

GREATER DAYTON PREMIER MANAGEMENT

Invitation for Bid

IFB# 24-05

Imperial RAD Rehabilitation

| | |
|-------------------------------------|---------------------------------------|
| Issue Date | Wednesday, July 22nd, 2024 |
| Pre-Bid Meeting | Wednesday, August 7th, 2024 @ 11am |
| Questions from Contractors Due | Monday, August 12th, 2024 at 5pm |
| Responses from GDPM to Be Posted By | Tuesday, August 13th, 2024 |
| Bids Due | Thursday, September 5th, 2024 at 10am |
| Bid Opening | Thursday, September 5th, 2024 at 11am |

Pre-Bid Meeting: Pre-bid meeting will be located at 137 and 149 Imperial Ct, Vandalia, OH 45377
on the following date: August 7th, 2024 at 11am.

Bid-Opening: The Bid-Opening will also be held virtually. Please use the following information in order to access the bid opening: _____
<https://www.gdpm.org/development-construction/construction-opportunities/>

How to Submit Bids:

Option 1: Mail to or drop off at GDPM. The envelope must be filled out exactly as follows:

GDPM

ATTN: Procurement

SEALED BID Imperial RAD Rehabilitation

400 Wayne Avenue

Dayton, Ohio 45410

Option 2: Email GDPM:

ebid@gdpm.org The subject
line must state **SEALED BID** Imperial RAD Rehabilitation

Questions about this Bid Shall be Submitted Electronically to: ebid@gdpm.org.

Greater Dayton Premier Management reserves the right to reject any or all bids, or waive any informality in the bidding. No bids shall be withdrawn for a period of ninety (90) days subsequent to the opening of bids.

All bidders shall be required to meet Affirmative Action requirements and Equal Opportunity requirements. Each bidder must insure that all employees and applicants for employment are not discriminated against because of race, color, religion, national origin, disability, age, ancestry, creed, or military status.

Greater Dayton Premier Management
Imperial RAD Rehabilitation
IFB 24-05

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The below items are part of the Bidder’s Packet. *Most of these items must either be completed or signed or both and submitted with your sealed bid. Please submit forms in order.*

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Greater Dayton Premier Management

Enhancing Neighborhoods • Strengthening Communities • Changing Lives

Imperial RAD Rehabilitation

Rehabilitation

IFB 24-05

Greater Dayton Premier Management (GDPM) is an Ohio political subdivision and an award-winning, nationally recognized public housing authority in Montgomery County, Ohio. Additionally, GDPM is Montgomery County's largest landlord and serves approximately 16,000 individuals annually.

Built in 1969, Imperial is an affordable housing development that contains two six-unit multifamily residential buildings. 137 Imperial contains three one-bedroom units and three two-bedroom units. 149 Imperial contains four one-bedroom units and two two-bedroom units. The sites are situated on a contiguous parcel and share a parking lot and common driveway. In conjunction with the rehabilitation, GDPM will be converting the Imperial development from the public housing program to the RAD Project Based Voucher Program.

GDPM seeks proposals from experienced contractors to complete a substantial rehabilitation of Imperial. As a result of this solicitation, GDPM intends to award the contract to the lowest, most responsible bidder and GDPM will give preference points to Section 3 Contractors (*see below*). GDPM's architect of record is the RDA Group, LLC. Upon contract execution, GDPM will turn over one vacant building to the contractor. Once that building is completed, GDPM will relocate the tenants from the second building into the rehabbed units in the first building and will then turn the second building over to the contractor. Therefore, construction shall take place in two phases.



I. Project Description:

<see specifications and drawings>

II. Bid Guarantee/Payment & Performance Bonds

All bids must be accompanied by a bid guarantee equivalent to 5% of the bid price; and at least one of the following:

- A. A performance bond and payment bond for 100% of the contract price;
- B. A performance bond and a payment bond, each for 50% or more of the contract price;
- C. 20% cash escrow;
- D. A 10% irrevocable letter of credit with terms acceptable to GDPM;
- E. Any other payment method acceptable to GDPM.

The bid guarantee may be a certified check, bank draft, U.S. Government Bonds at par value, or a bid bond secured by a surety company acceptable to the GDPM and authorized to do business in the State of Ohio. Certified checks and bank drafts must be made payable to the order of GDPM. The guarantees shall insure the execution of the contract and the furnishing of a method of assurance of completion by the successful bidder. Failure to submit a bid guarantee with the bid may result in the rejection of the bid. Guarantees submitted by unsuccessful bidders will be returned as soon as practicable after bid opening. For your convenience, a GDPM's Form of Bid Guarantee and Payment & Performance Bond is included in this packet.

III. Davis Bacon/Prevailing Wages:

Prevailing wage requirements of the Davis-Bacon and related Acts (DBRA) apply to laborers and mechanics on federal construction and most federally assisted construction projects in excess of \$2,000. Davis Bacon Wage Rates apply to this project. Therefore, the Contractor shall follow all requirements including, but not limited to, submitting required documentation to evidence compliance. A copy of the most recent wage determination is attached hereto. The Wage Determination in effect on the date of the bid opening will apply to this project.¹

IV. Section 3

The Section 3 program requires that recipients of certain HUD financial assistance, to the greatest extent possible, provide training, employment, contracting and other economic opportunities to low- and very low-income persons, especially recipients of government assistance for housing, and to businesses that provide economic opportunities to low- and very low-income persons. GDPM provides preferences to business that are registered as Section 3. For more information on Section 3 or how to register to become a Section 3 business please visit:

¹ Project must start within 90 days of "lock-in" date or a new Wage Determination may apply

<https://www.hud.gov/section3> or contact GDPM's Procurement Department at procurement@dmha.org.

For this solicitation, **Section 3 Contractors will receive 5% price consideration added to their final bid amount.** (A Section 3 Contractor may be awarded the Contract and not be the lowest, most responsible, responsive bidder as long as the Section 3 Contractor is within 5% of the low bid amount).

VI. Bid Preparation & Submission Requirements: To be considered, Contractor's bid packet must be fully completed. Please read all the Instructions carefully and contact GDPM if you have any questions. Prior to submission, ensure that the following forms are fully completed, signed and included in your Bid Packet:

- Invitation to Bid Form
- Bid Form
- Representations, Certifications, and Other Statements of Bidders
- Bid Guaranty
- Non-Collusive Affidavit & Full Disclosure
- Section 3 Form
- W-9

The Submission is in sealed bid form and may be mailed to **GDPM ATTN: Procurement BID Imperial Rehabilitation 400 Wayne Ave, Dayton, Ohio, 45410.** The bids may be submitted electronically to ebid@dmha.org. The subject line of the email must include the words: **SEALED BID Imperial Rehabilitation.** Electronic Bids shall be in pdf format. GDPM's bid packet is in a pdf fillable format and may be signed electronically.

VII. GDPM General Terms & Conditions for Construction Services:

Please carefully read and review the relevant terms and conditions prior to submitting your proposal. GDPM's General Terms and Conditions for Construction Services is available for review at <https://www.gdpm.org/development-construction/documents/>.

For this project, the construction contract will include GDPM's General Terms and Conditions for Construction Services. The terms and conditions are attached hereto and, by submitting a bid, Contractor agrees to the terms and conditions contained within.

VIII. Additional Information May Be Required:

If you are new to doing business with GDPM or it's been more than five years since you've worked on a GDPM related project, prior to Contract Award GDPM may require additional information including, but not necessarily limited to, references and evidence of capacity to perform. GDPM will request this information only if Contractor is selected for the award. Contractor will then have 72 hours to provide the requested information. If Contractor fails to provide the requested information, the information is inadequate or the information proves disqualifying in GDPM's discretion, GDPM will cancel the award and select the next lowest bidder for the Contract Award.

IX. Licensees & Permits:

During the term of the Contract, the Contractor shall ensure that all required licensing requirements and permitting requirements are met. The Contractor and Contractor's employees and agents shall secure and maintain in force such licenses and permits as are required by law and shall conform to all Federal, State, and local laws, ordinances, and regulations covering the Work. Failure to maintain items such as licenses or permits during the term of the Contract shall constitute a material breach thereof.

X. Reservation of Rights:

GDPM reserves the right to reject the low bid, if, in its sole discretion, that bidder is determined not to be the best-qualified bidder or to be deficient in experience, technical proficiency or unable to provide qualified manpower to meet the specifications. GDPM reserves the rights to reject and any or all bids, to waive any informality in the IFB process, or to terminate the IFB process at any time, if deemed by GDPM to be in its best interests. GDPM reserves the right not to award a contract pursuant to this IFB. GDPM reserves the right to change, modify, amend, revise or alter any of the instructions, terms, conditions, and/or specifications identified in the IFB documents within any attachment or drawing, or within any addenda issued. All addenda will be posted to GDPM's website at www.gdpm.org.

XI. Questions regarding this Solicitation:

Any procedural questions regarding this Invitation for Bid shall be submitted electronically to ebid@dmha.org. Any questions related to the scope and specifications shall be submitted electronically to housingdevelopment@dmha.org. If you'd like to receive notifications concerning this solicitation, please send a request with your name and email address to housingdevelopment@dmha.org.



INVITATION FOR BID GENERAL CONSTRUCTION SERVICES

IFB Name

Solicitation
No.

Prevailing Wage?

Proposal Due Date

Contract Term

Contractor Information

Name of Business:

Primary Contact

Street Address:

Street Address Line 2:

City:

State:

Zip Code:

Contact Number:

E-mail:*

Check at Least one
of the Following:*

Section 3

MBE/WBE

Veteran

None Apply

Are you currently
suspended,
debarred or
otherwise deemed
ineligible for a
federal contract
award?

Check box if
addendum was
reviewed (*don't check if
not applicable*)

Addendum 1

Addendum 2

Addendum 3

Addendum 4

Other

By signing below, Contractor attests that he/she has the legal power, right, and authority to make this Agreement. Contractor agrees that if selected for the Contract Award, Contractor is qualified to perform all work necessary to complete the services as specified in the Contract Documents at Contractor's quoted price. Further, Contractor has reviewed, acknowledges and accepts the provisions within the Contract Documents including, but not limited to, the Specifications, Contractor's bid, and the GDPM General Terms and Conditions for General Construction Services. Unless otherwise specified in writing by GDPM on GDPM letterhead and signed by both parties, during the term of the Contract, if any provision within the Contract Documents is in conflict with, or inconsistent with any provision with the GDPM General Terms and Conditions, the GDPM General Terms and Conditions shall prevail. Terms that conflict with and/or are inconsistent with the GDPM General Terms and Conditions are hereby revoked, rejected and void, even if the contract documents containing such terms are executed after the GDPM General Terms and Conditions, this includes, but is not limited to indemnification, warranty, payment, order of precedence, and integration provisions. By signing signing below, Contractor acknowledges that GDPM reserves it right to reject any and/or all bid or to cancel the solicitation at any time and for any reason(s). Contractor's bid shall be valid for at least 120 days subsequent to the bid opening date. GDPM Contract Documents are available at <https://www.gdpm.org/development-construction/documents/>.

Contractor Signature of Acceptance

Date

Acceptance of Proposal:

GDPM accepts your proposal and the Master Agreement containing the solicitation, General Terms and Conditions, and cost catalog are hereby in effect.

