bury depth to top of pipe. Maintain minimum of 8' horizontal distance between 2-1/2" and larger water piping and sanitary sewer piping. Maintain minimum of 30" horizontal and 12" vertical distance, water on top, between 2" and smaller water piping and sanitary sewer piping. Where water piping crosses a sanitary sewer, provide minimum 18" vertical clearance and waterproof PVC water pipe sleeve (reference sanitary sewer materials) sealed at both ends for distance of 10' from sewer in both directions.

3.08 FLUSHING AND DISINFECTION OF POTABLE WATER SYSTEMS

- A. Prior to use, isolate and fill system with potable water. Allow to stand 24 hours. Flush each outlet proceeding from the service entrance to the furthest outlet for a minimum of 1 minute and until water appears clear. Fill system with a solution of water and chlorine containing at least 10 parts per million of chlorine and allow to stand for 24 hours. Flush system with potable water until chlorine concentration is no higher than source water level.
- B. Wait 24 hours after final flushing. Take samples of water for lab testing. The number and location of samples shall be representative of the system size and configuration, and are subject to approval by Engineer. Test shall show the absence of coliform bacteria. If test fails, repeat disinfection and testing procedures until no coliform bacteria are detected. Submit test report indicating date and time of test along with test results.

- C. Piping that is pressure tested shall be drained completely dry. The piping system is not to be left full of stagnant water. The piping system, water heaters and water softeners shall not be filled until within 10 days of occupancy to guard against microbial growth.

3.09 DIELECTRIC UNIONS AND FLANGES

- A. Install dielectric unions, waterway fittings, or flanges at each point where a copper-to-steel pipe connection is required in domestic water systems.

3.10 UNIONS AND FLANGES

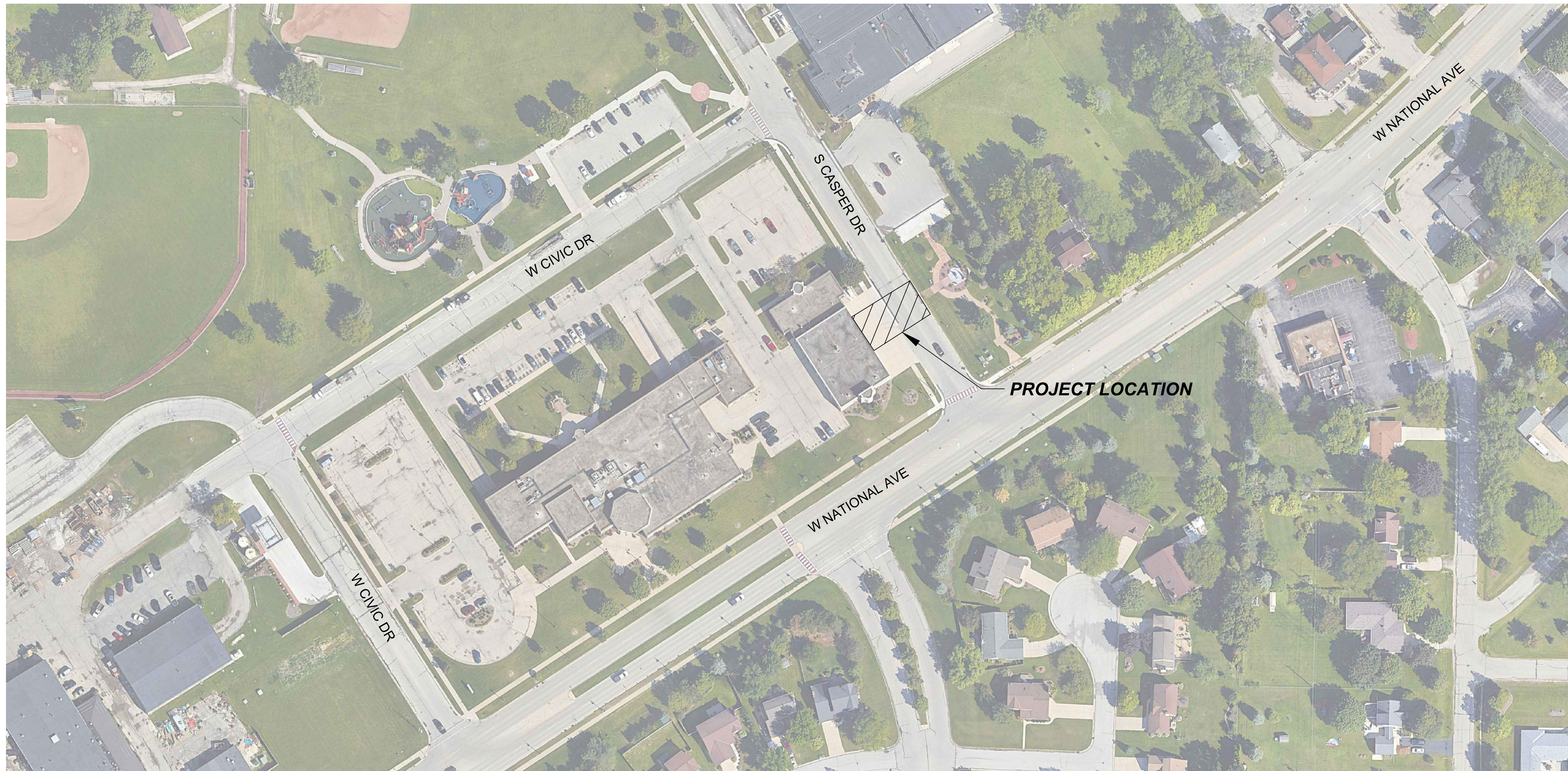
- A. Install a union or flange at each connection to each piece of equipment and at other items which may require removal for maintenance, repair, or replacement. Where a valve is located at a piece of equipment, locate the flange or union connection on the equipment side of the valve. Concealed unions or flanges are not acceptable.
- B. Union and flanges for disconnect and servicing area not required in installations using grooved mechanical joint couplings. (The couplings shall serve as unions and disconnect points).

3.11 PIPING SYSTEM LEAK TESTS

- A. Isolate or remove components from system which are not rated for test pressure. Perform final testing for medical and lab gas with all system components in place. Test piping in sections or entire system as required by sequence of construction. Do not insulate or conceal pipe until it has been successfully tested.
- B. If required for the additional pressure load under test, provide temporary restraints at fittings or expansion joints. Backfill underground water mains prior to testing with the exception of thrust restrained valves which may be exposed to isolate potential leaks.
- C. For hydrostatic tests, use clean water and remove all air from the piping being tested by means of air vents or loosening of flanges/unions. Measure and record test pressure at the high point in the system.
- D. Inspect system for leaks. Where leaks occur, repair the area with new materials and repeat the test; caulking will not be acceptable.
- E. Entire test must be witnessed by the Division's representative. All pressure tests are to be documented.

