

Bid No. 2022-03-09

TOWNSHIP OF PISCATAWAY
MIDDLESEX COUNTY
NEW JERSEY
TOWNSHIP OF PISCATAWAY

“2022-STERLING INTERIOR RENOVATIONS PHASE-3”

MAYOR
BRIAN WAHLER

PISCATAWAY TOWNSHIP COUNCIL
MICHELE LOMBARDI, COUNCIL PRESIDENT
FRANK UHRIN, COUNCIL VICE PRESIDENT
GABRIELLE CAHILL
JAMES BULLARD
STEVE D. CAHN
KAPIL K. SHAH
LINWOOD D. ROUSE

BUSINESS ADMINISTRATOR
TIMOTHY J. DACEY

TOWNSHIP CLERK
MELISSA A. SEADER

PROJECT MANAGER
GUY GASPARI, P.E. P. L.S, P.P., C.P.W.M /T & M ASSOCIATES
DIRECTOR OF PUBLIC WORKS/ENGINEERING
455 HOES LANE PISCATAWAY, NJ 08854

ANY QUESTIONS MUST BE E-MAILED TO Purchasing@piscatawaynj.org NO LATER THAN APRIL 4, 2022. @ 12noon. PHONE CALLS WILL NOT BE ACCEPTED THERE WILL BE NO EXCEPTIONS.

Bid Opening Date: Thursday, April 21, 2022 AT 2:00 PM

BIDDER: _____

ADDRESS: _____

TEL. NO.: _____

EMAIL: _____

NOTICE TO BIDDERS

BID NO: 2022-03-09

TOWNSHIP OF PISCATAWAY
MIDDLESEX COUNTY, NEW JERSEY

NOTICE IS HEREBY GIVEN that sealed bids will be received by the Business Administrator or designated representative, for the Township of Piscataway, on **THURSDAY, APRIL 21, 2022 at 2:00PM** prevailing time, in the Council Chambers, Township of Piscataway, Administration Building, 455 Hoes Lane, Piscataway, NJ 08854 at which time and place will be publicly read live broadcast via zoom as listed below. Bids will be publicly opened and reviewed for completeness for the following:

“2022-STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3”

Bids must be made on standard proposal form, be enclosed in a sealed package bearing the name and address of bidder and the words **“2022-STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3”** on the outside and delivered to the Township Purchasing office only, 455 Hoes Lane, Piscataway, NJ 08854 during regular business hours, 8:30 am to 12:20 pm and 1:30 pm to 4:30 pm., Monday through Friday, excluding holidays. *Please be advised that the municipal building is closed daily between 12:20 PM and 1:30 PM for lunch.*

Bidders must call the purchasing office at 732-562-2321 to drop off the sealed bid by or before 12noon on 4/21/2022. The Municipal building is closed to the public due to the Covid-19. Bids will be opened via zoom at 2:00pm.

Bids Specifications, Plans and instructions to bidders may be obtained at:
<http://bids.piscatawaynj.org/>

Walk Thru/Site Visit: MARCH 29, 2022 @2:00pm. At 1 Sterling Village Dive, Piscataway, NJ 08854

Question and Answer Due Date: APRIL 4, 2022 by 12 Noon, E-mail only to:
Purchasing@piscatawaynj.org

Addendum may be downloaded from the Township website <http://bids.piscatawaynj.org/>

(1) Bid Packet Marked “ORIGINAL” (1) Photo Copy of the Original “TRUE COPY”

During the Covid-19 pandemic, while the statewide “State of Emergency” declaration is still in effect in according with Executive Order 107 all proposal packets will only be read and opened electronically “BROADCAST LIVE” via ZOOM Bid opening. The Municipal building is closed due to the Covid-19 restrictions. Once the bid opening is concluded bidders must call the Purchasing Agent @ 732-562-2321 to set an appointment if bidders wishes to review any of the bids.

All bids shall be kept sealed , and will be received and publicly opened on the proposal opening date and time in the Township Council Chambers using Virtual teleconferencing which can be access by logging in to zoom in the following manner:

Join Zoom Meeting:

Piscataway Purchasing is inviting you to a scheduled Zoom meeting.

Topic: BID OPENING: 2022-STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

Time: Apr 21, 2022 02:00 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://us02web.zoom.us/j/84653904059?pwd=YjVjWXhLd1V4c1dvR2I5QWVuaEk2QT09>

Meeting ID: 846 5390 4059

Passcode: 685893

One tap mobile

+13126266799,,84653904059#,,,,*685893# US (Chicago)

+16468769923,,84653904059#,,,,*685893# US (New York)

Dial by your location

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+1 346 248 7799 US (Houston)

+1 408 638 0968 US (San Jose)

+1 669 900 6833 US (San Jose)

+1 253 215 8782 US (Tacoma)

Meeting ID: 846 5390 4059

Passcode: 685893

Bids can be hand delivered to the Municipal Building by calling the Purchasing Agent Purchasing@732-562-2321. If using an outside delivery and/or messenger service (i.e. Federal Express, UPS, etc.), please note the following: **The Township will not be responsible for deliveries made prior to or after normal business hours, or to any other office, or for the failure of a bidder to affix the label provided with the bid package on the courier envelope.**

Surety in the form of a bid bond, certified check or Cashier's Check in the amount of ten percent (10%) of the total price bid, but not in excess of \$20,000.00, payable unconditionally to the Township of Piscataway shall submit with the bid. The successful bidder will be required to furnish a Performance Bond in the Amount of 100% of total bid. Bidders shall comply with the requirements of N.J.S.A.10:5-31 and N.J.A.C. 17-27 et seq. Division of Purchasing.

Bid NO: 2022-03-09

TOWNSHIP OF PISCATAWAY: “2022-STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3”

Bidder’s Electronic Question Due Date: APRIL 4, 2022 @12NOON

Official Addenda Process: **APRIL 12, 2022.**

Purchasing@piscatawaynj.org

PRE-BID Conference / Site Visit Date: MARCH 29, 2022 @2PM @ 1 STERLING VILLAGE DRIVE, PISCATAWAY NJ 088854

Bid Submission Due Date: THURSDAY, APRIL 21, 2022 @2PM

Bidders must call the purchasing office at 732-562-2321 to drop off the sealed bid. The Municipal building is closed to the public due to the Covid-19.

PLEASE, DROP OFF YOUR SEALED BID BY OR BEFORE 12NOON ON 4/21/2022.

BIDS WILL BE OPENED VIA ZOOM @2PM

Bid Opening via ZOOM: Instructions below:

During the Covid-19 pandemic, while the statewide “State of Emergency” declaration is still in effect in according with Executive Order 107 all proposal packets will only be read and opened electronically “BROADCAST LIVE” via ZOOM Bid opening. The Municipal building is closed due to the Covid-19 restrictions. Once the bid opening is concluded bidders must call the Purchasing Agent @ 732-562-2321 to set an appointment if bidders wishes to review any of the bids.

All bids shall be kept sealed , and will be received and publicly opened on the proposal opening date and time in the Township Council Chambers using Virtual teleconferencing which can be access by logging in to zoom in the following manner:

Join Zoom Meeting

Piscataway Purchasing is inviting you to a scheduled Zoom meeting.

Topic: BID OPENING: 2022-STERLING VILLAGE INTERIOR RENOVATIONS
PHASE-3

Time: Apr 21, 2022 02:00 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://us02web.zoom.us/j/84653904059?pwd=YjVjWXhLd1V4c1dvR2I5QWVuaEk2QT09>

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THE TOWNSHIP OF PISCATAWAY



INSTRUCTIONS TO BIDDERS

PAGES 1-60



MARIA E. VALENTE-CAEMMERER

Purchasing Agent/Township Secretary

BID BOILER PLATE

PUBLIC WORKS

Revised June 2018

Piscataway

PUBLIC WORKS

Bid Specifications & General Requirements For

2022-STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

BID NO: 2022-03-09

THURSDAY, APRIL 21, 2022

Bid Opening Date

2:00 p.m. Via Zoom

Bid Opening Time

Opening Location: 455 Hoes Lane
Piscataway, NJ 08854

MARIA E. VALENTE-CAEMMERER

Purchasing Agent/Purchasing Specialist

The Township of Piscataway

REQUEST FOR BIDS GUY GASPARI, DIRECTOR OF PUBLIC WORKS/T & M ASSOCIATES Bid Advertisement

The Township of Piscataway, New Jersey, hereby advertises for competitive bids in accordance with N.J.S.A. 40A:11 et seq., for

BID NO. 2022-03-09 2022-STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

All necessary bid specifications and bid forms & Plans may be secured Township website at: <http://bids.piscatawaynj.org/>.

Specifications and instructions to bidders may be obtained on the Township website <http://bids.piscatawaynj.org/>. Bid documents will not be mailed. Bidders may contact the Purchasing office by E-mail only at: Purchasing@piscatawaynj.org regarding questions or additional information about the bid specifications. **By APRIL 4, 2021 by or before 12noon.**

Bids must be submitted to: Township of Piscataway Division of Purchasing
Att: Purchasing Agent
455 Hoes Lane
Piscataway, NJ 08854
Phone: 732-562-2321
E-mail: purchasing@piscatawaynj.org

Guy Gaspari, Director of Public Works/T & M Associates
Project Manager Contact Person
Department of Public works
455 Hoes Lane
Piscataway, NJ 08854
Township of Piscataway, NJ

Bids must be sealed and delivered to the Purchasing Office of the Piscataway Township ***on or before*** date and time indicated below. **The outside of the envelope to bear the following information:**

Title: **2022-STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3**

BID NO. **2022-03-09**

Name of the Bidder:

Address of the Bidder:

Date: Thursday **APRIL 21, 2022**

Time: **2:00 p.m.**

The bid opening process will begin on the above advertised date and time **'BROADCAST LIVE VIA ZOOM'** Administrative offices located at 455 Hoes Lane, Piscataway, NJ 08854. Bids may be submitted to the Purchasing office at the bid opening ZOOM meeting, prior to the advertised date and time. On the advertised date and time, the Purchasing Agent shall publicly receive and open all bids. **LIVE BROADCAST VIA ZOOM. No bids shall be received after the time designated in the advertisement.** (N.J.S.A. 40A:11-1 et. seq.,)The Township of Piscataway does not accept electronic (e-mail) submission of bids.

Bidders must call the purchasing office at 732-562-2321 to drop off the sealed bid. The Municipal building is closed to the public due to the Covid-19. PLEASE, MAKE SURE YOUR SEALED BID ARRIVES BY or BEFORE 12noon on 4/ 21/ 2022.

During the Covid-19 pandemic, while the statewide “State of Emergency” declaration is still in effect in according with Executive Order 107 all proposal packets will only be read and opened electronically “BROADCAST LIVE” via ZOOM Bid opening. The Municipal building is closed due to the Covid-19 restrictions. Once the bid opening is concluded bidders must call the Purchasing Agent @ 732-562-2321 to set an appointment if bidders wishes to review any of the bids.

All bids shall be kept sealed , and will be received and publicly opened on the proposal opening date and time in the Township Council Chambers using Virtual teleconferencing which can be access by logging in to zoom in the following manner: Piscataway Purchasing is inviting you to a scheduled Zoom meeting.

Topic: BID OPENING: 2022-STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

Time: Apr 21, 2022 02:00 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://us02web.zoom.us/j/84653904059?pwd=YjVjWXhLd1V4c1dvR2I5QWVuaEk2QT09>

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MARCH 29, 2022

There will be a pre-bid meeting on_____. While attendance is not mandatory, all prospective bidders are **strongly encouraged** to attend this important meeting, which will be held in the at **2:00 p.m.@ 1 STERLING VILLAGE DRIVE, PISCATAWAY, NJ 08854**

All bidders are required to comply with the requirements of N.J.S.A. 10:5-31 et seq., Affirmative Action Against Discrimination (N.J.A.C. 17:27-1 et seq.) An Initial Project Workforce Report will be required from the successful contractor. (Form AA-201).

Statement of Ownership Requirement: Pursuant to N.J.S.A. 52:25-24.2, Bidders shall submit a statement setting forth the names and addresses of all persons and entities that own ten percent or more of its stock or interest of any type at all levels of ownership.

Each bid shall be accompanied by a bid bond, cashier's check or certified check made payable to the Township of Piscataway, for ten percent (10%) of the amount of the total bid, however, not to exceed \$20,000.00.

Bidders are required by law to submit a Statement of Ownership Disclosure form statement setting forth the names and addresses of all persons and entities that own ten (10%) percent or more of its stock or interest of any type at all levels of ownership.

The bid package will also include other documents that must be completed and returned with the bid. Failure to comply with Instructions to Bidders and to complete and submit all required forms, may be cause for disqualification and rejection of the bid.

All contractors named in this proposal, shall possess a valid Public Works Contractor's Registration Certificate pursuant to N.J.S.A. 34:11-56.48 et seq., at the time the proposal is received by the Township of Piscataway. The Township of Piscataway reserves the right to reject any or all bids, pursuant to N.J.S.A. 40A:11-1 et. seq., and to waive any informalities that may be in the best interest of the Township.

MARIA E VALENTE-CAEMMERER

Purchasing Agent/Purchasing Specialist

THE TOWNSHIP OF PISCATAWAY

GUY GASPARI, PUBLIC WORK DIRECTOR/T & M ASSOCIATES

REQUEST FOR BIDS

PUBLIC WORKS

Bid Advertisement

The Township of Piscataway, New Jersey, hereby advertises for competitive bids in accordance with N.J.S.A. 40A:11 et seq., for

BID NO. 2022-03-09

2022-STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

Bid Documents and Specifications, Plans may be obtain on the Piscataway website for free of charge. www.piscatawaynj.org ; Bid documents will not be mailed, and only picked up in person, at the above office location.

Bidders should also login to the Township website at: www.piscatawaynj.org for any Addendums: Home page E-Gov, Bids, download, print the document for free. Bidders may contact the Purchasing office by E-mail only at: Purchasing@piscatawaynj.org regarding questions or additional information about the bid specifications.

Bids must be sealed and delivered to the Office of the Purchasing office of Piscataway Township *on or before* date and time indicated below. The envelope to bear the following information:

Outside of Envelope-Title: 2022-STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

Bid No: **2022-03-09**
Name of the Bidder:
Address of the Bidder:
Date: **THURSDAY, APRIL 21, 2022**
Time: **2:00 p.m. (via zoom)**

The bid opening process will begin on the above advertised date and time in The Township of Piscataway 455 Hoes Lane, Piscataway, New Jersey 08854. **VIA ZOOM. "BROADCAST LIVE ZOOM"** Bids must be submitted to the Purchasing Office at the bid opening meeting, prior to the advertised date and time. On the advertised date and time, the Purchasing Agent shall publicly receive and open all bids **Via ZOOM. No bids shall be received after the time designated in the advertisement.** The Township of Piscataway does not accept electronic (e-mail) submission of bids.

Bidders must call the purchasing office at 732-562-2321 to drop off the sealed bid. The Municipal building is closed to the public due to the Covid-19. PLEASE, MAKE SURE YOUR SEALED BID ARRIVES to Purchasing BEFORE OR BY 12NOON ON 4/21/2022.

During the Covid-19 pandemic, while the statewide “State of Emergency” declaration is still in effect in according with Executive Order 107 all proposal packets will only be read and opened electronically “BROADCAST LIVE” via ZOOM Bid opening. The Municipal building is closed due to the Covid-19 restrictions. Once the bid opening is concluded bidders must call the Purchasing Agent @ 732-562-2321 to set an appointment if bidders wishes to review any of the bids.

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+1 253 215 8782 US (Tacoma)

Meeting ID: 846 5390 4059

Passcode: 685893

PLEASE, MAKE SURE YOU DROP OFF YOUR SEALED BID BEFORE OR BY 12NOON ON 4/21/2022.

BID WILL BE OPENED @2PM VIA ZOOM.

There will be a pre-bid /**Site Visit** meeting on **MARCH 29, 2022**. While attendance is not mandatory, all prospective bidders are **strongly encouraged** to attend this important meeting, which will be held at the, at **2:00 p.m. @ 1 Sterling Village Drive, Piscataway, NJ 08854 (Sterling Village senior Housing)**

All bidders are required to comply with the requirements of N.J.S.A. 10:5-31 et seq., Affirmative Action Against Discrimination (N.J.A.C. 17:27-1 et seq.). An Initial Project Workforce Report will be required from the successful contractor. (Form AA-201).

Contractors bidding on this project are to comply with the requirements of the New Jersey Prevailing Wage Act pursuant to N.J.S.A. 34:11-56.25 et seq.

Each bid shall be accompanied by a bid bond, cashier's check or certified check made payable to the Township of Piscataway, for ten percent (10%) of the amount of the total bid, however, not to exceed \$20,000.00.

Bidders are required by law to submit a Statement of Ownership Disclosure form statement setting forth the names and addresses of all persons and entities that own ten (10%) percent or more of its stock or interest of any type at all levels of ownership.

Statement of Ownership Requirement: Pursuant to N.J.S.A. 52:25-24.2, Bidders shall submit a statement setting forth the names and addresses of all persons and entities that own ten percent or more of its stock or interest of any type at all levels of ownership.

The bid package will also include other documents that must be completed and returned with 40A:11-1 et seq., the bid. Failure to comply with Instructions to Bidders and to complete and submit all required forms, may be cause for disqualification and rejection of the bid.

The Township of Piscataway reserves the right to reject any or all bids pursuant to N.J.S.A. 40A:11-1 et seq., and to waive any informalities that may be in the best interests of the Township.

MARIA E. VALENTE-CAEMMERER

Purchasing Agent/Purchasing Specialist

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Review all sections that may affect your work and include applicable requirements. All contracts are based on scope information within the whole document set and are not limited to “trade” drawings and specifications.

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Sample of Bid Bond Form

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Sample of NJ AA-202 Forms

Sample of NJ AA-201 Forms

Sample of –ST-13 Form

SAMPLE PAGES **DOES NOT** HAVE TO RETURNED WITH BID PACKET.
REQUIRED ONCE CONTRACT IS AWARD.

Ethics in Purchasing

Township Responsibility

Recommendation of Purchases

It is the desire of The Township of Piscataway to have all employees and officials practice exemplary ethical behavior in the procurement of goods, materials, supplies, and services.

Officials and employees who recommend purchases shall not extend any favoritism to any vendor. Each recommended purchase should be based upon quality of the items, service, price, delivery, and other applicable factors in full compliance with N.J.S.A. 40A:11-1 et seq.,

Solicitation/Receipt of Gifts – Prohibited

Officials and employees are prohibited from soliciting and receiving funds, gifts, materials, goods, services, favors, and any other items of value from vendors doing business with The Township of Piscataway or anyone proposing to do business with the Township.

Vendor Responsibility

Offer of Gifts, Gratuities -- Prohibited

Any vendor doing business or proposing to do business with The Township of Piscataway, shall neither pay, offer to pay, either directly or indirectly, any fee, commission, or compensation, nor offer any gift, gratuity, or other thing of value of any kind to any official or employee of The Township of Piscataway or to any member of the official's or employee's immediate family.

Vendor Influence -- Prohibited

No vendor shall cause to influence or attempt to cause to influence, any official or employee of the Township of Piscataway, in any manner which might tend to impair the objectivity or independence of judgment of said official or employee.

Vendor Certification

Vendors or potential vendors will be asked to certify that no official or employee of The Township of Piscataway or immediate family members are directly or indirectly interested in this request or have any interest in any portions of profits thereof. The vendor participating in this request must be an independent vendor and not an official or employee of the Township.

MARIA E. VALENTE-CAEMMERER

Purchasing Agent/Purchasing Specialist

Township of Piscataway

ADVISORY INFORMATION FOR BIDDERS

1. PROMPTNESS OF BID SUBMITTAL

It is the responsibility of the bidder to ensure that their bid is presented in a sealed envelope and submitted to the Purchasing Office, prior to the advertised bid date and time **Via ZOOM**. The advertised bid date and time for this bid is on **THURSDAY, APRIL 21, 2022 @ 2:00pm**. No bids shall be received after the time designated in the bid advertisement. No extensions or exceptions will be made. The Purchasing Office is opened Monday through Friday from 8:30am – 4:30pm and closed for lunch from 12:20pm to 1:30pm. Once again, bids will not be received after the time designated in the advertisement. Bidders must call Purchasing @732-562-2321 to hand deliver the sealed bid. The Municipal Building is closed due to the Covid-19.

2. PARKING

Allow enough time to locate a parking space.

3. MAIL

Mail is brought to the Clerk's Offices in mailbags, approximately 11:30am each day. The mail is then sorted within the Township system, by departments. The Clerk's Office routinely receives its mail at approximately 11:30am.

4. UPS / FED EX / AND OTHER EXPRESS DELIVERY SERVICES

Deliveries of this type usually begin at 9:00 a.m. These items are brought only to the Clerk's Office. The Clerks Office then calls the various departments with a request to pick up their items. . **Please, Make Sure Name of the BID IS ON THE OUTSIDE OF THE FEDEX /UPS ENVELOPE.**

5. HAND DELIVER BIDS – SUGGESTED PRACTICE

Keeping the aforementioned items in mind, the Township suggests that bidders arrange to hand deliver their bid to the Clerk's Office, and the Clerk will personally turn it in to the Purchasing Agent before the advertised date and time. Please understand that bids arriving after the advertised bid date and time, for any reason, cannot be accepted, opened or considered. . CALL 732-562-2321 to drop off the sealed bid. **PLEASE MAKE SURE YOU DROP OFF YOUR SEALED BY OR BEFORE 12NOON ON 4/21/2022.**

Require: Submission of (1) Original Bid in Blue Ink and Required: (1) Photo Copy of the original marked "TRUE COPY".

Required (1) Original Bid Bond only with the Original bid packet.

All bids are to be submitted in duplicate; one (1) Original; one (1) Photo Copy of the Original Marked "TRUE COPY. No originals in the True copy

Bidders must call the purchasing office at 732-562-2321 to drop off the sealed bid. The Municipal building is closed to the public due to the Covid-19. PLEASE, MAKE SURE YOR SEALED BID ARRIVES BY OR BEFORE 12NOON.

During the Covid-19 pandemic, while the statewide “State of Emergency” declaration is still in effect in according with Executive Order 107 all proposal packets will only be read and opened electronically “BROADCAST LIVE” via ZOOM Bid opening. The Municipal building is closed due to the Covid-19 restrictions. Once the bid opening is concluded bidders must call the Purchasing Agent @ 732-562-2321 to set an appointment if bidders wishes to review any of the bids.

All bids shall be kept sealed , and will be received and publicly opened on the proposal opening date and time in the Township Council Chambers using Virtual teleconferencing which can be access by logging in to zoom in the following manner: Join Zoom Meeting:

Piscataway Purchasing is inviting you to a scheduled Zoom meeting.

Topic: BID OPENING: 2022-STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

Time: Apr 21, 2022 02:00 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://us02web.zoom.us/j/84653904059?pwd=YjVjWXhld1V4c1dvR2I5QWVuaEk2QT09>

Meeting ID: 846 5390 4059

Passcode: 685893

One tap mobile

+13126266799,,84653904059#,,,,*685893# US (Chicago)

+16468769923,,84653904059#,,,,*685893# US (New York)

Dial by your location

+1 312 626 6799 US (Chicago)

+1 646 876 9923 US (New York)

+1 301 715 8592 US (Washington DC)

+1 346 248 7799 US (Houston)

+1 408 638 0968 US (San Jose)

+1 669 900 6833 US (San Jose)

+1 253 215 8782 US (Tacoma)

Meeting ID: 846 5390 4059

Passcode: 685893

**PLEASE, MAKE SURE YOU DROP OFF YOUR SEALED BID TO PURCHASING BY OR BEFORE
12NOON ON 4/21/2022.**

BIDS WILL BE OPENING VIA ZOOM @2PM.

Township of Piscataway

BID CHECKLIST (A)

A. Bid packages must be submitted in duplicate on the proposed forms as provided, and in the manner designated. The Township of Piscataway will accept one original bid package and one copy of the bid package. Please include all items, organized as follows:

1. Addenda, Acknowledgement
2. Americans with Disabilities Act—Acknowledgement
Bid Bond Form
3. Bid Proposal Form
4. Bid Guarantee (Bid Bond, Cashier's Check, or Certified Check)
5. Business Registration Certificate -- New Jersey—Submit with bid or prior to award of contract
6. Certificate (Consent) from Surety
7. Acceptable Bid Bond Forms
8. Contractor Questionnaire / Certification
9. Contractor's Registration Certification
10. Contractor Registration Certificate—Submit with bid or prior to award of contract
11. Equipment Certification
12. Iran Disclosure of Investment Activities
13. Non-Collusion Affidavit
14. Notice of Classification Form
15. Prequalification Affidavit—No Material Adverse Change-N/A
16. Prevailing Wages Certification
17. Statement of Ownership Disclosure
18. Subcontractor's Disclosure Statement and all required attachments for subcontractors.
19. Sworn Contractor Certification; Qualifications and Credentials
20. Bidder Comment Form - Optional
21. Bid Cover Page, with name ,address ,phone number, E-mail address
22. Hold Harmless Agreement
23. Subcontractor's forms if not applicable: WRITE **N/A** ON THE FORM AND SIGN BOTTOM OF FORM.
24. Pay to Play Form

Failure to submit the above listed documents with the bid package may be cause for rejection of the entire bid for being non-responsive

THE TOWNSHIP OF PISCATAWAY

BID CHECKLIST (B)

B. Reminder Checklist

As a courtesy, the Office of the Purchasing Agent has prepared this reminder checklist to items pertaining to this bid. The checklist is not considered to be all-inclusive. Bidders are to read and become familiar with all instructions outlined in the bid package.

<u>Item</u>	<u>Yes</u>	<u>No</u>
1. Have you verified your pricing to ensure accuracy?		
2. Have you answered every question fully and accurately?		
3. Have you signed all your documents (Blue Ink)? No facsimile signature.		
4. Have you prepared all documents for submission?		
5. Did you make a copy of the bid package for your records?		
6. Did you make a duplicate copy of the original bid for the Township? Marked "True Copy"		
7. Did you submit a signed Bid Guarantee? Signed Consent of Surety?		
8. Did you correctly address the envelope, title of bid?		
9. Have you allowed ample time for the bid to reach the Clerk's Office? <hr/>		
10. REQUIRED: Bid Cover Page: Name, Address, Phone Number, E-mail Address?		

COVER PAGE IS REQUIRED BACK FILLED- OUT.

THE TOWNSHIP OF PISCATAWAY

STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3



**GENERAL
SPECIFICATIONS**



MARIA E. VALENTE-CAEMMERER

Purchasing Agent/Purchasing Specialist

THE TOWNSHIP OF PISCATAWAY

INSTRUCTIONS TO BIDDERS

1. BIDS ARE TO BE SUBMITTED TO:

Division of Purchasing/Attention Purchasing Agent
The Township of Piscataway
455 Hoes Lane
Piscataway, New Jersey 08854

BY: **2:00 p.m.** PREVAILING TIME

ON: **THURSDAY, APRIL 21, 2022**

by mail, delivery service or in person. Bids that are submitted are to be sealed and will be unsealed and announced at the bid opening meeting.

2. **Bid Packages to be submitted in Duplicate.** Bids must be placed in a *sealed* envelope/package marked as shown below on the front of the envelope/package. Bid packages must be submitted **in duplicate** on the proposed bid submittal forms as provided, and in the manner designated. The Township of Piscataway requires one original bid package, one duplicate copy of the bid package. The extra copies are necessary for processing of the bids. Bidders should also keep a complete copy of the bid packet, exactly as submitted.

OUTSIDE OF Envelope Label Information: Township: **The Township of Piscataway** _____

Bid Number: **2022-03-09** _____

Project: **"2022-STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3"**

Bid Date: **THURSDAY, APRIL 21, 2022** _____

Bid Time: **2:00pm** _____

Bidder: *Name of Company*
Address
City, State Zip

Failure to properly label the bid envelope may be cause for the rejection of the bid.

The Township of Piscataway does not accept electronic (E-mail) submission of bids.

PLEASE, MAKE SURE YOU DROP OFF YOUR SEALED BID BY OR BEFORE 12NOON ON 4/21/2022.

BID WILL BE OPENED @2PM VIA ZOOM.

3. BID OPENING MEETING

All bids will be publicly received and unsealed by the Purchasing Agent opened at the above address and read beginning at **2:00pm on THURSDAY, APRIL 21, 2022**. Bidders and/or their authorized agents, and the general public are invited to be present at the bid opening. It is the responsibility of each bidder to ensure that their bid is complete and presented to the Purchasing Agent prior to the advertised bid date and time. No bids shall be received or accepted by The Township of Piscataway after the advertised bid date and time. . **PLEASE, MAKE SURE YOUR SEALED BID ARRIVES ON OR BEFORE 12NOON 4/21/2022.**

Join Zoom Meeting:

Piscataway Purchasing is inviting you to a scheduled Zoom meeting.

Topic: BID OPENING: 2022-STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

Time: Apr 21, 2022 02:00 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://us02web.zoom.us/j/84653904059?pwd=YjVjWXhLd1V4c1dvR2I5QWVuaEk2QT09>

Meeting ID: 846 5390 4059

Passcode: 685893

One tap mobile

+13126266799,,84653904059#,,,,*685893# US (Chicago)

+16468769923,,84653904059#,,,,*685893# US (New York)

Dial by your location

+1 312 626 6799 US (Chicago)

+1 646 876 9923 US (New York)

+1 301 715 8592 US (Washington DC)

+1 346 248 7799 US (Houston)

+1 408 638 0968 US (San Jose)

+1 669 900 6833 US (San Jose)

+1 253 215 8782 US (Tacoma)

Meeting ID: 846 5390 4059

Passcode: 685893

**PLEASE, MAKE SURE YOU DROP OFF YOUR SEALED BID BY OR BEFORE 12NOON ON
4/21/2022.**

BID WILL BE OPENED @2PM VIA ZOOM.

BIDDING REQUIREMENTS

4. AFFIRMATIVE ACTION—EQUAL EMPLOYMENT OPPORTUNITY IN PUBLIC CONTRACTS--EEO

The construction contractor shall complete and submit an Initial Project Workforce Report, **Form AA-201** upon notification of award by the governing body. Proper completion and submission of this Report shall constitute evidence of the contractor's compliance with the regulations. Failure to submit this form may result in the contract being terminated. The contractor also agrees to submit a copy of the Monthly Project Workforce Report, **Form AA-202** once a month thereafter for the duration of the contract to the Department of Labor Workforce and Development and to The Township of Piscataway Public Agency Compliance Officer.

All bidders should familiarize themselves with N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27-1.1 et seq. **MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE—EXHIBIT B**. If awarded a contract, your company/firm will be required to comply with the above requirements.

All relevant questions should be related to:

Department of Treasury
Division of Purchase and Property
Contract Compliance and Audit Unit
EEO Monitoring Program—PO Box 206
Trenton, New Jersey 08625-0206
(609) 292-5473

5. AMERICAN GOODS

In accordance with N.J.S.A. 40A:11-1 et seq., only manufactured products of the United States, wherever available, and where possible are to be used with this project.

Access to the Work and Records

The representatives of the Federal Department of Labor, the New Jersey Department of Environmental Protection and the New Jersey Department of Labor and any other governmental entity having jurisdiction shall be afforded access to the work and project records under this contract. The Contractor shall provide proper facilities for such access and inspection

6. AMERICANS WITH DISABILITIES ACT; FACILITIES FOR HANDICAPPED PERSONS

The contractor must comply with all provisions of Title II of the Americans with Disabilities Act (ADA), P.L 101-336, in accordance with 42 U.S.C. S121.01 et seq. The Township of Piscataway further recognizes that all specifications for the construction, remodeling or renovation of any public building shall provide facilities for the physically handicapped.

It is further recommended that bidders are required to read the Americans with Disabilities language form that is included in these specifications. The form shall be signed to show agreement with the provisions of Title II of the Act and the provisions are to be made a part of the contract. The signed form

shall be submitted with the bid proposal. The contractor is obligated to comply with the Act and to hold the owner harmless.

7. ANTI-DISCRIMINATION PROVISIONS—N.J.S.A. 10:2-1

N.J.S.A. 10:2-1. Antidiscrimination provisions. Every contract for or on behalf of the State or any county or municipality or other political subdivision of the State, or any agency of or authority created by any of the foregoing, for the construction, alteration or repair of any public building or public work or for the acquisition of materials, equipment, supplies or services shall contain provisions by which the contractor agrees that:

a. In the hiring of persons for the performance of work under this contract or any subcontract hereunder, or for the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under this contract, no contractor, nor any person acting on behalf of such contractor or subcontractor, shall, by reason of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex, discriminate against any person who is qualified and available to perform the work to which the employment relates;

b. No contractor, subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee engaged in the performance of work under this contract or any subcontract hereunder, or engaged in the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under such contract, on account of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex;

c. There may be deducted from the amount payable to the contractor by the contracting public agency, under this contract, a penalty of \$50.00 for each person for each calendar day during which such person is discriminated against or intimidated in violation of the provisions of the contract; and

d. This contract may be canceled or terminated by the contracting public agency, and all money due or to become due hereunder may be forfeited, for any violation of this section of the contract occurring after notice to the contractor from the contracting public agency of any prior violation of this section of the contract.

No provision in this section shall be construed to prevent the township from designating that a contract, subcontract or other means of procurement of goods, services, equipment or construction shall be awarded to a small business enterprise, minority business enterprise or a women's business enterprise pursuant to P.L.).

8. ARCHITECT OR CONSTRUCTION DISPUTES; ALTERNATIVE DISPUTE RESOLUTION PROCESS

All disputes relating to construction contracts or relating to contracts for engineers or architects, surveyors, design or skilled services relating to construction contracts for prompt payment issues shall be submitted to the following Alternative Dispute Resolution process (“ADR”):

All disputes shall first be submitted to the architect of record, if there is one, for a determination. If thirty (30) days pass without a determination by the architect or a determination is made that does not resolve the dispute, then the claims shall be submitted for non-binding mediation by a single mediator.

The mediation shall be held where the project is located before a mediator who is mutually acceptable to the parties. The parties shall share the mediator’s fees equally. If the dispute is submitted for mediation the neutral party involved must demonstrate knowledge of the Local Public Contracts Law.

Nothing shall prevent either party from seeking injunctive or declaratory relief in court at any time.

The alternative dispute resolution practices required by this section shall not apply to disputes concerning the bid solicitation process, or to the formation of contracts.

The Bidder further agrees to include a similar provision in all agreements with independent contractors and consultants retained for the project and to require all independent contractors to include similar mediation provisions in all agreements with subcontractors, suppliers or fabricators so retained, thereby providing for mediation as the primary method for dispute resolution between the parties to those agreements. The arbitration of claims is expressly excluded under this Contract.

If the parties cannot resolve their dispute through the mediation process, the parties are free to file an action in the appropriate court of law.

****AIA- Document's will Not be accepted by The Township of Piscataway. Sample of acceptable Bid Bond Form in the bid**

9. BID GUARANTEE AND BONDING REQUIREMENTS

A. Bid Guarantee Bidders shall submit with their bid package a bid guarantee made payable to: The Township of Piscataway (“Township”). The guarantee shall be in the form of a certified check, cashier’s check or bid bond in the amount of 10% of the bid, but not in excess of \$20,000. Such deposit shall be forfeited upon refusal of a bidder to execute a contract. Any bid in the form of a check shall be returned when the contract is executed and surety (performance) bond filed with the Township.

The bid guarantee check for unsuccessful bidders, if requested, will be returned as soon after the bid opening as possible, but in no event later than (10) days after the bid opening.

Please note: Uncertified business checks, personal checks or money orders are not acceptable.

All bid bonds submitted must be signed and witnessed with original signatures. The Township will not accept facsimile or rubber stamp signatures on the bid bond. **Failure to sign the bid bond by either the Surety or Principal, and/or failure to submit the properly executed bid bond with the bid package, shall be deemed cause for disqualification and rejection of the bid.**

The Attorney-in-Fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of the Power of Attorney. The Township of Piscataway will only accept bid bonds from companies that are licensed and qualified to do business in the State of New Jersey. Such a list may be available upon request to the State of New Jersey, Department of Banking and Insurance, P.O. 040, Trenton, New Jersey 08625. **Failure to submit a properly executed bid guarantee shall be cause for disqualification and rejection of bid.**

Please note: The name, address and phone number of the Bond Underwriter as well as the Bond Number shall be included with all bonds submitted to the Township.

****AIA- Documents will Not be accepted by The Township of Piscataway. Bidders must use Township BID BOND Form in the bid.**

B. Certificate (Consent) of Surety—N.J.S.A. 40A:11-1 et seq.,

Each bidder must submit with his bid a certificate from a surety company stating that the surety company will provide the contractor with a performance bond in an amount equal to the amount of the contract (N.J.S.A. 40A-11-1 et seq.,). Such surety company must be licensed and qualified to do business in the State of New Jersey. All certificate (consent) of surety documents must be signed with original signatures.

The Township will not accept facsimile or rubberstamp signatures. The certificate (consent) of surety, together with a power of attorney must be submitted with the bid. Submission of a Consent of Surety which contains any prior conditions upon the Surety's issuance of the required Bonds (other than the award of the contract) may be cause for rejection of the bid.

Failure to sign the Certificate (Consent) of Surety by either the Surety or Principal, and/or failure to submit the properly executed Certificate (Consent) of Surety with the bid package, shall be deemed cause for disqualification and rejection of the bid.

**** Bidders must use Township BID BOND Form in the bid**

****Bidders must use Township Performance Payment Bond Form in the bid(-Sample)**

C. Performance Bond--(N.J.S.A. 2A:44-143/2A:44-147)

The successful contractor shall furnish a Performance, Payment and Completion Bond in a sum of at least one hundred percent (100%) of the total amount payable by the terms of his Contract. Such written guarantee shall be made payable to the Township of Piscataway and shall be in the form required by Statute. Attached to the performance bond shall be a Surety Disclosure Statement and Certification which shall be complete in all respects and duly acknowledged according to law. A model Surety Disclosure Statement and Certification is presented in the Appendix Section of this proposal.

Such bond shall further carry a stipulation that no advance, premature, excessive or delayed payments by the Township shall in any way affect the obligation of the Surety on its bond.

Such bond shall further stipulate that no payments made to the contractor, nor partial or entire use of occupancy of the work by the Township shall be an acceptance of any work or materials not in accordance with this Contract and the Surety shall be equally bound to the same extent as the Contractor.

It is expressly stipulated that the Surety for the Contractor on the project shall be obligated to make periodic inquiries of the Township at reasonable times, to determine whether its Principal has performed or was performing the Contract in accordance with all its terms and conditions, particularly in relation to the progress payments scheduled under said Contract with the Township.

In the event the Contractor defaults or fails to perform or finish the work prescribed under the Contract for any reason whatsoever, it shall become the unqualified obligation the Surety for the defaulting contractor to complete the Contract in accordance with its terms following receipt of notice from the Township of such default.

The Township shall only accept one payment and performance bond to cover this public works contract. The performance bond shall contain language as found in N.J.S.A. 2A:44-14. The bond form language is presented in the Appendix Section of this proposal.

Such Performance, Payment and Completion Bond shall be executed and delivered to The Township of Piscataway when so requested by the Notice to Proceed Letter or within ten (10) days after the award of contract.

The Township of Piscataway will only accept performance bonds from surety companies that are licensed and qualified to do business in the State of New Jersey, and if the amount of the bond is \$850,000 but not more than \$3.5 million, the surety shall hold a current certificate of authority, issued by the United States Secretary of the Treasury pursuant to 31 U.S.C. 9305. (N.J.S.A. 2A:44-143 (b))

Please note: The name, address, and phone number of the Bond Underwriter as well as the Bond Number shall be included with all bonds submitted to The Township of Piscataway and must be duly signed with original signatures.

When applicable, for multi-year contracts and for extension of contracts, the Performance Bond may be re-submitted each year on the contract anniversary date for one hundred per cent (100%) of the contract amount.

**** Bidders must use Township Performance Payment Bond Form in the bid. (-SAMPLE)**

10. BID PROPOSAL FORM

All bids are to be written in by typewriter or ink in a legible manner on the official Bid Proposal Form. Any bid price showing any erasure or alteration must be initialed by the bidder in ink, at the right margin next to the altered entry. Failure to initial any erasure or alteration may be cause to disqualify that particular bid entry. If the disqualified entry is a required one, the entire bid may be subject to rejection, so please fill out all entries with care.

Business Organization

Each Bid Proposal Form must give the full business address, business phone, fax, e-mail, the contact person of the bidder, and be signed by an authorized representative as follows:

- Bids by partnerships must furnish the full names of all partners and must be signed in the partnership name by one of the members of the partnership or by an authorized representative, followed by the signature and designation of the person signing.
- Bids by corporations must be signed in the legal name of the corporation, followed by the name of the State in which incorporated and must contain the signature and designation of the president, secretary or other person authorized to bind the corporation in the matter.
- Bids by sole-proprietorship shall be signed by the proprietor.
- When requested, satisfactory evidence of the authority of the officer signing shall be furnished.

The Bid Proposal Form must be duly signed by the authorized representative of the company, at the end of the Bid Proposal Form. **Failure to sign in Blue Ink the Bid Proposal Form may be cause to disqualify the entire bid.** If the Bid Proposal Form contains more than one sheet, then bidders are requested to affix the company name and address on each intervening sheet between the front sheet and the signature sheet which already bear the company information.

The Township of Piscataway will not consider any bid on which there is any alteration to, or departure from, the bid specifications. Bidders are not to make any changes on the Bid Proposal Form, or qualify their bid with conditions differing from those defined in the contract documents. If bidders do make changes on the Bid Proposal Form, except as noted above for initialed clerical mistakes, it may be cause to disqualify that particular bid as non-responsive. (N.J.S.A. 40A:11-1 et seq.,)

The bidder also conveys by submitting a bid that the company he represents is financially solvent, experienced in and competent to perform the type of work so specified.

BID RESULTS. Preliminary bid results you can E-mail purchasing@piscatawaynj.org generally within **24-36 hours after date and time of bid opening**

11. BIDDER COMMENT SHEET

This form is for the Bidder's use in offering voluntary alternates, or other comments intended to afford the Township information or opportunities to improve the quality of the project, without invalidating the bid proposal. It may *not* be used to take exception to specific conditions of the project defined in the contract documents which the Bidder does not like. The bid provided must be based upon the plans and specifications, and all contract conditions, as stated. If these documents or conditions contain some untenable item, or extremely expensive provision, for example, to which the Bidder wishes to raise objection, this must be done at the pre-bid meeting, or in writing to the Purchasing office at: Purchasing@piscatawaynj.org through the question process outlined in the Instructions to Bidders. Such inquiries will have response issued by addendum only, and the resulting decision circulated to all bidders of record.

12. BIDDER'S RESPONSIBILITY FOR BID SUBMITTAL

It is the responsibility of the bidder to ensure that their bid is presented to The Township of Piscataway and officially received before the advertised date and time of the bid. It is understood and agreed upon that any person in The Township of Piscataway will be absolved from responsibility for the premature opening of any bid not properly labeled and sealed. Failure to properly label the bid envelope may be cause for the rejection of the bid. **PROPERLY NAME OF THE BID: OUTSIDE OF THE ENVELOPE MUST BE LABEL CLEAR.**

ON YOUR FEDEX OR UPS ENVELPPE THE NAME OF THE BID MUST BE ON THE OUTSIDE.

Reference to General Requirements and Special Conditions

The attention of bidders is specifically directed to the General Requirements, and the Special Conditions of the specifications

BID SUBMITTAL. Bids may be hand delivered or mailed per legal Notice by Bidders. In the case of mailed bids, the Township of Piscataway will **not** assume any responsibility for bids lost in transit at any time before bid opening. All bids received after the designated date and time will be returned unopened to the bidder.

- A. **QUESTIONS REGARDING PLANS & SPECIFICATIONS.** Should any bidder be in doubt as to the intent of the Plans and Specifications, he should immediately notify the Purchasing Agent in writing by E-mail to : Purchasing@piscatawaynj.org , who will send a written addendum to all bidders covering the point in question. Bidders may not rely upon oral before submitting bids, the bidder shall apply in writing to the Purchasing Agent for clarification or interpretation of any conflicting information between two or more statements in the Plans and Specifications. If such clarification is not requested seven business days before bidding, the bidder shall be responsible for doing such work and furnishing such materials, as is necessary to comply with whichever interpretation of the Plans and Specifications the Engineer may, during construction, judge to be proper. . Question to be E-mailed to Purchasing@piscatawaynj.org . **By 12noon on APRIL 4, 2022.**
- B. Official Addenda Process: **APRIL 12, 2022.**

13. BUSINESS REGISTRATION CERTIFICATE (N.J.S.A. 52:32-44)

Pursuant to N.J.S.A. 52:32-44 as amended, a contractor shall provide the contracting agency with the business registration of the contractor and that of any named subcontractor prior to the time a contract, purchase order, or other contracting document is awarded or authorized. At the sole option of the contracting agency, the requirement that a contractor provide proof of business registration may be fulfilled by the contractor providing the contracting agency sufficient information for the contracting agency to verify proof of registration of the contractor, or named subcontractors, through a computerized system maintained by the State.

Request of the Township

All bidders or companies providing responses for requested proposals, are **requested** to submit with their response package a copy of their "New Jersey Business Registration Certificate" as issued by the Department of Treasury of the State of New Jersey.

The Township reminds all respondents that failure to submit the New Jersey Business Registration Certificate prior to the award of contract will result in the rejection of the proposal.

A subcontractor named in a bid or other proposal made by a contractor to a contracting agency shall provide a copy of its business registration to any contractor who shall provide it to the contracting agency pursuant to the provisions of subsection b. of this section. No contract with a subcontractor shall be entered into by any contractor under any contract with a contracting agency unless the subcontractor first provides the contractor with proof of a valid business registration.

The contractor shall maintain and submit to the contracting agency a list of subcontractors and their addresses that may be updated from time to time during the course of the contract performance. A complete and accurate list shall be submitted before final payment is made for goods provided or services rendered or for construction of a construction project under the contract. A contracting agency shall not be responsible for a contractor's failure to comply with this subsection.

A contractor or a contractor with a subcontractor that has entered into a contract with a contracting agency, and each of their affiliates, shall collect and remit to the Director of the Division of Taxation in the Department of the Treasury the use tax due pursuant to the "Sales and Use Tax Act," P.L.1966, c.30 (C.54:32B-1 et seq.) on all their taxable sales of tangible personal property delivered into this State.

STATE OF NEW JERSEY
BUSINESS REGISTRATION CERTIFICATE
FOR STATE AGENCY AND CASINO SERVICE CONTRACTORS

DEPARTMENT OF TREASURY
 DIVISION OF REVENUE
 PO BOX 252
 TRENTON, N.J. 08646-0252


TAXPAYER NAME: TAX REGISTRATION TEST ACCOUNT
 TAXPAYER IDENTIFICATION#: 970-097-382/500
 ADDRESS: 847 ROEBLING AVE
 TRENTON NJ 08611
 EFFECTIVE DATE: 01/01/01
 FORM-BRC(08-01)

TRADE NAME: CLIENT REGISTRATION
 SEQUENCE NUMBER: 0107330
 ISSUANCE DATE: 07/14/04

John S. Tully
 Acting Director

This Certificate is NOT assignable or transferable. It must be conspicuously displayed at above address.

SAMPLES OF
NEW JERSEY
BUSINESS REGISTRATION
CERTIFICATES

 **STATE OF NEW JERSEY**
BUSINESS REGISTRATION CERTIFICATE

Taxpayer Name: TAX REG TEST ACCOUNT
 Trade Name:
 Address: 847 ROEBLING AVE
 TRENTON, NJ 08611
 Certificate Number: 1093907
 Date of Issuance: October 14, 2004

For Office Use Only:
 20041014112823533

N.J.S.A. 54:49-4.1: Violations of Registration Requirements; Penalties.

A business organization that fails to provide a copy of a business registration as required pursuant to section 1 of P.L.2001, c.134 (C.52:32-44 et al.) or subsection e. or f. of section 92 of P.L.1977, c.110 (C.5:12-92), or that provides false information of business registration under the requirements of either of those sections, shall be liable for a penalty of \$25 for each day of violation, not to exceed \$50,000 for each business registration copy not properly provided under a contract with a contracting agency or under a casino service industry enterprise contract.

14. CHALLENGES TO BID SPECIFICATIONS (N.J.S.A. 40A:11-1 et seq.,)

Any prospective bidder who wishes to challenge a bid specification shall file such challenges in writing with the Purchasing Agent no less than three (3) days prior to the opening of bids. Challenges filed after that date shall be considered void and having no impact on The Township of Piscataway or the award of a contract.

15. CHANGE ORDERS (N.J.A.C. 6A:26-4.9, 4.10 et seq.) (N.J.A.C. 5:30-11.1 et seq.)

The Township Approval Required; Prior to Issuance of Change Order (N.J.A.C. 5:30-11.2)

Change orders may be approved by The Township of Piscataway in an amount up to twenty percent (20%) when necessitated by one of the following:

- Emergencies consistent with N.J.S.A. 40A:11-1 et. Seq.;
- Unforeseeable physical conditions; or
- Minor modification to the project/scope that achieve cost savings, improve service or resolve construction conditions.

Contractors are prohibited to perform any change order unless so directed in writing by the Township, Office of the Purchasing Agent. Project Manager must have Resolution and Certified Funds by CFO/Director of Finance for any Change Orders. No work can be started by the Contractor without a Resolution and Certified Funds, Executed Change Order Contract.

16. CONTRACTS

A. Award of Contract; Rejection of Bid

The contract shall be awarded, if at all, to the lowest responsible bidder as determined by the Township. The Township of Piscataway reserves the right to reject any or all bids as authorized by the Local Public Contracts Law, and to waive any informalities the Township feels are in the best interests of the Township.

Award the Contract or Reject All Bids--Sixty (60) Days

Pursuant to N.J.S.A. 40A:11-1 et seq., The Township of Piscataway shall award the contract or reject all bids within sixty (60) days of the advertised date and time, except that bids of any bidders who consent thereto may, at the request of the Township, be held in consideration for such longer period as may be agreed.

B. Equal Prices

Pursuant to the statute when two or more bidders submit equal prices and the prices are the lowest responsible bids, the Township may award the contract to the vendor whose response, in the discretion of the Township, is the most advantageous, price and other factors considered.

EQUAL OR TIE BID. The Township of Piscataway reserves the right to award at their discretion, in the best interest of the Township and with reference to the information submitted with the proposals, to any of the tie bidders.

UNIT PRICES. All unit prices, and all lump sum prices, in the bid proposal shall include all applicable fees, cost, and tax (if any) relating to project, and all charges for overhead, profit, insurance, etc. The successful bidder will not be responsible for real property tax on any property of the Owner, including the site of the project. Bid proposal amount will exclude all Federal Excise Tax and sales tax of all states, except those if any.

PRICING ERROR. If a pricing error is discovered after bid opening between the unit price and the total extended price, the unit price shall prevail.

RIGHTS RESERVED BY TOWNSHIP. The Township reserves the right to reject any and all bids, to waive any informalities or irregularities in the bids received, and to accept any bid which is deemed most favorable to the Township of Piscataway, New Jersey, at the time and under the conditions stipulated. Proposals incorporating deviations which, in the judgment of the Purchasing Agent, are a clear departure from the intent and purpose of these specifications will not be considered.

C. Return of Contracts and Related Contract Documents

Upon written notification of award of contract by the Township, the contractor shall sign and execute a formal contract agreement between the township and Contractor and return the executed contracts along with:

1. Performance Bond in the total amount of the contract.
2. Insurance Certificate with The Township of Piscataway named as an additional insured.
3. Affirmative Action Form AA-201 - Initial Project Workforce Report.
4. Other required documents as may be outlined in bid specifications.

The above documents may also be required for submission with the official Notice to Proceed. The contracts and related documents shall be returned to the Office of the Purchasing Agent within **ten (10) days of receipt of notification**. Failure to execute the contract and return said contract and related required documents within the prescribed time may be cause for the annulment of award by the Township with the bid security becoming property of the Township.

D. Alterations of Contract

The Township of Piscataway reserves the right to alter or amend the contract by adding to or subtracting from the work herein specified, such additions or omissions being done under the general conditions of these specifications and the terms of the Contract. No changes shall be permitted from the specifications except that the same be in writing and the amount of the extra compensation or credit stipulated therein. Refer to Change Order Section.

E. Term of Contract

The contractor, to whom the contract is awarded, will be required to do and perform the work/services and to provide and furnish the materials in connection therewith in accordance with the plans and specifications on or before the date listed in the Technical Specifications.

TERM/COMPLETION OF PROJECT AS PER SPECIFICATION/PROPOSAL PAGES

F. Purchase Order Required

No contractor shall commence any public works project until he is in receipt of an approved purchase order authorizing work to begin. (See Notice (Authorization) to Proceed)

17. CONTRACTOR'S REGISTRATION EVIDENCE

A. Valid Certificate – Receipt of Bid

All contractors must adhere to the provisions of the Public Works Contractor Registration Act – N.J.S.A. 34:11-56.48 et seq. The PWCRA requires that “*No contractor shall bid on any contract for public work . . . unless the contractor is registered pursuant to this act.*” The law requires that all contractors and sub-contractors named in the proposal possess a valid certificate at the time the proposal is received by the contracting unit, in this case the Township.

B. Submission of Certificate – Receipt of Bid--Requested; Prior to Award--Mandatory

All bidders **are requested** to submit with the bid package a current Public Works Contractor Registration Certificate that was issued prior to the receipt of the bid.

The contractor who most likely is to be considered for the contract award, must submit a copy of the current Public Works Contractor Registration Certificate, and if applicable, copies of certifications of all listed subcontractors, prior to the award of contract. **If the successful contractor fails to provide copies of certificates prior to the award of contract, the bid may be rejected as non-responsive.**

For more information contact:

Contractor Registration Unit
Division of Wage and Hour Compliance
New Jersey Department of Labor & Workforce Development
PO Box 389
Trenton, New Jersey 08625-0389
Tel: 609-292-9464
Fax: 609-633-8591
E-mail: wage.hour@dol.nj.gov
Website: lwd.dol.state.nj.us/labor/wagehour/content/contact_us.html

18. CONTRACTOR/VENDOR REQUIREMENTS—OFFICE OF THE NEW JERSEY STATE COMPTROLLER

Contractors/vendors doing business with The Township of Piscataway are reminded of the following legal requirements pertaining to the Office of the New Jersey State Comptroller:

A. Access to Relevant Documents and Information—N.J.S.A. 52:15C-14 (d)

Private vendors or other persons contracting with or receiving funds from a unit in the Executive branch of State government, including an entity exercising executive branch authority, independent State authority, public institution of higher education, or unit of local government or the township shall upon request by the State Comptroller provide the State Comptroller with prompt access to all relevant documents and information as a condition of the contract and receipt of public monies. The State Comptroller shall not disclose any document or information to which access is provided that is confidential or proprietary. If the State Comptroller finds that any person receiving funds from a unit in the Executive branch of State government, including an entity exercising executive branch authority, independent State authority, public institution of higher education, or unit of local government or the township refuses to provide information upon the request of the State Comptroller, or otherwise impedes or fails to cooperate with any audit or performance review, the State Comptroller may recommend to the contracting unit that the person be subject to termination of their contract, or temporarily or permanently debarred from contracting with the contracting unit.

B. Maintenance of Contract Records—N.J.A.C. 17:44-2.2

Relevant records of private vendors or other persons entering into contracts with covered entities are subject to audit or review by OSC pursuant to N.J.S.A. 52:15C-14(d).

The contractor/vendor to whom a contract has been awarded, shall maintain all documentation related to products, transactions or services under this contract for a period of five years from the date of final payment. Such records shall be made available to the New Jersey Office of the State Comptroller upon request.

19. DEBARMENT, SUSPENSION, OR DISQUALIFICATION – (N.J.A.C. 17:19-1.1 et seq.)

The Township of Piscataway will not enter into a contract for work with any person, company or firm that is on the State Department of Labor and Workforce Development; Prevailing Wage Debarment List, or the State of New Jersey Consolidated Debarment Report (www.state.nj.us/treasury/debarred) or the Federal System for Award—SAM.gov.

All bidders are required to submit a sworn statement indicating whether or not the bidder is, at the time of the bid, included on the State Department of Labor and Workforce Development; Prevailing Wage Debarment List or the State of New Jersey Consolidated Debarment Report, or the Federal Debarred Vendor List--Excluded Parties List System, through the System for Award Management portal—SAM.gov.

20. DOCUMENTS, MISSING/ILLEGIBLE

The bidder shall familiarize himself with all forms provided by the Township that are to be returned with the bid. If there are any forms either missing or illegible, it is the responsibility of the bidder to contact the Purchasing Agent during regular business hours or the **Guy Gaspari, Director of Public Works** as outlined in the bid advertisement for duplicate copies of the forms. This must be done before the bid date and time. The Township accepts no responsibility for duplicate forms that were not received by the bidder in time for the bidder to submit with his bid.

***Forms provided by The Township of Piscataway that must be returned with bid are referenced in the proceeding checklist.**

21. DOCUMENT SIGNATURES – ORIGINAL; BLUE INK

All documents returned to the Township shall be signed in ink (blue) with an original signature. Failure to sign and return all required documents with the bid package may be cause for disqualification and for the bid to be rejected pursuant to N.J.S.A 40A:11-1 et seq., (non-responsive). The Township will not accept facsimile or rubber stamp signatures.

Checklist of Required Documents (Forms Provided in Bid Package)

• Acknowledgement of Addenda
• Americans with Disabilities Act
• Bid Proposal Form
• Bidder Comments Form--optional
• Bid Cover Sheet, Name, Address, Phone Number, E-mail Bid Bond Form-Piscataway Form only
• Contractor Questionnaire/Certification
• Contractor’s Registration Certification
• Equipment Certification Exhibit “B” Hold Harmless Bidders Affidavit Plan & Experience Pay to Play Form
• Iran Disclosure of Investment Activities
• Non-Collusion Affidavit
• Prequalification Affidavit –N/A
• Prevailing Wages Certification
• Statement of Ownership Disclosure
• Subcontractor’s Disclosure Statement
• Sworn Contractor Certification; Qualifications and Credentials

Please check your bid package for these forms!

Reminder – Original Bid and One True Copy of Bid Package

Bid packages are to be submitted in duplicate on the proposed forms as provided and the manner designated. The Township of Piscataway will accept one original bid package, one true copy of the bid package.

22. EQUIPMENT CERTIFICATION (N.J.S.A. 40A:11-1 et seq.,)

Each bidder shall provide a certification showing that he owns, leases or controls all the necessary equipment required by the specifications. If the bidder is not the actual owner or lessee of any such equipment, he shall submit a certificate stating the source from which the equipment will be obtained and shall obtain a certificate from the owner and person in control of the equipment, definitely granting to the bidder the control of the equipment required during such time as may be necessary for the completion of that portion of the contract for which it is necessary.

The certificates are to be submitted with the bid. If the contract involves the installation of a manufactured system which requires the contractor to have special knowledge or training, or to be specifically certified by the manufacturer to install their system, this form is used to submit such required evidence of the bidder's approval from the manufacturer.

23. EXAMINATION OF SPECIFICATIONS, ACKNOWLEDGEMENT

The bidder, by submitting a proposal, acknowledges that he has carefully examined the bid specifications, documents, addenda (if any), and the site; and that from his investigation, he has satisfied himself as to the nature and location of the work, the general and local conditions and all matters which may in any way affect the work or its performance, and that as a result of such examination, he fully understands the intent and purpose thereof, his obligations thereunder, and that he will not make any claim for, or have any right to damages, because of the lack of any information.

Each bidder submitting a bid for a service contract shall include in his bid price all labor, materials, equipment, services, and other requirements necessary, or incidental to, the completion of the work, and other pertinent work as hereinafter described, in accordance with the bid specifications and documents.

Quality of Materials and Workmanship

The attention of bidders is directed to the exacting requirements of the Contract requiring the Contractor to provide safe, watertight and otherwise adequate structures. The bidder shall realize fully that the first class materials and workmanship specified must be supplied in full measure in order to produce acceptable structures and equipment of the kind specified and as designed to give uninterrupted service for an extended period. As per Specifications.

TERM/COMPLETION OF PROJECT AS PER SPECIFICATIONS/PROPOSAL PAGES

24. FALSE MATERIAL REPRESENTATION/TRUTH IN CONTRACTING

A person commits a crime if the person knowingly makes a material representation that is false in connection with the negotiation, award or performance of a government contract. If the contract amount is for \$25,000.00 or above, the offender is guilty of a crime of the second degree. If the contract amount exceeds \$2,500.00, but is less than \$25,000.00, the offender is guilty of a crime of the third degree. If the contract amount is for \$2,500.00 or less, the offender is guilty of a crime of the fourth degree.

Bidder should be aware of the following statutes that represent "Truth in Contracting" laws:

- N.J.S.A. 2C:21-34, et seq. governs false claims and representations by bidders. It is a serious crime for the bidder to knowingly submit a false claim and/or knowingly make material misrepresentation.
- N.J.S.A. 2C:27-10 provides that a person commits a crime if said person offers a benefit to a public servant for an official act performed or to be performed by a public servant, which is a violation of official duty.
- N.J.S.A. 2C:27-11 provides that a bidder commits a crime if said person, directly or indirectly, confers or agrees to confer any benefit not allowed by law to a public servant.
- Bidder should consult the statutes or legal counsel for further information.

25. FORCE MAJEURE

Neither party shall be liable in damages for any failure, hindrance or delay in the performance of any obligation under this Agreement if such delay, hindrance or failure to perform is caused by conditions beyond the control of either party, including, but not limited to, Acts of God, flood, fire, war or the public enemy, explosion, government regulations whether or not valid (including the denial or cancellation of any export or other necessary license), court order, state funding, or other unavoidable causes beyond the reasonable control of the party whose performance is affected which cannot be overcome by due diligence.

Vendors, and/or contractors who have a contract with The Township of Piscataway to provide goods or services cannot unilaterally claim an increase in the cost of the contract because of Force Majeure.

26. INSURANCE AND INDEMNIFICATION

The bidder to whom the contract is awarded for any service work or construction work shall secure, pay the premiums for and keep in force until the contract expires, insurance of the types and amounts listed as listed:

General Liability	\$2,000,000. General Aggregate \$1,000,000. Products \$1,000,000. Bodily Injury Property Damage & Personal Injury Combined \$1,000,000. Each Occurrence \$ 100,000 Pollution Cleanup \$ 50,000. Fire Damage \$ 5,000. Medical Expense
Excess Umbrella Liability	\$4,000,000 \$1,000,000 Sexual Harassment
Comprehensive Automobile Liability Coverage	\$1,000,000 Combined Single Limit Bodily Injury/Property Damage

(A) Insurance Certificate – When Required

- The contractor shall present to The Township of Piscataway an insurance certificate in the above types and limits before any work or service begins.
- Automobile liability insurance coverage shall be included for any vehicle used by the contractor.
- The certificate holder shall be as follows:

The Township of Piscataway
c/o Office of the Purchasing Agent
455 Hoes Lane
Piscataway, New Jersey 08854

Additional Insured Clause-- The contractor must include the following clause on the insurance certificate.

“The Township of Piscataway is named as an additional insured”

OTHER INSURANCES

WORKERS COMPENSATION Evidence of adequate Workers Compensation Insurance as required by the laws of the State of New Jersey and the United States, must be available for perusal. The minimum limits are the following, unless a greater amount is required by law:

Bodily Injury by Accident	\$1,000,000. Each Accident
Bodily Injury by Disease	\$1,000,000. Policy Limit
Bodily Injury by Disease	\$1,000,000. Each Employee
Contract Liability	Same as General Liability

(B) Indemnification

The contractor shall assume all risk of and responsibility for, and agrees to indemnify, defend, and save harmless the Township and its agents, employees and Township members, from and against any and all claims, demands, suits, actions, recoveries, judgments and costs and expenses (including, but not limited to, attorney's fees) in connection therewith on account of the loss of life or property or injury or damage to any person, body or property of any person or persons whatsoever, which shall arise from or result directly or indirectly from the work and/or materials supplied under this contract or the performance of services by the contractor under the agreement or by a party for the whole contract is liable. This indemnification obligation is not limited by, but is in addition to, the insurance obligations contained in this agreement.

The Contractor is to assume all liability of every sort incident to the work, including property damage caused by him or his men or by any subcontractor employed by him or any of the subcontractor's men.

(C) Builders Risk Applicable X Not Applicable

The contractor shall obtain and pay for within their bid, a Builder's Risk Policy providing coverage for all risk of physical loss or damage to the property in an amount equal to the total project value, less excavations and foundations.

The policy must be maintained for the duration of the project from the beginning of construction until:

- (i) written acceptance by **Guy Gaspari**, Director of Public Works, Piscataway STERLING VILLAGE SENIOR HOUSING or substantial completion, and
- (ii) a temporary certificate of occupancy or certificate of occupancy has been issued.

A copy of the policy must be delivered to The Township of Piscataway before construction begins. All of the contractor's policies, with the exception of workers' compensation, shall be endorsed naming the Township, its elected and appointed officials, and employees as additional insureds.

27. INTERPRETATIONS AND ADDENDA (N.J.S.A. 40A:11-1 et seq.,)

No interpretation of the meaning of the specifications will be made to any bidder orally. Every request for such interpretations should be made in writing to the Purchasing Agent or **Guy Gaspari, Director of Public Works/T & M Associates** of Record and must be received by same at least ten (10) business days, not including Saturdays, Sundays and holidays, prior to the date fixed for the opening of bids to be given consideration. Any and all interpretations and any supplemental instructions will be distributed in the form of written addenda to the specifications. The addenda will be provided by The Township of Piscataway in accordance with N.J.S.A 40A:11-1 et. Seq. to the bidder by E-mail , certified fax or delivery service, no later than seven (7) days, not including Saturdays, Sundays, or holidays prior to the date for acceptance of the bids. All addenda so issued shall become part of the contract document.

C. ADDENDA. It shall be understood that any addendum issued from time to time to provide additional information to the bidders shall become an integral part of this bid package. Receipt of Addendum shall be acknowledged by the bidders in the space provided therefore on the "Bid Proposal Form: Bidders log into Township website for Addendums.

www.piscatawaynj.org . By 12noon on **APRIL 4, 2022**.

D. Official Addenda Process: **APRIL 12, 2022**

28. IRAN DISCLOSURE OF INVESTMENT ACITIVITIES- (N.J.S.A. 40A:11-1 et seq.,)

The Township of Piscataway, pursuant to N.J.S.A. 40A:11-1 et. Seq. shall implement and comply with Public Law 2012, c.25, Disclosure of Investment Activities in Iran—N.J.S.A. 52:32-55 et seq.

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract, must complete a certification attesting, under penalty of perjury, that neither the person or entity, nor any of its parents, subsidiaries, or affiliates, is identified on the Department of Treasury’s Chapter 25 list as a person or entity engaging in investment activities in Iran.

The Chapter 25 list is found on the Divisions website

<http://www.state.nj.us/treasury/purchase/pdf/Chapter25List.pdf>.

If the Township determines that a person or entity has submitted a false certification concerning its engagement in investment activities in Iran under section 4 of P.L.2012, c.25 (C.52:32-58), the Township shall report to the New Jersey Attorney General the name of that person or entity, and the Attorney General shall determine whether to bring a civil action against the person to collect the penalty prescribed in paragraph (1) of subsection a. of section 5 of P.L.2012, c.25 (C.52:32-59).

In addition, bidders must provide a detailed, accurate and precise description of the activities of the bidding person/entity, or one of its parents, subsidiaries or affiliates, engaging in the investment activities in Iran outlined above by completing the boxes on the lower portion of the enclosed form.

The Township has provided within the specifications, a Disclosure of Investments Activities certification form for all persons or entities, that plan to submit a bid, respond to a proposal, or renew a contract with the Township, to complete, sign and submit with the proposal.

JANUARY 29, 2021 UPDATE IRAN INVESTMENTS DISCLOSURE DOCUMENT FOR BIDS DOCUMENTS

Subject: Iran Investment Disclosure Now Pre-Award

Effective January 29, 2021, P.L. 2021, c. 4 amends the law requiring vendor and contractor disclosure of investment activities in Iran. The law allows the Iran investment disclosure form to be submitted prior to contract award and at the time the contract is renewed rather than with the bid or RFP submission. Although the law refers to State contracts, it also applies to contracting units subject to the Local Public, Public School, and County College Contracts Laws because N.J.S.A. 40A:11-2.1; 18A:18A-49.4; and 18A:64A-25.43, respectively, require these contracting units to follow the Iran disclosure procedure for State contracts. Contracting units are encouraged to review the new law with legal counsel and revise their procurement forms as necessary.

Failure to complete, sign, certify and submit the Disclosure of Investment Activities in Iran form with the bid/proposal shall be cause for rejection of the proposal.

29. LIABILITY – COPYRIGHT

The contractor (vendor) shall hold and save the Township, its officials and employees, harmless from liability of any nature or kind for or on account of the use of any copyrighted or un-copyrighted composition, secret process, patented or unpatented invention, article or appliance furnished or used in the performance of his contract.

30. LIQUIDATED DAMAGES

The contractor agrees to substantially complete this public works project to the complete satisfaction of The Township of Piscataway by the stated contract completion date or within the number of working days so specified in the contract.

Failure to complete the project within the specified time frame or contract completion date shall lead to The Township of Piscataway assessing liquidated damages against the contractor in accordance with and pursuant to N.J.S.A. 40A:11-1 et. seq.

For each calendar day thereafter that the work included under this contract remains uncompleted in accordance with the provision of the contract or not completed to the satisfaction of the Township, the Township shall assess liquidated damages as follows:

<u>Amount of Contract</u>	<u>Liquidated Damages</u>
<u>Range of Amount</u>	
\$ 20,000 and less than \$ 50,000	\$ 200.00 per calendar day
50,001 and less than \$ 100,000	300.00 per calendar day
100,001 and less than \$ 250,000	500.00 per calendar day
251,001 and less than \$ 500,000	1,000.00 per calendar day
500,000 and less than \$1,000,000	2,000.00 per calendar day
1,000,000 and over	2,500.00 per calendar day

The Township may assess liquidated damages by deducting the amount from monies which may due or become due to the contract.

The Township may also assess the contractor additional damages for costs the Township may incur because each day the project remains uncompleted. These costs include but are not limited to:

- Construction management fees
- Architect/engineer fees
- administrative costs
- Any inspector or inspectors necessarily employed by The Township of Piscataway on the work, for any number of days in excess of the number allowed in the specifications

The Township of Piscataway may also assess against all monies owed to the contractor, liquidated damages for the violation of any terms and conditions of the contract or agreement by the contractor or the failure to perform said contract or agreement in accordance with its terms and conditions or the terms or conditions of the "Local Public Contracts Law," in accordance with and pursuant to N.J.S.A. 40A:11-1 et seq.,

31. MAINTENANCE BONDS **Required** not Required When required by the Township, the contractor shall furnish a Maintenance Bond for the total sum of the contract price, indemnifying The Township of Piscataway against defects in construction for a period of **Two (2) years** after the completion of the work, general wear and tear excepted.

The condition of this obligation is such that if the successful contractor shall indemnify and hold harmless The Township of Piscataway from and against all losses, costs, damages and expenses, whatsoever, which the Township may suffer or compelled to pay by reason of the failure of the successful contractor to indemnify the Township against defects in construction for a period of **Two (2) years** after the completion of the work. Maintenance Bond must be sent to the project manager at the Township of Piscataway.

32. NON-COLLUSION AFFIDAVIT (N.J.S.A. 52:34-15)

A notarized Non-Collusion Affidavit shall be submitted with the bid/proposal. The bidder/respondent has to certify that he has not directly or indirectly, entered into any agreement, participated in any collusion, discussed any or all parts of this proposal with any potential bidders, or otherwise taken any action in restraint of free, competitive bidding in connection with the above named bid, and that all statements contained in said Proposal and in this affidavit are true and correct, and made with full knowledge that The Township of Piscataway relies upon the truth of the statements contained in said Proposal and in the statements contained in this affidavit in awarding the contract for the said bid.

The respondent has to further warrant that no person or selling agency has been employed or retained to solicit or secure such contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except bona fide employees of bona fide established commercial or selling agencies maintained by the respondent.

The Township of Piscataway has provided a Non-Collusion Affidavit form here within the specifications package. All respondents are to complete, sign, have the signature notarized and submit the form with the proposal response.

Failure to submit the Non-Collusion Affidavit with the proposal may be cause for the disqualification of the proposal.

33. NOTICE (AUTHORIZATION) TO PROCEED

The contractor shall not perform any work, or provide any services, materials, supplies until a Notice (Authorization) to Proceed is received from the Office of the Purchasing Agent/Project Manager.

The Township of Piscataway only recognizes the receipt by the contractor of an approved signed purchase order as a Notice to Proceed. No word of mouth, phone, fax, e-mail, letter or other form of communication to proceed is a valid Notice to Proceed.

It is the intention of the Township to officially notify the Contractor, to whom the contract was awarded, through a Notice to Proceed letter issued by the Purchasing Agent. A purchase order will accompany the Notice to Proceed letter. The contractor shall submit certain documents to the Township as so requested in the Notice to Proceed letter.

34. Pre-Construction and Construction Conferences

Before construction is started, preconstruction conferences shall be held. During the first conference The Township of Piscataway Project Manager, his Engineer, Administrator, Purchasing Agent and the Contractor will discuss the procedures to be followed by the Contractor during the construction process. The Contractor will also be required to attend a preconstruction conference attended by all utility companies and State and local authorities. During the construction, job meetings shall be held at frequent intervals to review construction and restoration progress and to resolve difficulties which might delay completion of the work. Attendees at these meetings shall include representatives of the Township of Piscataway Project Manager, the Engineer, Administrator and Purchasing Agent and the Contractor. A Notice to Proceed must be sent to the awarded Contractor by the Project Manager. A Copy of the Notice to Proceed must be submitted to the Purchasing Agent.

34. PAYMENTS

Every effort will be made to pay vendors and contractors within thirty (30) to sixty (60) days provided The Township of Piscataway receives the appropriate documentation including but not limited to:

- Signed voucher by vendor
- Packing slips
- Invoices

Payment will be rendered upon completion of services or delivery of full order to the satisfaction of the Township, unless otherwise agreed to by written contract or mandated by State Law*. The Township may, at its discretion make partial payments. Township payment dates schedule and holidays list will be attached to the Contract.

*****Contractor, is strongly advised to submit the Invoices on a timely manner to the Project Manager along with the Weekly Certified Payrolls.**

All payments are subject to approval by The Township of Piscataway at a public meeting. Payment may be delayed from time to time depending on The Township of Piscataway meeting schedule.

35. PAYMENT, PARTIAL, WITHHOLDING

A. Contract Thresholds; Partial Payments/Withholding

1. Contracts – Less than \$100,000 – Lump Sum Payment

Public works contracts less than \$100,000 shall be paid in one lump total sum, upon completion of the project and to the satisfaction of the Township

Contracts – Exceeding \$100,000 – Monthly Payments

Public works contracts that exceed \$100,000 shall be paid with partial payments on a monthly basis for work that was completed to the satisfaction of the Township.

3. Withholding of Monies – Percentage to be Withheld

The Township of Piscataway shall withhold the following percentages of outstanding balances of monies owed to contractors:

Balances Exceeding \$500,000 -- Two (2%) Per Cent

Balances Less than \$500,000 -- Five (5%) Per Cent

The amounts withheld shall be returned to the contracts upon fulfillment of the terms of the contract.

B. Prompt Payment

The Township of Piscataway will provide payment in accordance with the “Prompt Payment” law as codified in N.J.S.A. 2A:30A-1 et seq. All payments to contractors are subject to approval by The Township of Piscataway at a public meeting.

The Township of Piscataway generally holds its Agenda, and its Regular Public Meetings twice or more each month. It is at these meetings that The Township of Piscataway reviews payment of bills.

All bills submitted to the Township for approval and payment pursuant to N.J.S.A. 2A:30A-1 et seq. must comply with the following provisions. The “billing date” shall be the date that the contractor signs the certification on the voucher/purchase order that the work has been performed. These bills include all bills for improvements to real property and contracts for engineers, architects, surveyors, design or skilled services relating to construction work.

Bills that are required to be approved by an engineering or architecture firm (prior to submission to the Township for approval) for purposes of confirmation of successful completion of construction work, shall be approved or disapproved within twenty (20) days of submission of same to the architect or engineer. If bills are disapproved or monies withheld from payment, the notice of the reason for same shall be given within the same twenty (20) days to the contract.

The Township must approve payment of all bills. For the Township to consider a bill for approval it must be submitted to the Purchasing Agent at least two weeks prior to a scheduled/or re-scheduled Township meeting date. If the Township, or any agent or officer of the Township, determines that the bill is not approved then notice of the disapproval shall be sent to the contractor with five (5) days of the Township meeting on which the bill was listed for approval. If the bill is approved by the Township, then payment shall be made to the contractor with seven (7) days of the Township meeting as per the “payment cycle.”

Release of Liens

Neither the final payment nor any part of the retained percentage shall become due until the Contractor delivers to The Township of Piscataway a complete Release of all Liens arising out of this Contract and an affidavit that so far as he has knowledge or information, the releases include all labor and material for which a lien could be filed, but the Contractor may, if any subcontractor refuses to furnish a release in full, furnish a bond satisfactory to the Township, to indemnify him against any liens. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to The Township of Piscataway all monies that the latter may be compelled to pay in discharging such a lien, including all costs and reasonable attorney's fees

36. PRE-BID MEETING; ATTENDANCE STRONGLY ENCOURAGED!

The pre-bid meeting is an important part of the bidding process. It permits all bidders to have an equal understanding of the procurement/contracting requirements and of the scope of work involved. Although pre-bid meetings are not mandatory, all potential bidders are strongly encouraged to attend. **Please review the General Specifications for a pre-bid meeting announcement.** Any or all changes to the bid specifications discussed as a result of the pre-bid meeting will be formalized in the form of an written addenda to the specifications and distributed in accordance with N.J.S.A. 40A:11-1 et seq.,

It is anticipated that the pre-bid meeting SITE/VISIT (MARCH 29, 2022@ 2:00 p.m.) scheduled for this project : @ 1 STERLING VILLAGE DRIVE, PISCATAWAY

E. Registration Period

At this time all attendees will be asked to register to attend this meeting. Proper photo identification is required. Plans and specifications may be available to download on Township bid website from. Attendance will be recorded.

F. Review of Procurement/Contracting Requirements—Purchasing Agent

The Purchasing Agent will review the major components of the procurement and contracting requirements of the bid.

G. Scope of Work and Scheduled Completion Time— **Guy Gaspari, Director of Public works.**

The Department of Public Works of /T & M ASSOCIATES in conjunction with the Director of Public Works (Buildings and Grounds) , and the Purchasing Agent will review the scope of the work that is requested and completion time requirements (As per Specification Number of Working Days). A review of the plans and any drawings may take place.

H. Walkthrough of Facility/Site- **MARCH 29, 2022 @ 2 p.m. @ STERLING VILLAGE**

Guy Gaspari, Director of Department of Public Works/T & M ASSOCIATES, in conjunction with the Assistant Director of Public Works and or the Purchasing Agent, may conduct a facility site walkthrough with all interested parties.

I. Questions; Clarifications (Due Date for Questions& Answers on the Bid is APRIL 4, 2022 BY 12:00 NOON)

J. Official Addenda Process: **APRIL 12, 2022.**

Potential bidders are permitted to ask questions during the process. Questions of substantial measure or questions that require clarification of work to be completed may be answered at the meeting, however, **Guy Gaspari , Director of Public Works/T & M ASSOCIATES** shall answer all such questions in writing in the form of an official addenda. To:

purchasing@piscatawaynj.org

Any and all answers to questions, interpretations or any supplemental instructions will be distributed in the form of a written official addenda to the specifications. The official addenda will be provided by the Purchasing Agent's Office of the Township in accordance with N.J.S.A. 40A:11-1 et Seq., to the bidder by E-mail to: purchasing@piscatawaynj.org , no later than seven (7) days, not including Saturdays, Sundays, or holidays prior to the date for acceptance of the bids. All addenda so issued shall become part of the bid and contract document.

37. BIDDERS COMMENT SHEET

This form is for the Bidder's use in offering voluntary alternates, or other comments intended to afford the Township information or opportunities to improve the quality of the project, without invalidating the bid proposal. It may *not* be used to take exception to specific conditions of the project defined in the contract documents which the Bidder does not like. The bid provided must be based upon the plans and specifications, and all contract conditions, as stated. If these documents or conditions contain some untenable item, or extremely expensive provision, for example, to which the Bidder wishes to raise objection, this must be done at the pre-bid meeting, or in writing to the Purchasing office at: Purchasing@piscatawaynj.org through the question process outlined in the Instructions to Bidders. Such inquiries will have response issued by addendum only, and the resulting decision circulated to all bidders of record.

37. PREVAILING WAGES: CONSTRUCTION, ALTERATIONS, REPAIRS

The State of New Jersey Prevailing Wage Act, Chapter 150 Laws of 1963 with applicable statewide wage Department of Labor and Workforce Development in conformance with N.J.S.A. 34:11-56.25 et seq., may be included in these bid contract documents. Copies of these wage rates may be obtained from the State Department of Labor and Workforce Development, and/or viewed at <http://lwd.dol.state.nj.us/> the Prevailing Wages Determination Section.

Compliance with New Jersey Prevailing Wage Act

Every contractor and subcontractor performing services in connection with this project, shall pay all workers a wage rate not less than the published prevailing wage rates, for the locality the work is being performed, as designated by the New Jersey Department of Labor and Workforce Development.

PREVAILING WAGE ACT.

Pursuant to N.J.S.A. 34:11-56.25 et seq., the Contractors on projects for public work shall adhere to all requirements of the New Jersey Prevailing Wage Act. The contractor shall be required to submit a certified payroll record to the Township within ten (10) days of the payment of the wages. In the event it is found that any worker, employed by the Contractor or any subcontractor has been paid a rate of wages less than the prevailing wage required to be paid, the Township may terminate the Contractor's or subcontractor's right to proceed with the work, or such part of the work as to which there has been a failure to pay required wages and the contractor and subcontractor then be required to continue the work to completion or otherwise.

The Contractor is also responsible for obtaining and submitting all subcontractors' certified payroll records within the aforementioned time period. The Contractor shall submit said certified payrolls in the form set forth in N.J.A.C. 12:60-6.1(c). It is the Contractor's responsibility to obtain any additional copies of the certified payroll form to be submitted by contacting the New Jersey Department of Labor and Workforce Development, Division of Workplace Standards.

Additional information is available at http://lwd.dol.state.nj.us/labor/wagehour/wagerate/pwr_construction.html

Certified Payrolls

Every contractor agrees to submit to The Township of Piscataway a certified payroll for each payroll period within ten (10) days of the payment of wages. The contractor further agrees that no payments will be made to the Contractor by the Township, if certified payrolls are not received by the Township. It is the Contractor's responsibility to insure timely receipt by the Township of certified payrolls.

Submission of Affidavit

Before final payment, the contractor shall furnish The Township of Piscataway with an affidavit stating that all workers have been paid the prevailing rate of wages in accordance with State of New Jersey requirements. The contractor shall keep an accurate record showing the name, craft, or trade and actual hourly rate of wages paid to each workman employed by him in connection with this work. Upon request, the Contractor(s) and each Subcontractor shall file written statements certifying to the amounts then due and owing to any and all workmen for wages due on account of the work. The statements shall be verified by the oaths of the Contractor or Subcontractor, as the case may be.

Posting of Prevailing Wages

The contractor and subcontractor shall post the prevailing wage rates for each craft and classification involved in the work, including the effective date of any changes thereof, in prominent and easily accessible places at the Site of the work and in such place or places as used to pay workmen their wages. N.J.S.A. 34:11-56.32.

PREVAILING WAGE ACT.

Pursuant to N.J.S.A. 34:11-56.25 et seq., The Contractors on projects for public work shall adhere to all requirements of the New Jersey Prevailing Wage Act. The contractor shall be required to submit a certified payroll record to the Township within ten (10) days of the payment of the wages. In the event it is found that any worker, employed by the Contractor or any subcontractor has been paid a rate of wages less than the prevailing wage required to be paid, the Township may terminate the Contractor's or subcontractor's right to proceed with the work, or such part of the work as to which there has been a failure to pay required wages and the contractor and subcontractor then be required to continue the work to completion or otherwise.

The Contractor is also responsible for obtaining and submitting all subcontractors' certified payroll records within the aforementioned time period. The Contractor shall submit said certified payrolls in the form set forth in N.J.A.C. 12:60-6.1(c). It is the Contractor's responsibility to obtain any additional copies of the certified payroll form to be submitted by contacting the New Jersey Department of Labor and Workforce Development, Division of Workplace Standards.

Additional information is available at http://lwd.dol.state.nj.us/labor/wagehour/wagerate/pwr_construction.html

Prevailing Wages Certification—Submission with Bid

The bidder shall submit a Prevailing Wages Certification with its bid package.