GDPM Signature of Acceptance

Date



Bid Form

IFB No. 24-05: Imperial RAD Rehabilitation

Total Bid Price (GDPM is Tax Exempt)

| | | |
|---|---------------------------|--|
| Total Bid Price of: | \$ _____ (Numeric amount) | |
| | _____ (Written amount) | |
| <i>Written amount prevails if any discrepancy exists.</i> | | |

Bid Elements – The Total Bid Price includes the following elements:

| Item | Description | Amount |
|------|---|-----------------|
| 1 | Labor | \$ |
| 2 | Materials | \$ |
| | Contractor Base Bid | \$ |
| 3 | Permit Allowance | \$10,000 |
| 4 | Building & Systems / Unforeseen Conditions Allowance: | \$75,000 |
| | Total Bid Price (Should match Total Bid Price Above) | \$ |

This project is funded in part by the U.S. Department of Housing and Urban Development and is subject to the following contractor cost limits: Profit: 6%; Overhead: 2%; General Requirements: 6% of hard construction costs.

Signature

Date



Bid Form

ALTERNATES

- A. Alternates listed on Bid Form will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work.

1.10 SCHEDULE OF ALTERNATES

- A. **ADD Alternate #1:** 149 Imperial Court: Remove existing low slope roof system complete, modify / re-frame as required for installation of new pre-engineered wood roof trusses, decking, shingle roof systems, includes extension of all vents, flues, etc. thru the new roof system, includes all related ancillary work at soffits, fascias, gutters and downspouts. Coordinate with drawings, specifications, and work scope noted.

| Item | Description | Amount |
|----------------------|-------------|-----------|
| 1 | Labor | \$ |
| 2 | Materials | \$ |
| Alternate Bid | | \$ |

- B. **ADD Alternate #2:** Provide the scheduled work scope at the Occupied Units [Unit #1] at 137 Imperial Court. Coordinate with drawings, specifications, and work scope noted.

| Item | Description | Amount |
|----------------------|-------------|-----------|
| 1 | Labor | \$ |
| 2 | Materials | \$ |
| Alternate Bid | | \$ |

- C. **ADD Alternate #3:** Provide the scheduled work scope at the Occupied Units [Unit #2, 3, 5, & 6] at 149 Imperial Court. Coordinate with drawings, specifications, and work scope noted.

| Item | Description | Amount |
|----------------------|-------------|-----------|
| 1 | Labor | \$ |
| 2 | Materials | \$ |
| Alternate Bid | | \$ |



Bid Form

- D. **ADD Alternate #4:** Remove existing solid surface countertops complete, install new plastic laminate countertops, back splashes, and end splashes at units #2, 3, 5, & 6 at 137 Imperial Court and at units #1, & 4 at 149 Imperial Court. Coordinate with drawings, specifications, and work scope noted.

| Item | Description | Amount |
|----------------------|-------------|-----------|
| 1 | Labor | \$ |
| 2 | Materials | \$ |
| Alternate Bid | | \$ |

- E. **ADD Alternate #5:** 137 Imperial Court: Remove existing shingle roof, underlayment, and flashing to the deck. Install new ice and water shield, underlayment, shingle roof system, all related flashing, terminations, etc. install new aluminum cladding over existing fascia. Remove existing, install new gutters and downspouts. Coordinate with drawings, specifications, and work scope noted.

| Item | Description | Amount |
|----------------------|-------------|-----------|
| 1 | Labor | \$ |
| 2 | Materials | \$ |
| Alternate Bid | | \$ |

- F. **ADD Alternate #6:** 137 Imperial Court: Remove existing, install new vinyl windows at existing openings. Coordinate with drawings, specifications, and work scope noted.

| Item | Description | Amount |
|----------------------|-------------|-----------|
| 1 | Labor | \$ |
| 2 | Materials | \$ |
| Alternate Bid | | \$ |

- G. **ADD Alternate #7:** Add \$25,000 to the building systems / integrity / contingency allowance in the project.

1.11 PROJECT ALLOWANCES

- A. Building & Systems / Unforeseen Conditions Allowance:



Bid Form

1. Provide in bid a draw down allowance in the amount of **\$75,000 [seventy five thousand dollars]** for Building & Systems / Unforeseen Conditions to address existing building / site / systems conditions as they interface with the project.
- B. Permit Allowance:
 1. Provide in bid a draw down allowance in the amount of **\$10,000 [ten thousand dollars]** for building permits. *Allowance shall be for actual / direct costs only, all labor, coordination, etc. shall be included in the bid amount.*

By signing below, Contractor attests that he/she has the legal power, right, and authority to make this Bid. Contractor agrees that if selected for the Contract Award, Contractor is qualified to perform all work necessary to complete the services as specified in the Contract Documents at Contractor's quoted price. Further, Contractor has reviewed, acknowledges and accepts the provisions within the Contract Documents including, but not limited to, the Specifications, Contractor's bid, and the GDPM General Terms and Conditions for General Construction Services. Unless otherwise specified in writing by GDPM on GDPM letterhead and signed by both parties, during the term of the Contract, if any provision within the Contract Documents is in conflict with, or inconsistent with any provision with the GDPM General Terms and Conditions, the GDPM General Terms and Conditions shall prevail. Terms that conflict with and/or are inconsistent with the GDPM General Terms and Conditions are hereby revoked, rejected and void, even if the contract documents containing such terms are executed after the GDPM General Terms and Conditions, this includes, but is not limited to indemnification, warranty, payment, order of precedence, and integration provisions. By signing signing below, Contractor acknowledges that GDPM reserves it right to reject any and/or all bid or to cancel the solicitation at any time and for any reason(s). Contractor's bid shall be valid for at least 120 days subsequent to the bid opening date.

Signature

Date

**U.S. Department of Housing
and Urban Development**
Office of Public and Indian Housing

**Representations, Certifications,
and Other Statements of Bidders**
Public and Indian Housing Programs

Representations, Certifications, and Other Statements of Bidders

Public and Indian Housing Programs

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1. Certificate of Independent Price Determination

(a) The bidder certifies that--

(1) The prices in this bid have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other bidder or competitor relating to (i) those prices, (ii) the intention to submit a bid, or (iii) the methods or factors used to calculate the prices offered;

(2) The prices in this bid have not been and will not be knowingly disclosed by the bidder, directly or indirectly, to any other bidder or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a competitive proposal solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the bidder to induce any other concern to submit or not to submit a bid for the purpose of restricting competition.

(b) Each signature on the bid is considered to be a certification by the signatory that the signatory--

(1) Is the person in the bidder's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

_____ [insert full name of person(s) in the bidder's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the bidder's organization];

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the bidder deletes or modifies subparagraph (a)2 above, the bidder must furnish with its bid a signed statement setting forth in detail the circumstances of the disclosure.

[] [Contracting Officer check if following paragraph is applicable]

(d) Non-collusive affidavit. (applicable to contracts for construction and equipment exceeding \$50,000)

(1) Each bidder shall execute, in the form provided by the PHA/IHA, an affidavit to the effect that he/she has not colluded with any other person, firm or corporation in regard to any bid submitted in response to this solicitation. If the successful bidder did not submit the affidavit with his/her bid, he/she must submit it within three (3) working days of bid opening. Failure to submit the affidavit by that date may render the bid nonresponsive. No contract award will be made without a properly executed affidavit.

(2) A fully executed "Non-collusive Affidavit" [] is, [] is not included with the bid.

2. Contingent Fee Representation and Agreement

(a) Definitions. As used in this provision:

"Bona fide employee" means a person, employed by a bidder and subject to the bidder's supervision and control as to time, place, and manner of performance, who neither exerts, nor proposes to exert improper influence to solicit or obtain contracts nor holds out as being able to obtain any contract(s) through improper influence.

"Improper influence" means any influence that induces or tends to induce a PHA/IHA employee or officer to give consideration or to act regarding a PHA/IHA contract on any basis other than the merits of the matter.

(b) The bidder represents and certifies as part of its bid that, except for full-time bona fide employees working solely for the bidder, the bidder:

(1) [] has, [] has not employed or retained any person or company to solicit or obtain this contract; and

(2) [] has, [] has not paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(c) If the answer to either (a)(1) or (a)(2) above is affirmative, the bidder shall make an immediate and full written disclosure to the PHA/IHA Contracting Officer.

(d) Any misrepresentation by the bidder shall give the PHA/IHA the right to (1) terminate the contract; (2) at its discretion, deduct from contract payments the amount of any commission, percentage, brokerage, or other contingent fee; or (3) take other remedy pursuant to the contract.

3. Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions (applicable to contracts exceeding \$100,000)

(a) The definitions and prohibitions contained in Section 1352 of title 31, United States Code, are hereby incorporated by reference in paragraph (b) of this certification.

(b) The bidder, by signing its bid, hereby certifies to the best of his or her knowledge and belief as of December 23, 1989 that:

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of a contract resulting from this solicitation;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the bidder shall complete and submit, with its bid, OMB standard form LLL, "Disclosure of Lobbying Activities;" and

(3) He or she will include the language of this certification in all subcontracts at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

(d) Indian tribes (except those chartered by States) and Indian organizations as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) are exempt from the requirements of this provision.

4. Organizational Conflicts of Interest Certification

The bidder certifies that to the best of its knowledge and belief and except as otherwise disclosed, he or she does not have any organizational conflict of interest which is defined as a situation in which the nature of work to be performed under this proposed contract and the bidder's organizational, financial, contractual, or other interests may, without some restriction on future activities:

- (a) Result in an unfair competitive advantage to the bidder; or,
- (b) Impair the bidder's objectivity in performing the contract work.

[] In the absence of any actual or apparent conflict, I hereby certify that to the best of my knowledge and belief, no actual or apparent conflict of interest exists with regard to my possible performance of this procurement.

5. Bidder's Certification of Eligibility

(a) By the submission of this bid, the bidder certifies that to the best of its knowledge and belief, neither it, nor any person or firm which has an interest in the bidder's firm, nor any of the bidder's subcontractors, is ineligible to:

(1) Be awarded contracts by any agency of the United States Government, HUD, or the State in which this contract is to be performed; or,

(2) Participate in HUD programs pursuant to 24 CFR Part 24.

(b) The certification in paragraph (a) above is a material representation of fact upon which reliance was placed when making award. If it is later determined that the bidder knowingly rendered an erroneous certification, the contract may be terminated for default, and the bidder may be debarred or suspended from participation in HUD programs and other Federal contract programs.

6. Minimum Bid Acceptance Period

(a) "Acceptance period," as used in this provision, means the number of calendar days available to the PHA/IHA for awarding a contract from the date specified in this solicitation for receipt of bids.

(b) This provision supersedes any language pertaining to the acceptance period that may appear elsewhere in this solicitation.

(c) The PHA/IHA requires a minimum acceptance period of [Contracting Officer insert time period] calendar days.

(d) In the space provided immediately below, bidders may specify a longer acceptance period than the PHA's/IHA's minimum requirement. The bidder allows the following acceptance period: calendar days.

(e) A bid allowing less than the PHA's/IHA's minimum acceptance period will be rejected.

(f) The bidder agrees to execute all that it has undertaken to do, in compliance with its bid, if that bid is accepted in writing within (1) the acceptance period stated in paragraph (c) above or (2) any longer acceptance period stated in paragraph (d) above.