<u>System</u>	<u>Test Medium</u>	<u>Initial Test Pressure Duration</u>	<u>Final Test Pressure Duration</u>
Below Ground Domestic Water	Water	N/A	200 psig 2 Hour
Above Ground Domestic Water	Water	N/A	100 psig 8 Hour

END OF SECTION



CIVIL SHEET INDEX:


C1.00	PROJECT LOCATION AND GENERAL NOTES
C1.10	SITE PLAN
C1.20	EXISTING SURVEY
C5.00	SPECIFICATIONS

LEGEND:

UTILITY	GRADING	SITE
<p>EXISTING:</p> <p>— W — W — WATERMAIN — E — E — BURIED ELECTRIC — OHW — OHW — OVERHEAD WIRE — GAS — GAS — GAS LINE — SAN — SAN — SANITARY SEWER — ST — ST — STORM SEWER</p> <p>UTILITY POLE LIGHT POLE SANITARY MANHOLE FIRE HYDRANT WATER VALVE STORM SEWER STRUCTURE</p> <p>PROPOSED:</p> <p>— W — W — WATERMAIN — E — E — ELECTRICAL LINE — GAS — GAS — GAS LINE — SAN — SAN — SANITARY SEWER — ST — ST — STORM SEWER</p> <p>WATER VALVE STORM SEWER STRUCTURE FLARED END SECTION</p>	<p>EXISTING:</p> <p>— 160 — MAJOR CONTOUR - - - 160 - - MINOR CONTOUR — 100.00 — EXIST 100.00 EXISTING SPOT ELEVATION</p> <p>PROPOSED:</p> <p>— 160 — MAJOR CONTOUR - - - 160 - - MINOR CONTOUR — 100.00 — SPOT ELEVATION (FINISHED GRADE, TOP OF PAVEMENT, FLANGE OF CURB) — DOOR 100.00 — DOOR ELEVATION — GR 100.00 — GROUND GRADE AT BUILDING — 100.50T/C 100.00E/P — SPOT ELEVATION (T/C - TOP OF CURB, E/P - EDGE OF PAVEMENT) — 100.50T/W 100.00B/W — RETAINING WALL SPOT ELEVATION (T/W - GROUND GRADE AT TOP OF WALL, B/W - GROUND GRADE AT BOTTOM)</p> <p>— 12" FES 100.00B/W — FLARED END SECTION (PIPE SIZE, INVERT ELEVATION) — DRAINAGE FLOW DIRECTION — EMERGENCY OVERFLOW ROUTE</p>	<p>EXISTING:</p> <p>EXISTING PARKING COUNT EXISTING SIGN EXISTING ADA PARKING SPACE</p> <p>PROPOSED:</p> <p>PARKING COUNT SIGN TRUNCATED DOMES PAVEMENT MARKING DIRECTIONAL ARROWS</p>

GENERAL NOTES AND SPECIFICATIONS:

- THE EXISTING SITE INFORMATION ON THIS PLAN WAS TAKEN FROM A SITE SURVEY PROVIDED BY CAPITOL SURVEY ENTERPRISES. THE ENGINEER MAKES NO WARRANTY OR REPRESENTATION WITH REFERENCE TO THE ACCURACY AND COMPLETENESS OF THE EXISTING CONDITIONS INDICATED OR NOT INDICATED ON THE ENGINEERING PLANS PROVIDED. VERIFY THE LOCATION OF ALL EXISTING SITE CONDITIONS INCLUDING UNDERGROUND UTILITIES, UNDERGROUND UTILITY ELEVATIONS, BUILDING SETBACKS AND EXISTING BUILDING LOCATIONS. THE CONTRACTOR SHALL INFORM THE OWNER AND ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING WITH WORK. QUESTIONS REGARDING THE EXISTING SURVEY SHALL BE DIRECTED TO THE PARTIES LISTED ABOVE.
- BEFORE PROCEEDING WITH ANY UTILITY CONSTRUCTION, EXCAVATE EACH EXISTING LATERAL TO BE CONNECTED TO (VERIFYING ELEVATION, LOCATION AND SIZE). SHOULD THE EXISTING UTILITY NOT BE AS INDICATED ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR EVALUATION.
- ALL UTILITY CONSTRUCTION SHALL ADHERE TO THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN (2003), AS WELL AS, THE MUNICIPAL CONSTRUCTION STANDARDS AND THE DEPT. OF SAFETY AND PROFESSIONAL SERVICES SEC. 382-387.
- ALL PERMITS MUST BE RECEIVED FROM THE MUNICIPALITY PRIOR TO THE START OF CONSTRUCTION. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE ALL APPLICABLE PERMITS ARE RECEIVED PRIOR TO STARTING CONSTRUCTION.
- NOTIFY THE PUBLIC WORKS INSPECTION DEPT. AT LEAST 48 HOURS BEFORE STARTING CONSTRUCTION.
- BACKFILL REQUIREMENTS AND ROADWAY/SIDEWALK RESTORATION SHALL ADHERE TO LOCAL STANDARDS (GRANULAR BACKFILL UNDER OR WITHIN 5' OF CURBS, SIDEWALK, OR PAVEMENT. SPOIL MAY BE USED ELSEWHERE. SLURRY BACKFILL WILL BE REQUIRED IN PUBLIC ROADWAYS.)
- ALL BUILDING UTILITIES SHALL BE VERIFIED WITH THE ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION.
- ALL PROPOSED WATERMAIN SHALL BE PVC SDR 18, CLASS 150, AWWA C900 WITH ELASTOMERIC JOINTS (UNLESS OTHERWISE NOTED).
- A MEANS TO LOCATE BURIED UNDERGROUND EXTERIOR NONMETALLIC UTILITIES MUST BE PROVIDED. PROVIDE TRACER WIRE OR OTHER METHODS IN ORDER TO BE LOCATED IN ACCORD WITH THE PROVISIONS SECTIONS 182.0715(2R) OF THE STATE STATUTES.
- UTILITY TRENCHES SHALL BE MECHANICALLY COMPACTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
- ALL MANHOLES, CATCH BASINS, INLETS, VALVES BOXES, ETC WITHIN THE PROJECT AREA SHALL BE RESET AND ADJUSTED TO MATCH FINISH GRADE.
- ALL EXCAVATED OR STRIPPED MATERIALS NOT BEING REPLACED IN UTILITY TRENCHES OR BEING USED FOR FILL SHALL BE REMOVED FROM THE SITE, UNLESS OTHERWISE DIRECTED BY THE OWNER.
- MATCH PROPOSED CONCRETE CURB AND GUTTER, SIDEWALK AND PAVEMENT TO EXISTING IN ELEVATION AND ALIGNMENT.
- REMOVAL OF CURB AND GUTTER, SIDEWALK AND PAVEMENT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE WISCONSIN D.O.T.
- ALL CONCRETE FOR CURB AND GUTTER, ROADWAY AND SIDEWALKS MUST CONFORM TO THE STANDARD SPECIFICATIONS FOR READY MIXED CONCRETE. MINIMUM 28 DAY COMPRESSIVE STRENGTH TEST MUST EQUAL 4000 PSI.
- PROTECT ALL PROPERTY CORNERS.
- REPAIR ANY DAMAGE TO EXISTING UTILITIES OR SITE IMPROVEMENTS. DOCUMENT ALL EXISTING DAMAGE PRIOR TO START OF CONSTRUCTION AND NOTIFY CONSTRUCTION MANAGER OF ANY FINDINGS.
- AS-BUILTS ARE TO BE PROVIDED TO THE CLIENT TRACKING ANY CHANGES THAT OCCURRED DURING CONSTRUCTION.

Scale: 1" = 80' 

Date: 06/13/2025

Project Number:
19-1011.26

Sheet Name:
Project Location and
General Notes

Sheet Number:
C1.10



IN ACCORDANCE WITH WISCONSIN STATUTE 182.0175, DAMAGE TO TRANSMISSION FACILITIES, EXCAVATOR SHALL BE SOLELY RESPONSIBLE TO PROVIDE ADVANCE NOTICE TO THE DESIGNATED "ONE CALL SYSTEM" NOT LESS THAN THREE WORKING DAYS PRIOR TO COMMENCEMENT OF ANY EXCAVATION REQUIRED TO PERFORM WORK CONTAINED ON THESE DRAWINGS, AND FURTHER, EXCAVATOR SHALL COMPLY WITH ALL OTHER REQUIREMENTS OF THIS STATUTE RELATIVE TO EXCAVATOR'S WORK.