Non-compliance Statement

If it is found that any worker, employed by the contractor or any subcontractor covered by said contract, has been paid a rate of wages less than the prevailing wage required to be paid by such contract, the Township, may begin proceedings to terminate the contractor's or subcontractor's right to proceed with the work, or such part of the work as to which there has been a failure to pay required wages and to prosecute the work to completion or otherwise. The contractor and his sureties shall be liable for any excess costs occasioned thereby to the public body.

38. QUALIFICATION OF BIDDERS - Contractor Questionnaire Certification Form

The Township of Piscataway may make such investigations as it seems necessary to determine the ability of the bidder to perform the terms of the contract. The bidder shall complete a Contractor Questionnaire Certification Form and return same with the bid and shall furnish all information to the Township as the Township may require to determine the contractor's ability to perform the duties and obligations as outlined in these specifications.

All bidders are reminded that bids may be rejected as not being responsive pursuant to N.J.S.A. 40:11-1 et seq., and therefore bidders are asked to complete the Questionnaire and to provide any supporting documentation with the bid package.

39. RESIDENT CITIZENS; PREFERRED IN EMPLOYMENT ON PUBLIC WORKS CONTRACTS

All bidders are to familiarize themselves with N.J.S.A. 34:9-2, which requires the contractor of any public work project to give preference in employment on the project, to citizens of the state of New Jersey. If the terms and conditions of N.J.S.A. 34:9-2 are not complied with, the contract shall be voidable. The Township is obligated to file with the Commissioner of Labor, the names and addresses of all contractors holding contracts with this project.

40. RENEWAL OF CONTRACT; AVAILABILITY AND APPROPRIATION OF FUNDS

The Township of Piscataway may, at its discretion, request that a contract that is subject to renewal, be renewed in full accordance with N.J.S.A. 40:11-1 et seq., The Purchasing Agent may negotiate terms for a renewal of contract proposal and present such negotiated proposal to the Township. The Township of Piscataway is the final authority in awarding renewals of contracts. All multi-year contracts and renewals are subject to the availability and appropriation annually of sufficient funds as may be needed to meet the extended obligation.

41. RIGHT TO KNOW LAW

All potentially hazardous materials or substances must be properly labeled in full accordance with the New Jersey Right to Know Law - N.J.S.A. 34:5A-1 et seq. All contractors or vendors who need additional information about the New Jersey Right to Know Law are to contact the:

New Jersey Department of Health and Senior Services
Right to Know Program
CN 368
Trenton, New Jersey 08625-0368
www.nj.gov/health/workplacehealthandsafety/right-to-know/

NEW JERSEY WORKER AND COMMUNITY RIGHT TO KNOW ACT

The manufacturer or supplier of chemical substances or mixtures shall label them in accordance with the N.J. Worker and Community Right to Know Law (N.J.S.A. 34:5A-1 et seq., and N.J.A.C 8:59-2 et seq.,). All direct use containers shall bear a label indicating the chemical name(s) and Chemical Abstracts Service number(s) of all hazardous substances in the container, and all other substances which are among the five most predominant substances in the container, or their trade secret registry number(s) pursuant to N.J.A.C. 8:59-5. "Container" means a receptacle used to hold a liquid, solid or gaseous substance such as bottles, bags, barrels, cans, cylinders, drums and cartons. (N.J.A.C. 8:59-1.3). Further, all applicable Material Safety Data Sheets (MSDS) - hazardous substance fact sheet - must be furnished. All containers which are stored at owner facilities by subcontractors shall display RTK labeling. Vendors with questions concerning labeling should contact the New Jersey Department of Health and Senior Services Right to Know Program for assistance in developing proper labels.

42. STATEMENT OF OWNERSHIP (N.J.S.A. 52:25-24.2)

Statement of Ownership

No business organization, regardless of form of ownership, shall be awarded any contract for the performance of any work or the furnishing of any goods and services, unless, prior to the receipt of the bid or accompanying the bid of said business organization, bidders shall submit a statement setting forth the names and addresses of all persons and entities that own ten percent or more of its stock or interest of any type at all levels of ownership.

The included Statement of Ownership shall be completed and attached to the bid proposal. This requirement applies to all forms of business organizations, including, but not limited to, corporations and partnerships, publicly-owned corporations, limited partnerships, limited liability corporations, limited liability partnerships, sole proprietorship, and Subchapter S corporations. **Failure to submit a disclosure document shall result in rejection of the bid as it cannot be remedied after bids have been opened.**

Not-for-profit entities should fill in their name, check the not-for-profit box, and certify the form. No other information is required.

43. SUBCONTRACTING: Subcontractor Disclosure Statement

Pursuant to N.J.S.A. 40A:11-1 et seq., any bidder who bids for the overall contract and who will subcontract the following work:

- Plumbing and gas fitting work;
- Refrigeration, heating and ventilating systems and equipment;
- Electrical work, tele-data, fire alarm or security systems; and
- Structural steel and ornamental iron work;

Documents to be Submitted: All Subcontractors

The prime contractor (bidders) who will be using a subcontractor on any part of this bid, shall identify the subcontractor(s) on the appropriate form and submit with the bid package the following subcontractor documents at the time indicated in the box below:

*****IF subcontractor is not applicable please write in N/A on the PAGE.**

<u>SUBCONTRACTOR DOCUMENT SUBMISSIONS</u>		
Estimated Value of Contract – Subcontractor	For Subcontractors in the four major branches listed above: <i><u>Submit with Bid</u></i>	For all other Subcontractors: <i><u>Submit Within ten (10 Days of Receipt of Notice of Award)</u></i>
\$2,000 through \$5,999	Contractor’s Registration Certificate	
\$6,000 through \$17,499	Contractor’s Registration Certificate New Jersey Business Registration Certificate	
\$17,500 through \$19,999	Contractor’s Registration Certificate New Jersey Business Registration Certificate	
\$20,000 or more	Contractor’s Registration Certificate New Jersey Business Registration Certificate	

Failure to identify in the Subcontractor’s Disclosure Statement the names and addresses of any or all subcontractors required to be named in the bid, or to submit with the bid the appropriate documents for each such subcontractor, may be cause for the bid to be rejected as being non-responsive.

Contractors are reminded that the subcontractors listed on the forms provided by the township may not be changed later, except in the case of failure in performance or other contract breach where a change is needed to protect the township.

*****IF subcontractor is not applicable please write in N/A on the PAGE.**

44. SUBCONTRACTING: PROHIBITIONS: HOLD HARMLESS

Prime contractors, with whom The Township of Piscataway have an executed contract, may not subcontract any part of any work done for the Township without first receiving written approval from the Township. Contractors seeking to use subcontractors must first complete the Request to Sub Contract Form as provided by the Building Services Department.

Subcontractors Prohibited to Sub Contract

It is the responsibility of the prime contractor to ensure that no subcontractor who has received written permission to do work for the Township, subcontracts any of its/their work without first receiving written approval from the prime contractor **and** the Director of Public Works or his designee.

The prime contractor assumes all responsibility for work performed by subcontractors. The prime contractor must also provide to the Township Purchasing Office the following documents secured from all approved subcontractors:

- Insurance Certificate as outlined in the bid specifications;
- Affirmative Action Evidence as outlined in the bid specifications;
- Written certification that the subcontractor shall adhere to prevailing wages as provided through New Jersey State Law;
- Evidence of Performance Security;
- Documents listed in the Subcontractor Document Submissions list.

In cases of subcontracting, The Township of Piscataway shall only pay the prime contractor. It is the sole responsibility of the prime contractor to ensure that all subcontractors are paid. The Township of Piscataway shall not be responsible for payments to subcontractors and shall be held harmless against any or all claims generated against prime contractors for non-payment to subcontractors.

Penalties – Unauthorized Subcontractors

The Township of Piscataway shall deduct the amount of \$1,000.00 (one thousand dollars) per day as a penalty, for each day a prime contractor uses a subcontractor without first receiving **written** permission from the Building Services Department.

*****IF subcontractor is not applicable please write in N/A on the PAGE.**

45. TAXES; Contractor's Use of Township's Tax Identification Number—Prohibited

As a New Jersey governmental entity, The Township of Piscataway is exempt from the requirements under New Jersey state sales and use tax (N.J.S.A. 54:32B-1 et seq.), and does not pay any sales or use taxes. Bidders should note that they are expected to comply with the provisions of said statute and the rules and regulations promulgated thereto to qualify them for examinations and reference to any and all labor, services, materials and supplies furnished to the Township. Contractors may not use the Township's tax identification number to purchase supplies, materials, service or equipment, for this project.

A contractor may qualify for a New Jersey Sales Tax Exemption on the purchase of materials, supplies and services when these purchases are used exclusively to fulfill the terms and conditions of the contract with the Township. All contractors are referred to New Jersey Division of Taxation—Tax Bulletin S&U-3 and in particular, Contractor's Exempt Purchase Certificate (Form ST-13). Again, contractors are not permitted to use the Township's tax identification number to purchase supplies, materials, services of equipment. **Sample attached in the bid for the Contractor- ST-13 FORM**

(ST-13-FORM)-Once Contract is awarded ST-13 FORM will be attached in the Contract for the Contractor use.

New Jersey State Sales and Use Tax Exemption

Materials and equipment purchases for permanent installation in the project will be exempt from the New Jersey State Sales and Use Tax. Each Bidder shall take this exemption into account in calculating his bid. It shall be the Contractor's responsibility to file the necessary exemption applications.

W-9- Required-Sample in the bid. May/should be submitted with the bid for faster process. Successful bidder/respondent shall complete W-9 Form and submit to Purchasing prior to contract award. Than form is available at the following link: www.irs.gov/pub/irs-pdf/fw9.pdf

Play to Play-NOTICE OF DISCLOSURE REQUIREMENT

Business entities are advised of their responsibility to file an annual disclosure statement of political contributions with the New Jersey Election Law Enforcement Commission (ELEC) pursuant to N.J.S.A. 19:44A-20.27 if they receive contracts in excess of \$50,000 from public entities in a calendar year. Business entities are responsible for determining if filing is necessary. Additional information on this requirement is available from ELEC at 888-313-3532 or at www.elect.state.nj.us.

46. TERMINATION OF CONTRACT

If the Township determines that the contractor has failed to comply with the terms and conditions of the bid and/or proposal upon which the issuance of the contract is based or that the contractor has failed to perform said service, duties and or responsibilities in a timely, proper, professional and/or efficient manner, then the Township shall have the authority to terminate the contract upon written notice setting forth the reason for termination and effective date of termination.

Termination by the Township of the contract does not absolve the contractor from potential liability for damages caused the Township by the contractor's breach of this agreement. The Township may withhold payment due the contractor and apply same towards damages once established. The Township will act diligently in accordance with governing statutes to mitigate damages. Damages may include the additional cost of procuring said services or goods from other sources.

The contractor further agrees to indemnify and hold the Township harmless from any liability to subcontractors or suppliers concerning work performed or goods provided arising out of the lawful termination of this agreement.

TERM/COMPLETION OF THE PROJECT: As per specifications/Proposal pages.

47. WITHDRAWAL OF BIDS

Before the Bid Opening

The Purchasing Agent may consider a written request from a bidder to withdraw a bid if the written request is received by the Purchasing Agent before the advertised time of the bid opening. Any bidder who has been granted permission by the Purchasing Agent to have his/her bid withdrawn cannot re-submit a bid for the same advertised bid project. That bidder shall also be disqualified from future bidding on the same project if the project is re-bid.

After the Bid Opening

The Township of Piscataway may consider a written request from a bidder to withdraw a bid, if the written request is received by the Purchasing Agent within five (5) business days after the bid opening. A request to withdraw a bid after the specified number of days will not be honored.

The contractor/vendor who wishes to withdraw a bid must provide a certification supported by written factual evidence that an error or omission was made by the contractor and that the error or omission was a substantial computational error or an unintentional omission or both.

The request to withdraw a bid after the bid opening may be reviewed by the Purchasing Agent, the Director of Public Works , other interested administrators; and the Department of Public Works of Record for the project (if necessary) and/or the Township Attorney and a recommendation will be made to the Township. If the Township of Piscataway grants permission to have the bid withdrawn the contractor/vendor shall be disqualified from bidding on the same project if the project is re-bid. If the contractor/vendor fails to meet the burden of proof to have the bid withdrawn the request to withdraw the bid will be denied and if the contractor/vendor fails to execute the contract the bid guarantee will be forfeited and become property of the Township.

48. CONTRACTOR / EMPLOYEES BACKGROUND CHECK/FINGER PRINTS

All employees of the Contractor will sign an Authorization to Release Records Form and submit to finger printing and background checks prior to beginning work. The Contractor shall not provide any employees whose results are not first submitted to and cleared by the Township (See Authorization to Release Records Form in the bid)

The contractor and its employees that will be working in the Sterling Village (Piscataway Senior Housing) must have background check and Finger Prints done by an agency **at the expense of the Contractor, Prior of the start of the any work**. Contractor shall obtain its own agency and have the reports sent to the Piscataway Administration office prior of any Contractor's employees and or any Subcontractors staff starting.

The reports must be sent to:
Piscataway Township Administrator /Purchasing
455 Hoes Lane
Piscataway, New Jersey, 08854.

49. WORK HOURS / INSPECTION

The contractor shall work only during the normal work hours of the Township unless authorized by the Township Engineer/ DPW to do otherwise. Overtime shall be considered those hours before 8:30 A.M and after 4:30 P.M. Monday thru Friday. In addition, Saturday, Sunday and all Township holidays will be considered overtime. The Contractor will be responsible to pay all overtime worked by the Township Inspector or Representative. There shall be an inspector on the job site at all times when the contractor is working.

Supplemental Specifications

STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

AWARD OF CONTRACT

The Township of Piscataway intends to award the contract for the project as follows:

EXPERIENCE

The Township of Piscataway requires evidence from all bidders that they have completed work or projects of a similar nature as outlined in the bid package. Bidders are to provide evidence of satisfactory completion of work of similar nature as outlined in the bid from other governmental bodies _____ for at least (5) years. **See attached Plan & Experience forms in the bid. As Per Specifications.**

NUMBER OF WORKING DAYS; TIME OF COMPLETION

The contractor agrees to substantially complete this Public Works Project to the satisfaction of The Township of Piscataway within (**AS PER SPEC'S**) working days from the receipt of the official Notice to Proceed and purchase order. The Township has defined a working day as a calendar day. **As Per Specifications/Proposal pages .**

The number of working days set by the Township may be extended by mutual agreement between the contractor and the Township. The mutual agreement shall be in writing and will be considered an addendum to the contract.

PRE-BID MEETING

A pre-bid meeting for this project is scheduled for (Site Visit Not Mandatory) **Strongly Encourage**

MARCH 29, 2022 @ STERLING VILLAGE SENIOR HOUSING

Month / Day / Year
2:00 p.m.
The Township of Piscataway

The purpose of this meeting is to review the legal and technical requirements of the bid proposal. While attendance is not mandatory, prospective bidders are **strongly encouraged** to attend this important meeting. Addenda to this bid proposal may be issued as a result of the pre-bid meeting.

TRADE CLASSIFICATION(S) (Optional)

A. Bidder:

For the purpose of this Public Works bid, each bidder shall be classified by the State of New Jersey—Division of Property Management and Construction in the following trade(s):

Classification Code
_____ (List Code #)

Classification Trade Name
_____ (List name of trade)

Proof of classification shall be submitted with the bid package in the form of a current Notice of Classification as issued by the New Jersey Division of Property Management and Construction.

B. Subcontractor:

For the purpose of this Public Works bid, each bidder shall use a subcontractor that is properly classified by the State of New Jersey—Division of Property Management and Construction in the following trade(s):

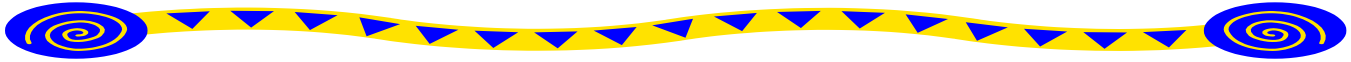
Classification Code
_____ (List Code #)

Classification Trade Name
_____ (List name of trade)

Proof of classification, in the form of a current Notice of Classification form, for each Sub-Contractor, shall be submitted by the bidder with the bid package for any estimated subcontractor work exceeding \$20,000.00.

THE TOWNSHIP OF PISCATAWAY

STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3



BID DOCUMENTS AND REQUIRED DOCUMENTATION

All documents in this section shall be completed, signed and submitted with the bid package – Failure to submit the bid documents and other documents so specified may be cause to reject the bid for being non-responsive.



Purchasing Agent/Township Secretary

ACKNOWLEDGEMENT OF ADDENDUM

STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

Bid No. 2022-03-09

Bid Date: THURSDAY, APRIL 21, 2022

The bidder acknowledges receipt of the hereinafter enumerated Addenda which have been issued during period of bidding and agrees that said Addenda shall become a part of this contract. The bidder shall list below the numbers and issuing dates of the Addenda.

<u>ADDENDA NO.</u>	<u>ISSUING DATES</u>
_____	_____
_____	_____
_____	_____
_____	_____

No Addenda Received

Name of Company _____

Address _____ P.O. Box _____

City, State, Zip Code _____

Name of Authorized Representative _____

Signature _____ **Date** _____

The Township of Piscataway

CONTRACTOR QUESTIONNAIRE/CERTIFICATION

STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

Bid No. 2022-03-09

Bid Date: THURSDAY, APRIL 21, 2022

Name of Company _____

Street Address _____ P.O. Box _____

City, State, Zip _____

Business Phone Number () _____ Extension _____

Emergency Phone Number () _____

FAX NO. () _____ E-Mail _____

FEIN No. _____

Questionnaire

1. How many years have you been engaged in the contracting business under your present firm or trading name?
_____ Years

2. Have you ever failed to complete any work awarded to your company?

Yes No

If yes, explain _____

3. Have you ever defaulted on a contract?

Yes No

If yes, explain _____

4. Have you or other principals of your company been debarred, suspended, proposed for debarment, declared ineligible, or voluntary excluded from participation in any public works projects by any federal, state, or local agencies, including any "prior negative experience" disqualification pursuant to N.J.S.A. 40A:11-1 et sq.,?

Yes No

If yes, explain _____

(Form continued on next page)

STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

BID NO. 2022-03-09

Bid Date: THURSDAY, APRIL 21, 2022

Name of Company

Experience – Township:

The Township of Piscataway requires evidence from all bidders that they have completed work or projects of a similar nature as outlined in the bid package. Bidders are to provide evidence of satisfactory completion of work of similar nature as outlined in the bid from _____ (___) Townships in New Jersey within the past _____ (___5___) years. Bidders are to complete the section on experience and provide supporting documentation with the bid package. **As Per Specifications.**

A. Title of Work/Project: _____
Name of Township: _____
Name of School Official: _____ Title _____
Phone Number _____ E-Mail _____
Date(s) of Project: _____

B. Title of Work/Project: _____
Name of Township: _____
Name of School Official: _____ Title _____
Phone Number _____ E-Mail _____
Date(s) of Project: _____

C. Title of Work/Project: _____
Name of Township: _____
Name of School Official: _____ Title _____
Phone Number _____ E-Mail _____
Date(s) of Project: _____

References

Architects--List names of architects that you have worked with on projects within the last five (5) years.

	<u>Firm</u>	<u>Principal</u>	<u>Phone Number</u>
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____

(Form continued on next page)

STERLING VILLAG PARKING LOT REHABILITATION

BID NO. 2022-03-09

Bid Date: THURSDAY, APRIL 21, 2022

Name of Company

Bank--List name of principal bank with which your company does business.

Bank

Officer

Phone Number

Trade--List names of companies within your trade with which your company does business:

Firm

Principal

Phone Number

1. _____
2. _____
3. _____

(Form continued on next page)

Contractor Questionnaire/Certification--page 4

STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

BID NO. 2022-03-09

Bid Date: THURSDAY, APRIL 21, 2022

Name of Company

Certifications

• **Debarment**

I certify that the entity listed on the form or any person employed by this entity, are not presently on the following:

- New Jersey Department of Treasury – Consolidated Debarment Report
- NJ Department of Labor and Workforce Development– Prevailing Wage Debarment List
- Federal Debarred Vendor List—System for Award Management (SAM.gov)

• **Direct/Indirect Interests**

I declare and certify that no member of the Township of Piscataway, nor any officer or employee or person whose salary is payable in whole or in part by said the township or their immediate family members are directly or indirectly interested in this bid or in the supplies, materials, equipment, work or services to which it relates, or in any portion of profits thereof. If a situation so exists where a Township member, employee, officer of the Township has an interest in the bid, etc., then please attach a letter of explanation to this document, duly signed by the president of the firm or company.

• **Gifts; Gratuities; Compensation**

I declare and certify that no person from my firm, business, corporation, association or partnership offered or paid any fee, commission or compensation, or offered any gift, gratuity or other thing of value to any school official, Township member or employee of the Township.

• **Vendor Contributions**

I declare and certify that I fully understand N.J.A.C. 6A:23A-6.3 (a) (1-4) concerning vendor contributions to school Township members.

• **False Material Representation/Truth in Contracting**

I further certify that I understand that it is a crime in the second degree in New Jersey to knowingly make a material representation that is false in connection with the negotiation, award or performance of a government contract. I further acknowledge my understanding of the New Jersey Truth in Contracting Laws.

President or Authorized Agent

Signature

CONTRACTOR REGISTRATION CERTIFICATION

Public Works

STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

BID NO. 2022-03-09

Bid Date: THURSDAY, APRIL 21, 2022

It is the determination of The Township of Piscataway that this is a Public Works project which contract amount in total will exceed \$2,000.00 (two thousand dollars), therefore, pursuant to the Public Works Contractor Registration Act -- N.J.S.A. 34:11-56.48 et seq., contractors are to be aware of the following:

No contractor shall bid on any contract for public work as defined in section 2 of P.L.1963, c. 150 (C.34:11-56.26) unless the contractor is registered pursuant to this act. No contractor shall list a subcontractor in a bid proposal for the contract unless the subcontractor is registered pursuant to P.L.1999, c.238 (C.34:11-56.48 et seq.) at the time the bid is made. No contractor or subcontractor, including a subcontractor not listed in the bid proposal, shall engage in the performance of any Public Work subject to the contract, unless the contractor or subcontractor is registered pursuant to that act.

I certify that our company understands that the project of The Township of Piscataway requires that all contractors and subcontractors listed in this proposal possess a valid Contractor Registration Certificate at the time the proposal is received by the Township and furthermore certify that I will provide copies of the valid certificates prior to the award of contract.

Name of Company _____

Authorized Agent _____ Title _____

Authorized Signature _____

EQUIPMENT CERTIFICATION

STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

BID NO. 2022-03-09

Bid Date: THURSDAY, APRIL 21, 2022

In accordance with 40A:11-1 et seq., I hereby certify that

A) _____ *(Name of Company)* owns all the necessary equipment as required by the specifications and to complete the specified Public Work project.

or

B) _____ *(Name of Company)* leases or controls all the necessary equipment as required by the specifications and to complete the specified Public Work project.

PLEASE NOTE: If your company is not the actual owner of the equipment, **you shall submit with the bid**

1. A certificate stating the source from which the equipment will be obtained and
2. Obtain and submit with the bid a certificate from the owner and person in control of the equipment, definitely granting to the bidder the control of the equipment required during such time it may be necessary for the completion of that portion of the contract for which said equipment will be necessary.

Name of Company _____

Authorized Agent _____ Title _____

Authorized Signature _____

To be completed, signed and returned with Bid

BID NO. 2022-03-09

STATE OF NEW JERSEY -- DIVISION OF PURCHASE AND PROPERTY DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN

Quote Number:

Bidder/Offeror:

PART 1: CERTIFICATION

BIDDERS MUST COMPLETE PART 1 BY CHECKING EITHER BOX.

FAILURE TO CHECK ONE OF THE BOXES WILL RENDER THE PROPOSAL NON-RESPONSIVE.

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that neither the person or entity, nor any of its parents, subsidiaries, or affiliates, is identified on the Department of Treasury's Chapter 25 list as a person or entity engaging in investment activities in Iran. The Chapter 25 list is found on the Division's website at <http://www.state.nj.us/treasury/purchase/pdf/Chapter25List.pdf>. Bidders **must** review this list prior to completing the below certification. **Failure to complete the certification will render a bidder's proposal non-responsive.** If the Director finds a person or entity to be in violation of law, s/he shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party

PLEASE CHECK THE APPROPRIATE BOX:

I certify, pursuant to Public Law 2012, c. 25, that neither the bidder listed above nor any of the bidder's parents, subsidiaries, or affiliates is listed on the N.J. Department of the Treasury's list of entities determined to be engaged in prohibited activities in Iran pursuant to P.L. 2012, c. 25 ("Chapter 25 List"). I further certify that I am the person listed above, or I am an officer or representative of the entity listed above and am authorized to make this certification on its behalf. **I will skip Part 2 and sign and complete the Certification below.**

OR

I am unable to certify as above because the bidder and/or one or more of its parents, subsidiaries, or affiliates is listed on the Department's Chapter 25 list. I will provide a detailed, accurate and precise description of the activities in Part 2 below and sign and complete the Certification below. Failure to provide such will result in the proposal being rendered as non-responsive and appropriate penalties, fines and/or sanctions will be assessed as provided by law.

PART 2: PLEASE PROVIDE FURTHER INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN

You must provide a detailed, accurate and precise description of the activities of the bidding person/entity, or one of its parents, subsidiaries or affiliates, engaging in the investment activities in Iran outlined above by completing the boxes below.

EACH BOX WILL PROMPT YOU TO PROVIDE INFORMATION RELATIVE TO THE ABOVE QUESTIONS. PLEASE PROVIDE THOROUGH ANSWERS TO EACH QUESTION. IF YOU NEED TO MAKE ADDITIONAL ENTRIES, CLICK THE "ADD AN ADDITIONAL ACTIVITIES ENTRY" BUTTON.

Name	<input type="text"/>	Relationship to Bidder/Offeror	<input type="text"/>
Description of Activities	<input type="text"/>		
Duration of Engagement	<input type="text"/>	Anticipated Cessation Date	<input type="text"/>
Bidder/Offeror Contact Name	<input type="text"/>	Contact Phone Number	<input type="text"/>

ADD AN ADDITIONAL ACTIVITIES ENTRY

Certification: I, being duly sworn upon my oath, hereby represent that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I acknowledge: that I am authorized to execute this certification on behalf of the bidder; that the State of New Jersey is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the completion of any contracts with the State to notify the State in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the State, permitting the State to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):

Signature:

Do Not Enter PIN as a Signature

Title:

Date:

NON-COLLUSION AFFIDAVIT

STERLING VILLAGE INTERIOR RENOVATIONS PHAE-3

Re: Bid Proposal for the Township of Piscataway.

BID NO. 2022-03-09

STATE OF _____

Bid Date: THURSDAY, APRIL 21, 2022

COUNTY OF _____ :SS:

I, _____ of the City of _____

in the County of _____ and the State of _____

of full age, being duly sworn according to law on my oath depose and say that:

I am _____ (Position in Company)

of the firm of _____ and the bidder making the Proposal for the above names contract, and that I executed the said Proposal with full authority so to do; that I have not, directly or indirectly, entered into any agreement, participated in any collusion, discussed any or all parts of this proposal with any potential bidder, or otherwise taken any action in restraint of free, competitive bidding in connection with the above named bid, and that all statements contained in said Proposal and in this affidavit are true and correct, and made with full knowledge that the Township of Piscataway relies upon the truth of the statements contained in said Proposal and in the statements contained in this affidavit in awarding the contract for the said bid.

I further warrant that no person or selling agency has been employed or retained to solicit or secure such contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except bona fide employees of bona fide established commercial or selling agencies maintained by

(Print Name of Contractor)

(SIGNATURE OF CONTRACTOR)

PREVAILING WAGES CERTIFICATION

STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

BID NO. 2022-03-09

It is the determination of the Township of Piscataway that this is a public works project that in total will exceed \$2,000.00 (two thousand dollars), therefore prevailing wages rules and regulations apply as promulgated by the New Jersey Prevailing Wage Act and in conformance with N.J.S.A. 34:11-56:25 et seq.

Certification

1. I certify that our company understands that this project of the Township of Piscataway requires prevailing wages to be paid in full accordance with the law.
2. I further certify that all subcontractors named in this bid understand that this project requires the subcontractor to pay prevailing wages in full accordance with the law.

Non-compliance Statement

If it is found that any worker, employed by the contractor or any subcontractor covered by said contract, has been paid a rate of wages less than the prevailing wage required to be paid by such contract, The Township , may begin proceedings to terminate the contractor's or subcontractor's right to proceed with the work, or such part of the work as to which there has been a failure to pay required wages and to prosecute the work to completion or otherwise. The contractor and his sureties shall be liable for any excess costs occasioned thereby to the public body.

NOTIFICATION OF VIOLATIONS – New Jersey Department of Labor and Workforce Development

Has the bidder or any person having an “interest” with the bidder, been notified by the New Jersey Department of Labor and Workforce Development by notice issued pursuant to N.J.S.A. 34:11-56:37 that he/she has been in violation for failure to pay prevailing wages as required by the New Jersey Prevailing Wage Act within the last five (5) years?

* Yes _____

No _____

*If yes, please attach a signed document explaining any/or all administrative proceedings with the Department within the last five (5) years. Please include any pending administrative proceedings with the Department if any.

Submission of Certified Payroll Records

All certified payroll records are to be submitted to the person named below who is coordinating the activities for the project:

Guy Gaspari/ Director of Public Works
The Township of Piscataway

Name of Company_____

Authorized Agent_____

Authorized Signature_____

To be completed, signed and returned with Bid/Proposal

STATEMENT OF OWNERSHIP DISCLOSURE

BID NO. 2022-03-09

N.J.S.A. 52:25-24.2 (P.L. 1977, c.33, as amended by P.L. 2016, c.43)

This statement shall be completed, certified to, and included with all bid and proposal submissions. Failure to submit the required information is cause for automatic rejection of the bid or proposal.

Name of Organization: _____

Organization Address: _____

City, State, ZIP: _____

Part I Check the box that represents the type of business organization:

- Sole Proprietorship (skip Parts II and III, execute certification in Part IV)
- Non-Profit Corporation (skip Parts II and III, execute certification in Part IV)
- For-Profit Corporation (any type) Limited Liability Company (LLC)
- Partnership Limited Partnership Limited Liability Partnership (LLP)
- Other (be specific): _____

Part II Check the appropriate box

The list below contains the names and addresses of all stockholders in the corporation who own 10 percent or more of its stock, of any class, or of all individual partners in the partnership who own a 10 percent or greater interest therein, or of all members in the limited liability company who own a 10 percent or greater interest therein, as the case may be. **(COMPLETE THE LIST BELOW IN THIS SECTION)**

OR

No one stockholder in the corporation owns 10 percent or more of its stock, of any class, or no individual partner in the partnership owns a 10 percent or greater interest therein, or no member in the limited liability company owns a 10 percent or greater interest therein, as the case may be. **(SKIP TO PART IV)**

(Please attach additional sheets if more space is needed):

Name of Individual or Business Entity	Home Address (for Individuals) or Business Address

Part III DISCLOSURE OF 10% OR GREATER OWNERSHIP IN THE STOCKHOLDERS, PARTNERS OR LLC MEMBERS LISTED IN PART II

If a bidder has a direct or indirect parent entity which is publicly traded, and any person holds a 10 percent or greater beneficial interest in the publicly traded parent entity as of the last annual federal Security and Exchange Commission (SEC) or foreign equivalent filing, ownership disclosure can be met by providing links to the website(s) containing the last annual filing(s) with the federal Securities and Exchange Commission (or foreign equivalent) that contain the name and address of each person holding a 10% or greater beneficial interest in the publicly traded parent entity, along with the relevant page numbers of the filing(s) that contain the information on each such person. **Attach additional sheets if more space is needed.**

Website (URL) containing the last annual SEC (or foreign equivalent) filing	Page #'s

Please list the names and addresses of each stockholder, partner or member owning a 10 percent or greater interest in any corresponding corporation, partnership and/or limited liability company (LLC) listed in Part II **other than for any publicly traded parent entities referenced above.** The disclosure shall be continued until names and addresses of every non-corporate stockholder, and individual partner, and member exceeding the 10 percent ownership criteria established pursuant to N.J.S.A. 52:25-24.2 has been listed. **Attach additional sheets if more space is needed.**

Stockholder/Partner/Member and Corresponding Entity Listed in Part II	Home Address (for Individuals) or Business Address

Part IV Certification

I, being duly sworn upon my oath, hereby represent that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I acknowledge: that I am authorized to execute this certification on behalf of the bidder/proposer; that **The Township of Piscataway** is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the completion of any contracts with The Township of Piscataway to notify The Township of Piscataway in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the, permitting The Township of Piscataway to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):		Title:	
Signature:		Date:	

This statement shall be completed, certified to, and included with all bid and proposal submissions. Failure to submit the required information is cause for automatic rejection of the bid or proposal.

To be completed, signed and returned with Bid

SUBCONTRACTOR'S DISCLOSURE FORM

STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

BID NO. 2022-03-09

Bid Date: THURSDAY, APRIL 21, 2022

The _____ *(Name of Bidding Company)*

Please Check One! _____ will sub-contract a portion of this project.
 _____ will not sub-contract any portion of this project.

Authorized Agent _____ **Title** _____

Signature of Bidder _____ **Date** _____

If the bidder is not going to subcontract any portion of this project, the bidder need not complete any further part of this document.

If the bidder will subcontract any of the following:

- Plumbing/gas fitting work;
- Refrigeration/heating/ventilating systems & equipment
- Electrical work, tele-data, fire alarm or security systems
- Structural steel/ornamental iron work

the bidder must do the following:

- Identify the contract number and type of work he intends to subcontract;
- Provide the name, address and other pertinent information about the subcontractor;*
- If the cost of the work by the subcontractor shall exceed the amounts listed below, the bidder shall provide in the bid package submission the following documents:

<u>SUBCONTRACTOR DOCUMENT SUBMISSIONS</u>		
<i><u>Estimated Value of Contract – Subcontractor</u></i>	<i>For Subcontractors in the four major branches listed above</i>	<i>For all other Subcontractors</i>
	<u>Submit With Bid</u>	<u>Submit Within ten (10 Days of Receipt of Notice of Award</u>
\$2,000 through \$5,999	Contractor's Registration Certificate	
\$6,000 through \$17,499	Contractor's Registration Certificate New Jersey Business Registration Certificate	
\$17,500 through \$19,999	Contractor's Registration Certificate New Jersey Business Registration Certificate	
\$20,000 or more	Contractor's Registration Certificate New Jersey Business Registration Certificate	

Please list subcontractor(s) on the following pages. Bidders may make extra copies of the following pages.

** Failure to identify the names and addresses of any subcontractors required to be named in the bid, or to submit the appropriate documents for each such subcontractor, may be cause for the bid to be rejected as being non-responsive.*

(Form continued on next page)

Subcontractor's Disclosure Statement (Continued)

Return With Bid

STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

BID NO. 2022-03-09

Bid Date: THURSDAY, APRIL 21, 2022

1. Sub-Contractor for PLUMBING AND GAS FITTING WORK

Name of Subcontracting Company _____

Address _____

City, State, Zip _____

Telephone _____ Fax _____

E-Mail _____ FEIN No: _____

Authorized Agent _____ Title _____

Will the cost of sub-contract exceed \$20,000.00?

_____ Yes Estimated Value of Contract \$ _____

_____ No Estimated Value of Contract \$ _____

If checked **yes**, the sub-contractor must be pre-qualified to perform the work. The bidder must provide in the bid package the following:

- The subcontractor's Notice of Classification;
- The subcontractor's Total Amount of Uncompleted Contracts; and
- Other documents that are required:

<u>SUBCONTRACTOR DOCUMENT SUBMISSIONS</u>		
<i><u>Estimated Value of Contract – Subcontractor</u></i>	<i>For Subcontractors in the four major branches listed above</i>	<i>For all other Subcontractors</i>
	<u>Submit With Bid</u>	<u>Submit Within ten (10 Days of Receipt of Notice of Award</u>
\$2,000 through \$5,999	Contractor's Registration Certificate	
\$6,000 through \$17,499	Contractor's Registration Certificate New Jersey Business Registration Certificate	
\$17,500 through \$19,999	Contractor's Registration Certificate New Jersey Business Registration Certificate	
\$20,000 or more	Contractor's Registration Certificate New Jersey Business Registration Certificate	

Certification of Equipment

The _____ hereby certifies the above named
Name of Bidding Company
subcontractor has the personnel, equipment, experience, financial and sufficient means to complete their portion of the contract in full accordance with the bid specifications.

Authorized Agent (Print) -- Bidder

Signature of Authorized Agent—Bidder

Subcontractor's Disclosure Statement (Continued)

Return With Bid

STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

BID NO. 2022-03-09

Bid Date: THURSDAY, APRIL 21, 2022

2. Sub-Contractor for REFRIGERATION, HEATING & VENTILATING SYSTEMS AND EQUIPMENT

Name of Subcontracting Company _____

Address _____

City, State, Zip _____

Telephone _____ Fax _____

E-Mail _____ FEIN No: _____

Authorized Agent _____ Title _____

Will the cost of sub-contract exceed \$20,000.00?

_____ Yes Estimated Value of Contract \$ _____

_____ No Estimated Value of Contract \$ _____

If checked **yes**, the sub-contractor must be pre-qualified to perform the work. The bidder must provide in the bid package the following:

- The subcontractor's Notice of Classification;
- The subcontractor's Total Amount of Uncompleted Contracts; and
- Other documents that are required:

<u>SUBCONTRACTOR DOCUMENT SUBMISSIONS</u>		
<i>Estimated Value of Contract – Subcontractor</i>	<i>For Subcontractors in the four major branches listed above</i>	<i>For all other Subcontractors</i>
	<u>Submit With Bid</u>	<u>Submit Within ten (10 Days of Receipt of Notice of Award</u>
\$2,000 through \$5,999	Contractor's Registration Certificate	
\$6,000 through \$17,499	Contractor's Registration Certificate New Jersey Business Registration Certificate	
\$17,500 through \$19,999	Contractor's Registration Certificate New Jersey Business Registration Certificate	
\$20,000 or more	Contractor's Registration Certificate New Jersey Business Registration Certificate	

Certification of Equipment

The _____ hereby certifies the above named
Name of Bidding Company

subcontractor has the personnel, equipment, experience, financial and sufficient means to complete their portion of the contract in full accordance with the bid specifications.

Authorized Agent (Print) -- Bidder

Signature of Authorized Agent—Bidder
(form continued on next page)

Subcontractor's Disclosure Statement (Continued)

Return With Bid

STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

BID NO. 2022-03-09

Bid Date: THURSDAY, APRIL 21, 2022

3. Sub-Contractor for ELECTRICAL WORK; TELE-DATA, FIRE ALARM OR SECURITY SYSTEMS

Name of Subcontracting Company _____

Address _____

City, State, Zip _____

Telephone _____ Fax _____

E-Mail _____ FEIN No: _____

Authorized Agent _____ Title _____

Will the cost of sub-contract exceed \$20,000.00?

_____ Yes Estimated Value of Contract \$ _____

_____ No Estimated Value of Contract \$ _____

If checked **yes**, the sub-contractor must be pre-qualified to perform the work. The bidder must provide in the bid package the following:

- The subcontractor's Notice of Classification;
- The subcontractor's Total Amount of Uncompleted Contracts; and
- Other documents that are required:

<u>SUBCONTRACTOR DOCUMENT SUBMISSIONS</u>		
<i><u>Estimated Value of Contract – Subcontractor</u></i>	<i><u>For Subcontractors in the four major branches listed above</u></i>	<i><u>For all other Subcontractors</u></i>
	<u>Submit With Bid</u>	<u>Submit Within ten (10 Days of Receipt of Notice of Award</u>
\$2,000 through \$5,999	Contractor's Registration Certificate	
\$6,000 through \$17,499	Contractor's Registration Certificate New Jersey Business Registration Certificate	
\$17,500 through \$19,999	Contractor's Registration Certificate New Jersey Business Registration Certificate	
\$20,000 or more	Contractor's Registration Certificate New Jersey Business Registration Certificate	

Certification of Equipment

The _____ hereby certifies the above named
Name of Bidding Company
subcontractor has the personnel, equipment, experience, financial and sufficient means to complete their portion of the contract in full accordance with the bid specifications.

Authorized Agent (Print) -- Bidder

Signature of Authorized Agent—Bidder

(form continued on next page)

STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

BID NO. 2022-03-09

Bid Date: THURSDAY, APRIL 21, 2022

4. Sub-Contractor for STRUCTURAL STEEL & IRON WORK

Name of Subcontracting Company _____

Address _____

City, State, Zip _____

Telephone _____ Fax _____

E-Mail _____ FEIN No: _____

Authorized Agent _____ Title _____

Will the cost of sub-contract exceed \$20,000.00?

_____ Yes Estimated Value of Contract \$ _____

_____ No Estimated Value of Contract \$ _____

If checked **yes**, the sub-contractor must be pre-qualified to perform the work. The bidder must provide in the bid package the following:

- The subcontractor's Notice of Classification;
- The subcontractor's Total Amount of Uncompleted Contracts; and
- Other documents that are required:

<u>SUBCONTRACTOR DOCUMENT SUBMISSIONS</u>		
<i><u>Estimated Value of Contract – Subcontractor</u></i>	<i>For Subcontractors in the four major branches listed above</i>	<i>For all other Subcontractors</i>
	<u>Submit With Bid</u>	<u>Submit Within ten (10 Days of Receipt of Notice of Award</u>
\$2,000 through \$5,999	Contractor's Registration Certificate	
\$6,000 through \$17,499	Contractor's Registration Certificate New Jersey Business Registration Certificate	
\$17,500 through \$19,999	Contractor's Registration Certificate New Jersey Business Registration Certificate	
\$20,000 or more	Contractor's Registration Certificate New Jersey Business Registration Certificate	

Certification of Equipment

The _____ hereby certifies the above named
Name of Bidding Company

subcontractor has the personnel, equipment, experience, financial and sufficient means to complete their portion of the contract in full accordance with the bid specifications.

Authorized Agent (Print) -- Bidder

Signature of Authorized Agent—Bidder

(form continued on next page)

To be completed, signed and returned with Bid

(IF APPLICABLE)

Subcontractor's Disclosure Statement
Other Trades
STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

BID NO. 2022-03-09

Bid Date: THURSDAY, APRIL 21, 2022

5. Name of Trade/Type of Work _____

Name of Subcontracting Company _____

Address _____

City, State, Zip _____

Telephone _____ Fax _____

E-Mail _____ FEIN No: _____

Authorized Agent _____ Title _____

Will the cost of sub-contract exceed \$20,000.00?

_____ Yes Estimated Value of Contract \$ _____

_____ No Estimated Value of Contract \$ _____

If checked **yes**, the sub-contractor must be pre-qualified to perform the work. The bidder must provide in the bid package the following:

- The subcontractor's Notice of Classification;
- The subcontractor's Total Amount of Uncompleted Contracts; and
- Other documents that are required:

<u>SUBCONTRACTOR DOCUMENT SUBMISSIONS</u>		
<i><u>Estimated Value of Contract – Subcontractor</u></i>	<i>For Subcontractors in the four major branches listed above</i>	<i>For all other Subcontractors</i>
	<u>Submit With Bid</u>	<u>Submit Within ten (10 Days of Receipt of Notice of Award</u>
\$2,000 through \$5,999	Contractor's Registration Certificate	
\$6,000 through \$17,499	Contractor's Registration Certificate New Jersey Business Registration Certificate	
\$17,500 through \$19,999	Contractor's Registration Certificate New Jersey Business Registration Certificate	
\$20,000 or more	Contractor's Registration Certificate New Jersey Business Registration Certificate	

Certification of Equipment

The _____ hereby certifies the above named
Name of Bidding Company
subcontractor has the personnel, equipment, experience, financial and sufficient means to complete their portion of the contract in full accordance with the bid specifications.

Authorized Agent (Print) -- Bidder

Signature of Authorized Agent—Bidder

To be completed, signed and returned with Bid

Bid No. 2022-03-09

Sworn Contractor Certification; Qualifications and Credentials

Pursuant to N.J.S.A. 40A:11-1 et seq., a pre-qualified contractor seeking to bid Township projects, and any subcontractors, that are required to be named under N.J.S.A. 40A:11-1 et seq., shall, as a condition of bidding, submit this Sworn Contractor Certification regarding qualifications and credentials.

I, _____, the principal owner or officer of the company certify that the forging statements are true and our firm has the following qualifications and credentials:

1. A current, valid certificate of registration issued pursuant to "The Public Works Contractor Registration Act," N.J.S.A. 34:11-56:48 et seq. A copy of which is submitted with its bid;
2. A current, valid Certificate of Authority (Business Registration) to perform work in New Jersey issued by the Department of Treasury, a copy of which is submitted with its bid;
3. A current valid contractor trade license required under applicable New Jersey Law for any specialty trade or specialty area in which the firm seeks to perform work, a copy of which is submitted with its bid;
4. During the term of The Township project, I as principal owner or officer of the company or corporation, as contractor, will have in place a suitable quality control and quality assurance program and an appropriate safety and health plan.

Name of Company _____

Print Name of Owner or Officer _____

Signature of Owner or Officer _____

**AMERICANS WITH DISABILITIES ACT OF 1990
Equal Opportunity for Individuals with Disability**

The contractor and The Township of Piscataway (hereafter "owner") do hereby agree that the provisions of Title 11 of the Americans With Disabilities Act of 1990 (the "Act") (42 U.S.C. S121 01 et seq.), which prohibits discrimination on the basis of disability by public entities in all services, programs, and activities provided or made available by public entities, and the rules and regulations promulgated pursuant there unto, are made a part of this contract. In providing any aid, benefit, or service on behalf of the owner pursuant to this contract, the contractor agrees that the performance shall be in strict compliance with the Act. In the event that the contractor, its agents, servants, employees, or subcontractors violate or are alleged to have violated the Act during the performance of this contract, the contractor shall defend the owner in any action or administrative proceeding commenced pursuant to this Act. The contractor shall indemnify, protect, and save harmless the owner, its agents, servants, and employees from and against any and all suits, claims, losses, demands, or damages, of whatever kind or nature arising out of or claimed to arise out of the alleged violation. The contractor shall, at its own expense, appear, defend, and pay any and all charges for legal services and any and all costs and other expenses arising from such action or administrative proceeding or incurred in connection therewith. In any and all complaints brought pursuant to the owner's grievance procedure, the contractor agrees to abide by any decision of the owner which is rendered pursuant to said grievance procedure. If any action or administrative proceeding results in an award of damages against the owner, or if the owner incurs any expense to cure a violation of the ADA which has been brought pursuant to its grievance procedure, the contractor shall satisfy and discharge the same at its own expense.

The owner shall, as soon as practicable after a claim has been made against it, give written notice thereof to the contractor along with full and complete particulars of the claim, If any action or administrative proceeding is brought against the owner or any of its agents, servants, and employees, the *owner shall* expeditiously forward or have forwarded to the contractor every demand, complaint, notice, summons, pleading, or other process received by the owner or its representatives.

It is expressly agreed and understood that any approval by the owner of the services provided by the contractor pursuant to this contract will not relieve the contractor of the obligation to comply with the Act and to defend, indemnify, protect, and save harmless the owner pursuant to this paragraph.

It is further agreed and understood that the owner assumes no obligation to indemnify or save harmless the contractor, its agents, servants, employees and subcontractors for any claim which may arise out of their performance of this Agreement. Furthermore, the contractor expressly understands and agrees that the provisions of this indemnification clause shall in no way limit the contractor's obligations assumed in this Agreement, nor shall they be construed to relieve the contractor from any liability, nor preclude the owner from taking any other actions available to it under any other provisions of the Agreement or otherwise at law.

Name of Company _____

Authorized Agent _____

Title or Position _____

Signature _____

Date _____

EXHIBIT B
MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE
N.J.S.A. 10:5-31 et seq. (P.L.1975, c.127)
N.J.A.C. 17:27-1.1 et seq.
CONSTRUCTION CONTRACTS

During the performance of this contract, the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer, pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the targeted employment goal prescribed by N.J.A.C. 17:27-7.2; provided, however, that the Dept. of LWD, Construction EEO Monitoring Program, may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions, A, B, and C, as long as the Dept. of LWD, Construction EEO Monitoring Program is satisfied that the contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Dept. of LWD, Construction EEO Monitoring Program, that its percentage of active "card carrying" members who are minority and women workers is equal to or greater than the targeted employment goal established in accordance with N.J.A.C. 17:27-7.2. The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

- (A) If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall, within three business days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et. seq., as supplemented and amended from time to time and the Americans with Disabilities Act. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five business days prior to the commencement of construction work, the contractor or subcontractor agrees to afford equal employment opportunities minority and women workers directly, consistent with this chapter. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and women workers consistent with affording equal employment opportunities as specified in this chapter, the contractor or subcontractor agrees to be prepared to provide such opportunities to minority and women workers directly, consistent with this chapter, by complying with the hiring or scheduling procedures prescribed under (B) below; and the contractor or subcontractor further agrees to take said action immediately if it determines that the union is not referring minority and women workers consistent with the equal employment opportunity goals set forth in this chapter.
- (B) If good faith efforts to meet targeted employment goals have not or cannot be met for each construction trade by adhering to the procedures of (A) above, or if the contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions:
 - (1) To notify the public agency compliance officer, the Dept. of LWD, Construction EEO Monitoring Program, and minority and women referral organizations listed by the Division pursuant to N.J.A.C. 17:27-5.3, of its workforce needs, and request referral of minority and women workers;
 - (2) To notify any minority and women workers who have been listed with it as awaiting available vacancies;
 - (3) Prior to commencement of work, to request that the local construction trade union refer minority and women workers to fill job openings, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade;

EXHIBIT B (Continued)

- (4) To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area;
- (5) If it is necessary to lay off some of the workers in a given trade on the construction site, layoffs shall be conducted in compliance with the equal employment opportunity and nondiscrimination standards set forth in this regulation, as well as with applicable Federal and State court decisions;
- (6) To adhere to the following procedure when minority and women workers apply or are referred to the contractor or subcontractor:
- (i) The contractor or subcontractor shall interview the referred minority or women worker.
 - (ii) If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work of the construction trade, the contractor or subcontractor shall in good faith determine the qualifications of such individuals. The contractor or subcontractor shall hire or schedule those individuals who satisfy appropriate qualification standards in conformity with the equal employment opportunity and non-discrimination principles set forth in this chapter. However, a contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency, provided the referral agency is acceptable to the Dept. of LWD, Construction EEO Monitoring Program. If necessary, the contractor or subcontractor shall hire or schedule minority and women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of (C) below.
 - (iii) The name of any interested women or minority individual shall be maintained on a waiting list, and shall be considered for employment as described in (i) above, whenever vacancies occur. At the request of the Dept. of LWD, Construction EEO Monitoring Program, the contractor or subcontractor shall provide evidence of its good faith efforts to employ women and minorities from the list to fill vacancies.
 - (iv) If, for any reason, said contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing of the reasons for the determination, maintain a copy of the determination in its files, and send a copy to the public agency compliance officer and to the Dept. of LWD, Construction EEO Monitoring Program.
- (7) To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Dept. of LWD, Construction EEO Monitoring Program and submitted promptly to the Dept. of LWD, Construction EEO Monitoring Program upon request.
- (C) The contractor or subcontractor agrees that nothing contained in (B) above shall preclude the contractor or subcontractor from complying with the union hiring hall or apprenticeship policies in any applicable collective bargaining agreement or union hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women or the failure to refer minorities and women consistent with the targeted county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to (B) above without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall not be required to employ women and minority advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that, in implementing the procedures of (B) above, it shall, where applicable, employ minority and women workers residing within the geographical jurisdiction of the union.

After notification of award, but prior to signing a construction contract, the contractor shall submit to the public agency compliance officer and the Dept. of LWD, Construction EEO Monitoring Program an initial project workforce report (Form AA-201) electronically provided to the public agency by the Dept. of LWD, Construction EEO Monitoring Program, through its website, for distribution to and completion by the contractor, in accordance with N.J.A.C. 17:27-7. The contractor also agrees to submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of this contract to the Dept. of LWD, Construction EEO Monitoring Program, and to the public agency compliance officer.

The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and/or off-the-job programs for outreach and training of minorities and women.

- (D) The contractor and its subcontractors shall furnish such reports or other documents to the Dept. of LWD, Construction EEO Monitoring Program as may be requested by the Dept. of LWD, Construction EEO Monitoring Program from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Dept. of LWD, Construction EEO Monitoring Program for conducting a compliance investigation pursuant to N.J.A.C. 17:27-1.1 et seq.

(Revised: January, 2016)

EXHIBIT B (Continued)

(Revised: January, 2016)

DATED: _____

COMPANY NAME: _____

ADDRESS: _____

TITLE: _____

PRINTED NAME _____

SIGNATURE: _____

BID BOND

BOND NO. _____

KNOW ALL MEN BY THESE PRESENTS, That we, _____
as Principal, and _____, a corporation duly organized under the laws of the State of _____, as Surety, are held and firmly bound unto the Township of Piscataway as Obligee, in the sum of Ten Percent (10%) of the Total Bid, Not to Exceed Twenty Thousand Dollars (\$20,000.00) for the payment of which Principal and Surety Bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally.

WHEREAS, Principal has submitted a bid for _____,
the "Project."

NOW, THEREFORE, if the Obligee shall make any award according to the terms of said bid and the Principal shall enter into a contract with said Obligee in accordance with the terms of said bid and give bond for the faithful performance thereof within the time specified; or if no time is specified within thirty days after the date of said award; or if the Principal shall, in the case of failure so to do, shall pay to the Obligee the difference, not to exceed the amount of this Bond, between the amount specified in bid and such larger amount for which the Obligee may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void: otherwise to remain in full force and effect.

Signed and sealed this ___ day of _____, 20__

Surety: _____

By: _____

Witness: _____

Principal: _____

By: _____

Witness: _____

BIDDER'S AFFIDAVIT

I, _____, being duly sworn, deposes that he/she

resides at _____

and that he/she is the _____ of _____
(Title) (Name of Bidder)

I am duly authorized to sign the bid and that bid is the true offer of the bidder, that the seal attached thereto is the seal of the bidder, and that each, every and all the declarations and statements contained in the bid and any and all affidavits, questionnaires and documents submitted pursuant to the proposal forbids are true to the best of my knowledge and belief.

(Affiant)

HOLD HARMLESS AGREEMENT

“To the fullest extent permitted by law, _____
(Name of Contractor/Vendor/Facility User) agrees to defend, pay on behalf of, indemnify, and hold harmless the Township of Piscataway, its elected and appointed officials, its agents, employees and volunteers and others working on behalf of the Township of Piscataway, against any and all claims, demands, suits, or loss including all costs connected therewith, and for any damages which may be asserted, claimed or recovered against or from the Township of Piscataway, its elected and appointed officials, its agents, employees, volunteers or others working on behalf of the Township of Piscataway, by reason of personal injury, including bodily injury or death and/or property damage, including loss of use thereof, which arises out of or is in any way connected for associated with this contract”

By: _____
Contractor/Vendor/Facility User

Township Of Piscataway

(Authorized Signature)

(Printed Name of Above)

(Address)

(City, State, Zip)

(Phone)

PLAN, EXPERIENCE AND EQUIPMENT QUESTIONNAIRE

Submitted to _____

)A Corporation

By _____)A Copartnership

)An Individual

Principal Office _____

The signatory of this questionnaire guarantees the truth and accuracy of all statements and of all answers to interrogatories hereinafter made.

1) In what manner have you inspected the proposed work? (explain in detail)

2) Explain your plan or layout for performing the proposed work.

3) The work, if awarded to you, will have the personal supervision of whom?

4.1) How many years has your organization been in business under your present name?

4.2) Have you ever failed to complete any work awarded to you? Yes ____ No ____
(If yes, attach additional sheet with details and explanation.)

5) Do you intend to sublet any portion(s) of this work? Yes ____ No ____
If yes, state amount of sub-contract, and if known, the name and address of the sub-contractor, amount and type of his equipment and financial responsibility.

6.) What equipment do you own that is available for and intended to be used on the present project?

QUANTITY	ITEM	DESCRIPTION, SIZE, CAPACITY, ETC	CONDITION	YEARS OF SERVICE	PRESENT LOCATION

7.) What equipment do you intend to purchase or lease for use on the proposed work, should the contract be awarded to you?

QUANTITY	ITEM	DESCRIPTION, SIZE, CAPACITY, ETC	APPROXIMATE COST	
			PURCHASE	LEASE

8) Have you made contracts or received firm offers for all materials prices used in preparing your proposal ? Yes ____ No ____ **Do not** give names of dealers or manufacturers.

I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT TO THE BEST OF MY KNOWLEDGE.

DATED: _____

(Signature)

(Name and Title)

(Company Name)

(Address)

(City, State, Zip Code)

C. 271 POLITICAL CONTRIBUTION DISCLOSURE FORM

Public Agency Instructions

This page provides guidance to public agencies entering into contracts with business entities that are required to file Political Contribution Disclosure forms with the agency. **It is not intended to be provided to contractors.** What follows are instructions on the use of form local units can provide to contractors that are required to disclose political contributions pursuant to N.J.S.A. 19:44A-20.26 (P.L. 2005, c. 271, s.2). Additional information on the process is available in Local Finance Notice 2006-1 (www.nj.gov/dca/lgs/lfnslfnmenu.shtml).

1. The disclosure is required for all contracts in excess of \$17,500 that are **not awarded** pursuant to a “fair and open” process (N.J.S.A. 19:44A-20.7).
2. Due to the potential length of some contractor submissions, the public agency should consider allowing data to be submitted in electronic form (i.e., spreadsheet, pdf file, etc.). Submissions must be kept with the contract documents or in an appropriate computer file and be available for public access. **The form is worded to accept this alternate submission.** The text should be amended if electronic submission will not be allowed.
3. The submission must be **received from the contractor and** on file at least 10 days prior to award of the contract. Resolutions of award should reflect that the disclosure has been received and is on file.
4. The contractor must disclose contributions made to candidate and party committees covering a wide range of public agencies, including all public agencies that have elected officials in the county of the public agency, state legislative positions, and various state entities. The Division of Local Government Services recommends that contractors be provided a list of the affected agencies. This will assist contractors in determining the campaign and political committees of the officials and candidates affected by the disclosure.
 - a. The Division has prepared model disclosure forms for each county. They can be downloaded from the “County PCD Forms” link on the Pay-to-Play web site at www.nj.gov/dca/lgs/p2p. They will be updated from time-to-time as necessary.
 - b. A public agency using these forms **should edit them to properly reflect the correct legislative district(s)**. As the forms are county-based, **they list all legislative districts in each county. Districts that do not represent the public agency should be removed from the lists.**
 - c. Some contractors may find it easier to provide a single list that covers all contributions, regardless of the county. These submissions are appropriate and should be accepted.
 - d. The form may be used “as-is”, subject to edits as described herein.
 - e. The “Contractor Instructions” sheet is intended to be provided with the form. It is recommended that the Instructions and the form be printed on the same piece of paper. The form notes that the Instructions are printed on the back of the form; where that is not the case, the text should be edited accordingly.
 - f. The form is a Word document and can be edited to meet local needs, and posted for download on web sites, used as an e-mail attachment, or provided as a printed document.
5. It is recommended that the contractor also complete a “Stockholder Disclosure Certification.” This will assist the local unit in its obligation to ensure that contractor did not make any prohibited contributions to the committees listed on the Business Entity Disclosure Certification in the 12 months prior to the contract. (See Local Finance Notice 2006-7 for additional

information on this obligation) A sample Certification form is part of this package and the instruction to complete it is included in the Contractor Instructions. **NOTE: This section is not applicable to Boards of Education.**

C. 271 POLITICAL CONTRIBUTION DISCLOSURE FORM

Contractor Instructions

Business entities (contractors) receiving contracts from a public agency that are NOT awarded pursuant to a “fair and open” process (defined at N.J.S.A. 19:44A-20.7) are subject to the provisions of P.L. 2005, c. 271, s.2 (N.J.S.A. 19:44A-20.26). This law provides that 10 days prior to the award of such a contract, the contractor shall disclose contributions to:

- any State, county, or municipal committee of a political party
- any legislative leadership committee*
- any continuing political committee (a.k.a., political action committee)
- any candidate committee of a candidate for, or holder of, an elective office:
 - of the public entity awarding the contract
 - of that county in which that public entity is located
 - of another public entity within that county
 - or of a legislative district in which that public entity is located or, when the public entity is a county, of any legislative district which includes all or part of the county

The disclosure must list reportable contributions to any of the committees that exceed \$300 per election cycle that were made during the 12 months prior to award of the contract. See N.J.S.A. 19:44A-8 and 19:44A-16 for more details on reportable contributions.

N.J.S.A. 19:44A-20.26 itemizes the parties from whom contributions must be disclosed when a business entity is not a natural person. This includes the following:

- individuals with an “interest” ownership or control of more than 10% of the profits or assets of a business entity or 10% of the stock in the case of a business entity that is a corporation for profit
- all principals, partners, officers, or directors of the business entity or their spouses
- any subsidiaries directly or indirectly controlled by the business entity
- IRS Code Section 527 New Jersey based organizations, directly or indirectly controlled by the business entity and filing as continuing political committees, (PACs).

When the business entity is a natural person, “a contribution by that person’s spouse or child, residing therewith, shall be deemed to be a contribution by the business entity.” [N.J.S.A. 19:44A-20.26(b)] The contributor must be listed on the disclosure.

Any business entity that fails to comply with the disclosure provisions shall be subject to a fine imposed by ELEC in an amount to be determined by the Commission which may be based upon the amount that the business entity failed to report.

The enclosed list of agencies is provided to assist the contractor in identifying those public agencies whose elected official and/or candidate campaign committees are affected by the disclosure requirement. It is the contractor’s responsibility to identify the specific committees to which contributions may have been made and need to be disclosed. The disclosed information may exceed the minimum requirement.

The enclosed form, a content-consistent facsimile, or an electronic data file containing the required details (along with a signed cover sheet) may be used as the contractor’s submission and is disclosable to the public under the Open Public Records Act.

The contractor must also complete the attached Stockholder Disclosure Certification. This will assist the agency in meeting its obligations under the law. **NOTE: This section does not apply to Board of Education contracts.**

* N.J.S.A. 19:44A-3(s): “The term "legislative leadership committee" means a committee established, authorized to be established, or designated by the President of the Senate, the Minority Leader of the Senate, the Speaker of the General Assembly or the Minority Leader of the General Assembly pursuant to section 16 of P.L.1993, c.65 (C.19:44A-10.1) for the purpose of receiving contributions and making expenditures.”

List of Agencies with Elected Officials Required for Political Contribution Disclosure
N.J.S.A. 19:44A-20.26

County Name:

State: Governor, and Legislative Leadership Committees

Legislative District #s:

State Senator and two members of the General Assembly per district.

County:

Freeholders

County Clerk

Sheriff

{County Executive}

Surrogate

Municipalities (Mayor and members of governing body, regardless of title):

**USERS SHOULD CREATE THEIR OWN FORM, OR DOWNLOAD
FROM WWW.NJ.GOV/DCA/LGS/P2P A COUNTY-BASED,
CUSTOMIZABLE FORM.**

I have read this Bid in its entirety and hereby affirm that the Provider agrees to all terms and acknowledge as outlined in the instructions to bidders.

DATED: _____

(Signature)

(Name and Title)

(Company Name)

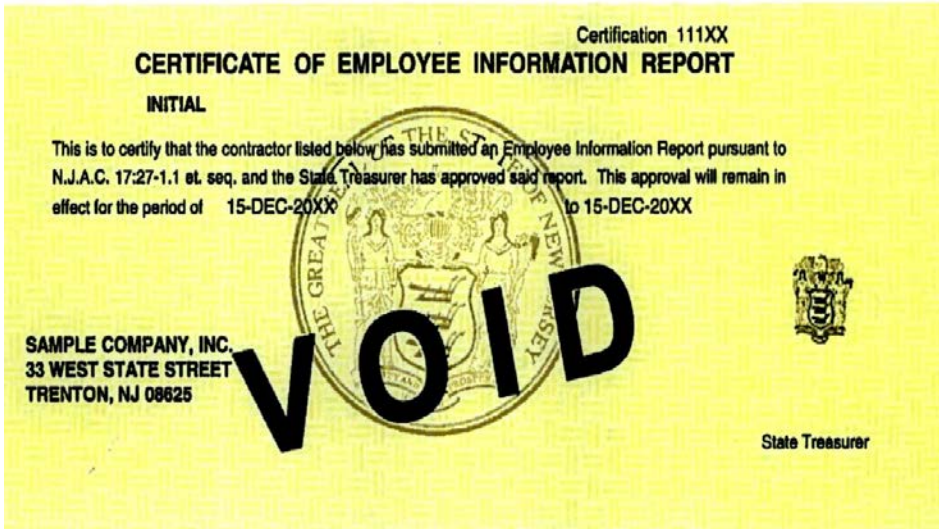
(Address)

(City, State, Zip Code)

(Corporate Seal)

SAMPLE CERTIFICATE OF EMPLOYEE INFORMATION REPORT

TOWNSHIP OF PISCATAWAY



BID NO: 2022-03-09

TOWNSHIP OF PISCATAWAY

REQUIRED FORMS:

HOLD HARMLESS AGREEMENT

PLAN & EXPERIENCE

PISCATAWAY BID BOND FORM

PAY TO PLAY FORM

CERTIFICATION LAST PAGE

**PLEASE COMPLETE & SIGN ALL OF
THE REQUIRED FORMS IN BLUE INK**

TO All Bidders:

REMINDER!

Did you sign all of the bid documents?

All bid documents returned to the Township shall be signed with original signatures. Please use [blue ink](#).

The Township will not accept facsimile or rubber stamp signatures.

Failure to sign and submit all bid documents may be cause for disqualification and rejection of the bid.

One “Original” and One PHOTO Copy of the Original marked “True Copy”.

Cover Page, Name, Address, Phone Number, E-mail Address.

Return the entire original bid packet intact by the indicated deadline.

Bidders, Login to website for any addendums.

Website: www.piscatawaynj.org (Click on Home Page , EGov, Bids)

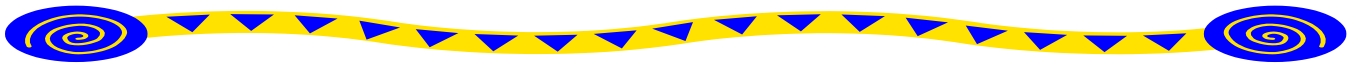
E-mail: purchasing@piscatawaynj.org

732-562-2321 (The Division of Purchasing)

THE TOWNSHIP OF PISCATAWAY

STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

TECHNICAL SPECIFICATIONS



Pages 1-255

Purchasing Agent/Township Secretary

SPECIFICATIONS

PREPARED BY:

T&M ASSOCIATES



MARY ELAINE DASTI, P.E.
NJ LICENSE NO. 24GE05120300

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SECTION 008100 - SUPPLEMENTARY SPECIAL CONDITIONS FOR MECHANICAL AND ELECTRICAL WORK

PART 1 - GENERAL

- 1.1.1 All work referred to in contract documents for General Contractor, Electrical Contractor, or any other Contractor, shall be the responsibility of the Contractor for this project. There are no separate Prime Contractors for this project.
- 1.1.2 Each Contractor shall refer to the Bidding Requirements, General Conditions and Supplementary Conditions as they are all applicable to this Section and shall become part of their respective specifications.

Each Contractor shall carefully read the above mentioned referenced documents, shall study the drawings and specifications prepared for all trades to fully acquaint themselves with all conditions limiting and controlling his work.

All trades shall be installed in accordance with the requirements of local codes and in accordance with any Authority having Jurisdiction.

1.2 CODES AND STANDARDS

- A. All equipment and installations shall conform to the requirements of the Uniform Construction Code of the State of New Jersey, including all referenced codes and standards, the Rehabilitation SubCode (NJAC 5:23-6, also know as SubChapter 6), and the codes and standards specified in other Sections, all local codes and the requirements of OSHA.
- B. Standards publications of technical organizations and regulatory agencies are referenced in other Sections, and unless stricter requirements are indicated, materials and equipment so specified shall be manufactured, tested and installed to conform, as a minimum, to the requirements of such reference standards and publications.
- C. In case of conflict between provisions of codes, laws, and ordinances, the more stringent and more expensive requirement shall apply. The drawings and specifications (the Contract Documents) shall be read and interpreted as being complimentary. Any conflicts between parts or sections of the Contract Documents or with codes, standards or regulations shall comply with the more stringent and more expensive condition. Contractor shall identify any and all conflicts to the Engineer prior to the receipt of bids. In the event a conflict is brought to the attention of the Engineer after the bids are received or the contract is awarded, the Contractor is reminded that the more stringent and more expensive condition will govern and the Engineer's decision in the matter will be final, including the issuance of any credits due the Owner.

1.3 SCOPE OF WORK

- A. Each Contractor shall furnish all labor, maintenance, attendance, apparatus, equipment, materials and incidentals necessary to complete all items under their section of work.

1.4 COOPERATION

- A. Contractor shall cooperate with all other Contractors doing work on the building, and shall plan, schedule and arrange work so as not to conflict with work of other trades. Without unnecessary delay, provide all other trades with such information, diagrams or details as may be required for proper installation of all work.

1.5 DRAWINGS AND MEASUREMENTS

- A. Drawings show the general arrangement and extent of work to be done and approximate location of same.
- B. Contractor shall examine drawings for the work of others and arrange his work so that no conflict will occur. Changes required in his work, which in the opinion of the Engineer would not be necessary had such examination been made, shall be made by this Contractor at his expense.
- C. Should errors, omissions, inconsistencies or obscurity in work appear or occur on the drawings, or in the specifications, the Contractor shall, before submitting his bid, apply to the Engineer, in writing, for an interpretation and determination of the intent of the drawings and specifications. Any interpretation made by the Engineer prior to the receipt of bids shall be considered part of the Contract.
- D. All contractors shall keep at the site of the work, one (1) copy of the Plans and Specifications.

1.6 PERMITS, RULES AND REGULATIONS, UTILITY ACCESSED FEES AND CONNECTION CHARGES

- A. All work specified must be installed in full accordance with the requirements of all State, City, and other Departments and Agencies including National Board of Fire Underwriters, having jurisdiction. Such requirements shall supplement this Specification and take precedence in case of conflict.
- B. Contractor shall file drawings, obtain and pay for all permits, inspections and approvals required.
- C. Certificate of Inspection and Approval shall be delivered to the Owner.
- D. Each Contractor shall arrange for required services to the building from the respective Utility Co. (As shown on the drawings.) All charges and fees for extensions and connections shall be paid by the respective contractor.

1.7 ADMINISTRATION OF WORK

- A. The work under these contracts shall be carried on simultaneously with the work of other trades and as directed by the Engineer, for the best progress of the work.

- B. Immediately upon signing the contract, the Contractor shall place orders for all materials contained in this Specification and necessary for his work and shall so provide for delivery and installation of materials in cooperation with the Contractor for General Construction so as to keep progress with and avoid delay to the building construction.
- C. All work shall be prosecuted at and from as many different points, at such times and with such force as the Engineer may deem necessary.
- D. Provide competent supervisor in responsible charge of the work who will be on the site during the erection and until all systems have been put into operative condition and accepted by the Owner.

1.8 SITE INSPECTION

- A. All bidders are to inspect the site before submitting bids, as no extra compensation will be allowed for work that may be due to building conditions or to construction or obstructions that may be observed on the premises, or should be inferred by anyone familiar with general building construction.
- B. All bidders shall also familiarize themselves too, with the means of entrance and exit at the property and all other information necessary to properly carry out this work.
- C. Advance notice shall be made and coordinated with the Department of Public Works, 732-562-2390.

1.9 MATERIALS AND WORKMANSHIP

- A. Whenever the words "approved equal" or words of like import are used in the specifying of material or equipment, it shall be understood that the Engineer's decision, not the Contractor's shall be final and binding as to quality, approval, and acceptability.
- B. Where materials or equipment are specified by means of manufacturer's description or number without the term "approved equal" the Contractor shall base his bid on items which are equal to those specified, these shall be listed separately in his bid. Final determination of acceptable equality shall be by the Engineer. Substitutions will not be considered unless submitted as stated above with the bid.
- C. All labor shall be performed by skilled mechanics under experienced superintendents. All work shall be properly executed, presenting a neat and workmanlike appearance, subject to the Engineer's approval.
- D. The equipment shall be of the manufacturers' type, capacities and detailed requirements specified and/or scheduled on the drawings. Exposed equipment shall be suitably weatherproofed for outdoor installation and operation. Items shall be standard products of

manufacturers specializing in the type of equipment furnished. Where two or more units of the same class of equipment are required, these products shall be products of a single manufacturer; however, the component parts of the system need not be products of the same manufacturer. Unit ratings shall be in accordance with the manufacturers published information and shall be equal to or exceed capacities specified. All equipment shall be installed in strict accordance with the drawings, manufacturers' recommendations and applicable governing codes. Major components of equipment shall have a nameplate affixed in a conspicuous place showing manufacturers' name, address and catalog number.

- E. All materials shall be new, of best quality or their respective kinds. Workmanship shall, in all respects, be of the highest grade and all construction shall be done according to the best practice of the trade.
- F. Provide, when required for review by the Engineer, labeled samples of any material or appliance specified herein or proposed to be used in the building.

1.10 APPROVAL OF EQUIPMENT

- A. As soon as practical, but not more than twenty (20) days after award of contract, a completed schedule of materials and equipment proposed for installation shall be submitted for the Engineer's approval. No partial lists will be considered and no shop drawings shall be submitted or material installed until this schedule is approved.
- B. No progress payments will be made until the above schedule has been submitted and approved by the Engineer.

1.11 SHOP DRAWINGS

- A. The Contractor shall furnish not less than three (3) copies to the Engineer for review and comment of all shop drawings, manufacturers' cuts, diagrams, etc., as may be required to construct the work intended.
- B. The Contractor shall notify the Engineer, in writing, of any change to contract, drawings or Specifications. Engineer's approval of shop drawings does not relieve contractor of responsibility for changes not pointed out in writing.
- C. Assemble submittals on related items procured from a single manufacturer in brochures or other suitable package form, rather than submitting a multiplicity of loose sheets.
- D. Process all submittal data to ensure that it conforms to all drawings and specification requirements, and that there are no omissions and/or duplications. Certify, in writing, on the face of each submittal that this has been done.
- E. Do not submit catalogs or tear sheets which are not positively identified. Provide precise identification as to the function of each and every item offered, and the exact item being offered.
- F. Do not submit detailed quantitative lists of lighting fixtures wiring devices and similar items.

It is the Contractor's obligation to provide sizes and quantities to conform with Drawings and Specifications.

1.12 CUTTING AND PATCHING

- A. Cut all openings required to install the new work, or to repair any defective work. Exercise due diligence to avoid cutting of openings larger than required or in wrong locations. Masonry or stone units that are cracked or cut beyond the limits of cover plates, escutcheons, etc., or otherwise exposed to view shall be replaced in their entirety.
- B. The patching of all openings cut by each Contractor or the repairing of any damage to the work of other trades occasioned by those cutting operations or by failure of any part of the work installed by each Contractor; performed by the trade whose work is involved, but paid for by the Contractor cutting the openings or causing the damage. All patching to be in accordance with the applicable sections of the General Contractor in this Specification.
- C. Where openings are cut through masonry walls or other structural supports, provide lintels as directed by the Engineer, both to afford support to the remaining work and to afford support during the cutting. Such lintels or other materials furnished under other sections of these Specifications, but paid for by the trade requiring them. With the exception of those openings specifically shown on the Engineer's drawings, cut no structural member in a way to lessen its strength without the specific permission of the Engineer.

1.13 SCAFFOLDING, RIGGING AND HOISTING

- A. Unless otherwise specified, the Contractor shall furnish all scaffolding, rigging, hoisting and services necessary to erection and delivery into the premises of any equipment and apparatus furnished. Remove same from the premises when no longer required.

1.14 DELINEATION OF WORK OF VARIOUS SECTIONS

- A. Furnishing of HVAC control equipment, motors, motor controllers, push buttons, starters, temperature control devices, disconnect switches, wiring diagrams and the like shall be the responsibility of Division 23.
- B. All ATC control devices, control panels, testing and control wiring, whether line or low voltage shall be the responsibility of Division 23.
- C. Line voltage to the ATC control panels, to a single panel or point of "demarcation" for each major air-handling system shall be the responsibility of Division 26.
- D. Empty conduits and outlet boxes for telephone, data systems wiring or other communications systems, as defined on the Contract Drawings shall be the responsibility of Division 26. Fire-safing of the installed conduits, raceways and wire management provisions, such as floor slots, shall be the responsibility of Division 26.

PART 2 - PRODUCTS

2.1 PIPE SLEEVES

- A. Where pipes pass through masonry or concrete walls, foundations or floors, set such sleeves as are necessary for passage of pipes. These sleeves will be of iron pipe of sufficient size so that 1/2" of air space will be provided around the pipe passing through. Where pipe is to be insulated, the insulation shall run continuous through sleeves and the air space shall be 1/4". Provide caulking for air tight installation between outside diameter of pipe or insulation and inside diameter of pipe sleeves. Contractor shall be responsible for exact location of these sleeves. Contractor has option to utilize link-seal pipe-to-wall penetration seal.
- B. Piping passing through exterior walls shall be made watertight with caulking compound and pipe sleeve to have a wall collar located at the center of the wall extending 8" all around the pipe. Collar to be 1/8" thick steel welded to sleeve.
- C. Sleeves and inserts shall not be used in any portion of the building where the use of same would impair strength or construction features of the building.
- D. Where pipes pass exposed through walls or enter areas where exposed, they shall be provided with chromium plated escutcheons on both sides. Sleeves passing through floor shall project 1/2" above finished floor level.

2.2 OFFSETS, TRANSITIONS AND CHANGES IN DIRECTION

- A. Offsets, transitions and changes in direction of pipes, electrical raceways, shall be made as required to maintain proper headroom and pitch of sloping lines, whether or not indicated on drawings. Contractor shall install all air vents, sanitary vents, pull boxes, etc., as required to effect these offsets, transitions and changes in direction at no additional cost.

2.3 FOUNDATIONS – NOT USED

2.4 CONCRETE AND MASONRY WORK – NOT USED

2.5 SUPPORTS AND FASTENINGS

- A. Supports and fastenings of all electrical equipment shall be furnished under respective Sections. All equipment hung from overhead construction shall have weight of equipment distributed by use of angle or channel iron supports of adequate size for loads imposed, with same substantially fastened to structural support system. Any wall mounted equipment which cannot be supported from architectural or structural materials, shall have its own independent support system furnished by this Contractor. Proposed installation method shall be submitted for review by the Engineer.

2.6 EXISTING CONDUITS, SEWERS, PIPES, ETC.

- A. Do everything necessary to protect, support and sustain all sewers, water or gas pipes, service pipes, electric lines, power, telephone or telegraph poles, conduits and other fixtures laid across or along the site of the work. The Engineer, as well as the company or

corporation owning said pipes, poles or conduits must be notified of same, before any such fixtures are removed or molested. In case of any of the said sewer, gas or water pipes, service pipes, electric light, power, telephone or telegraph poles, conduits or other fixtures are damaged, they shall be repaired by the authorities having control of the same, and the expense of said repairs shall be deducted from the moneys which are due or to become due under this contract.

- B. Should it become necessary to change the position or temporarily remove any electric conduits, water pipes, gas pipes or other pipes or wires, in order to permit use of a particular method of construction or in order to clear the structure being built; notify the Engineer of the location and circumstances and cease work if necessary, until satisfactory arrangements have been made by the Owner of said pipes or wires to properly care for the same. No claims for damages will be allowed on account of any delay occasioned thereby. The entire cost of the changes or temporary removal must be taken care of under this Contract at no additional cost to the Owner.

2.7 PIPING IDENTIFICATION

- A. Division 26 shall be responsible to identify, at ten foot intervals, all conduits 1" and larger as well as raceways (such as troughs) with service contained within the conduit or raceway. Emergency circuits shall have "EM" prefix on identification. Fire alarm systems shall have "FA" identification. Labels shall be affixed, designating the various voltage or service contained there-in:

Single Phase, 120 Volts	Single Phase, 277 Volts
Single Phase, 208 Volts	Single Phase, 480 Volts
Three Phase, 208 Volts	Three Phase, 480 Volts.

- B. Markers or Labels: Consists of self-sticking pipe marker. Marker: W.H. Brady Company, Style 6, 1- 1/8 X 4-2/3 inches with background color and legend shown in above schedule.

2.8 PROTECTION OF APPARATUS AND EQUIPMENT INSTALLATION

- A. At all times, take every precaution to properly protect apparatus from damage. Include the erection of temporary shelters to adequately protect any apparatus stored at the site, the cribbing of any apparatus above the floor of the construction, and the covering of apparatus with tarpaulin or other protective covering. Failure on the part of the Contractor to comply with the above to the entire satisfaction of the Engineer will be sufficient cause for the rejection of the pieces of apparatus in question.
- B. Erect all equipment in a neat and workmanlike manner. Align, level and adjust for satisfactory operation. Install so that connecting and disconnecting of piping and accessories can be made readily and so that all parts are easily accessible for inspection, maintenance and repair.
- C. Oil and grease all motors, and other running equipment and apparatus.

2.9 PROTECTION AND CLEANING OF PIPING AND EQUIPMENT

- A. Contractor shall properly protect all piping and equipment during installation and until final acceptance; all open ends of piping and equipment, etc., shall be properly capped, plugged or blanked off to keep out dirt or foreign material and to prevent obstruction or damage. All equipment shall be protected against damage immediately upon installation and turned over to the Owner in a clean, undamaged condition, ready for operation.
- B. All piping and equipment shall be thoroughly cleaned of all dirt, oil, cuttings or any foreign substances. Should any pipe, cut, or any part of the apparatus be stopped by refuse after the apparatus has been accepted, Contractor will be required to pay for the disconnecting, cleaning and reconnection, wherever necessary, for the purpose of locating and removing the obstruction. Contractor shall pay for repairs to adjoining work required thereby.

2.10 PAINTING

- A. Except for shop coats of paint or where specified, the General Contractor shall provide all finish painting. Each trade contractor shall, however, thoroughly clean all their respective work and leave same in a neat and workmanship condition for the application of paint of others.

2.11 NOISE AND VIBRATION

- A. Objectionable noise or vibration produced and transmitted to occupied portions of the building by apparatus, piping or other parts of the Electrical Work shall be eliminated by this Contractor without extra cost to the Owner.

2.12 ACCESS DOORS AND PANELS

- A. Each Division shall be responsible to furnish access panels for all locations where Electrical equipment, such as manual valves, automatic control valves, automatic damper mechanisms, pull box, etc., are installed behind furrings, chases, or non-removable suspended ceiling. These panels are to be installed in the walls or ceilings by the trade responsible for the rough and finish construction of the general construction. Contractors shall coordinate the supply of access doors and panels with the other trades to permit the timely rough-in and installation of those items with the remainder of the work. Access doors or panels shall be so sized and positioned that the otherwise concealed equipment can be properly serviced. The exact location in exposed locations is subject to the approval of the Engineer.
- B. Panels equal to Milcor of the type required by the conditions.
- C. In plasterboard walls, ceilings and facias, type M. Panels 14 gauge steel, frames 16 gauges steel, concealed hinge, flush screwdriver lock (cam type keyed lock at all locations). Finish prime coat baked enamel.
- D. In plaster, block or ceramic tile, type K. Panels 14 gauge steel with casing head of 22 gauge steel at frame edge, flush screw driver lock (cam type keyed lock at all low locations).

- E. Where access doors occur in partitions or ceilings bearing a fire rating: Self-closing and bear an appropriate UL fire rated label for that location. All doors: 12" X 12" minimum size. Where doors occur in modular material, their outer frame dimensions: Conform to that module or a multiple thereof.

2.13 CLEANING

- A. No waste material or rubbish shall be allowed to accumulate in or about the premises. All rubbish, trade tools, scaffolding, surplus material, etc., shall be removed from and about the building and all equipment, materials and apparatus shall be left clean and ready for use.
- B. Premises and floor shall be cleaned at the end of each work day.

2.14 ELECTRIC WIRING

- A. The electric wiring from power source to all equipment requiring power shall be provided by Division 26, except where indicated to be furnished and installed by the Automatic Temperature Control (ATC) portion of Division 23. Refer to paragraph 1.15 above, and Divisions 23 and 26 for wiring responsibilities.

2.15 WIRING DIAGRAMS

- A. All other Divisions shall furnish Division 26, any and all wiring diagrams required for the wiring installation of equipment, components, systems, motor controls, controls, starters, etc., supplied under those other Divisions.