7. Small, Minority, Women-Owned Business Concern Representation

The bidder represents and certifies as part of its bid/ offer that it --

(a) [] is, [] is not a small business concern. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding, and qualified as a small business under the criteria and size standards in 13 CFR 121.

(b) [] is, [] is not a women-owned business enterprise. "Women-owned business enterprise," as used in this provision, means a business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business.

(c) [] is, [] is not a minority business enterprise. "Minority business enterprise," as used in this provision, means a business which is at least 51 percent owned or controlled by one or more minority group members or, in the case of a publicly owned business, at least 51 percent of its voting stock is owned by one or more minority group members, and whose management and daily operations are controlled by one or more such individuals. For the purpose of this definition, minority group members are:

(Check the block applicable to you)

- [] Black Americans
- [] Asian Pacific Americans
- [] Hispanic Americans
- [] Asian Indian Americans
- [] Native Americans
- [] Hasidic Jewish Americans

8. Indian-Owned Economic Enterprise and Indian Organization Representation (applicable only if this solicitation is for a contract to be performed on a project for an Indian Housing Authority)

The bidder represents and certifies that it:

(a) [] is, [] is not an Indian-owned economic enterprise. "Economic enterprise," as used in this provision, means any commercial, industrial, or business activity established or organized for the purpose of profit, which is at least 51 percent Indian owned. "Indian," as used in this provision, means any person who is a member of any tribe, band, group, pueblo, or community which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs and any "Native" as defined in the Alaska Native Claims Settlement Act.

(b) [] is, [] is not an Indian organization. "Indian organization," as used in this provision, means the governing body of any Indian tribe or entity established or recognized by such governing body. Indian "tribe" means any Indian tribe, band, group, pueblo, or

community including Native villages and Native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs.

9. Certification of Eligibility Under the Davis-Bacon Act (applicable to construction contracts exceeding \$2,000)

(a) By the submission of this bid, the bidder certifies that neither it nor any person or firm who has an interest in the bidder's firm is a person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of the contract resulting from this solicitation shall be subcontracted to any person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(c) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C. 1001.

10. Certification of Nonsegregated Facilities (applicable to contracts exceeding \$10,000)

(a) The bidder's attention is called to the clause entitled **Equal Employment Opportunity** of the General Conditions of the Contract for Construction.

(b) "Segregated facilities," as used in this provision, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin because of habit, local custom, or otherwise.

(c) By the submission of this bid, the bidder certifies that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The bidder agrees that a breach of this certification is a violation of the Equal Employment Opportunity clause in the contract.

(d) The bidder further agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) prior to entering into subcontracts which exceed \$10,000 and are not exempt from the requirements of the Equal Employment Opportunity clause, it will:

- (1) Obtain identical certifications from the proposed subcontractors;
- (2) Retain the certifications in its files; and
- (3) Forward the following notice to the proposed subcontractors (except if the proposed subcontractors have submitted identical certifications for specific time periods):

Notice to Prospective Subcontractors of Requirement for Certifications of Nonsegregated Facilities

A Certification of Nonsegregated Facilities must be submitted before the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Employment Opportunity clause of the prime contract. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

Note: The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

11. Clean Air and Water Certification (applicable to contracts exceeding \$100,000)

The bidder certifies that:

(a) Any facility to be used in the performance of this contract [] is, [] is not listed on the Environmental Protection Agency List of Violating Facilities:

(b) The bidder will immediately notify the PHA/IHA Contracting Officer, before award, of the receipt of any communication from the Administrator, or a designee, of the Environmental Protection Agency, indicating that any facility that the bidder proposes to use for the performance of the contract is under consideration to be listed on the EPA List of Violating Facilities; and,

(c) The bidder will include a certification substantially the same as this certification, including this paragraph (c), in every nonexempt subcontract.

12. Previous Participation Certificate (applicable to construction and equipment contracts exceeding \$50,000)

(a) The bidder shall complete and submit with his/her bid the Form HUD-2530, "Previous Participation Certificate." If the successful bidder does not submit the certificate with his/her bid, he/she must submit it within three (3) working days of bid opening. Failure to submit the certificate by that date may render the bid nonresponsive. No contract award will be made without a properly executed certificate.

(b) A fully executed "Previous Participation Certificate" [] is, [] is not included with the bid.

13. Bidder's Signature

The bidder hereby certifies that the information contained in these certifications and representations is accurate, complete, and current.

(Signature and Date)

(Typed or Printed Name)

(Title)

(Company Name)

(Company Address)

Greater Dayton Premier Management Bid Guaranty

(Ohio revised Code Section 153.571)

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned _____

as **PRINCIPAL**, and _____

as **SURETIES**, are hereby held and firmly bound unto **The Dayton Metropolitan Housing Authority d/b/a Greater Dayton Premier Management (GDPM)**, as Obligee, in the penal sum of the dollar amount of the bud submitted by the Principal to GDPM on the ____ day of _____, 20__ to undertake the Project known as:

PROJECT NAME: _____

Solicitation No.: _____

The penal sum referred to herein shall be the dollar amount of the Principal's bid to GDPM, incorporating any additive or deductive alternate bids made by the Principal on the date referred to above to GDPM, which are accepted by GDPM. In no case shall the penal sum exceed the amount of _____ dollars. (If the foregoing blank is not filled in, the penal sum will be the full amount of the Principal's bid, including alternates. Alternatively, if the blank is filled in, the amount stated must not be less than the full amount of the bid including alternates, in dollars and cents. A percentage is not acceptable.) For the payment of the penal sum well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

SIGNED this _____ day of _____, 20__.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas the above-named Principal has submitted a bid for the above referenced Project.

NOW, THEREFORE, if GDPM accepts the bid of the Principal and the Principal fails to enter into a proper contract in accordance with the bid, plans, details, specifications, bills of material and all other solicitation documents; and in the event the Principal pays GDPM the difference not to exceed ten per cent of the penalty hereof between the amount specified in the bid and such larger amount for which GDPM may in good faith contract with the next lowest bidder to perform the work covered by the bid; or in the event GDPM does not award the contract to the next lowest bidder and resubmits the Project for bidding, the Principal pays to GDPM the difference not to exceed ten per cent of the penalty hereof between the amount specified in the bid, or the costs, in connection with the resubmission, of printing new contract documents, required advertising, and printing and mailing notices to prospective bidders, whichever is less, then this obligation shall be null and void, otherwise to remain in full force and effect; if GDPM accepts the bid of the Principal and the Principal within ten days after the awarding of the Contract enters into a proper Contract in accordance with the bid, plans, details, specifications, bills of material and all other solicitation documents which said Contract is made a part of this bond the same as though set forth herein;

AND FURTHER, if the said Principal shall well and faithfully do and perform the things agreed by GDPM to be done and performed according to the terms of said Contract; and shall pay all lawful claims of subcontractors, materials suppliers, and laborers, for labor performed and materials furnished in the carrying forward, performing, or completing of said Contract; we agreeing and assenting that this undertaking shall be for the benefit of any materials suppliers or laborer having a just claim, as well as for the obligee 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.

AND FURTHER, the Principal will correct or replace any defective work or materials discovered by GDPM within a period of one year from the date of acceptance of such work or material by GDPM, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

THE SAID Surety hereby stipulates and agrees that no modifications, omissions, or additions, in or to the terms of the said Contract or in the Plans and Specifications therefor shall in any wise affect the obligations of said Surety on its bond, and it does hereby waive notice of any such modifications, omissions, or additions, in or to the terms of the Contract, the Work or the Contract Documents, including, without limitation the Plans and Specifications.

< Remainder of page intentionally left blank >

PRINCIPAL:

Principal Signature

By: _____

Title: _____

SURETY:

Surety Signature

By: _____
Attorney-in-Fact

Surety Agent's Information:

Agency Name

Street

City State Zip

Telephone No.

(Attach hereto the current Power of Attorney of the person executing this bond for the Surety.)

Non-Collusive Affidavit and Full Disclosure Statement

Non-Collusive Affidavit: The undersigned party hereby certifies that this proposal/bid is genuine and not collusive or sham; that said offeror has not colluded, conspired, connived or agreed, directly or indirectly, with any offeror or person to put in a sham bid or to refrain from bidding, and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference, with any person, to fix the bid price or any other offeror, or to fix any overhead, profit or cost element of said bid price, or of that of any other offeror, or to secure any advantage against the Greater Dayton Premier Management or any person interested in the proposed contract; and that all statements in said proposal or bid are true.

Disclosure: The undersigned certifies that I, nor any member of my immediate family does not now, and has not for the preceding two years, had any interest, whatsoever, whether direct, or indirect, in GDPM or any of its members or officials including but not limited to any interest which yields or has the potential of yielding directly or indirectly a monetary or other material gain or benefit with any employees, officers and commissioners of GDPM and members of their immediate family, or any interest arising from blood or marriage or from close business association, notwithstanding whether any financial interest is involved with any employees, officers and commissioners of GDPM members of their families or employment or services rendered as a member, official or officer of GDPM.

Signature: _____

Signature: _____

Title: _____

(Company Name)

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

▶ Go to www.irs.gov/FormW9 for instructions and the latest information.

| | | |
|--|--|---|
| Print or type. See Specific Instructions on page 3. | 1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank. | |
| | 2 Business name/disregarded entity name, if different from above | |
| | 3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes. | 4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): |
| | <input type="checkbox"/> Individual/sole proprietor or single-member LLC <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____ Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner. <input type="checkbox"/> Other (see instructions) ▶ _____ | <input type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____ <i>(Applies to accounts maintained outside the U.S.)</i> |
| | 5 Address (number, street, and apt. or suite no.) See instructions. | Requester's name and address (optional) |
| | 6 City, state, and ZIP code | |
| | 7 List account number(s) here (optional) | |

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

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| Social security number | |
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Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

| | | |
|------------------|----------------------------|--------|
| Sign Here | Signature of U.S. person ▶ | Date ▶ |
|------------------|----------------------------|--------|

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting*, later, for further information.

Note: If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, *Withholding of Tax on Nonresident Aliens and Foreign Entities*).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 24% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the instructions for Part II for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code*, later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships*, earlier.

What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code*, later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note: ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or “doing business as” (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C corporation, or S corporation.** Enter the entity’s name as shown on the entity’s tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a “disregarded entity.” See Regulations section 301.7701-2(c)(2)(iii). Enter the owner’s name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner’s name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity’s name on line 2, “Business name/disregarded entity name.” If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

| IF the entity/person on line 1 is a(n) . . . | THEN check the box for . . . |
|--|---|
| • Corporation | Corporation |
| • Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes. | Individual/sole proprietor or single-member LLC |
| • LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes. | Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation) |
| • Partnership | Partnership |
| • Trust/estate | Trust/estate |

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys’ fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

- 1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)
- 2—The United States or any of its agencies or instrumentalities
- 3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities
- 5—A corporation
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission
- 8—A real estate investment trust
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940
- 10—A common trust fund operated by a bank under section 584(a)
- 11—A financial institution
- 12—A middleman known in the investment community as a nominee or custodian
- 13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

| IF the payment is for . . . | THEN the payment is exempt for . . . |
|--|---|
| Interest and dividend payments | All exempt payees except for 7 |
| Broker transactions | Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012. |
| Barter exchange transactions and patronage dividends | Exempt payees 1 through 4 |
| Payments over \$600 required to be reported and direct sales over \$5,000 ¹ | Generally, exempt payees 1 through 5 ² |
| Payments made in settlement of payment card or third party network transactions | Exempt payees 1 through 4 |

¹ See Form 1099-MISC, Miscellaneous Income, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note: You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note: See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at www.SSA.gov. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/Businesses and clicking on Employer Identification Number (EIN) under Starting a Business. Go to www.irs.gov/Forms to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to www.irs.gov/OrderForms to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note: Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983.