HARWOOD

civil • landscape architecture
structural • mechanical • electrical
plumbing / fire protection • security
lighting design • telecommunications

255 North 21st Street,
Milwaukee, Wisconsin 53233
414.475.5554 • hecl.com

Project Name:
City of New Berlin - Fire Station
#7 Water Lateral Replacement

16260 W. National
Ave. New Berlin, WI 53151

Client:



Issuance:
Construction Documents

Scale: 1" = 10'



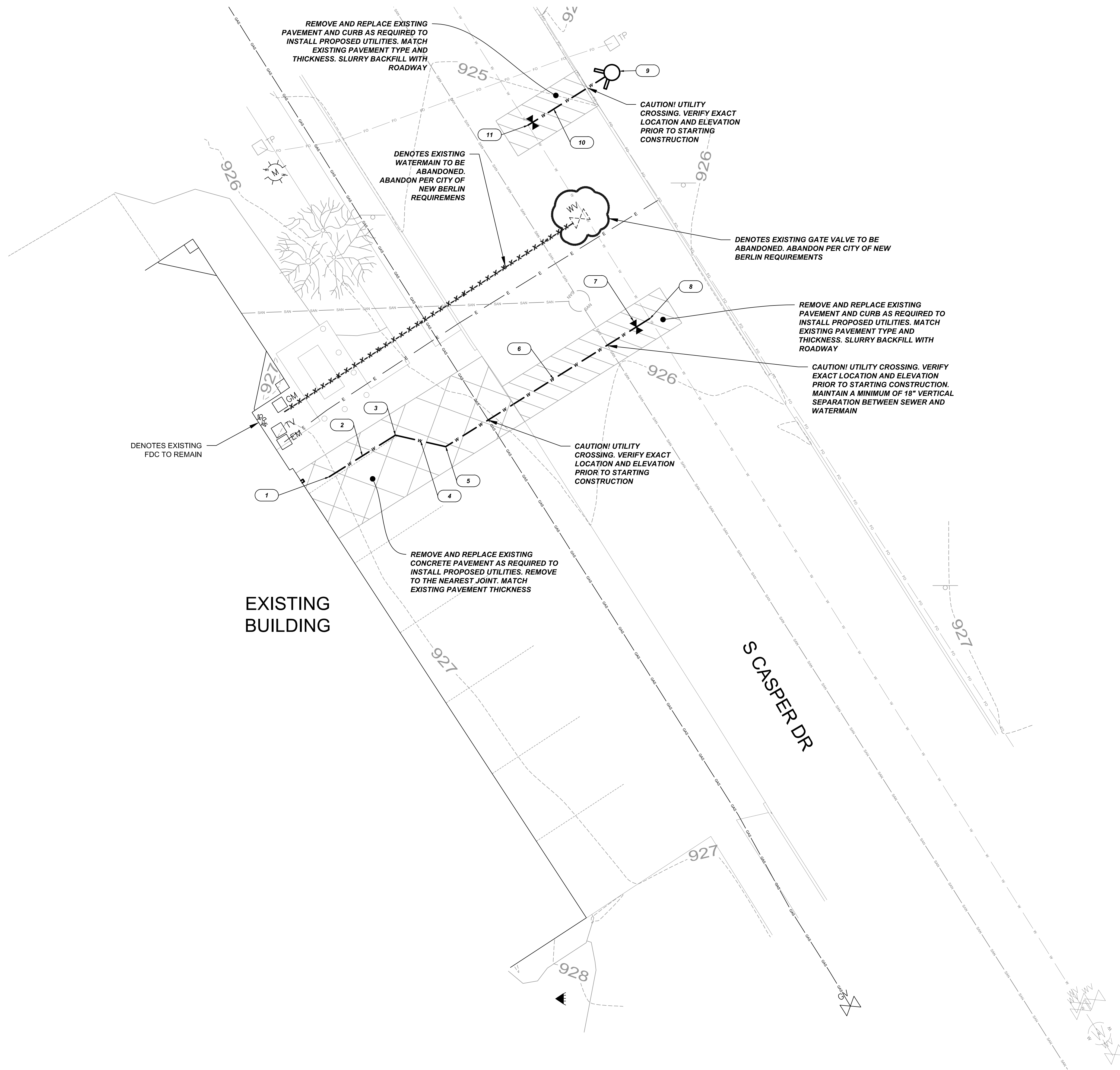
Date: 06/13/2025

Project Number:
19-1011.26

Sheet Name:
Site Plan

Sheet Number:

C1.10



DEMOLITION LEGEND

DENOTES ITEM TO BE REMOVED OR DEMOLISHED

DENOTES ITEM TO BE ABANDONED OR REMOVED

UTILITY TAGS

WATER

- DENOTES PROPOSED 6" WATERMAIN CONNECTION AT BUILDING. SEE PLUMBING PLANS FOR CONTINUATION INTO BUILDING.
- DENOTES PROPOSED 15 L.F. 6" PVC WATERMAIN
- DENOTES PROPOSED 6" 45° BEND
- DENOTES PROPOSED 10 L.F. 6" PVC WATERMAIN
- DENOTES PROPOSED 6" 45° BEND
- DENOTES PROPOSED 43 L.F. 6" PVC WATERMAIN
- DENOTES PROPOSED 6" GATE VALVE AND 3 L.F. 6" PVC WATERMAIN
- DENOTES PROPOSED WATERMAIN CONNECTION AT EXISTING WATERMAIN. CONNECT TO EXISTING WATERMAIN PER CITY OF NEW BERLIN REQUIREMENTS.
- DENOTES PROPOSED FIRE HYDRANT. HYDRANT TO BE LOCATED 4' FROM BACK OF CURB. CITY OF NEW BERLIN SHALL PROVIDE HYDRANT. CONTRACTOR TO INSTALL.
- DENOTES PROPOSED HYDRANT TEE, 6" AUX VALVE, 18 L.F. 6" PVC HYDRANT LEAD AND HYDRANT ASSEMBLY. HYDRANT TO BE PROVIDED BY CITY OF NEW BERLIN. HYDRANT TO BE INSTALLED PER CITY OF NEW BERLIN REQUIREMENTS.
- DENOTES PROPOSED WATERMAIN CONNECTION AT EXISTING WATERMAIN. CONNECT TO EXISTING WATERMAIN PER CITY OF NEW BERLIN REQUIREMENTS.



IN ACCORDANCE WITH WISCONSIN STATUTE 182.0175, DAMAGE TO TRANSMISSION FACILITIES, EXCAVATOR SHALL BE SOLELY RESPONSIBLE TO PROVIDE ADVANCE NOTICE TO THE DESIGNATED "ONE CALL SYSTEM" NOT LESS THAN THREE WORKING DAYS PRIOR TO COMMENCEMENT OF ANY EXCAVATION REQUIRED TO PERFORM WORK CONTAINED ON THESE DRAWINGS, AND FURTHER, EXCAVATOR SHALL COMPLY WITH ALL OTHER REQUIREMENTS OF THIS STATUTE RELATIVE TO EXCAVATOR'S WORK.



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Project Name:
 City of New Berlin - Fire Station
 #1 Water Lateral & FP
 Replacement

Client:

 City of New Berlin
 3805 S Casper Drive
 New Berlin, WI 53151
 Tel: (262) 786-8610

LEGEND			
— SAN —	SANITARY SEWER	⊠	ELECTRIC TRANSFORMER
— ST —	STORM SEWER	⊠	ELECTRIC METER
— W —	WATER MAIN	⊠	ELECTRIC PEDESTAL
— G —	BURIED GAS LINE	⊠	ELECTRIC BOX AT GRADE
— TEL —	BURIED TELEPHONE LINE	⊠	TELEPHONE BOX AT GRADE
— E —	BURIED ELECTRIC LINE	⊠	TELEPHONE PEDESTAL
— FO —	BURIED FIBER OPTIC LINE	⊠	TV PEDESTAL
— U —	OVERHEAD UTILITY LINES	⊠	GAS METER
— CATV —	BURIED CABLE TELEVISION LINES	⊠	AIR CONDITIONER
— COMB —	COMBINATION SEWER	⊠	UTILITY POLE
— WOOD FENCE —	WOOD FENCE	⊠	WOOD SIGN
— METAL FENCE —	METAL FENCE	⊠	METAL SIGN
—	EDGE OF TREES AND BRUSH	⊠	FLAG POLE
994.32 05	DOOR SILL ELEVATION	⊠	BOLLARD
—	FIRE DEPARTMENT CONNECTION	⊠	BOLLARD LIGHT
		⊠	YARD LIGHT
		⊠	MAIL BOX
		⊠	FIBER OPTIC MARKER
		⊠	DUY WIRE
		⊠	HYDRANT
		⊠	WATER VALVE
		⊠	GAS VALVE
		⊠	MANHOLE
		⊠	STORM MANHOLE
		⊠	CATCH BASIN
		⊠	CURB INLET
		⊠	METAL LIGHT POLE
		⊠	CONCRETE LIGHT POLE
		⊠	WOOD LIGHT POLE