2.16 MOTORS

- A. Each Division shall furnish motors as required for all equipment provided under that Division of the Specifications. Provide motors conforming to the following requirements, in addition to the requirements of various other sections of these Specifications.
- B. Capacity of Each Motor: To start and operate the driven equipment without exceeding motor full-load current nameplate rating at speed specified, or at any speed and load imposed by the drive actually furnished, except in the case of hermetic motors with water or refrigerant cooling in which actual motor running current may exceed nameplate full-load current by not more than 25% at specified operating conditions.
- C. Motor voltage shall be as indicated in various other sections of these Specifications, or as shown on Drawings or Schedules. All motors for application on variable speed (variable voltage, frequency or pulse-width modulation) shall be furnished with fully insulated bearings and a brush or other provision to safely divert shaft currents from flowing through the bearings (or gearboxes). Motors shall be as manufactured by US Motors, Baldor, Reliance, Marathon, Louis Allis, Century, General Electric, Ideal, Wagner or Westinghouse.

2.17 STARTERS AND MOTOR CONTROLS

- A. In general, each Division shall furnish an individual starter and the specified motor controls, for each motor furnished under that Division or Section of the Specifications. In the case of motor control centers or motor starter panels, the motor control center or motor starter panel shall be furnished and installed and wired under Division 26. All other Divisions shall coordinate their equipment requirements and wiring diagrams with Division 26, for proper circuit breaker, fuse and overload element selection.
- B. Size each starter to have a capacity rating within the required limits of the motor which it serves. Each starter shall be furnished with overload elements selected to provide overload protection, one in each phase lead, with a manual reset mechanism in the enclosure cover. Starter and disconnect shall be horsepower rated for the supplied load. Coordinate controller type, size, controls and auxiliaries with motors supplied and the function(s) required by control diagrams and sequence of operation shown in the Contract Documents.
- C. Manual Type: Provide manual single speed controller, similar to Allen-Bradley Bulletin 600-TQX109-600-N1, up to 1 HP single phase (120-240 volts) and Allen-Bradley Bulletin 609 up to 10 HP with overload protection, pilot light, with pad-lockable toggle handle or pushbuttons.
- D. Automatic or Controlled Type: In general, provide full voltage, non-reversing, combination single speed controller, similar to Allen-Bradley Bulletin 512, with combination disconnect switch, control transformer, across-the-line magnetic starter, reset button, red and green indicating lights, overload protection, and START-STOP push buttons or H-O-A selector switch, as indicated or otherwise required.
 1. Pilot lights shall be light-emitting diodes (LED's) of approved color. Provide T 1-3/4 or slide base socket with transformer for LED's.
 2. In general, the combination disconnect shall be of the instantaneous, magnetic-only circuit breaker type, designed for and sized for the motor load being supplied. Where otherwise specified or noted, disconnects shall be of the fused or thermal-magnetic circuit breaker type. All disconnect operators shall have provisions for external padlocking in the OFF position.
 3. Fuses shall be Bussmann dual-element Fusetron's for control power and low-peak current-limiting type for all motor power circuits.
 4. Contacts: Provide two (2) main line contacts for all single-phase starters and not less than three (3) for all polyphase starters. Provide a minimum of two normally-open and two normally-closed auxiliary contacts for each starter, in addition to contacts required for controls specified. Auxiliary relays may be used to supplement the number of auxiliary contacts directly applied to each motor controller. Provide a nominal 10 watt AC coil with three (3), Form "C" contacts on each relay, similar to Siemens/Potter-Brumfield type KRPA-14AN-120, with base socket and 10 ampere contacts and an ON indicator.
 5. Provide a control transformer for motors over 120 volts, to step down control

voltage to 120 volts, with two (2) primary fuses and a secondary fuse and ground connection on low voltage side. Size in accordance with control circuit devices required, plus a minimum of 50 va spare capacity. In general, provide controls as follows, or as otherwise shown on the Contract Documents:

- a. Provide manual control with momentary contact push buttons, running pilot light (LED) and low voltage protection.
 - b. Provide manual-automatic control with H-O-A selector switch, red and green pilot lights (LED's) and low voltage release. Wire safety controls so they are common to both manual and automatic controls.
- E. Unless otherwise indicated, furnish starters mounted indoors with NEMA type 1 enclosures; and furnish those exposed to the weather with NEMA type 4/4X enclosures.

2.18 CHARTS, IDENTIFICATION PLATES AND TAGS

- A. All piping trades shall provide separate valve control lists, charts, diagrams and tags showing essentials and features of the piping systems. Each piece of equipment identified by laminated plastic (Lamicoid) plates secured to the equipment.
- A. Charts and/or lists clearly and neatly typewritten and either sealed in clear molded plastic or mounted in black wooden frame with glass face and solid back. Mount where directed in Boiler Room or Mechanical Equipment Room.
- C. Valve tags shall be Seton Nameplate Co., 2" diameter brass with service and valve number embossed in colored enamel.
- D. Provide laminated plastic nameplates secured to each and every piece of equipment, electrical device or panel. Each compartment, circuit breaker of electrical panels that are supplied less doors or contain main distribution breakers, breakers for heating and ventilating equipment or special equipment shall be labeled. In general, use 1/4" high black lettering cut into a three-layer base material. The back and face layers shall be white in color and shall be the same thickness, allowing the nameplate to be turned-over and re-engraved in the future. The middle layer shall be black, with the lettering cut into the top half of the middle layer.

2.19 RECORD DRAWINGS

- A. During construction, each trade contractor shall keep an accurate record of all work installed on the project, and in particular, any and all deviations in the work as shown on the drawings. Upon completion of the work and acceptance by the Owner, the contractor shall furnish three (3) sets of "Record" Drawings to the Engineer.

2.20 OPERATING INSTRUCTIONS AND INSTRUCTION MANUAL

- A. Instruct the Owner's designated personnel in the presence of the Engineer's representative, as to the operation of the system as well as the proper operation and maintenance of the

equipment.

- B. Informal or unwitnessed instructions, or instructions to non-designated personnel will not be recognized.
- C. Prepare and submit for approval a comprehensive set of instructions for both operation and maintenance of equipment installed. This instruction shall include, in addition to the Contractor's own written operating and maintenance instructions, Manufacturers Bulletin and Data, Manufacturer's Operation and Maintenance Instructions and other information pertinent to operating the system installed.
- D. Submit these instructions for approval as rough draft and after required corrections are made, furnish in a suitable and desirable binder to the Owner's designated personnel, in triplicate.
- E. Operating Instructions: Contractor shall provide and arrange with the suppliers of installed systems or equipment to provide the services of expert experienced technicians to instruct Owner's operation personnel in the use, care, and emergency repair of such systems of equipment.
- F. The period of instruction shall be of such duration as to satisfy the Engineer that such instructions have accomplished their purpose.

2.21 GUARANTEE

- A. All Contractors shall furnish to the Owner a guarantee of all materials and workmanship supplied under their contracts for a period of two (2) years from date of substantial completion and final acceptance. The guarantee shall include an agreement by the Contractor to repair and/or replace, at the Contractor's expense, any and all defects which may appear in his work or materials during the guarantee period, which in the judgment of the Engineer arise from defective workmanship or imperfect or inferior materials. This guarantee shall be filed with that Engineer, in duplicate, before final acceptance.

END OF SECTION

SECTION 011000 – SUMMARY OF WORK

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Contract description.
- B. Contractor's use of site and premises.
- C. Specification Conventions.
- D. Project Duration.

1.2 CONTRACT DESCRIPTION

A. GENERAL

1. The project includes but, is not necessarily limited to, the following list of major Work items. The Contractor is responsible to complete all work as shown on the Contract Documents, and as may reasonably be required and not shown, to fully complete the Work.
 - a. ADA Apartment Conversions
 - 1) Selective demolition of equipment, fixtures, devices, walls, doors, millwork, finishes, etc., and the complete demolition of the Bathroom and Kitchen.
 - 2) New equipment, fixtures, devices, walls, doors, millwork, finishes, etc., including a completely new Bathroom and Kitchen, installed in accordance with ADA Guidelines.
 - 3) Coordination of all Sprinkler and Fire Alarm work with the Sterling Village fire alarm vendor and/or monitoring company to put the system in "test".
 - 4) All new receptacles and wiring in the Bathroom and Kitchen areas, replacement of receptacles in all other areas.
 - b. Common Area Flooring Replacement
 - 1) Remove existing carpet flooring and prepare substrate to receive new luxury vinyl tile (LVT).
 - 2) Remove existing wall base in all areas receiving new flooring and patch walls as necessary to receive new wall base.
 - 3) Install new LVT and wall base as shown.
 - c. Community Room Upgrades
 - 1) Demolition of the existing ceiling and light fixtures.
 - 2) Removal and reinstallation of HVAC diffusers and ceiling devices.
 - 3) Installation of a complete new ceiling and light fixtures as shown.
 - d. Temporary Measures
 - 1) Provide all necessary pedestrian control devices and signage to safely prevent unauthorized access and direct persons around active work areas.
 - 2) Provide all necessary measures to prevent dust and/or debris from leaving active work areas.

- 3) Provide all necessary ventilation to the outdoors to minimize odors within the building.
 - e. Phasing / Logistical Requirements
 - 1) Coordinate all work with Piscataway Township and Sterling Village.
 - 2) All work shall be executed to minimize impacts to typical building operations.
 - 3) Phase the work and/or include premium time, as necessary, to complete the common area flooring installations according to the specifications and manufacturer's written instructions while maintaining access to Apartments.
 2. The building will remain occupied during construction, except that the apartment to be converted to ADA will be vacated.
 3. Typical work hours are 8AM-4PM.
 4. See Part 1.5 Project Duration of this section for additional requirements.
- B. Perform Work of Contract under lump sum contract with Owner in accordance with General Conditions (Section GC of this specification).

1.3 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Limit use of site and premises to allow:
1. Owner occupancy.
- B. Contractor's access to the premises will be restricted and regulated by the Owner, since the facility serves as an active building.
1. Contractor's staff must wear photo identification displaying the company name and employee name on their person when performing work at any Township building.
 2. All personnel or agents or the Contractor must observe all rules and regulations in effect at the buildings.
 3. Employees or agents of the Contractor, while on Township of Piscataway property, shall be subject to the control of the Township of Piscataway, but under no circumstances shall persons be deemed to be employees or agents of the Township of Piscataway.
 4. Contractor must have personnel capable of passing security screening by the Township of Piscataway, including photo ID/photo license and social security card/employer proof of tax withholding.
 5. Clearance authorizations expire one year from date of submission of form. Contractor must track date and update their security clearance prior to its expiration.
- C. Construction Operations: Limited to areas noted on Drawings and Specifications. Facility to remain in operation during construction.
- D. Outages and Shutdown: Shutdown of HVAC equipment is limited to times and periods listed herein and as per direction of the Owner. It is the responsibility of the Contractor(s) to accommodate Owner's schedule and plan for work as acceptable to the Owner.

1.4 SPECIFICATION CONVENTIONS

- A. These specifications are written in imperative mood and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The words "shall be" are included by inference where a colon (:) is used within sentences or phrases.

1.5 PROJECT DURATION

All Work on this Contract shall be completed within one hundred fifty (150) Calendar Days from, and including, the date of the Notice to Proceed.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 011011 - CONSTRUCTION COORDINATION AND SEQUENCING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. The work under this section includes all measures necessary to schedule construction operations and coordinate with the Owner's personnel to maintain full service during the course of construction.
- B. Reference Section 011000 Summary of Work for additional requirements.

1.2 SUBMITTALS

- A. This specification shall be considered when preparing the construction schedule.
- B. The Contractor shall submit for review and approval a detailed construction schedule detailing all project activities required from Notice to Proceed to Completion as well as proposed measures for maintaining site operation and services during construction. This schedule which must incorporate the construction sequencing requirements herein and as indicated in Section 011000 "Summary", will be reviewed and approved by the Engineer, and must be submitted 15 calendar days after issuance of the Notice to Proceed. The schedule shall be in the Critical Path Method format and shall show logic ties between all activities.
 - 1) The schedule shall be updated on at least a monthly basis.
 - 2) Submit detailed 2-week look-aheads showing all work to be completed within that duration for detailed coordination purposes. Submit look-aheads no less than weekly.

PART 2 – PRODUCTS – Not Used

PART 3 - EXECUTION

- 3.1 The Contractor shall verify all site conditions and restraints in determining a means and method of executing the work.

Contractor is responsible for all required traffic control measures, coordination and submission of plan for approval. Comply with all Municipal, County, and State requirements. All costs to be included in base bid.

- 3.2 The Contractor shall perform all preliminary preparations, including having on site all necessary material, labor, equipment, etc., for accomplishing all required construction sequencing within a minimal time frame.
- 3.3 The Contractor shall provide all labor, equipment, and material necessary for temporary power

distribution, temporary control schemes, and other measures necessary to install the proposed work without an interruption of services. The Contractor shall also have during the construction sequencing a person available for emergency response through a pager or phone.

- 3.4 The Contractor shall not interfere with the Owner's employees in performance of any work that they may consider necessary to operate and maintain existing equipment or any new equipment placed into service. Where construction operations obstruct or otherwise hinder access to areas necessary for Owner operations, the Contractor shall provide safe access for personnel. All such areas shall be adequately lighted for safe access.
- 3.5 The Owner's personnel shall receive instruction from the respective manufacturers' representative in operation and maintenance once testing of each equipment/system is successfully completed and prior to its placement into service. Three copies of the O&M manuals must also be available three (3) weeks prior to starting the instruction and use by the Owner's personnel. The cost for this instruction shall be included in the Contractor's bid price.
- 3.6 The Contractor must provide the Engineer with 72 hours written notice of the time when any of the steps in the construction staging plan are planned to be initiated. The Engineer reserves the right to delay the request for the start of the activity if operations, emergencies, weather events, etc., require such a delay. The Contractor shall not make any claims for costs or schedule delays on this account.
- 3.7 The proposed improvement work is to be executed in an operating facility. Access to the site and building for removal and replacement of equipment is limited. The Contractor shall take into account the limitations of the construction staging and physical size of the site when estimating expected productivity, establishing a construction schedule, and delivery/storage of equipment and materials.

END OF SECTION

SECTION 011500 - TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary conditions apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 1. Temporary enclosures and protection.
 2. Protective coverings.
 3. Layout and dimensional control.
 4. Fire Protection.
 5. Project security.
 6. Temporary identification.
 7. Temporary utilities
 8. Debris removal.

1.3 PRODUCT HANDLING

- A. Protection: Use all means necessary to maintain temporary facilities and controls in proper and safe condition throughout progress of the Work.
- B. Replacements: In the event of loss or damage, immediately make all repairs and replacement necessary to the approval of the Engineer and at no additional cost to the Owner.

PART 2 – PRODUCTS

2.1 TEMPORARY ENCLOSURES AND PROTECTION

- A. The Contractor shall provide and maintain dust-proof and fireproof temporary closure partitions to separate occupied areas of the Project from other areas where Work is being performed and as required for project sequencing. The closures shall be formed of fireproof wood or other approved fire-resisting materials, fire rated for one (1) hours, and shall be provided with doors having locks permitting egress at all times and shall be dust tight.
- B. In addition to the foregoing, protections shall be provided and maintained by the Contractor in compliance with all applicable Federal and state safety and labor law requirements, codes, ordinances, rules and regulations, and generally as follows:

1. All necessary temporary closures, guard rails, barricades, screens, ladders, stairs, decking, planking, warning lights, directional signs, overhead protection, temporary walks, steps, bridges, and platforms, to adequately protect all workmen, employees of all contractors, occupants of the building, and the public from possible injury.
2. Against the entrance of storm water through roofs and new openings cut in walls. Shoring, bracing, supports, etc. as required to protect General Construction work, during and after its installation.

2.3 PROTECTIVE COVERINGS

- A. The Contractor shall protect all finished surfaces, including the jambs and soffits of all openings used as passageways or through which materials are handled, against any possible damage resulting from the conduct of Work by all trades.
- B. All finished surfaces, including factory finished and job finished items, shall be clean and not marred upon delivery of the building to the Owner. The Contractor shall without extra compensation, refinish all such spaces where such surfaces prove to have been inadequately protected and are damaged.
- C. Tight wood sheathing shall be laid under any materials that are stored on finished surfaces. Reinforced non-staining kraft building paper and plywood or planking must be laid over all types of finished floor surfaces in traffic areas and before moving any materials over these finished areas. Wheelbarrows, if used over such areas, shall have rubber-tired wheels.
- D. Roof surfaces shall not be subjected to traffic nor shall they be used for storage of material. Where some activity must take place in order to carry out the Work, adequate protection shall be provided.
- E. Since the building will be occupied at all times, each Contractor shall cover and protect the Owner's furniture and equipment in areas of his work, remove his debris on a daily basis and shall clean construction dust and dirt from all surfaces where Work is underway, on a daily basis.
- F. The Contractor shall protect all existing building finishes outside of the work area but, utilized by the Contractor for transport or storage of materials. Repair damages expeditiously and at no cost to the Owner.

2.4 LAYOUT AND DIMENSIONAL CONTROL

- A. Location: The Contractor shall be responsible for locating and laying out the Work and all of its parts on the site and within the building(s) and in three dimensions, in strict

accordance with the Drawings, and with great accuracy in establishing and maintaining dimensional control.

2.5 FIRE PROTECTION

- A. The Contractor shall provide and maintain adequate fire protection, ready for instant use, distributed around the project. The Contractor shall designate and maintain a fire watch during all hot work.
- B. Make arrangement for periodical inspection by local fire protection authorities and insurance underwriters inspections. Cooperate with said authorities and promptly carry out their recommendations.

2.6 PROJECT SECURITY

- A. All construction personnel are required to complete a background check using the National Instant Criminal Background Check System (NICS), and submit the results to the Township prior to commencing work. The Contractor shall submit a list of all approved project personnel for review/approval by the Township and a list of project personnel approved to be on-site shall be kept on-site at all times. This requirement extends to all sub-contractors and suppliers that will perform work on-site.
- B. The Contractor, at his option, may provide a watchman for protection of his tools, work, material, and supplies at the job site. Neither the Owner nor the Engineer assumes responsibility for any losses during construction. The Owner assumes no responsibility until final completion and acceptance of the Work.
- C. The Contractor shall be responsible for his Work in accordance with the terms of his liability and property insurance.

2.7 TEMPORARY IDENTIFICATION

- A. All construction personnel will be required to wear I.D. badges while on site at all times. Personnel without identification badges will not be permitted on site. The Contractor is responsible for supplying and maintaining suitable ID badges.

2.8 TEMPORARY UTILITIES

- A. Electric: Contractor may utilize the existing building power at no cost. Contract is responsible to verify electrical system has sufficient capacity for temporary construction loads and shall provide all required temporary infrastructure (including extension cords) as required to complete the work. If existing building does not have sufficient capacity for temporary construction loads, provide battery operated tools and/or temporary generators, as required.

- B. Water: Contractor may utilize the existing building water at no cost. Contractor shall provide all required temporary infrastructure (including hoses) as required to complete the work.
- C. Toilets: Contractor shall provide temporary portable self-contained toilets for use by construction personnel and placed at a location acceptable to the Owner.
- D. Storage Containers: Contractor shall provide temporary storage units as necessary to perform their work. Coordinate with the Owner to determine acceptable location. The Contractor is advised there is no storage available in the existing building.
- E. Heating, Cooling & Ventilation: Contractor shall provide temporary heating and/or cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high and low temperatures or humidity. Provide temporary ventilation required by construction activities as necessary to ensure safe ventilation of work areas and to prevent gasses and/or odors from leaving the work areas.

PART 3 – EXECUTION

3.1 REMOVAL

- A. Maintain all temporary facilities and controls as long as needed for the safe and proper completion of the work. Except as otherwise noted herein, remove all such temporary facilities and controls as rapidly as progress of the work will permit or as directed by the Architect.

3.2 DEBRIS REMOVAL

- A. Each Prime Contractor shall promptly remove all rubbish, refuse and debris material of whatever nature, resulting from his and his Subcontractor's project construction operations, and dispose of them legally off site.
 - 1. Disposal by burning is not permitted.
 - 2. Provide chutes, conveyers, etc. as required to collect debris into containers.
 - 3. Permit no accumulations, clean up daily if necessary.
 - 4. Contractors shall arrange to recycle all glass, paper, cardboard, aluminum, plastic, etc.

3.3 DUST AND DIRT

- A. All Work shall be conducted in such manner to produce the least disturbance and nuisance to surrounding areas. During certain construction operations and when removing debris, the Contractor shall wet down materials to allay dust.

- B. Sidewalks and streets shall be kept clear and clean at all times. Debris removal includes clean up of material spillage along truck access routines.
- C. Conform to all applicable federal, state and local codes.

END OF SECTION

SECTION 012000 - PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. System Description
- B. Schedule of values.
- C. Applications for payment.
- D. Change procedures.
- E. Defect assessment.

1.2 SYSTEM DESCRIPTION

A. UNIT PRICE ITEMS

1. A Unit Price is an amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for a stated Work item. Payment for the units of work shall fully compensate the Contractor for the work item, including purchase, delivery and installation of materials or equipment at the site and all required taxes, less applicable trade discounts, costs for unloading, handling, storage, protection, management, supervision, administration, insurance, bonds, overhead, profit and any other expenses contemplated for stated Work item.

2. Unit price work shall proceed only after receiving approval from the Owner.

3. Measurement and Payment: Payment for unit price items will be based on in-place/installed measurements. The Owner reserves the right to reject the Contractor's measurement of work-in-place and have the work measured, at Owner's expense. The Owners measurement shall govern.

4. Schedule of Unit Prices:

N/A

B. LUMP SUM ITEMS AND LUMP SUM CONTRACTS

1. Items of work will be indicated on the bid schedule.

2. Payment for the items of work indicated in the bid schedule as lump sum will be at the prices stated within the bid. Payment for the work to be performed under the lump sum shall fully compensate the Contractor for furnishing all material, labor, supervision, equipment, services, overhead, profit and all else necessary and incidental to complete the work as shown on the drawings and specifications, including all incidental work necessary to provide a completed project.

C. ALLOWANCE ITEMS

1. Allowances will be established for specific items of work when the extent of work, or quantity and quality of the work cannot be specifically defined in the Contract Documents. Work performed under provisionary allowances shall be at the direction and authorization of the Engineer. The price stated in the bid for provisionary allowances are estimates only.
2. Use allowances only as directed by the Project Manager. At project closeout, submit final allowance change order proposal, crediting Owner with unused amount, if any, of each allowance.
3. Allowances shall cover the cost to the Contractor for purchase, delivery and installation of materials or equipment at the site and all required taxes, less applicable trade discounts. Contract's costs for unloading, handling, storage, protection, management, supervision, administration, insurance, bonds, overhead, profit and any other expenses contemplated for stated allowance amounts shall be included in the Base Contract Sum and not in the Allowances.
4. Schedule of Allowances:

Allowance #1 – Existing Equipment: for the replacement of items not shown on the Contract Documents but, as may be required and, as directed by the Engineer/Township.

D. ALTERNATES

1. Definition: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the Base Bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
2. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
3. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.
4. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project. Include, as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation,

whether or not indicated as part of alternate. The cost for Alternates shall include the costs of related coordination, revision and/or adjustments.

5. Execute accepted alternates under the same conditions as other Work of the Contract.
6. Schedule of Alternates:

N/A

1.3 SCHEDULE OF VALUES

- A. Submit printed schedule on AIA Form G703 - Continuation Sheet for G702.
- B. Submit Schedule of Values (Rev. 0) in duplicate within 15 days after date of Owner-Contractor Agreement or at the preconstruction conference (whichever comes first) which shall subdivide the work into its component items. The resulting breakdown of the contract amount shall indicate the quantities and unit cost assigned to each item of work, along with the associated labor, equipment and material costs for each item of work. Labor costs shall also include the components outlined in the General Conditions. This breakdown may be adjusted by the Engineer if he feels the costs indicated for any part of the work do not accurately reflect the true value. No line item of work may reflect more than 5% of the value of a lump sum item. Schedule shall reflect a minimum of 5% of the total value of the contract for Close Out related work (providing warranties, Maintenance Bond, As-Built information, Operation & Maintenance Information, Spare Parts, Training).
- C. In addition to being used as the basis for preparing progress payments, the Schedule of Values may be used as a basis for negotiations concerning additional work or credits which may arise during the construction.
- D. For items of work which will be performed over a period of more than one (1) month, the cost breakdown shall be in sufficient detail of quantity and unit price so that progress payment estimates may be prepared on the basis of the amount of work performed during that period and not on percentages complete.
- E. Format: Identify each line item with number and title of major specification Section. Identify site mobilization, bonds and insurance, O&M manuals, As-built drawings.
- F. Include in each line item, amount of Allowances where specified. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by unit cost to achieve total for each item.
- G. Include within each line item, direct proportional amount of Contractor's overhead and profit.
- H. Revise schedule to list approved Change Orders, with each Application for Payment.

1.4 APPLICATIONS FOR PAYMENT

- A. Submit three copies of each application on AIA Form G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet for G702.
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
- C. Submit updated construction schedule with each Application for Payment.
- D. Payment Period: Submit at intervals stipulated elsewhere herein.
- E. Initial Application for Payment. Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
 - 1. List of subcontractors.
 - 2. Schedule of Values.
 - 3. Contractor's Construction Schedule.
 - 4. Products List.
 - 5. Schedule of Unit Prices.
 - 6. Submittals Schedule.
 - 7. List of Contractor's staff assignments.
 - 8. List of Contractor's principal consultants.
 - 9. Copies of Building Permits.
 - 10. Initial Progress Report.
 - 11. Certificate of Insurance and Insurance Policies.
 - 12. Performance and Payment Bonds.
- F. Final Payment Application: Submit Final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
 - 1. Evidence of Completion of project closeout requirements.
 - 2. Completion of punchlist items.
 - 3. Insurance Certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 - 4. Updated final statement, account for final changes to the Contract Sum.
 - 5. Transmittal of required Project Construction records to the Owner.
 - 6. Removal of temporary facilities, services, surplus materials, debris, etc.
 - 7. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims".
 - 8. AIA Document G706A, "Contractor's Affidavit of Release of Liens".
 - 9. AIA Documents G707, "Consent of Surety to Final Payment".
 - 10. Evidence that claims have been settled.
 - 11. Original Voucher form marked "Final Payment".
 - 12. Final, liquidated damages settlement statement.
 - 13. Prevailing Wage Rate Statement.
 - 14. Two (2) year 100% Maintenance Bond.

15. All Operation and Maintenance Manuals, Warranties and Guarantees, Permit Certificate of Approval.
- G. Submit with transmittal letter as specified for Submittals in Section 01 33 00 - Submittal Procedures.
- H. Substantiating Data: When Architect/Engineer requires substantiating information, submit data justifying dollar amounts in question. Include the following with Application for Payment:
 1. Current construction photographs.
 2. Partial Release of Liens from major subcontractors and vendors.
 3. Record documents for review by Owner which will be returned to Contractor.
 4. Affidavits attesting to off-site stored products.
 5. Construction progress schedules, revised and current.

1.5 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of the Architect/Engineer, it is not practical to remove and replace the Work, the Architect/Engineer will direct appropriate remedy or adjust payment.
- C. Where appropriate, defective Work will be partially repaired to instructions of Architect/Engineer and Owner, and unit sum/price will be adjusted to new sum/price reduced at discretion of Owner.
- D. Non-Payment For Rejected Products: Payment will not be made for rejected products for any of the following:
 1. Products wasted or disposed of in a manner that is not acceptable.
 2. Products determined as unacceptable before or after placement.
 3. Products not completely unloaded from transporting vehicle.
 4. Products placed beyond lines and levels of required Work.
 5. Products remaining on hand after completion of the Work.
 6. Loading, hauling, and disposing of rejected products.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 013000 - ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Coordination and project conditions.
- B. Preconstruction meeting.
- C. Site mobilization meeting.
- D. Progress meetings.
- E. Pre-installation meetings.
- F. Reporting
- G. Cutting and patching.
- H. Special procedures.

1.2 COORDINATION AND PROJECT CONDITIONS

- A. Coordinate scheduling, submittals, and Work of various sections to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, operating equipment.
- C. Coordinate space requirements, supports, and installation of mechanical and electrical Work indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within construction. Coordinate locations of fixtures and outlets with finish elements.
- E. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion and for portions of Work designated for Owner's occupancy.
- F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.3 PRECONSTRUCTION MEETING

- A. Owner will schedule meeting after Notice to Proceed.
- B. Attendance Required: Owner, Architect/Engineer and Contractor.

C. Agenda:

1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of Subcontractors, list of products, schedule of values, and progress schedule.
5. Designation of personnel representing parties in Contract and Architect/Engineer.
6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
7. Scheduling.

1.4 SITE MOBILIZATION MEETING

- A. Owner will schedule meeting at Project site prior to Contractor occupancy.
- B. Attendance Required: Contractor, Contractor's Superintendent and Subcontractors.

C. Agenda:

1. Use of premises by Owner and Contractor.
2. Owner's requirements and occupancy.
3. Construction facilities and controls provided by Owner.
4. Temporary utilities provided by Owner.
5. Construction layout.
6. Security and housekeeping procedures.
7. Schedules.
8. Application for payment procedures.
9. Procedures for testing.
10. Procedures for maintaining record documents.
11. Requirements for start-up of equipment.
12. Inspection and acceptance of equipment put into service during construction period.

1.5 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work as directed.
- B. Engineer will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Attendance Required: Job superintendent, project manager, major subcontractors and suppliers as appropriate to agenda topics for each meeting.

D. Agenda:

1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems impeding planned progress.

5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Other business relating to Work.

1.6 PRE-INSTALLATION MEETINGS

- A. When required, convene pre-installation meetings prior to commencing work of specific section.
- B. Require attendance of parties directly affecting, or affected by, Work of specific section.
- C. Notify Engineer four days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 1. Review conditions of installation, preparation and installation procedures.
 2. Review coordination with related work.

1.7 DAILY PROGRESS REPORTS

- A. Prepare a daily construction report recording the following information concerning events at Project site. Daily reports shall be submitted on a weekly basis, or as requested, and shall be generated for every day, including weekends and Holidays, from the issuance of the Notice to Proceed until Completion.
 1. List of subcontractors at the site.
 2. List of separate Contractors and visitors at the site.
 3. Approximate count of personnel at the site.
 4. Equipment at the site.
 5. Material deliveries.
 6. High and low temperatures, humidity and general weather conditions, including wind and precipitation.
 7. Testing and inspection.
 8. Accidents.
 9. Meetings and significant discussions.
 10. Unusual events.
 11. Description of all work activities performed.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 CUTTING AND PATCHING

- A. Employ skilled and experienced installer to perform cutting and patching.
- B. Submit written request in advance of cutting or altering elements affecting:
 - 1. Structural integrity of element.
 - 2. Integrity of weather-exposed or moisture-resistant elements.
 - 3. Efficiency, maintenance, or safety of element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate contractor.
- C. Execute cutting, fitting, and patching to complete Work, and to:
 - 1. Fit the several parts together, to integrate with other Work.
 - 2. Uncover Work to install or correct ill-timed Work.
 - 3. Remove and replace defective and non-conforming Work.
 - 4. Remove samples of installed Work for testing.
 - 5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.
- D. Execute work by methods to avoid damage to other Work, and to provide proper surfaces to receive patching and finishing.
- E. Cut masonry and concrete materials using masonry saw or core drill.
- F. Restore Work with new products in accordance with requirements of Contract Documents.
- G. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material, to full thickness of penetrated element.
- J. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for assembly, refinish entire unit.
- K. Identify hazardous substances or conditions exposed during the Work to Architect/Engineer for decision or remedy.

3.2 SPECIAL PROCEDURES

- A. Materials: As specified in product sections; match existing with new products and salvaged products for patching and extending work.

- B. Employ skilled and experienced installer to perform alteration work.
- C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.
- D. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- E. Remove debris and abandoned items from area and from concealed spaces.
- F. Prepare surface and remove surface finishes to permit installation of new work and finishes.
- G. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
- H. Remove, cut, and patch Work in manner to minimize damage and to permit restoring products and finishes to original or specified condition.
- I. Refinish existing visible surfaces to remain in renovated rooms and spaces, to specified condition for each material, with neat transition to adjacent finishes.
- J. Where new Work abuts or aligns with existing, provide smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
- K. When finished surfaces are cut so that smooth transition with new Work is not possible, terminate existing surface along straight line at natural line of division and submit recommendation to Architect/Engineer for review.
- L. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
- M. Finish surfaces as specified in individual product sections.

END OF SECTION

SECTION 013100 - PROGRESS MEETINGS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. The CONTRACTOR and/or CONTRACTOR'S representatives shall attend regularly scheduled Progress Meetings held for the purpose of coordinating the execution of the work. The Engineer will preside at the Progress Meetings.
- B. The proceedings of these meetings will be recorded by the Engineer and the CONTRACTOR will be furnished a reasonable number of copies of the meeting minutes.
- C. During the progress meeting, the CONTRACTOR shall provide update schedules concerning its plans for carrying out each part of the work.
- D. The CONTRACTOR shall provide a list of all items which are impacting the completion of the work (i.e. decisions required, easements required, shop drawing approvals required, etc.). As the work progress, the CONTRACTOR'S actual progress rate will be compared to the scheduled progress rate.
- E. The CONTRACTOR'S representatives at these meetings shall be empowered to make binding decisions regarding all matters pertaining to the work and to make definite reports as to status and anticipated progress rate.
- F. There will be a scheduled meeting every two weeks that the Contractor and its major subcontractors' representatives shall be required to attend. The hour and day of the week shall be determined by the Engineer. Progress meetings shall be scheduled more frequently if the Engineer decides more frequent meetings are required.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01202

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Submittal procedures.
- B. Construction progress schedules.
- C. Proposed products list.
- D. Product data.
- E. Shop drawings.
- F. Samples.
- G. Design data.
- H. Test reports.
- I. Certificates.
- J. Manufacturer's instructions.
- K. Manufacturer's field reports.
- L. Erection drawings.

1.2 SUBMITTAL PROCEDURES

- A. Transmit each submittal with Engineer accepted form.
- B. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.
- C. Identify Project, Contractor, subcontractor and supplier; pertinent drawing and detail number, and specification section number, appropriate to submittal.
- D. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents.
- E. Schedule submittals to expedite Project, and deliver to Engineer. Coordinate submission of related items.
- F. For each submittal for review, allow 15 days excluding delivery time to and from Contractor.
- G. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of completed Work.
- H. Allow space on submittals for Contractor and Engineer review stamps.
- I. When revised for resubmission, identify changes made since previous submission.
- J. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.

- K. Submittals not requested will not be recognized or processed.

1.3 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial schedules at Preconstruction meeting or within 15 days after date established in Notice to Proceed, whichever is earlier. After review, resubmit required revised data within ten days.
- B. Submit revised Progress Schedules with each Application for Payment.
- C. Distribute copies of reviewed schedules to Project site file, subcontractors, suppliers, and other concerned parties.
- D. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.
- E. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate early and late start, early and late finish, float dates, and duration.
- F. Indicate estimated percentage of completion for each item of Work at each submission.
- G. Submit separate schedule of submittal dates for shop drawings, product data, and samples and dates reviewed submittals will be required from Engineer. Indicate decision dates for selection of finishes.
- H. Revisions To Schedules:
 - 1. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
 - 2. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
 - 3. Prepare narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect.

1.4 PROPOSED PRODUCTS LIST

- A. Within 15 days after date of Notice to Proceed, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.5 PRODUCT DATA

- A. Product Data: Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

- B. Submit number of copies Contractor requires, plus two copies Engineer will retain.
- C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- D. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- E. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.6 SHOP DRAWINGS

- A. Shop Drawings: Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
- B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. When required by individual specification sections, provide shop drawings signed and sealed by professional engineer responsible for designing components shown on shop drawings.
 - 1. Include signed and sealed calculations to support design.
 - 2. Submit drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
 - 3. Make revisions and provide additional information when required by authorities having jurisdiction.
- D. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.7 SAMPLES

- A. Samples: Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
- B. Samples For Selection as Specified in Product Sections:
 - 1. Submit to Engineer for aesthetic, color, or finish selection.
 - 2. Submit samples of finishes from full range of manufacturers' standard colors, textures, and patterns for Engineer selection.
- C. Submit samples to illustrate functional and aesthetic characteristics of Products, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- D. Include identification on each sample, with full Project information.
- E. Submit number of samples specified in individual specification sections; Engineer will retain one sample.

- F. Reviewed samples which may be used in the Work are indicated in individual specification sections.
- G. Samples will not be used for testing purposes unless specifically stated in specification section.
- H. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes described in Section 01 70 00 - Execution and Closeout Requirements.

1.8 DESIGN DATA

- A. Submit for Engineer's knowledge as contract administrator or for Owner.
- B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.9 TEST REPORTS

- A. Submit for Engineer's knowledge as contract administrator or for Owner.
- B. Submit test reports for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.10 CERTIFICATES

- A. When specified in individual specification sections, submit certification by manufacturer, installation/application subcontractor, or Contractor to Engineer, in quantities specified for Product Data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Engineer.

1.11 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Engineer for delivery to Owner in quantities specified for Product Data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.12 MANUFACTURER'S FIELD REPORTS

- A. Submit reports for Engineer's benefit as contract administrator or for Owner.

- B. Submit report in duplicate within 5 days of observation to Engineer for information.
- C. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.13 ERECTION DRAWINGS

- A. Submit drawings for Engineer's benefit as contract administrator or for Owner.
- B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.
- C. Data indicating inappropriate or unacceptable Work may be subject to action by Engineer or Owner.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Quality control and control of installation.
- B. Tolerances.
- C. References.
- D. Labeling.
- E. Mock-up requirements.
- F. Manufacturers' field services.
- G. Examination.
- H. Preparation.

1.2 QUALITY CONTROL AND CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. When manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons qualified to produce required and specified quality.
- F. Verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.3 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. When manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

1.4 REFERENCES

- A. For products or workmanship specified by association, trade or other consensus standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date of Contract Documents, except where specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. When specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.
- E. Neither contractual relationships, duties nor responsibilities of parties in Contract nor those of Engineer shall be altered from Contract Documents by mention or inference otherwise in reference documents.

1.5 LABELING

- A. Attach label from agency approved by authority having jurisdiction for products, assemblies, and systems required to be labeled by applicable code.
- B. Label Information: Include manufacturer's or fabricator's identification, approved agency identification, and the following information, as applicable, on each label.
 - 1. Model number.
 - 2. Serial number.
 - 3. Performance characteristics.

1.6 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to Engineer 30 days in advance of required observations.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Verify utility services are available, of correct characteristics, and in correct locations.

3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

END OF SECTION

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Products.
- B. Product delivery requirements.
- C. Product storage and handling requirements.
- D. Product options.
- E. Product substitution procedures.
- F. Equipment electrical characteristics and components.

1.2 PRODUCTS

- A. Furnish products of qualified manufacturers suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.
- C. Furnish interchangeable components from same manufacturer for components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

- A. Store and protect products in accordance with manufacturers' instructions.
- B. Store with seals and labels intact and legible.
- C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- D. For exterior storage of fabricated products, place on sloped supports above ground.
- E. Provide off-site storage and protection when site does not permit on-site storage or protection.

- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- G. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.
- H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.5 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Products of one of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for any manufacturer not named in accordance with the following article.

1.6 PRODUCT SUBSTITUTION PROCEDURES

- A. Engineer will consider requests for Substitutions after award of the Contract.
- B. Substitutions may be considered when a product becomes unavailable through no fault of Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that Contractor:
 - 1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
 - 2. Will provide same warranty for Substitution as for specified product.
 - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
- E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals, without separate written request, or when acceptance will require revision to Contract Documents.

- F. Substitution Submittal Procedure:
1. Submit request for Substitution for consideration. Limit each request to one proposed Substitution.
 2. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.
 3. Write itemized comparison between products.
 4. Architect/Engineer will notify Contractor in writing of decision to accept or reject request.

PART 2 PRODUCTS

2.1 EQUIPMENT ELECTRICAL CHARACTERISTICS AND COMPONENTS

- A. Wiring Terminations: Furnish terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Include lugs for terminal box.

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 017000 - EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Closeout procedures.
- B. Final cleaning.
- C. Starting of systems.
- D. Demonstration and instructions.
- E. Testing, adjusting and balancing.
- F. Protecting installed construction.
- G. Project record documents.
- H. Operation and maintenance data.
- I. Manual for materials and finishes.
- J. Manual for equipment and systems.
- K. Spare parts and maintenance products.
- L. Product warranties and product bonds.
- M. Maintenance service.

1.2 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Architect/Engineer's review.
- B. Provide submittals to Engineer and Owner required by authorities having jurisdiction.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- D. Owner will occupy all portions of building as specified herein.

1.3 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
- B. Clean surfaces exposed to view; remove temporary labels, stains and foreign substances.
- C. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.
- D. Replace filters of operating equipment.
- E. Clean debris from roofs, gutters, downspouts, and drainage systems.
- F. Clean site; sweep paved areas, rake clean landscaped surfaces.

- G. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.4 STARTING OF SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Engineer and Owner seven days prior to start-up of each item.
- C. Verify each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.
- D. Verify tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.
- E. Verify wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of applicable manufacturer's representative in accordance with manufacturers' instructions.
- G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- H. Submit a written report in accordance with Section 01 33 00 - Submittal Procedures that equipment or system has been properly installed and is functioning correctly.

1.5 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of final inspection.
- B. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- C. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
- D. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
- E. Required instruction time for each item of equipment and system is specified in individual sections.

1.6 PROTECTING INSTALLED CONSTRUCTION

- A. Protect installed Work and provide special protection where specified in individual specification sections.

- B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic from landscaped areas.

1.7 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed Shop Drawings, Product Data, and Samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress, not less than weekly.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 2. Field changes of dimension and detail.
 - 3. Details not on original Contract drawings.
- G. Submit documents to Architect/Engineer with claim for final Application for Payment.

1.8 OPERATION AND MAINTENANCE DATA

- A. Submit data bound in 8-1/2 x 11 inch text pages, three D side ring binders with durable covers. Submit three hard copies and 1 electronic of same.
- B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.
- C. Internally subdivide binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
- D. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- E. Contents: Prepare Table of Contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:
 - 1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.
 - 2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
 - a. Significant design criteria.
 - b. List of equipment.
 - c. Parts list for each component.
 - d. Operating instructions.
 - e. Maintenance instructions for equipment and systems.
 - f. Maintenance instructions for finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
 - 3. Part 3: Project documents and certificates, including the following:
 - a. Shop drawings and product data.
 - b. Air and water balance reports.
 - c. Certificates.
 - d. Originals of warranties and bonds.
 - 4. Part 4: Warranties
 - 5. Part 5: Construction Permits and Approvals

1.9 MANUAL FOR MATERIALS AND FINISHES

- A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect/Engineer will review draft and return one copy with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.
- C. Submit one copy of completed volumes 15 days prior to final inspection. Draft copy be reviewed and returned after final inspection, with Architect/Engineer comments. Revise content of document sets as required prior to final submission.

- D. Submit two sets of revised final volumes in final form within 10 days after final inspection.
- E. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Include information for re-ordering custom manufactured products.
- F. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- G. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.
- H. Additional Requirements: As specified in individual product specification sections.
- I. Include listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.10 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect/Engineer will review draft and return one copy with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.
- C. Submit one copy of completed volumes 15 days prior to final inspection. Draft copy be reviewed and returned after final inspection, with Architect/Engineer comments. Revise content of document sets as required prior to final submission.
- D. Submit two sets of revised final volumes in final form within 10 days after final inspection.
- E. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.
- F. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- G. Include color coded wiring diagrams as installed.
- H. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and special operating instructions.

- I. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- J. Include servicing and lubrication schedule, and list of lubricants required.
- K. Include manufacturer's printed operation and maintenance instructions.
- L. Include sequence of operation by controls manufacturer.
- M. Include original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- N. Include control diagrams by controls manufacturer as installed.
- O. Include Contractor's coordination drawings, with color coded piping diagrams as installed.
- P. Include charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- Q. Include list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- R. Include test and balancing reports as specified in Section 01 40 00 - Quality Requirements.
- S. Additional Requirements: As specified in individual product specification sections.
- T. Include listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.

1.11 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Furnish spare parts, maintenance, and extra products in quantities specified in individual specification sections.
- B. Deliver to Project site and place in location as directed by Owner; obtain receipt prior to final payment.

1.12 PRODUCT WARRANTIES AND PRODUCT BONDS

- A. Obtain warranties and bonds executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.
- B. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.
- C. Verify documents are in proper form, contain full information, and are notarized.

- D. Co-execute submittals when required.
- E. Include Table of Contents and assemble in three D side ring binder with durable cover.
- F. Submit prior to final Application for Payment.
- G. Time Of Submittals:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
 - 2. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing date of acceptance as beginning of warranty or bond period.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 017950 - CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Maintenance contracts.
 - 2. Operation and maintenance data.
 - 3. Product warranties.
 - 4. Project record documents.
 - 5. Spare parts.

- B. Related Documents: The Contract Documents, as defined in Section 011000 - Summary of Work, apply to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other documents.

1.2 OPERATION AND MAINTENANCE DATA

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

1.3 PRODUCT WARRANTIES

- A. Submit Warranties required for specific Products or Work as specified in each individual Section.

- B. Form of Submittals:
 - 1. Bind in commercial quality 8-1/2 x 11 inch three D side ring binders with durable plastic covers.
 - 2. Cover: Identify each binder with typed or printed title WARRANTIES with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
 - 3. Table of Contents: Neatly typed, in sequence of Table of Contents of Project Manual, with each item identified with number and title of specification Section in which specified, and name of Product or Work item.
 - 4. Separate each warranty with index tab sheets keyed to Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

- C. Preparation of Submittals:
 - 1. Obtain warranties executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of applicable item of Work. Except for items put into use with Owner approval, leave date of beginning of time of warranty until the Date of Final Acceptance is determined.

2. Verify that documents are in proper form, contain full information, and are notarized.
 3. Co-execute submittals when required.
 4. Retain warranties until time specified for submittal.
- D. Time of Submittals
1. For equipment or component parts of equipment put into service during construction with Contracting Officer approval, submit documents within 10 days after acceptance.
 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance.

1.4 PROJECT RECORD DOCUMENTS

- A. Project Record Documents required include:
1. Marked-up copies of Contract Drawings.
 2. Marked-up copies of Shop Drawings.
 3. Marked-up copies of Specifications, addenda and Contract Modifications.
 4. Marked-up Product Data submittals.
 5. Field records for variable and concealed conditions.
 6. Record information on Work that is recorded only schematically.
- B. Specific record copy requirements that expand requirements of this Section are included in individual specification Sections of Division 2 through Division 16.
- C. Maintenance of Documents: Store record documents in field office apart from Contract Documents used for construction. Do not permit Project Record Documents to be used for construction purposes. Maintain and protect record documents from damage in a clean, dry, legible condition. Make documents available at all times for inspection by the Owner or Engineer.
- D. Record Drawings:
1. During construction, maintain a set of black-line white-prints of Contract Drawings and Shop Drawings for Project Record Document purposes.
 - a. Mark these Drawings to indicate actual installation where installation varies from installation shown originally. Give particular attention to information on concealed elements which would be difficult to identify or measure and record later. Items required to be marked include but are not limited to:
 - 1) Dimensional changes to Drawings.
 - 2) Revisions to details shown on Drawings.
 - 3) Depths of foundations below first floor.
 - 4) Locations and depths of underground utilities.
 - 5) Revisions to routing of piping and conduits.
 - 6) Revisions to electrical circuitry.
 - 7) Actual equipment locations.

- 8) Duct size and routing.
 - 9) Locations of concealed internal utilities.
 - 10) Changes made by Contract Modification.
 - 11) Details not on original Contract Drawings.
 - b. Mark completely and accurately record prints of Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions. Where Shop Drawings are marked, show cross-reference on Contract Drawings location.
 - c. Mark record sets with red erasable colored pencil; use other colors to distinguish between changes for different categories of Work at same location.
 - d. Mark important additional information which was either shown schematically or omitted from original Drawings.
 - e. Note construction change directive numbers, alternate numbers, Change Order numbers and similar identification.
 - f. Responsibility for Markup and Supervision: Individual or entity who obtained record data, whether individual or entity is installer, subcontractor, or similar entity, is required to prepare mark-up on Record Drawings.
 - 1) Accurately record information in an understandable Drawing technique.
 - 2) Record data as soon as possible after it has been obtained. In case of concealed installations, record and check mark-up prior to concealment.
 - 3) Contractor Representative: Affix signature and certify accuracy of Record Drawings.
 - g. At time of Final Acceptance, submit record Drawings to Engineer for Owner's records. Organize into sets, bind and label sets for Owner's continued use.
- E. Additional Record Submittals:
1. Refer to other specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Immediately prior to Final Acceptance, complete additional records and place in order, properly identified and bound or filed, ready for use and reference. Submit to Engineer for Owner's records.
 - a. Categories of requirements resulting in miscellaneous records and photographs include, but are not limited to the following:
 - 1) Field records on excavations and foundations.
 - 2) Field records on underground construction and similar Work.
 - 3) Survey showing locations and elevations of underground lines.
 - 4) Invert elevations of drainage piping.
 - 5) Surveys establishing building lines and levels.
 - 6) Authorized measurements utilizing unit prices or allowances.
 - 7) Records of plant treatment.
 - 8) Ambient and substrate condition tests.
 - 9) Certifications received in lieu of labels on bulk products.
 - 10) Batch mixing and bulk delivery records.
 - 11) Testing and qualification of tradesmen.
 - 12) Documented qualification of installation firms.
 - 13) Load and performance testing.
 - 14) Inspections and certifications by governing authorities.

- 15) Leakage and water-penetration tests.
- 16) Fire resistance and flame spread test results.
- 17) Final inspection and correction procedures.

PART 2 PRODUCTS
 Not Used.

PART 3 EXECUTION
 Not Used.

END OF SECTION

SECTION 061000 - ROUGH CARPENTRY

1 GENERAL

1. SUMMARY

a. Section Includes:

- 1) Framing with dimension lumber.
- 2) Framing with engineered wood products.
- 3) Shear wall panels.
- 4) Rooftop equipment bases and support curbs.
- 5) Wood blocking[, cants,] and nailers.
- 6) Wood furring[and grounds].
- 7) Wood sleepers.
- 8) Plywood backing panels.

2 PRODUCTS

1. WOOD PRODUCTS, GENERAL

a. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

- 1) Factory mark each piece of lumber with grade stamp of grading agency.
- 2) For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
- 3) Dress lumber, S4S, unless otherwise indicated.

b. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

c. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.

- 1) Allowable design stresses, as published by manufacturer, shall meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.WOOD-PRESERVATIVE-TREATED LUMBER

a.Preservative Treatment by Pressure Process: AWWPA U1; Use Category UC2.

1)Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

b.Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.

c.Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

d.Application: Treat items indicated on Drawings, and the following:

1)Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.

2)Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.

3.DIMENSION LUMBER FRAMING

a.Framing: No. 2 grade.

1)Species:

a)Hem-fir (north); NLGA.

b)Southern pine; SPIB.

c)Douglas fir-larch; WCLIB or WWPA.

d)Spruce-pine-fir; NLGA.

b.Exposed Framing: Hand-select material for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.

1)Species and Grade: As indicated above for load-bearing construction of same type.

4.MISCELLANEOUS LUMBER

a.General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1)Blocking.

2)Nailers.

3)Roofing equipment bases and support curbs.

- 4)Cants.
- 5)Furring.
- 6)Grounds.

b.Dimension Lumber Items: Construction or No. 2 grade lumber of any species.

5.PLYWOOD BACKING PANELS

a.Equipment Backing Panels: Plywood, DOC PS 1, Exterior, A-C in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness.

6.FASTENERS

a.General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.

- 1)Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

b.Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

c.Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01, ICC-ES AC58, ICC-ES AC193 or ICC-ES AC308 as appropriate for the substrate.

7.METAL FRAMING ANCHORS

a.Allowable design loads, as published by manufacturer, shall meet or exceed those indicated or of basis-of-design products. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.

b.Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 coating designation.

- 1)Use for interior locations unless otherwise indicated.

c.Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 coating designation; and not less than 0.036 inch thick.

1)Use for wood-preservative-treated lumber and where indicated.

8.MISCELLANEOUS MATERIALS

- a.Sill-Sealer Gaskets: Glass-fiber-resilient insulation, fabricated in strip form, for use as a sill sealer; 1-inch nominal thickness, compressible to 1/32 inch; selected from manufacturer's standard widths to suit width of sill members indicated.
- b.Sill-Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to suit width of sill members indicated.
- c.Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch.
- d.Adhesives for Gluing Furring to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.

3EXECUTION

1.INSTALLATION, GENERAL

- a.Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- b.Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.
- c.Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- d.Install shear wall panels to comply with manufacturer's written instructions.
- e.Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- f.Do not splice structural members between supports unless otherwise indicated.
- g.Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- h.Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

i. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

- 1) Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).
- 2) Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.
- 3) ICC-ES evaluation report for fastener.

2. PROTECTION

- a. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.
- b. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061000

SECTION 064116 - PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

1.GENERAL

1.SUMMARY

a.Section Includes:

- 1)Plastic-laminate-clad architectural cabinets.
- 2)Cabinet hardware and accessories.
- 3)Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-clad architectural cabinets that are not concealed within other construction.

2.PRE-INSTALLATION MEETINGS

- a.Pre-installation Conference: Conduct conference at Project site.

3.ACTION SUBMITTALS

a.Product Data: For each type of product.

- 1)Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.

b.Shop Drawings:

- 1)Include plans, elevations, sections, and attachment details.

c.Samples: For each exposed product and for each color and texture specified.

4.QUALITY ASSURANCE

- a.Manufacturer's Qualifications: Employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.

b.FIELD CONDITIONS

- c.Environmental Limitations without Humidity Control: Do not deliver or install cabinets until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining temperature and relative humidity at levels planned for building occupants during the remainder of the construction period.

2PRODUCTS

1.PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

a.Quality Standard: Unless otherwise indicated, comply with the Architectural Woodwork Standards for grades of cabinets indicated for construction, finishes, installation, and other requirements.

b.Architectural Woodwork Standards Grade: Custom

c.Type of Construction: Frameless

d.Door and Drawer-Front Style: Flush.

e.High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by quality standard.

1)Basis-of-Design products as indicated on the drawing or architect approved equal.

f.Laminate Cladding for Exposed Surfaces:

1)Horizontal Surfaces: Grade HGS.

2)Post-formed Surfaces: Grade HGP.

3)Vertical Surfaces: Grade HGS.

4)Edges: Grade HGS.

5)Pattern Direction: As indicated.

g.Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces: High-pressure decorative laminate, NEMA LD 3, Grade BKL.

h.Drawer Construction: Fabricate with exposed fronts fastened to sub-front with mounting screws from interior of body.

1)Join sub-fronts, backs, and sides with glued rabbeted joints supplemented by mechanical fasteners.

i.Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:

1)As indicated by laminate manufacturer's designations.

2.WOOD MATERIALS

a.Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.

1)Wood Moisture Content: 5 to 10 percent.

b. Composite Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.

1) Medium-Density Fiberboard (MDF): ANSI A208.2, Grade 130.

2) Particleboard (Medium Density): ANSI A208.1, Grade M-2.

3) Softwood Plywood: DOC PS 1, medium-density overlay.

4) Thermally Fused Laminate (TFL) Panels: Particleboard or MDF finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for Test Methods 3.3, 3.4, 3.6, 3.8, and 3.10.

3. CABINET HARDWARE AND ACCESSORIES

a. Frameless Concealed Hinges (European Type): ANSI/BHMA A156.9, B01602, 100 degrees of opening, self-closing.

b. Back-Mounted Pulls: ANSI/BHMA A156.9, B02011.

c. Wire Pulls: Back mounted, solid metal, 4 inches long, 5/16 inch in diameter.

d. Catches: Magnetic catches, ANSI/BHMA A156.9, B03141.

e. Adjustable Shelf Standards and Supports: ANSI/BHMA A156.9, B04071; with shelf rests, B04081.

f. Drawer Slides: ANSI/BHMA A156.9.

1) Heavy-Duty (Grade 1HD-100 and Grade 1HD-200): Side mount.

a) Type: Full extension.

b) Material: Aluminum slides.

c) Motion Feature: Push to open and Self-closing mechanism.

g. Door Locks: ANSI/BHMA A156.11, E07121.

h. Drawer Locks: ANSI/BHMA A156.11, E07041.

i. Door and Drawer Silencers: ANSI/BHMA A156.16, L03011.

j. Grommets for Cable Passage: 2-inch OD, molded-plastic grommets and matching plastic caps with slot for wire passage.

1) Color: Black.

k. Exposed Hardware Finishes: For exposed hardware, provide finish.

1) Matte nickel finish.

- l.For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in ANSI/BHMA A156.9.

4.MISCELLANEOUS MATERIALS

- a.Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood kiln-dried to less than 15 percent moisture content.
- b.Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.
- c.Adhesive for Bonding Plastic Laminate: Unpigmented contact cement.
 - 1)Adhesive for Bonding Edges: adhesive specified above for faces.

5.FABRICATION

- a.Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
- b.Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
- c.Install glass to comply with applicable requirements in Section 088000 "Glazing" and in GANA's "Glazing Manual."
 - 1)For glass in frames, secure glass with removable stops.
 - 2)For exposed glass edges, polish and grind smooth.

3EXECUTION

1.INSTALLATION

- a.Before installation, condition cabinets to humidity conditions in installation areas for not less than 72 hours.
- b.Architectural Woodwork Standards Grade: Install cabinets to comply with quality standard grade of item to be installed.

c.Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with wafer-head cabinet installation screws.

d.Install cabinets level, plumb, and true in line to a tolerance of 1/8 inch in 96 inches using concealed shims.

1)Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

2)Install cabinets without distortion so doors and drawers fit openings and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.

3)Fasten wall cabinets through back, near top and bottom, and at ends not more than 16 inches o.c. with No. 10 wafer-head screws sized for not less than 1-1/2-inch penetration into wood framing, blocking, or hanging strips.

END OF SECTION 064116

SECTION 081213 - HOLLOW METAL FRAMES

1 GENERAL

1. SUMMARY

a. Section includes:

- 1) Interior standard steel frames.
- 2) Interior custom hollow-metal frames.

2. DEFINITIONS

- a. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

3. ACTION SUBMITTALS

- a. Product Data: For each type of product.
- b. Shop Drawings: Include elevations, frame profiles, metal thicknesses, and wall opening conditions.
- c. Schedule: Prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings.

4. INFORMATIONAL SUBMITTALS

- a. Product test reports.

2 PRODUCTS

1. MANUFACTURERS

- a. Acceptable manufacturers for frames specified are listed below.

- 1) Bildisco Door Mfg., West Orange, New Jersey
- 2) Steelcraft, Cincinnati, Ohio
- 3) Curries, Mason City, Iowa
- 4) Or approved equal

2. STEEL FRAMES

- a. Construct hollow-metal frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- b. Exterior Frames: Hot-dip galvanized steel, ASTM A 653, Class A60, 14 gage hot dipped galvanized steel, with closed tops.
 - 1) All galvanized frames will include galvanized components.
 - 2) Construction: Full profile welded.
 - 3) Exposed Finish: Factory.

3. FRAME ANCHORS

- a. Jamb Anchors:
 - 1) Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
 - 2) Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor.
- b. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor.
- c. Material: ASTM A 879/A 879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.

4. MATERIALS

- a. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- b. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- c. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.
- d. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.
- e. Power-Actuated Fasteners in Concrete: Fabricated from corrosion-resistant materials.
- f. Glazing: Comply with requirements in Section 088000 "Glazing."

5.FABRICATION

- a.Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.
 - 1)Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 - 2)Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a)Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
 - b)Double-Door Frames: Drill stop in head jamb to receive two door silencers.
- b.Hardware Preparation: Factory prepare hollow-metal frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.
 - 1)Reinforce frames to receive nontemplated, mortised, and surface-mounted door hardware.
 - 2)Comply with BHMA A156.115 for preparing hollow-metal frames for hardware.

6.STEEL FINISHES

- a.Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
 - 1)Shop Primer: SDI A250.10.
- b.Factory Finish: SDI A250.3.
 - 1)Color and Gloss: As selected by Architect from manufacturer's full range.

3EXECUTION

1.INSTALLATION

- a.General: Install hollow-metal frames plumb, rigid, properly aligned, and securely fastened in place. Comply with approved Shop Drawings and with manufacturer's written instructions. Comply with SDI A250.11 or NAAMM-HMMA 840.
- b.Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.

- 1)Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes.
- 2)Install frames with removable stops located on secure side of opening.

c.Fire-Rated Openings: Install frames according to NFPA 80.

d.Floor Anchors: Secure with post-installed expansion anchors.

- 1)Floor anchors may be set with power-actuated fasteners instead of post-installed expansion anchors if so indicated and approved on Shop Drawings.

e.Solidly pack mineral-fiber insulation inside frames.

f.Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout or mortar.

g.In-Place Concrete or Masonry Construction: Secure frames in place with post-installed expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.

h.Installation Tolerances: Adjust hollow-metal frames to the following tolerances:

- 1)Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
- 2)Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
- 3)Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
- 4)Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.

i.Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow-metal manufacturer's written instructions.

2.CLEANING AND TOUCHUP

a.Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

b.Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

c.Factory-Finish Touchup: Clean abraded areas and repair with same material used for factory finish according to manufacturer's written instructions.

d.Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION 081213

SECTION 081416 - FLUSH WOOD DOORS.

1 GENERAL

1. SUMMARY

a. Section Includes:

- 1) Five-ply flush wood veneer-faced doors for transparent finish.
- 2) Factory finishing flush wood doors.
- 3) Factory fitting flush wood doors to frames and factory machining for hardware.

2. ACTION SUBMITTALS

a. Product Data: For each type of product, including the following:

- 1) Door core materials and construction.
- 2) Door edge construction
- 3) Door faces type and characteristics.
- 4) Factory-machining criteria.
- 5) Factory finishing specifications.

b. Shop Drawings: Indicate location, size, and hand of each door; elevation of each type of door; construction details not covered in Product Data; and the following:

- 1) Door schedule indicating door location, type, size, fire protection rating, and swing.
- 2) Door elevations, dimension and locations of hardware, lite and louver cutouts, and glazing thicknesses.
- 3) Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
- 4) Dimensions and locations of blocking for hardware attachment.
- 5) Clearances and undercuts.
- 6) Requirements for veneer matching.

c. Samples: For factory-finished doors.

3. INFORMATIONAL SUBMITTALS

a. Qualification Data: For door inspector.

- 1) Fire-Rated Door Inspector: Submit documentation of compliance with NFPA 80, Section 5.2.3.1.
- 2) Submit copy of DHI's Fire and Egress Door Assembly Inspector (FDAI) certificate.

b. Field quality-control reports.

4.CLOSEOUT SUBMITTALS

- a.Record Documents: For fire-rated doors, list of door numbers and applicable room name and number to which door accesses.

2.PRODUCTS

1.PERFORMANCE REQUIREMENTS

- a.Fire-Rated Wood Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated on Drawings, based on testing at positive pressure in accordance with UL 10C or NFPA 252.
 - 1)Temperature-Rise Limit: at vertical exit enclosures and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg. F. above ambient after 30 minutes of standard fire-test exposure.
- b.Smoke- and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing in accordance with UL 1784 and installed in compliance with NFPA 105.

2.FLUSH WOOD DOORS GENERAL

- a.Quality Standard: In addition to requirements specified, comply with ANSI/WDMA I.S. 1A.

3.SOLID-CORE, FIVE-PLY FLUSH WOOD VENEER-FACED DOORS FOR TRANSPARENT FINISH

a.Interior Doors

- 1)Performance Grade: ANSI/WDMA I.S. 1A Heavy Duty
- 2)Faces: Single-ply wood veneer not less than 1/50 inch thick.
 - a)Species: As indicated on drawings.
 - b)Cut: Plain sliced (flat sliced)
 - c)Match between Veneer Leaves: Book match.
 - d)Assembly of Veneer Leaves on Door Faces: Running match.
 - e)Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.
- 3)Exposed Vertical and Top Edges: Applied wood-veneer edges of same species as faces and covering edges of faces - Architectural Woodwork Standards edge Type B

- a) Fire-Rated Single Doors: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed vertical edges.
- b) Fire-Rated Pairs of Doors: Provide formed-steel edges and astragals with intumescent seals.

(1) Finish steel edges and astragals with baked enamel same color as doors.

- c) Mineral-Core Doors: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.

(1) Screw-Holding Capability: 550 lbf in accordance with WDMA T.M. 10.

4) Core for Non-Fire-Rated Doors:

- a) Either glued wood stave or WDMA I.S. 10 structural composite lumber.

5) Core for Fire-Rated Doors: As required to achieve fire-protection rating indicated on Drawings.

- a) Blocking for Mineral-Core Doors: Provide composite blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated on Drawings as needed to eliminate through-bolting hardware.

6) Construction: Five plies, hot-pressed bonded (vertical and horizontal edging is bonded to core), with entire unit abrasive planed before veneering.

7) Exposed Vertical and Top Edges: Any closed-grain hardwood.

8) Core:

4. LIGHT FRAMES

- a. Metal Frames for Light Openings in Fire-Rated Doors: Manufacturer's standard frame formed of 0.048-inch thick, cold-rolled steel sheet; with baked-enamel- or powder-coated finish; and approved for use in doors of fire-protection rating indicated on Drawings.

5. FABRICATION

- a. Factory fit doors to suit frame-opening sizes indicated.

- 1) Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
- 2) Comply with NFPA 80 requirements for fire-rated doors.

- b. Factory machine doors for hardware that is not surface applied.

- 1) Locate hardware to comply with DHI-WDHS-3.

- 2) Comply with final hardware schedules, door frame Shop Drawings, ANSI/BHMA-156.115-W, and hardware templates.
- 3) Coordinate with hardware mortises in metal frames, to verify dimensions and alignment before factory machining.
- 4) For doors scheduled to receive electrified locksets, provide factory-installed raceway and wiring to accommodate specified hardware.
- 5) Metal Astragals: Factory machine astragals and formed-steel edges for hardware for pairs of fire-rated doors.

c. Openings: Factory cut and trim openings through doors.

- 1) Light Openings: Trim openings with moldings of material and profile indicated.
- 2) Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Section 088000 "Glazing."
- 3) Louvers: Factory install louvers in prepared openings.

6. FACTORY FINISHING

a. Comply with referenced quality standard for factory finishing.

- 1) Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
- 2) Finish faces, all four edges, edges of cutouts, and mortises.
- 3) Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.

b. Factory finish doors

c. Transparent Finish:

- 1) ANSI/WDMA I.S. 1A Grade: Custom.
- 2) Finish: ANSI/WDMA I.S. 1A TR-6 Catalyzed Polyurethane.
- 3) Staining: As selected by Architect from manufacturer's full range.
- 4) Effect: Open-grain finish.
- 5) Sheen: Satin.

3. EXECUTION

1. INSTALLATION

a. Hardware: For installation, see Section 087100 "Door Hardware."

b. Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.

c. Install frames level, plumb, true, and straight.

1) Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.

2) Anchor frames to anchors or blocking built in or directly attached to substrates.

a) Secure with countersunk, concealed fasteners and blind nailing.

b) Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork.

(1) For factory-finished items, use filler matching finish of items being installed.

3) Install fire-rated doors and frames in accordance with NFPA 80.

4) Install smoke- and draft-control doors in accordance with NFPA 105.

a) Provide 1/8 inch at heads, jambs, and between pairs of doors.

b) Provide 1/8 inch from bottom of door to top of decorative floor finish or covering unless otherwise indicated on Drawings.

c) Where threshold is shown or scheduled, provide 1/4 inch from bottom of door to top of threshold unless otherwise indicated.

5) Bevel non-fire-rated doors 1/8 inch in 2 inches at lock and hinge edges.

d. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

e. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

2. FIELD QUALITY CONTROL

a. Inspection Agency: Engage a qualified inspector to perform inspections and to furnish reports to Architect.

b. Inspections:

c. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.

d. Re-inspect repaired or replaced installations to determine if replaced or repaired door assembly installations comply with specified requirements.

e. Prepare and submit separate inspection report for each fire-rated door assembly indicating compliance with each item listed in NFPA 80.

3.ADJUSTING

- a.Operation: Rehang or replace doors that do not swing or operate freely.
- b.Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 081416

SECTION 083113 - ACCESS DOORS AND FRAMES

1 GENERAL

1. SUMMARY

a. Section Includes:

- 1) Access doors and frames for walls and ceilings.

2. ACTION SUBMITTALS

a. Product Data: For each type of product.

b. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

c. Samples: For each door face material.

d. Schedule: Types, locations, sizes, latching or locking provisions, and other data pertinent to installation.

2 PRODUCTS

1. PERFORMANCE REQUIREMENTS

a. Fire-Rated Access Doors and Frames: Units complying with NFPA 80 tested according to the following test method:

- 1) NFPA 252 or UL 10B for fire-rated access door assemblies installed vertically.
- 2) NFPA 288 for fire-rated access door assemblies installed horizontally.

2. ACCESS DOORS AND FRAMES FOR WALLS AND CEILINGS

a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- 1) Access Panel Solutions.
- 2) Acudor Products, Inc.
- 3) Larsens Manufacturing Company.
- 4) Nystrom, Inc.

- 5) S Steel Sheet for Door: Nominal 0.060 inch, 16 gage.

a)Finish: Factory prime.

6)Frame Material: Same material, thickness, and finish as door.

7)Hinges: Manufacturer's standard.

8)Hardware: Lock.

b.Flush Access Doors with Concealed Flanges:

1)Assembly Description: Fabricate door to fit flush to frame. Provide frame with gypsum board beads for concealed flange installation.

2)Locations: Wall and ceiling.

3)Door Size: 12 inch by 12 inch.

c.Fire-Rated, Flush Access Doors with Concealed Flanges:

1)Assembly Description: Fabricate door to fit flush to frame, with a core of mineral-fiber insulation enclosed in sheet metal. Provide self-latching door with automatic closer and interior latch release. Provide frame with gypsum board beads for concealed flange installation.

2)Locations: Wall and ceiling.

3)Fire-Resistance Rating: Not less than that of adjacent construction.

4)Uncoated Steel Sheet for Door: Nominal 0.036 inch, 20 gage.

a)Finish: Factory prime.

5)Frame Material: Same material, thickness, and finish as door.

6)Hinges: Manufacturer's standard.

7)Hardware: Lock.

d.Hardware:

1)Lock: Cylinder.

a)Lock: Manufacturer's standard

3.MATERIALS

a.Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

b.Frame Anchors: Same type as door face.

c.Inserts, Bolts, and Anchor Fasteners: Hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329.

4.FABRICATION

- a.General: Provide access door and frame assemblies manufactured as integral units ready for installation.
- b.Metal Surfaces: For metal surfaces exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
- c.Doors and Frames: Grind exposed welds smooth and flush with adjacent surfaces. Furnish attachment devices and fasteners of type required to secure access doors to types of supports indicated.
- d.Latching Mechanisms: Furnish number required to hold doors in flush, smooth plane when closed.
 - 1)For cylinder locks, furnish two keys per lock and key all locks alike.

5.FINISHES

- a.Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- b.Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- c.Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

3EXECUTION

1.INSTALLATION

- a.Comply with manufacturer's written instructions for installing access doors and frames.
- b.Install doors flush with adjacent finish surfaces or recessed to receive finish material.

2.ADJUSTING

- a.Adjust doors and hardware, after installation, for proper operation.
- b.Remove and replace doors and frames that are warped, bowed, or otherwise damaged.

END OF SECTION 083113 - ACCESS DOORS AND FRAMES

SECTION 087100 – DOOR HARDWARE

1 GENERAL

1. RELATED DOCUMENTS

- a. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

2. SUMMARY

- a. This Section includes commercial door hardware for the following:

- 1) Swinging doors.
- 2) Other doors to the extent indicated.

- b. Door hardware includes, but is not necessarily limited to, the following:

- 1) Mechanical door hardware.
- 2) Electromechanical door hardware.
- 3) Cylinders specified for doors in other sections.

- c. Related Sections:

- 1) Division 08 Section "Hollow Metal Frames"
- 2) Division 08 Section "Fiberglass Doors"

- d. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

- 1) ANSI A117.1 - Accessible and Usable Buildings and Facilities.
- 2) ICC/IBC - International Building Code.
- 3) NFPA 70 - National Electrical Code.
- 4) NFPA 80 - Fire Doors and Windows.
- 5) NFPA 101 - Life Safety Code.
- 6) NFPA 105 - Installation of Smoke Door Assemblies.
- 7) State Building Codes, Local Amendments.

- e. Standards: All hardware specified herein shall comply with the following industry standards:

- 1) ANSI/BHMA Certified Product Standards - A156 Series
- 2) UL10C – Positive Pressure Fire Tests of Door Assemblies

3.SUBMITTALS

a.B. Shop Drawings:

- 1)Hardware schedule shall be organized in vertical format illustrated in DHI Publications Sequence and Formatting for the Hardware Schedule. Include abbreviations and symbols page according to DHI Publications Abbreviations and Symbols. Complete nomenclature of items required for each door opening as indicated.
- 2)Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of hardware.
- 3)Architectural Hardware Consultant (AHC), as certified by DHI, who shall affix seal attesting to completeness and correctness, shall review hardware schedule prior to submittal.

b.Submit manufacturer's catalog sheet on design, grade and function of items listed in hardware schedule. Identify specific hardware item per sheet, provide index, and cover sheet.

c.Coordination:

- 1)Distribute door hardware templates to related divisions within fourteen days of receiving approved door hardware submittals.

d.Shop Drawings: Details of electrified access control hardware indicating the following:

- 1)Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:
 - a)Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
 - b)Complete (risers, point-to-point) access control system block wiring diagrams.
 - c)Wiring instructions for each electronic component scheduled herein.
- 2)Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

e.Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals.

4.QUALITY ASSURANCE

a.Door hardware shall conform to ICC/ANSI A117.1.

- 1)Handles, Pulls, Latches, Locks and operating devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.

b.Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1)Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.

2)Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

c.Within fourteen days of receipt of approved door hardware submittals contact Owner with representative from hardware supplier to establish a keying conference. Verify keyway, visual key identification, number of master keys and keys per lock. Provide keying system per Owners instructions.

5.DELIVERY, STORAGE, AND HANDLING

a.Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

b.Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

c.Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service.

6.COORDINATION

a.Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

b.Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

c.Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

7.WARRANTY

- a.General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- b.Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
- 1)Structural failures including excessive deflection, cracking, or breakage.
 - 2)Faulty operation of the hardware.
 - 3)Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 4)Electrical component defects and failures within the systems operation.
- c.Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.
- d.Special Warranty Periods:
- 1)Ten years for mortise locks and latches.
 - 2)Twenty five years for manual surface door closer bodies.
 - 3)Two years for electromechanical door hardware.

8.MAINTENANCE SERVICE

- a.Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

2PRODUCTS

1.HINGES

- a.Hinges shall be of one manufacturer as listed for continuity of design and consideration of warranty.
- b.Standards: Products to be certified and listed by the following:
- 1)Butts and Hinges: ANSI/BHMA A156.1
 - 2)Template Hinge Dimensions: ANSI/BHMA A156.7
- c.Butt Hinges:
- 1)Hinge weight and size unless otherwise indicated in hardware sets:

- a) Doors up to 36" wide and up to 1-3/4" thick provide hinges with a minimum thickness of .134" and a minimum of 4-1/2" in height.
- b) Doors from 36" wide up to 42" wide and up to 1-3/4" thick provide hinges with a minimum thickness of .145" and a minimum of 4-1/2" in height.
- c) For doors from 42" wide up to 48" wide and up to 1-3/4" thick provide hinges with a minimum thickness of .180" and a minimum of 5" in height.
- d) Doors greater than 1-3/4" thick provide hinges with a minimum thickness of .180" and a minimum of 5" in height.
- e) Width of hinge is to be minimum required to clear surrounding trim.

2) Base material unless otherwise indicated in hardware sets:

- a) Exterior Doors: 304 Stainless Steel, Brass or Bronze material.
- b) Interior Doors: Steel material.
- c) Stainless Steel ball bearing hinges shall have stainless steel ball bearings. Steel ball bearings are unacceptable.

3) Quantity of hinges per door unless otherwise stated in hardware sets:

- a) Doors up to 60" in height provide 2 hinges.
- b) Doors 60" up to 90" in height provide 3 hinges.
- c) Doors 91" up to 120" in height provide 4 hinges.
- d) Doors over 120" in height add 1 additional hinge per each additional 30" in height.
- e) Dutch doors provide 4 hinges.

4) Hinge design and options unless otherwise indicated in hardware sets:

- a) Hinges are to be of a square corner five-knuckle design, flat button tips and have ball bearings unless otherwise indicated in hardware sets.
- b) Out-swinging exterior and out-swinging access controlled doors shall have non-removable pins (NRP) to prevent removal of pin while door is in closed position.
- c) When full width of opening is required, use hinges that are designed to swing door completely from opening when door is opened to 95 degrees.
- d) Provide mortar boxes for frames that require any electrically modified hinges if not an integral part of frame.
- e) When shims are necessary to correct frame or door irregularities, provide metal shims only.

5) Acceptable Manufacturers:

	Standard Weight	Heavy Weight
a) Hager Companies	BB1279	BB1168/BB1199
b) Bommer	BB5000	BB5004/BB5006
c) McKinney	TA2714	T4A3786/T4A3386

2.CYLINDERS AND KEYING

- A. Cylinders shall be of one manufacturer as listed for continuity of design and consideration of warranty.
- B. Standards: Manufacturer shall meet the following:
 - 1. Auxiliary Locks: ANSI/BHMA A156.5
 - 2. DHI Handbook "Keying systems and nomenclature" (1989)
- C. Cylinders:
 - 1. Manufacturer's standard tumbler type, six pin or seven-pin IC core.
 - 2. Shall be furnished with cams/tailpieces as required for locking device that is being furnished for project.
- D. Keying:
 - 1. Copy of Owners approved keying schedule shall be submitted to Owner and Architect with documentation of which keying conference was held and Owners sign-off.
 - 2. Provide a biting list to Owner of combinations as established, and expand to twenty five percent for future use or as directed by Owner.
 - 3. Key into Owner's existing keying system - BEST
 - 4. Keys to be shipped to Owner's representative, individually tag per keying conference.
 - 5. Cylinders to be construction keyed at factory. Provide minimum of 50 construction keys.
 - 6. Provide quantity of master/grand master keys as required by Owner.
 - 7. Provide visual key control identification on keys.
 - 8. Provide interchangeable cores with construction cores and construction keys
 - 9. Owner will provide final keying; all cores will be provided uncombined.
- E. Acceptable manufactures:
 - 1. Best

3.MECHANICAL LOCKS AND LATCHING DEVICES

- a.Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 certified. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.

1)Acceptable Manufacturers:

- a)Corbin Russwin Hardware (RU) – ML2000 Series.
- b)Yale Locks and Hardware (YA) – 8800FL Series.

4.LOCK AND LATCH STRIKES

a.Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

- 1)Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
- 2)Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
- 3)Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
- 4)Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

b.Standards: Comply with the following:

- 1)Strikes for Mortise Locks and Latches: BHMA A156.13.
- 2)Strikes for Bored Locks and Latches: BHMA A156.2.
- 3)Strikes for Auxiliary Deadlocks: BHMA A156.36.
- 4)Dustproof Strikes: BHMA A156.16.

5.ELECTRIC STRIKES

a.Standard Electric Strikes: Heavy duty, cylindrical and mortise lock electric strikes conforming to ANSI/BHMA A156.31, Grade 1, UL listed for both Burglary Resistance and for use on fire rated door assemblies. Stainless steel construction with dual interlocking plunger design tested to exceed 3000 lbs. of static strength and 350 ft-lbs. of dynamic strength. Strikes tested for a minimum 1 million operating cycles. Provide strikes with 12 or 24 VDC capability and supplied standard as fail-secure unless otherwise specified. Option available for latchbolt and latchbolt strike monitoring indicating both the position of the latchbolt and locked condition of the strike.

1)Acceptable Manufacturers:

- a)HES (HS).

6.DOOR CLOSERS

a.All door closers specified herein shall meet or exceed the following criteria:

- 1)General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.

- 2)Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
- 3)Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.
- 4)Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.
- 5)Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
- 6)Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
- 7)Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

b.Door Closers, Surface Mounted (Cam Action): ANSI/BHMA 156.4, Grade 1 certified surface mounted, high efficiency door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be of the cam and roller design, one piece cast aluminum silicon alloy body with adjustable backcheck and independently controlled valves for closing sweep and latch speed.

1)Acceptable Manufacturers:

- a)Corbin Russwin (RU) - DC5000 Series.
- b)Norton Door Controls (NO) - 2800ST Series.

7.DOOR STOPS AND HOLDERS

a.General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

b.Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1)Acceptable Manufacturers:

- a)Rockwood Manufacturing (RO).
- b)Trimco (TC).

c.Overhead Door Stops and Holders: ANSI/BHMA A156.6, Grade 1 certified overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.

1)Acceptable Manufacturers:

- a)Rixson Door Controls (RF).
- b)Rockwood Manufacturing (RO).

8.ARCHITECTURAL SEALS

a.General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

b.Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

c.Acceptable Manufacturers:

- 1)Pemko Manufacturing (PE).

9.FABRICATION

a.Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

10.FINISHES

a.Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

b.Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware

c.Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

3.EXECUTION

1.EXAMINATION

- a.Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, wall and floor construction, and other conditions affecting performance.
- b.Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

2.PREPARATION

- a.Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- b.Wood Doors: Comply with ANSI/DHI A115-W series.

3.INSTALLATION

- a.Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
 - 1)Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- b.Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- c.Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

4.FIELD QUALITY CONTROL

- a.Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

5.ADJUSTING

- a.Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as

intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

6.CLEANING AND PROTECTION

- a.Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- b.Clean adjacent surfaces soiled by door hardware installation.
- c.Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

7.DEMONSTRATION

- a.Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

8.DOOR HARDWARE SETS

- a.Guide: Door hardware items have been placed in sets which are intended to be a guide of design, grade, quality, function, operation, performance, exposure, and like characteristics of door hardware, and may not be complete. Provide door hardware required to make each set complete and operational.
- b.Hardware schedule does not reflect handing, backset, method of fastening and like characteristics of door hardware and door operation.
- c.Review door hardware sets with door types, frames, sizes and details on drawings. Verify suitability and adaptability of items specified in relation to details and surrounding conditions.

Hardware Sets

Set: 1.0

1 Continuous Hinge	By FRP Door Manufacturer	CL	McKinney
1 Classroom Lock	AUCN 8808FL Temp Core SFIC	626	Yale
1 Small Format Inter Core	33600006 MK x X4 SFIC	26	Medeco
1 Door Stop	441CU	US26D	Rockwood
1 Threshold	568A		Zero International
1 Gasketing	290APK x 2891APK		Pemko
1 Sweep	18061CNB		Pemko

Set: 2.0

1 Continuous Hinge	By FRP Door Manufacturer	CL	McKinney
1 Classroom Lock	AUCN 8808FL Temp Core SFIC	626	Yale
1 Small Format Inter Core	33600006 MK x X4 SFIC	26	Medeco
1 Surface Overhead Holder	10-X36	630	Rixson
1 Threshold	568A		Zero International
1 Gasketing	290APK x 2891APK		Pemko
1 Sweep	18061CNB		Pemko

Set: 3.0

1 Continuous Hinge	By FRP Door Manufacturer	CL	McKinney
1 Storeroom Lock	AUCN 8805FL Temp Core SFIC	626	Yale
1 Small Format Inter Core	33600006 MK x X4 SFIC	26	Medeco
1 Surface Closer	2800ST / PS2800ST	689	Norton
3 Silencer	608-RKW		Rockwood

Set: 4.0

1 Continuous Hinge	By FRP Door Manufacturer	CL	McKinney
1 Storeroom Lock	AUCN 8805FL Temp Core SFIC	626	Yale
1 Small Format Inter Core	33600006 MK x X4 SFIC	26	Medeco
1 Electric Strike	1006 Series	630	HES
1 SMART Pac Bridge Rectifier	2005M3		HES
1 Surface Closer	2800ST / PS2800ST	689	Norton
1 Threshold	568A		Zero International
1 Gasketing	290APK x 2891APK		Pemko
1 Sweep	18061CNB		Pemko

Note: Operation: During operating hours electric strike to be unlatched allowing doors to be pulled open. During off-hours authorized entry by card reader, allows electric strike to release, allowing entry. During loss of power, electric strike to remain latched, fail secure. Always free egress. For Access Control Module see Drawing A3; Detail 1; Note 8.

Set: 5.0

1 Continuous Hinge	By FRP Door Manufacturer	CL	McKinney
1 Storeroom Lock	AUCN 8805FL Temp Core SFIC	626	Yale
1 Small Format Inter Core	33600006 MK x X4 SFIC	26	Medeco
1 Surface Closer	2800ST / PS2800ST	689	Norton
1 Threshold	568A		Zero International
1 Gasketing	290APK x 2891APK		Pemko
1 Sweep	18061CNB		Pemko

END OF SECTION 087100

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

1 GENERAL

1. SUMMARY

a. Section Includes:

- 1) Non-load-bearing steel framing systems for interior gypsum board assemblies.
- 2) Suspension systems for interior gypsum ceilings and soffits.