You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983.

You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

| For this type of account: | Give name and SSN of: |
|--|---|
| 1. Individual | The individual |
| 2. Two or more individuals (joint account) other than an account maintained by an FFI | The actual owner of the account or, if combined funds, the first individual on the account ¹ |
| 3. Two or more U.S. persons (joint account maintained by an FFI) | Each holder of the account |
| 4. Custodial account of a minor (Uniform Gift to Minors Act) | The minor ² |
| 5. a. The usual revocable savings trust (grantor is also trustee) | The grantor-trustee ¹ |
| b. So-called trust account that is not a legal or valid trust under state law | The actual owner ¹ |
| 6. Sole proprietorship or disregarded entity owned by an individual | The owner ³ |
| 7. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A)) | The grantor* |
| For this type of account: | Give name and EIN of: |
| 8. Disregarded entity not owned by an individual | The owner |
| 9. A valid trust, estate, or pension trust | Legal entity ⁴ |
| 10. Corporation or LLC electing corporate status on Form 8832 or Form 2553 | The corporation |
| 11. Association, club, religious, charitable, educational, or other tax-exempt organization | The organization |
| 12. Partnership or multi-member LLC | The partnership |
| 13. A broker or registered nominee | The broker or nominee |

| For this type of account: | Give name and EIN of: |
|---|-----------------------|
| 14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments | The public entity |
| 15. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B)) | The trust |

¹ List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

² Circle the minor's name and furnish the minor's SSN.

³ You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

⁴ List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships*, earlier.

*Note: The grantor also must provide a Form W-9 to trustee of trust.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes.

Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to phishing@irs.gov. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at spam@uce.gov or report them at www.ftc.gov/complaint. You can contact the FTC at www.ftc.gov/idtheft or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see www.IdentityTheft.gov and Pub. 5027.

Visit www.irs.gov/IdentityTheft to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.



Greater Dayton Premier Management

Enhancing Neighborhoods • Strengthening Communities • Changing Lives

Prospective Business Vendor:

Enclosed, you will find a variety of forms regarding Section 3 (Housing & Urban Development Opportunities Act of 1968, as amended). Please complete and attach the Section 3 forms with your bid submission. **Failure to submit the appropriate forms may jeopardize the proposal/bid up to and including the possibility of said proposal/bid being deemed non-responsive**

Anyone claiming to be a Section 3 Business Concern shall be required, as set forth by procedure, to provide evidence of such status. Section 3 Business Concerns claiming Section 3 Preference status must meet that status at the time the bid, quote or proposal is submitted to GDPM.

Section 3 Required Forms:

- 1) Section 3 Assurance of Compliance & Section 3 Clause
- 2) Section 3 Action Plan
- 3) Section 3 Certification for Preference
- 4) Preference Category Acknowledgement S3 Residents

If you need any assistance or help regarding Section 3, feel free to contact us. We look forward to assisting you with Section 3 implementation.

Procurement@dmha.org



Greater Dayton Premier Management Section 3 Assurance of Compliance Form

Training, Employment, and Contracting Opportunities for Section 3 Residents and Section 3 Business Concerns

- A. The project assisted under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 170u. Section 3 requires that to the *greatest extent feasible, newly created opportunities* that are generated by the awarding of this contract be given to:
- Section 3 Workers upon their qualifications. 25% or more of all labor hours worked by all workers employed with PHA financial assistance must be Section 3 workers.
 - 5% or more of all labor hours worked by all workers employed with PHA financial assistance must be Targeted Section 3 workers.
- B. Notwithstanding any other provision of this contract, the applicant shall carry out the provisions of said Section 3 and the regulations issued pursuant thereto by the Secretary set forth in 24 CFR Part 75, and all applicable rules and orders of the Secretary issued thereunder prior to the execution of this contract. The requirements of said regulations include but are not limited to development and implementation of a Section 3 Action Plan/Strategy for utilizing Section 3 Business Concerns; the making of a good faith effort, as defined by the regulation, to provide training, employment and business opportunities required by Section 3; and incorporation of the "Section 3 Clause" specified by Section 75.9 and 75.17 of the regulations in all contracts for work in connection with the project. The applicant and recipient agency, certifies and agrees that it is under no contractual or other disability which would prevent it from complying with these requirements.
- C. Compliance with the provision of Section 3, the regulations set forth in 24 CFR Part 75, and all applicable rules and orders of the Secretary issued thereunder prior to approval by the Government of the application of this contract, shall be a condition of the Federal financial assistance provided to the project, binding upon the applicant, its contractors and subcontractors, its successors, and assigns to the sanctions specified by the contract, and to such sanctions as are specified by 24 CFR Section 75.

Applicant: _____

Signature: _____

Address: _____

Date: _____

Section 3 Clause

All Section 3 covered contracts shall include the following clause (referred to as the "Section 3 Clause"):

- A. The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, [12 U.S.C. 1701u](#) (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.
- B. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 75, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 75 regulations.
- C. The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.
- D. The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 75, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 75. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 75.
- E. The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 75.9 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 75.9
- F. Noncompliance with HUD's regulations in 24 CFR part 75 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.
- G. In the event of a determination by the Executive Director or his/her designee that the Contractor is not in compliance with the section 3 clause or any rule, regulation, or report submission requirements of the GDPM, this contract may be canceled, terminated, or suspended in whole or in part, and the Contractor may be declared ineligible for further GDPM contracts for a period of one to three years.



Contractor

Section 3 Action Plan Submission

The Section 3 Action Plan is a requirement for contracting opportunities with GDPM. The Section 3 Action Plan must indicate/describe the proposed strategies for achieving the Section 3 training and/or employment goals, and subcontracting numerical goals, when and if **newly created opportunities** are generated upon awarding of contracts. **Failure to submit the Section 3 Action plan may jeopardize the proposal/bid up to and including the possibility of said proposal/bid being deemed non-responsive.**

Please review the Section 3 Action Plan information attached. **All Sections need to be completed and signed.** This information will help to assist you in formulating your Section 3 Action Plan. You will need to address each question and check the appropriate boxes in regards to how your company will strive to achieve Section 3 Compliance to the “**greatest extent feasible**”.

Please identify individual(s) responsible for planning, implementing and tracking the projects’ Section 3 training, employment and/or contracting goals:

Name(s): _____

Contact Info: _____

Title(s): _____

Section 3 Subcontracting Opportunity Strategies

Please check any and all efforts from the below mentioned categories that your company will utilize to recruit, solicit, encourage, facilitate and contract with Section 3 Business Concerns when new subcontracting opportunities are generated through the awarding of the contract. **Some of the items will be mandatory as denoted with *required*.** Your acknowledgement is still needed, so please check accordingly.

*The Section 3 Action Plan is subject to audit at anytime during the awarding of the contract through the duration of the contract by the Section 3 Compliance Coordinator. **Required***

- Commit that when subcontracting occurs, 10% of the total dollar amount subcontracted out by the company and/or by subcontractors will go to Section 3 Business Concerns. **Required**
- Contact the GDPM Section 3 Compliance Department regarding all new subcontracting opportunities. **Required**
- Provide the GDPM Section 3 Compliance Department with a monthly report listing all subcontracting opportunities. **Required**
- Advertise new contracting opportunities in community (sites) and diversity newspapers/websites.
- Maintain a file of eligible qualified Section 3 Business Concerns for future contracting opportunities.
- Incorporate into contract (after selection of bidders but prior to the execution of contracts), a negotiated provision for a specific amount of work to be contracted with Section 3 Business Concern(s) during the contract.
- Sponsor or participate in minority, women, small business expositions and or conferences in the Dayton, Ohio area to network and promote contracting opportunities with Section 3 Business Concerns.
- Outreach to business assistance agencies, minority contracting associations, community organizations, to network and promote contracting opportunities with Section 3 Business Concerns.
- Contact/Meet with Resident Associations informing them of new contracting opportunities.
- Outreach to trade/labor organizations to network and promote contracting opportunities with Section 3 Business Concerns.
- Host/Facilitate workshops geared to Section 3 Business concerns on contracting procedures and opportunities.

Other:

Note: You are required to provide opportunities to "the greatest extent feasible" in order to comply with the requirements of Section 3. In the event that you are not able to hire/train and/or contract with Section 3 Residents and/or Section 3 Business Concerns, you will be required to document why you were unable to meet the numerical goals.

Signature: _____

Date: _____



GREATER DAYTON PREMIER MANAGEMENT SECTION 3 CERTIFICATION FOR PREFERENCE

Please note that a contract with Greater Dayton Premier Management is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended **AND** to the Section 3 Action Plan submitted with the proposal for this project.

Type of Business: Corporation Partnership Sole Proprietorship Joint Venture LLC MBE WBE
(check all that apply)

Business Name: _____

Contact Person: _____ Phone: _____ Email: _____

You self-certify that your business is, documented within the last six months a Section 3 Business Concern based on one of the below eligibility criteria's. (Check the one that qualifies your business):

Category 1

51 percent or more owned and controlled by low- or very low-income persons (based on household income under HUD-income limits); **or**

Category 2

75 percent or more of the business labor hours to perform the business are performed by low-very low income persons; **or**

Category 3

51 percent owned and controlled by current residents of public housing or Section 8-assisted housing.

OR

My business does not meet the Section 3 eligibility criteria and wishes to forgo Section 3 preferences in the awarding of this contract, but understand that we are still responsible for meeting Section 3 compliance.

"I hereby certify that the information provided on this form is true and correct, and understand any falsification of any of the information could subject me to punishment under the law."

Signature _____ Date _____
Authorized Signer

Title: _____

If you would like more information or to register your business in the Section 3 program, please send an email to Procurement@dmha.org.

Section 3 is a provision of the Housing and Urban Development (HUD) Act of 1968 that helps foster local economic development, neighborhood economic improvement, and individual self-sufficiency. The Section 3 program requires that recipients of certain HUD financial assistance, to the greatest extent feasible, provide job training, employment, and contracting opportunities for low-or very- low income residents in connection with projects and activities in their neighborhoods.

Is your Bid Packet Complete?



Are the following forms completed, signed and in your Bid Packet?

- 1. Invitation for Bid Form**
- 2. Bid Form**
- 3. Representations, Certifications, and other Statements of Bidders**
- 4. Bid Guaranty & Bond Form**
- 5. Non-Collusive Affidavit & Full Disclosure Form**
- 6. Section 3 Form**
- 7. W-9**

Wage Determination

Courtesy copy

"General Decision Number: OH20240018 07/05/2024

Superseded General Decision Number: OH20230018

State: Ohio

Construction Type: Residential

Counties: Greene, Miami, Montgomery and Preble Counties in Ohio.

RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

| | |
|--|---|
| <p>If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p> | <ul style="list-style-type: none"> . Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024. |
| <p>If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p> | <ul style="list-style-type: none"> . Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024. |

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number Publication Date

0 01/05/2024
 1 04/12/2024
 2 07/05/2024

ENGI0018-027 05/01/2019

| | Rates | Fringes |
|--|----------|---------|
| POWER EQUIPMENT OPERATOR (Bulldozer)..... | \$ 37.02 | 15.20 |

ENGI0066-026 06/01/2023

| | Rates | Fringes |
|--|----------|---------|
| POWER EQUIPMENT OPERATOR Crane..... | \$ 36.92 | 24.01 |

* LAB00265-004 06/01/2024

| | Rates | Fringes |
|-----------------------------------|----------|---------|
| LABORER (Mason Tender-Brick)..... | \$ 25.90 | 18.40 |

PAIN0707-001 05/01/2019

| | Rates | Fringes |
|---------------------------------|----------|---------|
| PAINTER (Brush and Roller)..... | \$ 23.91 | 16.55 |

PLAS0109-006 05/01/2018

| | Rates | Fringes |
|-----------------------------------|----------|---------|
| CEMENT MASON/CONCRETE FINISHER... | \$ 28.86 | 17.11 |

* SHEE0033-016 06/01/2024

| | Rates | Fringes |
|--|----------|---------|
| SHEET METAL WORKER (HVAC Duct Installation Only)..... | \$ 22.20 | 11.86 |

* SUOH2012-020 07/20/2012

| | Rates | Fringes |
|---|-------------|---------|
| BRICKLAYER..... | \$ 28.40 | 11.78 |
| CARPENTER..... | \$ 20.19 | 6.51 |
| ELECTRICIAN..... | \$ 19.68 | 9.46 |
| LABORER: Common or General..... | \$ 21.50 | 5.23 |
| OPERATOR: Backhoe/Excavator..... | \$ 25.25 | 9.38 |
| OPERATOR: Bobcat/Skid Steer/Skid Loader..... | \$ 29.49 | 11.16 |
| PLUMBER..... | \$ 20.00 | 5.52 |
| ROOFER..... | \$ 16.85 ** | 3.83 |

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

 ** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

 The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1,

2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

State Adopted Rate Identifiers

Classifications listed under the ""SA"" identifier indicate that the prevailing wage rate set by a state (or local) government was adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 01/03/2024 reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination

- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
 Wage and Hour Division
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION"

GDPM General Terms and Conditions



General Terms & Conditions for Construction Services

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1. ARTICLE I: CONTRACTOR RESPONSIBILITIES

- 1.1.** The Contractor shall perform the Work in a workmanlike manner, consistent with the standards of skill and care exercised by entities licensed to perform (where required by Ohio and/or Federal Law) and regularly performing comparable work in the same or similar locality under the same or similar circumstances.
- 1.2.** The Contractor shall perform the Work in accordance with the Contract Documents.
- 1.3.** The Contractor shall furnish all labor, services, materials, tools, equipment, superintendence, and transportation necessary for performance of the Work. Contractor shall also furnish all necessary water, heat, light, and power not made available to the Contractor by GDPM.
- 1.4.** The Contractor shall perform on the site and with its own organization, work equivalent to at least twelve percent (12%) of the total amount of work to be performed under the order. This percentage may reduce by a supplemental agreement to this Construction Contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be the advantage of GDPM.
- 1.5.** At all times during performance of this Construction Contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the work site a competent superintendent whose qualifications and experience are satisfactory to GDPM and has authority to act on behalf of the Contractor. Further, Contractor must remain on-site or be immediately available if contacted.
- 1.6.** The Contractor shall be responsible for all damages, including, but not limited to, damages to persons or property that occur as a result of the Contractor's breach of this Construction Contract, fault or negligence and shall take proper safety and health precautions to protect the Work, the workers, the public, and the property of others.
- 1.7.** The Contractor shall also be responsible for all storage, protection and cleaning of materials delivered and Work performed on the Project, until Substantial Completion and acceptance of the entire Project, except for any completed unit of Work which may have not been accepted under the Construction Contract.
- 1.8.** The Contractor shall lay out the work from base lines and bench marks indicated in the drawings and be responsible for all lines, levels, and measurements of all work executed under the Contract Documents.
 - 1.8.1.** The Contractor shall verify the lines, bench marks, figures and dimensions indicated in the Contract Documents before laying out the work and will be held responsible for any error(s) resulting from its failure to do so.
- 1.9.** The Contractor shall confine all operations (including storage of materials) on GDPM's premises to areas authorized or approved by GDPM.
- 1.10.** The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. At no time shall Contractor use GDPM trash receptacles.
 - 1.10.1.** After completing the Work and before final inspection, the Contractor shall:
 - Remove from the premises all scaffolding, equipment, tools, materials (including rejected materials) that are not the property of GDPM and rubbish caused by its work;
 - Leave the work area in a clean, neat, and orderly condition satisfactory to GDPM;

- Perform all specified tests; and
- Deliver the installation in complete and operating condition.

1.11. The Contractor must perform the Work so as to not interfere with, disturb, hinder, or delay the services of separate consultants or the work of separate contractors.

1.11.1. The intent of this Section, 1.11, is to benefit any separate consultants and separate contractors and to demonstrate that the separate consultants or separate contractors are intended third-party beneficiaries of Contractor's obligations under the Contract.

1.11.2. The Contractor must cooperate and coordinate fully with all separate consultants and separate contractors and must freely share all of the Contractor's Project-related information with them to facilitate the timely and proper performance of the Work and of the services and work of the separate consultants and separate contractors.

1.11.3. The Contractor must afford every separate consultant and separate Contractor proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of their services and work.

1.11.4. If the Contractor damages the property or work of any separate consultant or separate Contractor caused by Contractor or by failure to perform the Work with due diligence, delays, interferes with, hinders, or disrupts the services of any separate consultant or separate Contractor who suffers additional expense and damage as a result, the Contractor is responsible for that damage, injury, or expense.

1.12. The Contractor shall remove any snow and ice as may be required for reasonably safe access to the Project, including, without limitation, building entries, driveways, parking lots, and sidewalks.

1.13. If the proper execution or result of any part of the Work depends upon work performed or services provided by GDPM, a separate consultant, or a separate Contractor, the Contractor must inspect that other work and appropriate instruments of service, and promptly report to GDPM in writing any defects or deficiencies in that other work or services that render it unavailable or unsuitable for the proper execution and results of the Work.

1.13.1. The Contractor's failure to inspect and promptly report any issues in writing will constitute an acceptance of the other work and services as fit and proper for integration with the Contractor's Work unless in the opinion of GDPM, the defects and deficiencies in the other work and appropriate instruments of service were not reasonably discoverable at the time of the Contractor's inspection.

1.14. The Contractor shall not delay the Work on account of any claim, dispute, or action between the Contractor and GDPM or the Contractor, a Separate Consultant or Separate Contractor.

1.15. The Contractor shall develop and keep a Construction Progress Schedule and prepare and keep current a schedule of submittals that is coordinated with the Construction Progress Schedule for GDPM's acceptance.

1.16. The Project's regular work hours shall be between 8:00 am and 5:00 pm, or as determined and approved by GDPM.

1.16.1. The Contractor may modify the regular work hours only if Contractor receives written authorization from GDPM's Project Manager and/or Construction Contract Administrator.

- 1.17.** The Contractor shall coordinate the Work with the activities and responsibilities of the Project's architect or engineer ("A/E"), GDPM and Contractor's surety to achieve the Substantial Completion date and Contract Completion.
- 1.18.** The Contractor shall keep a daily log containing a record of weather, number of workers on Site for the Contractor, identification of equipment, Work accomplished, problems encountered and other similar relevant data. Such information must be made available to GDPM immediately upon request.
- 1.19.** The Contractor hereby represents and agrees that, prior to submitting its bid or quote to perform the Work on the Project, it has had a competent person carefully and diligently review each part of the Contract Documents, including the Divisions of the Specifications and parts of the Drawings that are not directly applicable to the Work.
- 1.19.1.** Contractor further represents and agrees that, based upon its careful and diligent review of the Contract Documents, that it is not aware of any conflicts, inconsistencies, errors, or omissions in the Contract Documents for which it has not notified GDPM or the A/E.
- 1.19.2.** If there are any such conflicts, inconsistencies, errors, or omissions in the Contract Documents, the Contractor shall notify GDPM of such in writing and Contractor shall:
- Provide the labor, equipment, or materials of the better quality or greater quantity; and/or
 - Comply with the more stringent requirements.
- 1.19.3.** The Contractor will not be entitled to any additional compensation for any conflicts, inconsistencies, errors, or omissions that would have been discovered by such careful and diligent review.
- 1.20.** The Contractor hereby represents and agrees that the Project is a public project involving public funds.
- 1.20.1.** The Contractor further understands that GDPM expects and requires that each Contractor adhere to the highest ethical and performance standards.
- 1.20.2.** Accordingly, Contractor hereby pledges and agrees that:
- It will act at all times with absolute integrity and truthfulness in its dealings with GDPM and the A/E;
 - It will use its best efforts to cooperate with GDPM and the A/E and all other contractors and consultants on the Project and at all times will act with professionalism and dignity in its dealings with GDPM, the A/E, and other contractors;
 - It will assign only competent supervisors and workers to the Project, each of whom is fully qualified to perform the tasks that are assigned to him/her; and
 - It has read, understands and will comply with the terms of the Contract Documents.
- 1.21.** Emergency
- 1.21.1.** In the event of an emergency affecting the safety of the Project, other property, or individuals, the Contractor, without special instructions or authorization, shall act to prevent the threatened damage, injury, or loss.

1.21.2. If the Contractor believes that it is entitled to an adjustment of the Contract Sum or Contract Times, or both, on account of its actions in response to any emergency, the Contractor may request a Change Order by giving written notice no later than 48-hours after the emergency.

1.22. The Contractor's responsibilities will terminate when all work has been completed, the final inspection made, and the Work accepted by the Contracting Officer. The Contractor will then be released from further obligation except as required by the warranties specified elsewhere in the contract.

2. ARTICLE II: HOUSING AUTHORITY RIGHTS AND RESPONSIBILITIES

2.1. GDPM shall designate a Project Manager and/or Construction Contract Administrator for the Project.

2.2. GDPM shall have access to the Work and Site at all times, whether the Project is in preparation or progress.

2.3. GDPM is not responsible for construction means, methods, manners, techniques, sequences, procedures, or for safety precautions and programs in connection with the Work, or for the Contractor's failure to carry out the Work in conformity with the Contract Documents.

2.4. Upon the date indicated in the Notice to Proceed, or other document provided by GDPM that authorizes Contractor to commence Work, GDPM shall provide the Site to the Contractor in a condition to permit the Contractor to perform the Work.

2.5. If the Site provided by GDPM is not in a condition to permit the Contractor to perform the Work, Contractor shall notify, in writing, GDPM's Project Manager and/or Construction Contract Administrator within one working day hours of the Notice to Proceed, or other document as applicable, and identify the conditions which are preventing Contractor from performing the Work.