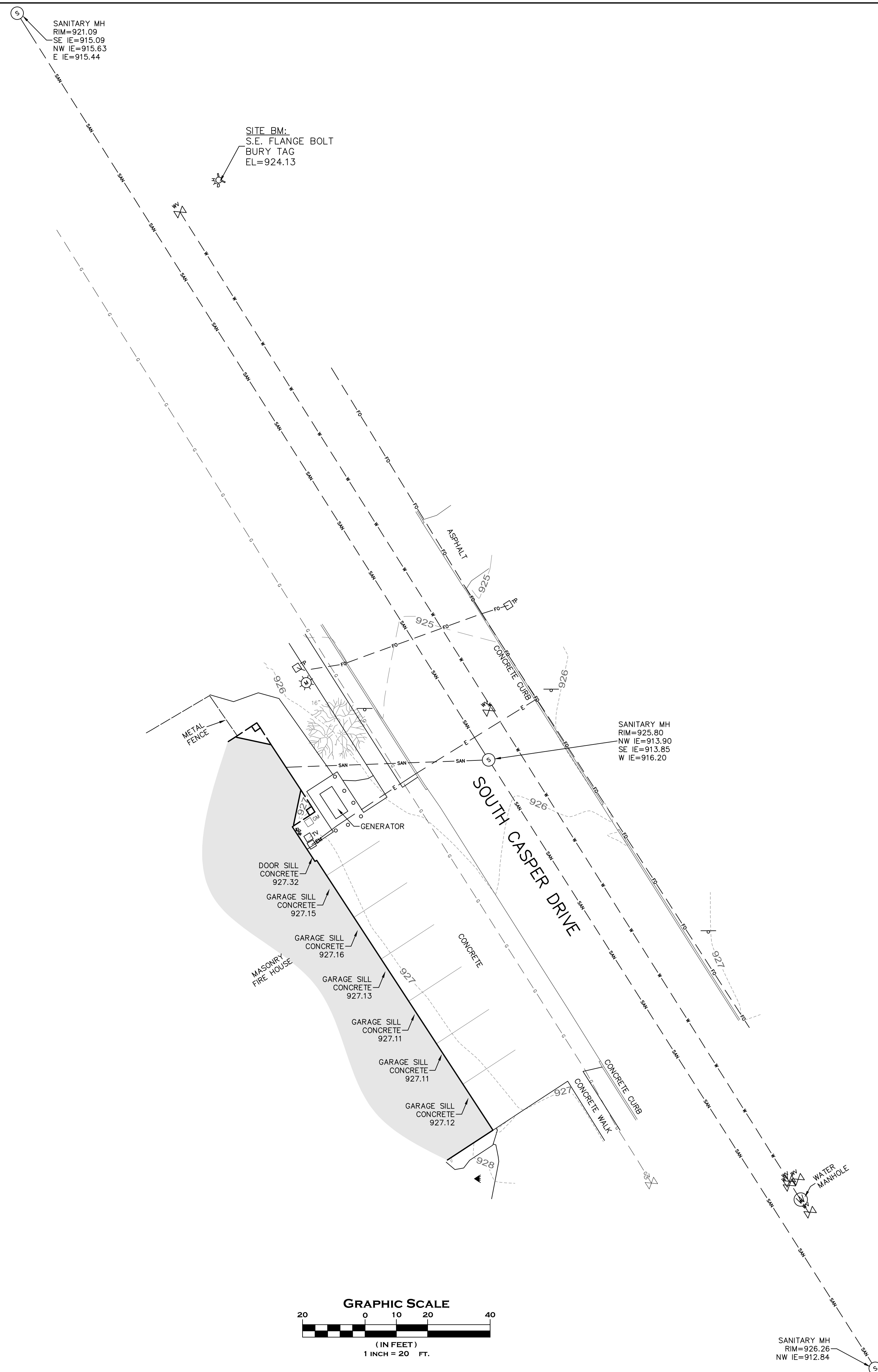
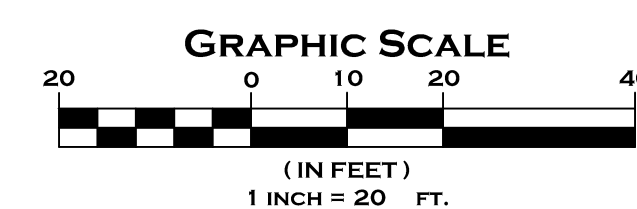
NOTES

- SUBJECT PROPERTY ZONED: I-1, INSTITUTIONAL.
- SETBACKS BASED ON CITY OF NEW BERLIN ZONING CODE AND ARE AS FOLLOWS: FRONT SETBACK = 50 FEET
SIDE SETBACK = 50 FEET
REAR SETBACK = 50 FEET
MAX HEIGHT = 45 FEET.
- THE UNDERGROUND UTILITY INFORMATION AS SHOWN HEREON IS BASED, IN PART, ON INFORMATION FURNISHED BY THE UTILITY COMPANIES, DIGGERS HOTLINE AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED TO.
- SUBJECT PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION X; AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN PER INFORMATION FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON FLOOD INSURANCE RATE MAP NO. 55133C0351H, WITH A DATE OF IDENTIFICATION OF OCTOBER 19, 2023, IN COMMUNITY NO. 550487, CITY OF NEW BERLIN, WHICH IS THE COMMUNITY IN WHICH THE SUBJECT PROPERTY IS SITUATED.
- PROJECT BENCHMARK - NORTH 1/4 CORNER OF SECTION 22. TOP OF CONCRETE MONUMENT WITH BRASS CAP = 921.23.
- SITE BENCHMARK - HYDRANT AS SHOWN HEREON.
- ELEVATIONS REFER TO THE NORTH AMERICAN DATUM OF 1988 (NAVD88)

NOTE: SURVEY COMPLETED BY CAPITOL SURVEY ENTERPRISES. THE ENGINEER MAKES NO WARRANTY OR REPRESENTATION WITH REFERENCE TO THE ACCURACY AND COMPLETENESS OF THE EXISTING CONDITIONS INDICATED OR NOT INDICATED ON THE ENGINEERING PLANS PROVIDED.

EXISTING CONDITIONS MAP
 FOR
NEW BERLIN FIRE STATION NO. 7
 16260 W. NATIONAL AVE.
 NEW BERLIN, WI

DRAWN BY:	DHS	DATE:	APRIL 2, 2025
CHECKED BY:	MJB	DRAWING No.	EC - 0
CSE JOB No.:	25-030	SHEET	1 OF 1



Scale: 1" = 20'

Date: 06/06/2025

Project Number:
 19-1011.26

Sheet Name:
 Existing Survey

Sheet Number:
C1.20



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civil • landscape architecture
structural • mechanical • electrical
plumbing / fire protection • security
lighting design • telecommunications

255 North 21st Street,
Milwaukee, Wisconsin 53233
414.475.5554 • hecl.com

Project Name:
City of New Berlin - Fire Station
#1 Water Lateral & FP
Replacement

Client:



3805 S Casper Drive
New Berlin, WI 53151
Tel: (262) 786-8610

Issuance:
Construction Documents

Scale:



Date: 06/06/2025

Project Number:
19-1011.26

Sheet Name:
Specifications

Sheet Number:

C5.00

GENERAL REQUIREMENTS

- Contractor shall be solely responsible for obtaining all permits necessary to complete the work. Contractor shall pay all fees associated with obtaining permits.
- Completely coordinate with work of all other trades.
- Although such work is not specifically called out on drawing, the contractor shall furnish and install all miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
- Drawings are diagrammatic and indicate general arrangement of site features, dimensions, utility tags are provided as a courtesy. All lengths and dimensions shall be verified by Contractor in advance of bidding, otherwise, the more expensive option shall be deemed to be included.
- Field verify locations and arrangement of all existing site features.
- If any errors or omissions appear in Drawings, Specifications, or other documents, bidding Contractor shall notify Engineer no later than ten (10) days prior to submitting bid. Should conflict occur in or between drawings and specifications, bidding contractor is deemed to have estimated more expensive way of doing work, unless he has asked for and obtained written decision (addendum) before submission of bid as to which method or materials will be required.
- Installation of all systems and materials is subject to clarification as indicated in reviewed shop drawings and field coordination drawings.
- Perform all work and install materials and equipment in full accordance with the latest applicable rules, regulations, requirements, and specifications of the following:
 - State and Federal Laws
 - Local laws, codes and ordinances
 - American Society for Testing and Materials (ASTM)
 - American Water Works Association (AWWA)
 - Federal Highway Administration (FHWA)
 - Environmental Protection Agency (EPA)
 - Wisconsin Department of Safety and Professional Services (SPS):
 - Chapter NR 141 - Monitoring Well Construction
 - Chapter NR 812 - Well Construction and Pump Installation
 - Wisconsin Department of Natural Resources Technical Standards for Constructions Site, Erosion & Sediment Control
 - Conflicts, if any, which may exist between the above items, the more restrictive shall govern.
- SUBMITTALS
 - The A/E's review of shop drawings or samples shall not relieve the Contractor of responsibility for any deviation from the contract documents. The Contractor shall include with the shop drawings an index sheet detailing all deviations from the contract documents, and will be held responsible for all deviations unless he has received written approval from the A/E for the specific deviation, separate from general shop drawing approval. The A/E's review shall not relieve the contractor from responsibility for errors or omissions in the shop drawings or samples.
 - Shop Drawings:
 - The Contractor shall review the shop drawings and stamp with his approval prior to submitting shop drawings to A/E for review.
 - Shop drawings shall be submitted electronically in one PDF format file for each specification section. File name shall contain specification number and product name. Each shop drawing shall contain the following:
 - Cover Sheet: The submittals shall contain a cover sheet, which shall include the following information.
 - Submittal Date
 - Specification Section
 - Manufacturer's Representative (Contact Name, address, and telephone number)
 - Project Name, Project City, Project State, and Project Address.
 - Product Data: Manufacturer's product data sheets and description of all system components. These data sheets shall be highlighted or suitably marked, so that included items and options are indicated. On data sheets that include multiple products, the products that are not used shall be crossed out.
- Cause as little interference or interruption of existing utilities and services as possible.
- Schedule work which will cause interference or interruption in advance with Owner, Architect, authorities having jurisdiction and all affected trades.
- Examine Contract Documents to determine how other work will affect execution of civil work.
- Determine and verify locations of all existing utilities on or near site.
- Make arrangements for and pay for necessary permits, licenses, and inspections.
- Keep a complete set of all civil drawings in job site office for showing actual locations of utilities and other features encountered, modifications to proposed grades and site features, and other deviations from the original design.
 - Use this set of drawings for no other purpose.
 - Where any locations of utilities and other features encountered, modifications to proposed grades and site features, and other deviations from the original design are installed differently from that shown, indicate differences clearly and neatly using ink or indelible pencil.
 - At project completion, submit record set of drawings to owner and engineer.

DEMOLITION

- For utilities or other services requiring removal or abandonment in-place, submit materials documenting completion of such work.
- Verify all gas and electrical utilities have been abandoned or disconnected and associated hazards mitigated, prior to beginning any demolition.
- Take all necessary precautions while dismantling piping containing gas, gasoline, oil or other explosive or toxic fluids or gases. Purge lines and contain materials in accordance with all applicable regulations, store such piping outdoors until fumes are removed.
- Unless otherwise noted, Contractor shall be responsible for obtaining and paying for all permits necessary to complete demolition work.
- Use Contractor's normal equipment for demolition purposes and which meets all safety requirements imposed on such equipment.
- Remove all equipment, fixtures and other materials scheduled for salvage prior to be beginning demolition operations.
- Abandon gas, electric and communication utilities in accordance with local utility company requirements, or applicable substantive requirements if considered private.
- Demolish foundation walls and other below grade features in accordance with the plans. Unless otherwise noted, remove all below grade features to a point 4' below adjoining existing grade, or proposed grade, whichever is lower. Basement and/or lowest level floors more than 4' below existing grade need not be removed, but must be broken up to permit drainage.
- Carefully protect and/or replace drain tiles encountered during demolition which are necessary to maintain site drainage conditions. Immediately repair or replace any drain tiles not scheduled for demolition, but damaged. Report damage to the Construction Representative. Repairs to drain tile or replacement drain tile shall be comparable or better than the existing drain tile system.
- Transport and dispose all demolition waste in accordance with local, state, and federal guidelines.

WATER UTILITY DISTRIBUTION PIPING

- Submittals
 - Provide manufacturer's product information (cut sheets) and O&M information for watermain materials as indicated in Civil General Requirements, including:
 - Pipe
 - Fittings
 - Valves
 - Hydrants
 - Joint Restraint Materials
 - Tracer Wire
 - Provide reports that document pressure and continuity testing procedures and results
 - Provide reports that document safe sample collection procedures and results.
 - Contractor shall be solely responsible for obtaining all permits necessary to complete the work. Contractor shall pay all fees associated with obtaining permits.
 - Unless otherwise shown on the plans provide valves on "dead end" mains that will allow dry connection to the watermain system. Terminate "dead end" mains with full length of pipe beyond the valve, and a ell end will restrained plug.
 - Ductile iron watermain shall conform to the requirements of ANSI/AWWA C151/A21.51 and ANSI/AWWA C104/A21.4.
 - PVC watermain shall conform to the requirements of AWWA C900 (4"-12") or AWWA C905 (14"-48")
 - HDPE watermain shall conform to the requirements of AWWA C906 (4"-63).
 - HYDRANTS
 - MATERIALS
 - Acceptable Manufacturers are:
 - Clow Medallion
 - Kennedy Guardian
 - Mueller Super Centurion 250, Model A423
 - Waterous 5.25" Pacer
 - Pre-approved equal.
 - All hydrants shall be provided as follows
 - MJ connection
 - Turn left to open
 - depth of bury 6.5'
 - Weather shield top
 - Painted Blue Hydrant Red (5 mil DFT)
 - Break flange (traffic) type
 - 5.25" main valve opening
 - Two 2.5" hose nozzles
 - One 4.5" pumper nozzle
 - One 5' long Heavy Duty Candy Cane Fire Hydrant Marker with a spring equipped L-bracket for hydrant flange bolt mounting. Available at Ferguson Waterworks (Part # CHMHRV), HD Supply (Hydra Finder Flag) or USA Bluebook (Part # ME-22516).
 - Hydrant leads shall be six (6) inch, Class 52 ductile iron pipe.
 - Hydrants shall be connected to watermain with a Clow F1217 Anchoring Tee or pre-approved equal, a branch RW Gate Valve at main, a valve box and adaptor base.
 - All hydrants and valves shall be restrained by Mega-lugs or pre-approved equal from the main to the hydrant. Any push on joints in hydrant leads need to be harness restrained.
 - Hydrants that are not placed in service shall have a "Not in Service" tag attached to the pumper nozzle.
 - All pumper nozzle caps on private fire hydrants shall be painted safety yellow.
 - DESIGN STANDARDS
 - Location:
 - Maximum spacing: 400-ft, diameter from center of hydrant to center of hydrant.
 - At all high points in distribution system.
 - At lot lines extended, where practical. In the event a hydrant location conflicts with a valve location at an intersection, the hydrant tee shall be located 10 feet away from the main valve.
 - Rural: 3 feet off of Right-of-Way. Provide 5-ft, deep x 10-ft, wide hydrant easement.
 - Urban: 4 feet behind back of curb line.
 - Sideways, recreation trails and other pedestrian ways: Minimum separation distance from edge of pathway to closest physical feature of the hydrant shall be 18".
 - Design height: Pumper nozzle above surrounding finish ground = 18" to 24".
 - Contractor shall provide for a 6.5' burial depth for all hydrant leads shown on plans. If a water main burial depth is greater than 6.5', Contractor shall install fitting(s) to raise the hydrant lead to meet the required burial depth.
 - Break flange must be at grade or not greater than 6 inches above grade.
 - Branch tee shall be anchor-style with gate valve at the tee.
 - An asphalt service drive with culvert shall be installed in all ditch crossings greater than 2.0 feet deep or that have traverse slopes greater than 4H:1V.
 - The service drive shall be 7 feet wide and extend to 2 feet behind the hydrant. The drive shall be constructed with 8 feet wide by 6" deep of No.2 open graded base course and 7 feet wide by 3" depth of asphalt.
 - Culverts shall be hydraulically sized for each location consistent with Section 4 of the Development Handbook
- Resilient seated wedge gate valve shall conform to the requirements of AWWA C509 and C515. Body, bonnet and gate shall be constructed of ductile iron. Bolts shall be stainless steel.
- Rubber-seated butterfly valve shall conform to the requirements of AWWA C504, for Class 150B. Body and disc shall be constructed of ductile iron. Bolts shall be stainless steel. Disc shall be lens shaped.
- Resilient seated wedge gate lapping valve having 100% port shall conform to the requirements of AWWA C509 and C515. Body, bonnet and gate shall be constructed of ductile iron. Bolts shall be stainless steel.
- Maintain clearances between watermains and existing or proposed sewer lines as follows:
 - 8" horizontal separation (measured center to center) between watermains and existing or proposed sanitary or storm sewers.
 - 12" vertical separation (measured from outsides of pipes) where watermains cross over sanitary or storm sewers.
 - 18" vertical separation (measured from outsides of pipes) where watermains cross under sanitary or storm sewers.
- Install watermain at locations and depths shown on the plans. Install locator tape per manufacturer's recommendations.
- Tracer wire shall be a minimum of 10 gauge, insulated, single-conductor copper wire or equivalent and installed per manufacturer's recommendations.
- Provided a minimum of 6' of cover over watermain, unless otherwise shown on the drawings or directed by the construction representative. For watermains with less than 6' of cover, provide insulation as shown on the drawings, or as required by Wisconsin Department of Safety and Professional Services Administrative Code SPS 382.
- Install fittings, valves and hydrants at locations shown on the drawings.
- Pressure test all watermain and copper water services.
- Conduct continuity test on all ductile iron watermain and copper water services.