2. ACTION SUBMITTALS

- a. Product Data: For each type of product.

2 PRODUCTS

1. PERFORMANCE REQUIREMENTS

- a. Fire-Test-Response Characteristics: Provide materials and construction identical to those tested according to ASTM E 119.
- b. STC-Rated Assemblies: Provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413.

2. FRAMING SYSTEMS

- a. Steel Studs and Runners: ASTM C 645.

- 1) Minimum Base-Metal Thickness: As indicated on Drawings.
- 2) Depth: As indicated on Drawings.

- b. Firestop Tracks: Manufactured to allow partition heads to expand and contract with movement of the structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.

- 1) Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a) Fire Trak Corp.; Fire Trak System.
 - b) Grace Construction Products; FlameSafe FlowTrak System.
 - c) Metal-Lite, Inc.; The System.

- c.Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
- d.Cold-Rolled Channel Bridging: Steel, 0.053-inch minimum base-metal thickness, with minimum 1/2-inch- wide flanges.
- e.Hat-Shaped, Rigid Furring Channels: ASTM C 645.
- f.Resilient Furring Channels: 1/2-inch- deep, steel sheet members designed to reduce sound transmission.
- g.Cold-Rolled Furring Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inch- wide flanges.

3.SUSPENSION SYSTEMS

- a.Tie Wire: ASTM A 641, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch- diameter wire.
- b.Hanger Attachments to Concrete:
 - 1)Anchors: Capable of sustaining a load equal to 5 times that imposed as determined by ASTM E 488.
 - 2)Powder-Actuated Fasteners: Capable of sustaining, a load equal to 10 times that imposed as determined by ASTM E 1190.
- c.Wire Hangers: ASTM A 641, Class 1 zinc coating, soft temper, 0.16 inch in diameter.
- d.Furring Channels (Furring Members):
 - 1)Cold-Rolled Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inch- wide flanges, 3/4 inch deep.
 - 2)Steel Studs and Runners: ASTM C 645.
 - a)Minimum Base-Metal Thickness: 0.033 inch.
 - 3)Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch deep.
 - a)Minimum Base-Metal Thickness: 0.033 inch.
 - 4)Resilient Furring Channels: 1/2-inch- deep members designed to reduce sound transmission.
 - a)Configuration: Asymmetrical or hat shaped.
 - 5)Z-Shaped Furring: With slotted or non-slotted web, face flange of 1-1/4 inches, wall attachment flange of 7/8 inch, minimum uncoated-steel thickness of 0.0179 inch, and depth required to fit insulation thickness indicated.

4.AUXILIARY MATERIALS

- a.Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

3EXECUTION

1.INSTALLATION, GENERAL

- a.Installation Standard: ASTM C 754.

- 1)Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.

- b.Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- c.Install bracing at terminations in assemblies.

2.INSTALLING FRAMED ASSEMBLIES

- a.Install framing system components according to spacing indicated, but not greater than spacing required by referenced installation standards for assembly types.
- b.Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- c.Install studs so flanges within framing system point in same direction.
- d.Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.
- e.Direct Furring:
 - 1)Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.
- f.Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.INSTALLING SUSPENSION SYSTEMS

- a.Install suspension system components according to spacing indicated, but not greater than spacing required by referenced installation standards for assembly types.
- b.Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.
- c.Suspend hangers from building structure as follows:
 - 1)Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
 - a)Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 2)Where width of ducts and other construction within ceiling plenum produces hanger spacing that interfere with locations of hangers, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
 - 3)Do not attach hangers to steel roof deck.
 - 4)Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
 - 5)Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
 - 6)Do not connect or suspend steel framing from ducts, pipes, or conduit.
- d.Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.
- e.Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION 092216 - NON-STRUCTURAL METAL FRAMING

SECTION 092900 - GYPSUM BOARD

1GENERAL

1.SUMMARY

a.Section Includes:

- 1)Interior gypsum board.

2.ACTION SUBMITTALS

- a.Product Data: For each type of product.

2PRODUCTS

1.PERFORMANCE REQUIREMENTS

- a.Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

2.INTERIOR GYPSUM BOARD

- a.Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- 1)CertainTeed Corporation.
- 2)Georgia-Pacific Building Products.
- 3)United States Gypsum Company.

- b.Gypsum Wallboard: ASTM C 1396.

- 1)Thickness: Indicated
- 2)Long Edges: Tapered.

3.TRIM ACCESSORIES

- a.Interior Trim: ASTM C 1047.

- 1)Material: Galvanized or aluminum-coated steel sheet, rolled zinc or plastic.

b.Exterior Trim: ASTM C 1047.

1)Material: Hot-dip galvanized steel sheet, plastic, or rolled zinc.

c.Aluminum Trim: ASTM B 221, Alloy 6063-T5.

4.JOINT TREATMENT MATERIALS

a.General: Comply with ASTM C 475.

b.Joint Tape:

1)Interior Gypsum Board: Paper.

c.Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

5.AUXILIARY MATERIALS

a.Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

b.Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

c.Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing).

d.Thermal Insulation: As specified in Section 072100 "Thermal Insulation."

3EXECUTION

1.APPLYING AND FINISHING PANELS

a.Comply with ASTM C 840.

b.Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

c.Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch-wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

d.Install trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

- e. Prefill open joints and damaged surface areas.
- f. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- g. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
 - 1) Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2) Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
 - a) Primer and its application to surfaces are specified in Section 099123 "Interior Painting."
- h. Protect adjacent surfaces from drywall compound and texture finishes and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- i. Remove and replace panels that are wet, moisture damaged, and mold damaged.

END OF SECTION 092900 - GYPSUM BOARD

SECTION 093013 - CERAMIC TILING

1 GENERAL

1. SUMMARY

a. Section Includes:

- 1) Porcelain tile.
- 2) Stone thresholds.
- 3) Tile backing panels.

2. ACTION SUBMITTALS

a. Product Data: For each type of product.

b. Samples:

- 1) Each type and composition of tile and for each color and finish required.
- 2) Assembled samples mounted on a rigid panel, with grouted joints, for each type and composition of tile and for each color and finish required.
- 3) Stone thresholds.

3. INFORMATIONAL SUBMITTALS

a. Qualification Data: For Installer.

4. QUALITY ASSURANCE

a. Installer Qualifications:

- 1) Installer employs Ceramic Tile Education Foundation Certified Installers or installers recognized by the U.S. Department of Labor as Journeyman Tile Layers.

2 PRODUCTS

1. PRODUCTS, GENERAL

- a. ANSI Ceramic Tile Standard: Provide Standard-grade tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.

- b.ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCNA installation methods specified in tile installation schedules, and other requirements specified.

2.TILE PRODUCTS

- a.Porcelain Tile Type: Provide basis-of-design porcelain tiles as indicated on the drawings.

- 1)Module Size: as indicated on the drawings
- 2)Face: Pattern of design indicated, with manufacturer's standard edges.
- 3)Tile Color and Pattern: As selected by Architect from manufacturer's full range
- 4)Grout Color: As selected by Architect from manufacturer's full range.

3.THRESHOLDS

- a.General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.

- 1)Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to 1/16 inch above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to 1/2 inch or less above adjacent floor surface.

- b.Marble Thresholds: ASTM C 503, with a minimum abrasion resistance of 10 according to ASTM C 1353 or ASTM C 241 and with honed finish.

- 1)Description: Uniform, fine- to medium-grained white stone with gray veining.

4.TILE BACKING PANELS

- a.Cementitious Backer Units: ANSI A118.9 or ASTM C 1325, Type A.

- b.Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- 1)Georgia-Pacific Building Products.
- 2)MAPEI Corporation.
- 3)United States Gypsum Company.
- 4)Thickness: As indicated.

5.SETTING MATERIALS

- a.Latex-Portland Cement Mortar (Thinset): ANSI A118.4.

- b.Products: Subject to compliance with requirements, provide one of the following:

- 1)ARDEX GmbH.
- 2)Bostik, Inc.
- 3)Laticrete International, Inc.
- 4)MAPEI Corporation.

c.Provide non-sagging mortar.

6.GROUT MATERIALS

- a.Sand-Portland Cement Grout: ANSI A108.10, consisting of white or gray cement and white or colored aggregate as required to produce color indicated.
- b.Standard Cement Grout: ANSI A118.6.
- c.Products: Subject to compliance with requirements, provide one of the following:
 - 1)Bostik, Inc.
 - 2)Laticrete International, Inc.
 - 3)MAPEI Corporation.

7.MISCELLANEOUS MATERIALS

- a.Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- b.Grout Release: Manufacturer's standard product to prevent finely powdered pigments from lodging in the pores of the tile surface.
- c.Grout Sealer: Manufacturer's standard product for sealing grout joints and that does not change color or appearance of grout.
- d.Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1)Bonsal American, an Oldcastle company.
 - 2)Custom Building Products.
 - 3)Jamo Inc.
 - 4)Southern Grouts & Mortars, Inc.
 - 5)Summitville Tiles, Inc.

3.EXECUTION

1.EXAMINATION

a.Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

1)Verify that substrates for setting tile are firm; dry; clean; free of coatings that are incompatible with tile-setting materials, including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.

b.Proceed with installation only after unsatisfactory conditions have been corrected.

2.PREPARATION

a.Fill cracks, holes, and depressions in concrete substrates for tile floors installed with thinset mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.

b.Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.CERAMIC TILE INSTALLATION

a.Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.

1)For the following installations, follow procedures in the ANSI A108 series of tile installation standards for providing 95 percent mortar coverage:

a)Tile floors in wet areas.

b.Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.

c.Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned

joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

d. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.

e. Where accent tile differs in thickness from field tile, vary setting bed thickness so that tiles are flush.

f. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.

g. Joint Widths: Unless otherwise indicated, install tile following the manufacturer's recommended joint widths.

h. Stone Thresholds: Install stone thresholds in same type of setting bed as adjacent floor unless otherwise indicated.

i. Grout Release: Prior to application of grout apply grout release according to manufacturer's written instructions.

j. Grout Sealer: Apply grout sealer to grout joints according to grout-sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.

k. Install panels and treat joints according to ANSI A108.11 and manufacturer's written instructions for type of application indicated.

END OF SECTION 093013 - CERAMIC TILING

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

1 - GENERAL

1.SUMMARY

- a.Section includes acoustical panels and exposed suspension systems for ceilings.

2.PRE-INSTALLATION MEETINGS

- a.Pre-installation Conference: Conduct conference at Project site.

3.ACTION SUBMITTALS

- a.Product Data: For each type of product.
- b.Samples: For each exposed product and for each color and texture specified.

4.INFORMATIONAL SUBMITTALS

- a.Product test reports.
- b.Evaluation reports.
- c.Field quality-control reports.

5.CLOSEOUT SUBMITTALS

- a.Maintenance data.

2 - PRODUCTS

1.PERFORMANCE REQUIREMENTS

- a.Seismic Performance: Acoustical ceiling shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
- b.Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1)Flame-Spread Index: Comply with ASTM E 1264 for Class A materials.
 - 2)Smoke-Developed Index: 50 or less.

2.ACOUSTICAL PANEL CEILINGS, GENERAL

- a.Acoustical Panel Standard: Comply with ASTM E 1264.
- b.Metal Suspension System Standard: Comply with ASTM C 635.
- c.Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

3.ACOUSTICAL PANELS

- a.**Basis-of-Design Product:** Subject to compliance with requirements, provide products as indicated on the drawings, or comparable product by one of the following:

- 1)**Armstrong World Industries, Inc.**
- 2)**CertainTeed Corp.**
- 3)**USG**

- b.Classification: Type III, Form 1, Pattern EI.
- c.Color: As selected from manufacturer's full range.
- d.LR: .85.
- e.NRC: .70, Type E-400 mounting according to ASTM E 795.
- f.CAC: 35.
- g.Edge/Joint Detail: Square.
- h.Thickness: 3/4 inch.
- i.Modular Size: 24 by 48 inches.

4.METAL SUSPENSION SYSTEM

- a.**Basis-of-Design Product:** Subject to compliance with requirements, provide products as indicated on the drawings or comparable products by one of the following:

- 1)**Armstrong World Industries, Inc.**
- 2)**CertainTeed Corp.**
- 3)**USG.**

- b.Narrow-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; pre-painted, electrolytically zinc coated, or hot-dip galvanized according to ASTM A 653/A 653M, not less than G30 coating designation; with prefinished 9/16-inch- wide metal caps on flanges.

- 1)Structural Classification: Heavy-duty system.
- 2)End Condition of Cross Runners: Override (stepped) or butt-edge type.
- 3)Face Design: Flat, flush.
- 4)Cap Material: Steel cold-rolled sheet.
- 5)Cap Finish: Painted in color as selected from manufacturer's full range.

c.Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.

3EXECUTION

1.INSTALLATION

- a.Install acoustical panel ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- b.Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.
 - 1)Arrange directionally patterned acoustical panels as indicated on reflected ceiling plans.

END OF SECTION 095113 – ACOUSTICAL PANEL CEILINGS

SECTION 099123 - INTERIOR PAINTING

1 GENERAL

1. SUMMARY

a. Section includes surface preparation and the application of paint systems on interior substrates including, but not limited to the following:

- 1) Concrete masonry units (CMUs).
- 2) Wood.
- 3) Gypsum board.

2. DEFINITIONS

- a. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- b. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- c. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- d. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- e. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- f. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- g. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

3. ACTION SUBMITTALS

- a. Product Data: For each type of product. Include preparation requirements and application instructions.
 - 1) Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
- b. Samples: For each type of paint system and in each color and gloss of topcoat.

4.QUALITY ASSURANCE

a.Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1)Architect will select one surface to represent surfaces and conditions for application of each paint system.

a)Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft.

b)Other Items: Architect will designate items or areas required.

2)Final approval of color selections will be based on mockups.

a)If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

2PRODUCTS

1.MANUFACTURERS

a.Products: Subject to compliance with requirements, available products that may be incorporated into the Work include products from any manufacturer listed in the MPI Approved Products Lists for the MPI Interior Painting systems listed in the Interior Painting Schedule for the paint category indicated.

2.PAINT, GENERAL

a.MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

b.Material Compatibility:

1)Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

2)For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

c.Colors: As selected by Architect from manufacturer's full range.

3EXECUTION

1.EXAMINATION

- a.Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- b.Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1)Concrete: 12 percent.
 - 2)Fiber-Cement Board: 12 percent.
 - 3)Masonry (Clay and CMUs): 12 percent.
 - 4)Wood: 15 percent.
 - 5)Gypsum Board: 12 percent.
 - 6)Plaster: 12 percent.
- c.Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- d.Proceed with coating application only after unsatisfactory conditions have been corrected.
 - 1)Application of coating indicates acceptance of surfaces and conditions.

2.PREPARATION

- a.Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- b.Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1)After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

3.APPLICATION

- a.Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
- b.Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

4.INTERIOR PAINTING SCHEDULE

a.CMU Substrates:

1)Latex System MPI INT 4.2A:

- a)Block Filler: Block filler, latex, interior/exterior, MPI #4.
- b)Intermediate Coat: Latex, interior, matching topcoat.
- c)Topcoat: Latex, interior (MPI Gloss Level 3), MPI #52.

b.Wood Substrates: Wood trim and Architectural woodwork.

1)Latex over Latex Primer System MPI INT 6.3T:

- a)Prime Coat: Primer, latex, for interior wood, MPI #39.
- b)Intermediate Coat: Latex, interior, matching topcoat.
- c)Topcoat: Latex, interior, flat (MPI Gloss Level 1), MPI #53.
- d)Topcoat: Latex, interior, semi-gloss (MPI Gloss Level 5), MPI #54.

c. Gypsum Board Substrates:

1)Latex over Latex Sealer System MPI INT 9.2A:

- a)Prime Coat: Primer sealer, latex, interior, MPI #50.
- b)Intermediate Coat: Latex, interior, matching topcoat.
- c)Topcoat: Latex, interior (MPI Gloss Level 2), MPI #44.

END OF SECTION 099123

SECTION 102800 - TOILET AND BATH ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Toilet room and bath accessories as scheduled on drawings.

B. Related Sections:

1. Ceramic tile: Division 9.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's technical information for each accessory.

B. Shop Drawings: Submit rough-in drawings. Include the following details and all other information necessary to demonstrate compliance with contract documents:

1. Dimensions.
2. Rough-in requirements.
3. Required clearances.
4. Methods of assembling components.
5. Anchorages.

C. Manufacturer's Instructions: Submit for each product specified in this section.

1. Include installation instructions and instructions for examination, preparation, and protection of adjacent work.

1.4 PRODUCT HANDLING

A. Execute product manufacturer's special instructions to prevent damage to products. Store products in manufacturer's original shipping containers.

1.5 COORDINATION

A. Use manufacturer's instructions and data to determine anchorage requirements for products specified. In a timely manner, distribute the following to affected installers of related work:

1. Components and anchorage devices provided by toilet accessory manufacturer for incorporation into other work.
2. Coordination data including setting drawings, templates, instructions, etc., for cutouts and

installations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide products as manufactured by one of the following, or approved equal:
 - 1. Bobrick Washroom Equipment, Inc.
 - 2. American Specialties, Inc.
 - 3. Bradley Corporation.

2.2 MATERIALS

- A. Stainless Steel: AISI Type 302/304, No. 4 satin finish.
- B. Mounting Devices and Fasteners: Manufacturer's recommended items for substrates and conditions indicated; hot-dip galvanized after fabrication, complying with ASTM A 386.

2.3 TOILET ACCESSORIES

- A. Refer to drawings for specific requirements.

2.4 FABRICATION

- A. Surface Mounted Accessories: Where possible, design accessory to provide concealed anchorage when installed. Precisely-fit seams and joints. Roll exposed edges unless indicated otherwise. Use full-length stainless steel piano-type hinges for access doors and panels.
- B. Recess Mounted Accessories: Design accessories to provide concealed anchorage when closed. Weld all joints. Precisely miter corners where indicated. Use full-length stainless steel piano-type hinges for access doors and panels.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Accessory Locations: Coordinate accessory locations with other work to avoid interference and to ensure proper operation and servicing of accessories. Notify the Architect in writing of any conflicts concerning product placement, for resolution. Do not proceed without resolution.
- B. Correct unsatisfactory substrate conditions before start of accessory installation.

3.2 PREPARATION

- A. Clean surfaces to receive accessories. Protect surrounding elements from damage during accessory installation.

3.3 INSTALLATION

- A. Perform installation in accordance with manufacturer's instructions, except where more stringent requirements are shown or specified, and except where project conditions require extra precautions or provisions to ensure satisfactory performance of the work.
- B. Provide plumb, level accessory installations.
- C. Securely attach accessories to substrate.
- D. Accessories Installed for Use by Handicapped Persons: Install accessories in accordance with applicable regulations.

3.4 ADJUSTING, CLEANING, PROTECTION

- A. Adjust accessories as required to provide smooth operation and trouble free servicing.
- B. Clean and polish exposed surfaces of accessories using accessory manufacturer's recommended procedures and cleaning agents.
- C. Provide coverings as required to protect installed accessories.

END OF SECTION 102800 TOILET ACCESSORIES

SECTION 122413 – ROLLER WINDOW SHADES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Roller shades, manual operation and accessories.
- B. Shade fabric.

1.2 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
- B. Cradle to Cradle Products Innovation Institute (C2C):
 - 1. C2C (DIR) - C2C Certified Products Registry.
- C. National Fire Protection Association (NFPA):
 - 1. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
 - 2. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.
- D. Underwriters Laboratories (UL):
 - 1. UL (GGG) - GREENGUARD Gold Certified Products; Current Edition.
- E. Window Covering Manufacturers Association (WCMA):
 - 1. WCMA A100.1 - Safety of Window Covering Products; 2018.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work with other trades to provide rough-in of electrical wiring as required for installation of hardwired motorized shades.
- B. Pre-installation Meeting: One week prior to commencing work related to this section. Require attendance of all affected installers.
- C. Sequencing:

1. Do not fabricate shades until field dimensions for each opening have been taken with finished conditions in place. "Hold to" dimensions are not acceptable.
2. Do not install shades until final surface finishes and painting are complete.

1.4 SUBMITTALS

- A. See Section 013300 - Submittal Procedures.
- B. Product Data: Manufacturer's catalog pages and data sheets for products specified including materials, finishes, dimensions, profiles, mountings, and accessories.
 1. Preparation instructions and recommendations.
 2. Styles, material descriptions, dimensions of individual components, profiles, features, finishes, accessories, and operating instructions.
 3. Storage and handling requirements and recommendations.
 4. Mounting details and installation methods.
 5. Manufacturer's Instructions: Include storage, handling, protection, examination, preparation, and installation.
 6. Project Record Documents: Record actual locations of control system components and show interconnecting wiring.
 7. Operation and Maintenance Data: Component list with part numbers, and operation and maintenance instructions.
- A. Window Treatment Schedule: For all roller shades. Use same room designations as indicated on the Drawings and include opening sizes and key to typical mounting details.
- B. Maintenance Data: Bill of materials for all components with part numbers. Methods for maintaining roller shades, precautions regarding cleaning materials and methods, instructions for operating hardware and controls.
- C. Warranty: Manufacturer's warranty documents as specified in this Section.

1.5 QUALITY ASSURANCE

- A. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.
- B. Manufacturer Qualifications: Obtain roller shades system through one source from a single manufacturer with a minimum of ten years' experience and minimum of five projects of similar scope and size in manufacturing products comparable to those specified in this section.
- C. Installer for Roller Shade System - Qualifications: Installer trained and certified by the manufacturer with a minimum of ten years' experience in installing products comparable to those specified in this section.

- D. Product Listing Organization Qualifications: Organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.
- E. Fire-Test-Response Characteristics: Passes NFPA 701 small and large-scale vertical burn. Materials tested shall be identical to products proposed for use.
- F. Shade Cloth Anti-Microbial Characteristics: 'No Growth' per ASTM G 21 results for fungi ATCC9642, ATCC9644, ATCC9645.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver in factory-labeled packages, marked with manufacturer and product name, fire-test-response characteristics, and location of installation using same room designations indicated on Drawings and in Window Treatment Schedule.
- B. Store and handle products per manufacturer's recommendations.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Install roller shades after finish work including painting is complete and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1.8 WARRANTY

- A. Roller Shade Hardware and Chain Warranty: Manufacturer's standard non-depreciating warranty for interior shading.
 - 1. Shade Hardware: 10 years unless otherwise indicated.
 - a. Mecho/5, EuroTwill and Chelsea Blackout shade fabric: 25 years.
 - 2. Roller Shade Installation: One year from date of Substantial Completion, not including scaffolding, lifts or other means to reach inaccessible areas, which are deemed owners responsibility.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Manufacturer: MechoShade systems, LLC; Web: www.mechoshade.com.
- B. Provide products as specified or Architect approved comparable products from any other manufacturer.
- C. Requests for substitutions will be considered in accordance with provisions of Section 012500.

2.2 ROLLER SHADES, MANUAL OPERATION AND ACCESSORIES

- A. Shade System; General:

1. Components capable of being removed or adjusted without removing mounted shade brackets, or cassette support channel.
2. Smooth operation while raising or lowering shades.

B. Basis-of-Design: Mecho/5; manual solar shade for commercial applications.

1. Description: Manually operated fabric window shades.
 - a. Shade Type I: Single Roller.
 - b. Shade Type II: Double Roller.
 - c. Universal drive capability to offset drive chain for reverse or regular roll shades.
 - d. Drop Position: Regular roll or reverse roll as required best suited to the installation.
 - e. Mounting: Wall Mounted.
 - f. Mounting: Window Head and or Jamb Mounting.
 - g. Size: Field verify.
 - h. Fabric: As indicated on the drawings.
2. Brackets and Mounting Hardware: As recommended by manufacturer for mounting indicated and to accommodate shade fabric roll-up size and weight.
 - a. Material: Steel, 1/8 inch thick.
 - b. Double Roller Brackets: Configured for light-filtering and room-darkening shades in one opening.
 - 1) Light-Filtering Fabric: Room-side of opening.
 - 2) Room-Darkening Fabric: Glass-side of opening.
 - c. Single shade operation width: Up to 180 inches dependent on fabric.
 - d. Multiple Shade Band Operation: Provide hardware as necessary to operate more five shade bands, up to 360 inches wide; depending on fabric weight, using a single clutch operator.
3. Roller Tubes:
 - a. Material: Extruded aluminum.
 - b. Size: As recommended by manufacturer; selected for suitability for installation conditions, span, and weight of shades.
 - c. Fabric Attachment: Utilize extruded channel in tube to accept vinyl spline welded to fabric edge. Shade band to be removable and replaceable without removing roller tube from brackets or inserting spline from the side of the roller tube.
 - d. Roller tubes to be capable of being removed and reinstalled without affecting roller shade limit adjustments.
4. Hembars: Designed to maintain bottom of shade straight and flat.
 - a. Style: Full wrap fabric covered bottom bar, flat profile with heat sealed closed ends.
 - b. Room-Darkening Shades: Provide a slot in bottom bar with wool-pile light seal.
5. Clutch Operator: Manufacturer's standard material and design integrated with bracket/brake assembly.
 - a. Permanently lubricated brake assembly mounted on an oil-impregnated hub with wrapped spring clutch.
 - b. Brake must withstand minimum pull force of 50 pounds (22.7 kg) in the stopped position.

- c. Mount clutch/brake assembly on the support brackets, fully independent of the roller tube components.
- 6. Drive Chain: Continuous loop stainless steel beaded ball chain, 95 pound (43 kg) minimum breaking strength. Provide upper and lower limit stops.
- 7. Accessories:
 - a. Fascia: Removable extruded aluminum fascia, size as required to conceal shade mounting, attachable to brackets without exposed fasteners.
 - 1) Finish: Fabric wrapped to match shade.
 - 2) Can be installed across two or more shade bands in one piece.
 - 1) Single Fascia: Accommodate regular roll shades.
 - 2) Single Fascia: Accommodate reverse roll shades.
 - 3) Profile: Square.
 - 4) Configuration: Captured and continuous, as required best suited to the installation.
 - b. Room-Darkening Channels: Extruded aluminum side and center channels with brush pile edge seals, SnapLoc mounting base, and concealed fasteners. Channels to accept one-piece exposed blackout hembar to assure side light control and sill light control.

2.3 SHADE FABRIC

- A. Basis-of-Design: Shade fabric as manufactured by MechoShade Systems LLC.
 - 1. Solar Shadecloths: Provide fabric as indicated on the drawings
 - 2. Blackout Shadecloths: Provide fabric as indicated on the drawings.

2.4 ROLLER SHADE FABRICATION

- A. Field measure finished openings prior to ordering or fabrication.
- B. Dimensional Tolerances: Fabricate shades to fit openings within specified tolerances.
 - 1. Vertical Dimensions: Fill openings from head to sill with 1/2 inch space between bottom bar and window stool or finished floor where applicable.
 - 2. Horizontal Dimensions: Inside Mounting.
 - a. Fill openings from jamb to jamb.
 - 3. Horizontal Dimensions: Outside mounting.
 - a. Cover window frames, trim, and casings completely.
- C. Openings Requiring Continuous Multiple Shade Units with Separate Rollers: Locate roller joints at window mullion centers; butt rollers end-to-end.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.

- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Start of installation shall be considered acceptance of substrates.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using methods recommended by manufacturer for achieving best result for substrate under the project conditions.
- C. Coordinate with window installation and placement of concealed blocking to support shades.

3.3 INSTALLATION

- A. Install shades level, plumb, square, and true per manufacturer's instructions and approved shop drawings. Locate so shade band is at least 2 inches from interior face of glass. Allow proper clearances for window operation hardware. Use mounting devices as indicated.
- B. Replace shades exceeding specified tolerances at no extra cost to Owner.
- C. Adjust and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range. Adjust level, projection, and shade centering from mounting bracket. Verify there is no telescoping of shade fabric.
- D. Clean roller shade surfaces after installation, per manufacturer's written instructions.
- E. Demonstrate operation and maintenance of window shade system to Owner's personnel.
- F. Manufacturer's authorized personnel are to train Owner's personnel on operation and maintenance of system.
 - 1. Use operation and maintenance manual as a reference, supplemented with additional training materials as required.

3.4 PROTECTION AND CLEANING

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.
 - 1. Clean soiled shades and exposed components as recommended by manufacturer.
 - 2. Replace shades that cannot be cleaned to "like new" condition.

END OF SECTION 122413

SECTION 123661.16 - SOLID SURFACING COUNTERTOPS

1 GENERAL

1. SUMMARY

a. Section Includes:

- 1) Solid surface material countertops.
- 2) Solid surface material backsplashes.
- 3) Solid surface material end splashes.
- 4) Solid surface material apron fronts.

2. ACTION SUBMITTALS

- a. Product Data: For countertop materials.
- b. Shop Drawings: For countertops. Show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures.
- c. Samples: For each type of material exposed to view.

2 PRODUCTS

1. SOLID SURFACE COUNTERTOP MATERIALS

- a. Solid Surface Material: Homogeneous-filled plastic resin complying with ICPA SS-1.
- 1) Type: Provide Standard type unless Special Purpose type is indicated.
 - 2) Colors and Patterns: As selected by Architect from manufacturer's full range.
- b. Plywood: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.

2. COUNTERTOP FABRICATION

- a. Fabricate countertops according to solid surface material manufacturer's written instructions and to the AWI/AWMAC/WI's "Architectural Woodwork Standards."
- 1) Grade: Custom.

b.Configuration: Provide configurations as indicated on the drawings and as noted below.

- 1)Front: Straight, slightly eased at top with separate apron, height as indicated, recessed 1/4-inch behind front edge.
- 2)Backsplash: Straight, slightly eased at corner.
- 3)Side Splash: Matching backsplash.

c.Countertops: 1/2-inch-thick, solid surface with front edge built up with same material.

d.Backsplashes: 1/2-inch-thick, solid surface material.

e.Joints: Fabricate countertops without joints.

f.Cutouts and Holes:

- 1)Undercounter Plumbing Fixtures: Make cutouts for fixtures using template or pattern furnished by fixture manufacturer. Form cutouts to smooth, even curves.

3.INSTALLATION MATERIALS

a.Adhesive: Product recommended by solid surface material manufacturer.

b.Sealant for Countertops: Comply with applicable requirements in Section 079200 "Joint Sealants."

3EXECUTION

1.INSTALLATION

- a.Fasten countertops by screwing through corner blocks of base units into underside of countertop. Predrill holes for screws as recommended by manufacturer.
- b.Fasten subtops to cabinets by screwing through subtops into cornerblocks of base cabinets. Shim as needed to align subtops in a level plane.
- c.Secure countertops to subtops with adhesive according to solid surface material manufacturer's written instructions.
- d.Bond joints with adhesive and draw tight as countertops are set. Mask areas of countertops adjacent to joints to prevent adhesive smears.
- e.Install backsplashes and end splashes by adhering to wall and countertops with adhesive.
- f.Install aprons to backing and countertops with adhesive.

g. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.

h. Apply sealant to gaps at walls; comply with Section 079200 "Joint Sealants."

END OF SECTION 123661.16 – SOLID SURFACING COUNTERTOPS

SECTION 211313 - WET-PIPE SPRINKLER SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Pipes, fittings, and specialties.
 - 2. Sprinklers.
- B. Related Requirements:

1.3 DEFINITIONS

- A. Standard-Pressure Sprinkler Piping: Wet-pipe sprinkler system piping designed to operate at working pressure of 175-psig maximum.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Shop Drawings: For wet-pipe sprinkler systems.
 - 1. Include plans, elevations, sections, and attachment details.
 - 2. Include diagrams for power, signal, and control wiring.
- C. Delegated-Design Submittal: For wet-pipe sprinkler systems indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Sprinkler systems, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
 - 1. Domestic water piping.
 - 2. HVAC ductwork.
 - 3. HVAC hydronic piping.
 - 4. Sewer and vent piping.
 - 5. Items penetrating finished ceiling include the following:
 - a. Lighting fixtures.
 - b. Air outlets and inlets.
 - c. Fire alarm devices.
- B. Qualification Data: For qualified Installer and professional engineer.
- C. Approved Sprinkler Piping Drawings: Working plans, prepared according to NFPA 13, that have been approved by authorities having jurisdiction, including hydraulic calculations if applicable.
- D. Welding certificates.
- E. Fire-hydrant flow test report.
- F. Field Test Reports and Certificates: Indicate and interpret test results for compliance with performance requirements and as described in NFPA 13. Include "Contractor's Material and Test Certificate for Aboveground Piping."
- G. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For wet-pipe sprinkler systems and specialties to include in emergency, operation, and maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Sprinkler Cabinets: Finished, wall-mounted, steel cabinet with hinged cover, and with space for minimum of six spare sprinklers plus sprinkler wrench. Include number of sprinklers required by NFPA 13 and sprinkler wrench. Include separate cabinet with sprinklers and wrench for each type of sprinkler used on Project.

1.8 QUALITY ASSURANCE

A. Installer Qualifications:

1. Installer's responsibilities include designing, fabricating, and installing sprinkler systems and providing professional engineering services needed to assume engineering responsibility. Base calculations on results of fire-hydrant flow test.
 - a. Engineering Responsibility: Preparation of working plans, calculations, and field test reports by a qualified professional engineer.

B. Welding Qualifications: Qualify procedures and operators according to 2010 ASME Boiler and Pressure Vessel Code.

1.9 FIELD CONDITIONS

A. Interruption of Existing Sprinkler Service: Do not interrupt sprinkler service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary sprinkler service according to requirements indicated:

1. Notify Construction Manager and Owner no fewer than three days in advance of proposed interruption of sprinkler service.
2. Do not proceed with interruption of sprinkler service without Construction Manager's and Owner's written permission.
3. During periods of shut down of the fire water service to the building, provide a fire watch in accordance with the requirements of local authorities having jurisdiction and the Owner.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Sprinkler system equipment, specialties, accessories, installation, and testing shall comply with the following:

1. NFPA 13.

B. Standard-Pressure Piping System Component: Listed for 175-psig minimum working pressure.

C. Delegated Design: Engage a qualified professional engineer to design wet-pipe sprinkler systems.

1. Sprinkler system design shall be approved by authorities having jurisdiction.

- a. Margin of Safety for Available Water Flow and Pressure: 10 percent, including losses through water-service piping, valves, and backflow preventers.
- b. Sprinkler Occupancy Hazard Classifications:
 - 1) Office and Public Areas: Light Hazard.
2. Minimum Density for Automatic-Sprinkler Piping Design:
 - a. Light-Hazard Occupancy: 0.10 gpm over 1500-sq. ft. area.
3. Maximum Protection Area per Sprinkler: According to UL listing.
4. Maximum Protection Area per Sprinkler:
 - a. Office and Public Spaces: 225 sq. ft.

2.2 STEEL PIPE AND FITTINGS

- A. Standard-Weight, Galvanized and Black-Steel Pipe: ASTM A 53/A 53M, Type E, Grade B. Pipe ends may be factory or field formed to match joining method.
- B. Schedule 30, Galvanized and Black Steel Pipe: ASTM A 135/A 135M; ASTM A 795/A 795M, Type E; or ASME B36.10M wrought steel, with wall thickness not less than Schedule 30 and not more than Schedule 40. Pipe ends may be factory or field formed to match joining method.
- C. Galvanized and Black Steel Pipe Nipples: ASTM A 733, made of ASTM A 53/A 53M, standard-weight, seamless steel pipe with threaded ends.
- D. Galvanized and Uncoated Steel Couplings: ASTM A 865/A 865M, threaded.
- E. Galvanized and Uncoated, Gray-Iron Threaded Fittings: ASME B16.4, Class 125, standard pattern.
- F. Malleable- or Ductile-Iron Unions: UL 860.
- G. Cast-Iron Flanges: ASME 16.1, Class 125.
- H. Steel Flanges and Flanged Fittings: ASME B16.5, Class 150.
 1. Pipe-Flange Gasket Materials: AWWA C110, rubber, flat face, 1/8 inch thick, ASME B16.21, nonmetallic and asbestos free or EPDM rubber gasket.
 - a. Class 125 and Class 250, Cast-Iron, Flat-Face Flanges: Full-face gaskets.
 - b. Class 150 and Class 300, Ductile-Iron or -Steel, Raised-Face Flanges: Ring-type gaskets.
 2. Metal, Pipe-Flange Bolts and Nuts: Carbon steel unless otherwise indicated.

- I. Steel Welding Fittings: ASTM A 234/A 234M and ASME B16.9.
 - 1. Welding Filler Metals: Comply with AWS D10.12M/D10.12 for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.
- J. Grooved-Joint, Steel-Pipe Appurtenances:
 - 1. Pressure Rating: 175-psig minimum.
 - 2. Galvanized or Painted Grooved-End Fittings for Steel Piping: ASTM A 47/A 47M, malleable-iron casting or ASTM A 536, ductile-iron casting, with dimensions matching steel pipe.
 - 3. Grooved-End-Pipe Couplings for Steel Piping: AWWA C606 and UL 213 rigid pattern, unless otherwise indicated, for steel-pipe dimensions. Include ferrous housing sections, EPDM-rubber gasket, and bolts and nuts.

2.3 SPRINKLER PIPING SPECIALTIES

- A. Branch Outlet Fittings:
 - 1. Standard: UL 213.
 - 2. Pressure Rating: 175-psig minimum.
 - 3. Body Material: Ductile-iron housing with EPDM seals and bolts and nuts.
 - 4. Type: Mechanical-tee and -cross fittings.
 - 5. Configurations: Snap-on and strapless, ductile-iron housing with branch outlets.
 - 6. Size: Of dimension to fit onto sprinkler main and with outlet connections as required to match connected branch piping.
 - 7. Branch Outlets: Grooved, plain-end pipe, or threaded.
- B. Adjustable Drop Nipples:
 - 1. Standard: UL 1474.
 - 2. Pressure Rating: 250-psig minimum.
 - 3. Body Material: Steel pipe with EPDM-rubber O-ring seals.
 - 4. Size: Same as connected piping.
 - 5. Length: Adjustable.
 - 6. Inlet and Outlet: Threaded.
- C. Flexible Sprinkler Hose Fittings:
 - 1. Standard: UL 1474.
 - 2. Type: Flexible hose for connection to sprinkler, and with bracket for connection to ceiling grid.
 - 3. Pressure Rating: 175-psig minimum.
 - 4. Size: Same as connected piping, for sprinkler.

2.4 SPRINKLERS

- A. Listed in UL's "Fire Protection Equipment Directory" or FM Global's "Approval Guide."
- B. Pressure Rating for Residential Sprinklers: 175-psig maximum.
- C. Pressure Rating for Automatic Sprinklers: 175-psig minimum.
- D. Automatic Sprinklers with Heat-Responsive Element:
 - 1. Nonresidential Applications: UL 199.
 - 2. Characteristics: Nominal 1/2-inch orifice with Discharge Coefficient K of 5.6, and for "Ordinary" temperature classification rating unless otherwise indicated or required by application.
- E. Sprinkler Finishes: Chrome plated.
- F. Sprinkler Escutcheons: Materials, types, and finishes for the following sprinkler mounting applications. Escutcheons for concealed are specified with sprinklers.
 - 1. Ceiling Mounting: Chrome-plated steel, one piece, flat.
- G. Sprinkler Guards:
 - 1. Standard: UL 199.
 - 2. Type: Wire cage with fastening device for attaching to sprinkler.

PART 3 - EXECUTION

3.1 PIPING INSTALLATION

- A. Locations and Arrangements: Drawing plans, schematics, and diagrams indicate general location and arrangement of piping. Install piping as indicated on approved working plans.
 - 1. Deviations from approved working plans for piping require written approval from authorities having jurisdiction. File written approval with Architect before deviating from approved working plans.
 - 2. Coordinate layout and installation of sprinklers with other construction that penetrates ceilings, including light fixtures, HVAC equipment, and partition assemblies.
- B. Piping Standard: Comply with NFPA 13 requirements for installation of sprinkler piping.
- C. Install seismic restraints on piping. Comply with NFPA 13 requirements for seismic-restraint device materials and installation.

- D. Use listed fittings to make changes in direction, branch takeoffs from mains, and reductions in pipe sizes.
- E. Install unions adjacent to each valve in pipes NPS 2 and smaller.
- F. Install sprinkler piping with drains for complete system drainage.
- G. Install hangers and supports for sprinkler system piping according to NFPA 13. Comply with requirements for hanger materials in NFPA 13.
- H. Fill sprinkler system piping with water.

3.2 JOINT CONSTRUCTION

- A. Install couplings, flanges, flanged fittings, unions, nipples, and transition and special fittings that have finish and pressure ratings same as or higher than system's pressure rating for aboveground applications unless otherwise indicated.
- B. Install unions adjacent to each valve in pipes NPS 2 and smaller.
- C. Install flanges, flange adapters, or couplings for grooved-end piping on valves, apparatus, and equipment having NPS 2-1/2 and larger end connections.
- D. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- E. Remove scale, slag, dirt, and debris from inside and outside of pipes, tubes, and fittings before assembly.
- F. Flanged Joints: Select appropriate gasket material in size, type, and thickness suitable for water service. Join flanges with gasket and bolts according to ASME B31.9.
- G. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
 - 1. Apply appropriate tape or thread compound to external pipe threads.
 - 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged.
- H. Welded Joints: Construct joints according to AWS D10.12M/D10.12, using qualified processes and welding operators according to "Quality Assurance" Article.
 - 1. Shop weld pipe joints where welded piping is indicated. Do not use welded joints for galvanized-steel pipe.

- I. Steel-Piping, Roll-Grooved Joints: Roll rounded-edge groove in end of pipe according to AWWA C606. Assemble coupling with housing, gasket, lubricant, and bolts. Join steel pipe and grooved-end fittings according to AWWA C606 for steel-pipe grooved joints.
- J. Dissimilar-Material Piping Joints: Make joints using adapters compatible with materials of both piping systems.

3.3 SPRINKLER INSTALLATION

- A. Install sprinklers in suspended ceilings in center of acoustical ceiling panels.
- B. Install sprinklers into flexible, sprinkler hose fittings, and install hose into bracket on ceiling grid.

3.4 IDENTIFICATION

- A. Install labeling and pipe markers on equipment and piping according to requirements in NFPA 13.
- B. Identify system components, wiring, cabling, and terminals.

3.5 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections with the assistance of a factory-authorized service representative:
 - 1. Leak Test: After installation, charge systems and test for leaks. Repair leaks and retest until no leaks exist.
 - 2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
 - 3. Flush, test, and inspect sprinkler systems according to NFPA 13, "Systems Acceptance" Chapter.
 - 4. Energize circuits to electrical equipment and devices.
 - 5. Coordinate with fire-alarm tests. Operate as required.
 - 6. Coordinate with fire-pump tests. Operate as required.
- B. Sprinkler piping system will be considered defective if it does not pass tests and inspections.
- C. Prepare test and inspection reports.

3.6 CLEANING

- A. Clean dirt and debris from sprinklers.

- B. Only sprinklers with their original factory finish are acceptable. Remove and replace any sprinklers that are painted or have any other finish than their original factory finish.

3.7 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain specialty valves and pressure-maintenance pumps.

3.8 PIPING SCHEDULE

- A. Sprinkler specialty fittings may be used, downstream of control valves, instead of specified fittings.
- B. Standard-pressure, wet-pipe sprinkler system, NPS 4 and smaller, shall be one of the following:
 - 1. Standard-weight, black-steel pipe with threaded ends; uncoated, gray-iron threaded fittings; and threaded joints.
 - 2. Standard-weight, black-steel pipe with roll-grooved ends; uncoated, grooved-end fittings for steel piping; grooved-end-pipe couplings for steel piping; and grooved joints.
 - 3. Standard-weight, black-steel pipe with plain ends; steel welding fittings; and welded joints.
- C. Standard-pressure, wet-pipe sprinkler system, NPS 5 and larger, shall be one of the following:
 - 1. Standard-weight or Schedule 30, black-steel pipe with threaded ends; uncoated, gray-iron threaded fittings; and threaded joints.
 - 2. Standard-weight or Schedule 30, galvanized-steel pipe with threaded ends; galvanized, gray-iron threaded fittings; and threaded joints.
 - 3. Standard-weight or Schedule 30, black-steel pipe with roll-grooved ends; uncoated, grooved-end fittings for steel piping; grooved-end-pipe couplings for steel piping; and grooved joints.
 - 4. Standard-weight or Schedule 30, black-steel pipe with plain ends; steel welding fittings; and welded joints.

3.9 SPRINKLER SCHEDULE

- A. Use sprinkler types in subparagraphs below for the following applications:
 - 1. Rooms with Suspended Ceilings: Concealed sprinklers.
- B. Provide sprinkler types in subparagraphs below with finishes indicated.
 - 1. Concealed Sprinklers: Rough brass, with factory-painted white cover plate.

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END OF SECTION 211313

SECTION 220517 - SLEEVES AND SLEEVE SEALS FOR PLUMBING PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Sleeves.
 - 2. Grout.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

PART 2 - PRODUCTS

2.1 SLEEVES

- A. Cast-Iron Wall Pipes: Cast or fabricated of cast or ductile iron and equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop unless otherwise indicated.
- B. Galvanized-Steel Wall Pipes: ASTM A 53/A 53M, Schedule 40, with plain ends and welded steel collar; zinc coated.
- C. Galvanized-Steel-Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, zinc coated, with plain ends.
- D. Galvanized-Steel-Sheet Sleeves: 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint.

2.2 GROUT

- A. Standard: ASTM C 1107/C 1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.

- B. Characteristics: Nonshrink; recommended for interior and exterior applications.
- C. Design Mix: 5000-psi, 28-day compressive strength.
- D. Packaging: Premixed and factory packaged.

PART 3 - EXECUTION

3.1 SLEEVE INSTALLATION

- A. Install sleeves for piping passing through penetrations in floors, partitions and walls. Sleeves are not required for core-drilled holes.
- B. Install sleeves for pipes passing through interior partitions.
 - 1. Cut sleeves to length for mounting flush with both surfaces.
 - 2. Install sleeves that are large enough to provide 1/4-inch annular clear space between sleeve and pipe or pipe insulation.
 - 3. Seal annular space between sleeve and piping or piping insulation; use joint sealants appropriate for size, depth, and location of joint.
- C. Fire-Barrier Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at pipe penetrations. Seal pipe penetrations with firestop materials.

3.2 SLEEVE SCHEDULE

- A. Use sleeves and sleeve seals for the following piping-penetration applications:
 - 1. Concrete Slabs above Grade:
 - a. Piping Smaller Than NPS 6: Galvanized-steel-pipe sleeves, Stack-sleeve fittings or Sleeve-seal fittings.
 - b. Piping NPS 6 and Larger: Galvanized-steel-pipe sleeves or Stack-sleeve fittings.
 - 2. Interior Partitions:
 - a. Piping Smaller Than NPS 6: Galvanized-steel-pipe sleeves.
 - b. Piping NPS 6 and Larger: Galvanized-steel-sheet sleeves.

END OF SECTION 220517

SECTION 220518 - ESCUTCHEONS FOR PLUMBING PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Escutcheons.
 - 2. Floor plates.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

PART 2 - PRODUCTS

2.1 ESCUTCHEONS

- A. One-Piece, Cast-Brass Type: With polished, chrome-plated finish and setscrew fastener.
- B. One-Piece, Deep-Pattern Type: Deep-drawn, box-shaped brass with chrome-plated finish and spring-clip fasteners.
- C. One-Piece, Stamped-Steel Type: With chrome-plated finish and spring-clip fasteners.
- D. Split-Casting Brass Type: With polished, chrome-plated finish and with concealed hinge and setscrew.
- E. Split-Plate, Stamped-Steel Type: With chrome-plated finish, concealed and exposed-rivet hinge, and spring-clip fasteners.

2.2 FLOOR PLATES

- A. One-Piece Floor Plates: Cast-iron flange with holes for fasteners.

- B. Split-Casting Floor Plates: Cast brass with concealed hinge.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install escutcheons for piping penetrations of walls, ceilings, and finished floors.
- B. Install escutcheons with ID to closely fit around pipe, tube, and insulation of insulated piping and with OD that completely covers opening.
 - 1. Escutcheons for New Piping:
 - a. Piping with Fitting or Sleeve Protruding from Wall: One-piece, deep-pattern type.
 - b. Chrome-Plated Piping: One-piece, cast-brass type with polished, chrome-plated finish.
 - c. Insulated Piping: One-piece, stamped-steel type.
 - d. Bare Piping at Wall and Floor Penetrations in Finished Spaces: One-piece, cast-brass type with polished, chrome-plated finish.
 - e. Bare Piping at Ceiling Penetrations in Finished Spaces: One-piece, cast-brass type with polished, chrome-plated finish.
 - f. Bare Piping in Unfinished Service Spaces: One-piece, stamped-steel type.
 - g. Bare Piping in Equipment Rooms: One-piece, stamped-steel type.
 - 2. Escutcheons for Existing Piping:
 - a. Chrome-Plated Piping: Split-casting brass type with polished, chrome-plated finish.
 - b. Insulated Piping: Split-plate, stamped-steel type with concealed hinge.
 - c. Bare Piping at Wall and Floor Penetrations in Finished Spaces: Split-casting brass type with polished, chrome-plated finish.
 - d. Bare Piping at Wall and Floor Penetrations in Finished Spaces: Split-plate, stamped-steel type with concealed hinge.
 - e. Bare Piping at Ceiling Penetrations in Finished Spaces: Split-casting brass type with polished, chrome-plated finish.
 - f. Bare Piping at Ceiling Penetrations in Finished Spaces: Split-plate, stamped-steel type with concealed hinge.
 - g. Bare Piping in Unfinished Service Spaces: Split-plate, stamped-steel type with concealed hinge.
 - h. Bare Piping in Equipment Rooms: Split-plate, stamped-steel type with concealed hinge.
- C. Install floor plates with ID to closely fit around pipe, tube, and insulation of piping and with OD that completely covers opening.
 - 1. New Piping: One-piece, floor-plate type.

2. Existing Piping: Split-casting, floor-plate type.

3.2 FIELD QUALITY CONTROL

- A. Replace broken and damaged escutcheons and floor plates using new materials.

END OF SECTION 220518

SECTION 220523.12 - BALL VALVES FOR PLUMBING PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Brass ball valves.
 - 2. Bronze ball valves.

1.3 DEFINITIONS

- A. CWP: Cold working pressure.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of valve.
 - 1. Certification that products comply with NSF 61 Annex G and NSF 372.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Prepare valves for shipping as follows:
 - 1. Protect internal parts against rust and corrosion.
 - 2. Protect threads, flange faces, and soldered ends.
 - 3. Set ball valves open to minimize exposure of functional surfaces.
- B. Use the following precautions during storage:
 - 1. Maintain valve end protection.
 - 2. Store valves indoors and maintain at higher-than-ambient-dew-point temperature. If outdoor storage is necessary, store valves off the ground in watertight enclosures.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR VALVES

- A. Source Limitations for Valves: Obtain each type of valve from single source from single manufacturer.
- B. ASME Compliance:
 - 1. ASME B1.20.1 for threads for threaded end valves.
 - 2. ASME B16.18 for solder-joint connections.
 - 3. ASME B31.9 for building services piping valves.
- C. NSF Compliance: NSF 61 Annex G and NSF 372 for valve materials for potable-water service.
- D. Bronze valves shall be made with dezincification-resistant materials. Bronze valves made with copper alloy (brass) containing more than 15 percent zinc are not permitted.
- E. Valve Pressure-Temperature Ratings: Not less than indicated and as required for system pressures and temperatures.
- F. Valve Sizes: Same as upstream piping unless otherwise indicated.
- G. Valve Actuator Types:
 - 1. Handlever: For quarter-turn valves smaller than NPS 4.
- H. Valves in Insulated Piping:
 - 1. Include 2-inch stem extensions.
 - 2. Extended operating handles of nonthermal-conductive material and protective sleeves that allow operation of valves without breaking vapor seals or disturbing insulation.
 - 3. Memory stops that are fully adjustable after insulation is applied.

2.2 BRASS BALL VALVES

- A. One-Piece, Brass Ball Valves:
 - 1. Description:
 - a. Standard: MSS SP-110.
 - b. CWP Rating: 400 psig.
 - c. Body Design: One piece.
 - d. Body Material: Forged brass or bronze.
 - e. Ends: Threaded and soldered.
 - f. Seats: PTFE.
 - g. Stem: Brass or stainless steel.

- h. Ball: Chrome-plated brass or stainless steel.
 - i. Port: Reduced.
 - B. Two-Piece, Brass Ball Valves with Full Port and Brass Trim:
 - 1. Description:
 - a. Standard: MSS SP-110.
 - b. CWP Rating: 600 psig.
 - c. Body Design: Two piece.
 - d. Body Material: Forged brass.
 - e. Ends: Threaded and soldered.
 - f. Seats: PTFE.
 - g. Stem: Brass.
 - h. Ball: Chrome-plated brass.
 - i. Port: Full.
- C. Two-Piece, Brass Ball Valves with Full Port and Stainless-Steel Trim:
 - 1. Description:
 - a. Standard: MSS SP-110.
 - b. CWP Rating: 600 psig.
 - c. Body Design: Two piece.
 - d. Body Material: Forged brass.
 - e. Ends: Threaded and soldered.
 - f. Seats: PTFE.
 - g. Stem: Stainless steel.
 - h. Ball: Stainless steel, vented.
 - i. Port: Full.
- D. Three-Piece, Brass Ball Valves with Full Port and Brass Trim:
 - 1. Description:
 - a. Standard: MSS SP-110.
 - b. CWP Rating: 600 psig.
 - c. Body Design: Three piece.
 - d. Body Material: Forged brass.
 - e. Ends: Threaded and soldered.
 - f. Seats: PTFE.
 - g. Stem: Brass.
 - h. Ball: Chrome-plated brass.
 - i. Port: Full.
- E. Three-Piece, Brass Ball Valves with Full Port and Stainless-Steel Trim:
 - 1. Description:
 - a. Standard: MSS SP-110.
 - b. CWP Rating: 600 psig.

- c. Body Design: Three piece.
- d. Body Material: Forged brass.
- e. Ends: Threaded and soldered.
- f. Seats: PTFE.
- g. Stem: Stainless steel.
- h. Ball: Stainless steel, vented.
- i. Port: Full.

2.3 BRONZE BALL VALVES

A. One-Piece, Bronze Ball Valves with Bronze Trim:

1. Description:

- a. Standard: MSS SP-110.
- b. CWP Rating: 400 psig.
- c. Body Design: One piece.
- d. Body Material: Bronze.
- e. Ends: Threaded.
- f. Seats: PTFE.
- g. Stem: Bronze.
- h. Ball: Chrome-plated brass.
- i. Port: Reduced.

B. One-Piece, Bronze Ball Valves with Stainless-Steel Trim:

1. Description:

- a. Standard: MSS SP-110.
- b. CWP Rating: 600 psig.
- c. Body Design: One piece.
- d. Body Material: Bronze.
- e. Ends: Threaded.
- f. Seats: PTFE.
- g. Stem: Stainless steel.
- h. Ball: Stainless steel, vented.
- i. Port: Reduced.

C. Two-Piece, Bronze Ball Valves with Full Port, and Bronze or Brass Trim:

1. Description:

- a. Standard: MSS SP-110.
- b. CWP Rating: 600 psig.
- c. Body Design: Two piece.
- d. Body Material: Bronze.
- e. Ends: Threaded and soldered.
- f. Seats: PTFE.
- g. Stem: Bronze or brass.

- c. Body Design: Two piece.
- d. Body Material: Bronze, ASTM B 584, Alloy C844.
- e. Ends: Threaded.
- f. Seats: PTFE.
- g. Stem: Stainless steel.
- h. Ball: Chrome-plated brass, with exhaust vent opening for pneumatic applications.
- i. Port: Full.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine valve interior for cleanliness, freedom from foreign matter, and corrosion. Remove special packing materials, such as blocks, used to prevent disc movement during shipping and handling.
- B. Operate valves in positions from fully open to fully closed. Examine guides and seats made accessible by such operations.
- C. Examine threads on valve and mating pipe for form and cleanliness.
- D. Examine mating flange faces for conditions that might cause leakage. Check bolting for proper size, length, and material. Verify that gasket is of proper size, that its material composition is suitable for service, and that it is free from defects and damage.
- E. Do not attempt to repair defective valves; replace with new valves.

3.2 VALVE INSTALLATION

- A. Install valves with unions or flanges at each piece of equipment arranged to allow service, maintenance, and equipment removal without system shutdown.
- B. Locate valves for easy access and provide separate support where necessary.
- C. Install valves in horizontal piping with stem at or above center of pipe.
- D. Install valves in position to allow full stem movement.
- E. Install valve tags. Comply with requirements in Section 220553 "Identification for Plumbing Piping and Equipment" for valve tags and schedules.

3.3 GENERAL REQUIREMENTS FOR VALVE APPLICATIONS

- A. If valves with specified CWP ratings are unavailable, the same types of valves with higher CWP ratings may be substituted.
- B. Select valves with the following end connections:
 - 1. For Copper Tubing, NPS 2 and Smaller: Threaded ends except where solder-joint valve-end option is indicated in valve schedules below.

3.4 DOMESTIC HOT- AND COLD-WATER VALVE SCHEDULE

- A. Pipe NPS 2 and Smaller:
 - 1. Bronze and Brass Valves: May be provided with solder-joint ends instead of threaded ends.
 - 2. One piece, brass ball valve.
 - 3. One piece, bronze ball valve with bronze or stainless-steel trim.
 - 4. Two-piece, brass ball valves with full port and brass or stainless-steel trim.
 - 5. Two-piece, bronze ball valves with full port and bronze, brass or stainless-steel trim.
 - 6. Three-piece, brass ball valves with full port and brass or stainless-steel trim.
 - 7. Three-piece, bronze ball valves with full port and bronze, brass or stainless-steel trim.

END OF SECTION 220523.12

SECTION 220529 - HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Metal pipe hangers and supports.
 - 2. Metal framing systems.
 - 3. Thermal-hanger shield inserts.
 - 4. Fastener systems.
 - 5. Pipe stands.
 - 6. Pipe positioning systems.
 - 7. Equipment supports.

1.3 DEFINITIONS

- A. MSS: Manufacturers Standardization Society of The Valve and Fittings Industry Inc.

1.4 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design equipment supports, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Structural Performance: Hangers and supports for plumbing piping and equipment shall withstand the effects of gravity loads and stresses within limits and under conditions indicated according to ASCE/SEI 7.
 - 1. Design supports for multiple pipes, including pipe stands, capable of supporting combined weight of supported systems, system contents, and test water.
 - 2. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Signed and sealed by a qualified professional engineer. Show fabrication and installation details and include calculations for the following; include Product Data for components:
 - 1. Metal framing systems.
 - 2. Pipe stands.
 - 3. Equipment supports.

1.6 INFORMATIONAL SUBMITTALS

- A. Welding certificates.

1.7 QUALITY ASSURANCE

- A. Structural Steel Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Pipe Welding Qualifications: Qualify procedures and operators according to ASME Boiler and Pressure Vessel Code.

PART 2 - PRODUCTS

2.1 METAL PIPE HANGERS AND SUPPORTS

- A. Carbon-Steel Pipe Hangers and Supports:
 - 1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
 - 2. Galvanized Metallic Coatings: Pregalvanized or hot dipped.
 - 3. Nonmetallic Coatings: Plastic coating, jacket, or liner.
 - 4. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
 - 5. Hanger Rods: Continuous-thread rod, nuts, and washer made of stainless steel.
- B. Stainless-Steel Pipe Hangers and Supports:
 - 1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
 - 2. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
 - 3. Hanger Rods: Continuous-thread rod, nuts, and washer made of stainless steel.

C. Copper Pipe Hangers:

1. Description: MSS SP-58, Types 1 through 58, copper-coated-steel, factory-fabricated components.
2. Hanger Rods: Continuous-thread rod, nuts, and washer made of stainless steel.

2.2 METAL FRAMING SYSTEMS

A. MFMA Manufacturer Metal Framing Systems:

1. Description: Shop- or field-fabricated pipe-support assembly for supporting multiple parallel pipes.
2. Standard: MFMA-4.
3. Channels: Continuous slotted steel channel with inturned lips.
4. Channel Nuts: Formed or stamped steel nuts or other devices designed to fit into channel slot and, when tightened, prevent slipping along channel.
5. Hanger Rods: Continuous-thread rod, nuts, and washer made of stainless steel.
6. Metallic Coating: Electroplated zinc, Hot-dipped galvanized or Mill galvanized.
7. Paint Coating: Vinyl.
8. Plastic Coating: PVC.
9. Combination Coating: Galvanized and PVC coated.

2.3 THERMAL-HANGER SHIELD INSERTS

- A. Insulation-Insert Material for Cold Piping: ASTM C 552, Type II cellular glass with 100-psig or ASTM C 591, Type VI, Grade 1 polyisocyanurate with 125-psig minimum compressive strength and vapor barrier.
- B. Insulation-Insert Material for Hot Piping: Water-repellent treated, ASTM C 533, Type I calcium silicate with 100-psig, ASTM C 552, Type II cellular glass with 100-psig or ASTM C 591, Type VI, Grade 1 polyisocyanurate with 125-psig minimum compressive strength.
- C. For Trapeze or Clamped Systems: Insert and shield shall cover entire circumference of pipe.
- D. For Clevis or Band Hangers: Insert and shield shall cover lower 180 degrees of pipe.
- E. Insert Length: Extend 2 inches beyond sheet metal shield for piping operating below ambient air temperature.

2.4 FASTENER SYSTEMS

- A. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

- B. Mechanical-Expansion Anchors: Insert-wedge-type, stainless-steel anchors, for use in hardened portland cement concrete; with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

2.5 PIPE STANDS

- A. Low-Type, Single-Pipe Stand: One-piece stainless-steel base unit with plastic.
- B. High-Type, Single-Pipe Stand:
 - 1. Description: Assembly of base, vertical and horizontal members, and pipe support.
 - 2. Base: Stainless steel.
 - 3. Vertical Members: Two or more cadmium-plated-steel or stainless-steel, continuous-thread rods.
 - 4. Horizontal Member: Cadmium-plated-steel or stainless-steel rod with plastic or stainless-steel, roller-type pipe support.
- C. High-Type, Multiple-Pipe Stand:
 - 1. Description: Assembly of bases, vertical and horizontal members, and pipe supports.
 - 2. Bases: One or more; plastic.
 - 3. Vertical Members: Two or more protective-coated-steel channels.
 - 4. Horizontal Member: Protective-coated-steel channel.
 - 5. Pipe Supports: Galvanized-steel, clevis-type pipe hangers.

2.6 PIPE POSITIONING SYSTEMS

- A. Description: IAPMO PS 42, positioning system of metal brackets, clips, and straps for positioning piping in pipe spaces; for plumbing fixtures in commercial applications.

2.7 EQUIPMENT SUPPORTS

- A. Description: Welded, shop- or field-fabricated equipment support made from structural carbon-steel shapes.

2.8 MISCELLANEOUS MATERIALS

- A. Structural Steel: ASTM A 36/A 36M, carbon-steel plates, shapes, and bars; black and galvanized.
- B. Grout: ASTM C 1107, factory-mixed and -packaged, dry, hydraulic-cement, nonshrink and nonmetallic grout; suitable for interior and exterior applications.
 - 1. Properties: Nonstaining, noncorrosive, and nongaseous.

2. Design Mix: 5000-psi, 28-day compressive strength.

PART 3 - EXECUTION

3.1 HANGER AND SUPPORT INSTALLATION

- A. Metal Pipe-Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Install hangers, supports, clamps, and attachments as required to properly support piping from the building structure.
- B. Thermal-Hanger Shield Installation: Install in pipe hanger or shield for insulated piping.
- C. Fastener System Installation:
 1. Install powder-actuated fasteners for use in lightweight concrete or concrete slabs less than 4 inches thick in concrete after concrete is placed and completely cured. Use operators that are licensed by powder-actuated tool manufacturer. Install fasteners according to powder-actuated tool manufacturer's operating manual.
 2. Install mechanical-expansion anchors in concrete after concrete is placed and completely cured. Install fasteners according to manufacturer's written instructions.
- D. Pipe Positioning-System Installation: Install support devices to make rigid supply and waste piping connections to each plumbing fixture.
- E. Install hangers and supports complete with necessary attachments, inserts, bolts, rods, nuts, washers, and other accessories.
- F. Equipment Support Installation: Fabricate from welded-structural-steel shapes.
- G. Install building attachments within concrete slabs or attach to structural steel. Install additional attachments at concentrated loads, including valves, flanges, and strainers, NPS 2-1/2 and larger and at changes in direction of piping. Install concrete inserts before concrete is placed; fasten inserts to forms and install reinforcing bars through openings at top of inserts.
- H. Load Distribution: Install hangers and supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.
- I. Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and to not exceed maximum pipe deflections allowed by ASME B31.9 for building services piping.
- J. Insulated Piping:
 1. Attach clamps and spacers to piping.
 - a. Piping Operating above Ambient Air Temperature: Clamp may project through insulation.

- b. Piping Operating below Ambient Air Temperature: Use thermal-hanger shield insert with clamp sized to match OD of insert.
 - c. Do not exceed pipe stress limits allowed by ASME B31.9 for building services piping.
 2. Install MSS SP-58, Type 39, protection saddles if insulation without vapor barrier is indicated. Fill interior voids with insulation that matches adjoining insulation.
 - a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 and larger if pipe is installed on rollers.
 3. Install MSS SP-58, Type 40, protective shields on cold piping with vapor barrier. Shields shall span an arc of 180 degrees.
 - a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 and larger if pipe is installed on rollers.
 4. Shield Dimensions for Pipe: Not less than the following:
 - a. NPS 1/4 to NPS 3-1/2: 12 inches long and 0.048 inch thick.
 - b. NPS 4: 12 inches long and 0.06 inch thick.
 5. Thermal-Hanger Shields: Install with insulation same thickness as piping insulation.

3.2 EQUIPMENT SUPPORTS

- A. Fabricate structural-steel stands to suspend equipment from structure overhead or to support equipment above floor.
- B. Grouting: Place grout under supports for equipment and make bearing surface smooth.
- C. Provide lateral bracing, to prevent swaying, for equipment supports.

3.3 METAL FABRICATIONS

- A. Cut, drill, and fit miscellaneous metal fabrications for equipment supports.
- B. Fit exposed connections together to form hairline joints. Field weld connections that cannot be shop welded because of shipping size limitations.
- C. Field Welding: Comply with AWS D1.1/D1.1M procedures for shielded, metal arc welding; appearance and quality of welds; and methods used in correcting welding work; and with the following:
 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. Finish welds at exposed connections so no roughness shows after finishing and so contours of welded surfaces match adjacent contours.

3.4 ADJUSTING

- A. Hanger Adjustments: Adjust hangers to distribute loads equally on attachments and to achieve indicated slope of pipe.
- B. Trim excess length of continuous-thread hanger and support rods to 1-1/2 inches.

3.5 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
 1. Apply paint by brush or spray to provide a minimum dry film thickness of 2.0 mils.
- B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

3.6 HANGER AND SUPPORT SCHEDULE

- A. Specific hanger and support requirements are in Sections specifying piping systems and equipment.
- B. Comply with MSS SP-69 for pipe-hanger selections and applications that are not specified in piping system Sections.
- C. Use hangers and supports with galvanized metallic coatings for piping and equipment that will not have field-applied finish.
- D. Use nonmetallic coatings on attachments for electrolytic protection where attachments are in direct contact with copper tubing.
- E. Use carbon-steel pipe hangers and supports, metal trapeze pipe hangers and metal framing systems and attachments for general service applications.
- F. Use copper-plated pipe hangers and stainless-steel attachments for copper piping and tubing.
- G. Use padded hangers for piping that is subject to scratching.
- H. Use thermal-hanger shield inserts for insulated piping and tubing.

- I. Horizontal-Piping Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
 1. Adjustable, Steel Clevis Hangers (MSS Type 1): For suspension of noninsulated or insulated, stationary pipes NPS 1/2 to NPS 30.
 2. Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3): For suspension of pipes NPS 3/4 to NPS 36, requiring clamp flexibility and up to 4 inches of insulation.
 3. Steel Pipe Clamps (MSS Type 4): For suspension of cold and hot pipes NPS 1/2 to NPS 24 if little or no insulation is required.
 4. Pipe Hangers (MSS Type 5): For suspension of pipes NPS 1/2 to NPS 4, to allow off-center closure for hanger installation before pipe erection.
 5. Adjustable, Swivel Split- or Solid-Ring Hangers (MSS Type 6): For suspension of noninsulated, stationary pipes NPS 3/4 to NPS 8.
 6. Adjustable, Steel Band Hangers (MSS Type 7): For suspension of noninsulated, stationary pipes NPS 1/2 to NPS 8.
 7. Adjustable Band Hangers (MSS Type 9): For suspension of noninsulated, stationary pipes NPS 1/2 to NPS 8.
 8. Adjustable, Swivel-Ring Band Hangers (MSS Type 10): For suspension of noninsulated, stationary pipes NPS 1/2 to NPS 8.
 9. Split Pipe Ring with or without Turnbuckle Hangers (MSS Type 11): For suspension of noninsulated, stationary pipes NPS 3/8 to NPS 8.
 10. Extension Hinged or Two-Bolt Split Pipe Clamps (MSS Type 12): For suspension of noninsulated, stationary pipes NPS 3/8 to NPS 3.
 11. U-Bolts (MSS Type 24): For support of heavy pipes NPS 1/2 to NPS 30.
 12. Clips (MSS Type 26): For support of insulated pipes not subject to expansion or contraction.
 13. Pipe Saddle Supports (MSS Type 36): For support of pipes NPS 4 to NPS, with steel-pipe base stanchion support and cast-iron floor flange or carbon-steel plate.
 14. Pipe Stanchion Saddles (MSS Type 37): For support of pipes NPS 4 to NPS 36, with steel-pipe base stanchion support and cast-iron floor flange or carbon-steel plate, and with U-bolt to retain pipe.
 15. Adjustable Pipe Saddle Supports (MSS Type 38): For stanchion-type support for pipes NPS 2-1/2 to NPS 36 if vertical adjustment is required, with steel-pipe base stanchion support and cast-iron floor flange.
 16. Adjustable Roller Hangers (MSS Type 43): For suspension of pipes NPS 2-1/2 to NPS 24, from single rod if horizontal movement caused by expansion and contraction might occur.
 17. Complete Pipe Rolls (MSS Type 44): For support of pipes NPS 2 to NPS 42 if longitudinal movement caused by expansion and contraction might occur but vertical adjustment is not necessary.
 18. Pipe Roll and Plate Units (MSS Type 45): For support of pipes NPS 2 to NPS 24 if small horizontal movement caused by expansion and contraction might occur and vertical adjustment is not necessary.
 19. Adjustable Pipe Roll and Base Units (MSS Type 46): For support of pipes NPS 2 to NPS 30 if vertical and lateral adjustment during installation might be required in addition to expansion and contraction.

- J. Vertical-Piping Clamps: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Extension Pipe or Riser Clamps (MSS Type 8): For support of pipe risers NPS 3/4 to NPS 24.
 2. Carbon- or Alloy-Steel Riser Clamps (MSS Type 42): For support of pipe risers NPS 3/4 to NPS 24 if longer ends are required for riser clamps.
- K. Hanger-Rod Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel Turnbuckles (MSS Type 13): For adjustment up to 6 inches for heavy loads.
 2. Steel Clevises (MSS Type 14): For 120 to 450 deg. F piping installations.
 3. Swivel Turnbuckles (MSS Type 15): For use with MSS Type 11, split pipe rings.
 4. Malleable-Iron Sockets (MSS Type 16): For attaching hanger rods to various types of building attachments.
 5. Steel Weldless Eye Nuts (MSS Type 17): For 120 to 450 deg. F piping installations.
- L. Building Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel or Malleable Concrete Inserts (MSS Type 18): For upper attachment to suspend pipe hangers from concrete ceiling.
 2. Top-Beam C-Clamps (MSS Type 19): For use under roof installations with bar-joist construction, to attach to top flange of structural shape.
 3. Side-Beam or Channel Clamps (MSS Type 20): For attaching to bottom flange of beams, channels, or angles.
 4. Center-Beam Clamps (MSS Type 21): For attaching to center of bottom flange of beams.
 5. Welded Beam Attachments (MSS Type 22): For attaching to bottom of beams if loads are considerable and rod sizes are large.
 6. C-Clamps (MSS Type 23): For structural shapes.
 7. Top-Beam Clamps (MSS Type 25): For top of beams if hanger rod is required tangent to flange edge.
 8. Side-Beam Clamps (MSS Type 27): For bottom of steel I-beams.
 9. Steel-Beam Clamps with Eye Nuts (MSS Type 28): For attaching to bottom of steel I-beams for heavy loads.
 10. Linked-Steel Clamps with Eye Nuts (MSS Type 29): For attaching to bottom of steel I-beams for heavy loads, with link extensions.
 11. Malleable-Beam Clamps with Extension Pieces (MSS Type 30): For attaching to structural steel.
 12. Welded-Steel Brackets: For support of pipes from below or for suspending from above by using clip and rod. Use one of the following for indicated loads:
 - a. Light (MSS Type 31): 750 lb.
 - b. Medium (MSS Type 32): 1500 lb.
 - c. Heavy (MSS Type 33): 3000 lb.

13. Side-Beam Brackets (MSS Type 34): For sides of steel or wooden beams.
 14. Plate Lugs (MSS Type 57): For attaching to steel beams if flexibility at beam is required.
 15. Horizontal Travelers (MSS Type 58): For supporting piping systems subject to linear horizontal movement where headroom is limited.
- M. Saddles and Shields: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel-Pipe-Covering Protection Saddles (MSS Type 39): To fill interior voids with insulation that matches adjoining insulation.
 2. Protection Shields (MSS Type 40): Of length recommended in writing by manufacturer to prevent crushing insulation.
 3. Thermal-Hanger Shield Inserts: For supporting insulated pipe.
- N. Comply with MFMA-103 for metal framing system selections and applications that are not specified in piping system Sections.
- O. Use powder-actuated fasteners or mechanical-expansion anchors instead of building attachments where required in concrete construction.
- P. Use pipe positioning systems in pipe spaces behind plumbing fixtures to support supply and waste piping for plumbing fixtures.

END OF SECTION 220529

SECTION 220553 - IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Equipment labels.
 - 2. Warning signs and labels.
 - 3. Pipe labels.
 - 4. Stencils.
 - 5. Warning tags.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples: For color, letter style, and graphic representation required for each identification material and device.
- C. Equipment Label Schedule: Include a listing of all equipment to be labeled with the proposed content for each label.
- D. Valve numbering scheme.
- E. Valve Schedules: For each piping system to include in maintenance manuals.

PART 2 - PRODUCTS

2.1 EQUIPMENT LABELS

- A. Metal Labels for Equipment:
 - 1. Material and Thickness: Brass, 0.032-inch or anodized aluminum, 0.032-inch minimum thickness, and having predrilled or stamped holes for attachment hardware.
 - 2. Letter Color: Black.

3. Background Color: White.
 4. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.
 5. Minimum Letter Size: 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-quarters the size of principal lettering.
 6. Fasteners: Stainless-steel rivets or self-tapping screws.
 7. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.
- B. Plastic Labels for Equipment:
1. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/8 inch thick, and having predrilled holes for attachment hardware.
 2. Letter Color: Black.
 3. Background Color: White.
 4. Maximum Temperature: Able to withstand temperatures up to 160 deg. F.
 5. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.
 6. Minimum Letter Size: 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-quarters the size of principal lettering.
 7. Fasteners: Stainless-steel rivets or self-tapping screws.
 8. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.
- C. Label Content: Include equipment's Drawing designation or unique equipment number, Drawing numbers where equipment is indicated (plans, details, and schedules), and the Specification Section number and title where equipment is specified.
- D. Equipment Label Schedule: For each item of equipment to be labeled, on 8-1/2-by-11-inch bond paper. Tabulate equipment identification number, and identify Drawing numbers where equipment is indicated (plans, details, and schedules) and the Specification Section number and title where equipment is specified. Equipment schedule shall be included in operation and maintenance data.
- 2.2 WARNING SIGNS AND LABELS
- A. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/8 inch thick, and having predrilled holes for attachment hardware.
 - B. Letter Color: White.
 - C. Background Color: Red.
 - D. Maximum Temperature: Able to withstand temperatures up to 160 deg. F.

- E. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.
- F. Minimum Letter Size: 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-quarters the size of principal lettering.
- G. Fasteners: Stainless-steel rivets or self-tapping screws.
- H. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.
- I. Label Content: Include caution and warning information plus emergency notification instructions.

2.3 PIPE LABELS

- A. General Requirements for Manufactured Pipe Labels: Preprinted, color-coded, with lettering indicating service, and showing flow direction.
- B. Pretensioned Pipe Labels: Precoiled, semirigid plastic formed to cover full circumference of pipe and to attach to pipe without fasteners or adhesive.
- C. Self-Adhesive Pipe Labels: Printed plastic with contact-type, permanent-adhesive backing.
- D. Pipe Label Contents: Include identification of piping service using same designations or abbreviations as used on Drawings; also include pipe size and an arrow indicating flow direction.
 - 1. Flow-Direction Arrows: Integral with piping-system service lettering to accommodate both directions or as separate unit on each pipe label to indicate flow direction.
 - 2. Lettering Size: Size letters according to ASME A13.1 for piping.

2.4 STENCILS

- A. Stencils for Piping:
 - 1. Lettering Size: Size letters according to ASME A13.1 for piping.
 - 2. Stencil Material: Fiberboard or metal.
 - 3. Stencil Paint: Exterior, gloss, alkyd enamel in colors complying with recommendations in ASME A13.1 unless otherwise indicated. Paint may be in pressurized spray-can form.
 - 4. Identification Paint: Exterior, alkyd enamel in colors according to ASME A13.1 unless otherwise indicated. Paint may be in pressurized spray-can form.

2.5 WARNING TAGS

- A. Description: Preprinted or partially preprinted accident-prevention tags of plasticized card stock with matte finish suitable for writing.
 - 1. Size: 3 by 5-1/4 inches minimum.
 - 2. Fasteners: Brass grommet and wire.
 - 3. Nomenclature: Large-size primary caption such as "DANGER," "CAUTION," or "DO NOT OPERATE."
 - 4. Color: Safety yellow background with black lettering.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean piping and equipment surfaces of substances that could impair bond of identification devices, including dirt, oil, grease, release agents, and incompatible primers, paints, and encapsulants.

3.2 GENERAL INSTALLATION REQUIREMENTS

- A. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- B. Coordinate installation of identifying devices with locations of access panels and doors.
- C. Install identifying devices before installing acoustical ceilings and similar concealment.

3.3 EQUIPMENT LABEL INSTALLATION

- A. Install or permanently fasten labels on each major item of mechanical equipment.
- B. Locate equipment labels where accessible and visible.

3.4 PIPE LABEL INSTALLATION

- A. Stenciled Pipe Label Option: Stenciled labels may be provided instead of manufactured pipe labels, at Installer's option. Install stenciled pipe labels, complying with ASME A13.1, with painted, color-coded bands or rectangles on each piping system.
 - 1. Identification Paint: Use for contrasting background.
 - 2. Stencil Paint: Use for pipe marking.

- B. Pipe Label Locations: Locate pipe labels where piping is exposed or above accessible ceilings in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and exterior exposed locations as follows:
 - 1. Near each valve and control device.
 - 2. Near each branch connection, excluding short takeoffs for fixtures and terminal units. Where flow pattern is not obvious, mark each pipe at branch.
 - 3. Near penetrations through walls, floors, ceilings, and inaccessible enclosures.
 - 4. At access doors, manholes, and similar access points that permit view of concealed piping.
 - 5. Near major equipment items and other points of origination and termination.
 - 6. Spaced at maximum intervals of 50 feet along each run. Reduce intervals to 25 feet in areas of congested piping and equipment.
 - 7. On piping above removable acoustical ceilings. Omit intermediately spaced labels.

- C. Directional Flow Arrows: Arrows shall be used to indicate direction of flow in pipes, including pipes where flow is allowed in both directions.

- D. Pipe Label Color Schedule:
 - 1. Domestic Water Piping
 - a. Background: Safety green.
 - b. Letter Colors: White.

 - 2. Sanitary Waste Piping:
 - a. Background Color: Safety purple.
 - b. Letter Color: White.

3.5 WARNING-TAG INSTALLATION

- A. Write required message on, and attach warning tags to, equipment and other items where required.

END OF SECTION 220553

SECTION 220719 - PLUMBING PIPING INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes insulating the following plumbing piping services:
 1. Domestic cold-water piping.
 2. Domestic hot-water piping.
 3. Domestic recirculating hot-water piping.
 4. Exposed supplies and drains for handicap-accessible lavatories and sinks.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include thermal conductivity, water-vapor permeance thickness, and jackets (both factory- and field-applied, if any).
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
 1. Detail application of protective shields, saddles, and inserts at hangers for each type of insulation and hanger.
 2. Detail insulation application at elbows, fittings, flanges, valves, heat exchangers and specialties for each type of insulation.
 3. Detail removable insulation at piping specialties, equipment connections, and access panels.
 4. Detail application of field-applied jackets.
 5. Detail application at linkages of control devices.
- C. Samples: For each type of insulation and jacket indicated. Identify each Sample, describing product and intended use. Sample sizes are as follows:
 1. Preformed Pipe Insulation Materials: 12 inches long by NPS 2.
 2. Jacket Materials for Pipe: 12 inches long by NPS 2.
 3. Sheet Jacket Materials: 12 inches square.
 4. Manufacturer's Color Charts: For products where color is specified, show the full range of colors available for each type of finish material.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Material Test Reports: From a qualified testing agency acceptable to authorities having jurisdiction indicating, interpreting, and certifying test results for compliance of insulation materials, sealers, attachments, cements, and jackets, with requirements indicated. Include dates of tests and test methods employed.
- C. Field quality-control reports.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Skilled mechanics who have successfully completed an apprenticeship program or another craft training program certified by the Department of Labor, Bureau of Apprenticeship and Training.
- B. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products according to ASTM E 84 by a testing agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing agency.
 - 1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.
 - 2. Insulation Installed Outdoors: Flame-spread index of 75 or less, and smoke-developed index of 150 or less.
- C. Comply with the following applicable standards and other requirements specified for miscellaneous components:
 - 1. Supply and Drain Protective Shielding Guards: ICC A117.1.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Packaging: Insulation material containers shall be marked by manufacturer with appropriate ASTM standard designation, type and grade, and maximum use temperature.

1.7 COORDINATION

- A. Coordinate sizes and locations of supports, hangers, and insulation shields specified in Section 220529 "Hangers and Supports for Plumbing Piping and Equipment."
- B. Coordinate clearance requirements with piping Installer for piping insulation application. Before preparing piping Shop Drawings, establish and maintain clearance requirements for

installation of insulation and field-applied jackets and finishes and for space required for maintenance.

1.8 SCHEDULING

- A. Schedule insulation application after pressure testing systems and, where required, after installing and testing heat tracing. Insulation application may begin on segments that have satisfactory test results.
- B. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS

- A. Comply with requirements in "Piping Insulation Schedule, General," "Indoor Piping Insulation Schedule" articles for where insulating materials shall be applied.
- B. Products shall not contain asbestos, lead, mercury, or mercury compounds.
- C. Products that come in contact with stainless steel shall have a leachable chloride content of less than 50 ppm when tested according to ASTM C 871.
- D. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable according to ASTM C 795.
- E. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.
- F. Cellular Glass: Inorganic, incombustible, foamed or cellulated glass with annealed, rigid, hermetically sealed cells. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.
 - 1. Block Insulation: ASTM C 552, Type I.
 - 2. Special-Shaped Insulation: ASTM C 552, Type III.
 - 3. Preformed Pipe Insulation without Jacket: Comply with ASTM C 552, Type II, Class 1.
 - 4. Preformed Pipe Insulation with Factory-Applied ASJ-SSL: Comply with ASTM C 552, Type II, Class 2.
 - 5. Factory fabricate shapes according to ASTM C 450 and ASTM C 585.
- G. Mineral-Fiber Blanket Insulation: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 553, Type II and ASTM C 1290, Type I. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.
- H. Mineral-Fiber, Preformed Pipe Insulation:

1. Type I, 850 Deg F Materials: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 547, Type I, Grade A, with factory-applied ASJ-SSL. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

2.2 INSULATING CEMENTS

- A. Mineral-Fiber Insulating Cement: Comply with ASTM C 195.
- B. Expanded or Exfoliated Vermiculite Insulating Cement: Comply with ASTM C 196.
- C. Mineral-Fiber, Hydraulic-Setting Insulating and Finishing Cement: Comply with ASTM C 449.

2.3 ADHESIVES

- A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated, unless otherwise indicated.
- B. Cellular-Glass Adhesive: Two-component, thermosetting urethane adhesive containing no flammable solvents, with a service temperature range of minus 100 to plus 200 deg. F.
- C. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A.
- D. ASJ Adhesive, and FSK Jacket Adhesive: Comply with MIL-A-3316C, Class 2, Grade A for bonding insulation jacket lap seams and joints.
- E. PVC Jacket Adhesive: Compatible with PVC jacket.