3. ARTICLE III: A/E'S DUTY, RESPONSIBILITY AND AUTHORITY

3.1. The A/E for this Contract and any successor shall be designated in writing by GDPM.

3.2. The A/E's duties and responsibilities may include, but shall not be limited to:

3.2.1. Attend and conduct the Construction Progress Meetings.

3.2.2. Making periodic visits to the work site and on the basis of his/her on-site inspections, issuing written reports to GDPM which shall include all observed deficiencies.

3.2.2.1. The A/E shall electronically send a copy of the report to GDPM and to the Contractor's designated representative at the site.

3.2.2.2. Said report shall include a summary of up-to-date project completion information and summary of any changes to the Work to date.

3.2.3. Making modifications in drawings and technical specifications and assisting the Contracting Officer in the preparation of change orders and other contract modifications for issuance to the Contracting Officer.

3.2.4. The A/E may authorize minor changes or alterations in the Work that are consistent with the intent of the Contract Documents and do not involve adjustment of the Contract Sum or Contract Time, or both.

3.2.4.1. The A/E has no authority to authorize the Contractor to perform additional or extra Work for which the Contractor may seek adjustment of the Contract Sum or the Contract Time, or both.

3.2.5. Reviewing and making recommendations with respect to:

- The Contractor's Construction Progress Schedules;
- The Contractor's shop and detailed drawings; and
- The Contractor's price breakdown and progress payment estimates.

3.2.6. Assisting in inspections, signing Certificates of Completion, and making recommendations with respect to acceptance of work completed under the contract; and

3.2.7. Approve or certify applicable forms required under the Contract Documents.

3.3. Site Visits and Observation

3.3.1. The A/E shall notify, advise, and consult with GDPM and protect GDPM against Defective Work throughout completion of the Project, which includes the Correction Period, and for such time period GDPM may extend A/E's services.

3.3.1.1. The A/E should designate a field representative, subject to GDPM's approval, to attend meetings, to observe and check the progress and quality of the Work, and to take action as necessary or appropriate to achieve conformity with the Contract Documents.

3.3.1.2. The A/E shall have its consultants attend to the Project at intervals required by its agreement or required by GDPM.

3.3.2. The A/E is authorized to disapprove or reject Defective Work. The A/E shall immediately notify GDPM, in writing, any time the A/E disapproves or rejects an item of Work.

3.3.3. The A/E is not responsible for construction means, methods, manners, techniques, sequences, procedures, or for work safety precautions and programs in connection with the Work, or for the Contractor's failure to carry out the Work in conformity with the Contract Documents.

3.4. Testing and Inspection Services

3.4.1. Unless otherwise specified in the Contract Documents, the A/E shall apply for, secure, and pay for the costs of structural testing and special inspections under the Ohio Building Code; testing including geotechnical analysis, environmental testing and analysis, concrete, masonry, structural steel, reinforcing steel, welding, bolts, steel connections, HVAC systems and controls, plumbing and piping, air, and water balancing and testing, or other testing, or approvals required by Applicable Law.

3.5. A/E Review and Approval of Work

3.5.1. Any information the Contractor submits to the A/E is for the sole purpose of determining whether the Work and information is generally consistent with the Contract's intent, and will not relieve the Contractor of its sole responsibility for the performance, preparation, completeness, and accuracy of the Work and information.

3.5.2. By reviewing information submitted by the Contractor, A/E is not taking on responsibility for construction means, methods, manners, techniques, sequences, procedures, or for work safety precautions and programs in connection with the Work.

3.6. Limitation of A/E's Authority

- 3.6.1.** The A/E shall serve as the technical representative for GDPM with respect to architectural, engineering, and design matters related to the Work performed under the Contract.
- 3.6.2.** Subject to the Contractor's responsibility under ARTICLE I, the A/E may provide direction on Contract performance.
- 3.6.3.** Such direction shall be within the scope of the Contract and may not be of a nature which:
- Institutes additional work outside of the scope of the Contract;
 - Constitutes a change (except as provided for in 3.2.4);
 - Causes an increase or decrease in the cost of the Contract;
 - Alters the Construction Progress Schedule;
 - Changes any of the other express terms or conditions of the Contract;
 - Accepts any defective or non-conforming services, Work, or vendor-furnished items;
 - Makes any settlements on GDPM's behalf;
 - Assumes any responsibilities of the Contractor or Subcontractors; or
 - Binds GDPM to any authorizations under, modifications of, or amendments to the Contract Documents other than as expressly provided herein.
- 3.7.** The Contractor acknowledges and agrees that GDPM's legal counsel may from time to time provide legal services to the Project and that in doing so may communicate with the A/E, as GDPM's representative on the Project.
- 3.7.1.** The Contractor agrees that such communications will be privileged communications and, if there is a Claim contemplated or pending, any written communications will be protected by the attorney client privilege and considered confidential work product.

4. ARTICLE IV: PRECONSTRUCTION ACTIVITIES

4.1. Pre-construction Conference

- 4.1.1.** Within ten calendar days, unless otherwise indicated by GDPM, of Contract execution, and prior to the commencement of work, the Contractor shall attend a preconstruction conference with GDPM representatives, GDPM's A/E, and other interested parties convened by GDPM.
- 4.1.1.1.** The conference will serve to acquaint the participants with the general plan of the construction operation and all other requirements of the Contract.
- 4.1.1.2.** The A/E will be responsible for taking minutes and distributing said minutes within seventy-two (72) hours of completion of the meeting.
- 4.1.1.3.** GDPM will provide the A/E and Contractor with the date, time, and place of the conference. Generally, the information will be contained in the issued Notice to Proceed.

4.2. Certificate of Insurance

4.2.1. Before commencing work, the Contractor and each Subcontractor shall furnish GDPM with certificates of insurance showing the minimum insurance coverage is in force and will insure all operations under the Contract.

4.3. Building and Trade Permits, Licenses and Codes

4.3.1. The Contractor shall give all notices and comply with all applicable laws, ordinances, codes, rules, and regulations.

4.3.1.1. Notwithstanding the requirement of the Contractor to comply with the drawings and specifications in the Contract, all Work installed shall comply with all applicable laws, ordinances, codes, rules, and regulations, as may be amended by any waivers.

4.3.1.2. Before installing the Work, the Contractor shall examine all drawings and the specifications for compliance with applicable laws, ordinances, codes, rules, and regulations bearing on the Work and shall immediately report, in writing, any discrepancy it may discover to GDPM's Project Manager and/or Construction Contract Administrator and the A/E. (HUD term had 'contracting officer')

4.3.1.3. If required by any governing jurisdiction, GDPM will modify the Contract by change order so that the Work on the Project will conform to the applicable laws, ordinances, codes, rules, and regulations.

4.3.1.4. If the Contractor installs any Work that does not comply with all applicable laws, ordinances, codes, rules, and regulations before providing notice hereunder to GDPM and receiving direction from GDPM, Contractor shall be responsible for all costs resulting from any removal, demolishing, and disposing of any Work that must be replaced or repaired.

4.3.2. Notwithstanding the provisions below, the Contractor shall secure and pay for all permits, fees, and licenses necessary for the proper execution and completion of Work.

4.3.2.1. Where GDPM can arrange for the issuance of all or part of these permits, fees, and licenses, without cost to the Contractor, the Contract amount shall be reduced accordingly.

4.4. Plan Approval and Permits

4.4.1. The A/E shall facilitate the required structural, plumbing, HVAC, and electrical plan reviews during the design phase, as required by the governing jurisdiction for securing an overall building permit to start construction.

4.4.2. The Contractor shall schedule and attend all intermediate and final inspections required for any permit applicable to the Work or any governing jurisdiction.

4.4.3. If applicable, the Contractor shall schedule with the State Fire Marshal or local fire authority for the life safety inspection for occupancy permits.

4.4.4. The Contractor shall give the A/E and GDPM reasonable notice of the dates and times for any inspections.

4.4.4.1. The Contractor shall pay for all initial inspections and re-inspections required as a result of Contractor's failure to receive approval for its Work.

4.5. Trade Permits and Licenses

4.5.1. The Contractor shall secure and pay the fees for any permit, inspection, or license applicable to the Contractor's particular trade.

4.6. Local Permits:

4.6.1. The Contractor shall secure and pay the fees for any permits, inspections, licenses, capacity charges, or tap fees required by local authorities having jurisdiction over the Work.

4.6.2. The Contractor shall give the A/E and GDPM reasonable notice of the date(s) arranged for inspections.

4.7. National Pollutant Discharge Elimination System (NPDES) Storm Water General Permit:

4.7.1. If applicable, the A/E shall secure the NPDES general permit by submitting a Notice of Intent (NOI) application form to the Ohio Environmental Protection Agency at least 45 days prior to the start of construction.

4.7.2. The Contractor shall be a co-permittee, if required under Applicable Law.

4.7.3. The A/E shall prepare and certify the storm water pollution prevention plan to provide sedimentation and erosion controls at the Work.

4.8. The A/E shall prepare and process the required Notice of Termination (NOT) prior to Contract Completion.

5. ARTICLE V: CONSTRUCTION REQUIREMENTS

5.1. Commencement of Work on Site

5.1.1. Unless GDPM agrees otherwise in writing, the Construction Stage will commence with GDPM issuing the Notice to Proceed and will terminate upon Substantial Completion, Certificate of Occupancy issuance, and the Completion of all punch list items delivered to Contractor by GDPM which must occur no later than 10 days after date of Substantial Completion.

5.1.2. Notice to Proceed:

5.1.2.1. The Contractor shall begin work upon the date indicated in a written Notice to Proceed from GDPM or its designee.

5.1.2.2. The Contractor shall not begin work prior to receiving such notice.

5.1.2.3. If GDPM Board of Commissioners' approval is required, the Notice to Proceed shall be issued within 180 days of GDPM Board of Commissioner's approval.

5.1.2.4. When applicable and if the Notice to Proceed is not issued within 180 days of GDPM Board of Commissioners' approval, GDPM may, in its sole discretion, terminate the Contract without recourse from the Contractor.¹

5.2. Environmental Controls

5.2.1. The Contractor shall protect its Work and materials from damage from water, moisture, and other weather, including damage from water run-off from other property or structures, and damage from heat, cold, and humidity.

5.2.2. Contractor is not authorized to use permanent HVAC system without express written authorization from GDPM

5.2.3. Until the permanent HVAC system is complete and available for use:

5.2.3.1. The Contractor shall make arrangements and pay for installation and maintenance of temporary heating and ventilating systems; and

5.2.3.2. The Contractor shall pay the costs incurred in operating the temporary heating and ventilating systems.

5.2.4. When the permanent HVAC system is complete and available for use:

5.2.4.1. The Contractor shall start up and maintain operation of the permanent HVAC system, including filters, and promptly remove temporary heating and ventilating systems.

5.2.4.2. If the Project consists entirely of new construction, the Contractor shall pay the costs of energy consumed in operating the permanent HVAC system until Substantial Completion.

5.2.4.3. From the date of Substantial Completion, GDPM shall pay the cost of operating the permanent HVAC system for the occupied portion of the Project.

5.2.4.4. Use of the permanent HVAC system during construction shall not change, modify or reduce the Contractor's warranty and service obligations under the Contract Documents.

5.3. Construction Procedures

5.3.1. The Contractor is solely responsible for and has control over all construction means, methods, techniques, sequences, and procedures, for safety precautions and programs in connection with the Work, and for coordinating all portions of the Work.