SEEDING AND RESTORATION

- Grass seed shall meet the requirements of section 630.2.1 of standards specifications for highway construction.
- Grass seed: fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology."
- Water free of wastewater effluent or other hazardous chemicals.
- Clean straw or hay that is well-seasoned, and free of rot, mildew and the seeds of noxious weeds.
- No seeding shall occur on frozen ground or at temperatures lower than 32 degrees Fahrenheit. No seeding shall occur when the average wind speed exceeds 12 MPH.
- Sow seed using either Method A or Method B as defined in Section 630.3.3 of Standard Specifications for Highway Construction. Unless otherwise noted, sow seed at a rate of 5# (dry seed weight) 1000 square feet.
- Place and anchor mulch using the methods outlined in Section 627.3 of Standard Specifications for Highway Construction.
- Seeded areas are to be watered daily to maintain adequate surface soil moisture for proper seed germination. Watering shall continue for not less than 30 days following seeding. Thereafter, apply ½" of water twice weekly until final acceptance.

CAST IN PLACE CONCRETE

- Submittals
 - Concrete mix design: Submit five (5) copies of mix design to Architect for review. This submittal shall include the following:
 - Required cylindrical compression strength for Fc (28 day).
 - Element (curb, driveway, etc.) in which each class (strength of concrete) will be used
 - Cylinder compressive strength test results or complete standard deviation analysis in accordance with ACI 318 Section 5.3
 - Proportions of Materials
 - Source of materials - Cement (type and brand), gravel pit.
 - Aggregate size and certification from an independent testing lab that gradation, specific gravity, soundness, absorption, and impurities meet ASTM requirements.
 - Admixture brand, dosage, literature.
 - Air content
 - Water content and target slump
 - Range of ambient temperature and humidity for which design is valid
 - Special characteristics of mix which require precautions in mixing, placing, or finishing techniques to achieve finished product specified.
 - Product Data: Submit manufacturer's product data for review with application and installation instructions for proprietary materials and items including: patching compounds, epoxies, curing compounds, dry-shake finish materials, hardeners, sealers etc. for all items specified and used in materials list.
- All work shall be in accordance with applicable manufacturer's and supplier's instructions.
- All concrete work which does not conform to the requirements of the Contract Documents and ACI 301, including function, durability, appearance, strength, cracking, tolerances and finishing, shall be corrected as directed by Architect at Contractor's expense. Additional testing, engineering, reinforcement and removal and replacement of defective concrete shall be paid for by Concrete Contractor. Contractor shall also be responsible for the cost of corrections to any other work affected by or resulting from corrections to the concrete work.
- All concrete, unless otherwise specifically permitted by Architect, shall be transit-mixed in accordance with ASTM C 94.
 - Synthetic Fibers shall be used in concrete mix design in lieu of welded wire fabric. Synthetic fibers shall not replace reinforcing rebar/dowels as depicted on the Construction Details.
 - For concrete sidewalks: Matrix Bi-Blend micro fiber - FRC Industries. Application dosage shall be 1.5 pounds per cubic yard.
 - For concrete pavements: Matrix HPS 950 Macro/micro synthetic blend fiber or Forta Ferro macro fiber - FRC Industries. Application dosage shall be 5 pounds per cubic yard.
- Concrete must meet all requirements of the ASTM C 94, ACI 211, ACI 318 Chapter 4 Durability Requirements, and those herein specified for materials, proportioning, mixing and other details of manufacturer, quality and deliver.
- Air entrained concrete: Use for all exterior slabs, walls, walks, platforms, ramps, steps, all portions of parking
- Concrete requiring air entrainment shall contain six (6) percent plus or minus one and a half (1.5) percent air by volume, for 3/4" dia. aggregate. Conform to ACI 318, Chapter 4.
- Minimum compressive strength at 28 days: 4000 psi.
- Maximum aggregate size shall not exceed one third of the slab on grade thickness.
- Fly Ash may be used as a pound for pound replacement of cement up to 20% of the total cementitious content, 25% for footings, except for finished flatwork during winter construction, subject to Architect's approval.
- Make one slump test of the first truck of each mix, each day, one test for each compression test and other tests as often as required thereafter, whenever consistency changes.
- Air content tests shall be made from the first truck of each mix, each day and when-ever test cylinders are made, in accordance with ASTM C 173 or ASTM C231. Test more often when required air contents are not achieved.
- Concrete Temperature: Test hourly when air temperature is 40 degrees F (4 degrees C) and below, and when 80 degrees F (27 degrees C) and above; and each time a set of compression test specimens is made.
- If measured slump, air content or concrete temperature falls outside limits specified, a check test shall be made immediately on another portion of same sample. In event of a second failure, concrete shall be considered to have failed to meet requirements of specifications and shall not be used in structure. Notify Architect immediately.
- Strength tests shall be made for each of the following conditions: Each day's pour, each class of concrete, each change of supplies or source, each 150 cubic yards of concrete or fraction thereof, and each 5000 square feet of surface area for slabs or walls.
- To conform to requirements of this Specification, the strength level shall be considered satisfactory so long as the average of all sets of three (3) consecutive strength test results equals or exceeds the specified Fc and no individual strength test result falls below the specified strength Fc by more than 500 psi. Architect shall be notified immediately of nonconformance.
- Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- Protect freshly placed concrete from premature drying and excessive cold or hot temperatures in conformance with ACI 301 and ACI 308.
- Concrete curb and gutter shall be placed in accordance with WisDOT Section 601 to the dimensions and shapes shown in the standard detail drawings. Where curb and gutter details are not provided, curb and gutter shape and dimensions shall match existing adjacent curb and gutter.
- Concrete sidewalk and driveway shall be placed in accordance with WisDOT Section 602 to the dimensions and thicknesses shown in the detail drawings.
- Provide concrete pavement having the thickness and reinforcement as shown on the drawings, or to match adjacent existing pavement.
- Each curb ramp shall be provided with a detectable warning field installed in fresh concrete of all sidewalk and multi-use trails at legal crosswalks, and as shown in the detail drawings. A detectable warning field shall not be installed in asphalt pavements. The detectable warning field shall be installed per manufacturer's recommendations.