2.4 MASTICS

- A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-PRF-19565C, Type II.
- B. Vapor-Barrier Mastic: Water based; suitable for indoor use on below-ambient services.
 1. Water-Vapor Permeance: ASTM E 96/E 96M, Procedure B, 0.013 perm at 43-mil dry film thickness.
 2. Service Temperature Range: Minus 20 to plus 180 deg. F.
 3. Solids Content: ASTM D 1644, 58 percent by volume and 70 percent by weight.
 4. Color: White.
- C. Vapor-Barrier Mastic: Solvent based; suitable for indoor use on below-ambient services.
 1. Water-Vapor Permeance: ASTM F 1249, 0.05 perm at 35-mil dry film thickness.
 2. Service Temperature Range: 0 to 180 deg. F.
 3. Solids Content: ASTM D 1644, 44 percent by volume and 62 percent by weight.
 4. Color: White.

- D. Breather Mastic: Water based; suitable for indoor and outdoor use on above-ambient services.
 - 1. Water-Vapor Permeance: ASTM F 1249, 1.8 perms at 0.0625-inch dry film thickness.
 - 2. Service Temperature Range: Minus 20 to plus 180 deg. F.
 - 3. Solids Content: 60 percent by volume and 66 percent by weight.
 - 4. Color: White.

2.5 LAGGING ADHESIVES

- A. Description: Comply with MIL-A-3316C, Class I, Grade A, and shall be compatible with insulation materials, jackets, and substrates.
 - 1. For indoor applications, use lagging adhesives that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 2. Fire-resistant, water-based lagging adhesive and coating for use indoors to adhere fire-resistant lagging cloths over pipe insulation.
 - 3. Service Temperature Range: 0 to plus 180 deg. F.
 - 4. Color: White.

2.6 SEALANTS

- A. Joint Sealants for Cellular-Glass:
 - 1. Materials shall be compatible with insulation materials, jackets, and substrates.
 - 2. Permanently flexible, elastomeric sealant.
 - 3. Service Temperature Range: Minus 100 to plus 300 deg. F.
 - 4. Color: White or gray.
- B. ASJ Flashing Sealants, and Vinyl, PVDC, and PVC Jacket Flashing Sealants:
 - 1. Materials shall be compatible with insulation materials, jackets, and substrates.
 - 2. Fire- and water-resistant, flexible, elastomeric sealant.
 - 3. Service Temperature Range: Minus 40 to plus 250 deg. F.
 - 4. Color: White.

2.7 FACTORY-APPLIED JACKETS

- A. Insulation system schedules indicate factory-applied jackets on various applications. When factory-applied jackets are indicated, comply with the following:
 - 1. ASJ: White, kraft-paper, fiberglass-reinforced scrim with aluminum-foil backing; complying with ASTM C 1136, Type I.
 - 2. ASJ-SSL: ASJ with self-sealing, pressure-sensitive, acrylic-based adhesive covered by a removable protective strip; complying with ASTM C 1136, Type I.

2.8 FIELD-APPLIED FABRIC-REINFORCING MESH

- A. Woven Glass-Fiber Fabric: Approximately 2 oz./sq. yd. with a thread count of 10 strands by 10 strands/sq. in. for covering pipe and pipe fittings.

2.9 FIELD-APPLIED CLOTHS

- A. Woven Glass-Fiber Fabric: Comply with MIL-C-20079H, Type I, plain weave, and pre-sized a minimum of 8 oz./sq. yd.

2.10 FIELD-APPLIED JACKETS

- A. Field-applied jackets shall comply with ASTM C 921, Type I, unless otherwise indicated.
- B. PVC Jacket: High-impact-resistant, UV-resistant PVC complying with ASTM D 1784, Class 16354-C; thickness as scheduled; roll stock ready for shop or field cutting and forming. Thickness is indicated in field-applied jacket schedules.
 - 1. Adhesive: As recommended by jacket material manufacturer.
 - 2. Color: White.
 - 3. Factory-fabricated fitting covers to match jacket if available; otherwise, field fabricate.
 - a. Shapes: 45- and 90-degree, short- and long-radius elbows, tees, valves, flanges, unions, reducers, end caps, soil-pipe hubs, traps, mechanical joints, and P-trap and supply covers for lavatories.

2.11 TAPES

- A. ASJ Tape: White vapor-retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136.
 - 1. Width: 3 inches.
 - 2. Thickness: 11.5 mils.
 - 3. Adhesion: 90 ounces force/inch in width.
 - 4. Elongation: 2 percent.
 - 5. Tensile Strength: 40 lbf/inch in width.
 - 6. ASJ Tape Disks and Squares: Precut disks or squares of ASJ tape.
- B. PVC Tape: White vapor-retarder tape matching field-applied PVC jacket with acrylic adhesive; suitable for indoor and outdoor applications.
 - 1. Width: 2 inches.
 - 2. Thickness: 6 mils.
 - 3. Adhesion: 64 ounces force/inch in width.
 - 4. Elongation: 500 percent.
 - 5. Tensile Strength: 18 lbf/inch in width.

2.12 SECUREMENTS

A. Bands:

1. Stainless Steel: ASTM A 167 or ASTM A 240/A 240M, Type 304 or Type 316; 0.015 inch thick, 3/4 inch wide with wing seal or closed seal.
2. Aluminum: ASTM B 209, Alloy 3003, 3005, 3105, or 5005; Temper H-14, 0.020 inch thick, 3/4 inch wide with wing seal or closed seal.

B. Staples: Outward-clinching insulation staples, nominal 3/4-inch-wide, stainless steel or Monel.

C. Wire: 0.062-inch soft-annealed, stainless steel.

2.13 PROTECTIVE SHIELDING GUARDS

A. Protective Shielding Pipe Covers:

1. Description: Manufactured plastic wraps for covering plumbing fixture hot- and cold-water supplies and trap and drain piping. Comply with Americans with Disabilities Act (ADA) requirements.

B. Protective Shielding Piping Enclosures:

1. Description: Manufactured plastic enclosure for covering plumbing fixture hot- and cold-water supplies and trap and drain piping. Comply with ADA requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of insulation application.

1. Verify that systems to be insulated have been tested and are free of defects.
2. Verify that surfaces to be insulated are clean and dry.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

B. Mix insulating cements with clean potable water; if insulating cements are to be in contact with stainless-steel surfaces, use demineralized water.

3.3 GENERAL INSTALLATION REQUIREMENTS

- A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of piping including fittings, valves, and specialties.
- B. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for each item of pipe system as specified in insulation system schedules.
- C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.
- D. Install insulation with longitudinal seams at top and bottom of horizontal runs.
- E. Install multiple layers of insulation with longitudinal and end seams staggered.
- F. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.
- G. Keep insulation materials dry during application and finishing.
- H. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.
- I. Install insulation with least number of joints practical.
- J. Where vapor barrier is indicated, seal joints, seams, and penetrations in insulation at hangers, supports, anchors, and other projections with vapor-barrier mastic.
 - 1. Install insulation continuously through hangers and around anchor attachments.
 - 2. For insulation application where vapor barriers are indicated, extend insulation on anchor legs from point of attachment to supported item to point of attachment to structure. Taper and seal ends at attachment to structure with vapor-barrier mastic.
 - 3. Install insert materials and install insulation to tightly join the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by insulation material manufacturer.
 - 4. Cover inserts with jacket material matching adjacent pipe insulation. Install shields over jacket, arranged to protect jacket from tear or puncture by hanger, support, and shield.
- K. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.
- L. Install insulation with factory-applied jackets as follows:
 - 1. Draw jacket tight and smooth.
 - 2. Cover circumferential joints with 3-inch-wide strips, of same material as insulation jacket. Secure strips with adhesive and outward clinching staples along both edges of strip, spaced 4 inches o.c.

3. Overlap jacket longitudinal seams at least 1-1/2 inches. Install insulation with longitudinal seams at bottom of pipe. Clean and dry surface to receive self-sealing lap. Staple laps with outward clinching staples along edge at 2 inches o.c.
 - a. For below-ambient services, apply vapor-barrier mastic over staples.
 4. Cover joints and seams with tape, according to insulation material manufacturer's written instructions, to maintain vapor seal.
 5. Where vapor barriers are indicated, apply vapor-barrier mastic on seams and joints and at ends adjacent to pipe flanges and fittings.
- M. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness.
- N. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.
- O. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.
- P. For above-ambient services, do not install insulation to the following:
1. Testing agency labels and stamps.
 2. Nameplates and data plates.
 3. Cleanouts.

3.4 PENETRATIONS

- A. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.
- B. Insulation Installation at Fire-Rated Wall and Partition Penetrations: Install insulation continuously through penetrations of fire-rated walls and partitions.
- C. Insulation Installation at Floor Penetrations:
 1. Pipe: Install insulation continuously through floor penetrations.
 2. Seal penetrations through fire-rated assemblies.

3.5 GENERAL PIPE INSULATION INSTALLATION

- A. Requirements in this article generally apply to all insulation materials except where more specific requirements are specified in various pipe insulation material installation articles.
- B. Insulation Installation on Fittings, Valves, Strainers, Flanges, and Unions:

1. Install insulation over fittings, valves, strainers, flanges, unions, heat exchangers and other items with continuous thermal and vapor-retarder integrity unless otherwise indicated.
 2. Insulate pipe elbows using preformed fitting insulation or mitered fittings made from same material and density as adjacent pipe insulation. Each piece shall be butted tightly against adjoining piece and bonded with adhesive. Fill joints, seams, voids, and irregular surfaces with insulating cement finished to a smooth, hard, and uniform contour that is uniform with adjoining pipe insulation.
 3. Insulate tee fittings with preformed fitting insulation or sectional pipe insulation of same material and thickness as used for adjacent pipe. Cut sectional pipe insulation to fit. Butt each section closely to the next and hold in place with tie wire. Bond pieces with adhesive.
 4. Insulate valves using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. For valves, insulate up to and including the bonnets, valve stuffing-box studs, bolts, and nuts. Fill joints, seams, and irregular surfaces with insulating cement.
 5. Insulate strainers using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. Fill joints, seams, and irregular surfaces with insulating cement. Insulate strainers so strainer basket flange or plug can be easily removed and replaced without damaging the insulation and jacket. Provide a removable reusable insulation cover. For below-ambient services, provide a design that maintains vapor barrier.
 6. Insulate flanges and unions using a section of oversized preformed pipe insulation. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker.
 7. Cover segmented insulated surfaces with a layer of finishing cement and coat with a mastic. Install vapor-barrier mastic for below-ambient services and a breather mastic for above-ambient services. Reinforce the mastic with fabric-reinforcing mesh. Trowel the mastic to a smooth and well-shaped contour.
 8. For services not specified to receive a field-applied jacket install fitted PVC cover over elbows, tees, strainers, valves, flanges, and unions. Terminate ends with PVC end caps. Tape PVC covers to adjoining insulation facing using PVC tape.
 9. Stencil or label the outside insulation jacket of each union with the word "union." Match size and color of pipe labels.
- C. Insulate instrument connections for thermometers, taps, test connections on insulated pipes. Shape insulation at these connections by tapering it to and around the connection with insulating cement and finish with finishing cement, mastic, and flashing sealant.
- D. Install removable insulation covers at locations indicated. Installation shall conform to the following:

1. Make removable flange and union insulation from sectional pipe insulation of same thickness as that on adjoining pipe. Install same insulation jacket as adjoining pipe insulation.
2. When flange and union covers are made from sectional pipe insulation, extend insulation from flanges or union long at least two times the insulation thickness over adjacent pipe insulation on each side of flange or union. Secure flange cover in place with stainless-steel or aluminum bands. Select band material compatible with insulation and jacket.
3. Construct removable valve insulation covers in same manner as for flanges, except divide the two-part section on the vertical center line of valve body.
4. When covers are made from block insulation, make two halves, each consisting of mitered blocks wired to stainless-steel fabric. Secure this wire frame, with its attached insulation, to flanges with tie wire. Extend insulation at least 2 inches over adjacent pipe insulation on each side of valve. Fill space between flange or union cover and pipe insulation with insulating cement. Finish cover assembly with insulating cement applied in two coats. After first coat is dry, apply and trowel second coat to a smooth finish.
5. Unless a PVC jacket is indicated in field-applied jacket schedules, finish exposed surfaces with a metal jacket.

3.6 INSTALLATION OF CELLULAR-GLASS INSULATION

A. Insulation Installation on Straight Pipes and Tubes:

1. Secure each layer of insulation to pipe with wire or bands and tighten bands without deforming insulation materials.
2. Where vapor barriers are indicated, seal longitudinal seams, end joints, and protrusions with vapor-barrier mastic and joint sealant.
3. For insulation with factory-applied jackets on above-ambient services, secure laps with outward clinched staples at 6 inches o.c.
4. For insulation with factory-applied jackets on below-ambient services, do not staple longitudinal tabs. Instead, secure tabs with additional adhesive as recommended by insulation material manufacturer and seal with vapor-barrier mastic and flashing sealant.

B. Insulation Installation on Pipe Flanges:

1. Install preformed pipe insulation to outer diameter of pipe flange.
2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with cut sections of cellular-glass block insulation of same thickness as pipe insulation.
4. Install jacket material with manufacturer's recommended adhesive, overlap seams at least 1 inch, and seal joints with flashing sealant.

C. Insulation Installation on Pipe Fittings and Elbows:

1. Install preformed sections of same material as straight segments of pipe insulation when available. Secure according to manufacturer's written instructions.
2. When preformed sections of insulation are not available, install mitered sections of cellular-glass insulation. Secure insulation materials with wire or bands.

D. Insulation Installation on Valves and Pipe Specialties:

1. Install preformed sections of cellular-glass insulation to valve body.
2. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
3. Install insulation to flanges as specified for flange insulation application.

3.7 INSTALLATION OF MINERAL-FIBER INSULATION

A. Insulation Installation on Straight Pipes and Tubes:

1. Secure each layer of preformed pipe insulation to pipe with wire or bands and tighten bands without deforming insulation materials.
2. Where vapor barriers are indicated, seal longitudinal seams, end joints, and protrusions with vapor-barrier mastic and joint sealant.
3. For insulation with factory-applied jackets on above-ambient surfaces, secure laps with outward clinched staples at 6 inches o.c.
4. For insulation with factory-applied jackets on below-ambient surfaces, do not staple longitudinal tabs. Instead, secure tabs with additional adhesive as recommended by insulation material manufacturer and seal with vapor-barrier mastic and flashing sealant.

B. Insulation Installation on Pipe Flanges:

1. Install preformed pipe insulation to outer diameter of pipe flange.
2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with mineral-fiber blanket insulation.
4. Install jacket material with manufacturer's recommended adhesive, overlap seams at least 1 inch, and seal joints with flashing sealant.

C. Insulation Installation on Pipe Fittings and Elbows:

1. Install preformed sections of same material as straight segments of pipe insulation when available.
2. When preformed insulation elbows and fittings are not available, install mitered sections of pipe insulation, to a thickness equal to adjoining pipe insulation. Secure insulation materials with wire or bands.

D. Insulation Installation on Valves and Pipe Specialties:

1. Install preformed sections of same material as straight segments of pipe insulation when available.
2. When preformed sections are not available, install mitered sections of pipe insulation to valve body.
3. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
4. Install insulation to flanges as specified for flange insulation application.

3.8 FIELD-APPLIED JACKET INSTALLATION

- A. Where glass-cloth jackets are indicated, install directly over bare insulation or insulation with factory-applied jackets.
 1. Draw jacket smooth and tight to surface with 2-inch overlap at seams and joints.
 2. Embed glass cloth between two 0.062-inch-thick coats of lagging adhesive.
 3. Completely encapsulate insulation with coating, leaving no exposed insulation.
- B. Where PVC jackets are indicated, install with 1-inch overlap at longitudinal seams and end joints. Seal with manufacturer's recommended adhesive.
 1. Apply two continuous beads of adhesive to seams and joints, one bead under lap and the finish bead along seam and joint edge.

3.9 FINISHES

- A. Insulation with ASJ, Glass-Cloth, or Other Paintable Jacket Material: Paint jacket with paint system identified below.
 1. Flat Acrylic Finish: Two finish coats over a primer that is compatible with jacket material and finish coat paint. Add fungicidal agent to render fabric mildew proof.
 - a. Finish Coat Material: Interior, flat, latex-emulsion size.
- B. Color: Final color as selected by Architect. Vary first and second coats to allow visual inspection of the completed Work.

3.10 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Tests and Inspections:
 1. Inspect pipe, fittings, strainers, and valves, randomly selected by Architect, by removing field-applied jacket and insulation in layers in reverse order of their installation. Extent of inspection shall be limited to three locations of straight pipe, three locations of

threaded fittings, three locations of welded fittings, two locations of threaded strainers, two locations of welded strainers, three locations of threaded valves, and three locations of flanged valves for each pipe service defined in the "Piping Insulation Schedule, General" Article.

- C. All insulation applications will be considered defective Work if sample inspection reveals noncompliance with requirements.

3.11 PIPING INSULATION SCHEDULE, GENERAL

- A. Acceptable preformed pipe and tubular insulation materials and thicknesses are identified for each piping system and pipe size range. If more than one material is listed for a piping system, selection from materials listed is Contractor's option.
- B. Items Not Insulated: Unless otherwise indicated, do not install insulation on the following:
 - 1. Drainage piping located in crawl spaces.
 - 2. Underground piping.
 - 3. Chrome-plated pipes and fittings unless there is a potential for personnel injury.

3.12 INDOOR PIPING INSULATION SCHEDULE

- A. Domestic Cold Water:
 - 1. NPS 1 and Smaller: Insulation shall be one of the following:
 - a. Cellular Glass: 1-1/2 inches thick.
 - b. Mineral-Fiber, Preformed Pipe Insulation, Type I: 1 inch thick.
 - 2. NPS 1-1/4 and Larger: Insulation shall be one of the following:
 - a. Cellular Glass: 1-1/2 inches thick.
 - b. Mineral-Fiber, Preformed Pipe Insulation, Type I: 1 inch thick.
- B. Domestic Hot and Recirculated Hot Water:
 - 1. NPS 1-1/4 and Smaller: Insulation shall be one of the following:
 - a. Cellular Glass: 1-1/2 inches thick.
 - b. Mineral-Fiber, Preformed Pipe Insulation, Type I: 1 inch thick.
 - 2. NPS 1-1/2 and Larger: Insulation shall be one of the following:
 - a. Cellular Glass: 1-1/2 inches thick.
 - b. Mineral-Fiber, Preformed Pipe Insulation, Type I: 1 inch thick.

- C. Exposed Sanitary Drains, Domestic Water, Domestic Hot Water, and Stops for Plumbing Fixtures for People with Disabilities:
 - 1. All Pipe Sizes: Insulation shall be one of the following:
 - a. Flexible Elastomeric: 3/4 inch thick.
 - b. Mineral-Fiber, Preformed Pipe Insulation, Type I: 1/2 inch thick.

3.13 INDOOR, FIELD-APPLIED JACKET SCHEDULE

- A. Install jacket over insulation material. For insulation with factory-applied jacket, install the field-applied jacket over the factory-applied jacket.
- B. If more than one material is listed, selection from materials listed is Contractor's option.
- C. Piping, Concealed:
 - 1. None.
- D. Piping, Exposed:
 - 1. PVC: 20 mils thick.

END OF SECTION 220719

SECTION 221116 - DOMESTIC WATER PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Aboveground domestic water pipes, tubes, and fittings inside buildings.

1.3 ACTION SUBMITTALS

- A. Product Data: For transition fittings and dielectric fittings.

1.4 INFORMATIONAL SUBMITTALS

- A. System purging and disinfecting activities report.
- B. Field quality-control reports.

1.5 FIELD CONDITIONS

- A. Interruption of Existing Water Service: Do not interrupt water service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary water service according to requirements indicated:
 - 1. Notify Construction Manager and Owner no fewer than three days in advance of proposed interruption of water service.
 - 2. Do not interrupt water service without Construction Manager's and Owner's written permission.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

- A. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, fitting materials, and joining methods for specific services, service locations, and pipe sizes.
- B. Potable-water piping and components shall comply with NSF 14 and NSF 61 Annex G. Plastic piping components shall be marked with "NSF-pw."

2.2 COPPER TUBE AND FITTINGS

- A. Hard Copper Tube: ASTM B 88, Type L water tube, drawn temper.
- B. Soft Copper Tube: ASTM B 88, Type K water tube, annealed temper.
- C. Cast-Copper, Solder-Joint Fittings: ASME B16.18, pressure fittings.
- D. Wrought-Copper, Solder-Joint Fittings: ASME B16.22, wrought-copper pressure fittings.
- E. Bronze Flanges: ASME B16.24, Class 150, with solder-joint ends.
- F. Copper Unions:
 - 1. MSS SP-123.
 - 2. Cast-copper-alloy, hexagonal-stock body.
 - 3. Ball-and-socket, metal-to-metal seating surfaces.
 - 4. Solder-joint or threaded ends.
- G. Copper Pressure-Seal-Joint Fittings:
 - 1. Fittings for NPS 2 and Smaller: Wrought-copper fitting with EPDM-rubber, O-ring seal in each end.
 - 2. Fittings for NPS 2-1/2 to NPS 4: Cast-bronze or wrought-copper fitting with EPDM-rubber, O-ring seal in each end.
- H. Copper Push-on-Joint Fittings:
 - 1. Description:
 - a. Cast-copper fitting complying with ASME B16.18 or wrought-copper fitting complying with ASME B 16.22.
 - b. Stainless-steel teeth and EPDM-rubber, O-ring seal in each end instead of solder-joint ends.
- I. Copper-Tube, Extruded-Tee Connections:

1. Description: Tee formed in copper tube according to ASTM F 2104.

J. Appurtenances for Grooved-End Copper Tubing:

1. Bronze Fittings for Grooved-End, Copper Tubing: ASTM B 75 copper tube or ASTM B 584 bronze castings.
2. Mechanical Couplings for Grooved-End Copper Tubing:
 - a. Copper-tube dimensions and design similar to AWWA C606.
 - b. Ferrous housing sections.
 - c. EPDM-rubber gaskets suitable for hot and cold water.
 - d. Bolts and nuts.
 - e. Minimum Pressure Rating: 300 psig.

2.3 PIPING JOINING MATERIALS

A. Pipe-Flange Gasket Materials:

1. AWWA C110/A21.10, rubber, flat face, 1/8 inch thick or ASME B16.21, nonmetallic and asbestos free unless otherwise indicated.
2. Full-face or ring type unless otherwise indicated.

B. Metal, Pipe-Flange Bolts and Nuts: ASME B18.2.1, carbon steel unless otherwise indicated.

C. Solder Filler Metals: ASTM B 32, lead-free alloys.

D. Flux: ASTM B 813, water flushable.

E. Brazing Filler Metals: AWS A5.8/A5.8M, BCuP Series, copper-phosphorus alloys for general-duty brazing unless otherwise indicated.

2.4 TRANSITION FITTINGS

A. General Requirements:

1. Same size as pipes to be joined.
2. Pressure rating at least equal to pipes to be joined.
3. End connections compatible with pipes to be joined.

B. Fitting-Type Transition Couplings: Manufactured piping coupling or specified piping system fitting.

C. Sleeve-Type Transition Coupling: AWWA C219.

2.5 DIELECTRIC FITTINGS

- A. General Requirements: Assembly of copper alloy and ferrous materials with separating nonconductive insulating material. Include end connections compatible with pipes to be joined.
- B. Dielectric Unions:
 - 1. Standard: ASSE 1079.
 - 2. Pressure Rating: 150 psig.
 - 3. End Connections: Solder-joint copper alloy and threaded ferrous.
- C. Dielectric Flanges:
 - 1. Standard: ASSE 1079.
 - 2. Factory-fabricated, bolted, companion-flange assembly.
 - 3. Pressure Rating: 150 psig.
 - 4. End Connections: Solder-joint copper alloy and threaded ferrous; threaded solder-joint copper alloy and threaded ferrous.
- D. Dielectric-Flange Insulating Kits:
 - 1. Nonconducting materials for field assembly of companion flanges.
 - 2. Pressure Rating: 150 psig.
 - 3. Gasket: Neoprene or phenolic.
 - 4. Bolt Sleeves: Phenolic or polyethylene.
 - 5. Washers: Phenolic with steel backing washers.
- E. Dielectric Nipples:
 - 1. Standard: IAPMO PS 66.
 - 2. Electroplated steel nipple complying with ASTM F 1545.
 - 3. Pressure Rating and Temperature: 300 psig at 225 deg. F.
 - 4. End Connections: Male threaded or grooved.
 - 5. Lining: Inert and noncorrosive, propylene.

PART 3 - EXECUTION

3.1 PIPING INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of domestic water piping. Indicated locations and arrangements are used to size pipe and calculate friction loss, expansion, and other design considerations. Install piping as indicated unless deviations to layout are approved on coordination drawings.
- B. Install copper tubing under building slab according to CDA's "Copper Tube Handbook."

- C. Install shutoff valve immediately upstream of each dielectric fitting.
- D. Install domestic water piping level and plumb.
- E. Rough-in domestic water piping for water-meter installation according to utility company's requirements.
- F. Install piping concealed from view and protected from physical contact by building occupants unless otherwise indicated and except in equipment rooms and service areas.
- G. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- H. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal, and coordinate with other services occupying that space.
- I. Install piping to permit valve servicing.
- J. Install nipples, unions, special fittings, and valves with pressure ratings the same as or higher than the system pressure rating used in applications below unless otherwise indicated.
- K. Install piping free of sags and bends.
- L. Install fittings for changes in direction and branch connections.
- M. Install unions in copper tubing at final connection to each piece of equipment, machine, and specialty.
- N. Install thermostats in hot-water circulation piping. Comply with requirements for thermostats in Section 221123 "Domestic Water Pumps."
- O. Install thermometers on domestic water inlet and outlet piping and on hydronic water inlet and outlet piping at heat exchanger, and on domestic hot water outlet piping at hot water storage tank. Comply with requirements for thermometers in Section 220519 "Meters and Gages for Plumbing Piping."
- P. Install sleeves for piping penetrations of walls, ceilings, and floors. Comply with requirements for sleeves specified in Section 220517 "Sleeves and Sleeve Seals for Plumbing Piping."
- Q. Install sleeve seals for piping penetrations of concrete walls and slabs. Comply with requirements for sleeve seals specified in Section 220517 "Sleeves and Sleeve Seals for Plumbing Piping."
- R. Install escutcheons for piping penetrations of walls, ceilings, and floors. Comply with requirements for escutcheons specified in Section 220518 "Escutcheons for Plumbing Piping."

3.2 JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- B. Remove scale, slag, dirt, and debris from inside and outside of pipes, tubes, and fittings before assembly.
- C. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
 - 1. Apply appropriate tape or thread compound to external pipe threads.
 - 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged.
- D. Brazed Joints for Copper Tubing: Comply with CDA's "Copper Tube Handbook," "Braze Joints" chapter.
- E. Soldered Joints for Copper Tubing: Apply ASTM B 813, water-flushable flux to end of tube. Join copper tube and fittings according to ASTM B 828 or CDA's "Copper Tube Handbook."
- F. Pressure-Sealed Joints for Copper Tubing: Join copper tube and pressure-seal fittings with tools recommended by fitting manufacturer.
- G. Push-on Joints for Copper Tubing: Clean end of tube. Measure insertion depth with manufacturer's depth gage. Join copper tube and push-on-joint fittings by inserting tube to measured depth.
- H. Extruded-Tee Connections: Form tee in copper tube according to ASTM F 2014. Use tool designed for copper tube; drill pilot hole, form collar for outlet, dimple tube to form seating stop, and braze branch tube into collar.
- I. Joint Construction for Grooved-End Copper Tubing: Make joints according to AWWA C606. Roll groove ends of tubes. Lubricate and install gasket over ends of tubes or tube and fitting. Install coupling housing sections over gasket with keys seated in tubing grooves. Install and tighten housing bolts.
- J. Joint Construction for Grooved-End Steel Piping: Make joints according to AWWA C606. Roll groove ends of pipe as specified. Lubricate and install gasket over ends of pipes or pipe and fitting. Install coupling housing sections over gasket with keys seated in piping grooves. Install and tighten housing bolts.
- K. Flanged Joints: Select appropriate asbestos-free, nonmetallic gasket material in size, type, and thickness suitable for domestic water service. Join flanges with gasket and bolts according to ASME B31.9.
- L. Joints for Dissimilar-Material Piping: Make joints using adapters compatible with materials of both piping systems.

3.3 TRANSITION FITTING INSTALLATION

- A. Install transition couplings at joints of dissimilar piping.
- B. Transition Fittings in Underground Domestic Water Piping:
 - 1. Fittings for NPS 1-1/2 and Smaller: Fitting-type coupling.
 - 2. Fittings for NPS 2 and Larger: Sleeve-type coupling.

3.4 DIELECTRIC FITTING INSTALLATION

- A. Install dielectric fittings in piping at connections of dissimilar metal piping and tubing.
- B. Dielectric Fittings for NPS 2 and Smaller: Use dielectric couplings, nipples or unions.
- C. Dielectric Fittings for NPS 2-1/2 to NPS 4: Use dielectric flanges or flange kits.

3.5 HANGER AND SUPPORT INSTALLATION

- A. Comply with requirements for pipe hanger, support products, and installation in Section 220529 "Hangers and Supports for Plumbing Piping and Equipment."
 - 1. Vertical Piping: MSS Type 8 or 42, clamps.
 - 2. Individual, Straight, Horizontal Piping Runs:
 - a. 100 Feet and Less: MSS Type 1, adjustable, steel clevis hangers.
 - 3. Multiple, Straight, Horizontal Piping Runs 100 Feet or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.
 - 4. Base of Vertical Piping: MSS Type 52, spring hangers.
- B. Support vertical piping and tubing at base and at each floor.
- C. Rod diameter may be reduced one size for double-rod hangers, to a minimum of 3/8 inch.
- D. Install hangers for copper tubing with the following maximum horizontal spacing and minimum rod diameters:
 - 1. NPS 3/4 and Smaller: 60 inches with 3/8-inch rod.
 - 2. NPS 1 and NPS 1-1/4: 72 inches with 3/8-inch rod.
 - 3. NPS 1-1/2 and NPS 2: 96 inches with 3/8-inch rod.
 - 4. NPS 2-1/2: 108 inches with 1/2-inch rod.
- E. Install supports for vertical copper tubing every 10 feet.

- F. Support piping and tubing not listed in this article according to MSS SP-69 and manufacturer's written instructions.

3.6 CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. When installing piping adjacent to equipment and machines, allow space for service and maintenance.

3.7 IDENTIFICATION

- A. Identify system components. Comply with requirements for identification materials and installation in Section 220553 "Identification for Plumbing Piping and Equipment."
- B. Label pressure piping with system operating pressure.

3.8 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
 - 1. Piping Inspections:
 - a. Do not enclose, cover, or put piping into operation until it has been inspected and approved by authorities having jurisdiction.
 - b. During installation, notify authorities having jurisdiction at least three days before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction:
 - 1) Roughing-in Inspection: Arrange for inspection of piping before concealing or closing in after roughing in and before setting fixtures.
 - 2) Final Inspection: Arrange for authorities having jurisdiction to observe tests specified in "Piping Tests" Subparagraph below and to ensure compliance with requirements.
 - c. Reinspection: If authorities having jurisdiction find that piping will not pass tests or inspections, make required corrections and arrange for reinspection.
 - d. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.
 - 2. Piping Tests:
 - a. Fill domestic water piping. Check components to determine that they are not air bound and that piping is full of water.

- b. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit a separate report for each test, complete with diagram of portion of piping tested.
- c. Leave new, altered, extended, or replaced domestic water piping uncovered and unconcealed until it has been tested and approved. Expose work that was covered or concealed before it was tested.
- d. Cap and subject piping to static water pressure of 50 psig above operating pressure, without exceeding pressure rating of piping system materials. Isolate test source and allow it to stand for four hours. Leaks and loss in test pressure constitute defects that must be repaired.
- e. Repair leaks and defects with new materials, and retest piping or portion thereof until satisfactory results are obtained.
- f. Prepare reports for tests and for corrective action required.

B. Domestic water piping will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

3.9 ADJUSTING

A. Perform the following adjustments before operation:

1. Close drain valves, hydrants, and hose bibbs.
2. Open shutoff valves to fully open position.
3. Remove plugs used during testing of piping and for temporary sealing of piping during installation.
4. Remove and clean strainer screens. Close drain valves and replace drain plugs.
5. Check plumbing specialties and verify proper settings, adjustments, and operation.

3.10 CLEANING

A. Clean and disinfect potable domestic water piping as follows:

1. Purge new piping and parts of existing piping that have been altered, extended, or repaired before using.
2. Use purging and disinfecting procedures prescribed by authorities having jurisdiction; if methods are not prescribed, use procedures described in either AWWA C651 or AWWA C652 or follow procedures described below:
 - a. Flush piping system with clean, potable water until dirty water does not appear at outlets.
 - b. Fill and isolate system according to either of the following:
 - 1) Fill system or part thereof with water/chlorine solution with at least 50 ppm of chlorine. Isolate with valves and allow to stand for 24 hours.

- 2) Fill system or part thereof with water/chlorine solution with at least 200 ppm of chlorine. Isolate and allow to stand for three hours.
 - c. Flush system with clean, potable water until no chlorine is in water coming from system after the standing time.
 - d. Repeat procedures if biological examination shows contamination.
 - e. Submit water samples in sterile bottles to authorities having jurisdiction.
- B. Prepare and submit reports of purging and disinfecting activities. Include copies of water-sample approvals from authorities having jurisdiction.
- C. Clean interior of domestic water piping system. Remove dirt and debris as work progresses.

3.11 PIPING SCHEDULE

- A. Transition and special fittings with pressure ratings at least equal to piping rating may be used in applications below unless otherwise indicated.
- B. Flanges and unions may be used for aboveground piping joints unless otherwise indicated.
- C. Fitting Option: Extruded-tee connections and brazed joints may be used on aboveground copper tubing.
- D. Aboveground domestic water piping, NPS 2 and smaller, shall be one of the following:
 1. Hard copper tube, ASTM B 88, Type L; cast- or wrought-copper, solder-joint fittings; and soldered joints.
 2. Hard copper tube, ASTM B 88, Type L; copper pressure-seal-joint fittings; and pressure-sealed joints.
 3. Hard copper tube, ASTM B 88, Type L; copper push-on-joint fittings; and push-on joints.

3.12 VALVE SCHEDULE

- A. Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:
 1. Shutoff Duty: Use ball or gate valves for piping NPS 2 and smaller. Use butterfly, ball, or gate valves with flanged ends for piping NPS 2-1/2 and larger.
 2. Drain Duty: Hose-end drain valves.
- B. Use check valves to maintain correct direction of domestic water flow to and from equipment.

END OF SECTION 221116

SECTION 221119 - DOMESTIC WATER PIPING SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Vacuum breakers.
 - 2. Strainers.
 - 3. Outlet boxes.
 - 4. Drain valves.
 - 5. Water-hammer arresters.
 - 6. Flexible connectors.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For domestic water piping specialties.
 - 1. Include diagrams for power, signal, and control wiring.

1.4 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For domestic water piping specialties to include in emergency, operation, and maintenance manuals.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PIPING SPECIALTIES

- A. Potable-water piping and components shall comply with NSF 61 Annex G and NSF 14. Mark "NSF-pw" on plastic piping components.

2.2 PERFORMANCE REQUIREMENTS

- A. Minimum Working Pressure for Domestic Water Piping Specialties: 125 psig unless otherwise indicated.

2.3 VACUUM BREAKERS

- A. Pipe-Applied, Atmospheric-Type Vacuum Breakers:

1. Standard: ASSE 1001.
2. Size: NPS 1/4 to NPS 3, as required to match connected piping.
3. Body: Bronze.
4. Inlet and Outlet Connections: Threaded.
5. Finish: Chrome plated.

- B. Hose-Connection Vacuum Breakers:

1. Standard: ASSE 1011.
2. Body: Bronze, nonremovable, with manual drain.
3. Outlet Connection: Garden-hose threaded complying with ASME B1.20.7.
4. Finish: Chrome or nickel plated.

2.4 STRAINERS FOR DOMESTIC WATER PIPING

- A. Y-Pattern Strainers:

1. Pressure Rating: 125 psig minimum unless otherwise indicated.
2. Body: Bronze for NPS 2 and smaller; cast iron with interior lining that complies with AWWA C550 or that is FDA approved, epoxy coated and for NPS 2-1/2 and larger.
3. End Connections: Threaded for NPS 2 and smaller; flanged for NPS 2-1/2 and larger.
4. Screen: Stainless steel with round perforations unless otherwise indicated.
5. Drain: Pipe plug or factory-installed, hose-end drain valve.

2.5 OUTLET BOXES

- A. Clothes Washer Outlet Boxes:

1. Mounting: Recessed.
2. Material and Finish: Enameled-steel, epoxy-painted-steel or stainless-steel box and faceplate.
3. Faucet: Combination valved fitting or separate hot- and cold-water valved fittings complying with ASME A112.18.1. Include garden-hose thread complying with ASME B1.20.7 on outlets.
4. Supply Shutoff Fittings: NPS 1/2 ball valves and NPS 1/2 copper, water tubing.
5. Drain: NPS 2 standpipe and P-trap for direct waste connection to drainage piping.
6. Inlet Hoses: Two 60-inch-long, rubber household clothes washer inlet hoses with female, garden-hose-thread couplings. Include rubber washers.
7. Drain Hose: One 48-inch-long, rubber household clothes washer drain hose with hooked end.

2.6 DRAIN VALVES

A. Ball-Valve-Type, Hose-End Drain Valves:

1. Standard: MSS SP-110 for standard-port, two-piece ball valves.
2. Pressure Rating: 400-psig minimum CWP.
3. Size: NPS 3/4.
4. Body: Copper alloy.
5. Ball: Chrome-plated brass.
6. Seats and Seals: Replaceable.
7. Handle: Vinyl-covered steel.
8. Inlet: Threaded or solder joint.
9. Outlet: Threaded, short nipple with garden-hose thread complying with ASME B1.20.7 and cap with brass chain.

B. Stop-and-Waste Drain Valves:

1. Standard: MSS SP-110 for ball valves or MSS SP-80 for gate valves.
2. Pressure Rating: 200-psig minimum CWP or Class 125.
3. Size: NPS 3/4.
4. Body: Copper alloy or ASTM B 62 bronze.
5. Drain: NPS 1/8 side outlet with cap.

2.7 WATER-HAMMER ARRESTERS

A. Water-Hammer Arresters:

1. Standard: ASSE 1010 or PDI-WH 201.
2. Type: [Metal bellows] [Copper tube with piston].
3. Size: ASSE 1010, Sizes AA and A through F, or PDI-WH 201, Sizes A through F.

2.8 FLEXIBLE CONNECTORS

- A. Bronze-Hose Flexible Connectors: Corrugated-bronze tubing with bronze wire-braid covering and ends brazed to inner tubing.
 - 1. Working-Pressure Rating: Minimum 200 psig.
 - 2. End Connections NPS 2 and Smaller: Threaded copper pipe or plain-end copper tube.
 - 3. End Connections NPS 2-1/2 and Larger: Flanged copper alloy.

- B. Stainless-Steel-Hose Flexible Connectors: Corrugated-stainless-steel tubing with stainless-steel wire-braid covering and ends welded to inner tubing.
 - 1. Working-Pressure Rating: Minimum 200 psig.
 - 2. End Connections NPS 2 and Smaller: Threaded steel-pipe nipple.
 - 3. End Connections NPS 2-1/2 and Larger: Flanged steel nipple.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install Y-pattern strainers for water on supply side of each pump.
- B. Install outlet boxes recessed in wall or surface mounted on wall. Install 2-by-4-inch fire-retardant-treated-wood blocking, wall reinforcement between studs.
- C. Install water-hammer arresters in water piping according to PDI-WH 201.

3.2 CONNECTIONS

- A. Comply with requirements for ground equipment in Section 260526 "Grounding and Bonding for Electrical Systems."
- B. Fire-retardant-treated-wood blocking is specified in Section 260519 "Low-Voltage Electrical Power Conductors and Cables" for electrical connections.

3.3 ADJUSTING

- A. Set field-adjustable temperature set points of temperature-actuated, water mixing valves.

END OF SECTION 221119

SECTION 221316 - SANITARY WASTE AND VENT PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Pipe, tube, and fittings.
 - 2. Specialty pipe fittings.

1.3 PERFORMANCE REQUIREMENTS

- A. Components and installation shall be capable of withstanding the following minimum working pressure unless otherwise indicated:
 - 1. Soil, Waste, and Vent Piping: 10-foot head of water.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1.5 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

1.6 QUALITY ASSURANCE

- A. Piping materials shall bear label, stamp, or other markings of specified testing agency.

1.7 PROJECT CONDITIONS

- A. Interruption of Existing Sanitary Waste Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:

1. Notify Construction Manager and Owner no fewer than three days in advance of proposed interruption of sanitary waste service.
2. Do not proceed with interruption of sanitary waste service without Construction Manager's and Owner's written permission.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

- A. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, fitting materials, and joining methods for specific services, service locations, and pipe sizes.

2.2 HUB-AND-SPIGOT, CAST-IRON SOIL PIPE AND FITTINGS

- A. Pipe and Fittings: ASTM A 74, Service class.
- B. Gaskets: ASTM C 564, rubber.
- C. Calking Materials: ASTM B 29, pure lead and oakum or hemp fiber.

2.3 HUBLESS, CAST-IRON SOIL PIPE AND FITTINGS

- A. Pipe and Fittings: ASTM A 888 or CISPI 301.
- B. CISPI, Hubless-Piping Couplings:
 1. Standards: ASTM C 1277 and CISPI 310.
 2. Description: Stainless-steel corrugated shield with stainless-steel bands and tightening devices; and ASTM C 564, rubber sleeve with integral, center pipe stop.
- C. Heavy-Duty, Hubless-Piping Couplings:
 1. Standards: ASTM C 1277 and ASTM C 1540.
 2. Description: Stainless-steel shield with stainless-steel bands and tightening devices; and ASTM C 564, rubber sleeve with integral, center pipe stop.
- D. Cast-Iron, Hubless-Piping Couplings:
 1. Standard: ASTM C 1277.
 2. Description: Two-piece ASTM A 48/A 48M, cast-iron housing; stainless-steel bolts and nuts; and ASTM C 564, rubber sleeve with integral, center pipe stop.

2.4 GALVANIZED-STEEL PIPE AND FITTINGS

- A. Galvanized-Steel Pipe: ASTM A 53/A 53M, Type E, Standard Weight class. Include square-cut-grooved or threaded ends matching joining method.
- B. Galvanized-Cast-Iron Drainage Fittings: ASME B16.12, threaded.

2.5 COPPER TUBE AND FITTINGS

- A. Copper DWV Tube: ASTM B 306, drainage tube, drawn temper.
- B. Copper Drainage Fittings: ASME B16.23, cast copper or ASME B16.29, wrought copper, solder-joint fittings.
- C. Solder: ASTM B 32, lead free with ASTM B 813, water-flushable flux.

2.6 SPECIALTY PIPE FITTINGS

- A. Transition Couplings:
 - 1. General Requirements: Fitting or device for joining piping with small differences in OD's or of different materials. Include end connections same size as and compatible with pipes to be joined.
 - 2. Fitting-Type Transition Couplings: Manufactured piping coupling or specified piping system fitting.
- B. Dielectric Fittings:
 - 1. General Requirements: Assembly of copper alloy and ferrous materials with separating nonconductive insulating material. Include end connections compatible with pipes to be joined.
 - 2. Dielectric Unions:
 - a. Description:
 - 1) Standard: ASSE 1079.
 - 2) Pressure Rating: 150 psig.
 - 3) End Connections: Solder-joint copper alloy and threaded ferrous.
 - 3. Dielectric Flanges:
 - a. Description:
 - 1) Standard: ASSE 1079.
 - 2) Factory-fabricated, bolted, companion-flange assembly.

- 3) Pressure Rating: 150 psig.
- 4) End Connections: Solder-joint copper alloy and threaded ferrous; threaded solder-joint copper alloy and threaded ferrous.

PART 3 - EXECUTION

3.1 PIPING INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on coordination drawings.
- B. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.
- C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- D. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- E. Install piping to permit valve servicing.
- F. Install piping at indicated slopes.
- G. Install piping free of sags and bends.
- H. Install fittings for changes in direction and branch connections.
- I. Install piping to allow application of insulation.
- J. Make changes in direction for soil and waste drainage and vent piping using appropriate branches, bends, and long-sweep bends. Sanitary tees and short-sweep 1/4 bends may be used on vertical stacks if change in direction of flow is from horizontal to vertical. Use long-turn, double Y-branch and 1/8-bend fittings if two fixtures are installed back to back or side by side with common drain pipe. Straight tees, elbows, and crosses may be used on vent lines. Do not change direction of flow more than 90 degrees. Use proper size of standard increasers and reducers if pipes of different sizes are connected. Reducing size of drainage piping in direction of flow is prohibited.
- K. Lay buried building drainage piping beginning at low point of each system. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab in piping and pull past each joint as completed.

- L. Install soil and waste drainage and vent piping at the following minimum slopes unless otherwise indicated:
 - 1. Building Sanitary Drain: 2 percent downward in direction of flow for piping NPS 3 and smaller; 1 percent downward in direction of flow for piping NPS 4 and larger.
 - 2. Horizontal Sanitary Drainage Piping: 2 percent downward in direction of flow for piping NPS 3 and smaller; 1 percent downward in direction of flow for piping NPS 4 and larger.
 - 3. Vent Piping: 1 percent down toward vertical fixture vent or toward vent stack.
 - M. Install cast-iron soil piping according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings."
 - N. Install steel piping according to applicable plumbing code.
 - O. Install aboveground copper tubing according to CDA's "Copper Tube Handbook."
 - P. Plumbing Specialties:
 - 1. Comply with requirements for cleanouts specified in Section 221319 "Sanitary Waste Piping Specialties."
 - 2. Install drains in sanitary drainage gravity-flow piping. Comply with requirements for drains specified in Section 221319 "Sanitary Waste Piping Specialties."
 - Q. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.
 - R. Install sleeves for piping penetrations of walls, ceilings, and floors. Comply with requirements for sleeves specified in Section 220517 "Sleeves and Sleeve Seals for Plumbing Piping."
 - S. Install sleeve seals for piping penetrations of concrete walls and slabs. Comply with requirements for sleeve seals specified in Section 220517 "Sleeves and Sleeve Seals for Plumbing Piping."
 - T. Install escutcheons for piping penetrations of walls, ceilings, and floors. Comply with requirements for escutcheons specified in Section 220518 "Escutcheons for Plumbing Piping."
- 3.2 JOINT CONSTRUCTION
- A. Join hub-and-spigot, cast-iron soil piping with gasket joints according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for compression joints.
 - B. Join hub-and-spigot, cast-iron soil piping with calked joints according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for lead-and-oakum calked joints.
 - C. Join hubless, cast-iron soil piping according to CISPI 310 and CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for hubless-piping coupling joints.

- D. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
 - 1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
 - 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- E. Join copper tube and fittings with soldered joints according to ASTM B 828. Use ASTM B 813, water-flushable, lead-free flux and ASTM B 32, lead-free-alloy solder.

3.3 SPECIALTY PIPE FITTING INSTALLATION

- A. Transition Couplings:
 - 1. Install transition couplings at joints of piping with small differences in OD's.
- B. Dielectric Fittings:
 - 1. Install dielectric fittings in piping at connections of dissimilar metal piping and tubing.

3.4 HANGER AND SUPPORT INSTALLATION

- A. Comply with requirements for pipe hanger and support devices and installation specified in Section 220529 "Hangers and Supports for Plumbing Piping and Equipment."
 - 1. Install carbon-steel pipe hangers for horizontal piping in noncorrosive environments.
 - 2. Install carbon-steel pipe support clamps for vertical piping in noncorrosive environments.
 - 3. Vertical Piping: MSS Type 8 or Type 42, clamps.
 - 4. Install individual, straight, horizontal piping runs:
 - a. 100 Feet and Less: MSS Type 1, adjustable, steel clevis hangers.
 - 5. Multiple, Straight, Horizontal Piping Runs 100 Feet or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.
 - 6. Base of Vertical Piping: MSS Type 52, spring hangers.
- B. Support horizontal piping and tubing within 12 inches of each fitting and coupling.
- C. Support vertical piping and tubing at base and at each floor.
- D. Rod diameter may be reduced one size for double-rod hangers, with 3/8-inch minimum rods.

- E. Install hangers for cast-iron soil piping with the following maximum horizontal spacing and minimum rod diameters:
 - 1. NPS 1-1/2 and NPS 2: 60 inches with 3/8-inch rod.
 - 2. NPS 3: 60 inches with 1/2-inch rod.
 - 3. NPS 4 and NPS 5: 60 inches with 5/8-inch rod.
 - 4. Spacing for 10-foot lengths may be increased to 10 feet. Spacing for fittings is limited to 60 inches.

- F. Install supports for vertical cast-iron soil piping every 15 feet.

- G. Install hangers for steel piping with the following maximum horizontal spacing and minimum rod diameters:
 - 1. NPS 1-1/4: 84 inches with 3/8-inch rod.
 - 2. NPS 1-1/2: 108 inches with 3/8-inch rod.
 - 3. NPS 2: 10 feet with 3/8-inch rod.
 - 4. NPS 2-1/2: 11 feet with 1/2-inch rod.
 - 5. NPS 3: 12 feet with 1/2-inch rod.
 - 6. NPS 4 and NPS 5: 12 feet with 5/8-inch rod.

- H. Install supports for vertical steel piping every 15 feet.

- I. Install hangers for copper tubing with the following maximum horizontal spacing and minimum rod diameters:
 - 1. NPS 1-1/4: 72 inches with 3/8-inch rod.
 - 2. NPS 1-1/2 and NPS 2: 96 inches with 3/8-inch rod.
 - 3. NPS 2-1/2: 108 inches with 1/2-inch rod.
 - 4. NPS 3 and NPS 5: 10 feet with 1/2-inch rod.

- J. Install supports for vertical copper tubing every 10 feet.

- K. Support piping and tubing not listed above according to MSS SP-69 and manufacturer's written instructions.

3.5 CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties.

- B. Use transition fitting to join dissimilar piping materials.

- C. Connect drainage and vent piping to the following:
 - 1. Plumbing Fixtures: Connect drainage piping in sizes indicated, but not smaller than required by plumbing code.

2. Plumbing Fixtures and Equipment: Connect atmospheric vent piping in sizes indicated, but not smaller than required by authorities having jurisdiction.
 3. Plumbing Specialties: Connect drainage and vent piping in sizes indicated, but not smaller than required by plumbing code.
 4. Install test tees (wall cleanouts) in conductors near floor.
- D. Where installing piping adjacent to equipment, allow space for service and maintenance of equipment.

3.6 IDENTIFICATION

- A. Identify exposed sanitary waste and vent piping. Comply with requirements for identification specified in Section 220553 "Identification for Plumbing Piping and Equipment."

3.7 FIELD QUALITY CONTROL

- A. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction.
1. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in and before setting fixtures.
 2. Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.
- B. Re-inspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for re-inspection.
- C. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.
- D. Test sanitary drainage and vent piping according to procedures of authorities having jurisdiction or, in absence of published procedures, as follows:
1. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.
 2. Leave uncovered and unconcealed new, altered, extended, or replaced drainage and vent piping until it has been tested and approved. Expose work that was covered or concealed before it was tested.
 3. Roughing-in Plumbing Test Procedure: Test drainage and vent piping except outside leaders on completion of roughing-in. Close openings in piping system and fill with water to point of overflow, but not less than 10-foot head of water. From 15 minutes before inspection starts to completion of inspection, water level must not drop. Inspect joints for leaks.
 4. Finished Plumbing Test Procedure: After plumbing fixtures have been set and traps filled with water, test connections and prove they are gastight and watertight. Plug vent-stack openings on roof and building drains where they leave building. Introduce air into piping

system equal to pressure of 1-inch wg. Use U-tube or manometer inserted in trap of water closet to measure this pressure. Air pressure must remain constant without introducing additional air throughout period of inspection. Inspect plumbing fixture connections for gas and water leaks.

5. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.
6. Prepare reports for tests and required corrective action.

3.8 CLEANING AND PROTECTION

- A. Clean interior of piping. Remove dirt and debris as work progresses.
- B. Protect drains during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.
- C. Place plugs in ends of uncompleted piping at end of day and when work stops.

3.9 PIPING SCHEDULE

- A. Aboveground, soil and waste piping NPS 3 and smaller shall be any of the following:
 1. Service class, cast-iron soil pipe and fittings; gaskets; and gasketed joints.
 2. Hubless, cast-iron soil pipe and fittings; CISPI hubless-piping couplings; and coupled joints.
 3. Copper DWV tube, copper drainage fittings, and soldered joints.
 4. Dissimilar Pipe-Material Couplings: transition couplings.
- B. Aboveground, soil and waste piping NPS 4 and larger shall be any of the following:
 1. Service class, cast-iron soil pipe and fittings; gaskets; and gasketed joints.
 2. Hubless, cast-iron soil pipe and fittings; heavy-duty hubless-piping couplings; and coupled joints.
 3. Dissimilar Pipe-Material Couplings: transition couplings.
- C. Aboveground, vent piping all sizes shall be any of the following:
 1. Service class, cast-iron soil pipe and fittings; gaskets; and gasketed joints.
 2. Hubless, cast-iron soil pipe and fittings; CISPI hubless-piping couplings; and coupled joints.
 3. Galvanized-steel pipe, drainage fittings, and threaded joints.
 4. Copper DWV tube, copper drainage fittings, and soldered joints.
 5. Dissimilar Pipe-Material Couplings: transition couplings.
- D. Underground, soil, waste, and vent piping NPS 3 and smaller shall be any of the following:
 1. Service class, cast-iron soil piping; gaskets; and gasketed joints.

2. Hubless, cast-iron soil pipe and fittings; CISPI, cast-iron hubless-piping couplings; and coupled joints.
 3. Dissimilar Pipe-Material Couplings: transition couplings.
- E. Underground, soil and waste piping NPS 4 and larger shall be any of the following:
1. Service class, cast-iron soil piping; gaskets; and gasketed joints.
 2. Hubless, cast-iron soil pipe and fittings; heavy-duty, cast-iron hubless-piping couplings; coupled joints.
 3. Dissimilar Pipe-Material Couplings: transition couplings.

END OF SECTION 221316

SECTION 221319 - SANITARY WASTE PIPING SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Cleanouts.
 - 2. Floor drains.
 - 3. Through-penetration firestop assemblies.
 - 4. Miscellaneous sanitary drainage piping specialties.

1.3 DEFINITIONS

- A. HDPE: High-density polyethylene plastic.
- B. PE: Polyethylene plastic.
- C. PP: Polypropylene plastic.
- D. PVC: Polyvinyl chloride plastic.

1.4 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For drainage piping specialties to include in emergency, operation, and maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Drainage piping specialties shall bear label, stamp, or other markings of specified testing agency.

- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- C. Comply with NSF 14, "Plastics Piping Components and Related Materials," for plastic sanitary piping specialty components.

PART 2 - PRODUCTS

2.1 CLEANOUTS

- A. Exposed Metal Cleanouts:
 - 1. ASME A112.36.2M, Cast-Iron Cleanouts:
 - 2. Standard: ASME A112.36.2M for cast iron for cleanout test tee.
 - 3. Size: Same as connected drainage piping
 - 4. Body Material: Hub-and-spigot, cast-iron soil pipe T-branch or Hubless, cast-iron soil pipe test tee as required to match connected piping.
 - 5. Closure: Countersunk, brass plug.
 - 6. Closure Plug Size: Same as or not more than one size smaller than cleanout size.
- B. Wall Cleanouts:
 - 1. Standard: ASME A112.36.2M. Include wall access.
 - 2. Size: Same as connected drainage piping.
 - 3. Body: Hub-and-spigot, cast-iron soil pipe T-branch or Hubless, cast-iron soil pipe test tee as required to match connected piping.
 - 4. Closure: Countersunk brass plug.
 - 5. Closure Plug Size: Same as or not more than one size smaller than cleanout size.
 - 6. Wall Access: Round, flat, chrome-plated brass or stainless-steel cover plate with screw.
 - 7. Wall Access: Square, nickel-bronze, copper-alloy, or stainless-steel wall-installation frame and cover.

2.2 FLOOR DRAINS

- A. Cast-Iron Floor Drains:
 - 1. Standard: ASME A112.6.3.
 - 2. Pattern: Floor drain.
 - 3. Body Material: Gray iron.
 - 4. Seepage Flange: Where required for the application.
 - 5. Anchor Flange: Where required for the application.
 - 6. Clamping Device: Where required for the application.
 - 7. Outlet: Bottom.
 - 8. Sediment Bucket: Slotted or perforated, where indicated.

9. Top or Strainer Material: Nickel bronze or Stainless steel.
10. Top Shape: Round or Square, as indicated.
11. Top Loading Classification: Medium Duty, as indicated.
12. Inlet Fitting: Gray iron, with threaded inlet and threaded or spigot outlet.
13. Trap Material: Cast iron.
14. Trap Pattern: Deep-seal P-trap.

2.3 THROUGH-PENETRATION FIRESTOP ASSEMBLIES

A. Through-Penetration Firestop Assemblies:

1. Standard: UL 1479 assembly of sleeve and stack fitting with firestopping plug.
2. Size: Same as connected soil, waste, or vent stack.
3. Sleeve: Molded PVC plastic, of length to match slab thickness and with integral nailing flange on one end for installation in cast-in-place concrete slabs.
4. Stack Fitting: ASTM A 48/A 48M, gray-iron, hubless-pattern, wye branch with neoprene O-ring at base and gray-iron plug in thermal-release harness. Include PVC protective cap for plug.
5. Special Coating: Corrosion resistant on interior of fittings.

2.4 MISCELLANEOUS SANITARY DRAINAGE PIPING SPECIALTIES

A. Deep-Seal Traps:

1. Description: Cast-iron or bronze casting, with inlet and outlet matching connected piping and cleanout trap-seal primer valve connection.
2. Size: Same as connected waste piping.
 - a. NPS 2: 4-inch-minimum water seal.
 - b. NPS 2-1/2 and Larger: 5-inch-minimum water seal.

PART 3 - EXECUTION

3.1 INSTALLATION

- #### A. Install cleanouts in aboveground piping and building drain piping according to the following, unless otherwise indicated:
1. Size same as drainage piping up to NPS 4. Use NPS 4 for larger drainage piping unless larger cleanout is indicated.
 2. Locate at each change in direction of piping greater than 45 degrees.
 3. Locate at minimum intervals of 50 feet for piping NPS 4 and smaller and 100 feet for larger piping.
 4. Locate at base of each vertical soil and waste stack.

- B. For cleanouts located in concealed piping, install cleanout wall access covers, of types indicated, with frame and cover flush with finished wall.
- C. Install floor drains at low points of surface areas to be drained. Set grates of drains flush with finished floor, unless otherwise indicated.
 - 1. Position floor drains for easy access and maintenance.
 - 2. Set floor drains below elevation of surrounding finished floor to allow floor drainage. Set with grates depressed according to the following drainage area radii:
 - a. Radius, 30 Inches or Less: Equivalent to 1 percent slope, but not less than 1/4-inch total depression.
 - b. Radius, 30 to 60 Inches: Equivalent to 1 percent slope.
 - c. Radius, 60 Inches or Larger: Equivalent to 1 percent slope, but not greater than 1-inch total depression.
 - 3. Install floor-drain flashing collar or flange so no leakage occurs between drain and adjoining flooring. Maintain integrity of waterproof membranes where penetrated.
 - 4. Install individual traps for floor drains connected to sanitary building drain, unless otherwise indicated.
- D. Install through-penetration firestop assemblies in conductors and stacks at floor penetrations.
- E. Install deep-seal traps on floor drains and other waste outlets, if indicated.
- F. Install wood-blocking reinforcement for wall-mounting-type specialties.

3.2 CONNECTIONS

- A. Comply with requirements in Section 221316 "Sanitary Waste and Vent Piping" for piping installation requirements. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to equipment to allow service and maintenance.
- C. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."
- D. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

3.3 FIELD QUALITY CONTROL

- A. Perform tests and inspections and prepare test reports.
- B. Tests and Inspections:

1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.4 PROTECTION

- A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.
- B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

3.5 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain equipment installed in accordance with this section.

END OF SECTION 221319

SECTION 224100 - RESIDENTIAL PLUMBING FIXTURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Faucets.
 - 2. Lavatories.
 - 3. Showers.
 - 4. Kitchen sinks.
 - 5. Water closets.
 - 6. Toilet seats.
 - 7. Supply fittings.
 - 8. Waste fittings.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Include diagrams for power, signal, and control wiring.

1.3 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Counter cutout templates for mounting of counter-mounted plumbing fixtures.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance data.

PART 2 - PRODUCTS

2.1 LAVATORIES

- A. Lavatories, counter mounted.
 - 1. Refer to drawings for performance and Basis of Design.

2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product

2.2 LAVATORY FAUCETS

- A. NSF Standard: Comply with NSF/ANSI 61 Annex G, "Drinking Water System Components - Health Effects," for faucet materials that will be in contact with potable water.
- B. Lavatory Faucets:
 1. Refer to drawings for performance and Basis of Design.
 2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product.

2.3 SHOWERS

- A. Showers with base and faucet.
 1. Refer to drawings for performance and Basis of Design.
 2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product.

2.4 SHOWER FAUCETS

- A. NSF Standard: Comply with NSF/ANSI 61 Annex G, "Drinking Water System Components - Health Effects," for faucet materials that will be in contact with potable water.
- B. Shower Faucets:
 1. Refer to drawings for performance and Basis of Design.
 2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product.

2.5 KITCHEN SINKS

- A. Kitchen Sinks:
 1. Refer to drawings for performance and Basis of Design.
 2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product.

2.6 SINK FAUCETS

- A. NSF Standard: Comply with NSF/ANSI 61 Annex G, "Drinking Water System Components - Health Effects," for faucet materials that will be in contact with potable water.
- B. Sink Faucets:
 - 1. Refer to drawings for performance and Basis of Design.
 - 2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product.

2.7 WATER CLOSETS

- A. Water Closets:
 - 1. Refer to drawings for performance and Basis of Design.
 - 2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product.
 - a. Standards: ASME A112.19.2/CSA B45.1 and ASME A112.19.5.
 - b. Height: Handicapped/elderly.
 - 3. Supply Fittings:
 - a. Standard: ASME A112.18.1/CSA B125.1.
 - b. Supply Piping: Chrome-plated-brass pipe or chrome-plated-copper tube matching water-supply piping size. Include chrome-plated wall flange.
 - c. Stop: Chrome-plated-brass, one-quarter-turn, ball-type or compression stop with inlet connection matching water-supply piping type and size.

2.8 TOILET SEATS

- A. Toilet Seats:
 - 1. Standard: IAPMO/ANSI Z124.5.
 - 2. Material: Plastic.
 - 3. Type: Residential.

2.9 SUPPLY FITTINGS

- A. NSF Standard: Comply with NSF/ANSI 61 Annex G, "Drinking Water System Components - Health Effects," for faucet materials that will be in contact with potable water.
- B. Standard: ASME A112.18.1/CSA B125.1.

C. Lavatory and Kitchen Sink Supply Fittings:

1. Supply Piping: Chrome-plated-brass pipe or chrome-plated-copper tube matching water-supply piping size. Include chrome-plated wall flange.
2. Stops: Chrome-plated-brass, one-quarter-turn, ball-type or compression stop with inlet connection matching water-supply piping type and size.
 - a. Operation: Wheel handle.
3. Risers:
 - a. Size: NPS 3/8 for lavatories.
 - b. Size: NPS 1/2 for kitchen sinks.
 - c. Material: Chrome-plated, soft-copper flexible tube, ASME A112.18.6, braided- or corrugated-stainless-steel flexible hose riser.

2.10 WASTE FITTINGS

- A. Standard: ASME A112.18.2/CSA B125.2.
- B. Drain: Pop-up type with NPS 1-1/4 offset tailpiece for accessible lavatories.
- C. Drain: Grid type with NPS 1-1/2 offset tailpiece for accessible kitchen sinks.
- D. Trap:
 1. Size: NPS 1-1/2 lavatories and kitchen sinks.
 2. Material: Chrome-plated, cast-brass; and chrome-plated-brass wall flange.

2.11 GROUT

- A. Standard: ASTM C 1107/C 1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
- B. Characteristics: Nonshrink; recommended for interior and exterior applications.
- C. Design Mix: 5000-psi, 28-day compressive strength.
- D. Packaging: Premixed and factory packaged.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install plumbing fixtures level and plumb according to roughing-in drawings.

- B. Install floor-mounted water closets on closet attachments to drainage piping.
- C. Install counter-mounting fixtures in and attached to casework.
- D. Install water-supply piping with stop on each supply to each fixture to be connected to water distribution piping. Attach supplies to supports or substrate within pipe spaces behind fixtures. Install stops in locations where they can be easily reached for operation.
- E. Install tanks for accessible, tank-type water closets with lever handle mounted on wide side of compartment.
- F. Install toilet seats on water closets.
- G. Install faucet flow-control fittings with specified flow rates and patterns in faucet spouts if faucets are not available with required rates and patterns. Include adapters if required.
- H. Install shower flow-control fittings with specified maximum flow rates in shower arms.
- I. Install traps on fixture outlets.
 - 1. Exception: Omit trap on fixtures with integral traps.
 - 2. Exception: Omit trap on indirect wastes unless otherwise indicated.
- J. Set shower receptors in leveling bed of cement grout.
- K. Install protective shielding pipe covers and enclosures on exposed supplies and waste piping of accessible lavatories and sinks. Comply with requirements in Section 220719 "Plumbing Piping Insulation."
- L. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations. Use deep-pattern escutcheons if required to conceal protruding fittings. Comply with escutcheon requirements specified in Section 220518 "Escutcheons for Plumbing Piping."
- M. Seal joints between plumbing fixtures, counters, floors, and walls using sanitary-type, one-part, mildew-resistant silicone sealant.

3.2 CONNECTIONS

- A. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.
- B. Comply with water piping requirements specified in Section 221116 "Domestic Water Piping."
- C. Comply with soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."

- D. Install protective shielding pipe covers and enclosures on exposed supplies and waste piping of accessible lavatories and sinks. Comply with requirements in Section 220719 "Plumbing Piping Insulation."

3.3 ADJUSTING

- A. Operate and adjust plumbing fixtures and controls. Replace damaged and malfunctioning fixtures, fittings, and controls.
- B. Adjust water pressure at faucets to produce proper flow.

3.4 CLEANING AND PROTECTION

- A. After completing installation of plumbing fixtures, inspect and repair damaged finishes.
- B. Clean plumbing fixtures, faucets, and other fittings with manufacturers' recommended cleaning methods and materials.
- C. Provide protective covering for installed plumbing fixtures and fittings.
- D. Do not allow use of plumbing fixtures for temporary facilities unless approved in writing by Owner.

END OF SECTION 224100

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes building wire and cable; nonmetallic-sheathed cable; direct burial cable; service entrance cable; armored cable; metal clad cable; and wiring connectors and connections.

1.2 REFERENCES

- A. International Electrical Testing Association:
 - 1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- B. National Fire Protection Association:
 - 1. NFPA 70 - National Electrical Code.
 - 2. NFPA 262 - Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces.
- C. Underwriters Laboratories, Inc.:
 - 1. UL 1277 - Standard for Safety for Electrical Power and Control Tray Cables with Optional Optical-Fiber Members.

1.3 SYSTEM DESCRIPTION

- A. Product Requirements: Provide products as follows:
 - 1. Solid conductor for feeders and branch circuits 10 AWG and smaller.
 - 2. Stranded conductors for control circuits.
 - 3. Conductor not smaller than 12 AWG for power and lighting circuits.
 - 4. Conductor not smaller than 16 AWG for control circuits.
 - 5. Increase wire size in branch circuits to limit voltage drop to a maximum of 3 percent.
- B. Wiring Methods: Provide the following wiring methods:
 - 1. Concealed Dry Interior Locations: Use only building wire, Type THHN/THWN insulation, in raceway, armored cable or metal clad cable.
 - 2. Exposed Dry Interior Locations: Use only building wire, Type THHN/THWN insulation, in raceway.
 - 3. Above Accessible Ceilings: Use only building wire, Type THHN/THWN insulation, in raceway, armored cable or metal clad cable.
 - 4. Wet or Damp Interior Locations: Use only building wire, Type THHN/THWN insulation, in raceway, armored cable or metal clad cable.
 - 5. Exterior Locations: Use only building wire, Type THHN/THWN insulation, in raceway.
 - 6. Underground Locations: Use only building wire, Type THHN/THWN (XHHW for services) insulation, in raceway.
 - 7. Cable Tray Locations: Use only Tray cable Type TC.

1.4 DESIGN REQUIREMENTS

- A. Conductor sizes are based on copper unless indicated as aluminum or "AL".
- B. When aluminum conductor is substituted for copper conductor, size to match circuit requirements, terminations, conductor ampacity and voltage drop.

1.5 SUBMITTALS

- A. Product Data: Submit for building wire and each cable assembly type.
- B. Design Data: Indicate voltage drop and ampacity calculations for aluminum conductors substituted for copper conductors.
- C. Test Reports: Indicate procedures and values obtained.

1.6 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of components and circuits.

1.7 QUALITY ASSURANCE

- A. Provide wiring materials located in plenums with peak optical density not greater than 0.5, average optical density not greater than 0.15, and flame spread not greater than 5 feet (1.5 m) when tested in accordance with NFPA 262.
- B. Maintain one copy of each document on site.

1.8 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

1.9 FIELD MEASUREMENTS

- A. Verify field measurements are as indicated on Drawings.

1.10 COORDINATION

- A. Where wire and cable destination is indicated and routing is not shown, determine routing and lengths required.
- B. Wire and cable routing indicated is approximate unless dimensioned.

PART 2 PRODUCTS

2.1 BUILDING WIRE AND CABLE

- A. Product Description: Single or multi- conductor insulated wire.
- B. Conductor: Copper.
- C. Insulation Voltage Rating: 600 volts.
- D. Insulation Temperature Rating: 75 degrees C unless otherwise noted.

2.2 ARMORED OR METAL CLAD CABLE

- A. Conductor: Copper.
- B. Insulation Voltage Rating: 600 volts.
- C. Insulation Temperature Rating: 75 degrees C.
- D. Armor Material: Steel except where Aluminum is noted on Drawings.
- E. Armor Design: Interlocked metal tape.
- F. Jacket: PVC where required.

2.3 TRAY CABLE

- A. Product Description: Multiconductor power and control cable NFPA 70 Type TC.
- B. Conductor: Copper.
- C. Insulation: Flame-retardant cross-linked polyethylene.
- D. Overall Jacket: Polyvinyl Chlorine (PVC) in accordance with UL 1277.
- E. Insulation Voltage Rating: 600 volts.
- F. Insulation Temperature Rating: 90 degrees C.
- G. Listings: Finished cable UL listed as Type TC, and sunlight resistant.

2.4 TERMINATIONS

- A. Terminal Lugs for Wires 6 AWG and Smaller: Solderless, compression type copper.
- B. Lugs for Wires 4 AWG and Larger: Color keyed, compression type copper, with insulating sealing collars.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify interior of building has been protected from weather.
- B. Verify mechanical work likely to damage wire and cable has been completed.
- C. Verify raceway installation is complete and supported.

3.2 PREPARATION

- A. Completely and thoroughly swab raceway before installing wire.

3.3 EXISTING WORK

- A. Remove exposed abandoned wire and cable , including abandoned wire and cable above accessible ceiling finishes. Patch surfaces where removed cables pass through building finishes.
- B. Disconnect abandoned circuits and remove circuit wire and cable. Remove abandoned boxes when wire and cable servicing boxes is abandoned and removed. Install blank cover for abandoned boxes not removed.
- C. Provide access to existing wiring connections remaining active and requiring access. Modify installation or install access panel.
- D. Extend existing circuits using materials and methods compatible with existing electrical installations, or as specified.
- E. Clean and repair existing wire and cable remaining or wire and cable to be reinstalled.

3.4 INSTALLATION

- A. Route wire and cable to meet Project conditions.
- B. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- C. Identify and color code wire and cable. Identify each conductor with its circuit number or other designation indicated.
- D. Special Techniques--Building Wire in Raceway:
 - 1. Pull conductors into raceway at same time.
 - 2. Install building wire 4 AWG and larger with pulling equipment.
- E. Special Techniques - Cable:
 - 1. Protect exposed cable from damage.

2. Support cables above accessible ceiling, using spring metal clips or cable ties to support cables from structure or ceiling suspension system. Do not rest cable on ceiling panels.
 3. Use suitable cable fittings and connectors.
- F. Special Techniques - Wiring Connections:
1. Clean conductor surfaces before installing lugs and connectors.
 2. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.
 3. Tape uninsulated conductors and connectors with electrical tape to 150 percent of insulation rating of conductor.
 4. Install split bolt connectors for copper conductor splices and taps, 6 AWG and larger.
 5. Install solderless pressure connectors with insulating covers for copper conductor splices and taps, 8 AWG and smaller.
 6. Install insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller.
 7. Terminate aluminum conductors with tin-plated, aluminum-bodied compression connectors only. Fill with anti-oxidant compound before installing conductor.
 8. Install suitable reducing connectors or mechanical connector adaptors for connecting aluminum conductors to copper conductors.
- G. Install stranded conductors for branch circuits 10 AWG and smaller. Install crimp on fork terminals for device terminations. Do not place bare stranded conductors directly under screws.
- H. Install terminal lugs on ends of 600 volt wires unless lugs are furnished on connected device, such as circuit breakers.
- I. Size lugs in accordance with manufacturer's recommendations terminating wire sizes. Install 2-hole type lugs to connect wires 4 AWG and larger to copper bus bars.
- J. For terminal lugs fastened together such as on motors, transformers, and other apparatus, or when space between studs is small enough that lugs can turn and touch each other, insulate for dielectric strength of 2-1/2 times normal potential of circuit.

3.5 WIRE COLOR

- A. General:
1. For wire sizes 10 AWG and smaller, install wire colors in accordance with the following:
 - a. Black and red for single phase circuits at 120/240 volts.
 - b. Black, red, and blue for circuits at 120/208 volts single or three phase.
 - c. Orange, brown, and yellow for circuits at 277/480 volts single or three phase.
 2. For wire sizes 8 AWG and larger, identify wire with colored tape at terminals, splices and boxes. Colors are as follows:
 - a. Black and red for single phase circuits at 120/240 volts.
 - b. Black, red, and blue for circuits at 120/208 volts single or three phase.
 - c. Orange, brown, and yellow for circuits at 277/480 volts single or three phase.

- B. Neutral Conductors: White. When two or more neutrals are located in one conduit, individually identify each with proper circuit number.
- C. Branch Circuit Conductors: Install three or four wire home runs with each phase uniquely color coded.
- D. Feeder Circuit Conductors: Uniquely color code each phase.
- E. Ground Conductors:
 - 1. For 6 AWG and smaller: Green.
 - 2. For 4 AWG and larger: Identify with green tape at both ends and visible points including junction boxes.

3.6 FIELD QUALITY CONTROL

- A. Balance single phase branches and feeders in panels to the Engineer's satisfaction.
- B. Inspect and test in accordance with NETA ATS, except Section 4.
- C. Perform inspections and tests listed in NETA ATS, Section 7.3.1.

END OF SECTION

SECTION 260533 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes conduit and tubing, surface raceways, wireways, outlet boxes, pull and junction boxes, and handholes.

1.2 REFERENCES

- A. American National Standards Institute:
 - 1. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.
 - 2. ANSI C80.3 - Specification for Electrical Metallic Tubing, Zinc Coated.
 - 3. ANSI C80.5 - Aluminum Rigid Conduit - (ARC).
- B. National Electrical Manufacturers Association:
 - 1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
 - 2. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.
 - 3. NEMA OS 1 - Sheet Steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
 - 4. NEMA OS 2 - Nonmetallic Outlet Boxes, Device Boxes, Covers, and Box Supports.
 - 5. NEMA RN 1 - Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit.
 - 6. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Tubing and Conduit.
 - 7. NEMA TC 3 - PVC Fittings for Use with Rigid PVC Conduit and Tubing.

1.3 SYSTEM DESCRIPTION

- A. Raceway and boxes located as indicated on Drawings, and at other locations required for splices, taps, wire pulling, equipment connections, and compliance with regulatory requirements. Raceway and boxes are shown in approximate locations unless dimensioned. Provide raceway to complete wiring system.

1.4 DESIGN REQUIREMENTS

- A. Minimum Raceway Size: 3/4 inch unless otherwise specified.

1.5 SUBMITTALS

- A. Product Data: Submit for the following:
 - 1. Flexible metal conduit.
 - 2. Liquidtight flexible metal conduit.
 - 3. Nonmetallic conduit.
 - 4. Flexible nonmetallic conduit.

5. Nonmetallic tubing.
6. Raceway fittings.
7. Conduit bodies.
8. Surface raceway.
9. Wireway.
10. Pull and junction boxes.
11. Handholes.

- B. Manufacturer's Installation Instructions: Submit application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, and installation of Product.

1.6 CLOSEOUT SUBMITTALS

- A. Project Record Documents:
 1. Record actual routing of conduits larger than 2 inch.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.
- B. Protect PVC conduit from sunlight.

1.8 COORDINATION

- A. Coordinate mounting heights, orientation and locations of outlets mounted above counters, benches, and backsplashes.

PART 2 PRODUCTS

2.1 METAL CONDUIT

- A. Rigid Steel Conduit: ANSI C80.1.
- B. Rigid Aluminum Conduit: ANSI C80.5.
- C. Intermediate Metal Conduit (IMC): Rigid steel.
- D. Fittings and Conduit Bodies: NEMA FB 1; material to match conduit.

2.2 PVC COATED METAL CONDUIT

- A. Product Description: NEMA RN 1; rigid steel conduit with external PVC coating, 40 mil thick.

- B. Fittings and Conduit Bodies: NEMA FB 1; steel fittings with external PVC coating to match conduit.

2.3 FLEXIBLE METAL CONDUIT

- A. Product Description: Interlocked steel construction.
- B. Fittings: NEMA FB 1.

2.4 LIQUIDTIGHT FLEXIBLE METAL CONDUIT

- A. Product Description: Interlocked steel construction with PVC jacket.
- B. Fittings: NEMA FB 1.

2.5 ELECTRICAL METALLIC TUBING (EMT)

- A. Product Description: ANSI C80.3; galvanized tubing.
- B. Fittings and Conduit Bodies: NEMA FB 1; steel or malleable iron compression type.

2.6 NONMETALLIC CONDUIT

- A. Product Description: NEMA TC 2; Schedule 40 or 80 PVC as noted on the Drawings.
- B. Fittings and Conduit Bodies: NEMA TC 3.

2.7 NONMETALLIC TUBING

- A. Product Description: NEMA TC 2.
- B. Fittings and Conduit Bodies: NEMA TC 3.

2.8 WIREWAY

- A. Product Description: General purpose indoors, raintight outdoors type wireway.
- B. Knockouts: Manufacturer's standard.
- C. Cover: Screw cover.
- D. Connector: Slip-in.
- E. Finish: Rust inhibiting primer coating with gray enamel finish.

2.9 OUTLET BOXES

- A. Sheet Metal Outlet Boxes: NEMA OS 1, galvanized steel.
 - 1. Luminaire and Equipment Supporting Boxes: Rated for weight of equipment supported; furnish 1/2 inch male fixture studs where required.
 - 2. Concrete Ceiling Boxes: Concrete type.
- B. Nonmetallic Outlet Boxes: NEMA OS 2.
- C. Cast Boxes: NEMA FB 1, Type FD, aluminum. Furnish gasketed cover by box manufacturer. Furnish threaded hubs.
- D. Wall Plates for Finished Areas: As specified on Drawings.
- E. Wall Plates for Unfinished Areas: Furnish gasketed cover.

2.10 PULL AND JUNCTION BOXES

- A. Sheet Metal Boxes: NEMA OS 1, galvanized steel.
- B. Hinged Enclosures: As specified in Section 26 27 16.
- C. Surface Mounted Cast Metal Box: NEMA 250, Type 4X; flat-flanged, surface mounted junction box:
 - 1. Material: Cast aluminum.
 - 2. Cover: Furnish with ground flange, neoprene gasket, and stainless steel cover screws.
- D. In-Ground Cast Metal Box: NEMA 250, Type 6, inside flanged, recessed cover box for flush mounting:
 - 1. Material: Galvanized cast iron.
 - 2. Cover: Nonskid cover with neoprene gasket and stainless steel cover screws.
 - 3. Cover Legend: "ELECTRIC" or as noted on Drawings.
- E. Fiberglass Concrete composite Handholes: Die-molded, glass-fiber concrete composite hand holes:
 - 1. Cover: Glass-fiber concrete composite, weatherproof cover with nonskid finish.
 - 2. Cover Legend: "ELECTRIC" or as noted on Drawings.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Verify outlet locations and routing and termination locations of raceway prior to rough-in.

3.2 EXISTING WORK

- A. Remove exposed abandoned raceway, including abandoned raceway above accessible ceiling finishes. Cut raceway flush with walls and floors, and patch surfaces.
- B. Remove concealed abandoned raceway to its source.
- C. Disconnect abandoned outlets and remove devices. Remove abandoned outlets when raceway is abandoned and removed. Install blank cover for abandoned outlets not removed.
- D. Maintain access to existing boxes and other installations remaining active and requiring access. Modify installation or provide access panel.
- E. Extend existing raceway and box installations using materials and methods compatible with existing electrical installations, or as specified.
- F. Clean and repair existing raceway and boxes to remain or to be reinstalled.

3.3 INSTALLATION

- A. Ground and bond raceway and boxes.
- B. Fasten raceway and box supports to structure and finishes.
- C. Identify raceway and boxes.
- D. Arrange raceway and boxes to maintain headroom and present neat appearance.

3.4 INSTALLATION - RACEWAY

- A. Raceway routing is shown in approximate locations unless dimensioned. Route to complete wiring system.
- B. Arrange raceway supports to prevent misalignment during wiring installation.
- C. Support raceway using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
- D. Group related raceway; support using conduit rack. Construct rack using steel channel; provide space on each for 25 percent additional raceways.
- E. Do not support raceway with wire or perforated pipe straps. Remove wire used for temporary supports
- F. Do not attach raceway to ceiling support wires or other piping systems.

- G. Construct wireway supports from steel channel.
- H. Route exposed raceway parallel and perpendicular to walls.
- I. Route raceway installed above accessible ceilings parallel and perpendicular to walls.
- J. Route conduit in and under slab from point-to-point.
- K. Maximum Size Conduit in Slab Above Grade: 3/4 inch. Do not cross conduits in slab.
- L. Maintain clearance between raceway and piping for maintenance purposes.
- M. Maintain 12 inch clearance between raceway and surfaces with temperatures exceeding 104 degrees F.
- N. Cut conduit square using saw or pipe cutter; de-burr cut ends.
- O. Bring conduit to shoulder of fittings; fasten securely.
- P. Join nonmetallic conduit using cement as recommended by manufacturer. Wipe nonmetallic conduit dry and clean before joining. Apply full even coat of cement to entire area inserted in fitting. Allow joint to cure for minimum 20 minutes.
- Q. Install conduit hubs to fasten conduit to cast boxes.
- R. Install no more than equivalent of three 90 degree bends between boxes except where noted on Drawings. Install conduit bodies to make sharp changes in direction, as around beams. Install factory elbows for bends in metal conduit larger than 2 inch size.
- S. Avoid moisture traps; install junction box with drain fitting at low points in conduit system.
- T. Install fittings to accommodate expansion and deflection where raceway crosses seismic, control and expansion joints.
- U. Install suitable pull string or cord in each empty raceway except sleeves and nipples.
- V. Install suitable caps to protect installed conduit against entrance of dirt and moisture.
- W. Surface Raceway: Install flat-head screws, clips, and straps to fasten raceway channel to surfaces; mount plumb and level. Install insulating bushings and inserts at connections to outlets and corner fittings.
- X. Close ends and unused openings in wireway.

3.5 INSTALLATION - BOXES

- A. Install wall mounted boxes at elevations to accommodate mounting heights as indicated on Drawings.
- B. Adjust box location up to 10 feet prior to rough-in to accommodate intended purpose.
- C. Orient boxes to accommodate wiring devices oriented as specified on the Drawings.
- D. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.
- E. In Accessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminaire.
- F. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.
- G. Do not install flush mounting box back-to-back in walls; install with minimum 6 inches separation. Install with minimum 24 inches separation in acoustic rated walls.
- H. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.
- I. Install stamped steel bridges to fasten flush mounting outlet box between studs.
- J. Install flush mounting box without damaging wall insulation or reducing its effectiveness.
- K. Install adjustable steel channel fasteners for hung ceiling outlet box.
- L. Do not fasten boxes to ceiling support wires or other piping systems.
- M. Support boxes independently of conduit.
- N. Install gang box where more than one device is mounted together. Do not use sectional box.
- O. Install gang box with plaster ring for single device outlets.