5.3.2. If the Contract Documents give instructions that affect construction means, methods, manners, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety of them and, except as expressly stated herein, be fully and solely responsible for the jobsite safety of the means, manners, methods, techniques, sequences, or procedures.

5.3.3. If the Contractor determines that the means, methods, manners, techniques, sequences, or procedures specified in the Contract Documents may not be safe, the Contractor shall give timely written notice to GDPM.

5.3.4. The Contractor shall not proceed with that portion of the Work without further written instructions from GDPM.

5.3.5. Additional Contractor Responsibilities

5.3.5.1. The Contractor shall lay out and coordinate all lines, levels, elevations, and measurements for all of the Work, coordinate and verify existing conditions, and notify the A/E and GDPM of discrepancies and conflicts before proceeding with installation or excavation.

5.3.5.2. The Contractor shall perform all cutting, fitting, or patching required for the Work and shall not endanger the Project by cutting, excavating, or otherwise altering the Work or any part of it.

5.3.5.3. If the Design requires sleeves for completing the specified Work, the Contractor and all Subcontractors shall coordinate to furnish and install the sleeves.

- The Contractors are responsible for the exact location of and size of all holes and openings required to be formed or built for the Work.

5.3.5.4. The Contractor's patching shall match and blend with the existing adjacent surfaces.

5.3.5.5. In addition to the items herein, The Contractor is responsible for all items in Article I, Contractor's Responsibilities.

5.4. Utilities

5.4.1. Availability and Use of Utilities

5.4.1.1. If GDPM has existing access to utilities, GDPM shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and service as specified herein so long as the utility use does not interfere with GDPM's operations.

5.4.1.2. Unless otherwise provided in the Contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to GDPM or where the utility is produced by GDPM, at reasonable rates as determined by GDPM.

5.4.1.3. The Contractor shall ~~carefully conserve any utilities furnished~~ provided by GDPM without charge.

5.4.1.4. The Contractor, at its expense and in a manner satisfactory to GDPM, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges.

5.4.1.5. Before final acceptance of the Work by GDPM, the Contractor shall remove all the temporary connections, distribution lines, meters, appurtenances and associated paraphernalia.

5.4.2. The Contractor shall comply with the Ohio Revised Code and any local rules, regulations and ordinances concerning utilities.

5.4.2.1. In addition, before starting excavation or trenching, the Contractor shall determine the location of any underground utilities and notify any public authority or utility having jurisdiction over the Project and secure any required approval.

5.4.3. The Contractor shall give at least 2 business days in advance of excavation to GDPM of underground utilities registered with the Ohio Underground Utility Protection Services ("OUPS").

5.4.3.1. The Contractor is required, within 48 hours' notice, to stake, mark, or otherwise designate the location for its utilities in the construction area together with its approximate depth.

5.4.3.2. In the event Contractor damages a utility line, the Contractor shall immediately notify the appropriate utility company or government official, the A/E and GDPM of the problem.

5.4.4. Water and Drainage

5.4.4.1. The Contractor shall provide water necessary for the Work until the permanent plumbing system is available for use.

5.4.4.2. The Contractor shall provide temporary drainage and dewatering necessary for the Work and shall employ pumps, trenches, drains, sumps, and other necessary elements required to provide satisfactory working conditions for the protection, execution, and completion of the Project.

5.4.4.3. The Contractor shall make arrangements and pay for installation and maintenance of temporary plumbing systems until the permanent plumbing system is available for use.

5.4.4.4. When the permanent plumbing system is complete and available for use:

- The Contractor shall start up and maintain operation of the permanent plumbing systems, and make arrangements and pay for removal of temporary plumbing systems.
- If the Project consists entirely of new construction, the Contractor shall pay the costs of water consumed and sewage charges until Substantial Completion.
- If the Project is a renovation of an existing building or structure, addition(s) to an existing building or structure, or any combination of new construction and renovation work that does not allow separate metering of utilities, GDPM shall pay the costs of water consumed and sewage charges.
- If separate metering of utilities is available, the Contractor and GDPM will pay the costs of their respective use.

5.4.4.5. After the date of Substantial Completion, GDPM shall pay the costs of water consumed and sewage charges for the occupied portion of the Project.

5.4.4.6. Use of the permanent plumbing system during construction shall not change, modify, or reduce the Contractor's warranty and service obligations under the Contract Documents.

5.4.5. Electric Service

5.4.5.1. The Contractor shall provide temporary light and power; pay the charges for temporary electric service, installation, and removal if required.

5.4.5.2. If the Project consists entirely of new construction, the Contractor shall pay the cost of energy consumed until Substantial Completion.

5.4.5.3. If the Project is a renovation of an existing building or structure, addition(s) to an existing building or structure, or any combination of new construction and renovation work that does not allow separate metering of utilities, GDPM shall pay the cost of energy consumed. GDPM will charge Contractor the cost of the energy consumed in accordance with 5.4.6.

5.4.5.4. If separate metering of utilities is available, the Contractor and GDPM will pay the costs of their respective use.

5.4.5.5. From the date of Substantial Completion, GDPM shall pay the cost of energy consumed for the occupied portions of the Project.

5.4.5.6. Use of the permanent electrical system during construction shall not change, modify, or reduce the Contractor's warranty and services obligations under the Contract Documents.

5.4.6. Payment of Utility Services

- 5.4.6.1. Unless otherwise expressly stated in the Contract Documents, Contractor shall reimburse GDPM the cost of utility services during the Construction Period.
- 5.4.6.2. Unless otherwise expressly stated in the Contract Documents, payment for reimbursement of GDPM for the cost of utility services during the Contract Period shall be made directly to GDPM.
- 5.4.6.3. If payment is not received, GDPM may deduct the cost of utility services from payments otherwise due to the Contractor.
- 5.4.6.4. If the payments otherwise due to the Contractor are not sufficient to fully reimburse GDPM, either Contractor or its surety shall make whatever payments are necessary to fully reimburse GDPM.
- 5.4.6.5. **Process for Payment:** Reimbursement from the contractor shall be performed on a quarterly basis unless a more frequent payment schedule is agreed upon between GDPM and the contractor prior to start of the project.

5.5. Hoisting Facilities

- 5.5.1. The Contractor shall erect and maintain any hoisting equipment required for its Work.
- 5.5.2. If the electric service requirements of hoisting facilities differ from that available at the Site, the Contractor shall provide and pay for all necessary connections.
- 5.5.3. If a permanent elevator is identified in the Contract Documents to be used for hoisting materials or personnel during construction, the Contractor shall furnish an extended warranty and service contract in effect until the expiration of the Correction Period.

5.6. Interruption of Existing Services

- 5.6.1. Whenever it becomes necessary to interrupt existing services in use by GDPM or its tenants, including, but not limited to, sewer, water, gas, steam lines, electric, telephone, Wi-Fi, and cable service, the Contractor shall continue the associated Work on a non-stop 24-hour per day basis until that Work is completed and the service restored, or perform the associated Work at an alternate time as required by and in coordination with GDPM.
- 5.6.2. Before beginning that Work, the Contractor shall apply in writing to, and receive approval in writing from GDPM to establish a time when interruption of the service will cause a minimum of interference with the activities of GDPM and its tenants.

5.7. Construction Supervision

- 5.7.1. Unless waived by GDPM in writing, the Contractor shall provide continuous supervision at the Site through a competent project manager or superintendent when any Work is being performed.
- 5.7.2. The Contractor's project manager and superintendent shall each have responsibility and authority to act on behalf of the Contractor.
 - 5.7.2.1. All communication to the Contractor's project manager and superintendent shall be binding as if given directly by the Contractor.
- 5.7.3. The Contractor shall submit an outline of the qualifications and experience of the Contractor's proposed project manager and superintendent, including references, to GDPM no later than 2 days after request from GDPM.

- 5.7.3.1.** The Contractor shall submit an outline of the qualifications and experience of the Subcontractor's proposed project manager and proposed superintendent, including references, to GDPM no later than 2 days after GDPM's request.
- 5.7.3.2.** GDPM may reject the Contractor or Subcontractor's proposed project manager and/or proposed superintendent.
- 5.7.3.2.1.** If GDPM does not notify the Contractor of the rejection within 30 days after receiving the required information, it shall then indicate that GDPM does not have an objection, but does not affect GDPM's rights under the Contract Documents or any other provision relative to the project manager or superintendent.
- 5.7.3.3.** If GDPM rejects the Contractor or Subcontractor's proposed project manager or proposed superintendent, the Contractor shall replace, or cause the Subcontractor to replace the project manager or superintendent (as appropriate) with someone acceptable to GDPM at no additional cost.
- 5.7.4.** If GDPM does not object the proposed project manager or superintendent, the Contractor and its Subcontractor shall not replace their respective project managers and superintendents without prior written approval of GDPM.

5.8. Construction Progress Schedule

- 5.8.1.** The Contractor shall, no later than seven days of the issuance of the Notice to Proceed or another period of time determined by GDPM, prepare and electronically submit to GDPM, for approval viable schedule showing the order in which the Contractor proposes to perform the Work, the dates on which the Contractor contemplates starting and completing the several salient features of the Work (including acquiring labor, materials, and equipment).
- 5.8.2.** The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period.
- 5.8.3.** The Chart must be in a Critical Path Method (CPM) format.
- 5.8.4.** If the Contractor fails to submit a schedule within the time prescribed, GDPM may withhold approval of progress payments or take other remedies under the Contract until Contractor submits the required schedule.
- 5.8.5.** The Contractor shall monitor the Work for conformance with the Construction Progress Schedule and shall initiate revisions as required herein.
- 5.8.6.** The Contractor shall enter the actual progress on the chart as required by GDPM, and immediately provide electronic copies of the annotated schedule to GDPM.
- 5.8.6.1.** If GDPM determines, upon the basis of inspection conducted, herein that the Contractor is not meeting the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by GDPM, without additional cost to GDPM.
- 5.8.6.2.** In this circumstance, GDPM may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as GDPM deems necessary to demonstrate how the approved rate of progress will be regained.

5.8.7. Failure of the Contractor to comply with the requirements of GDPM shall be grounds for a determination by GDPM that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the Contract.

5.8.7.1. Upon making this determination, GDPM may terminate the Contractor's right to proceed with the work, or any separable part of it.

5.8.8. Unless otherwise agreed to in writing, The Contractor shall develop the Construction Progress Schedule using commercially available, personal computer software acceptable to GDPM and shall submit all baseline and updated schedules to GDPM in the schedule's native format.

5.8.9. This submission shall be in electronic format.

5.8.10. The Construction Progress Schedule shall not exceed the time limits under the Contract Documents. Further, the Progress Schedule shall provide for reasonable, efficient, and economical execution of the Project and shall relate to the entire project to the extent required by the Contract Documents.

5.8.10.1. In the event that a Construction Progress Schedule submitted by Contractor shows a completion date that extends beyond the Contract Time permitted to Contractor in the Contract Documents, such Construction Progress Schedule shall not be deemed to modify the Contract Time permitted in the Contract Documents.

5.8.10.2. The Contractor shall use the Construction Progress Schedule to plan, organize, and execute the Project, record and report actual performance and progress, and show how it plans to coordinate and complete all remaining work by contract completion within applicable milestones.