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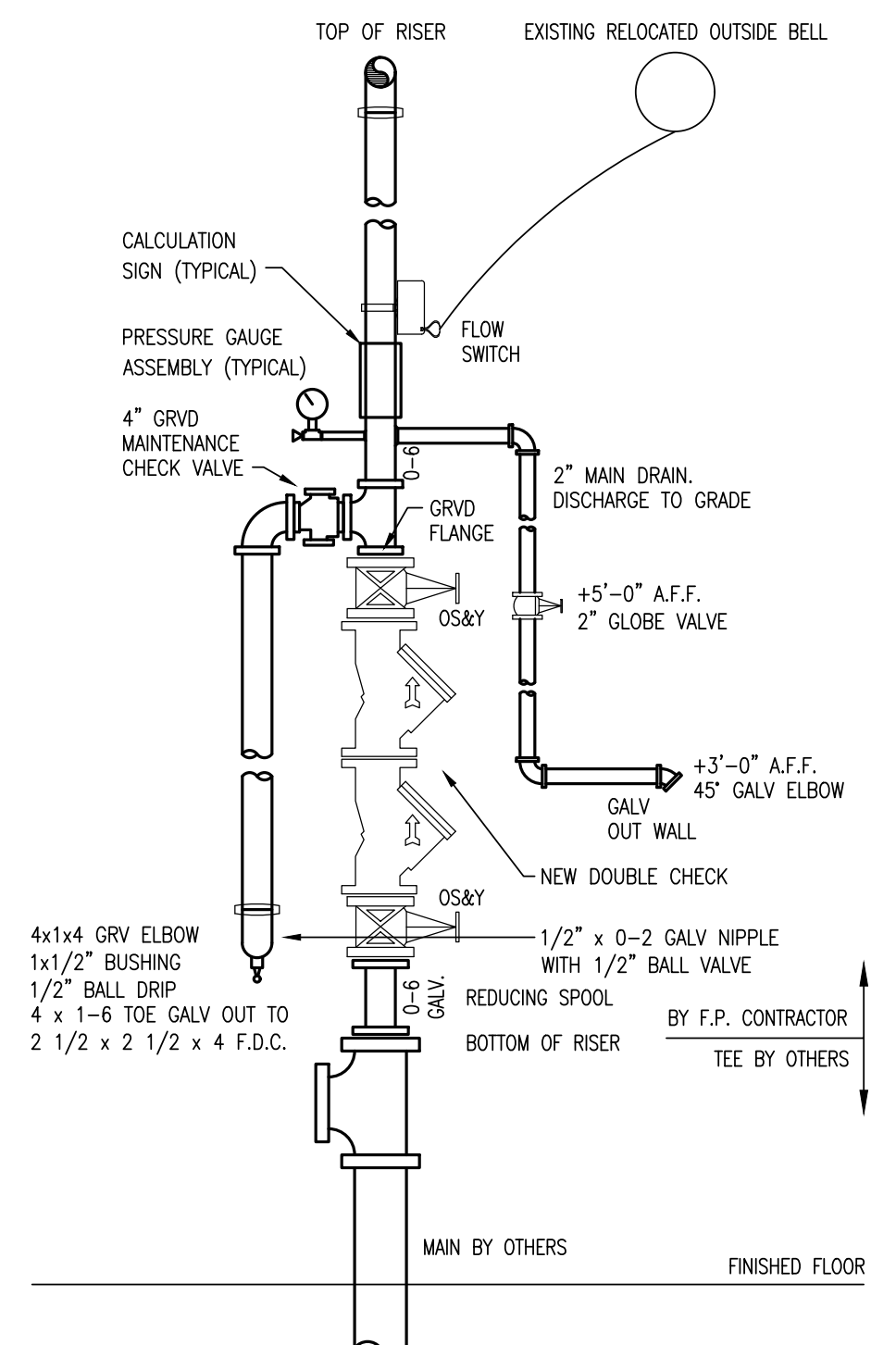
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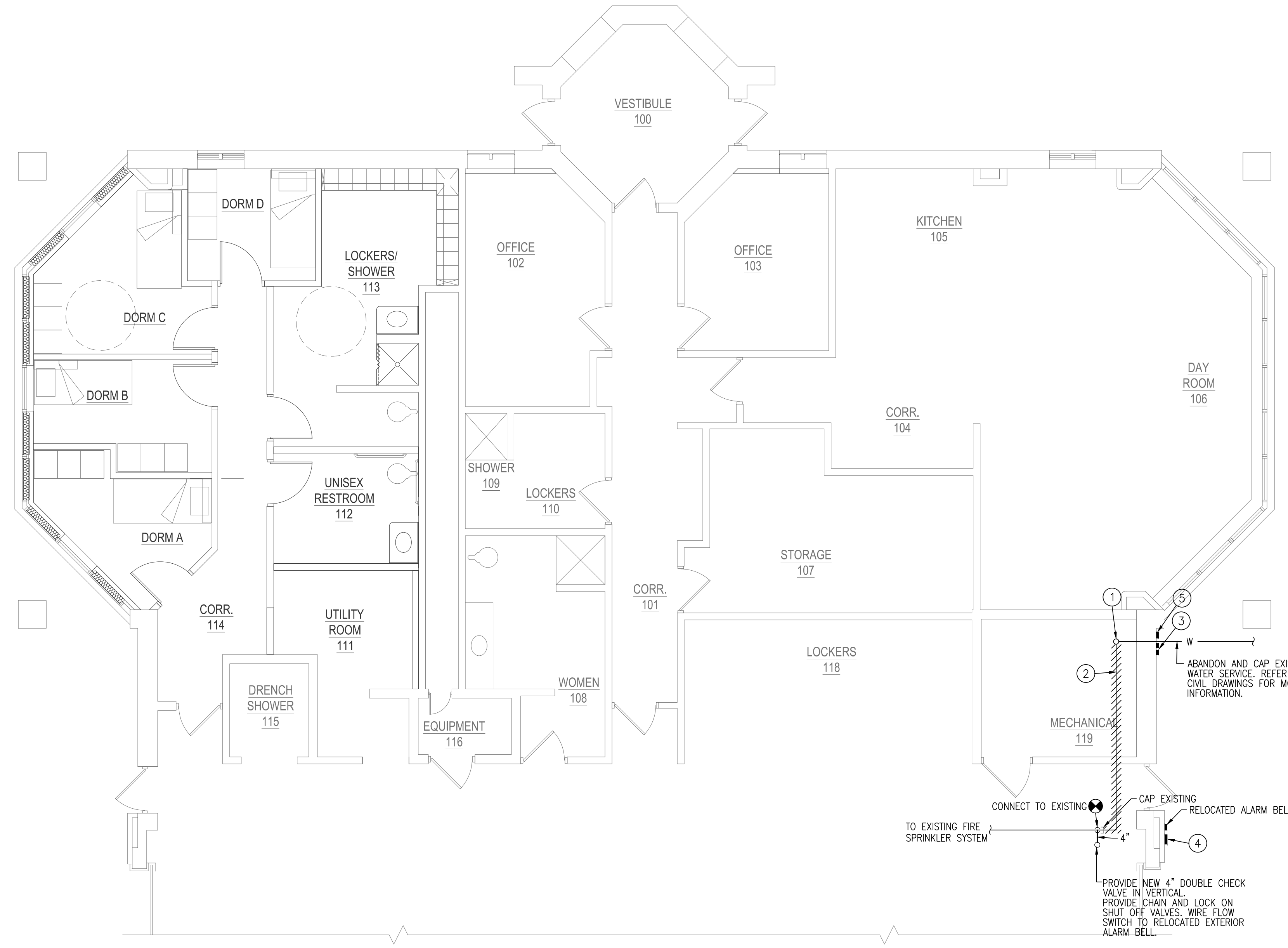
Project Name:
City of New Berlin - Fire Station
#7 Water Lateral Replacement