3.6 INTERFACE WITH OTHER PRODUCTS

- A. Install conduit to preserve fire resistance rating of partitions and other elements.
- B. Route conduit through roof openings for piping and ductwork or through suitable roof jack with pitch pocket. Coordinate location with roofing installation.
- C. Locate outlet boxes to allow luminaires positioned as indicated on Drawings.

- D. Align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices.

3.7 ADJUSTING

- A. Adjust flush-mounting outlets to make front flush with finished wall material.
- B. Install knockout closures in unused openings in boxes.

3.8 CLEANING

- A. Clean interior of boxes to remove dust, debris, and other material.
- B. Clean exposed surfaces and restore finish.

END OF SECTION

SECTION 260923 - LIGHTING CONTROL DEVICES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Remote control lighting relays.
 2. Lighting contactors.
 3. Switches.
 4. Switch plates.
 5. Occupancy sensors.
 6. Photocells.
 7. Photocell control unit.

1.2 REFERENCES

- A. National Electrical Manufacturers Association:
1. NEMA FU 1 - Low Voltage Cartridge Fuses.
 2. NEMA ICS 2 - Industrial Control and Systems: Controllers, Contractors, and Overload Relays, Rated Not More Than 2000 Volts AC or 750 Volts DC.
 3. NEMA ICS 4 - Industrial Control and Systems: Terminal Blocks.
 4. NEMA ICS 5 - Industrial Control and Systems: Control Circuit and Pilot Devices.
 5. NEMA ICS 6 - Industrial Control and Systems: Enclosures.
 6. NEMA KS 1 - Enclosed and Miscellaneous Distribution Equipment Switches (600 Volts Maximum).

1.3 SYSTEM DESCRIPTION

- A. Distributed switching control using self-contained individually mounted lighting relays.
- B. Where indicated on Contract Documents or required by applicable code, provide automatic shutoff for lighting inside building larger than 5,000 sq. ft. Control shutoff by method conforming to ICC IECC.
- C. Where indicated on Contract Documents or required by applicable code, provide automatic shutoff for lighting outside building. Control shutoff by method conforming to ICC IECC.

1.4 SUBMITTALS

- A. Shop Drawings: Indicate dimensioned drawings of lighting control system components and accessories.
 - 1. One Line Diagram: Indicating system configuration indicating panels, number and type of switches or devices.
 - 2. Include typical wiring diagrams for each component.
- B. Product Data: Submit manufacturer's standard product data for each system component.
- C. Manufacturer's Installation Instructions: Submit for each system component.

1.5 NJ SMART START APPLICATION

- A. The contractor shall complete and submit a New Jersey Smart Start rebate application to the New Jersey Office of Clean Energy on behalf of the Owner as a contract submittal. The application shall include all information necessary for the Owner to obtain available rebates both for lighting control and for lighting fixtures.

1.6 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record following information:
 - 1. Actual locations of components and record circuiting and switching arrangements.
 - 2. Wiring diagrams reflecting field installed conditions with identified and numbered system components and devices.
- B. Operation and Maintenance Data:
 - 1. Submit replacement parts numbers.
 - 2. Submit manufacturer's published installation instructions and operating instructions.
 - 3. Recommended renewal parts list.

1.7 QUALITY ASSURANCE

- A. Maintain one copy of each document on Site.

1.8 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Accept components on Site in manufacturer's packaging. Inspect for damage.
- B. Protect components by storing in manufacturer's containers indoor protected from weather.

1.10 WARRANTY

- A. Furnish five-year manufacturer's warranty for components.

1.11 EXTRA MATERIALS

- A. Furnish two of each switch type.
- B. Furnish two of each occupancy sensor type.
- C. Furnish two of each photocell type.

PART 2 - PRODUCTS

2.1 REMOTE CONTROL LIGHTING RELAYS

- A. Product Description: Heavy duty, single-coil momentary contact mechanically held remote control relays.
- B. Contacts: Rated 20 A at fixture operating voltage V. Rated for lighting applications with high intensity discharge (HID), LED, tungsten and fluorescent lamps.
- C. Line Voltage Connections: Clamp type screw terminals.
- D. Enclosure: NEMA ICS 6, to meet conditions. Fabricate enclosure from steel finished with manufacturer's standard gray enamel or gray plastic where approved by the Engineer.
 - 1. Interior Dry Locations: Type 1.
 - 2. Exterior Locations: Type 3R.
 - 3. Corrosive Locations: Type 4X.

2.2 LIGHTING CONTACTORS

- A. Product Description: NEMA ICS 2, magnetic lighting contactor.
- B. Configuration: Electrically held or Mechanically held, three wire control, as specified.
- C. Coil Operating Voltage: 120 V, 60 Hz unless otherwise required.

- D. Poles: To match circuit configuration and control function.
- E. Contact Rating: Conductor overcurrent protection, considering derating for continuous loads.
- F. Accessories:
 - 1. Cover Mounted Pilot Devices: NEMA ICS 5, standard-duty
 - 2. Selector Switch: ON-OFF-AUTOMATIC function, with rotary action.
 - 3. Indicating Light: Red lens, LED lamp.
 - 4. Auxiliary Contacts: One field convertible in addition to seal-in contact.
 - 5. Relays: NEMA ICS 2.
- G. Enclosure: NEMA ICS 6, to meet conditions. Fabricate enclosure from steel finished with manufacturer's standard gray enamel or gray plastic where approved by the Engineer.
 - 1. Interior Dry Locations: Type 1.
 - 2. Exterior Locations: Type 3R.
 - 3. Corrosive Locations: Type 4X.

2.3 SWITCHES

- A. Wall Switch: Specification Grade unlighted, momentary pushbutton type for overriding relays.
 - 1. Material: Stainless steel.
 - 2. Color: As approved by Owner.
- B. Key Switch: Spade key type. Match non-key switch ratings.

2.4 SWITCH PLATES

- A. Product Description: Specification grade.
 - 1. Material: Stainless steel.
 - 2. Color: As approved by Owner.

2.5 OCCUPANCY SENSOR

- A. Compatible with modular relay panels. Capable of being wired directly to system wiring without auxiliary components or devices.
- B. Separate sensitivity and time delay adjustments with LED indication of sensed movement. User adjustable time-delay of 30 seconds to 12 minutes.
- C. Furnish with manual override.

- D. Operation: Silent.
- E. Room Sensors: Two-way pattern or as indicated on Contract Documents.
- F. Corridor and Hallway Sensors:
 - 1. Capable of detecting motion 14 feet wide and 80 feet long with one sensor mounted 10 feet above floor.
 - 2. Capable of detecting motion in warehouse aisle 10 feet wide and 60 feet long or 100 feet long when mounted 22 feet above floor.
 - 3. Capable of being wired in master-slave configuration to extend area of coverage.

2.6 PHOTOCELLS

- A. General: Consist of sensor mounted as indicated on Contract Documents with separate control-calibration module. Sensor connected to control-calibration module via single shielded conductor with maximum distance of 500 feet. Control unit powered by 24 V ac.
- B. Control-Calibration Module: Furnish with following:
 - 1. Capable of being switched between 4 measurement ranges.
 - 2. Separate trip points for high and low response settings.
 - 3. Momentary contact device to override photocell relays.
 - 4. Three-minute time delay between switching outputs to avoid nuisance tripping.
- C. Sensor Devices: Each sensor employs photo diode technology to allow linear response to daylight within illuminance range.
 - 1. Exterior Lighting: Hooded sensor, horizontally mounted, employing flat lens, and working range 1-100 fc in 10 percent increments. Entire sensor encased in optically clear epoxy resin.
 - 2. Indoor Lighting: Sensor with Fresnel lens providing for 60-degree cone shaped response area to monitor indoor office lighting levels.
 - 3. Atriums: Sensor with translucent dome with 180-degree field of view and respond in range of 100-1,000 fc.
 - 4. Skylights: Sensor with translucent dome with 180-degree field of view and respond in range of 1,000-10,000 fc.

2.7 PHOTOCCELL CONTROL UNIT

- A. Product Description: Photodiode control unit with PHOTOCCELL ENABLE and MASTER OVERRIDE inputs for remote control, 3-minute time delay, and with selectable ranges for 1-10 fc, 10-100 fc, 100-1,000 fc, and 1,000-10,000 fc.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Mount switches, occupancy sensors, and photocells as listed in the schedules, except that where the schedule lists a wall switch and one already exists, do not replace unless damaged or inoperable.
- B. Identify power wiring with circuit breaker number controlling load. When multiple circuit breaker panels are feeding into relay panel, label wires to indicate originating panel designation.
- C. Label each low voltage wire with relay number at each switch or sensor.

3.2 MANUFACTURER'S FIELD SERVICES

- A. Furnish services for minimum of two days for check, test, and startup. Perform following services:
 - 1. Check installation of panelboards.
 - 2. Test operation of remote controlled devices.
 - 3. Repair or replace defective components.

3.3 ADJUSTING

- A. Test each system component after installation to verify proper operation.
- B. Test relays, contactors, and switches after installation to confirm proper operation.
- C. Confirm correct loads are recorded on directory card in each panel.

3.4 DEMONSTRATION

- A. Demonstrate operation of following system components:
 - 1. Switches. Demonstrate for all zones.
 - 2. Each type of occupancy sensors.
 - 3. Each type of photocell.
- B. Furnish four hours to instruct Owner's personnel in operation and maintenance of system. Schedule training with Owner, provide at least seven days' notice to Owner and Architect/Engineer of approved training date.

END OF SECTION 260923

SECTION 262416 - PANELBOARDS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Distribution and branch circuit panelboards.
 2. Electronic grade branch circuit panelboards.
 3. Load centers.

1.2 REFERENCE STANDARDS

- A. Institute of Electrical and Electronics Engineers:
1. IEEE C62.41 - Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits.
- B. National Electrical Manufacturers Association:
1. NEMA FU 1 - Low Voltage Cartridge Fuses.
 2. NEMA ICS 2 - Industrial Control and Systems: Controllers, Contactors, and Overload Relays, Rated Not More Than 2000 Volts AC or 750 Volts DC.
 3. NEMA ICS 5 - Industrial Control and Systems: Control Circuit and Pilot Devices.
 4. NEMA KS 1 - Enclosed and Miscellaneous Distribution Equipment Switches (600 Volts Maximum).
 5. NEMA PB 1 - Panelboards.
 6. NEMA PB 1.1 - General Instructions for Proper Installation, Operation, and Maintenance of Panelboards Rated 600 Volts or Less.
- C. International Electrical Testing Association:
1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- D. National Fire Protection Association:
1. NFPA 70 - National Electrical Code.
- E. Underwriters Laboratories Inc.:
1. UL 50 - Cabinets and Boxes
 2. UL 67 - Safety for Panelboards.
 3. UL 489 - Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures.
 4. UL 1283 - Electromagnetic Interference Filters.
 5. UL 1449 - Transient Voltage Surge Suppressors.
 6. UL 1699 - Arc-Fault Circuit Interrupters.

1.3 SUBMITTALS

- A. Product Data: Submit catalog data showing specified features of standard products.
- B. Shop Drawings: Indicate outline and support point dimensions, voltage, main bus ampacity, integrated short circuit ampere rating, circuit breaker and fusible switch arrangement and sizes.
- C. Source Quality control submittals: Indicate results of [shop] [factory] tests and inspections.
- D. Field Quality Control Submittals: Indicate results of Contractor furnished tests and inspections.

1.4 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of panelboards and record actual circuiting arrangements.
- B. Operation and Maintenance Data: Submit spare parts listing; source and current prices of replacement parts and supplies; and recommended maintenance procedures and intervals.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Extra Stock Materials:
 - 1. Furnish two of each panelboard key. Panelboards keyed alike or to Owner's current keying system.

1.6 QUALITY ASSURANCE

- A. Qualifications
 - 1. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years' experience.

PART 2 PRODUCTS

2.1 DISTRIBUTION PANELBOARDS

- A. Description: NEMA PB 1, circuit breaker type panelboard.
- B. Operation:
 - 1. Minimum integrated short circuit rating: 22,000 amperes rms symmetrical or as indicated on Drawings.
- C. Materials
 - 1. Panelboard Bus: Copper, current carrying components, ratings as indicated on Drawings. Furnish copper ground bus in each panelboard.

2. Molded Case Circuit Breakers: UL 489, circuit breakers with integral thermal and instantaneous magnetic trip in each pole. Furnish circuit breakers UL listed as Type HACR for air conditioning equipment branch circuits.
3. Molded Case Circuit Breakers with Current Limiters: UL 489, circuit breakers with replaceable current limiting elements, in addition to integral thermal and instantaneous magnetic trip in each pole.
4. Current Limiting Molded Case Circuit Breakers: UL 489, circuit breakers with integral thermal and instantaneous magnetic trip in each pole, coordinated with automatically resetting current limiting elements in each pole. Interrupting rating 100,000 symmetrical amperes, let-through current and energy level less than permitted for same size NEMA FU 1, Class RK-5 fuse.
5. Circuit Breaker Accessories: Trip units and auxiliary switches as indicated on Drawings.
6. Cabinet Front: As shown on plans.

D. Finishes

1. Manufacturer's standard gray enamel.

2.2 BRANCH CIRCUIT PANELBOARDS

A. Description: NEMA PB1, circuit breaker type, lighting and appliance branch circuit panelboard.

B. Materials:

1. Panelboard Bus: Copper, current carrying components, ratings as indicated on Drawings. Furnish copper ground bus in each panelboard
2. For non-linear load applications subject to harmonics furnish 200 percent rated, plated copper, solid neutral.
3. Minimum Integrated Short Circuit Rating: 22,000 A or as indicated on Drawings].
4. Molded Case Circuit Breakers: UL 489, plug-on type thermal magnetic trip circuit breakers, with common trip handle for all poles, listed as Type SWD for lighting circuits, Type HACR for air conditioning equipment circuits, Class A ground fault interrupter circuit breakers as indicated on Drawings. Provide UL class 760 arc-fault interrupter circuit breakers as indicated on Drawings. Do not use tandem circuit breakers.
5. Current Limiting Molded Case Circuit Breakers: UL 489, circuit breakers with integral thermal and instantaneous magnetic trip in each pole, coordinated with automatically resetting current limiting elements in each pole. Interrupting rating 100,000 symmetrical amperes, let-through current and energy level less than permitted for same size NEMA FU 1, Class RK-5 fuse.
6. Surge Suppressor: Integrated in panelboard when specified on Drawings
7. Enclosure: NEMA PB 1, Type 1 indoors, Type 3R outdoors.
8. Cabinet Box: 6 inches deep, 20 inches wide unless shown otherwise on the Drawings.

C. Cabinet Front: Surface cabinet front with concealed trim clamps, concealed hinge, metal directory frame, and flush lock keyed alike. Finishes:

1. Finish in manufacturer's standard gray enamel.

2.3 ELECTRONIC GRADE PANELBOARD

A. Description:

1. Integral Surge Suppressor: Component recognized in accordance with UL 1449 and UL 1283.
2. Panelboard: UL 67 listed and TVSS device UL 1449 Component Recognized. TVSS device meets UL 1449. Furnish panelboard markings with clamp voltage at TVSS terminals and clamp voltage at panelboard line terminals.

B. Performance:

1. Integral Surge Suppressers:
 - a. Meet or exceed the following criteria:
 - 1) Maximum single impulse current rating not less than 120 kA for each phase.
 - 2) Pulse Lift Test: Capable of protecting against and surviving 5000 IEEE C62.41 Category C transients without failure or degradation.
 - 3) Clamping voltage not exceeding the following:

Voltage	L-N	N-G	L-G
208Y/120	500 V	500 V	500 V
480Y/277	1000 V	1000 V	1000 V

C. Fabrication:

1. Integral Surge Suppressor:
 - a. Furnish copper bus bars for surge current path.
 - b. Construct using surge current modules (MOV based). Each module fused with user replaceable 200,000 AIR rated fuses. Status of each module monitored on front cover of panelboard enclosure and on module.
 - c. Furnish with audible alarm activated when one of surge current modules has failed. Furnish alarm on/off to silence alarm and alarm push-to-test switch to test alarm. Locate switches and alarm on front cover of panelboard enclosure.
 - d. Furnish response time no greater than five nanoseconds for individual protection modes.
 - e. Designed to withstand maximum continuous operating voltage (MCOV) of not less than 115 percent of nominal RMS voltage.
 - f. Furnish visible indication of proper suppresser connection and operation. Lights indicate operable phase and module.
 - g. Furnish minimum EMI/RFI filtering of 34 dB at 100 kHz with insertion loss ratio of 50: 1 using Mil Std. 220A methodology.
2. Panelboards
 - a. Top or bottom feed as indicated on Drawings. Furnish circuit directory inside door.
 - b. Construct box of galvanized steel. Box size as indicated on Drawings.
 - c. Main bus constructed of copper and rated for load current.
 - d. Furnish interior with branch circuit breakers. Furnish one 60 amp circuit breaker, with appropriate number of poles, as dedicated disconnect for TVSS.
 - e. Furnish standard rated, neutral assembly with copper neutral bus.

- f. Furnish with insulated ground bus and safety ground bus.
- g. Furnish wiring gutters in accordance with NEC.
- h. Furnish with branch breaker positions and nominal current rating as indicated on Drawings.

2.4 LOAD CENTERS

- A. Description: Circuit breaker load center, with bus ratings as indicated on Drawings.
- B. Performance:
 - 1. Minimum Integrated Short Circuit Rating: 10,000 amperes rms symmetrical or as shown on Drawings.
- C. Materials:
 - 1. Molded Case Circuit Breakers: UL 489, plug-on type thermal magnetic trip circuit breakers, with common trip handle for poles, listed as Type SWD for lighting circuits, Class A ground fault interrupter circuit breakers where indicated on Drawings. Do not use tandem circuit breakers.
 - 2. Enclosure: General Purpose.
 - 3. Finish in manufacturer's standard gray enamel.

2.5 SOURCE QUALITY CONTROL

- A. Independently test integral surge suppressers with category C3 high exposure waveform (20 kV-1.2/50us, 10kA-8/20 us) per IEEE C62.41.

PART 3 EXECUTION

3.1 DEMOLITION

- A. Disconnect abandoned panelboards and load centers. Remove abandoned panelboards and load centers.
- B. Maintain access to existing panelboard and load centers remaining active and requiring access. Modify installation or provide access panel.

3.2 INSTALLATION

- A. Install panelboards and load centers in accordance with NEMA PB 1.1.
- B. Install panelboards and load centers plumb.
- C. Install recessed panelboards and load centers flush with wall finishes.

- D. Height: 6 feet to top of panelboard and load center; install panelboards taller than 6 feet with bottom no more than 4 inches above floor.
- E. Install filler plates for unused spaces in panelboards.
- F. Provide typed circuit directory for each branch circuit panelboard and load center. Revise directory to reflect circuiting changes to balance phase loads. Identify each circuit as to its clear, evident and specific purpose of use.
- G. Install engraved plastic nameplates.
- H. Install spare conduits out of each recessed panelboard to accessible location above ceiling or below floor as applicable. Minimum spare conduits: 5 empty 1 inch. Identify each as SPARE.
- I. Ground and bond panelboard enclosure. Connect equipment ground bars of panels in accordance with NFPA 70.

3.3 REPAIR AND RESTORATION

- A. Repair existing panelboards and load centers to remain or to be reinstalled.

3.4 FIELD QUALITY CONTROL

- A. Inspect and test in accordance with NETA ATS, except Section 4.
- B. Perform circuit breaker inspections and tests listed in NETA ATS, Section 7.6.
- C. Perform switch inspections and tests listed in NETA ATS, Section 7.5.
- D. Perform controller inspections and tests listed in NETA ATS, Section 7.16.1.

3.5 ADJUSTING

- A. Measure steady state load currents at each panelboard feeder; rearrange circuits in panelboard to balance phase loads to within 20 percent of each other. Maintain proper phasing for multi-wire branch circuits.

3.6 CLEANING

- A. Clean existing panelboards and load centers to remain or to be reinstalled.

END OF SECTION

SECTION 262726 - WIRING DEVICES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes wall switches; wall dimmers; receptacles; multioutlet assembly; and device plates and decorative box covers.

1.2 REFERENCES

- A. National Electrical Manufacturers Association:
 1. NEMA WD 1 - General Requirements for Wiring Devices.
 2. NEMA WD 6 - Wiring Devices-Dimensional Requirements.

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's catalog information showing dimensions, colors, and configurations.
- B. Samples: Submit two samples of each wiring device and wall plate illustrating materials, construction, color, and finish.

1.4 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

1.5 EXTRA MATERIALS

- A. Furnish two of each style, size, and finish wall plate.

PART 2 PRODUCTS

2.1 WALL SWITCHES

- A. Product Description: NEMA WD 1, General-Duty, AC only general-use snap switch.
- B. Ratings: Match branch circuit and load characteristics.

2.2 WALL DIMMERS

- A. Product Description: NEMA WD 1; Semiconductor dimmer for incandescent lamps, Type as indicated on Drawings.

- B. Power Rating: As indicated on Drawings.
- C. Accessory Wall Switch: Match dimmer appearance.

2.3 RECEPTACLES

- A. Product Description: NEMA WD 1, Heavy-duty general use receptacle.
- B. Configuration: NEMA WD 6, type as indicated on Drawings.
- C. Convenience Receptacle: Type 5-20.
- D. GFCI Receptacle: Convenience receptacle with integral ground fault circuit interrupter to meet regulatory requirements.

2.4 WALL PLATES

- A. As selected by the Owner.

2.5 MULTIOULET ASSEMBLY

- A. Multi-outlet Assembly: Sheet metal channel with fitted cover, with pre-wired receptacles, suitable for use as multi-outlet assembly.
- B. Receptacles: Furnish covers and accessories to accept convenience receptacles specified in this Section.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify outlet boxes are installed at proper height.
- B. Verify wall openings are neatly cut and completely covered by wall plates.
- C. Verify branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.

3.2 PREPARATION

- A. Clean debris from outlet boxes.

3.3 EXISTING WORK

- A. Disconnect and remove abandoned wiring devices.
- B. Modify installation to maintain access to existing wiring devices to remain active.

- C. Clean and repair existing wiring devices to remain or to be reinstalled.

3.4 INSTALLATION

- A. Install devices plumb and level.
- B. Install switches with OFF position down.
- C. Install wall dimmers to achieve full rating specified and indicated after derating for ganging as instructed by manufacturer.
- D. Do not share neutral conductor on load side of dimmers.
- E. Install receptacles with grounding pole on bottom.
- F. Install decorative plates on switch, receptacle, and blank outlets in finished areas.
- G. Connect wiring devices by wrapping solid conductor around screw terminal. When stranded conductors are used in lieu of solid, use crimp on fork terminals for device terminations. Do not place bare stranded conductors directly under device screws.
- H. Use jumbo size plates for outlets installed in masonry walls.
- I. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.

3.5 INTERFACE WITH OTHER PRODUCTS

- A. Coordinate locations of outlet boxes to obtain mounting heights as specified and as indicated on drawings.
- B. Install wall switch or dimmer 48 inches above finished floor.
- C. Install convenience receptacle 18 inches above finished floor.
- D. Install convenience receptacle 6 inches above back splash of counter.

3.6 FIELD QUALITY CONTROL

- A. Inspect each wiring device for defects.
- B. Operate each wall switch with circuit energized and verify proper operation.
- C. Verify each receptacle device is energized.
- D. Test each receptacle device for proper polarity.
- E. Test each GFCI receptacle device for proper operation.

3.7 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.

3.8 CLEANING

- A. Clean exposed surfaces to remove splatters and restore finish.

END OF SECTION

SECTION 265119 - LED INTERIOR LIGHTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes the following types of LED luminaires:
 - 1. Replacement Lamps
 - 2. New LED Fixtures
 - 3. Materials.
 - 4. Finishes.
 - 5. Luminaire support.

1.2 DEFINITIONS

- A. CCT: Correlated color temperature.
- B. CRI: Color Rendering Index.
- C. Efficacy: Number of lumens per watt of electricity.
- D. Fidelity Index: How closely the observed light can render colors like the sun, using 99 color samples.
- E. Fixture: See "Luminaire."
- F. Gamut Index: Measurements of how saturated or desaturated colors appear under the emitted light.
- G. IP: International Protection or Ingress Protection Rating.
- H. LED: Light-emitting diode.
- I. Lumen: Measured output of lamp and luminaire, or both.
- J. Luminaire: Complete lighting unit, including lamp, reflector, and housing.

1.3 SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Arrange in order of luminaire designation.
 - 2. Include data on features, accessories, and finishes.

3. Include physical description and dimensions of luminaires.
 4. Include emergency lighting units, including batteries and chargers.
 5. Include life, output (lumens, CCT, and CRI), and energy efficiency data.
 6. Photometric data and adjustment factors based on laboratory tests, complying with IES Lighting Measurements Testing and Calculation Guides, of each luminaire type. The adjustment factors shall be for lamps and accessories identical to those indicated for the luminaire used in this Project according to IES LM-79 and IES LM-80.
 - a. Manufacturers' Certified Data: Photometric data certified by manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products.
 - b. Testing Agency Certified Data: For indicated luminaires, photometric data certified by a qualified independent testing agency. Photometric data for remaining luminaires shall be certified by manufacturer.
- B. Shop Drawings: For nonstandard or custom luminaires.
1. Include plans, elevations, sections, and mounting and attachment details.
 2. Include details of luminaire assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 3. Include diagrams for power, signal, and control wiring.
- C. Samples: For each luminaire and for each color and texture with standard factory-applied finish.
- D. Samples for Initial Selection: For each type of luminaire with custom factory-applied finishes.
1. Include Samples of luminaires and accessories involving color and finish selection.
- E. Samples for Verification: For each type of luminaire.
1. Include Samples of luminaires and accessories to verify finish selection.
- F. Product Schedule: For luminaires and lamps.
- 1.4 INFORMATIONAL SUBMITTALS
- A. Qualification Data: For testing laboratory providing photometric data for luminaires.
- B. Seismic Qualification Certificates: For luminaires, accessories, and components, from manufacturer.
1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.

- C. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- D. Product Certificates: For each type of luminaire.
- E. Product Test Reports: For each luminaire, for tests performed by manufacturer and witnessed by a qualified testing agency or performed by a qualified testing agency.
- F. Sample warranty.

1.5 NJ SMART START APPLICATION

- A. The contractor shall complete and submit a New Jersey Smart Start rebate application to the New Jersey Office of Clean Energy on behalf of the Owner as a contract submittal. The application shall include all information necessary for the Owner to obtain available rebates both for lighting control and for lighting fixtures.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For luminaires and lighting systems to include in operation and maintenance manuals.
 - 1. Provide a list of all lamp types used on Project; use ANSI and manufacturers' codes.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Lamps: One for every 50 of each type and rating installed. Furnish at least one of each type. Spare driver modules shall be provided for each spare lamp that requires an external driver.
 - 2. Diffusers and Lenses: One for every 100 of each type and rating installed. Furnish at least one of each type.
 - 3. Globes and Guards: One for every 20 of each type and rating installed. Furnish at least one of each type.

1.8 QUALITY ASSURANCE

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Luminaire manufacturer's laboratory that is accredited under the NVLAP for Energy Efficient Lighting Products.
- B. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as

defined by OSHA in 29 CFR 1910.7, accredited under the NVLAP for Energy Efficient Lighting Products, and complying with the applicable IES testing standards.

- C. Provide luminaires from a single manufacturer for each luminaire type.
- D. Each luminaire type shall be binned within a three-step MacAdam Ellipse to ensure color consistency among luminaires.
- E. Mockups: For interior luminaires in room or module mockups, complete with power and control connections.
 - 1. Obtain Architect's approval of luminaires in mockups before starting installations.
 - 2. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Protect finishes of exposed surfaces by applying a strippable, temporary protective covering before shipping.

1.10 WARRANTY

- A. Warranty: Manufacturer and Installer agree to repair or replace components of luminaires that fail in materials or workmanship within specified warranty period.
- B. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. All fixtures furnished under this contract shall be DesignLights Consortium® (DLC) qualified products.
- B. Seismic Performance: Luminaires shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
- C. Seismic Performance: Luminaires and lamps shall be labeled vibration and shock resistant.

1. The term "withstand" means "the luminaire will remain in place without separation of any parts when subjected to the seismic forces specified and the luminaire will be fully operational during and after the seismic event."

2.2 REPLACEMENT LAMP REQUIREMENTS

- A. All lamps to be removed under this project shall be recycled in accordance with the recommendations of the Association of Lighting and Mercury Recyclers (ALMR). If lamps are to be recycled using a drum top crusher on site, the crusher shall be housed and operated in a Contractor furnished vehicle or housing to effectively prevent the spread of waste materials. Drum top crushers shall not be operated within the Owner's buildings due to the risk of exposure to mercury.

2.3 LUMINAIRE REQUIREMENTS

- A. Luminaire requirements apply to new fixtures only, not to relamped existing fixtures
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Standards:
 1. ENERGY STAR certified.
 2. NRTL Compliance: Luminaires for hazardous locations shall be listed and labeled for indicated class and division of hazard by an NRTL.
 3. FM Global Compliance: Luminaires for hazardous locations shall be listed and labeled for indicated class and division of hazard by FM Global.
 4. UL Listing: Listed for location.
 5. Recessed luminaires shall comply with NEMA LE 4.
 6. User Replaceable Lamps:
 - a. Bulb shape complying with ANSI C78.79.
 - b. Lamp base complying with ANSI C81.61.
- D. CRI of 90 minimum. CCT of 3000 -6200 K, as approved by Engineer.
- E. Minimum rated lamp life of 50,000 hours to L70.
- F. Lamps dimmable from 100 percent to 0 percent of maximum light output.
- G. Internal driver.
- H. Nominal Operating Voltage to suit line voltage of existing.
- I. Housings:

1. Extruded-aluminum housing and heat sink.
2. Colored anodized or powder-coat finish. Color to be selected by the Owner
3. Lens Thickness: At least 0.125 inch minimum unless otherwise indicated.

2.4 MATERIALS

A. Metal Parts:

1. Free of burrs and sharp corners and edges.
2. Sheet metal components shall be steel unless otherwise indicated.
3. Form and support to prevent warping and sagging.

B. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

C. Diffusers and Globes:

1. Prismatic acrylic or clear, UV-stabilized acrylic as approved
2. Acrylic Diffusers: One hundred percent virgin acrylic plastic, with high resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
3. Glass: Annealed crystal glass unless otherwise indicated.
4. Lens Thickness: At least 0.125 inch minimum unless otherwise indicated.

D. Housings:

1. Extruded-aluminum housing and heat sink.
2. Colored anodized or powder-coat finish. Color to be selected by the Owner

E. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps. Locate labels where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.

1. Label shall include the following lamp characteristics:
 - a. "USE ONLY" and include specific lamp type.
 - b. Lamp diameter, shape, size, wattage, and coating.
 - c. CCT and CRI for all luminaires.

2.5 METAL FINISHES

A. Variations in finishes are unacceptable in the same piece. Variations in finishes of adjoining components are acceptable if they are within the range of approved Samples and if they can be and are assembled or installed to minimize contrast.

2.6 LUMINAIRE SUPPORT

- A. Comply with NEC requirements and manufacturer's recommendations for support of fixtures.
- B. Single-Stem Hangers: 1/2-inch steel tubing with swivel ball fittings and ceiling canopy. Finish same as luminaire.
- C. Wires: ASTM A 641/A 641 M, Class 3, soft temper, zinc-coated steel, 12 gage or larger.
- D. Rod Hangers: 3/16-inch-minimum diameter, cadmium-plated, threaded steel rod.
- E. Hook Hangers: Integrated assembly matched to luminaire, line voltage, and equipment with threaded attachment, cord, and locking-type plug.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for luminaire to verify actual locations of luminaire and electrical connections before luminaire installation. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with NECA 1.
- B. Install luminaires level, plumb, and square with ceilings and walls unless otherwise indicated.
- C. Install lamps in each luminaire.
- D. Supports:
 - 1. Sized and rated for luminaire weight.
 - 2. Able to maintain luminaire position after cleaning and relamping.
 - 3. Provide support for luminaire without causing deflection of ceiling or wall.
 - 4. Luminaire mounting devices shall be capable of supporting a horizontal force of 100 percent of luminaire weight and vertical force of 400 percent of luminaire weight.
- E. Flush-Mounted Luminaire Support:
 - 1. Secured to outlet box.

2. Attached to ceiling structural members at four points equally spaced around circumference of luminaire.
3. Trim ring flush with finished surface.

F. Wall-Mounted Luminaire Support:

1. Attached to structural members in walls if over 10 pounds, attached using wall anchors and box ears if under 10 pounds.
2. Do not attach luminaires solely using #6 electrical screws in box ears.

G. Ceiling-Mounted Luminaire Support:

1. Ceiling mount with standard ceiling box or as shown in Manufacturer's literature.

H. Suspended Luminaire Support:

1. Pendants and Rods: Where longer than 48 inches, brace to limit swinging.
2. Stem-Mounted, Single-Unit Luminaires: Suspend with twin-stem hangers. Support with approved outlet box and accessories that hold stem and provide damping of luminaire oscillations. Support outlet box vertically to building structure using approved devices.
3. Continuous Rows of Luminaires: Use tubing or stem for wiring at one point and tubing, rod or wire support for suspension for each unit length of luminaire chassis, including one at each end.
4. Do not use ceiling grid as support for pendant luminaires. Connect support wires or rods to building structure.

I. Ceiling-Grid-Mounted Luminaires:

1. Secure to any required outlet box.
2. Secure luminaire to the luminaire opening using approved fasteners in a minimum of four locations, spaced near corners of luminaire.
3. Use approved devices and support components to connect luminaire to ceiling grid and building structure in a minimum of four locations, spaced near corners of luminaire.

J. Comply with requirements herein for wiring connections.

3.3 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified herein.

3.4 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:

1. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.
 2. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery power and retransfer to normal.
- B. Luminaire will be considered defective if it does not pass operation tests and inspections.
- C. Prepare test and inspection reports.

3.5 ADJUSTING

- A. Occupancy Adjustments: When requested within 24 months of date of Substantial Completion, provide on-site assistance in adjusting the direction of aim of luminaires to suit occupied conditions. Make up to two visits to Project during other-than-normal hours for this purpose. Some of this work may be required during hours of darkness.
1. During adjustment visits, inspect all luminaires. Replace lamps or luminaires that are defective.
 2. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.
 3. Adjust the aim of luminaires in the presence of the Architect.

END OF SECTION 265119

SECTION 265619 - EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes exterior luminaires, poles, and accessories.

1.2 SUBMITTALS

- A. Shop Drawings: Indicate dimensions and components for each luminaire not standard Product of manufacturer.
- B. Product Data: Submit dimensions, ratings, and performance data.
- C. Samples: Submit two color chips 3 x 3 inch in size illustrating luminaire finish color where indicated in luminaire schedule.

1.3 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years' experience.

1.4 COORDINATION

- A. Furnish bolt templates and pole mounting accessories to installer of pole foundations.

PART 2 - PRODUCTS

2.1 LUMINAIRES

- A. Product Description: Complete exterior luminaire assemblies, with features, options, and accessories as scheduled.

2.2 LED DRIVER AND ARRAYS

- A. UL 1598 listing.
- B. LED arrays shall have LED's that produce minimum 80 lumens/watt @ 525mA.

1. Lumen Depreciation Data: maintain greater than 95% lumen maintenance at 60,000 hours per IES TM-21.
 2. LED color: neutral white, 4000 deg K, minimum CRI of 70, or as scheduled.
- C. LED arrays shall have an IP66 enclosure rating.
- D. Driver + LED Life Rating not less than 100,000 hours.
- E. Power supply / driver shall be field replaceable by means quick-disconnect connectors and easy access mounting hardware.
- F. Drives shall accept 120 – 277 volts or 480 volts, 60 Hz.
- G. Power Factor > 0.9@ full load.
- H. THD < 20% @ full load.
- I. Surge protection: 10kA/10kV per ANSI/IEEE C136.2-2014
- J. The housing shall have an integral thermal management system with extruded aluminum radiation fins and lateral airways for passive cooling, no devices using moving parts are permitted.
- K. Minimum starting temperature: minus 30 deg C, 40 deg C ambient.
- L. Comply with IES LM-79-08 and LM-90-08 Approved Methods.
- M. Comply with In-Situ testing for more reliable results.
- N. LED's shall be Restriction of Hazardous Substances Directive (RoHS) compliant.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify foundations or mountings are ready to receive fixtures.

3.2 EXISTING WORK

- A. Maintain operation of existing exterior luminaires until construction activities necessitate removal.
- B. Disconnect and remove abandoned exterior luminaries.
- C. Extend existing exterior luminaire installations using materials and methods compatible with existing installations, or as specified.

3.3 INSTALLATION

- A. Install concrete bases for lighting poles at locations if and where indicated.
- B. Install poles plumb. Install double nuts to adjust plumb. Grout around each base.
- C. Install lamps in each luminaire.
- D. Bond and ground luminaries, metal accessories and metal poles. Install supplementary grounding electrode at each pole.
- E. Provide in-line watertight breakaway fusing in every exterior light pole, Littelfuse POWER-GARD, Bussman HEB Series, or equal.

3.4 FIELD QUALITY CONTROL

- A. Operate each luminaire after installation and connection. Inspect for improper connections and operation.
- B. Measure illumination levels to verify conformance with performance requirements.
- C. Take measurements during night sky, without moon or with heavy overcast clouds effectively obscuring moon.

3.5 ADJUSTING

- A. Aim and adjust luminaries to provide illumination levels and distribution.

3.6 CLEANING

- A. Clean photometric control surfaces as recommended by manufacturer.
- B. Clean finishes and touch up damage.

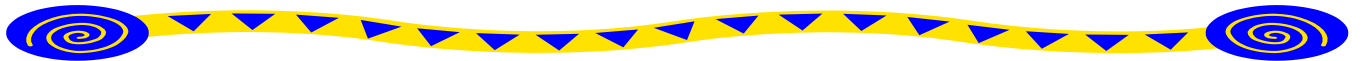
3.7 PROTECTION OF FINISHED WORK

- A. Relamp luminaries having failed lamps at Substantial Completion.

END OF SECTION 265619

Bid No: 2022-03-09

THE TOWNSHIP OF PISCATAWAY



PLANS

Pages 1-22



MARIA E. VALENTE-CAEMMERER

Purchasing Agent/Township Secretary

PLANS FOR

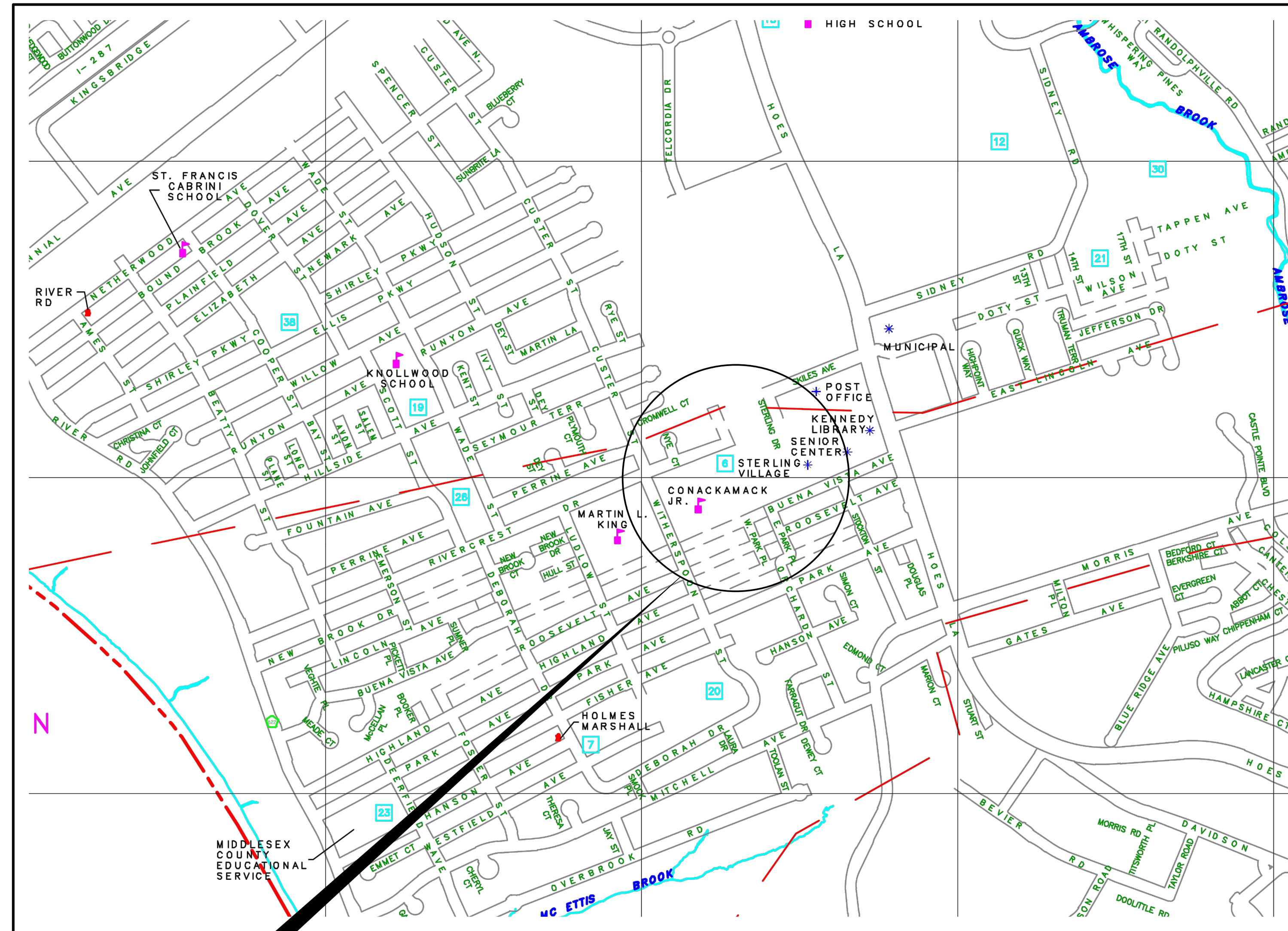
2022 - STERLING VILLAGE INTERIOR RENOVATIONS

PHASE - 3

TOWNSHIP OF PISCATAWAY
MIDDLESEX COUNTY, NEW JERSEY

INDEX	
NO.	DESCRIPTION
-	COVER
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A201a	FIRST FLOOR PLAN A
A201b	FIRST FLOOR PLAN B
A202a	SECOND - FOURTH FLOOR PLAN A
A202b	SECOND - FOURTH FLOOR PLAN B
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A301	COMMUNITY ROOM DEMOLITION REFLECTED CEILING PLAN
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A401	APARTMENT 553 CONSTRUCTION PLAN & REFLECTED CEILING PLAN
A500	FINISH LEGEND, SCHEDULE & NOTES
FP101	FIRE PROTECTION PARTIAL PLANS
P000	PLUMBING GENERAL INFORMATION
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P200	PLUMBING SCHEDULES
E000	ELECTRICAL GENERAL INFORMATION
E100	ELECTRICAL DEMOLITION PLAN
E101	ELECTRICAL NEW WORK PLAN
E200	ELECTRICAL SCHEDULES

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VERIZON WIRELINE NETWORK 110 S JEFFERSON ROAD SUITE 100 WHIPPANY, NJ 07981 ATTN: NAHED SHAHATA (212) 843-3070
CENTURY LINK 225 OLD NEW BRUNSWICK ROAD PISCATAWAY, NJ 08854 ATTN: JEFF PENNY (720) 888-4686
LOCATION OF UTILITIES SHOWN ON THESE PLANS ARE NOT WARRANTED AS TO EXACTNESS. CONTRACTOR SHALL DETERMINE EXACT LOCATION AND DEPTH OF UTILITIES PRIOR TO CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND OTHER APPLICABLE LAWS.
PRIOR TO DIGGING CALL 1-800-272-1000



PROJECT SITE
TOWNSHIP OF PISCATAWAY
STERLING VILLAGE
1 STERLING DR.
PISCATAWAY, NJ 08854

KEY MAP
N.T.S.

PREPARED BY
MARY ELAINE DASTI, P.E.
VP, COMPANY PRACTICE LEADER

PISCATAWAY TOWNSHIP GOVERNING BODY	
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COUNCIL PRESIDENT:	MICHELE LOMBARDI
COUNCIL VICE PRESIDENT:	FRANK UHRIN
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BUSINESS ADMINISTRATOR:	TIMOTHY J. DACEY
TOWNSHIP CLERK:	MELISSA A. SEADER
CONTACT INFORMATION:	455 HOES LANE PISCATAWAY, NJ 08854 PHONE: 732-562-2300 FAX: 732-529-2500 WEB: WWW.PISCATAWAYNJ.ORG



11 TINDALL ROAD
MIDDLETOWN, NJ 07748
TEL: 732-671-4600
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 FILE PATH: C:\Projects\Files\00240\N\Plans\...
 LAST SAVED DATE AND TIME: 10 May 2022, 4:37PM
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2022-STERLING VILLAGE INTERIOR RENOVATIONS

PHASE 3:

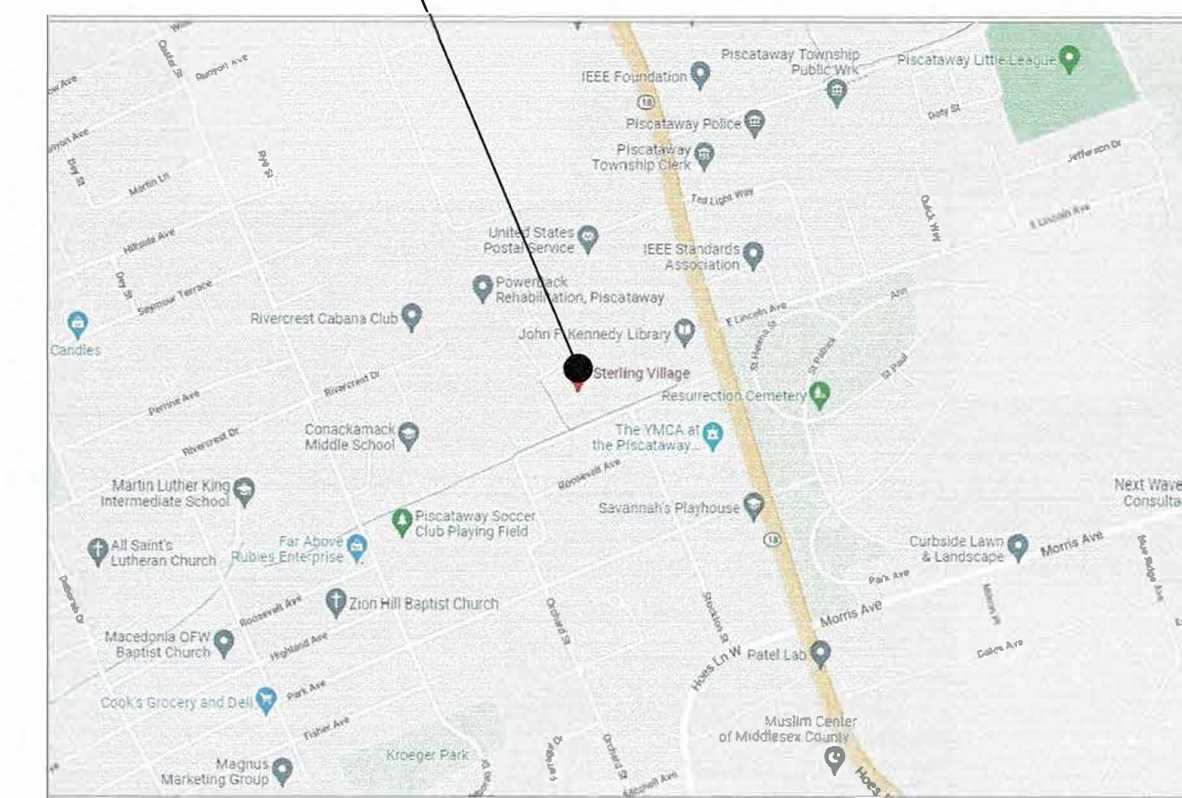
FOR THE AFFORDABLE SENIOR HOUSING OF PISCATAWAY TOWNSHIP 1 STERLING DR, PISCATAWAY, NJ 08854

LIST OF DRAWINGS:

SITE DRAWINGS:

- A000 INFO. ABBREVIATIONS, GRAPHICS, SYMBOLS, LEGEND ADA & MISC. DETAILS
- A101 FIRST FLOOR DEMOLITION PLAN
- A102 2ND-4TH FLOOR DEMOLITION PLAN & 5TH FLOOR DEMOLITION PLAN
- A201a FIRST FLOOR PLAN A
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- A500 FINISH LEGEND, SCHEDULE & NOTES

STERLING VILLAGE

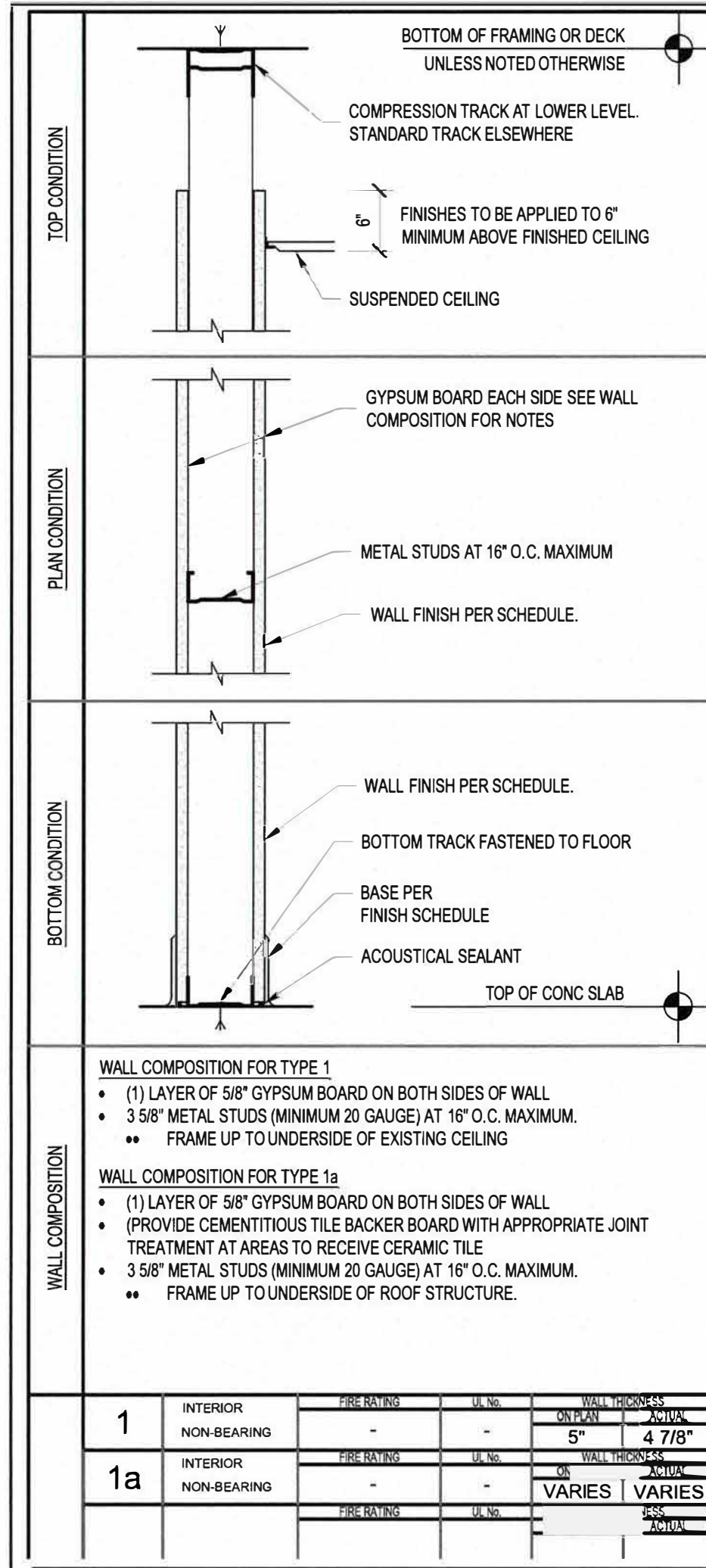


RSC architects

3 University Plaza Drive
Suite 600
Hackensack, NJ 07601
T: 201.941.3040
F: 201.941.3050
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3/16/22 Date



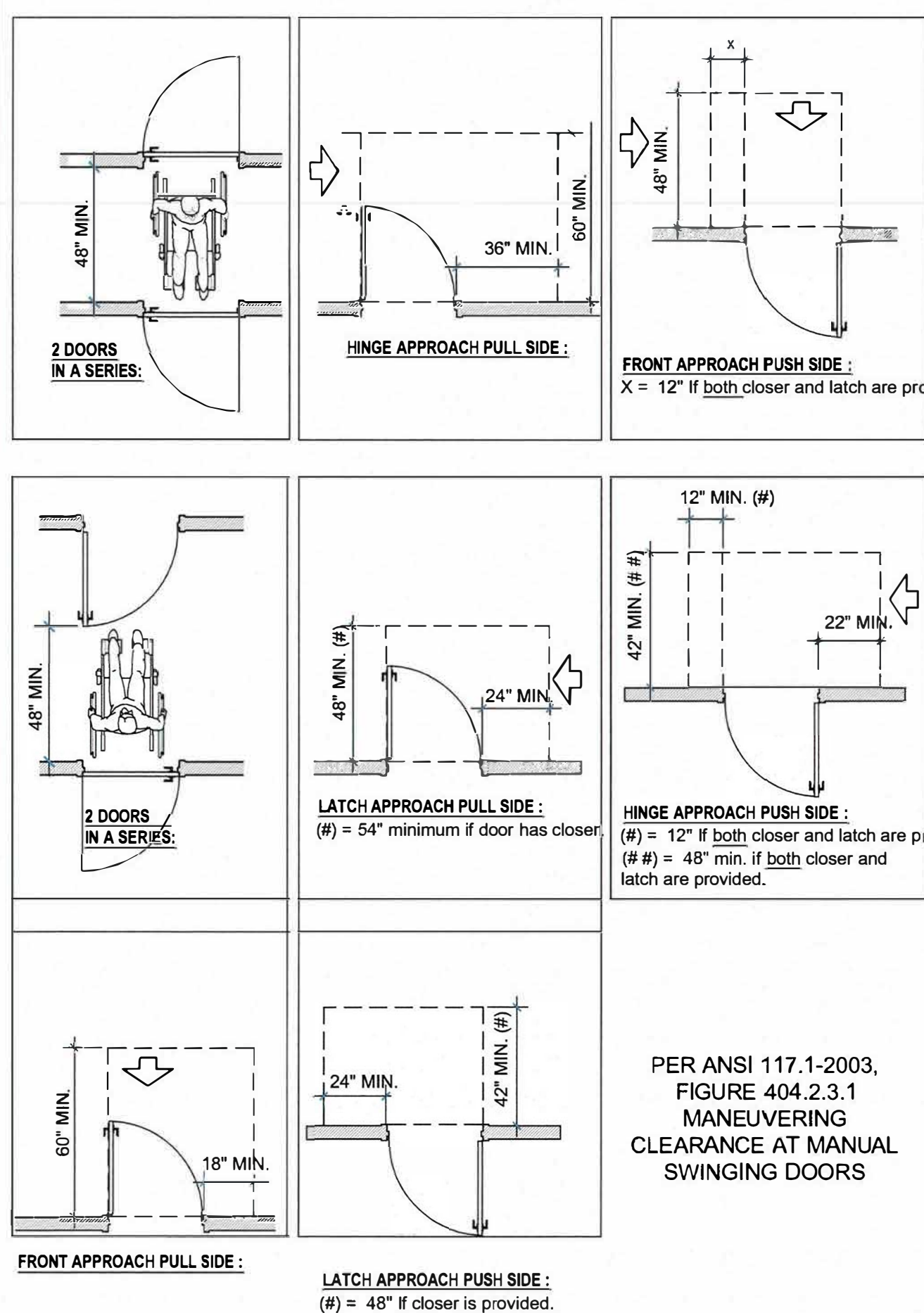
03 PARTITION TYPE
SCALE: NOT TO SCALE

1. ALL WORK TO COMPLY WITH THE FEDERAL, STATE AND LOCAL ACCESSIBILITY LAWS AS ADOPTED BY THE TOWNSHIP OF PISCATAWAY, NJ.
2. CONTRACTOR SHALL BE LICENSED BY THE STATE OF NEW JERSEY IN WHICH THE PROJECT IS LOCATED.
3. THE GENERAL CONTRACTORS AND ALL SUBCONTRACTORS WILL THOROUGHLY FAMILIARIZE THEMSELVES WITH THE CONSTRUCTION DOCUMENTS AND WILL VERIFY EXISTING SITE AND BUILDING CONDITIONS PRIOR TO SUBMITTING A BID. BIDS SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR THE SUCCESSFUL COMPLETION OF THE WORK, AND THE COMPLETION AND CLOSE OUT OF ALL PERMITS NECESSARY TO OBTAIN A FINAL CERTIFICATE OF OCCUPANCY.
4. ALL WORK TO BE PERFORMED IN A GOOD AND WORKMANLIKE MANNER IN ACCORDANCE WITH INDUSTRY STANDARDS FOR A COMMERCIAL, FOOD SERVICE FACILITY.
5. ALL WORK TO COMPLY WITH THE RULES AND REGULATIONS OF THE BUILDING. ALL CONTRACTORS SHALL BECOME FAMILIAR WITH THE RULES AND REGULATIONS OF THE BIDDING PRIOR TO SUBMITTING A BID.
6. PRIOR TO THE START OF CONSTRUCTION THE GENERAL CONTRACTOR SHALL PROVIDE A CRITICAL PATH METHOD PROJECT SCHEDULE TO THE OWNER AND ARCHITECT. THE SCHEDULE SHALL INCLUDE KEY SUBMITTAL AND APPROVAL DATES FOR ALL MILLWORK, EQUIPMENT, LIGHTING, SPRINKLERS, DUCTWORK AND FINISHES.
7. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL PHOTO DOCUMENT THE EXISTING CONDITIONS AND SUBMIT DIGITAL PHOTOGRAPHS TO THE OWNER AND ARCHITECT FOR RECORD.
8. PROVIDE ALL LABOR, SUPERVISION, AND MATERIALS AND EVERYTHING OF EVERY SORT WHICH MAY BE NECESSARY FOR A SUCCESSFUL COMPLETION OF THIS PROJECT TO OBTAIN A FINAL OCCUPANCY PERMIT. ALL WORK TO BE PERFORMED IN A GOOD AND WORKMANLIKE MANNER AS DESCRIBED HEREIN BY THESE CONSTRUCTION DOCUMENTS ACCORDING TO THE TRUE INTENT AND MEANING OF THE DRAWINGS AND SPECIFICATIONS. WHETHER THE SAME MAY OR MAY NOT BE PARTICULARLY INFERRED THEREFROM ALL WORK INDICATED OR DESCRIBED IN THE DRAWINGS OR SPECIFICATIONS WILL BE CONFERRED BY THE CONTRACT TO THE EXTENT AS IF DESCRIBED IN BOTH.
9. SUBCONTRACTORS, BEFORE STARTING THEIR WORK, WILL CHECK AND VERIFY THEIR PARTICULAR CODE RELATED REQUIREMENTS FOR COMPLIANCE ALONG WITH MEASUREMENTS, SURFACE LEVELS, SURFACE CONDITIONS AND RELATED PRODUCT, INSTALLATIONS NEAR AND ABOUT THEIR WORK. EACH TRADE WILL VERIFY IF CONTRACT CONDITIONS WITH THE OWNER OR THE ON-SITE CONSTRUCTION MANAGER AS TO IF THEY ARE OR NOT OF THE SAME, AS PER THESE CONSTRUCTION DOCUMENTS. IT WILL BE CONCLUDED THAT EACH BIDDER UNDERSTANDS AND KNOWS EXACTLY WHAT WILL BE REQUIRED OF HIM AND WILL PERFORM THESE REQUIREMENTS WITHOUT RECOURSE TO THE FULL AND UNCONDITIONAL SATISFACTION OF THE OWNER. THERE ARE NO ALTERNATE BIDS ON THIS PROJECT. NO ADDITIONAL COMPENSATION WILL BE CONSIDERED AFTER LETTING OF THIS BID UNLESS CHANGES ARE DIRECTED BY THE OWNER IN WRITING WITH COST ALREADY NEGOTIATED FOR THAT ADDED WORK AFTER THE LETTING OF THE BID.
10. THIS ARCHITECT AND HIS PROFESSIONAL CONSULTANTS WILL NOT HAVE CONTROL OR CHANGE OF AND WILL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK ON THIS PROJECT OR FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK ON THIS SITE, NOR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE INTENT OF THE CONTRACT AND OR CONSTRUCTION DOCUMENTS.
11. ALL SUBCONTRACTORS WILL PROVIDE A CERTIFICATE OF INSURANCE TO THE OWNER PRIOR TO STARTING ANY WORK ON THIS PROJECT. NOTE: CERTIFICATE OF INSURANCE CANNOT BE TERMINATED OR CANCELED WITHOUT 10 DAYS PRIOR WRITTEN NOTICE TO THE OWNER.
12. RESPONSIBILITY OF CONTRACTOR: EACH CONTRACTOR IS RESPONSIBLE FOR AND MUST GUARANTEE IN WRITING FIRST CLASS WORKMANSHIP AND MATERIALS. EACH CONTRACTOR WILL ASSUME ALL RESPONSIBILITY FOR THE CARE AND PROTECTION OF HIS OWN WORK AND MATERIALS FROM DAMAGE AND WILL PROTECT THIS SAME PROPERTY. HE WILL MAKE GOOD ANY DAMAGE TO HIS OWN OR OTHER WORK CAUSED BY HIMSELF OR WORKMEN EMPLOYED BY HIM.
13. SITE SAFETY: EACH CONTRACTOR WILL ABIDE BY LOCAL AREA STANDARDS AND RELATED OSHA STANDARDS FOR THE PROTECTION AND SAFETY FOR THEIR EMPLOYEES ON SITE. THE ARCHITECT AND HIS PROFESSIONAL CONSULTANTS WILL BE HELD HARMLESS BY THE OWNER, GENERAL CONTRACTOR AND RELATED AWARDED TRADES, ON THIS PROJECT FOR ACCIDENTS OR INJURIES CAUSED OR ACCRUED ON THIS PROPERTY DURING THE PRE/ACTUAL/POST CONSTRUCTION PHASES OF THIS PROJECT.
14. LIENS: ALL SUBCONTRACTORS AND THE GENERAL CONTRACTOR WILL DELIVER TO THE OWNER A COMPLETE RELEASE OF ALL ITEMS ARISING OUT OF THIS CONTRACT AND/OR RECEIPTS IN FULL IN LIEU THERE OF TOWARDS THEIR PARTIAL OR FINAL PAYMENT FOR WORK IN PLACE FOR THE OWNER.
15. GENERAL CONTRACTOR TO PAY FOR ALL SCAVENGER SERVICES, AND WILL BE RESPONSIBLE FOR REMOVAL OF DEBRIS ACCUMULATED BY EACH TRADE. HOWEVER, EACH TRADE WILL KEEP THE JOB SITE CLEAN AND SAFE AT ALL TIMES, ALONG WITH A BROOM FINISH AT THE END OF EACH WORKING DAY.
16. IF CHANGES ARE MADE IN THE FIELD ON THIS PROJECT VIA DIMENSIONS, MATERIALS, INSTALLATION DIFFERENT THAN INDUSTRY TECHNIQUES AND STANDARDS, ETC., OWNER IS TO BE NOTIFIED 48 HOURS IN ADVANCE TO THESE CHANGES TO BE MADE BY SAID TRADE. IF NOTICE IS NOT GIVEN TO THE OWNER, THEN THAT SUBCONTRACTOR IS TOTALLY RESPONSIBLE FOR THE CONSEQUENCES AND EFFECTS EVOLVED FROM THESE CHANGES.
17. ALL PENETRATIONS SHALL BE FULLY SEALED. PROVIDE FIRESTOPPING AND/OR FIRE CAULK WHERE REQUIRED TO MAINTAIN RATINGS. AT ANY OTHER PENETRATIONS SHALL BE FILLED WITH STEEL WOOL AND CAULKED. FINISH TO MATCH ADJACENT FINISHES.
18. CONSTRUCTION CLEANUP: AFTER ALL OTHER WORK IS COMPLETED AND JUST PRIOR TO TURNING THE SPACE OVER TO THE OWNER, THE CONTRACTOR WILL EMPLOY THE SERVICES OF A PROFESSIONAL CLEANING SERVICES TO CLEAN AND WASH DOWN ALL INSTALLED EQUIPMENT, SERVICE AREAS, ALONG WITH THE CLEANING OF ALL GLASS WINDOW/DOOR SURFACES PRIOR TO OCCUPANCY. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES FOR THIS MUNICIPALITY. SEE "CODE REVIEW ON THIS SHEET"
19. CONTRACTOR WILL APPOINT ONE SPECIFIC INDIVIDUAL FOR LIAISON WITH THE OWNER REPRESENTATIVE AND ARCHITECT.
20. CONTRACTOR TO PROTECT EXISTING CONSTRUCTION AND RESTORE ALL FINISH SURFACES TO THEIR ORIGINAL CONDITION WHERE DAMAGED.
21. CONTRACTOR WILL MAINTAIN A COPY OF THE APPROVED CONSTRUCTION DOCUMENTS ON SITE AT ALL TIMES. CONTRACTOR SHALL PERFORM NO PORTION OF THE WORK AT ANY TIME WITHOUT APPROVED CONTRACT DOCUMENTS.

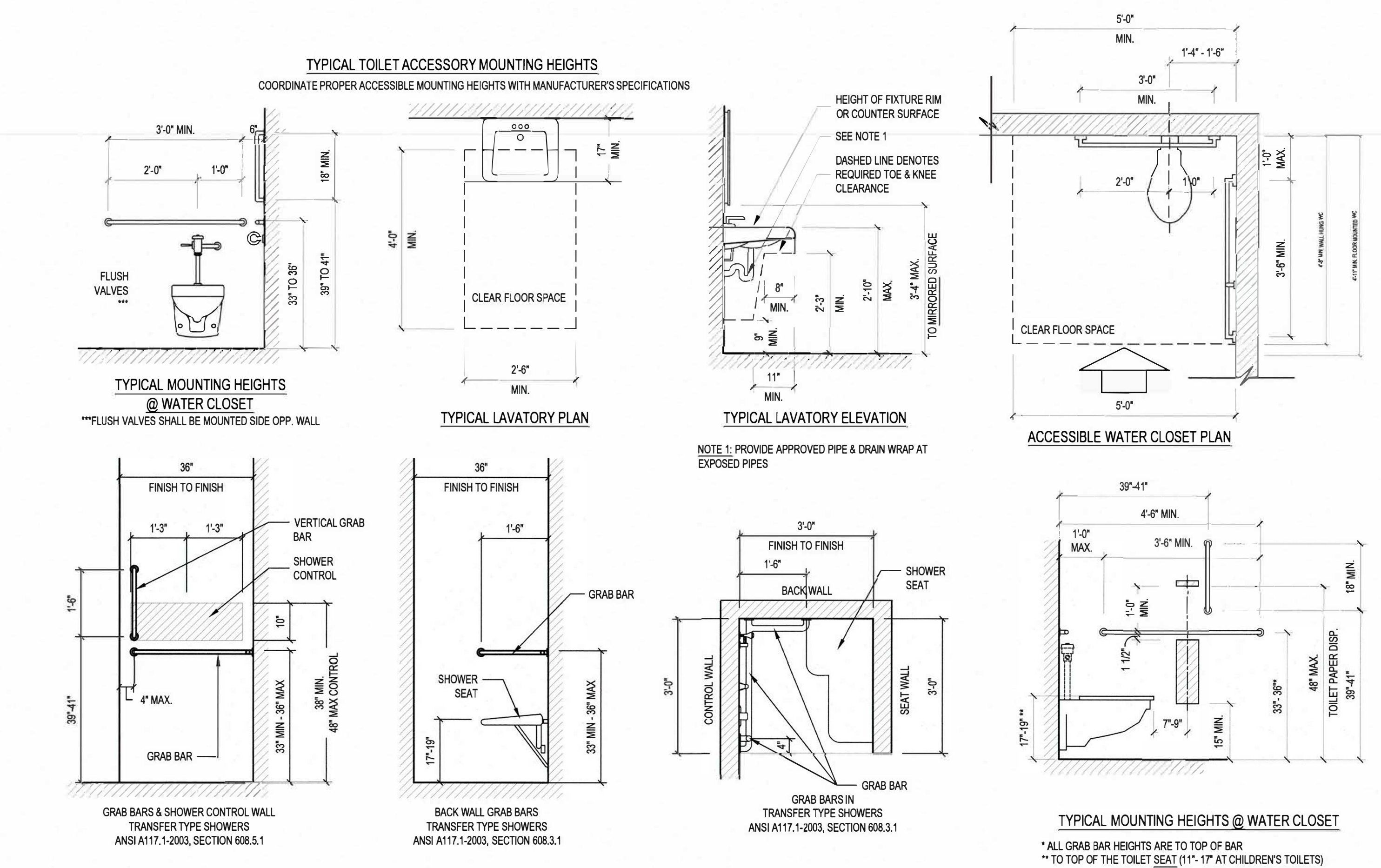
03 GENERAL NOTES
SCALE: NOT TO SCALE

ACT. Acoustical Tile	JAN. Janitor
ADJ. Adjustable	J.C. Janitor's Closet
ADMIN. Administrative	JT. Joint
A.F.F. Above Finished Floor	KIT. Kitchen
A.I.A. American Institute of Architects	LAB. Laboratory
ALT. Alternate	LAM. Laminate
ALUM. Aluminum	LAV. Lavatory
ARCH. Architectural	L.P. Low Point
ASTM. American Society of Testing Materials	L.T. Light
BD. Board	MANUF. Manufacturer
B.O. Bottom of Building	MAX. Maximum
BLDG. Building	MECH. Mechanical
C.B. Catch Basin	M.E.P. Mechanical Electrical Plumbing
C.F. Cubic Feet	M.H. Manhole
C.J. Control Joint	MIN. Minimum
CL. Center Line	MISC. Miscellaneous
CLG. Ceiling	M.O. Masonry Opening
C.M.U. Concrete Masonry Unit	M.S. Marble Saddle
COL. Column	MTD. Mounted
CONC. Concrete	N.A. Not Applicable
CONF. Conference	N.I.C. Not in Contract
CONST. Construction	N.T.S. Not to Scale
CONT. Continuous	O.A. Overall
CORR. Corridor	O.C. On Center
CPT. Carpet	O.D. Outside Diameter
C.T. Ceramic Tile	OPP. Opposite
CTR. Center	P.C. Pre-cast Concrete
DBL. Double	P.L. Property Line
DEPT. Department	P.LAM. Plastic Laminate
DET. Detail	PREFAB. Prefabricated
D.F. Drinking Fountain	P.V.C. Poly Vinyl Chloride Pipe
D.M. Dimension	R. Riser
DN. Down	RAD. Radius
DR. Door	R.C.P. Reinforced Concrete Pipe
DWG. Drawing	R.D. Roof Drain
EA. Each	REF. Reference
E.J. Expansion Joint	REFR. Refrigerator
ELEV. Elevation	REIN. Reinforced
ELECT. Electrical	REV. Revision
EMER. Emergency	RM. Room
ENCL. Enclosure	R.O. Rough Opening
E.P. Electrical Panelboard	R.O.W. Right of Way
EQ. Equal	S.B. Smart Board
EQUIP. Equipment	S.ECT. Section
EXIST. Existing	S.F. Square Feet
EXT. Exterior	SIM. Similar
F.A. Fire Alarm	SPEC. Specification
F.D. Floor Drain	S.T.C. Sound Transmission Class
F.E. Fire Extinguisher	STD. Standard
F.H.C. Fire Hose Cabinet	STL. Steel
FIN. Finish	STOR. Storage
FLR. Floor	STR. Structural
F.R.P. Fiber Reinforced Polyester	SUSP. Suspended
FTG. Foot or Feet	T. Tread
GA. Gage	T.B. Tack Board
GALV. Galvanized	TEL. Telephone
G.C. General Contractor	TEMP. Tempered
GL. Glass	TEMP. GL. Tempered Glass
G.W.B. Gypsum Wallboard	T.O. Top of
G.W.T. Glazed Wall Tile	T.O.C. Top of Curb
GYP. Gypsum	T.V. Television
H.B. Hose Bibb	TYP. Typical
HGT. Height	T.&G. Tongue and Groove
H.M. Hollow Metal	U.O.N. Unless Otherwise Noted
HORIZ. Horizontal	V.C.T. Vinyl Composition Tile
H.P. High Point	VERT. Vertical
H.R. Heating	VEST. Vestibule
H.V.A.C. Heating Ventilation Air Conditioning	V.I.F. Ventrily In Field
I.D. Inside Diameter	W. With
INFO. Information	WB. White Board
INSUL. Insulation	WC. Water Closet
INT. Interior	WO. Without
INV. Invert Elevation	WT. Wall Tile

04 ABBREVIATIONS
SCALE: NO SCALE



05 ADA DOOR CLEARANCES
SCALE: 1/4"=1'-0"



06 H.C. ACCESSIBLE DETAILS & MOUNTING HEIGHTS
SCALE: 1/2"=1'-0"

TOWNSHIP OF PISCATAWAY
2022 - STERLING VILLAGE
INTERIOR RENOVATIONS PHASE-3
TOWNSHIP OF PISCATAWAY, MIDDLESEX COUNTY, NEW JERSEY

ABBREVIATIONS, GRAPHIC, SYMBOLS,
LEGEND, ADA INFO. & MISC. DETAILS

AND ASSOCIATES

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CHECKED BY RW
DRAWN BY JB
DATE 02-16-2022
SCALE
PROJ. NO. 08.21.018

DRAWING
A000
SHEET
2
OF
22

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GENERAL NOTES:

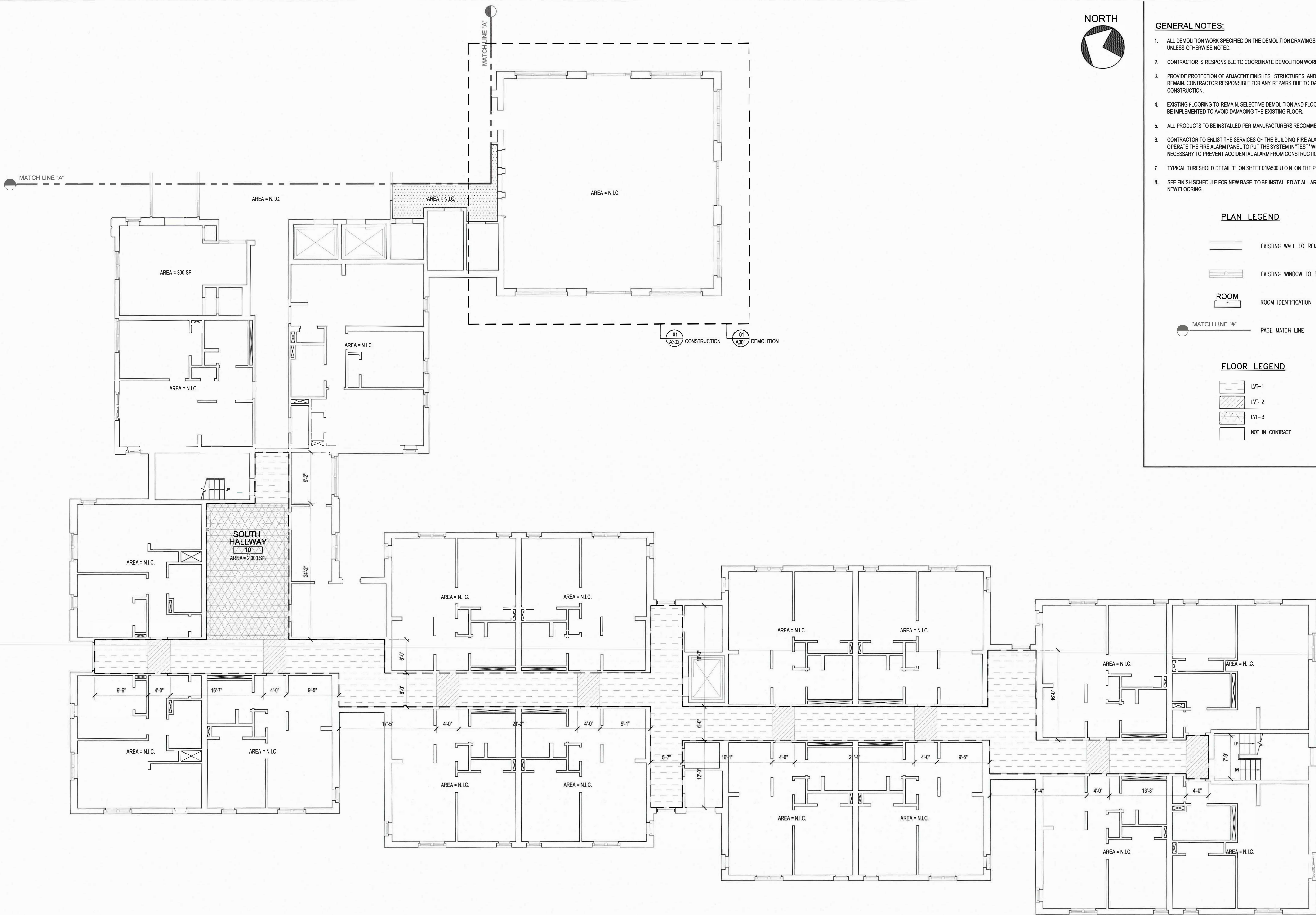
1. ALL DEMOLITION WORK SPECIFIED ON THE DEMOLITION DRAWINGS TO BE BASE-BID UNLESS OTHERWISE NOTED.
2. CONTRACTOR IS RESPONSIBLE TO COORDINATE DEMOLITION WORK FOR ALL TRADES.
3. PROVIDE PROTECTION OF ADJACENT FINISHES, STRUCTURES, AND FLOORING TO REMAIN. CONTRACTOR RESPONSIBLE FOR ANY REPAIRS DUE TO DAMAGE FROM CONSTRUCTION.
4. EXISTING FLOORING TO REMAIN, SELECTIVE DEMOLITION AND FLOOR COVERING TO BE IMPLEMENTED TO AVOID DAMAGING THE EXISTING FLOOR.
5. ALL PRODUCTS TO BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
6. CONTRACTOR TO ENLIST THE SERVICES OF THE BUILDING FIRE ALARM VENDOR TO OPERATE THE FIRE ALARM PANEL TO PUT THE SYSTEM IN "TEST" WHENEVER NECESSARY TO PREVENT ACCIDENTAL ALARM FROM CONSTRUCTION OPERATIONS.
7. TYPICAL THRESHOLD DETAIL T1 ON SHEET 01/A500 U.O.N. ON THE PLAN.
8. SEE FINISH SCHEDULE FOR NEW BASE TO BE INSTALLED AT ALL AREAS RECEIVING NEW FLOORING.

PLAN LEGEND

- EXISTING WALL TO REMAIN
- EXISTING WINDOW TO REMAIN
- ROOM IDENTIFICATION
- MATCH LINE "B"

FLOOR LEGEND

- LVT-1
- LVT-2
- LVT-3
- NOT IN CONTRACT



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TOWNSHIP OF PISCATAWAY
2022 - STERLING VILLAGE
INTERIOR RENOVATIONS PHASE-3
TOWNSHIP OF PISCATAWAY, MIDDLESEX COUNTY, NEW JERSEY
FIRST FLOOR PLAN A

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1 FIRST FLOOR PLAN "A"
SCALE: 1/8"=1'-0"

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7. TYPICAL THRESHOLD DETAIL T1 ON SHEET 01/A500 U.O.N. ON THE PLAN.
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PLAN LEGEND:

- EXISTING WALL TO REMAIN
- EXISTING WINDOW TO REMAIN
- ROOM IDENTIFICATION
- MATCH LINE "B" PAGE MATCH LINE

FLOOR LEGEND:

- LVI-1
- LVI-2
- LVI-3
- NOT IN CONTRACT



1 FIRST FLOOR PLAN "B"
SCALE: 1/8"=1'-0"

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RSC architects

3 University Plaza Drive
Suite 600
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T: 201.941.3040
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 2022 - STERLING VILLAGE
 INTERIOR RENOVATIONS PHASE - 3
 TO WMS HP OF PISCATAWAY, MIDDLESEX COUNTY, NEW JERSEY

FIRST FLOOR PLAN B

AND

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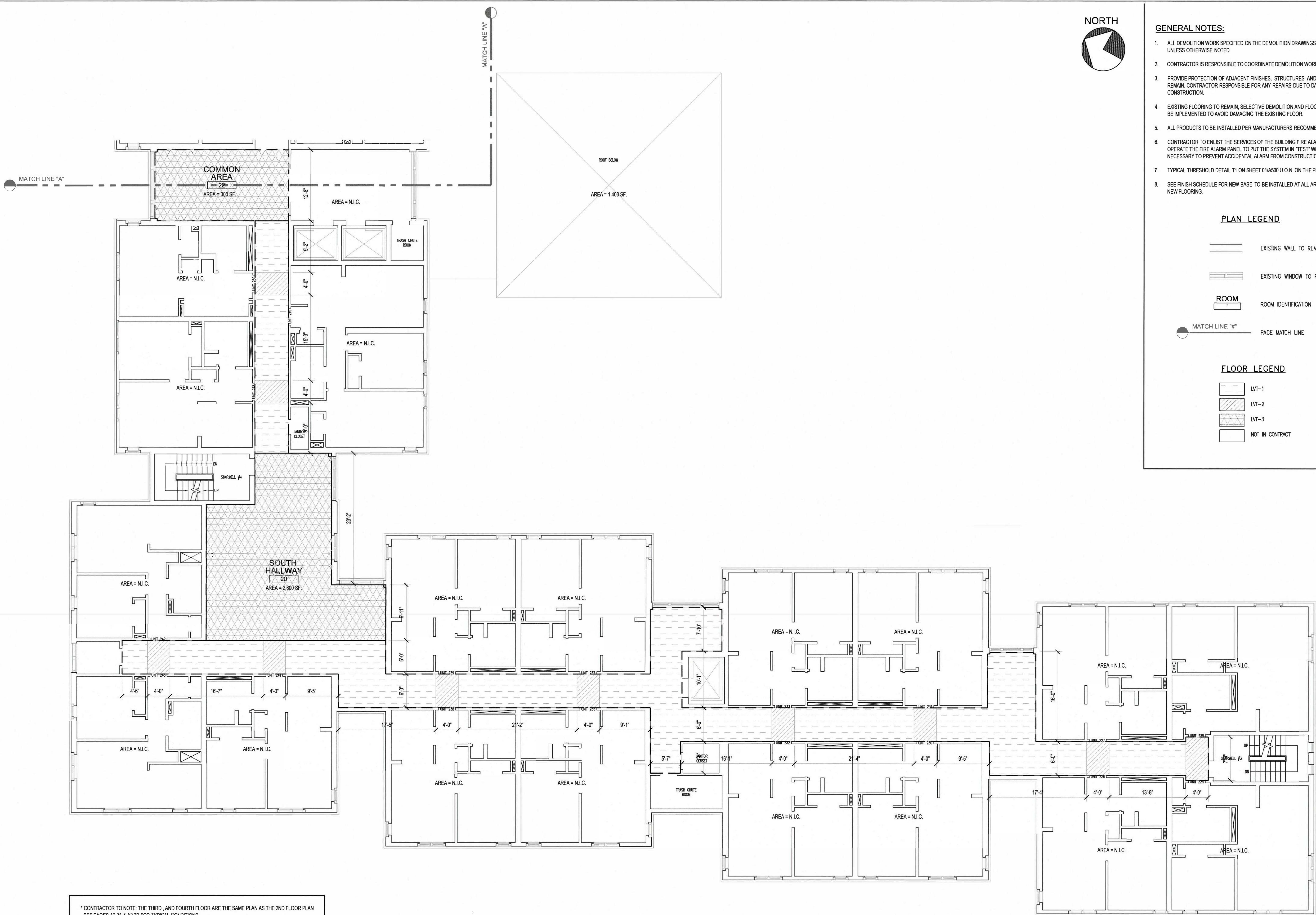
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DRAWN BY	JB	DATE	03/15/2022
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1 2nd - 4th FLOOR PLAN "A"
 SCALE: 1/8"=1'-0"

* CONTRACTOR TO NOTE: THE THIRD AND FOURTH FLOOR ARE THE SAME PLAN AS THE 2ND FLOOR PLAN SEE PAGES A2.2A & A2.2B FOR TYPICAL CONDITIONS



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PLAN LEGEND

- EXISTING WALL TO REMAIN
- EXISTING WINDOW TO REMAIN
- ROOM IDENTIFICATION
- PAGE MATCH LINE

FLOOR LEGEND

- LVT-1
- LVT-2
- LVT-3
- NOT IN CONTRACT

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TOWNSHIP OF PISCATAWAY
 2022 - STERLING VILLAGE
 INTERIOR RENOVATIONS PHASE - 3
 TOWNSHIP OF PISCATAWAY, MIDDLESEX COUNTY, NEW JERSEY
SECOND - FOURTH FLOOR PLAN A

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3 University Plaza Drive
Suite 600
Hackensack, NJ 07601
t. 201.941.3040
f. 201.941.3050
www.rscarchitects.com

LICENSURE NO.
John P. Caporus, AIA
A10004 NJ
L20041560 NJ
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03104911 NY
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TOWNSHIP OF HISCATAWAY

2022 - STERLING VILLAGE
INTERIOR RENOVATIONS PHASE-3
TOWNSHIP OF HISCATAWAY, MIDDLESEX COUNTY, NEW JERSEY

SECOND- FOURTH FLOOR PLAN B

AND

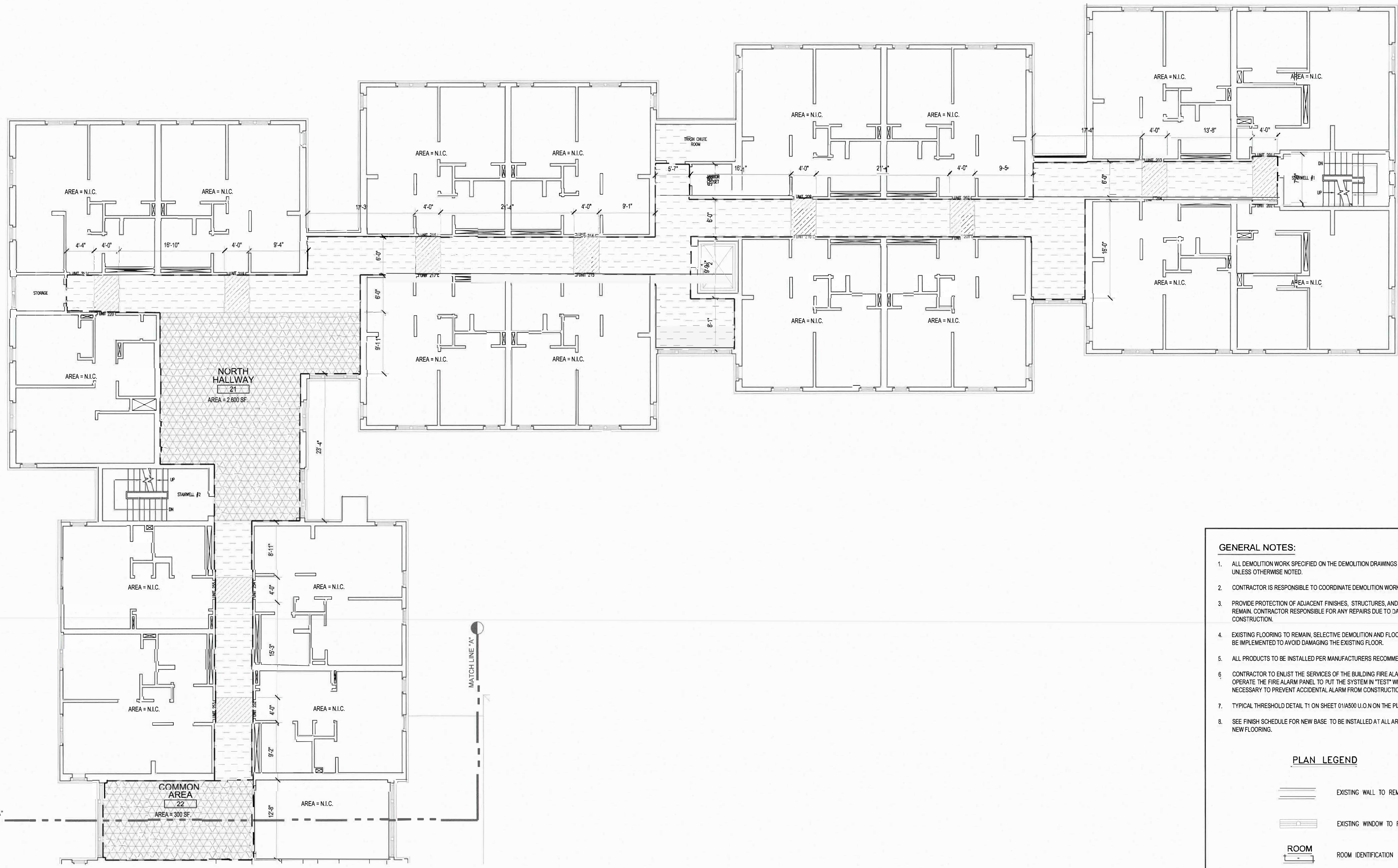
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PLAN LEGEND

EXISTING WALL TO REMAIN

EXISTING WINDOW TO REMAIN

ROOM IDENTIFICATION

PAGE MATCH LINE

FLOOR LEGEND

LVI-1

LVI-2

LVI-3

NOT IN CONTRACT

*CONTRACTOR TO NOTE: THE THIRD, AND FOURTH FLOOR ARE THE SAME PLAN AS THE 2ND FLOOR PLAN SEE PAGES A2.2A & A2.2B FOR TYPICAL CONDITIONS

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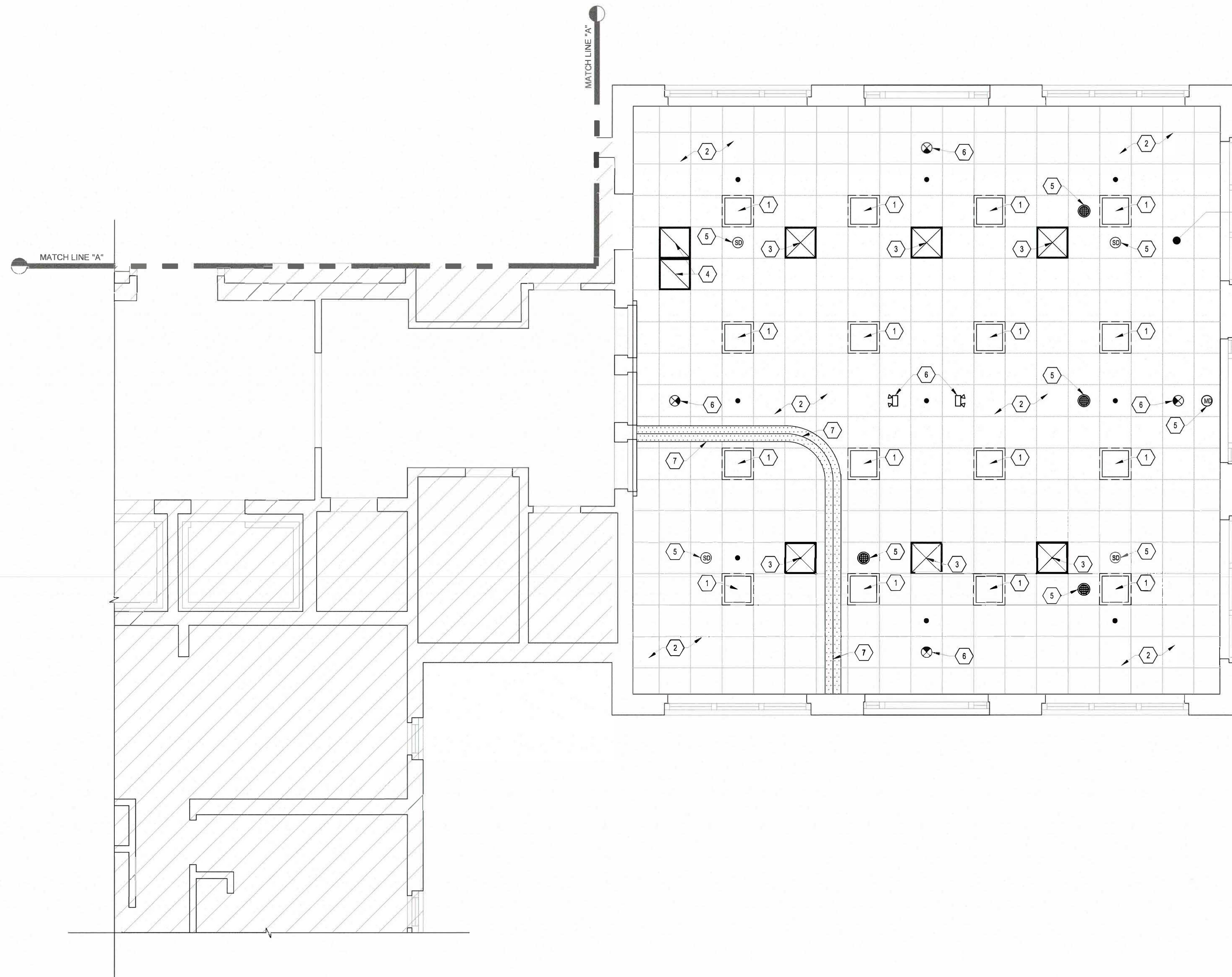
REFLECTED CEILING DEMOLITION KEY NOTES: (R)

1. REMOVE AND DISPOSE OF ALL EXISTING LIGHT FIXTURES. CONTRACTOR SHALL INSTALL TEMPORARY LIGHTING TO ILLUMINATE ROOMS.
2. REMOVE AND DISPOSE OF ALL CEILING GRID, AND ACOUSTICAL TILE.
3. CONTRACTOR TO REMOVE AND STORE ALL HVAC SUPPLY DIFFUSERS, TEMPORARILY COVER ALL DUCTS AND EQUIPMENT WHILE DEMOLITION IS UNDERWAY. CLEAN DIFFUSERS/GRILLES BEFORE REINSTALLING.
4. CONTRACTOR TO REMOVE AND STORE ALL HVAC RETURN DIFFUSERS, TEMPORARILY COVER ALL DUCTS AND EQUIPMENT WHILE DEMOLITION IS UNDERWAY. CLEAN DIFFUSERS/GRILLES BEFORE REINSTALLING.
5. CONTRACTOR TO REMOVE AND STORE ALL HEAT/SMOKE DETECTORS, SPEAKERS AND CAMERAS.
6. EXISTING EXIT SIGNS AND EMERGENCY LIGHTING TO BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
7. FOLDABLE ROOM DIVIDER & TRACK TO REMAIN. CONTRACTOR TO COVER AND PROTECT WHILE DEMOLITION IS UNDERWAY.

DEMOLITION REFLECTED CEILING PLAN LEGEND:

- 2'-0" x 2'-0" LED LIGHTING FIXTURE TO BE REMOVED
- MOTION DETECTOR
- SPRINKLER HEAD TO REMAIN
- CEILING MOUNTED EXIT SIGN
- AUDIO SPEAKER
- EMERGENCY LIGHTS
- SMOKE DETECTOR
- HVAC SUPPLY DIFFUSER
- HVAC RETURN DIFFUSER
- SURVEILLANCE CAMERA
- WALL MOUNTED EXIT SIGN
- ROOM NAME ROOM # HT. MTR
- 2'X2' SUSPENDED ACOUSTICAL TILE TO BE REMOVED
- EXISTING METAL PANEL FOR FOLDING ROOM DIVIDER TRACK TO REMAIN

COMMUNITY ROOM
12
9'-9" ACT



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3 University Plaza Drive
Suite 600
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t: 201.941.3040
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2022 - STERLING VILLAGE
INTERIOR RENOVATIONS PHASE-3
TOWNSHIP OF PISCATAWAY, MIDDLESEX COUNTY, NEW JERSEY

COMMUNITY ROOM DEMOLITION
REFLECTED CEILING PLAN

AND

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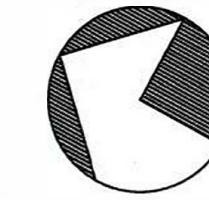
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1 FIRST FLOOR DEMOLITION REFLECTED CEILING PLAN "A"
SCALE: 1/4"=1'-0"

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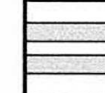






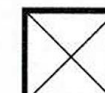



GENERAL NOTES:


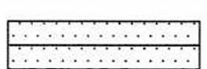
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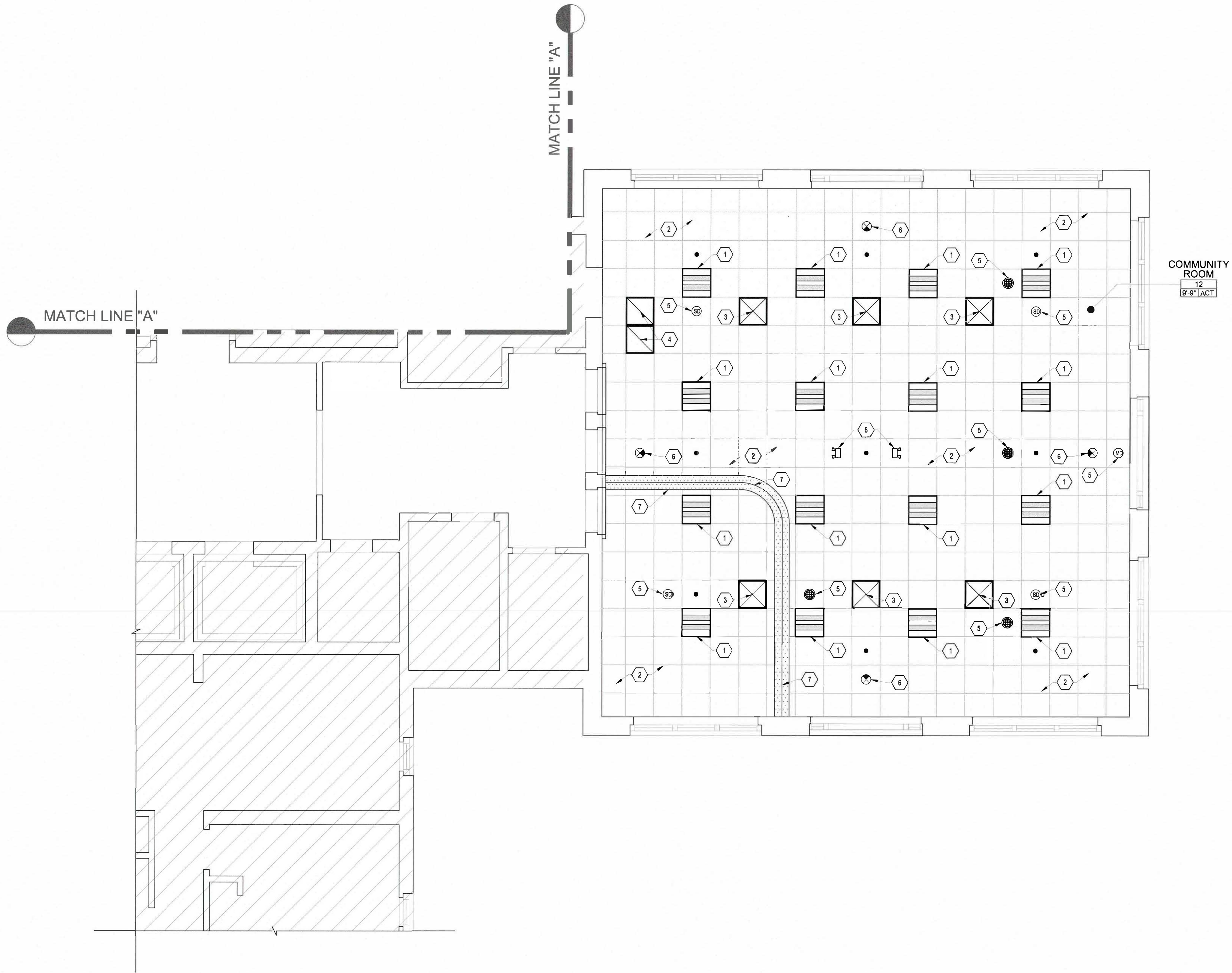
REFLECTED CEILING CONSTRUCTION KEY NOTES: (#)

1. NEW 2'-0" X 2'-0" LED LIGHT FIXTURES. SEE FINISH SCHEDULE ON DRAWING A4.0 FOR ADDITIONAL INFORMATION.
2. NEW CEILING GRID AND ACOUSTICAL TILE. ALL ASSOCIATED EQUIPMENT TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS.
3. CONTRACTOR TO REINSTALL ALL HVAC SUPPLY DIFFUSERS.
4. CONTRACTOR TO REINSTALL ALL HVAC RETURN DIFFUSERS.
5. CONTRACTOR TO REINSTALL ALL HEATSMOKE DETECTORS, SPEAKERS AND CAMERAS. ALL ASSOCIATED EQUIPMENT TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS.
6. CONTRACTOR TO INSTALL ALL NEW EXIT SIGNS AND EMERGENCY LIGHTING.
7. FOLDABLE ROOM DIVIDER & TRACK TO REMAIN.

REFLECTED CEILING PLAN LEGEND:

-  NEW 2'-0" x 2'-0" LED LIGHTING FIXTURE
-  MOTION DETECTOR
-  SPRINKLER HEAD TO REMAIN
-  CEILING MOUNTED EXIT SIGN
-  AUDIO SPEAKER
-  EMERGENCY LIGHTS
-  SMOKE DETECTOR
-  HVAC SUPPLY DIFFUSER
-  HVAC RETURN DIFFUSER
-  SURVEILLANCE CAMERA
-  WALL MOUNTED EXIT SIGN
- | ROOM NAME |
|--------------|
| ROOM # |
| HGT. MTRX. |

 ROOM TAG, CEILING HEIGHT, AND MATERIAL
-  NEW 2'X2' SUSPENDED ACOUSTICAL TILE (SEE FINISH SCHEDULE)
-  EXISTING METAL PANEL FOR FOLDING ROOM DIVIDER TRACK TO REMAIN



COMMUNITY ROOM
12
19'-9" X 12'-0" FACT

MATCH LINE "A"

MATCH LINE "A"

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1 FIRST FLOOR REFLECTED CEILING PLAN "A"
SCALE: 1/4"=1'-0"



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AIA#028
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COMMUNITY ROOM
REFLECTED CEILING PLAN

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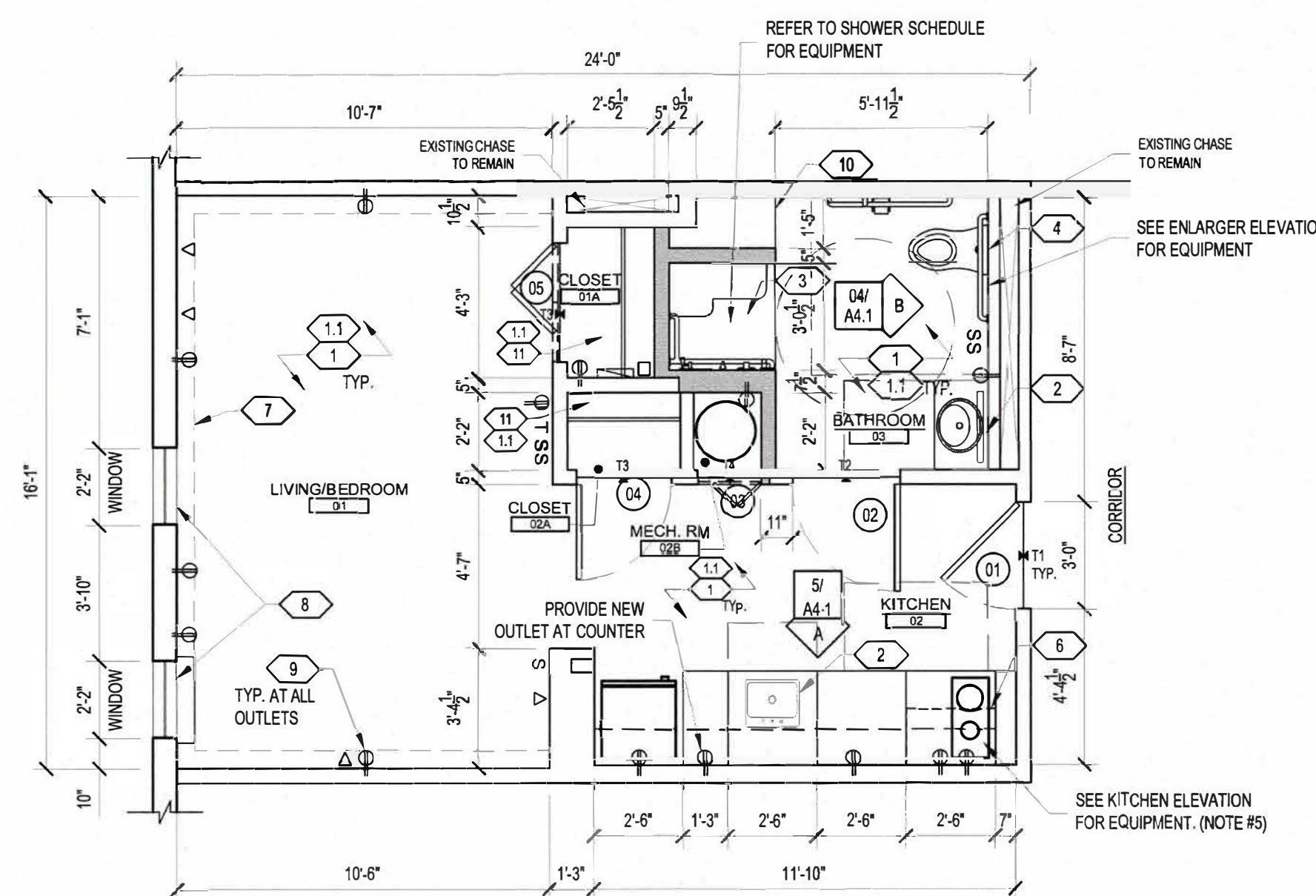
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PLUMBING FIXTURE/ACCESSORY SCHEDULE		
A	LAVATORY	CORIAN ELEMENTS 810P ADA COMPLIANT - COLOR: WHITE
B	WATER CLOSET	KOHLER BARRINGTON K-3578-RA - COLOR: WHITE
C	42" GRAB BAR	BRADLEY #8122-00142
C.1	36" GRAB BAR	BRADLEY #8122-00136
C.2	18" GRAB BAR (VERTICAL OR HORIZONTAL)	BRADLEY #8122-00118
D	FLAT MIRROR ABOVE VANITY	EXTRUDED ALUMINUM TOP AND BOTTOM TRACK
E	ELECTRIC WATER HEATER	WATER HEATER TO BE REINSTALLED ON NEW SHELF
F	TOILET TISSUE DISPENSER	KOHLER ALTEO K-37054-BN (BRUSHED NICKEL)
G	ROBE HOOK	KOHLER ALTEO K-37055-BN (BRUSHED NICKEL)
H	UNDERLAVATORY GUARD	PLUMBEREX HANDY-SHIELD MAXX
I	TOWEL RING	KOHLER ALTEO K-37057-BN (BRUSHED NICKEL)
J	KITCHEN SINK	CORIAN ELEMENTS 5610P ADA COMPLIANT - COLOR: TBD

KITCHEN EQUIPMENT		
M	SUMMIT CREK2B 2 BURNER RADIANT COOKTOP	COLOR: BLACK CERAMIC GLASS COOK TOP (DEDICATED CIRCUIT)
N	GE PES227DLWW 2.2 CU FT MICROWAVE	COLOR: WHITE (PROVIDE DEDICATED CIRCUIT) COUNTER TOP UNIT
P	GE GTE16GTHWW REFRIGERATOR w TOP Freezer 30"	COLOR: WHITE (PROVIDE DEDICATED CIRCUIT)
Q	GE JYX300DJWW NON VENTED RANGE HOOD 30"	COLOR: WHITE (PROVIDE CIRCUIT) CONTROL GE #UXRC70
R	3" SOLID SURFACE BACKSPALASH	BACKSPALASH TO BE FULL HEIGHT AT COOKING AREA

SHOWER ACCESSORY SCHEDULE				
ID	DESCRIPTION	VENDOR	MODEL	COMMENTS
-	ADA SHOWER PAN	INPRO	TRANSFER 36" X 36"	
-	SHOWER WALL FRP PANELS	INPRO	BIOPRISM 36" X 36"	STYLE SUBWAY TILE
-	CURTAIN ROD	BOBRICK	B-6107 X 36	INCLUDE STAINLESS STEEL SLIDES: 204-1
-	SHOWER CURTAIN	BOBRICK	204-2, 42" X 72"	
-	SHELF/TOWEL BAR	BOBRICK	B-676 X 24	
-	SHOWER FIXTURE	LITELINE	SLM14-8W-MME	

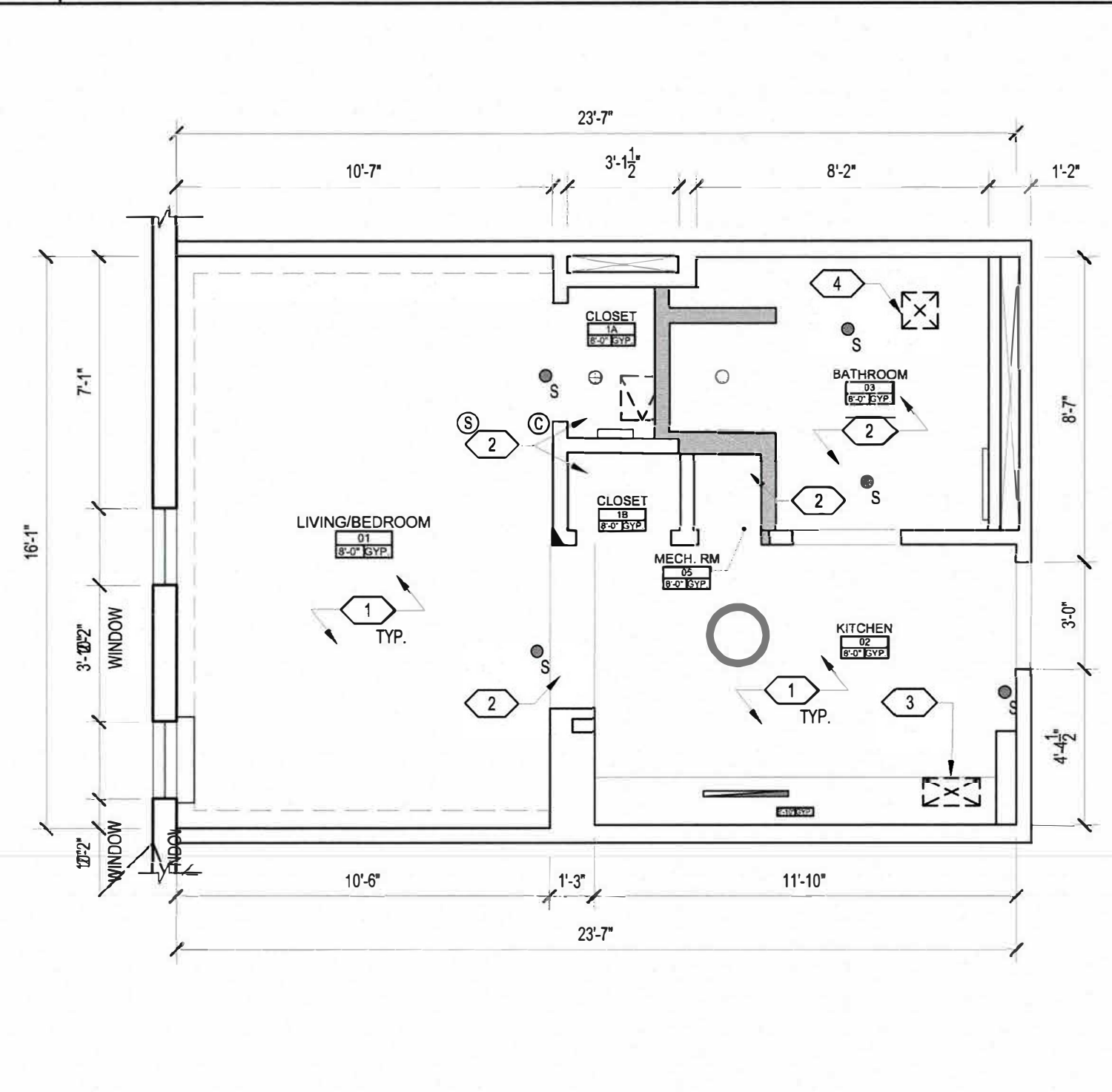


- ### CONSTRUCTION KEY NOTES:
- ROOM TO RECEIVE NEW FINISHES. TO INCLUDE BUT NOT LIMITED TO FLOORS, WALLS, CEILINGS, AND TRIM. SEE FINISH SCHEDULE FOR ADDITIONAL INFORMATION. PATCH AND REPAIR ALL EXISTING WALLS PRIOR TO NEW FINISH BEING APPLIED.
 - EXISTING CEILINGS TO BE SKIM COATED AFTER TEXTURED CEILING HAS BEEN SCRAPED SMOOTH. SEE FINISH SCHEDULE FOR PAINT FINISH.
 - NEW SINK TO BE INSTALLED AND CONNECTED TO EXISTING PLUMBING.
 - NEW F.R.P. SHOWER PAN AND WALLS TO BE INSTALLED, SEE FINISH SCHEDULE FOR SHOWER EQUIPMENT.
 - NEW TOILET TO BE INSTALLED AND CONNECTED, PER MANUFACTURERS SPECIFICATIONS (SEE SCHEDULE).
 - INSTALL NEW KITCHEN EQUIPMENT, OVEN, FRIDGE, AND MICROWAVE. SEE ENLARGED PLAN FOR LAYOUT. ALL UTILITIES TO BE REUSED, PROVIDE DEDICATED CIRCUIT TO OVEN AND FRIDGE.
 - INSTALL NEW KITCHEN RE-CIRCULATION HOOD PER MANUFACTURERS SPECIFICATIONS. SEE INTERIOR ELEVATIONS.
 - EXISTING RADIATORS TO REMAIN. CONTRACTOR TO PROVIDE PROTECTION DURING CONSTRUCTION.
 - PROVIDE AND INSTALL WINDOW TREATMENTS, BRACKETS, AND ALL ASSOCIATED HARDWARE.
 - INSTALL NEW OUTLETS, SWITCHES, AND COVER PLATES (WHITE) IN EXISTING BOXES. CONFIRM EXISTING LOCATIONS MEET ACCESSIBLE MOUNTING HEIGHTS AND LOCATIONS ON SHEET A400. REFER TO ELECTRICAL PLANS FOR LOCATIONS.
 - PROVIDE OPEN SHELVING AT 24" O.C. VERT. TO MATCH COUNTER FINISH.
 - PROVIDE (2) CLOTHING HANGING RODS AT 48" MAX HT. AND 86" MAX HT.

- ### GENERAL CONSTRUCTION NOTES
- SCALE: N.T.S.
- THE GENERAL NOTES AND CONSTRUCTION DOCUMENTS HEREWIT SHALL APPLY TO THE WORK OF THIS PROJECT, AND SHALL BE CAREFULLY REVIEWED BY THE GENERAL CONTRACTOR AND ALL OF HIS SUB CONTRACTORS. THE GENERAL CONTRACTOR SHALL COORDINATE EACH SUBCONTRACTOR'S PARTICULAR WORK WITH ALL OTHER SUBCONTRACTORS WORK ASSOCIATED WITH THIS PROJECT.
- AT FURRED OUT WALLS, EXISTING RECEPTACLES (POWER, DATA, ETC.) TO BE RELOCATED TO THE FACE OF NEW ENCLOSURE.
 - ALL ELEVATIONS ARE TAKEN FROM FINISHED FLOOR F.F.E. (0'-0") UNLESS NOTED OTHERWISE.
 - MAX. STUD SPACING OF 16" O.C. ALL AREAS. ADDITIONAL AL METAL STUD TO BE 16 GAUGE MINIMUM.
 - ALL WALL PARTITION TYPES NOT LABELED SHALL BE PARTITION TYPE "1".
 - FURNISH AND INSTALL SOLID BLOCKING OR STRAPPING AT ALL GYP. BD. PARTITION WALLS TO SUPPORT WALL HUNG EQUIPMENT, MILLWORK, OR ACCESSORIES. REFER TO FINE PLANS AND SCHEDULE.
 - REFER TO DRAWING THIS SHEET FOR MILLWORK SECTIONS AND ELEVATIONS.
 - FOR ALL FINISHES, REFER TO FINISH SCHEDULE, SHEET A400.
 - GENERAL CONTRACTOR SHALL COORDINATE, SUPPLY AND INSTALL ANY BLOCKING AS REQUIRED FOR THE SECURITY.
 - ALL DIMENSIONS ARE TO FINISHED SURFACES UNLESS OTHERWISE NOTED.
 - DO NOT SCALE DRAWINGS. IF REQUIRED DIMENSIONS ARE NOT INDICATED, THE GENERAL CONTRACTOR SHALL REQUEST ADDITIONAL INFORMATION FROM THE ARCHITECT FOR RESOLUTION.
 - GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF WORK OF ALL TRADES.
 - GENERAL CONTRACTOR SHALL VERIFY ALL EXISTING CONDITION IN THE FIELD AND NOTIFY THE OWNER AND THE ARCHITECT OF ANY DISCREPANCIES IN WRITING.
 - GENERAL CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS FOR APPROVAL.
 - ALL DOORS IN DRYWALL OR MASONRY PARTITION SHALL BE SET FROM OUTSIDE EDGE OF BUCK TO ALLOW ENOUGH ROOM FOR DECORATIVE DOOR CASING (UNLESS OTHERWISE NOTED).
 - TAPING AND SPACKLING SHALL BE 3 COAT APPLICATION.
 - ALL EXPOSED CORNERS ARE TO BE FITTED WITH METAL CORNER BEADS.
 - ALL JOINTS IN NEW PARTITIONS, AS WELL AS JUNCTIONS BETWEEN EXISTING AND NEW PARTITIONS, SHALL BE TAPED AND SPACKLED AND FINISHED SMOOTH.
 - ALL NEW FINISHES TO MATCH EXISTING ADJACENT, INCLUDING BUT NOT LIMITED TO WALL THICKNESS, CROWN MOLDING AND BASE TYPE. E. G. C. TO ENSURE NEW FINISHES MATCH EXISTING IN COLOR, TEXTURE, THICKNESS, ETC. ALTERNATIVE MATERIALS MAY BE PROVIDED WHEN REQD. UPON OWNER'S WRITTEN APPROVAL.
 - THE GENERAL CONTRACTOR SHALL PROVIDE SUFFICIENT FRAMING FOR ALL AIR SUPPLY AND RETURN OPENINGS ABOVE. REFERENCE HVAC ENGINEERING DRAWINGS AND THE GENERAL CONTRACTOR'S MECHANICAL CONTRACTOR'S SHOP DRAWINGS FOR MORE INFORMATION.
 - WHERE EXISTING PARTITIONS HAVE BEEN REMOVED, ADJOINING WALLS, FLOORING, CEILING, ETC. ARE TO BE PATCHED FLUSH AND FINISHED TO MATCH EXG.
 - NECESSARY ALTERATION TO EXISTING AFFECTED MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS SHALL BE INCLUDED.
 - WALLBOARD SHALL BE FURNISHED AND INSTALLED IN THE LONGEST AVAILABLE LENGTHS SO THE WALLBOARD PANELS SHALL EXTEND VERTICALLY IN ONE PIECE FROM FLOOR TO CEILING AND/OR SLABS, BEAMS OR DECKS ABOVE, AS REQUIRED.
 - PROTECT EXISTING FINISHES DURING ALL STAGES. REPAIR TO MATCH EXISTING IF DAMAGED. CONTRACTOR IS RESPONSIBLE FOR COSTS TO REPAIR AREAS DAMAGED DURING CONSTRUCTION.

1 CONSTRUCTION PLAN - APARTMENT 552

SCALE: 1/4"=1'-0"



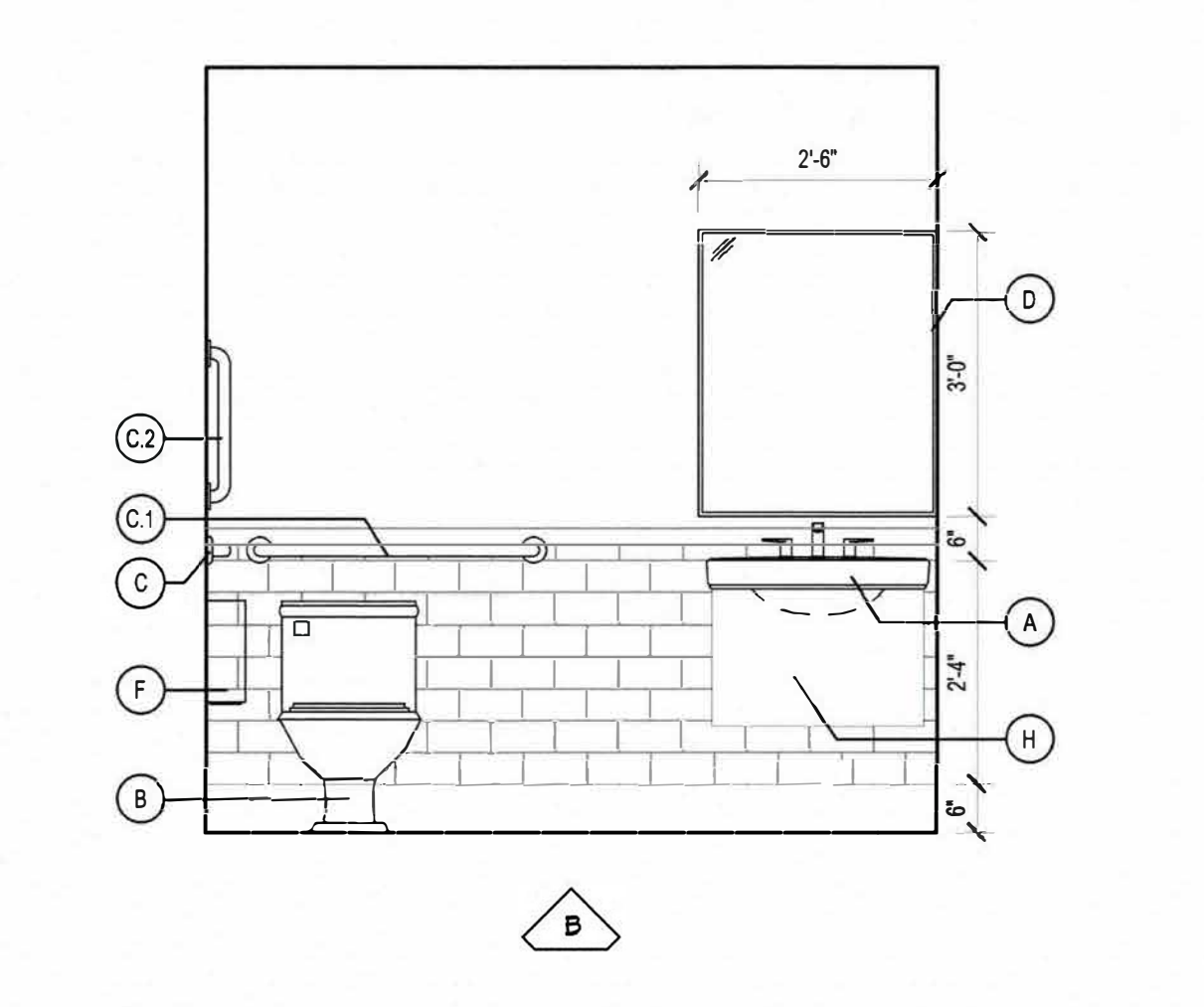
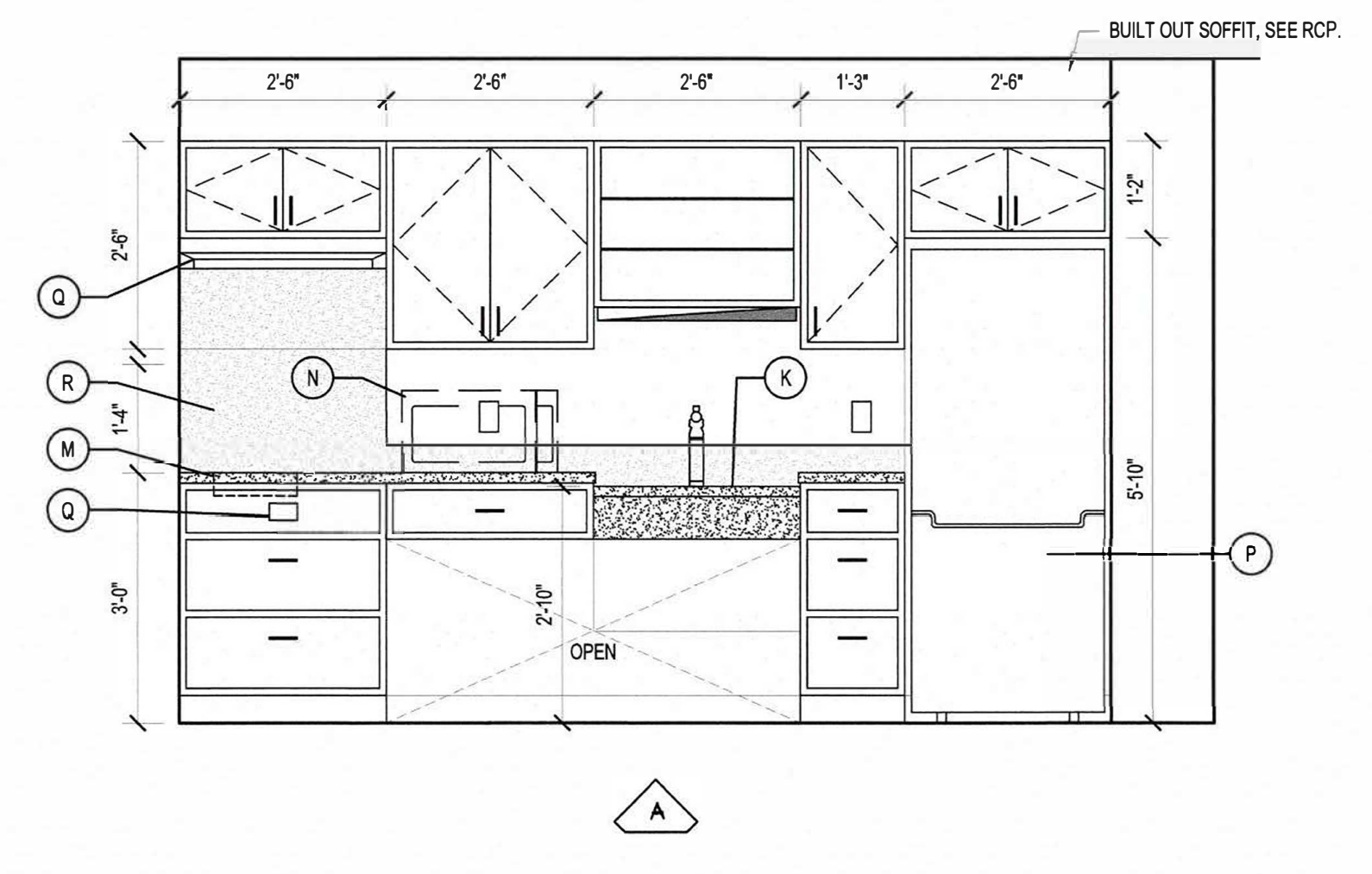
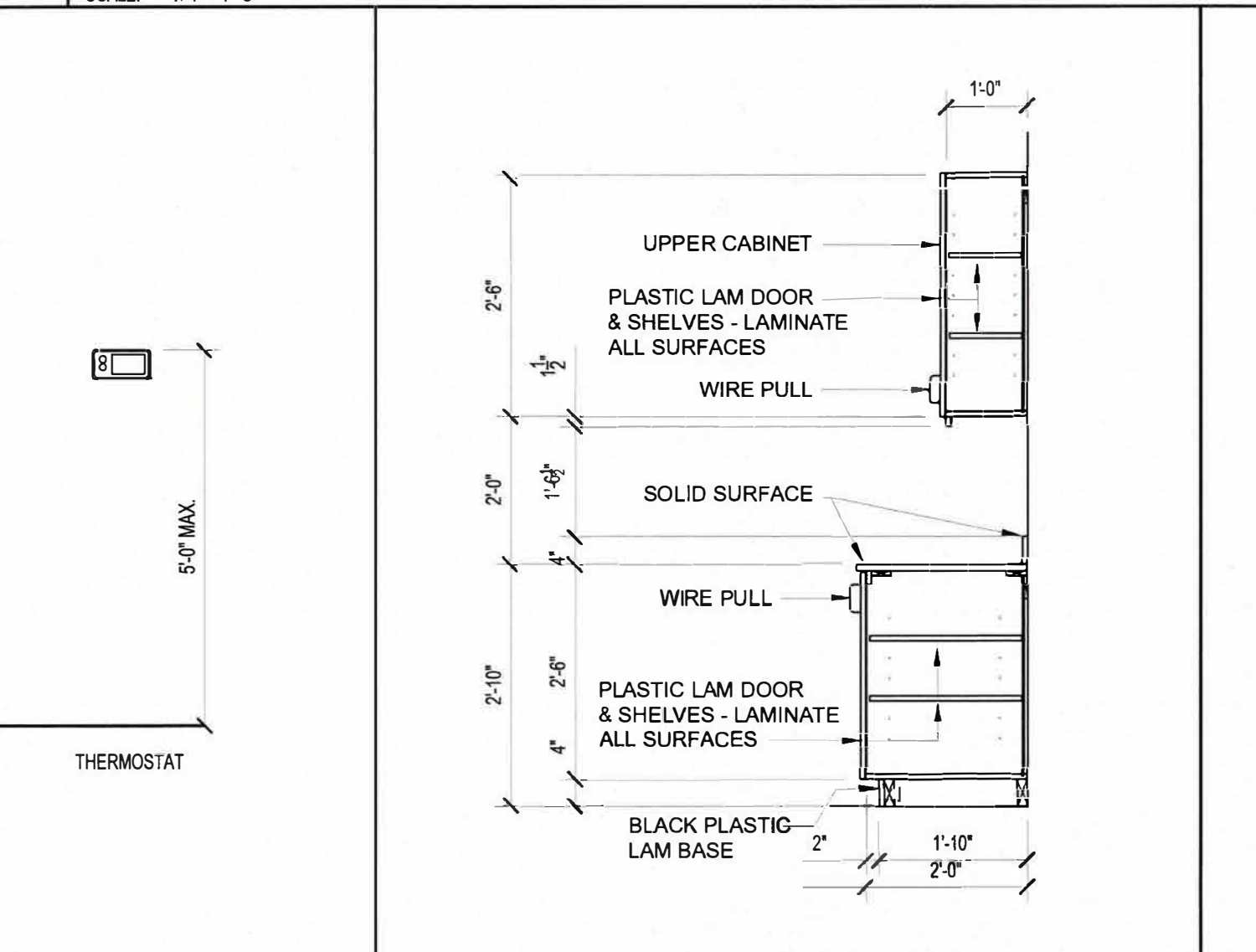
- ### DRAWING NOTES:
- NEW GYP. CEILING TO BE PATCHED AND REPAIRED AS REQUIRED, SEE FINISH SCHEDULE FOR FINISHES. NEW EXT SIGNS, SMOKE DETECTORS, SPRINKLERS, WIFI / INTERNET EXTENDERS, AND ALL ASSOCIATED EQUIPMENT TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS.
 - PATCH AND REPAIR EXISTING GYPSUM BOARD CEILING SEE PLAN FOR NEW CEILING MOUNTED EQUIPMENT TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS. SEE FINISH SCHEDULE FOR FINISHES.
 - NEW RE-CIRCULATION HOOD TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS.
 - REINSTALL EXISTING BATHROOM EXHAUST VENT, TO BE CLEANED PRIOR TO INSTALLATION.

PLAN LEGEND

	EXISTING INTERIOR PARTITION TO REMAIN		SHOWER LIGHT
	EXISTING EXTERIOR WALL TO REMAIN		ROOM # HT. GYP.
	NEW PARTITION - SEE 06/A1.0		NEW SPRINKLER HEAD
	NEW DOOR - SEE SHEET A5.0		EXHAUST FAN
	EXISTING DOOR TO REMAIN		SMOKE DETECTOR
	MATERIAL/CEILING HEIGHT		CARBON MONOXIDE DETECTOR
	ELECTRICAL RECEPTACLE		CEILING ACCESS HATCH
	LIGHT SWITCH		GYP. CEILING BOARD
	THERMOSTAT		NEW SADDLE - SEE A500
	DOOR BELL SUPPORT EQUIPMENT		
	ELECTRICAL PANEL BOX		
	DATA PORT TYP.		
	DATA PORT EMERGENCY PHONE/ PULL STRING		
	BATHROOM LIGHTING FIXTURE MAKE - KUZZCO MODEL - VL60236-BK		
	CLOSET LIGHTING FIXTURE MAKE - LIGHTOLIER MODEL - LRS-10-A-210U-VA		
	KITCHEN LIGHTING FIXTURE MAKE - KUZZCO MODEL - FM43522-BK		
	KITCHEN LIGHTING FIXTURE MAKE - ACOLYTE MODEL - RAC-120-00-29-HW		

2 APARTMENT REFLECTED CEILING PLAN 552

SCALE: 1/4"=1'-0"



7 TYP MOUNTING HEIGHTS MISC.

SCALE: N.T.S.



6 TYP MILLWORK SECTION

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



5 ENLARGED KITCHEN ELEVATION

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



4 ENLARGED BATHROOM ELEVATION

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



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RW		

3 University Plaza Drive
 Hackensack, NJ 07601
 T: 201.941.3040
 F: 201.941.3050
 www.rscarchitects.com

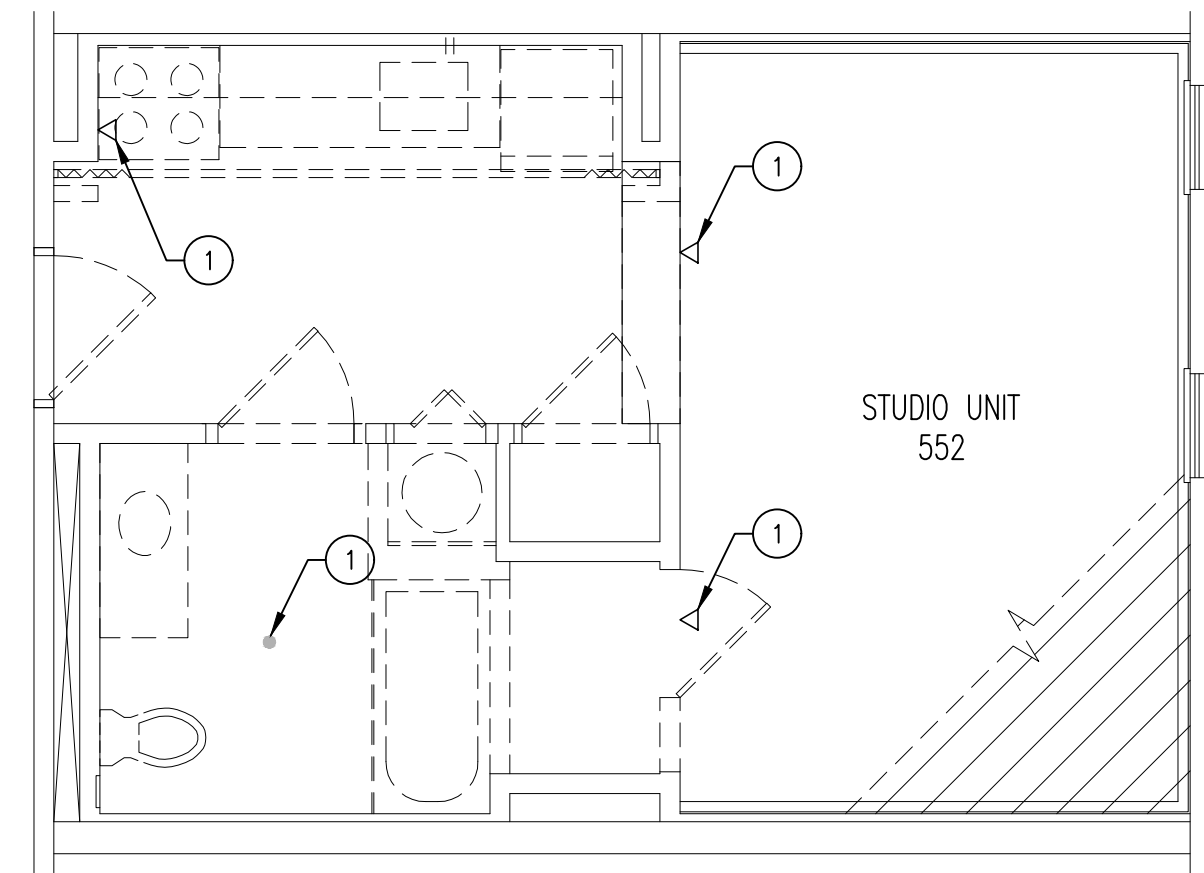
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 A032960 IL
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 A010001 DC
 0401010808 HI

TOWNSHIP OF PISCATAWAY
 2022 - STERLING VILLAGE
 INTERIOR RENOVATIONS PHASE - 3
 TOWNSHIP OF PISCATAWAY, MIDDLESEX COUNTY, NEW JERSEY
 APARTMENT 552 CONSTRUCTION PLAN
 & REFLECTED CEILING PLAN

AND
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 1144 HOOPER AVENUE, SUITE 202
 TOMS RIVER, NJ 08785
 TEL 732-473-3400
 FAX 732-473-3408
 www.landmassociates.com
 NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS
 AND LAND SURVEYORS
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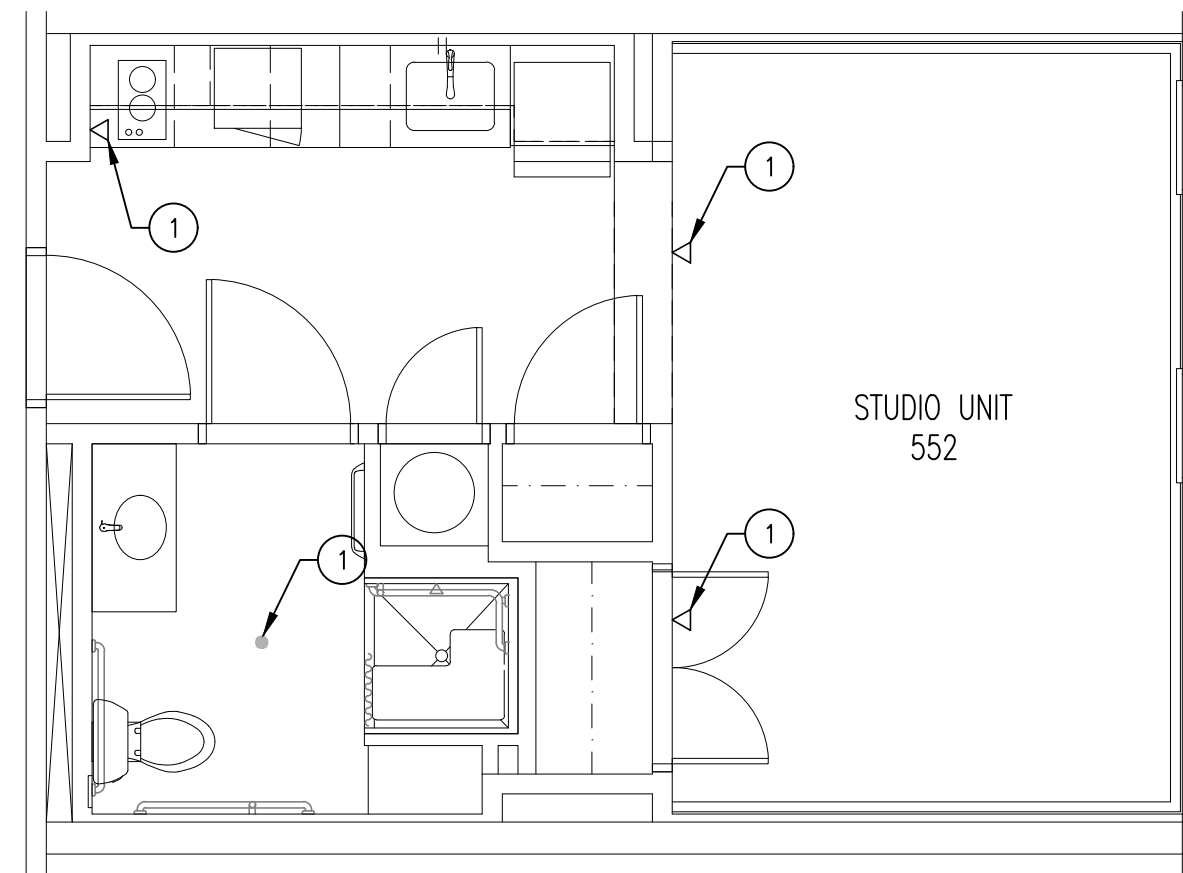
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CHECKED BY	RW	DATE	02-16-2022
DRAWN BY	JB	SCALE	13
PROJ. NO.	08.21.018	SHEET	OF 22



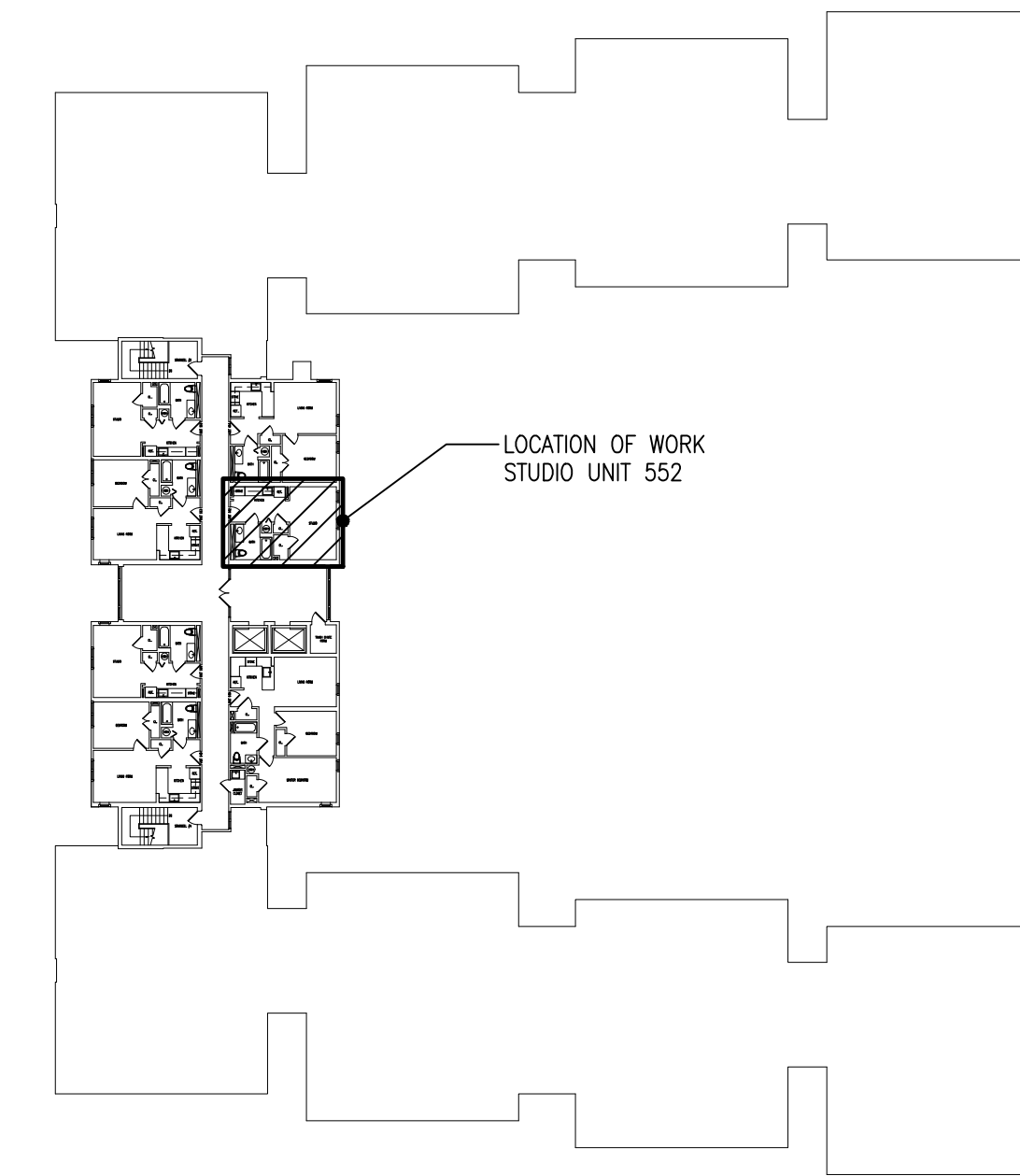
APARTMENT 552 ADA CONVERSION DEMOLITION PARTIAL PLAN
1/4" = 1'-0"

PLAN KEY NOTES	SYMBOL =
1. EXISTING SPRINKLER HEAD TO REMAIN.	⊙ 1



APARTMENT 552 ADA CONVERSION NEW WORK PARTIAL PLAN
1/4" = 1'-0"

PLAN KEY NOTES	SYMBOL =
1. EXISTING SPRINKLER HEAD.	⊙ 1



5TH FLOOR KEY PLAN
1" = 40'-0"

FIRE PROTECTION SYMBOLS	
▷	EXISTING SIDEWALL SPRINKLER HEAD.
⊙	EXISTING SPRINKLER HEAD TO REMAIN
⊙ DETAIL SHEET	DETAIL OR PART PLAN TITLE
△	REVISION TAG
⊗	DRAWING KEY NOTE

PROJECT INFORMATION:
FILE PATH: G:\Projects\Pisc\00250\Plans
FILE NAME: PISC-00250-FIRE PROTECTION SHEETS.dwg
DATE PLOTTED: 08 Nov 2022, 03:00AM
LAST SAVE BY: Tcepl@t&M

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NO.	DATE	ISSUED FOR BID	BY	CHKD

MARY ELAINE DASTI, P.E.
VP, COMPANY PRACTICE LEADER

LICENSED PROFESSIONAL ENGINEER
STATE OF NJ LICENSE No. 246ED5120300

TOWNSHIP OF PISCATAWAY
2022 - STERLING VILLAGE INTERIOR
RENOVATIONS PHASE - 3
TOWNSHIP OF PISCATAWAY, MIDDLESEX COUNTY, NEW JERSEY
FIRE PROTECTION PARTIAL PLANS

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1144 HOOPER AVENUE, SUITE 202
TOMS RIVER, NJ 08753
TEL 732-473-3400
FAX 732-473-3408

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AND LAND SURVEYORS
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DATE	2/18/2022	OF	22
SCALE	AS NOTED		

PROJECT INFORMATION:
 FILE PATH: G:\Projects\Pisc\00250\Plans
 FILE NAME: PSC-00250 PLUMBING SHEETS.dwg
 DATE PLOTTED: 08 Nov 2022, 03:00AM
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PLUMBING GENERAL NOTES

GENERAL REQUIREMENTS

1. GENERAL

A. DEFINITIONS:

- FURNISH: TO PURCHASE, PROCURE, ACQUIRE AND DELIVER, COMPLETE WITH RELATED ACCESSORIES.
- INSTALL: TO ERECT, MOUNT AND CONNECT, COMPLETE WITH RELATED ACCESSORIES.
- PROVIDE: TO FURNISH AND INSTALL.
- PLUMBING CONTRACTOR, THE CONTRACTOR, THIS CONTRACTOR: THE CONTRACTOR FOR PLUMBING WORK, WHICH IS SPECIFIED HEREIN AND SHOWN ON THE DRAWINGS.
- OWNER: THE INDIVIDUAL OR ENTITY HOLDING OWNERSHIP OF THE PROPERTY, OR A DESIGNATED REPRESENTATIVE THEREOF, WHERE THE WORK IS TO BE PERFORMED, AND SHALL INCLUDE TENANTS LEASING SPACE AT THE LOCATION OF THE PROJECT, WHERE APPLICABLE.

B. COMPLY WITH THE LATEST ADOPTED EDITIONS OF ALL APPLICABLE CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO:

- INTERNATIONAL BUILDING CODE - NEW JERSEY EDITION (IBC-NJ);
- INTERNATIONAL FUEL GAS CODE (IFGC);
- INTERNATIONAL MECHANICAL CODE (IMC);
- NEW JERSEY UNIFORM CONSTRUCTION CODE (NUCC);
- NATIONAL STANDARD PLUMBING CODE (NSPC);
- NATIONAL FIRE PROTECTION ASSOCIATION (NFPA);
- AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM);
- FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA);
- NEW JERSEY BARRIER-FREE REQUIREMENTS;
- APPLICABLE UNION AND EQUAL OPPORTUNITY STANDARDS OR REQUIREMENTS.

C. CONTRACTOR-FURNISHED PRODUCTS

- CONTRACTOR SHALL FURNISH PRODUCTS INDICATED. THE WORK INCLUDES DELIVERING, UNLOADING, HANDLING, STORING, PROTECTING AND ASSEMBLING. CONTRACTOR SHALL FURNISH PRODUCTS AS DIRECTED AND TURN THEM OVER TO OWNER AT PROJECT CLOSEOUT.
- ACCESS TO SITE
- LIMIT USE OF PROJECT SITE TO WORK IN AREAS INDICATED. DO NOT DISTURB PORTIONS OF PROJECT SITE BEYOND AREAS IN WHICH THE WORK IS INDICATED.
- KEEP DRIVEWAYS, PARKING LOTS, LOADING AREAS, ENTRANCES, ETC. SERVING PREMISES CLEAR AND AVAILABLE TO OWNER, OWNER'S EMPLOYEES AND EMERGENCY VEHICLES AT ALL TIMES. DO NOT USE THESE AREAS FOR PARKING OR STORAGE OF MATERIALS.
- THE CONTRACTOR'S BID SHALL INCLUDE ALL COSTS ASSOCIATED WITH AFTER-HOURS WORK/PREMIUM TIME NECESSARY TO PREVENT DISRUPTION TO THE OWNER'S OPERATIONS OR BUILDING OCCUPANTS.

E. COORDINATION

- COOPERATE WITH OWNER DURING CONSTRUCTION OPERATIONS TO MINIMIZE CONFLICTS AND FACILITATE OWNER USAGE. PERFORM THE WORK SO AS NOT TO INTERFERE WITH THE OWNER'S DAY-TO-DAY OPERATIONS.
- COORDINATE THE PLUMBING WORK WITH ALL OTHER AFFECTED WORK AND THE CONSTRUCTION SCHEDULE.
- COORDINATE WITH THE WORK OF OTHER TRADES. INDICATED ROUTING OF ALL PIPING SYSTEMS IS APPROXIMATE. PROVIDE OFFSETS AND MINOR DEVIATIONS TO INDICATED ROUTING AS REQUIRED TO COORDINATE WITH THE WORK OF OTHER TRADES AND THE GENERAL BUILDING CONDITIONS.

2. PRODUCTS

- PROVIDE ALL MATERIALS, TOOLS, SUPERVISION AND LABOR REQUIRED FOR THE PLUMBING INSTALLATION SHOWN OR DESCRIBED ON THE DRAWINGS AND IN THESE SPECIFICATIONS.
- ALL PRODUCTS AND MATERIALS SHALL BE NEW AND LISTED BY A RECOGNIZED TESTING LABORATORY.
- COLOR AND FINISH SELECTIONS FOR ALL PRODUCTS AND MATERIALS SHALL BE AS DIRECTED OR APPROVED BY THE ARCHITECT.
- ALL COMPONENTS AND ACCESSORIES OF EQUIPMENT, FIXTURES AND PRODUCTS OF THE PLUMBING WORK SHALL BE INCLUDED SO AS TO MAKE THE WORK COMPLETE IN ALL RESPECTS, EVEN IF NOT INDICATED OR SPECIFIED.

3. EXECUTION

- OBTAIN ALL PERMITS, PAY ALL FEES AND SCHEDULE ALL REQUIRED INSPECTIONS. COPIES OF ALL PERMITS AND INSPECTION CERTIFICATES SHALL BE FORWARDED TO THE OWNER FOR RECORD.
- THE GENERAL CONDITIONS OF THE CONTRACT AND ALL DIVISION 1 REQUIREMENTS APPLY TO THE WORK OF THIS SECTION.
- COMPLY WITH THE REGULATIONS AND REQUIREMENTS OF ALL UTILITY SERVICE PROVIDERS AND ALL AUTHORITIES HAVING JURISDICTION.
- COMPLY WITH ALL THE REQUIREMENTS OF THE OWNER'S INSURANCE CARRIER.
- WHERE APPLICABLE, COMPLY WITH THE OWNER'S PUBLISHED REQUIREMENTS OR STANDARDS.
- INSTALL PIPING, EQUIPMENT AND FIXTURES IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THE INSTALLATION COMPLIES WITH REQUIREMENTS AND SERVES INTENDED PURPOSES. MAINTAIN ALL REQUIRED AND RECOMMENDED CLEARANCES.
- THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING BID TO DETERMINE ALL CONDITIONS AFFECTING HIS SCOPE OF WORK AND BID PRICE.
- SUBMITTALS:
 - SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:
 - ALL SCHEDULED PLUMBING EQUIPMENT;
 - PIPE AND FITTINGS;
 - PLUMBING FIXTURES;
 - VALVES AND SPECIALTIES;
 - INSULATION;
 - HANGERS AND SUPPORTS;
 - INCLUDE ELECTRICAL DATA FOR ALL ITEMS WHICH REQUIRE ELECTRICAL POWER.
 - TEST AND BALANCING REPORTS;
 - SUBMIT CLOSE-OUT DOCUMENTS, INCLUSIVE OF ALL EQUIPMENT O&M MANUALS, WARRANTIES, AND AS-BUILT DRAWINGS INDICATING ALL ALTERNATIONS, ADDITIONS AND DELETIONS OF THE SYSTEMS DESIGNED AND AS SHOWN ON THE CONTRACT DOCUMENTS.
 - BELOW GRADE UTILITIES ON AS-BUILT DRAWINGS SHALL BE DIMENSIONED TO NEAREST COLUMN LINES OR OTHER PERMANENT BUILDING FEATURES.
 - SUBMITTALS FROM SUPPLIERS OR MANUFACTURERS WHICH DO NOT BEAR THE STAMP OF THE SUBMITTING CONTRACTOR INDICATING THAT THE CONTRACTOR HAS REVIEWED THE SUBMITTAL FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS WILL BE RETURNED REJECTED.
 - THE ENGINEER'S REVIEW OF SUBMITTALS IS A COURTESY WHICH DOES NOT RELIEVE THE CONTRACTOR FROM CONFORMING TO THE

REQUIREMENTS OF THE CONTRACT DOCUMENTS, REGARDLESS OF THE ACTION INDICATED BY THE SHOP DRAWING STAMP.

- SUBSTITUTIONS: ALL SPECIFIED EQUIPMENT SHALL SERVE AS THE BASIS OF DESIGN. ALL BIDS SHALL BE BASED ON THE SPECIFIED MANUFACTURER(S). SUBSTITUTIONS OF OTHER MANUFACTURER'S EQUIPMENT SHALL BE CONSIDERED BY THE ENGINEER. THE CONTRACTOR ASSUMES RESPONSIBILITY FOR COORDINATING THE WORK OF OTHER TRADES THAT ARE AFFECTED BY SUBSTITUTIONS, INCLUSIVE OF ALL RELATED COSTS.

I. DRAWINGS

- THE DRAWINGS ARE DIAGRAMMATIC AND SHOW THE APPROXIMATE LOCATIONS OF EQUIPMENT, FIXTURES, PIPING, ETC. EXACT LOCATIONS OF SUCH ITEMS SHALL BE COORDINATED IN THE FIELD WITH THE ARCHITECTURAL DRAWINGS AND/OR THE OWNER AS CONSTRUCTION PROCEEDS.
- PROVIDE ALL NECESSARY INCIDENTAL MATERIALS AND ACCESSORIES REQUIRED TO COMPLETE WORK IN ALL RESPECTS, EVEN IF NOT PARTICULARLY SHOWN OR SPECIFIED.
- REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING REQUIREMENTS FOR ALL FIXTURES.

J. ACCESS PANELS

- ALL VALVES, EQUIPMENT, DISCONNECT SWITCHES, SPECIALTIES, ETC. REQUIRING FUTURE ACCESS OR SERVICE SHALL BE CLEARLY IDENTIFIED AND COMMUNICATED TO THE GENERAL CONTRACTOR.
- FOR ALL AREAS WHICH THE GENERAL CONSTRUCTION WILL LIMIT THE ACCESS TO THE ABOVE DEVICES, THE PLUMBING CONTRACTOR SHALL FURNISH ACCESS PANELS TO BE TURNED OVER TO THE GENERAL CONTRACTOR FOR INSTALLATION.
- ACCESS PANELS SHALL BE PAINTED STEEL WITH A CONTINUOUS HINGE AT ONE SIDE AND A SCREW LOCK OPPOSITE THE HINGE.
- ACCESS PANEL SIZE SHALL BE AS REQUIRED TO PROVIDE PROPER ACCESS TO THE DEVICE SERVED.

K. BASIC PLUMBING METHODS

- ROUTE PIPING IN AN ORDERLY MANNER, PLUMB AND PARALLEL TO BUILDING FEATURES. INSTALL WORK TO CONSERVE BUILDING SPACE.
- INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR CONNECTED EQUIPMENT.
- REDUCTIONS IN PIPE SIZES SHALL BE MADE WITH ONE PIECE REDUCING FITTINGS. BUSHINGS ARE NOT ACCEPTABLE. PROVIDE FLANGED FITTINGS AT BASE OF RISERS.
- THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING AND PATCHING ASSOCIATED WITH THE PLUMBING WORK. FINISHED OPENINGS SHALL MATCH EXISTING ADJACENT CONSTRUCTION AND FINISHES. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR ALL PAINTING ASSOCIATED WITH CUTTING AND PATCHING.
- ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE EQUIPMENT OR PRODUCT MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- ALL SYSTEMS SHALL OPERATE WITHOUT OBJECTIONABLE NOISE OR VIBRATION.
- ALL PIPING IN FINISHED SPACES SHALL BE CONCEALED.
- INSTALL PIPING ABOVE ACCESSIBLE CEILINGS TO ALLOW FOR CEILING PANEL REMOVAL.
- INSTALL PIPE TO ALLOW FOR VALVE OPERATION AND MAINTENANCE AND SERVICE OF EQUIPMENT.
- CLEAN INTERIOR OF PIPING. REMOVE DIRT AND DEBRIS AS WORK PROGRESSES. PLUG ENDS OF UNCOMPLETED PIPING AT THE END OF EACH DAY AND WHEN WORK STOPS.
- REAM ENDS OF PIPES AND TUBES AND REMOVE BURRS. REMOVE SCALE, SLAG, DIRT AND DEBRIS FROM INSIDE AND OUTSIDE PIPES, TUBES AND FITTINGS BEFORE ASSEMBLING. BEVEL PLAIN ENDS OF STEEL PIPE.
- LOW VOLTAGE WIRING SHALL BE PROVIDED BY THIS CONTRACTOR. THE CONTRACTOR FOR ELECTRICAL WORK SHALL BE RESPONSIBLE FOR LINE VOLTAGE WIRING.
- PIPING SHALL NOT BE SUPPORTED FROM OTHER PIPE, CONDUIT OR DUCTWORK.
- PIPING HANGERS AND SUPPORTS SHALL BE IN ACCORDANCE WITH MSS SP-58.
- ALL EQUIPMENT SHALL BE PROVIDED WITH APPROPRIATE SUPPORTS. PROVIDE CHROME-PLATED ESCUTCHEONS AT ALL PIPING PENETRATIONS THROUGH FLOORS, WALLS AND CEILINGS IN ALL FINISHED SPACES EXPOSED TO VIEW.
- PREPARE PIPING CONNECTIONS TO EQUIPMENT WITH FLANGES AND UNIONS.

L. EXISTING CONDITIONS.

- VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING WITH THE PLUMBING WORK.
- VERIFY EXISTING CONDITIONS BEFORE COMMENCING WORK, AND REPORT ANY DISCREPANCIES TO THE ENGINEER. BY COMMENCING WORK THE CONTRACTOR ACKNOWLEDGES HIS CONFIRMATION OF ALL EXISTING CONDITIONS AS ACCEPTABLE WITH REFERENCE TO HIS CONTRACT AND SCOPE OF WORK.
- USE EXISTING CONNECTIONS AT MAINS AND RISERS WHEN AVAILABLE FOR THE CONNECTION OF NEW PIPING.

M. WARRANTY

- EQUIPMENT, MATERIALS AND WORKMANSHIP OF THE PLUMBING INSTALLATION SHALL BE WARRANTED BY THE CONTRACTOR FOR PLUMBING WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER.
- THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROMPTLY REPAIR AND CORRECT ANY FAULTY MATERIALS, WORKMANSHIP OR EQUIPMENT. ALL SETTLEMENTS OF SURFACES THAT OCCUR WITHIN THAT PERIOD SHALL ALSO BE PROMPTLY REPAIRED.

DEMOLITION

1. GENERAL

A. DEFINITIONS

- REMOVE: DETACH ITEMS FROM EXISTING CONSTRUCTION AND DISPOSE OF THEM IN A LEGAL MANNER OFF-SITE UNLESS INDICATED TO BE SALVAGED OR REINSTALLED.
- REMOVE AND SALVAGE: DETACH ITEMS FROM EXISTING CONSTRUCTION, IN A MANNER TO PREVENT DAMAGE, AND DELIVER TO OWNER READY FOR REUSE.
- REMOVE AND REINSTALL: DETACH ITEMS FROM EXISTING CONSTRUCTION, IN A MANNER TO PREVENT DAMAGE, PREPARE FOR REUSE, AND REINSTALL WHERE INDICATED.
- EXISTING TO REMAIN: LEAVE EXISTING ITEMS THAT ARE NOT TO BE REMOVED AND THAT ARE NOT OTHERWISE INDICATED TO BE SALVAGED OR REINSTALLED.

B. MATERIALS OWNERSHIP

- UNLESS OTHERWISE INDICATED, DEMOLITION WASTE BECOMES PROPERTY OF CONTRACTOR.
- WHERE INDICATED, REMOVE AND SALVAGE EXISTING ITEMS TO BE

RETAINED BY THE OWNER.

C. FIELD CONDITIONS

- CONDUCT DEMOLITION SO OWNER'S OPERATIONS WILL NOT BE DISRUPTED.
- NOTIFY ENGINEER OF DISCREPANCIES BETWEEN EXISTING CONDITIONS AND DRAWINGS BEFORE PROCEEDING WITH SELECTIVE DEMOLITION. THE DRAWINGS DO NOT PURPORT TO SHOW ALL EXISTING ITEMS.
- DISPOSE OF ALL REMOVED ITEMS AND MATERIALS AS SOON AS POSSIBLE, AND AT THE END OF EACH WORK SHIFT.

D. WARRANTY

- REMOVE, REPLACE, PATCH AND REPAIR MATERIALS AND SURFACES CUT OR DAMAGED DURING DEMOLITION, BY METHODS AND WITH MATERIALS AND USING APPROVED CONTRACTORS SO AS NOT TO VOID EXISTING WARRANTIES. NOTIFY WARRANTOR BEFORE PROCEEDING.

2. PRODUCTS

- PERFORMANCE REQUIREMENTS
 - COMPLY WITH GOVERNING EPA NOTIFICATION REGULATIONS BEFORE BEGINNING DEMOLITION. COMPLY WITH HAULING AND DISPOSAL REGULATIONS OF AUTHORITIES HAVING JURISDICTION.

3. EXECUTION

A. EXAMINATION

- VERIFY THAT ALL UTILITIES HAVE BEEN DISCONNECTED AND CAPPED BEFORE STARTING DEMOLITION OPERATIONS.

B. UTILITY SERVICES AND PLUMBING/ELECTRICAL SYSTEMS

- EXISTING SERVICES/SYSTEMS TO REMAIN: MAINTAIN SERVICES/SYSTEMS INDICATED TO REMAIN AND PROTECT THEM AGAINST DAMAGE.
- LOCATE ALL EXISTING UNDERGROUND UTILITIES BEFORE COMMENCING WORK.

C. PROTECTION

- PROVIDE TEMPORARY BARRICADES AND OTHER PROTECTION REQUIRED TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDINGS, FACILITIES OR TENANTS.
- EXISTING ITEMS TO REMAIN: PROTECT CONSTRUCTION INDICATED TO REMAIN AGAINST DAMAGE AND SOILING DURING DEMOLITION. DAMAGED ITEMS TO BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
- REINSTALL ITEMS IN LOCATIONS INDICATED. COMPLY WITH INSTALLATION REQUIREMENTS FOR NEW MATERIALS AND EQUIPMENT. PROVIDE CONNECTIONS, SUPPORTS AND MISCELLANEOUS MATERIALS NECESSARY TO MAKE ITEM FUNCTIONAL FOR USE.

TESTING, ADJUSTING AND BALANCING

1. GENERAL

- ALL EQUIPMENT WILL BE FACTORY TESTED.
- ALL PIPING, FIXTURES AND EQUIPMENT SHALL BE LEFT CLEAN AND FREE OF DIRT, DEBRIS, CUTTING OILS, ETC.
- ALL COSTS ASSOCIATED WITH TESTING, ADJUSTING AND BALANCING SHALL BE INCLUDED IN THE CONTRACTOR'S BID.
- AT THE COMPLETION OF THE PLUMBING WORK, COMPLETELY TEST THE ENTIRE PLUMBING INSTALLATION FOR PROPER OPERATION. PROVIDE SUFFICIENT NOTICE TO ALL PARTIES TO WITNESS TESTING. CORRECT ALL DEFICIENCIES FOUND.
- ALL TESTING SHALL BE IN ACCORDANCE WITH THE NATIONAL STANDARD PLUMBING CODE, THE INTERNATIONAL FUEL GAS CODE AND ALL OTHER APPLICABLE CODES AND STANDARDS.
- NEW, ALTERED, EXTENDED OR REPLACED PLUMBING SHALL BE LEFT UNCOVERED AND UNCONCEALED UNTIL IT HAS BEEN INSPECTED, TESTED AND APPROVED.
- TESTING OF THE INSTALLED SYSTEMS SHALL BE CONDUCTED IN THE PRESENCE OF A REPRESENTATIVE FOR THE OWNER AND APPROPRIATE LOCAL AUTHORITIES.
- RESULTS OF ALL TESTING SHALL BE SUBMITTED TO THE OWNER IN THE FORM OF WRITTEN REPORTS.

2. EXECUTION

A. DRAINAGE AND VENT SYSTEMS:

- TESTING SHALL BE IN ACCORDANCE WITH THE 2015 NATIONAL STANDARD PLUMBING CODE SECTION 15.4.
- ALL NEW SYSTEMS, AND ALL MODIFIED SECTIONS OF EXISTING SYSTEMS SHALL BE TESTED.
- PROVIDE TESTING AT ROUGH PLUMBING STAGE AND FINISHED PLUMBING STAGE AS INDICATED BELOW.
- FOR ROUGH PLUMBING ONE OF THE FOLLOWING TEST METHODS SHALL BE USED:
 - WATER TEST - SUBJECT SYSTEM TO MINIMUM 10-FOOT HEAD OF WATER. THIS METHOD IS SUITABLE FOR ANY PIPING MATERIALS.
 - AIR TEST - INTRODUCE AIR UNDER PRESSURE TO UNIFORM GAUGE PRESSURE OF 5 POUNDS PER SQUARE INCH, OR SUFFICIENT PRESSURE TO BALANCE A COLUMN OF MERCURY 10 INCHES IN HEIGHT FOR A PERIOD OF AT LEAST 15 MINUTES WITHOUT INTRODUCING NEW AIR. THIS METHOD MAY NOT BE USED WITH PLASTIC PIPING SYSTEMS.
 - FOR FINISHED PLUMBING ONE OF THE FOLLOWING TEST METHODS SHALL BE USED:
 - SMOKE TEST - FILL ALL FIXTURE TRAPS AND INTRODUCE SMOKE VIA ONE OR MORE SMOKE MACHINES TO A PRESSURE EQUIVALENT TO ONE-INCH WATER COLUMN MAINTAINED FOR THE DURATION OF THE INSPECTION.
 - PEPPERMINT TEST - WHERE APPROVED BY THE AUTHORITY HAVING JURISDICTION, A PEPPERMINT TEST CONDUCTED IN ACCORDANCE WITH NSPC SECTION 15.4.2.B.2 MAY BE USED IN LIEU OF A SMOKE TEST.
- WATER SUPPLY SYSTEMS:
 - TEST THE ENTIRE WATER SUPPLY SYSTEM, OR COMPLETED SECTIONS THEREOF TO A WATER PRESSURE NOT LESS THAN THE WORKING PRESSURE UNDER WHICH IT WILL BE USED, OR 80 POUNDS PER SQUARE INCH, WHICHEVER IS GREATER.
 - WHERE APPROVED BY THE AUTHORITY HAVING JURISDICTION AND AIR PRESSURE TEST WITH THE SAME PRESSURES INDICATED ABOVE MAY BE USED IN LIEU OF A WATER PRESSURE TEST.
 - LOSS OF TEST PRESSURE AND LEAKS CONSTITUTE DEFECTS REQUIRING REPAIR.
 - TESTING OF PLASTIC PIPING SYSTEMS WITH COMPRESSED GAS OR AIR PRESSURE IS PROHIBITED.
 - UPON COMPLETION OF TESTING, FLUSH AND DISINFECT THE SYSTEM IN ACCORDANCE WITH NSPC SECTION 10.9.