16260 W. National
Ave. New Berlin, WI 53151

Client:
City of New Berlin
3805 S Casper Drive
New Berlin, WI 53151
Tel: (262) 786-8610



2 FIRE PROTECTION RISER DETAIL
NTS



1 PLUMBING FLOOR PLAN
3/16" = 1'-0"

- KEYED FIRE PROTECTION NOTES:**
1. EXISTING 4" FIRE PROTECTION RISER, VALVES, SWITCHES AND ASSOCIATED PIPING TO BE REMOVED TO BELOW FLOOR AND PLUGGED. PATCH FLOOR TO MATCH EXISTING.
 2. REMOVE EXISTING PIPING.
 3. REMOVE EXISTING SIAMESE FIRE DEPARTMENT CONNECTION.
 4. PROVIDE NEW 5" STORZ FIRE DEPARTMENT CONNECTION.
 5. EXISTING ALARM BELL TO BE REMOVED AND SAVED FOR RELOCATION.

Issuance:
Construction Documents

Scale: As Noted

Date: 06/13/2025

Project Number:
19-1011.26

Sheet Name:
Partial Fire
Protection Plan

Sheet Number:

FP1.10

FIRE PROTECTION SHEET INDEX:
FP1.10 PARTIAL FIRE PROTECTION PLAN



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Project Name:
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16260 W. National
Ave. New Berlin, WI 53151

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Issuance:
Construction Documents

Scale: As Noted



Date: 06/13/2025

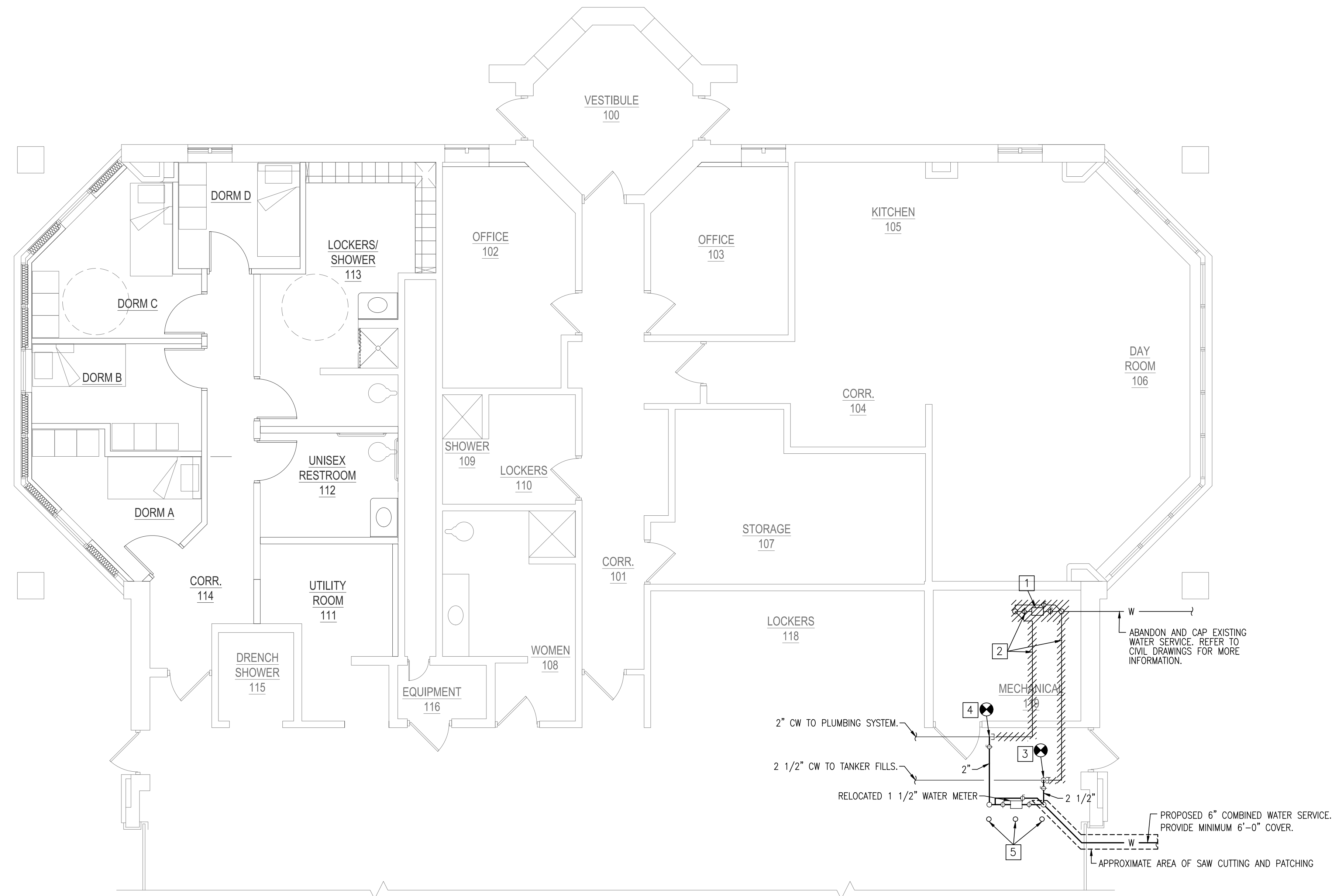
Project Number:
19-1011.26

Sheet Name:
Plumbing Plan
and Notes

Sheet Number:

P1.10

PLUMBING LEGEND		
SYMBOL	ABBR.	DESCRIPTION
	CW	COLD WATER PIPING
	UP	PIPING UP
	DN	PIPING DOWN
	C.O.	CLEANOUT
		BALL VALVE
		POINT OF CONNECTION OF NEW PIPING TO EXISTING



- KEYED PLUMBING NOTES:
- EXISTING 1 1/2" PLUMBING METER TO BE REMOVED AND SAVED FOR RELOCATION AND REINSTALLATION.
 - REMOVE EXISTING PIPING.
 - CONNECT 2 1/2" UN-METERED COLD WATER TO EXISTING TANKER FILL PIPE.
 - CONNECT 2" METER COLD WATER TO BUILDING DOMESTIC WATER DISTRIBUTION PIPE.
 - PROVIDE CONCRETE BOLLARDS TO PROTECT WATER METER AND FIRE RISER.

1 PLUMBING FLOOR PLAN
3/16" = 1'-0"

PLUMBING SHEET INDEX:	
P1.10	PLUMBING PLAN AND NOTES



REQUESTED ACTION STATEMENT

DATE: August 8, 2025
TO: Mayor
Common Council
Parks, Buildings and Grounds Commission
FROM: Josh Fabian – Supervisor Parks Department
ISSUE: Valley View Disc Golf Course Bench Donation Agreement

REQUESTED:

Recommend to Common Council to approve a donation agreement between resident Jim McGinnis and the City of New Berlin the addition of a bench at the New Berlin Valley View Disc Golf Course.

FISCAL IMPACT:

None

RATIONALE:

A City of New Berlin resident, Jim McGinnis, would like to donate a bench to the City of New Berlin to be located at the practice basket hole of the New Berlin Valley View Disc Golf Course. Following the addition of benches around the course in recent years, the bench by the practice basket provides more quality seating for Park visitors and course users.