PLUMBING PIPING SYMBOLS

	PIPE TURNING DOWN
	PIPE TURNING UP
	PIPING TOP TAKEOFF
	PIPING FLOW ARROW
	PIPE UNION. LOCATE TO ALLOW FOR EQUIPMENT REMOVAL.
	SHUT-OFF VALVE
	PRESSURE REDUCING VALVE
	CHECK VALVE
	STRAINER
	PRESSURE GAUGE WITH COCK
	MERCURY IN GLASS TUBE THERMOMETER AND WELL
	WATER HAMMER ARRESTER
	TEMPERATURE AND PRESSURE RELIEF VALVE
	PIPE CAP
	HOT WATER TEMPERING VALVE
	NATURAL GAS PRESSURE REGULATOR
	NATURAL GAS SHUT-OFF VALVE
	EXISTING MATERIAL TO BE REMOVED
	SANITARY SEWER PIPING BELOW GRADE/FLOOR
	EXISTING SANITARY SEWER PIPING BELOW GRADE/FLOOR TO REMAIN
	EXISTING SANITARY SEWER PIPING BELOW GRADE/FLOOR TO BE REMOVED
	SANITARY SEWER PIPING ABOVE GRADE/FLOOR
	EXISTING SANITARY SEWER PIPING ABOVE GRADE/FLOOR TO REMAIN
	EXISTING SANITARY SEWER PIPING ABOVE GRADE/FLOOR TO BE REMOVED
	VENT PIPING
	EXISTING VENT PIPING TO REMAIN
	EXISTING VENT PIPING TO BE REMOVED
	DOMESTIC COLD WATER PIPING
	EXISTING DOMESTIC COLD WATER PIPING TO REMAIN
	EXISTING DOMESTIC COLD WATER PIPING TO BE REMOVED
	DOMESTIC HOT WATER PIPING
	EXISTING DOMESTIC HOT WATER PIPING TO REMAIN
	EXISTING DOMESTIC HOT WATER PIPING TO BE REMOVED
	EXISTING NATURAL GAS PIPING TO REMAIN

PLUMBING GENERAL SYMBOLS

	DETAIL OR PART PLAN TITLE.
	REVISION TAG.
	EQUIPMENT, DUCTWORK OR PIPING TO BE REMOVED.
	POINT OF CONNECTION, NEW TO EXISTING.
	POINT OF DISCONNECTION.
	DRAWING KEYNOTE.

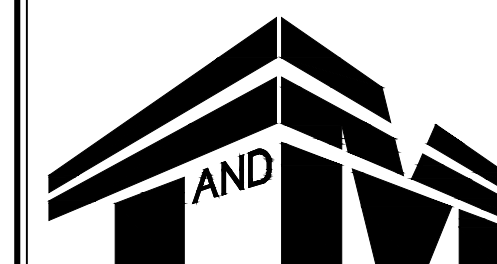
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MARY ELAINE DASTI, P.E.
 VP, COMPANY PRACTICE LEADER

LICENSED PROFESSIONAL ENGINEER
 STATE OF NJ LICENSE No. 24GE05120300

TOWNSHIP OF PISCATAWAY
 2022 - STERLING VILLAGE INTERIOR
 RENOVATIONS PHASE - 3
 TOWNSHIP OF PISCATAWAY, MIDDLESEX COUNTY, NEW JERSEY

PLUMBING GENERAL INFORMATION

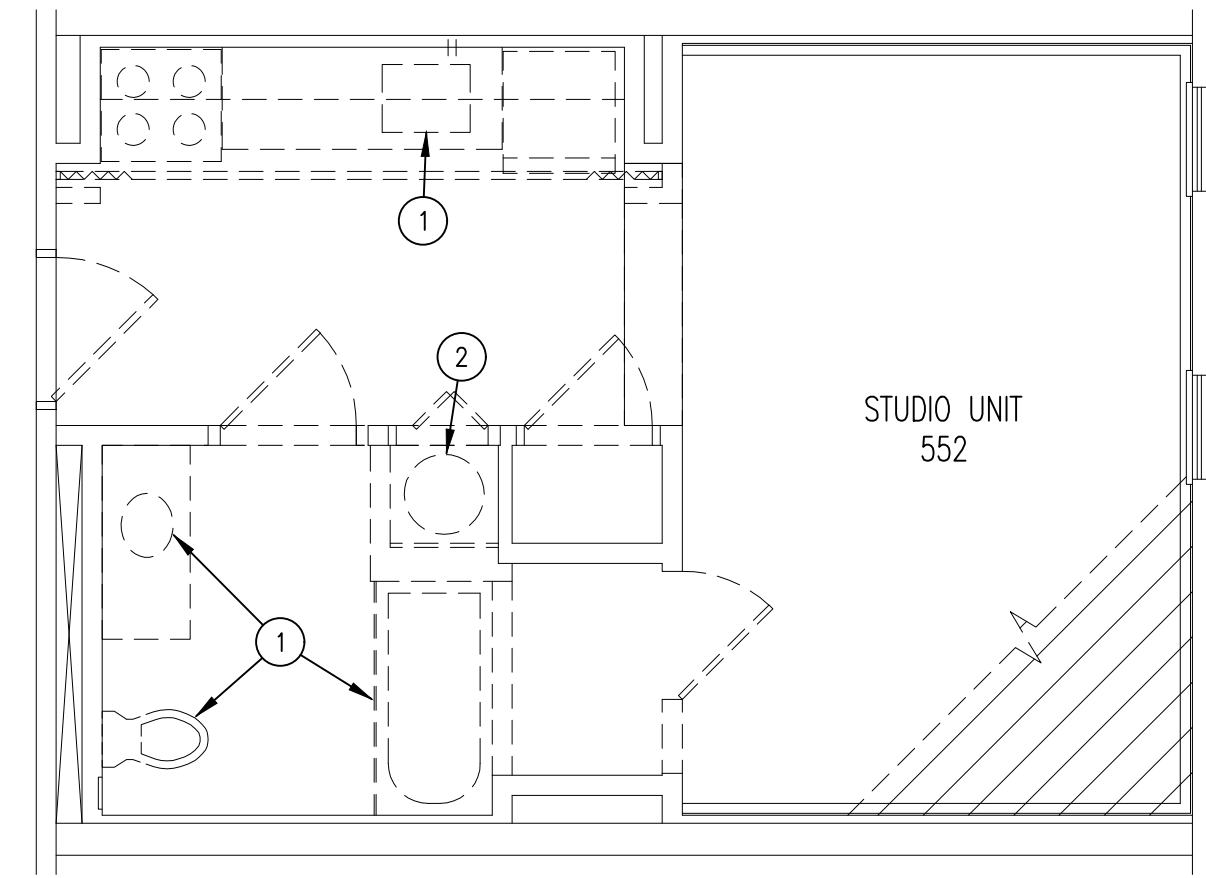


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 TEL 732-473-3400
 FAX 732-473-3408

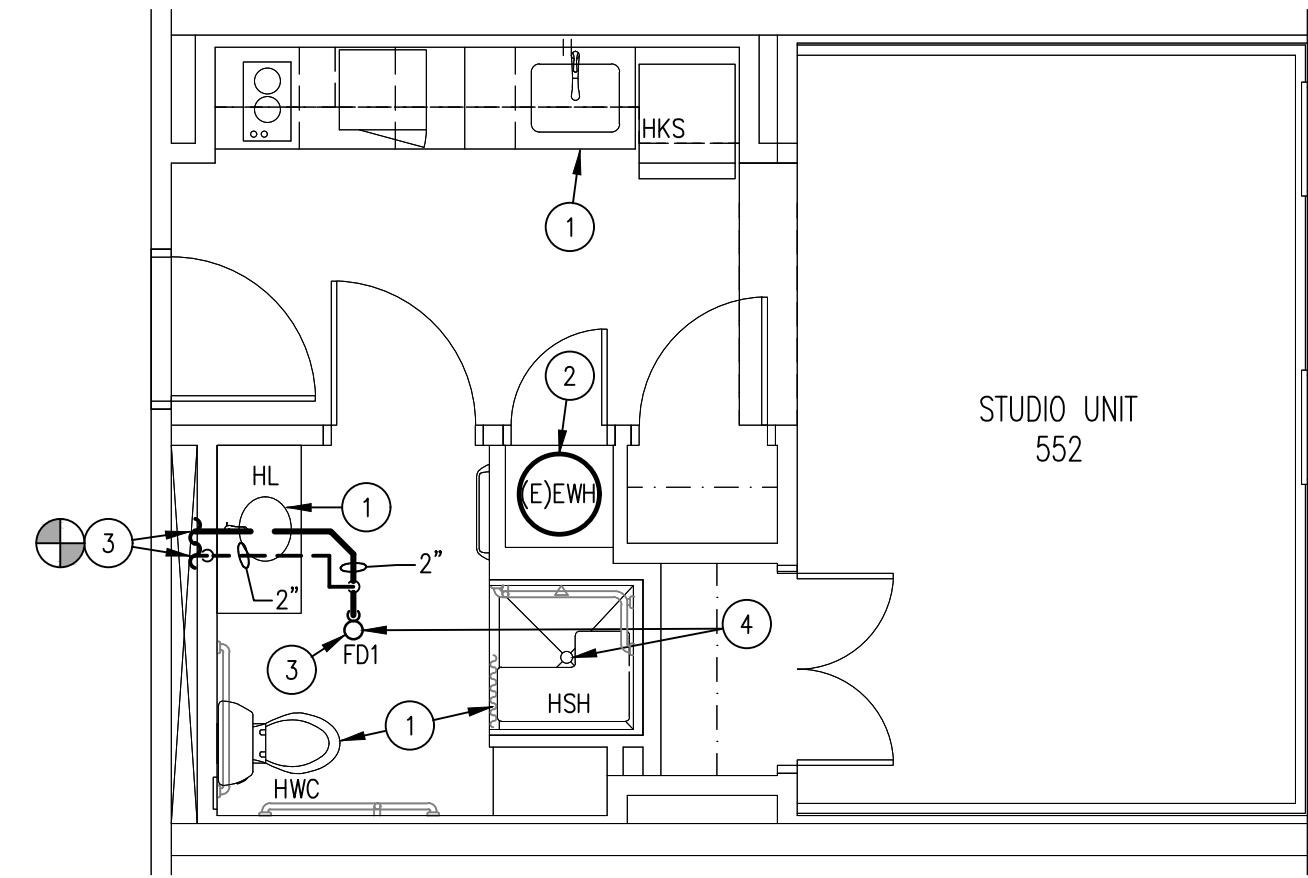
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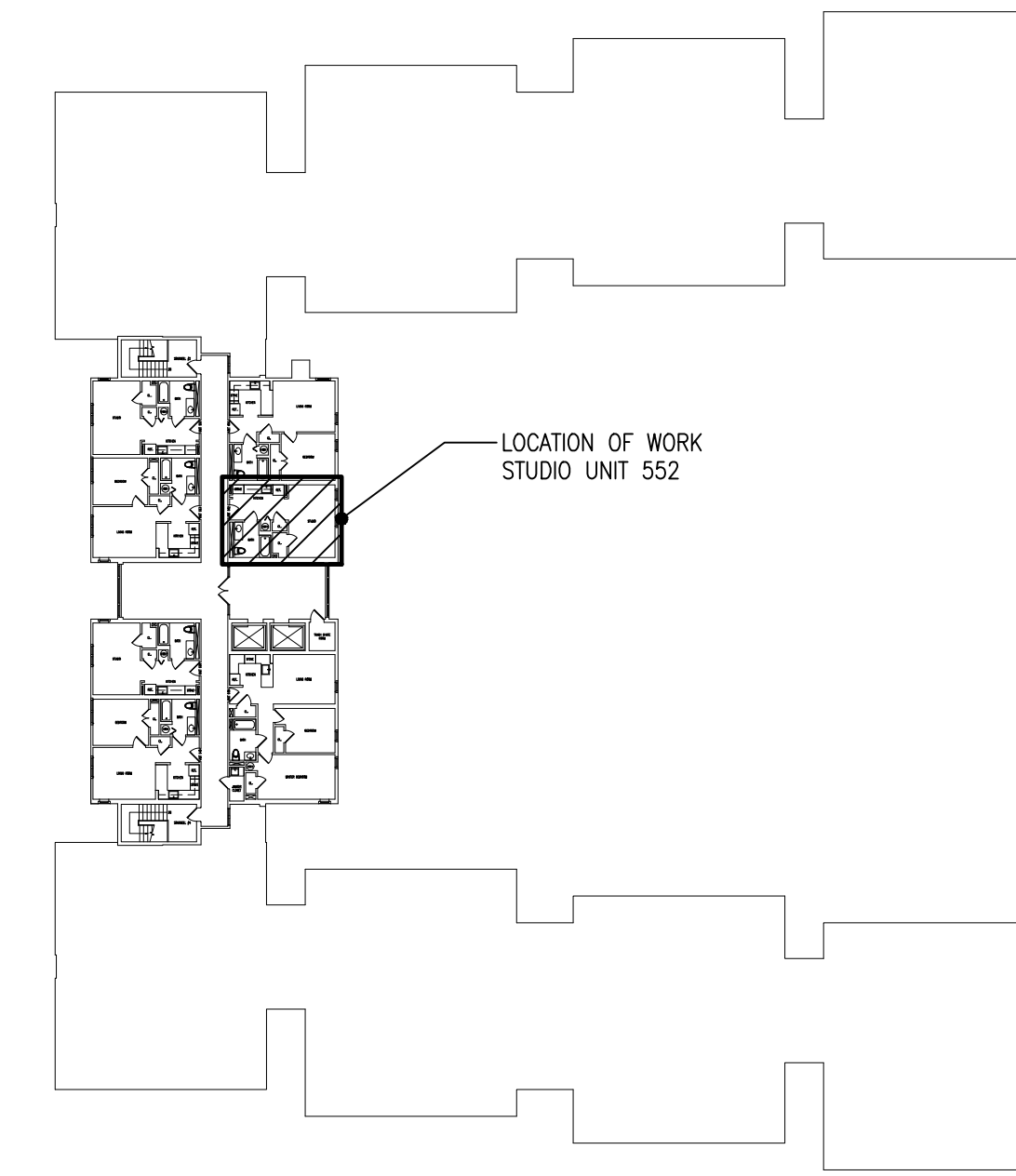
DESIGNED BY	JMB	DRAWING	
CHECKED BY	MED		P000
DRAWN BY	JMB	SHEET	16
DATE	2/18/2022		
SCALE	NONE		
PROJ. NO.	PISC00250		OF 22



APARTMENT 552 ADA CONVERSION DEMOLITION PARTIAL PLAN
1/4" = 1'-0"



APARTMENT 552 ADA CONVERSION NEW WORK PARTIAL PLAN
1/4" = 1'-0"



5TH FLOOR KEY PLAN
1" = 40'-0"

PLAN KEY NOTES	SYMBOL = (#)
1. DISCONNECT AND REMOVE EXISTING PLUMBING FIXTURE AND ASSOCIATED ROUGHING AND TRIM. EXISTING BRANCH PIPING SERVING FIXTURE TO BE MODIFIED TO SERVE NEW FIXTURE AT LOCATION OF EXISTING.	(1)
2. EXISTING ELECTRIC WATER HEATER ON EQUIPMENT PLATFORM/SHELF SHALL REMAIN. UNIT MAY BE REMOVE TEMPORARILY TO ALLOW FOR WORK IN UTILITY CLOSET AS REQUIRED.	(2)

PLAN KEY NOTES	SYMBOL = (#)
1. MODIFY AND EXTEND EXISTING BRANCH PIPING AS REQUIRED TO ACCEPT NEW FIXTURE AT APPROXIMATE LOCATION OF REMOVED FIXTURE.	(1)
2. REINSTALL EXISTING ELECTRIC WATER HEATER ON EQUIPMENT PLATFORM/SHELF WITH DRIP PAN BELOW UNIT. RECONNECT EXISTING DOMESTIC WATER PIPING WITH BRAIDED FLEX HOSES, POWER WIRING AND DRAIN PIPING AS REQUIRED. INSULATE ALL EXISTING DOMESTIC WATER PIPING.	(2)
3. LOCATE EXISTING 4" SANITARY AND 4" VENT STACKS. CONNECT TO EXISTING AS REQUIRED AND EXTEND TO NEW FLOOR DRAIN AS SHOWN. COORDINATE EXACT LOCATION OF DRAIN AND ROUTING OF PIPING IN FIELD WITH EXISTING CONDITIONS.	(3)
4. COORDINATE FINAL DRAIN LOCATIONS WITH HOLLOW CORE PLANK LOCATIONS IN FIELD.	(4)

GENERAL NOTES
1. THE CONTRACTOR SHALL TEMPORARILY REMOVE EXISTING CEILINGS IN SPACES BELOW DWELLING UNITS UNDERGOING RENOVATIONS AS REQUIRED TO ACCOMMODATE THE WORK. UPON COMPLETION OF DWELLING UNIT RENOVATIONS PATCH, REPAIR AND RESTORE CEILINGS TO MATCH EXISTING.

PROJECT INFORMATION:
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FILE NAME: PISC-00250-PLUMBING-SHEETS.dwg
DATE PLOTTED: 08 Nov 2022, 09:04AM
LAST SAVE BY: Tceplg083

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MARY ELAINE DASTI, P.E.
VP, COMPANY PRACTICE LEADER

LICENSED PROFESSIONAL ENGINEER
STATE OF NJ LICENSE No. 246ED5120300

TOWNSHIP OF PISCATAWAY
2022 - STERLING VILLAGE INTERIOR
RENOVATIONS PHASE - 3
TOWNSHIP OF PISCATAWAY, MIDDLESEX COUNTY, NEW JERSEY
PLUMBING PARTIAL PLANS

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1144 HOOPER AVENUE, SUITE 202
TOMS RIVER, NJ 08753
TEL 732-473-3400
FAX 732-473-3408

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CHECKED BY	MED	SHEET	17
DRAWN BY	JMB	PROJ. NO.	PISC-00250
DATE	2/18/2022	OF	22
SCALE	1/4" = 1'		

PLUMBING FIXTURE SCHEDULE

MARK	MAKE	SERIES	MODEL	DESCRIPTION	FAUCET/CONTROLS	TRIM	FEATURES/SUPPORTS/OPTIONS	COLOR/FINISH	CONNECTION SIZES				FIXTURE UNITS			REMARKS
									SAN.	VENT	C.W.	H.W.	DFU	WSFU-C	WSFU-H	
HWC	PER ARCHITECT	PER ARCHITECT	PER ARCHITECT	HANDICAP WATER CLOSET, TANK-TYPE.	INTEGRAL TRIP LEVER.	CHROME-PLATED STOP VALVE, BRAIDED STAINLESS STEEL SUPPLY HOSE.	PER ARCHITECT	PER ARCHITECT	4"	2"	1/2"	-	4.0	5.0	-	2
HL	PER ARCHITECT	PER ARCHITECT	PER ARCHITECT	HANDICAP LAVATORY, COUNTERTOP-TYPE	PER ARCHITECT	POP-UP DRAIN, BRASS TAILPIECE, CHROME-PLATED BRASS P-TRAP, ANGLE STOPS AND BRAIDED STAINLESS STEEL FLEXIBLE SUPPLIES.	PROVIDE LEONARD MODEL 170A-LF POINT-OF-USE THERMOSTATIC MIXING VALVE ON H.W. SUPPLY.	PER ARCHITECT	1-1/2"	1-1/2"	1/2"	1/2"	1.0	0.75	0.75	1,2
HSB	PER ARCHITECT	PER ARCHITECT	PER ARCHITECT	HANDICAP TRANSFER SHOWER	PER ARCHITECT	PER ARCHITECT	PER ARCHITECT	PER ARCHITECT	2"	2"	1/2"	1/2"	2.0	2.0	2.0	2
HKS	PER ARCHITECT	PER ARCHITECT	PER ARCHITECT	HANDICAP KITCHEN SINK, COUNTERTOP-TYPE	PER ARCHITECT	FLAT CHROME-PLATED STRAINER, BRASS OFFSET TAILPIECE, CHROME-PLATED BRASS P-TRAP, ANGLE STOPS AND BRAIDED STAINLESS STEEL FLEXIBLE SUPPLIES.	PROVIDE LEONARD MODEL 170A-LF POINT-OF-USE THERMOSTATIC MIXING VALVE ON H.W. SUPPLY.	PER ARCHITECT	1-1/2"	1-1/2"	1/2"	1/2"	2.0	1.125	1.125	1,2
CL	PER ARCHITECT	PER ARCHITECT	PER ARCHITECT	UNDERMOUNT COUNTERTOP LAVATORY, SINGLE BOWL WITH OVERFLOW	PER ARCHITECT	GRID STRAINER DRAIN, OFFSET BRASS TAILPIECE, CHROME-PLATED BRASS P-TRAP, ANGLE STOPS AND BRAIDED STAINLESS STEEL FLEXIBLE SUPPLIES.	PROVIDE LEONARD MODEL 170A-LF POINT-OF-USE THERMOSTATIC MIXING VALVE ON H.W. SUPPLY.	PER ARCHITECT	1-1/2"	1-1/2"	1/2"	1/2"	1.0	0.75	0.75	1,2

REMARKS:
 1. SPECIFY DECK HOLE PUNCHING WHEN ORDERING
 2. MOUNT FIXTURE IN ACCORDANCE WITH ALL BARRIER-FREE REQUIREMENTS, WHERE APPLICABLE.

PLUMBING SPECIALTIES SCHEDULE

MARK	MAKE	SERIES	MODEL	DESCRIPTION	VARIATIONS/OPTIONS/ACCESSORIES	COLOR/FINISH
WCO	JAY R. SMITH	4530	4532S	FINISHED WALL CLEANOUT, CLEANOUT TEE WITH COUNTERSUNK PLUG AND ROUND STAINLESS STEEL ACCESS COVER, TAPER THREAD, BRONZE PLUG	VANDAL PROOF SCREW (-U)	CAST IRON/ STAINLESS STEEL
FD1	SIQUX CHIEF	832 SERIES	832-2PNR	GENERAL SERVICE FLOOR DRAIN, ADJUSTABLE STRAINER, 2" OUTLET	RECTORSEAL SURE-SEAL FLOOR DRAIN TRAP SEALER	CAST IRON/ NICKEL BRONZE

PROJECT INFORMATION:
 FILE PATH: G:\Projects\Plumbing\00250\Plans\
 FILE NAME: PISC-00250-PLUMBING_SHEETS.dwg
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MARY ELAINE DASTI, P.E.
 VP, COMPANY PRACTICE LEADER

LICENSED PROFESSIONAL ENGINEER
 STATE OF NJ LICENSE No. 246ED5120300

TOWNSHIP OF PISCATAWAY
**2022 - STERLING VILLAGE INTERIOR
 RENOVATIONS PHASE - 3**
 TOWNSHIP OF PISCATAWAY, MIDDLESEX COUNTY, NEW JERSEY
PLUMBING SCHEDULES



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CHECKED BY	MED	SHEET	18
DRAWN BY	JMB	PROJ. NO.	PISC-00250
DATE	2/18/2022	OF	22
SCALE	NONE		

PROJECT INFORMATION:
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 PLOT TIME: 10 Nov 2022, 3:58PM
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ELECTRICAL GENERAL NOTES									
1.	THE ELECTRICAL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE OR ANY OTHER STATE OR LOCAL CODE HAVING JURISDICTION.								
2.	ALL CONDUIT RUNS ARE DIAGRAMMATICALLY SHOWN ON THE DRAWINGS. THE FINAL ROUTING OF CONDUITS SHALL BE DETERMINED BY THE ELECTRICAL CONTRACTOR AND APPROVED BY THE ENGINEER. CONDUIT SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL CONDITIONS. EXPOSED CONDUITS SHALL BE INSTALLED PARALLEL TO BEAMS AND WALLS. CONDUIT SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTIONS TO EQUIPMENT.								
3.	EXISTING UNDERGROUND PIPE, CONDUIT AND APPURTENANCES ARE NOT SHOWN. CONTRACTOR SHALL LOCATE ALL EXISTING SUBSURFACE EQUIPMENT WHICH MAY CONFLICT WITH NEW CONSTRUCTION SO AS TO AVOID CONFLICTS OR DAMAGE.								
4.	UTILITY COMPANY WORK SHALL BE COORDINATED BY THE CONTRACTOR. ANY ASSOCIATED FEES AND COSTS SHALL BE PAID BY THE CONTRACTOR. CONTRACTOR SHALL PAY UTILITY COMPANY IN ADVANCE TO ENSURE THE CONTRACTOR MEETS ITS SCHEDULE.								
5.	WIRE SIZES SHOWN ON PLANS MAY BE OVERSIZED TO ACCOMMODATE VOLTAGE DROP. CONTRACTOR MAY ELECT TO TAP DOWN WIRE SIZE AT SOURCE AND/OR APPLIANCE IN A LISTED MANNER COMPLIANT WITH THE CODE.								
6.	CONTRACTOR SHALL PROVIDE APPURTENANCES AS REQUIRED (TRANSFORMERS, RELAYS, ETC.) TO PROVIDE THE PROPER POWER SUPPLY FOR ANY VOLTAGES REQUIRED FOR A COMPLETE INSTALLATION. ANY VOLTAGE SUPPLIES REQUIRED BY THE SUBMITTED EQUIPMENT, FOR POWER OR CONTROLS, SHALL BE INCLUDED.								
7.	THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE GROUNDING SYSTEM IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. ELECTRICAL WIRE RACEWAYS, APPARATUS AND PANEL ENCLOSURES AND OTHER NON-CURRENT CARRYING METAL PARTS SHALL BE MECHANICALLY JOINED TO FORM A CONTINUOUS CONDUCTING METALLIC PATH AND ASSURE ELECTRICAL CONTINUITY OF THE GROUNDING CIRCUITS. THE STRANDED COPPER BONDING JUMPER CABLES AND/OR GROUND WIRES SHALL BE INSTALLED WHERE REQUIRED. THE SURFACE WHERE GROUNDING CONNECTIONS ARE TO BE MADE SHALL BE CLEAN AND DRY. STEEL SURFACES SHALL BE GROUND OR FILED TO REMOVE ALL SCALE, RUST, GREASE AND DIRT. COPPER AND GALVANIZED STEEL SHALL BE CLEANED WITH EMERY CLOTH TO REMOVE OXIDE BEFORE MAKING CONNECTIONS.								
7.1.	MOTOR AND POWER DISTRIBUTION EQUIPMENT SHALL BE EFFECTIVELY GROUNDED USING A GROUND CONDUCTOR.								
7.2.	CONTROL AND INSTRUMENTATION EQUIPMENT SHALL BE EFFECTIVELY GROUNDED USING A GROUND CONDUCTOR, METALLIC RACEWAY, OR A COMBINATION OF THE TWO.								
8.	THE TYPE CONDUIT SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED: <table border="1"> <thead> <tr> <th>APPLICATION</th> <th>TYPE</th> </tr> </thead> <tbody> <tr> <td>INDOOR LOCATIONS</td> <td>EMT</td> </tr> <tr> <td>OUTDOOR ABOVE GRADE LOCATIONS</td> <td>RMC</td> </tr> <tr> <td>OUTDOOR BELOW GRADE LOCATIONS</td> <td>SCH. 40 PVC</td> </tr> </tbody> </table>	APPLICATION	TYPE	INDOOR LOCATIONS	EMT	OUTDOOR ABOVE GRADE LOCATIONS	RMC	OUTDOOR BELOW GRADE LOCATIONS	SCH. 40 PVC
APPLICATION	TYPE								
INDOOR LOCATIONS	EMT								
OUTDOOR ABOVE GRADE LOCATIONS	RMC								
OUTDOOR BELOW GRADE LOCATIONS	SCH. 40 PVC								
9.	THE POWER AND CONTROL WIRING SHALL BE STRANDED COPPER CONDUCTOR WITH THHW INSULATION RATED 600 VOLTS. SERVICE WIRING SHALL BE AS POWER WIRING BUT HAVE "XHHW" TYPE INSULATION. MINIMUM SIZE OF POWER WIRING SHALL BE #12 AWG. CONTROL WIRING SHALL BE #14 AWG.								
10.	THE ELECTRICAL APPARATUS SUCH AS SWITCHES, RECEPTACLES, CONTROL DEVICES, PANELS, ETC., ARE SHOWN IN THEIR APPROXIMATE LOCATION. ACTUAL LOCATION OF THESE APPARATUS SHALL BE DETERMINED BY CHECKING JOB SITE AND OTHER TRADE DRAWINGS. FINAL LOCATION SHALL BE APPROVED BY THE ENGINEER. SWITCHES AND DISCONNECTS MOUNTING HEIGHT SHALL BE 4'-6" MIN. ABOVE FINISHED FLOOR OR GRADE UNLESS OTHERWISE NOTED.								
11.	A 1/8" NYLON PULL CORD SHALL BE PULLED INTO ALL CONDUITS NOT CONTAINING WIRES.								
12.	ALL PVC TYPE CONDUIT EXCEPT ELECTRIC SERVICE CONNECTIONS SHALL INCLUDE A GROUNDING CONDUCTOR IN ADDITION TO THOSE THAT ARE SHOWN ON THE DRAWING.								
13.	ALL FIELD WIRING TERMINATIONS SHALL BE MADE AT TERMINALS LOCATED IN THE INDIVIDUAL COMPARTMENTS OR ENCLOSURES. USE OF WIRE NUTS OR DIRECT WIRING WILL NOT BE ACCEPTED. ALL TERMINATION POINTS MUST BE IDENTIFIED IN THE SHOP DRAWINGS AND PERMANENTLY / CLEARLY MARKED IN ACCORDANCE WITH THE SPECIFICATION REQUIREMENTS. TERMINATOR MATERIALS SHALL BE SIZED FOR THE INSTALLED CONDUCTORS.								
14.	ALL WIRES SHALL BE NEATLY BUNDLED AND TAGGED TO INDICATE THE CONNECTED DEVICE. EACH WIRE SHALL BE COLOR CODED AND TAGGED WITH A PLASTIC SLEEVE TYPE WIRING TAG. WIRING SHALL BE TAGGED AT EACH POINT OF TERMINATION.								
15.	CONDUIT INSTALLATION INTO EQUIPMENT WITH EXPOSED LIVE COMPONENTS SHALL BE ROUTED FOR BOTTOM ENTRY WHERE POSSIBLE OR SEALED IN A WATERTIGHT MANNER ACCEPTABLE TO THE ENGINEER.								
16.	ALL 90 DEGREE ELBOWS AND CONDUIT PENETRATING CONCRETE SHALL BE PVC COATED GALVANIZED RIGID STEEL.								
17.	ALL RELAYS AND CONTACTORS SHALL HAVE A SUFFICIENT AMOUNT OF CONTACTS TO SATISFY THE CONTRACT REQUIREMENTS AND ONE SPARE.								
18.	ALL DEVICES AND APPARATUS FURNISHED SHALL BE NEW AND SHALL BE UL LISTED.								
19.	THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUIT REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND/OR SPECIFICATION.								
20.	DISCONNECT AND REMOVE EXISTING CONDUIT, WIRING, POWER AND CONTROL DEVICES ASSOCIATED WITH EQUIPMENT TO BE DEMOLISHED EXCEPT WHERE OTHERWISE INDICATED TO BE REUSED. REMOVE ALL WIRE AND EXPOSED CONDUIT.								
21.	ALL CIRCUIT BREAKERS FOR MOTOR-OPERATED EQUIPMENT SHALL BE EQUIPPED WITH LOCK-OUT / TAG-OUT ACCESSORY.								

ELECTRICAL ABBREVIATIONS	
A	AMPERES
AFF	ABOVE FLOOR FINISH
AIC	AMPERES INTERRUPTING CAPACITY
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
E	EXISTING
EC	ELECTRICAL CONTRACTOR
EQP	EQUIPMENT
ETR	EXISTING TO REMAIN
FACP	FIRE ALARM CONTROL PANEL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER.
GRD/G	GROUNDING
HOA	HAND-OFF-AUTOMATIC
JB	JUNCTION BOX
KV	KILOVOLTS
KVA	KILOVOLT AMPERES
KW	KILOWATTS
NTS	NOT TO SCALE
R	REMOVE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VOLTS
W	WATTS
WP	WEATHERPROOF
NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS SHOWN HERE MAY APPEAR ON THE DRAWINGS FOR THIS PROJECT.	

ELECTRICAL SYMBOLS	
#XX/XX	CIRCUIT FOR A SINGLE POLE BREAKERS IN A SINGLE POSITION ON THE PANELBOARD.
#XX,XX	CIRCUIT DENOTING TWO-POLE, 240V
S ₀	ON/OFF DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH, SENSOR SWITCH MODEL: WSX PDT WH
S	ON/OFF SINGLE POLE SWITCH, SPECIFICATION GRADE; 'K' DENOTES KEY OPERATED
S ₃	ON/OFF 3-WAY SWITCH, SPECIFICATION GRADE
S ₀	ON/OFF DIMMER SWITCH
OS	DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR, SENSOR SWITCH MODEL: CMR 10
Ⓢ	DUPLEX RECEPTACLE, NEMA 5-20R, REFER TO ARCHITECTURAL PLANS FOR MOUNTING HEIGHTS; 'GF' GROUND FAULT INTERRUPTER
Ⓢ	SWITCH CONTROLLED DUPLEX RECEPTACLE, NEMA 5-20R.
Ⓢ	JUNCTION BOX FOR HARDWIRED EQUIPMENT
F	FIRE ALARM MANUAL PULL STATION - MOUNT 48" AFF
F	COMBINATION AUDIO/VISUAL INDICATING DEVICE - MOUNT 80" AFF
F	VISUAL INDICATING DEVICE - MOUNT 80" AFF
FS	FLOW SWITCH
TS	TAMPER SWITCH
S	SMOKE DETECTOR, 'R' DENOTES ELEVATOR RECALL
H	HEAT DETECTOR

NO.	DATE	ISSUED FOR BID	REVISIONS	BY	CHKD
1	3/15/22			AHM	MED

MARY ELAINE DASTI, P.E.
 VP, COMPANY PRACTICE LEADER

LICENSED PROFESSIONAL ENGINEER
 STATE OF NJ LICENSE No. 246E05120300

TOWNSHIP OF PISCATAWAY

2022 - STERLING VILLAGE INTERIOR RENOVATIONS PHASE - 3

TOWNSHIP OF PISCATAWAY, MIDDLESEX COUNTY, NEW JERSEY

ELECTRICAL GENERAL INFORMATION



YOUR GOALS. OUR MISSION.

1144 HOOPER AVENUE, SUITE 202
 TOMS RIVER, NJ 08753
 TEL 732-473-3400
 FAX 732-473-3408

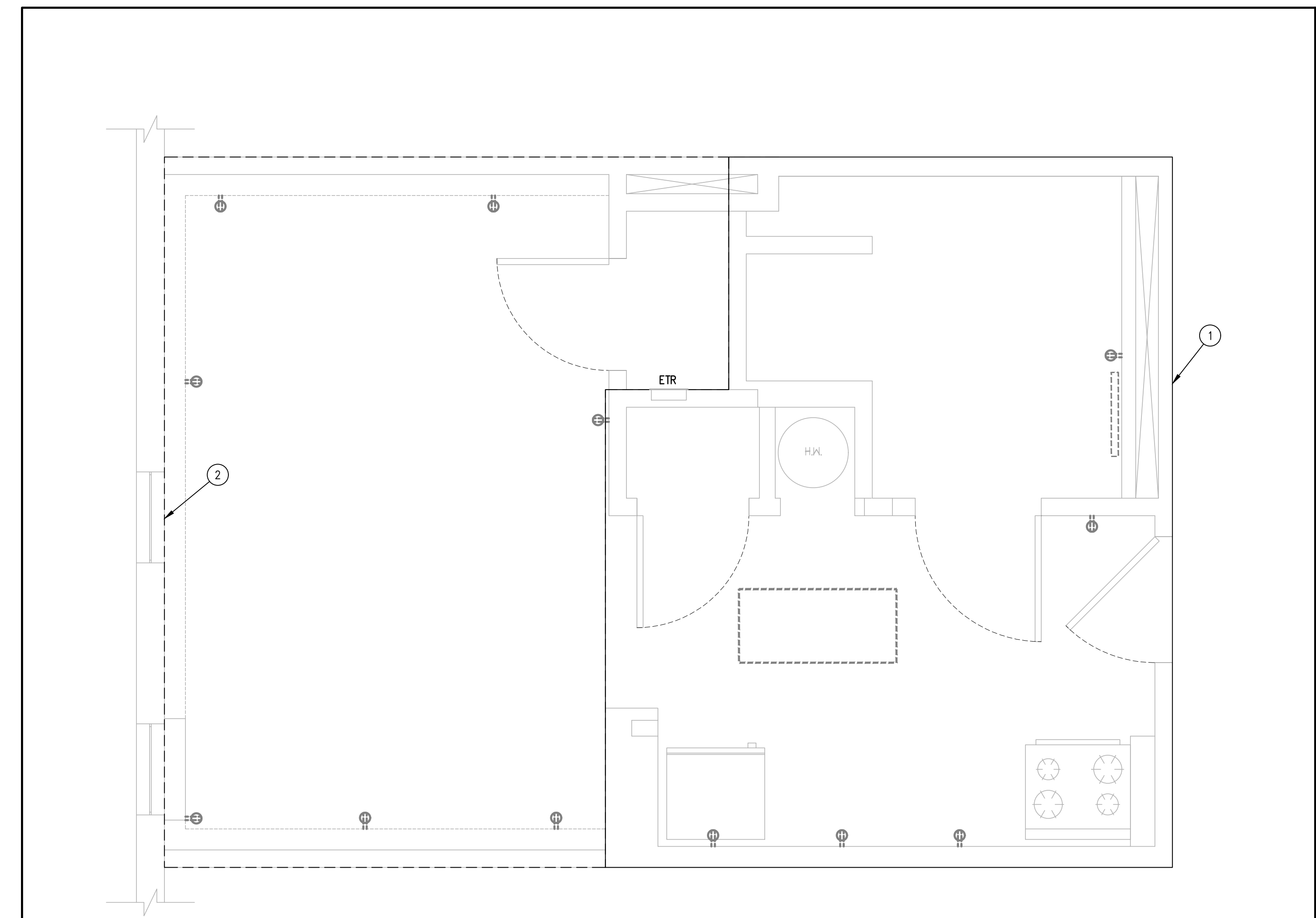
www.tandmassociates.com
 NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS
 AND LAND SURVEYORS
 CERTIFICATE OF AUTHORIZATION: 25A27987503

OFFICES LOCATED IN:
 DELAWARE, INDIANA, KENTUCKY,
 MASSACHUSETTS, MICHIGAN, NEW JERSEY,
 OHIO AND PENNSYLVANIA

DESIGNED BY	AHM	DRAWING	E000
CHECKED BY	MED		
DRAWN BY	AHM	SHEET	19
DATE	2/18/2022		
SCALE	NONE		
PROJ. NO.	PISC-00250		OF 22

PROJECT INFORMATION:
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 FILE NAME: PISC-00250_ELECTRICAL_SHEETS.dwg
 DATE: 2/18/2022 10:41:11 AM TIME: 10 Nov 2022, 3:58PM
 LAST SAVE BY: AMZSR

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APARTMENT 552 ADA CONVERSION — DEMOLITION PARTIAL PLAN
 1/2" = 1'-0"

- DEMOLITION PLAN KEYNOTES**
1. ALL RECEPTACLES EQUIPMENT AND LIGHTING SHOWN IN THIS AREA SHLL BE DEMOLISHED AND THE EXISTING WRING/CONDUIT REMOVED BACK TO THE PANEL.
 2. RECEPTACLES, EQUIPMENT AND LIGHTING SHOWN SHALL BE REMOVED AS PART OF NEW CONSTRUCTION. CONTRACTOR SHALL REPLACE EXISTING RECEPTACLE INTERIOR. EXISTING WRING AND BACKBOX CAN BE RE-USED, RELOCATE AS NEEDED.

NO.	DATE	ISSUED FOR BID	REVISIONS	BY	CHKD
1	3/15/22			AHM	MED

MARY ELAINE DASTI, P.E.
 VP, COMPANY PRACTICE LEADER

LICENSED PROFESSIONAL ENGINEER
 STATE OF NJ LICENSE No. 246E05120300

TOWNSHIP OF PISCATAWAY
2022 - STERLING VILLAGE INTERIOR RENOVATIONS PHASE - 3
 TOWNSHIP OF PISCATAWAY, MIDDLESEX COUNTY, NEW JERSEY
ELECTRICAL DEMOLITION PLAN

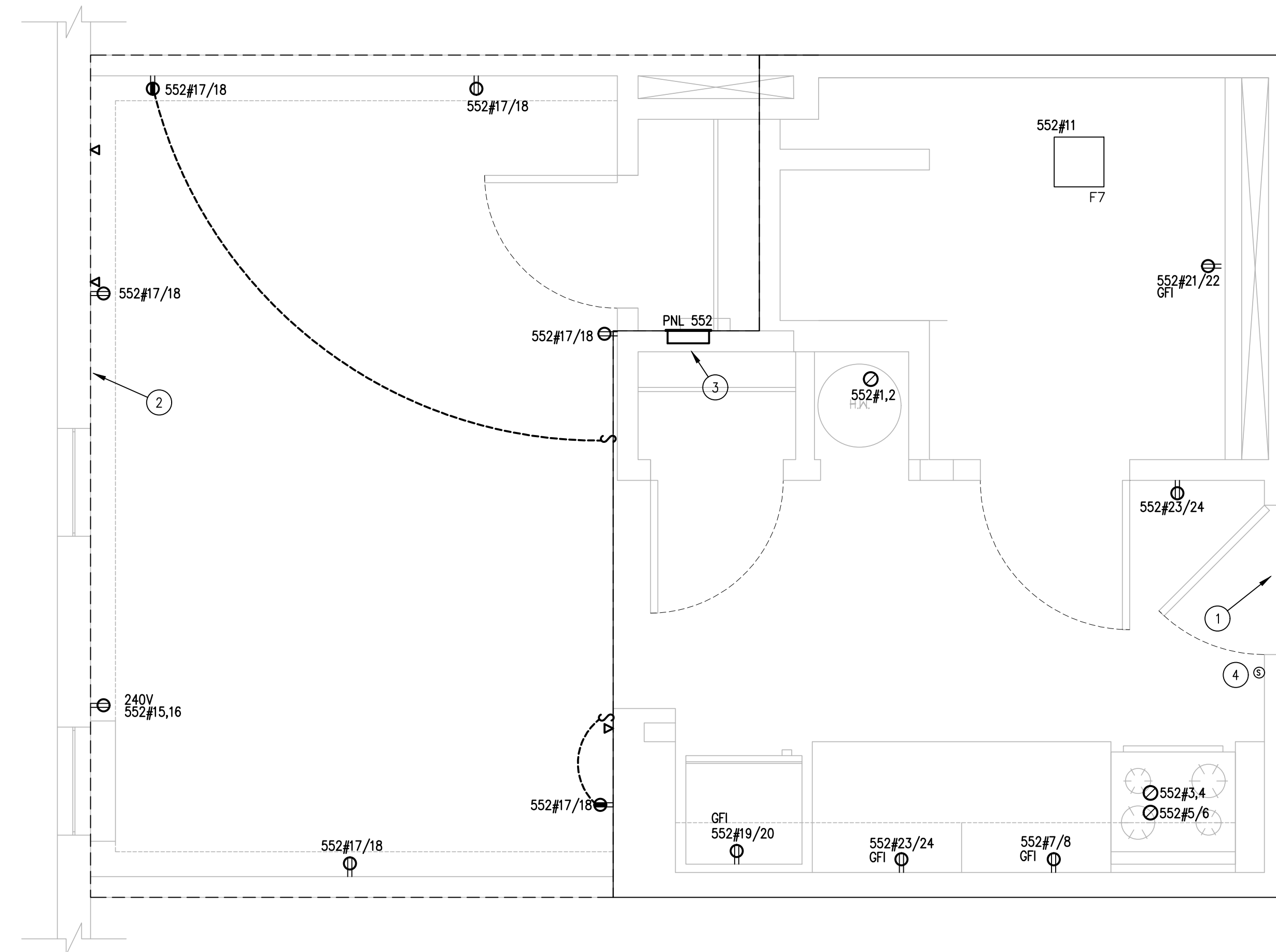
YOUR GOALS. OUR MISSION.

1144 HOOPER AVENUE, SUITE 202
 TOMS RIVER, NJ 08753
 TEL 732-473-3400
 FAX 732-473-3408
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NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS
 AND LAND SURVEYORS
 CERTIFICATE OF AUTHORIZATION 246A2787500

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 MASSACHUSETTS, MICHIGAN, NEW JERSEY,
 OHIO AND PENNSYLVANIA

DESIGNED BY	AHM	DRAWING	E100
CHECKED BY	MED		
DRAWN BY	AHM	SHEET	20
DATE	2/18/2022		
SCALE	1/2" = 1'		
PROJ. NO.	PISC-00250	OF	22



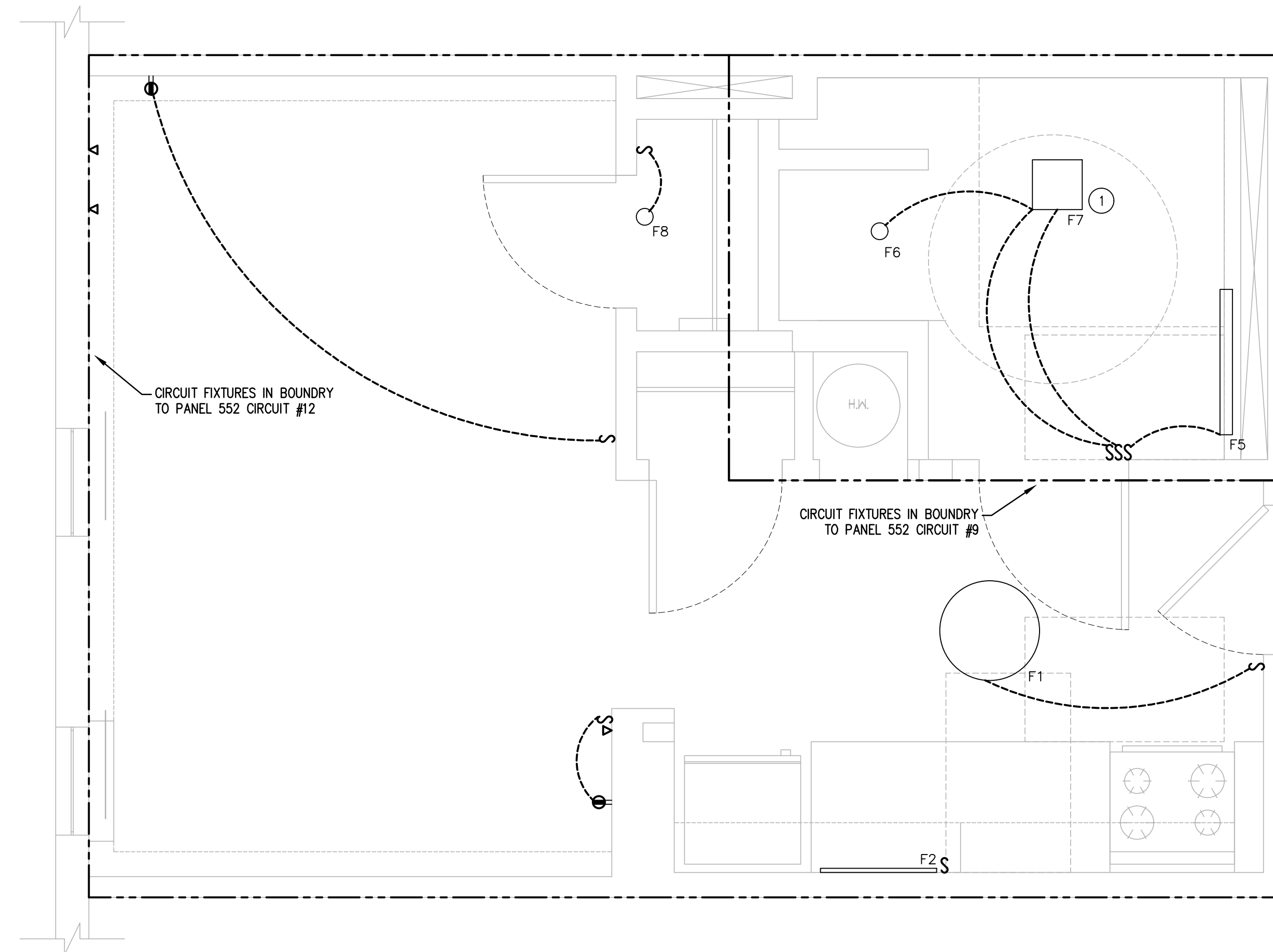
APARTMENT 552 ADA CONVERSION – ELECTRICAL POWER PLAN
1/2" = 1'-0"

POWER PLAN GENERAL NOTES

1. THE LOWER HALF OF THE PANELBOARD USES SOME TANDEM BREAKERS, REFER TO E201. NORMAL SIZED BREAKERS INSTALLED IN THE LOWER HALF OF THE PANELS HAVE TWO NUMBERS PER POLE SEPARATED BY A SLASH.

POWER PLAN PLAN KEYNOTES SYMBOL = ①

1. INSTALL NEW RECEPTACLE AND WIRING.
2. REPLACE EXISTING RECEPTACLE INTERIOR, EXISTING WIRING AND BACKBOX CAN BE RE-USED, EXTEND WIRING AS REQUIRED.
3. EXISTING PANEL AND FEEDER TO REMAIN.
4. CONTRACTOR TO RELOCATE SMOKE DETECTOR AS NECESSARY FOR NEW DOOR LOCATION.



APARTMENT 552 ADA CONVERSION – LIGHTING PLAN
1/2" = 1'-0"

LIGHTING PLAN GENERAL NOTES

1. SEE LIGHTING FIXTURE SCHEDULE ON DRAWING E201 FOR FIXTURE IDENTIFICATION.

LIGHTING PLAN KEYNOTES SYMBOL = ①

1. FIXTURE F7 IS A COMBINATION LIGHT AND HEATER. IT IS BEING CONNECTED TO THE BATHROOM LIGHTING CIRCUIT, WITH THE LIGHT CONTROLLED BY THE BATHROOM LIGHT SWITCH AND THE HEATING ELEMENT IS CONTROLLED BY A DEDICATED SWITCH.

PROJECT INFORMATION:
FILE PATH: G:\Projects\Plan\00250\Plans\
FILE NAME: PISC-00250 ELECTRICAL SHEETS.dwg
DATE: 2/18/2022 11:06:11 AM
LAST SAVE BY: AMZUR

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1	3/15/22				

MARY ELAINE DASTI, P.E.
VP, COMPANY PRACTICE LEADER

LICENSED PROFESSIONAL ENGINEER
STATE OF NJ LICENSE No. 246E05120300

TOWNSHIP OF PISCATAWAY
2022 - STERLING VILLAGE INTERIOR
RENOVATIONS PHASE - 3
TOWNSHIP OF PISCATAWAY, MIDDLESEX COUNTY, NEW JERSEY
ELECTRICAL NEW WORK PLAN

1144 HOOPER AVENUE, SUITE 202
TOMS RIVER, NJ 08753
TEL 732-473-3400
FAX 732-473-3408
www.tandmassociates.com
NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS
AND LAND SURVEYORS
CERTIFICATE OF AUTHORIZATION 246A27987503
OFFICES LOCATED IN:
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OHIO AND PENNSYLVANIA

DESIGNED BY	AHM	DRAWING	E101
CHECKED BY	MED	SHEET	21
DRAWN BY	AHM	PROJ. NO.	PISC-00250
DATE	2/18/2022	SCALE	1/2" = 1'
OF	22		

PROJECT INFORMATION:
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 FILE NAME: PISC-00250_ELECTRICAL_SHEETS.dwg
 DATE: 2/18/2022 11:05:11 AM
 TIME: 10 Nov 2022, 3:58PM
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LOCATION		22KAIC		MFG.: SIEMENS					
APARTMENT 552				MOUNT: EXISTING					
PANEL	552	120/208 VOLTS	1	PHASE	3	WIRE	125	AMP	MAINS_MLO
CKT. NO.	SERVES	WIRE & CONDUIT	TRIP POLE	LOAD KVA	LOAD KVA	TRIP POLE	WIRE & CONDUIT	SERVES	CKT. NO.
1	WATER HEATER	2#10, #12G	30/2	4.5		100/2	EXISTING	EXISTING	13
2								BACKFED MAIN	14
3	RANGE (2 BURNER)	2#10, #12G	30/2	2.25	0.8	20/2	2#12, #12G	LIVING ROOM AC	15
4									16
5/6	RANGE HOOD / SPARE	2#12, #12G	20/1	0.3	1.08	20/1	2#12, #12G	LVG/BED RM RECEPT	17/18
7/8	MICROWAVE	2#12, #12G	20/1	1.0	1.8	20/1	2#12, #12G	REFRIGERATOR	19/20
9/10	LIGHTING/SPARE	2#12, #12G	20/1	0.12	0.18	20/1	2#12, #12G	BATHROOM GFI	21/22
11/12	BATHROOM HTR/LIGHT	2#12, #12G	20/1	1.47	0.36	20/1	2#12, #12G	KITCHEN RECEPTS	23/24
* REPLACE EXISTING BREAKER WITH AFCI BREAKER				9.60	4.22	13.82 KVA = 67 A			

LIGHTING FIXTURE SCHEDULE							
LUMINAIRE	MANUFACT.	CATALOG NUMBER	WATTAGE	VOLTS	LAMP TYPE	DESCRIPTION	
F1	KUZCO	FM43522-BK	42	120V	LED	LED DRUM LIGHT WITH CONTEMPORARY LOOK	
F2	JUNO	UPLD22 30K 90CRI WH NS	8.1	120V	LED	LED FLUSH MOUNT	
F5	FERGUSON	V.60236-BK	43	120V	LED	4' LED STRIP LIGHT	
F6	LITELINE	SLMT4-BW	8.3	120V	LED	4" LED DOWNLIGHT	
F7	BROAN	MODEL 656	1428	120V		COMBINATION HEATER AND LIGHT	
F8	LIGHTOLIER	L5R-10-A-Z10U-VA/L5R-10-830-VA	14	120V	LED	LED CLOSET LIGHT	

ISSUED FOR BID	REVISIONS	DATE	NO.
		3/15/22	

MARY ELAINE DASTI, P.E.
 VP, COMPANY PRACTICE LEADER

LICENSED PROFESSIONAL ENGINEER
 STATE OF NJ LICENSE No. 246ED5120300

TOWNSHIP OF PISCATAWAY
 2022 - STERLING VILLAGE INTERIOR
 RENOVATIONS PHASE - 3
 TOWNSHIP OF PISCATAWAY, MIDDLESEX COUNTY, NEW JERSEY
 ELECTRICAL SCHEDULES



DESIGNED BY	AHM	DRAWING	E200
CHECKED BY	MED		
DRAWN BY	AHM	SHEET	22
DATE	2/18/2022		
SCALE	NONE		
PROJ. NO.	PISC-00250	OF	22

THE TOWNSHIP OF PISCATAWAY



PROPOSAL SHEETS

Page 1-5



MARIA E. VALENTE-CAEMMERER

Purchasing Agent/Township Secretary

BID PROPOSAL FORM

BID FOR: 2022 - STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3

**TO: MAYOR & TOWNSHIP COUNCIL
 TOWNSHIP OF PISCATAWAY
 455 HOES LANE
 PISCATAWAY, NJ 08854**

DATE: APRIL 21, 2022

TIME: 2:00 P.M.

STATEMENT OF FACT: The undersigned hereby declares that they have carefully examined the Bidding Documents, Plans, Specifications and addenda issued for the referenced project and have become familiar with all existing conditions affecting proper execution of the work and further offers to furnish all plant, labor, materials, supplies, management, supervision, and equipment and other facilities and things necessary or proper for or incidental to the **2022 - STERLING VILLAGE INTERIOR RENOVATIONS PHASE-3** for the following amounts:

BID Tabulation

ITEM NO.	APPROX QUANT.	BID ITEM DESCRIPTION & WRITTEN BID AMOUNT	UNIT PRICE		ITEM TOTAL	
			DOLLARS	CENTS	DOLLARS	CENTS
1.	1 Lump Sum	Base Bid Amount _____	N/A	N/A	\$	
		Lump Sum Written in Words				
2.	1 Lump Sum	Allowance #1 – Existing Equipment _____	N/A	N/A	\$	50,000 00
		Fifty Thousand Lump Sum Written in Words				
*TOTAL AMOUNT BID					\$	

***TOTAL AMOUNT BID WRITTEN IN WORDS:** _____

Tabulated Total Amount Bid **MUST agree with Total Amount Bid Written in Words.*

The Owner reserves the right to reject all bids/proposals in accordance with N.J.S.A. 40A:11-13.2 and to waive any non-material informalities in the bidding. The Bidder agrees that his bid proposal may not be withdrawn for a period of SIXTY (60) days from the opening thereof except in accordance with N.J.S.A. 40A:11-23.3.

Conditional bid proposals will not be accepted. Bid Proposal Forms will not be accepted unless signed by the Owner or authorized Officer.

The Undersigned agrees, if awarded the Contract, to execute and deliver the Contract Agreement to the Owner within the timeframe specified in the Instructions to Bidders.

CERTIFICATION

The undersigned hereby affirms that they have carefully examined the Bidding Documents, Plans, Specifications and addenda issued for the referenced project and have become familiar with all existing conditions affecting proper execution of the work and the amounts bid herein represent the total cost for all work involved in the respective items and includes all plant, labor, materials, supplies, management, supervision, and equipment and other facilities and things necessary or proper for or incidental to the respective items, in accordance with the requirements of the Contract Documents.

Signature

Name & Title (type or print)

Bid Date

Name of Bidder

Company FEIN # _____

CONTRACTORS DATA SHEET

As evidence of the bidders qualifications, he shall complete and submit with this bid proposal, the "Contractors Data" Sheet information.

PISCATAWAY TOWNSHIP RESERVES THE RIGHT TO REQUEST VENDORS TO EXPLAIN THE METHOD USED TO ARRIVE AT ANY OR ALL FIGURES IN THEIR BID.

ORGANIZATION

Name: _____

Type:

___ Corporation ___ Partnership ___ Individual ___ Joint Venture

Other: _____

Type of Work (General, Electrical, etc.): _____

The number of years your firm has been performing these services _____

How many personnel will be available to work in this contract _____

Name(s) of the Principal in Charge and Responsible Project Manager to be assigned to work on this contract.

Name _____ Name _____

Years of Experience _____ Years of Experience _____

Years Employed by Firm _____ Years Employed by Firm _____

Time Dedicated to Project _____% Time Dedicated to Project _____%

If a Corporation:

Date of Incorporation: _____ State of Incorporation: _____

President's Name: _____

Vice-President's Name: _____

Secretary's Name: _____

Treasurer's Name: _____

Township of Piscataway
2022 - Sterling Village Interior Renovations Phase - 3
Piscataway, NJ

If a Partnership:

Date of Organization: _____

Names of Partners:

If Individually Owned:

Date of Organization: _____

Name of Owner: _____

LICENSING

Provide applicable license numbers for the location the work is to be performed:

EXPERIENCE

List the categories of work that your organization normally performs with its own forces:

EMERGENCY CONTACT INFO

Name(s) and phone number(s) of management personnel to be contacted if problems or emergencies occur:

Name _____

Phone Number _____

Name _____

Phone Number _____

INSURANCE INFORMATION

Name of Insurance Company _____

Name of Insurance Representative _____

SURETY INFORMATION

Name of Bonding Company _____

Name of Bonding Company Representative _____

CLAIMS AND SUITS

If the answer to any of the questions is yes, attach details hereto.

Yes / No Has your organization ever failed to complete any work awarded to it?

Yes / No Are there any judgements, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers?

Yes / No Has your organization filed any law suits or requested arbitration with regard to construction contracts in the last five years?

CURRENT CONTRACTS

Attach a separate sheet hereto listing major construction projects your organization has in progress, giving the name of the project, owner, architect, contract amount, percent complete and scheduled completion date. Provide a reference name and contact information for each contract that the County may contact for reference.

Total Amount of Current Open Contracts: \$ _____

Total Amount of Bonds in Effect: \$ _____

COMPLETED CONTRACTS

Attach a separate sheet hereto listing major construction projects your organization has completed in the last five years, giving the name of the project, owner, architect, contract amount, percent complete and scheduled completion date. Provide a reference name and contact information for each contract that the County may contact for reference.

Average Annual Amount of Work Performed: \$ _____

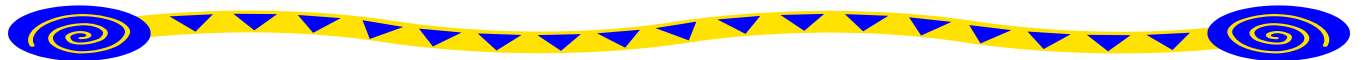
BIDDER _____

DATE _____

Bid No: 2022-03-09

THE TOWNSHIP OF PISCATAWAY

THESE SAMPLE PAGES ARE **NOT** REQUIRED BACK WITH SEALED BID DOCUMENTS



SAMPLE-BID REQUIRED DOCUMENTS ONCE AWARD

All documents in this section must be submitted with the awarded Contract –These documents are **REQUIRED ONCE AWARDED ONLY.** Failure to submit the documents and other documents with the contract may be cause to reject the bid for being non-responsive.



MARIA E. VALENTE-CAEMMERER

Purchasing Agent/Township Secretary

Sample: Required ONLY Once Awarded:

SAMPLE OF FORMS THAT WILL BE REQUIRED ONCE AWARDED

SAMPLE-AA-201

SAMPLE-AA-202

SAMPLE-W-9

SAMPLE-INSURANCE CERTIFICATE

SAMPLE-ST-13 FORM

SAMPLE-PERFORMANCE BOND FORM.

**Sample- AA-202- STATE OF NJ Dept. of Monthly Payroll
Forms**

**SAMPLE- WHD FORMS-U.S. DEPARTMENT OF
LABOR WEEKLY REPORT**

**Sample-W-9- May be submitted for faster
processed.**

**SAMPLE- ST-13 FORM- CONTRACTOR EXEMPT
FORM.**

SAMPLE: PERFORMANCE PAYMENT BOND FORM

**(ANY “AIA Payment Document” ARE NOT
ACCEPTABLE)**

**THESE SAMPLE PAGES DO NOT HAVE TO BE
RETURNED WITH BID.**

SAMPLE

SAMPLE

AUTHORIZATION TO RELEASE RECORDS

I _____

(Print name of Applicant,) the undersigned, an employee or potential employee of

_____, (name of contractor) a being advised that the matter of security and confidentiality may be involved in the performance of the duties of such position, do hereby authorize the appropriate Township officials to fingerprint me and conduct a security check of my background and qualifications, both now and on any later date that the Township deems necessary. I understand that all such information is and will be kept strictly confidential.

I further agree to furnish to the Township of Piscataway any and all required information and documentation to establish my identity and to complete the security check. Forms returned to Township Administrator/Division of Purchasing.

Social Security No. Driver's License No. Date of Birth

PRINT NAME:

Full Address:

Signature of Applicant Date

Witness Date

SAMPLE

Township of Piscataway

Appendix Section

(Piscataway Township Performance Payment Bond Form only -
Sample in bid)

A. Model Performance Bond Form - *Sample*

B. Surety Disclosure Statement and Certification - *Sample*

C. PISCATAWAY PERFORMANCE BOND FORM- SAMPLE

PISCATAWAY BID BOND FORM ATTACHED.

SAMPLE

TO CONTRACTOR:

Have your bonding company complete the enclosed Performance/Payment Bond. In order to expedite the process by which your Performance/Payment Bond will be approved by our township attorney, you must use the enclosed form. Please fill out the numbered highlighted areas and have all required signatures in place. The Township will not review any alternative forms and they will be returned to you.

Please fill out the highlighted areas numbered as follows:

1. Full name of Contractor
2. Indicate whether a Corporation, Partnership or Individual
- 3, 3A, 3B Full name of Bonding Company, State, and Office Address
4. Amount of contract in words and figures
5. Date of Bond (Supplied by bonding company - cannot be prior to date of contract)
6. Date of Contract (Found on first page of contract at top)
7. Title and/or description of contract
8. Full name of Contractor
9. Full name of Contractor
10. Same date as Item # 5

Accompanying documents from the bonding company must include the following:

1. Financial Statement
 2. Surety Disclosure Statement and Certification
- A Power of Attorney should be provided for the individual executing the bond on behalf of the surety.

**PERFORMANCE PAYMENT BOND MUST BE SIGNED AND SEALED BY ALL
PARTIES INDICATED ON PAGE 2**

SAMPLE

Performance Payment Bond

PERFORMANCE PAYMENT BOND

Know all men by these presents, that we, **(1)** _____ a
(2) _____ the undersigned as Principal and
(3) _____ of the State of **(3A)** _____
 duly authorized to do business in the State of New Jersey, having an office at
(3B) _____, New Jersey, as Surety, are
 hereby held and firmly bound unto the Township of Piscataway, 455 Hoes Lane, Piscataway, New Jersey
 08854 in the penal sum of
(4) _____
 (\$ _____) DOLLARS,

for the payment of which well and truly to be made, we hereby jointly and severally bind ourselves, our
 heirs, executors, administrators, successors and assigns.

(5) Signed this _____ day of _____ 20____.

The condition of the above obligation is such that whereas, the above named principal did on the
(6) _____ day of _____, 20____, enter into a contract with the Township
 of Piscataway, 455 Hoes Lane, Piscataway, New Jersey 08854 for
(7) _____

which said contract is made a part of this the bond the same as though set forth herein;

Now, if the said **(8)** _____ shall well and faithfully do and perform the
 things agreed by **(9)** _____ to be done and performed according to the
 terms of said contract, and shall pay all lawful claims of beneficiaries as defined by N.J.S. 2A:44-143 for
 labor performed or materials, provisions, provender or other supplies or teams, fuels, oils, implements or
 machinery furnished, used or consumed in the carrying forward, performing or completing of said contract,
 we agreeing and assenting that this undertaking shall be for the benefit of any beneficiary as defined in N.J.S.
 2A: 44-143 having a just claim, as well as for the oblige herein; then this obligation shall be void; otherwise
 the same shall remain in full force and effect; it being expressly understood and agreed that the liability of
 the surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as
 herein stated.

The said surety hereby stipulates and agrees that no modifications, omissions or additions in or to the
 terms of the said contract or in or to the plans or specifications therefore shall in anywise affect the
 obligation of said surety on its bond.

Recovery of any claimant under the bond shall be subject to the conditions and provisions of this article
 to the same extent as if such conditions and provisions were fully incorporated in the form set forth above.

SAMPLE

Performance Payment Bond

This bond shall not be subject to cancellation either by the principal or by the surety for any reason until such time as all improvements subject to the bond have been accepted by the municipality.

This bond shall be deemed continuous in form and shall remain in full force and effect until the improvements are accepted by the municipality and the bond is released, or until default is declared, or until the bond is replaced by another bond meeting applicable legal requirements. Upon approval or acceptance of all improvements by the municipality, or upon replacement of this bond by another bond, liability under this bond shall cease.

The aggregate liability of the surety shall not exceed the sum set forth above.

In the event that the improvements subject to this bond are not completed within the time allowed under the contract or bid documents (hereinafter the "Contract") between principal and municipality, the municipal governing body may, at its option, and upon at least 30 days prior written notice to the principal and to the surety by personal delivery or by certified or registered mail or courier, declare the principal to be in default and, in the event that the surety fails or refuses to complete the work in accordance with the terms and conditions of said Contract, claim payment under this bond for the cost of completion of the work. In the event that any action is brought against the principal under this bond, written notice of such action shall be given to the surety by the municipality by personal delivery or by registered or certified mail or courier at the same time.

The surety shall have the right to complete the work in accordance with the terms and conditions of said Contract, either with its own employees or in conjunction with the principal or another contractor; provided, however, that the surety in its sole discretion, may make a monetary settlement with the municipality as an alternative to completing the work.

This bond shall insure to the benefit of the municipality only and no other party shall acquire any rights hereunder.

In the event that this bond shall for any reason cease to be effective prior to the approval or acceptance of all improvements, a cease and desist order may be issued by the governing body, in which case all work shall stop until such time as a replacement guarantee acceptable to municipality becomes effective.

SAMPLE

Performance Payment Bond

IN WITNESS WHEREOF , this instrument is executed in two (2) counterparts each of which shall be deemed an original , this the **(10)** _____ day of _____ , 20

Attest :

Principal

(Typed or Printed)

Principal Secretary

(Typed or Printed)

By: _____ (s)

Address

SEAL :

Witness to Princip

SAMPLE

Attest :

Surety
By: _____ (s)
Attorney-in-fact

Surety Secretary

SEAL :

Address

Witness as to Surety

Address

**INSTRUCTIONS FOR COMPLETING THE INITIAL PROJECT
WORKFORCE REPORT – CONSTRUCTION (AA201)**

DO NOT COMPLETE THIS FORM FOR GOODS AND/OR SERVICE CONTRACTS

1. Enter the Federal Identification Number assigned to the contractor by the Internal Revenue Service, or if a Federal Employer Identification Number has been applied for but not yet issued, or if your business is such that you have not or will not receive a Federal Identification Number, enter the social security number assigned to the single owner or one partner, in the case of a partnership.
2. Note: The Department of Labor & Workforce Development, Construction EEO Monitoring Program will assign a contractor ID number to your company. This number will be your permanently assigned contractor ID number that must be on all correspondence and reports submitted to this office.
3. Enter the prime contractor's name, address and zip code number.
4. Check box if Company is Minority Owned or Woman Owned
5. Enter the complete name and address of the Public Agency awarding the contract. Include the contract number, date of award and dollar amount of the contract.
6. Enter the name and address of the project, including the county in which the project is located.
7. Note: A project contract ID number will be assigned to your firm upon receipt of the completed Initial Project Workforce Report (AA201) for this contract. This number must be indicated on all correspondence and reports submitted to this office relating to this contract.
 8. Check "Yes" or "No" to indicate whether a Project Labor Agreement (PLA) was established with the labor organization(s) for this project.
9. Under the Projected Total Number of Employees in each trade or craft and at each level of classification, enter the total composite workforce of the prime contractor and all subcontractors projected to work on the project. Under Projected Employees enter total minority and female employees of the prime contractor and all subcontractors projected to work on the project. Minority employees include Black, Hispanic, American Indian and Asian, (J=Journey worker, AP=Apprentice). Include projected phase-in and completion dates.
10. Print or type the name of the company official or authorized Equal Employment Opportunity (EEO) official include signature and title, phone number and date the report is submitted.

This report must be submitted to the Public Agency that awards the contract and the Department of Labor & Workforce Development, Construction EEO Compliance Monitoring Program after notification of award, but prior to signing the contract.

**THE CONTRACTOR IS TO RETAIN A COPY AND SUBMIT COPY TO THE PUBLIC AGENCY AWARDING
THE CONTRACT AND FORWARD A COPY TO:**

**NEW JERSEY DEPARTMENT OF LABOR & WORKFORCE DEVELOPMENT
CONSTRUCTION EEO COMPLIANCE MONITORING UNIT
P.O. BOX 209
TRENTON, NJ 08625-0209
(609) 292-9550**

SAMPLE

CONTRACTOR INSURANCE REQUIREMENTS

Contractors

When the municipality lets work to a contractor, it is expected and required the contractor provide the municipality with the following minimum amount of insurance.

a) Small Service and Repair Contractors

- General Liability, including Products/Completed
- Operations – Limit \$500,000 CSL
- Authority to be named as additional insured
- Auto Liability: Limit \$500,000 CSL
- Coverage to include “Non-Owned and Hired Automobiles”
- Workers’ Compensation Insurance – statutory limits

b) Larger Contractors (Includes contractors that are doing new construction or major alterations):

Requirements are same as above with exception of limits which are to be \$ 1 Million CSL for both General and Automobile Liability.

Note: No work shall be allowed to begin without property Insurance Certificates on file with the member municipality and approved by the Insurance producer. Also, refer back to Item #9 in the underwriting section of the Policies and Procedures Manual for Insurance requirements for pyrotechnic contractors.

ADDITIONAL INSURED

The Township of Piscataway must be named additional Insured.
The description of the Goods & Services must be listed.

SAMPLE CERTIFICATE OF INSURANCE



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

PRODUCER Applicants Insurance Company Name and Address	THIS CERTIFICATION IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.	
	INSURERS AFFORDING COVERAGE	NAIC #
INSURED Applicants Company Name and Address	INSURER A:	
	INSURER B:	
	INSURER C:	
	INSURER D:	
	INSURER E:	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIODS INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSURANCE TYPE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS
GENERAL LIABILITY <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> OCCUR <input type="checkbox"/> GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PROJ. <input type="checkbox"/> SUCT <input type="checkbox"/> LOC	Policy Number		Term	EACH OCCURRENCE \$ \$1,000,000 DAMAGE TO RENTED PREMISES (EA OCCURRENCE) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$
AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS	Policy Number		Term	CORRECTED SINGLE LIMIT (EA OCCURRENCE) \$ \$1,000,000 BODILY INJURY (EA OCCURRENCE) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ AUTO ONLY - EA ACCIDENT \$ OTHER THAN AUTO ONLY: EA ACC \$ AGG \$
GARAGE LIABILITY <input type="checkbox"/> ANY AUTO				EACH OCCURRENCE \$ \$2,000,000 AGGREGATE \$ \$ \$
EXCESS/UMBRELLA LIABILITY <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> DEDUCTIBLE RETENTION \$	Policy Number		Term	WC STATUTORY LIMITS OTHER \$ E.L. EACH ACCIDENT \$ \$100,000 E.L. DISEASE - EA EMPLOYEE \$ \$100,000 E.L. DISEASE - POLICY LIMIT \$ \$500,000
WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETORS/PARTNERS/EXECUTIVE OFFICERS/EMBER EXCLUDED? If yes, describe below SPECIAL PROVISIONS below OTHER	Policy Number If applicable		Term	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

Leave Blank **NAME OF PROJECT AND LOCATION**

CERTIFICATE HOLDER ATTN: TOWSHIP OF PISCATAWAY 455 HOES LANE PISCATAWAY, NJ 08854	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL _____ DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES. AUTHORIZED REPRESENTATIVE
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SAMPLE

To be completed by contractor
and retained by seller.

FORM ST-13

CONTRACTOR'S EXEMPT PURCHASE CERTIFICATE

TO: _____
(Name of Seller) (Date)

(Address of Seller)

The materials, supplies, or services purchased by the undersigned are for exclusive use in erecting structures, or building on, or otherwise improving, altering or repairing real property of the exempt organization, governmental entity, or qualified housing sponsor named below and are exempt from Sales and Use Tax under N.J.S.A. 54:32B-8.22.

THIS CONTRACT COVERS WORK TO BE PERFORMED FOR: (Check one)

EXEMPT ORGANIZATION

Name of Exempt Organization _____

Address _____

Exempt Organization Number _____

NEW JERSEY OR FEDERAL GOVERNMENTAL ENTITY

Name of Governmental Entity _____

Address of Governmental Entity _____

QUALIFIED HOUSING SPONSOR

Name of Qualified Housing Sponsor _____

Address of Qualified Housing Sponsor _____

ADDRESS OR LOCATION OF CONTRACT WORK SITE: (property must be owned or leased by one of the above)

I, the undersigned contractor, hereby verify and affirm that all of the information shown on this certificate is true.

Name of Contractor as registered with the New Jersey Division of Taxation

SAMPLE

Address of Contractor

Signature of Contractor or Authorized Employee

See INSTRUCTIONS on reverse side.

- 1. Good Faith-** To act in good faith means to act in accordance with standards of honesty. In general, registered sellers who accept exemption certificates in good faith are relieved of liability for the collection and payment of sales tax on the transactions covered by the exemption certificate.

In order for good faith to be established, the following conditions must be met:

- (a) Certificate must contain no statement or entry which the seller knows is false or misleading;
- (b) Certificate must be an official form or a proper and substantive reproduction, including electronic;
- (c) Certificate must be filled out completely;
- (d) Certificate must be dated and include the purchaser's New Jersey tax identification number or, for a purchaser that is not registered in New Jersey, the Federal employer identification number or out-of-State registration number. Individual purchasers must include their driver's license number; and
- (e) Certificate or required data must be provided within 90 days of the sale.

The seller may, therefore, accept this certificate in good faith as a basis for exempting sales to the signatory purchaser and is relieved of liability even if it is determined that the purchaser improperly claimed the exemption.

- 2. Improper Certificate** - Sales transactions which are not supported by properly executed exemption certificates are deemed to be taxable retail sales. In this situation, the burden of proof that the tax was not required to be collected is upon the seller.
- 3. Correction of Certificate** - In general, sellers have 90 days after the date of sale to obtain a corrected certificate where the original certificate lacked material information required to be set forth in said certificate or where such information is incorrectly stated.
- 4. Additional Purchases by Same Purchaser** - This Certificate will serve to cover additional purchases by the same purchaser of the same general type of property or service. However, each subsequent sales slip or purchase invoice based on this Certificate must show the purchaser's name, address and Certificate of Authority Number for purpose of verification.
- 5. Retention of Certificates** - Certificates must be retained by the seller for a period of not less than four years from the date of the last sale covered by the certificate. Certificates must be in the physical possession of the seller and available for inspection on or before the 90th day following the date of the transaction to which the certificate relates.

6. Definitions:

"Contractor" - means any individual, partnership, corporation or other commercial entity engaged in any business involving erecting structures for others, or building on, or otherwise improving, altering, or repairing real property of others.

"Exempt Organization" - is any organization which holds a valid exempt organization permit issued pursuant to the provisions of N.J.S.A. 54:32B-9(b) which has issued an ST-5 Exempt Organization Certificate to the contractor.

"New Jersey or Federal Governmental Entity" - is any agency, instrumentality, political subdivision, authority, or public corporation of the governments of the United States of America or the State of New Jersey. Governmental agencies, instrumentalities or political subdivisions of states other than New Jersey do not qualify for exemption.

"Qualified Housing Sponsor" - is any person, partnership, corporation or association certified by the New Jersey Housing and Mortgage Finance Agency to have obtained financing, in addition to federal, state or local government subsidies, for a housing project from the New Jersey Housing and Mortgage Finance Agency pursuant to N.J.S.A. 55:14K-1, et seq. and has issued a New Jersey Sales and Use Tax Housing Sponsor Letter of Exemption to the contractor.

PRIVATE REPRODUCTION of Contractor's Exempt Purchase Certificates may be made without the prior permission of the Division of Taxation.

FOR MORE INFORMATION:

Call the Customer Service Center (609) 292-6400. Send an e-mail to nj.taxation@treas.state.nj.us. Write to: New Jersey Division of Taxation, Information and Publications Branch, PO Box 281, Trenton, NJ 08695-0281.

PAYROLL

(For Contractor's Optional Use; See Instructions at www.dol.gov/whd/forms/wh347instr.htm)



Rev. Dec. 2008

Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

NAME OF CONTRACTOR OR SUBCONTRACTOR ADDRESS OMB No.: 1235-0008
Expires: 01/31/2015

PAYROLL NO. FOR WEEK ENDING PROJECT AND LOCATION PROJECT OR CONTRACT NO.

(1) NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	(2) NO. OF WITHHOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	(4) DAY AND DATE OT OR ST. HOURS WORKED EACH DAY	(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS					(9) NET WAGES PAID FOR WEEK
							FICA	WITH- HOLDING TAX		OTHER	TOTAL DEDUCTIONS	
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SAMPLE

While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that it will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

SAMPLE

INSTRUCTIONS FOR COMPLETING MONTHLY PROJECT WORKFORCE REPORT- (AA202)

1. Enter the prime contractor's name, address and zip code number.
2. Enter the **CONTRACTOR ID NUMBER** assigned by the Dept. of Labor & Workforce Development Construction EEO Compliance Monitoring Program.
3. Enter the Federal Identification Number assigned to the contractor by the Internal Revenue Service, or if a Federal Employer Identification Number has not been applied for or issued, or if your business is such that it will not receive a Federal Identification Number, enter the Social Security Number of the owner or of one partner, in the case of a partnership.
4. Reporting Period - enter the beginning and ending dates of the month for the report being submitted. (i.e., 1/1/00 – 1/31/00).
5. Enter the complete name of the public agency awarding the contract. Include the date of contract award.
6. Enter the name and location of the project, including the county in which the project is located.
7. Enter the **PROJECT NUMBER** assigned by the Dept. of Labor & Workforce Development Construction EEO Compliance Monitoring Program.
8. Enter the company name(s) of the contractor(s) performing work at the construction site. List the prime contractor first with subcontractor(s) following.
9. Enter the total percent (%) of project work the contractor or subcontractor has completed, to date.
10. Identify the trades or crafts applicable to the prime contractor and each subcontractor listed in column #8. Use a single line for each trade or craft.
11. Enter the total number of employees for each contractor at each level of classification (J=Journeyworker, AP=Apprentice) and the total number of each minority group - Black, Hispanic, American Indian, Asian and Female. Note: Column A shall include Total Number of employees. Columns B-E shall also include minority females. Column F shall include both non-minority and minority females.
12. Enter the total number of minority employees for each employer at each level of classification. Note: This shall be the sum of columns B-E.
13. Enter the Total Monthly work hours for all employees in each craft at each level of classification.
(A) Enter the Total Monthly minority work hours for each craft at each level of classification (Columns B-E).
(B) Enter the Total Monthly female work hours for each craft at each level of classification (Column F).
14. (A) Enter the Total Monthly PERCENT of minority work hours for each craft at each level of classification.
(B) Enter the Total Monthly PERCENT of female work hours for each craft at each level of classification.
15. Enter the Total Cumulative work hours for each craft at each level of classification.
(A) Enter the Total Cumulative minority work hours for each craft at each level of classification.
(B) Enter the Total Cumulative female work hours for each craft at each level of classification.
16. (A) Enter the Cumulative Percent of minority work hours for each craft at each level of classification.
(B) Enter the Cumulative Percent of female work hours for each craft at each level of classification.
17. Print or type the name of the company official submitting the report; include signature, title, telephone number, and date the report is submitted.

THE CONTACTOR SHOULD RETAIN ONE COPY AND SUBMIT A COPY TO THE PUBLIC AGENCY WHICH AWARDED THE CONTRACT. ANOTHER COPY MUST BE FORWARDED TO:

New Jersey Department of Labor & Workforce Development
Construction EEO Compliance Monitoring Program
PO Box 209
Trenton, NJ 08625-0209
609 292-9550

State Of New Jersey

Department of Labor & Workforce Development
Construction EEO Compliance Monitoring Program

MONTHLY PROJECT WORKFORCE REPORT - CONSTRUCTION

For instructions on completing the form, go to: http://www.state.nj.us/treasury/contract_compliance/pdf/aa202ins.pdf		3. F ID or SS Number	
1. Name and address of Prime Contractor (NAME)	2. Contractor ID Number	4. Reporting Period	
(ADDRESS)		5. Public Agency Awarding Contract	Date of Award
(CITY)		6. Name and Location of Project	
(STATE)		County	7. Project ID Number
(ZIP CODE)			

8. CONTRACTOR NAME (LIST PRIME CONTRACTOR WITH SUBS FOLLOWING)	9. PERCENT OF WORK COMPLETED	10. TRADE OR CRAFT	CLASSIFICATION (SEE REVERSE)	11. NUMBER OF EMPLOYEES						12. TOTAL	13. WORK HOURS		14. % OF WORK HRS		15. CUM. WORK HRS		16. CUM. % OF W/H			
				A.	B.	C.	D.	E.	F.	NO. OF MIN. EMP.	TOTAL WORK HOURS	A.	B.	A.	B.	TOTAL WORK HOURS	A.	B.	A.	B.
				TOTAL	BLACK	HISPANIC	AMERICAN INDIAN	ASIAN	FEMALES			MIN. W/H	FEMALE W/H	% OF MIN. W/H	% OF FEMALE W/H	MIN. HOURS	FEMALE HOURS	% OF MIN. W/H	% OF FEM. W/H	
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SAMPLE

17. COMPLETED BY (PRINT OR TYPE)

(NAME)	(SIGNATURE)	(TITLE)

(AREA CODE)	(TELEPHONE NUMBER)	(EXT.)	(DATE)		

THE TOWNSHIP OF PISCATAWAY



LAST PAGE