- The Project participants shall use the Construction Progress Schedule as a tool for scheduling and reporting sequences and/or the progress of the Work.
- The Contractor shall provide a clear graphics legend and other data including without limitation, milestone dates, constraints, and other items required by the Project and GDPM.
- Each submission shall show GDPM's contract number and project name.

5.8.11. The Contractor shall provide the following in each schedule:

5.8.11.1. Activity identification and description of each activity broken down to a maximum duration that is appropriate for the activity;

5.8.11.2. Responsibility of the Contractor;

5.8.11.3. Contractor's resources and crew size for each activity; and

5.8.11.4. Provide early start, early finish, late start, late finish dates.

5.8.11.5. The Construction Progress Schedule shall show all submittal dates, review and approval durations for coordination drawings, Shop Drawings, other action submittals and mock-up Work.

5.8.12. The Contractor shall submit the initial and all updates of the Construction Progress Schedule in graphic and tabular form to GDPM.

5.8.12.1. With each monthly schedule update, the Contractor shall include a list of all changes to the previously approved baseline schedule or monthly updated schedule.

- 5.8.13.** The Construction Progress Schedule shall be managed using early start dates and early finish dates.
- 5.8.13.1.** The Contractor must exhaust all existing float before claiming additional time for a Change Order.
- 5.8.14.** The Contractor's failure to submit and properly maintain an approved Construction Progress Schedule may result in withholding payment in accordance with the Contract Documents.
- 5.8.15.** For each Progress Meeting, the Contractor shall provide a 2-6 week look-ahead schedule, as appropriate for the Project.
- 5.8.16.** On a monthly basis, the Contractor shall prepare and submit to GDPM a written report describing:
- 5.8.16.1.** Activities begun or finished during the preceding month;
- 5.8.16.2.** Activities in progress and expected completion;
- 5.8.16.3.** Activities to be started or finished in the upcoming month including, without limitation, the Contractor's workforce size and total resource hours associated with those activities;
- 5.8.16.4.** Recommendations for adjusting the Construction Progress Schedule to meet Milestone dates and the Substantial Completion date; and
- 5.8.16.5.** Other information requested by GDPM.
- 5.8.17.** If it is apparent that the Contractor may be unable to meet Critical Path activities, Milestone completion dates, or the Substantial Completion date(s), GDPM shall direct the Contractor to submit within 3 days a Recovery Plan to avoid or minimize a delay in the Project.
- 5.8.17.1.** A Recovery Plan shall include, without limitation, adjustments to one or more of the following:
- Workforce
 - Hours per shift
 - Shifts per workday
 - Workdays per week
 - Equipment
 - Activity logic
- 5.8.17.2.** If GDPM approves the Recovery Plan, the Contractor shall prepare a revised Construction Progress Schedule within 3 business days to GDPM.
- If GDPM does not approve the Recovery Plan, the Contractor shall submit within 3 days an alternate Recovery Plan to GDPM in writing for review and in accordance the Contract Documents.
- 5.8.18.** The Contractor shall update the Construction Progress Schedule on a monthly basis, or other interval(s) as approved by GDPM, in accordance with the Contract Documents.
- 5.8.18.1.** The Contractor shall submit a tabular copy showing all changes to the previously approved schedule.

5.8.18.2. The original or initially approved Construction Progress Schedule and all subsequent Construction Progress Schedules submitted by the Contractor, and accepted by GDPM, shall serve as an affirmation that the Contractor agrees to meet the applicable requirements and updated Construction Progress Schedule.

5.8.18.3. The Contractor's failure to timely submit updated Construction Progress Schedules as deemed necessary by GDPM may result in withholding payments from Contractor.

5.9. Progress Meetings

5.9.1. Unless otherwise indicated in writing, GDPM shall schedule bi-weekly Progress Meetings for the Contractor and other persons involved in the Project as deemed necessary for coordination of the Work by GDPM, including Contractor's Subcontractors on the Project.

5.9.1.1. The purpose of the Progress Meeting is to review progress on the Project during the previous week, discuss anticipated progress during the following weeks, review critical operations, and discuss critical problems.

5.9.2. The Contractor shall be represented at every Progress Meeting by a person authorized with signatory authority to make decisions regarding possible modifications of the Contract Documents or Construction Progress Schedule.

5.9.2.1. GDPM shall notify the Contractor and other persons involved in the Project of the time and place of the Progress Meeting that shall thereafter be the same day and hour of the week for the duration of the Project, unless GDPM notifies the Contractor and other Persons involved in the Project of a different day and hour at least 2 days in advance.

5.9.2.2. The Contractor shall have any of its subcontractors attend the Progress Meeting as determined advisable by the Contractor, or as requested by GDPM.

5.9.2.3. Unless otherwise indicated in writing, A/E shall prepare a written report of each Progress Meeting and distribute the report to the GDPM and the Contractor.

5.9.2.4. If any person in attendance objects to anything in a report of a Progress Meeting, the person shall notify GDPM and any other affected person in writing explaining the objections within seven calendar days.

5.9.2.5. The report of each Progress Meeting shall reflect any objection made to the report of the previous Progress Meeting and any response.

5.10. Project Coordination

5.10.1. If determined needed by GDPM, the Contractor or Subcontractor(s), The Contractor shall prepare Coordination Drawings for any Coordination Area.

5.10.1.1. The Contractor shall prepare the Coordination Drawings with Computer-Aided Design ("CAD") or Building Information Modeling ("BIM") software acceptable to GDPM.

5.10.1.2. The Coordination Drawings shall show all affected work, including without limitation, plan and elevation dimensions.

5.10.2. After the Contractor completes the Coordination Drawing, the Contractor shall forward a copy of the Coordination Drawings to GDPM.

5.10.2.1. The A/E shall report any concerns in writing to the Coordination Participants within 14 days after receiving the drawings.

5.11. Additional Tests and Inspections

- 5.11.1.** If the A/E or GDPM determines that any portion of the Work requires special inspection, testing, or approval not otherwise required under the Contract Documents, the A/E and/or GDPM shall order such inspection, testing, or approval.
- 5.11.2.** If the special inspection, testing, or approval reveals Defective Work, the Contractor shall pay all associated costs and will not be entitled to any related adjustment of the Contract Times. Those costs may include without limitation:
- The cost of special inspection, testing, or approval;
 - The cost of additional special inspections, testing, or approvals, to evaluate Remedial Work;
 - The cost of correcting Defective Work; and
 - All related GDPM-incurred fees and charges of contractors, engineers, architects, attorneys, and other professionals.
- 5.11.3.** GDPM may deduct the costs described under the Contract Documents from payments then or thereafter due the Contractor. If payments then or thereafter due to the Contractor are not sufficient to cover those amounts, the Contractor or its surety shall immediately pay the amount of the insufficiency to GDPM.
- 5.11.4.** If the special inspection, testing, or approval reveals that the Work complies with the Contract Documents, and the Contractor believes that it is entitled to an adjustment of the Contract Sum or Contract Time, or both, on account of the special inspection, testing, or approval, the Contractor may file a Claim by requesting a Change Order by giving written notice within 7 days after the special inspection, testing, or approval.
- 5.11.5.** If the Contractor is aware of the need of an inspection, testing, or approval, or of a need to have any inspection, testing, or approval completed by a particular time to avoid delay, then the Contractor shall timely communicate such information to GDPM.
- 5.11.6.** Except as described in Additional Tests and Inspections, GDPM shall pay for any inspection, testing, or approval that did not become a requirement until after award of Contract.
- 5.11.7.** The Contractor shall coordinate with and give GDPM reasonable notice of the anticipated dates of all inspections, testing, or approvals.

5.12. Review of Contract Documents

- 5.12.1.** Before starting each portion of the Work, the Contractor shall carefully study and compare the various Contract Documents relative to that portion of the Work, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the Site affecting it.
- 5.12.2.** If the Contractor finds any perceived ambiguity, conflict, error, omission, or discrepancy on or between any of the Contract Documents, or between any of the Contract Documents and any Applicable Law, the Contractor, before proceeding with the Work, shall promptly submit of Requests for Information ("RFI") to GDPM for an interpretation or clarification.
- 5.12.2.1.** Before submitting any RFI, the Contractor shall carefully review the Contract Documents to ensure that the Contract Documents do not answer the RFI.

5.12.2.2. If Contractor indicates that the information requested in the RFI affects the critical path of the Project's Construction Progress Schedule and attaches the portion of the Project's Construction Progress Schedule that verifies that the information requested in the RFI affects the critical path, GDPM shall make all reasonable efforts to respond to the RFI within 7 business days of receiving the RFI.

5.12.3. If the Contractor believes that it is entitled to an adjustment of the Contract Sum or Contract Times, or both, on account of clarifications or instructions issued in response to a RFI, the Contractor may submit a Claim by requesting a Change Order by giving notice within 3 business days of receiving the RFI response.

5.12.4. If Contractor does not notify GDPM in accordance with this Article Five or any other section of the Contract Documents that addresses adjustments to the Contract Sum and Contract Time, the Contractor will have accepted the RFI response without an adjustment to the Contract Sum or Contract Time and irrevocably waives his right to submit or request an adjustment to the Contract Sum and/or Contract Time.

5.12.5. Frivolous RFI

5.12.5.1. If the Contractor submits a frivolous RFI, as determined by GDPM, Contractor shall be liable to GDPM for the costs related to the review and response of the RFI.

5.12.5.1.1. GDPM may deduct the costs described herein from payments then or thereafter due to the Contractor.

5.12.5.1.2. If payments then or thereafter due to the Contractor are not sufficient to cover GDPM's costs, the Contractor or its surety shall immediately pay the amount of the insufficiency to GDPM.

5.12.5.2. Frivolous RFIs may be returned unanswered.

5.12.5.3. Delays caused by improper or frivolous RFI's are the sole responsibility of the Contractor who shall waive the Contractor's right to seek adjustments to the Contract Sum and Contract Time.

5.13. Site Investigation and Conditions Affecting the Work

5.13.1. The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including, but not limited to:

- Conditions bearing upon transportation, disposal, handling, and storage of materials;
- The availability of labor, water, electric power and roads;
- Uncertainties of weather, river stages, tides, or similar physical conditions at the site;
- The conformation and conditions of the ground; and
- The character of equipment and facilities needed preliminary to and during work performance.

5.13.2. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by GDPM, as well as from the drawings and specifications made part of this contract.

5.13.2.1. Any failure of the Contractor Site Investigation and Conditions Affecting the Work will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the Work, or for proceedings to successfully perform the Work without additional expense to GDPM.

5.13.3. GDPM assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by GDPM. Nor does GDPM assume responsibility for any understanding reached or representations made concerning conditions which can affect the Work by any of its officers or agents before execution of this Contract, unless that understanding or representation is expressly stated in this Contract.

5.14. Protection of the Project

5.14.1. The Contractor shall protect the Project from weather and maintain the Work and all materials, apparatus, and fixtures free from injury or damage until Substantial Completion of the Work.

5.14.1.1. The Contractor shall at all times cover or protect the Work and materials.

5.14.1.2. The Contractor, at its own expense, shall remove, and replace with new, any Work damaged as a result of the Contractor's failure to provide coverage or protection.

5.14.1.3. After the date of Substantial Completion of the Work, GDPM is responsible for protecting and maintaining all materials, apparatus, and fixtures for the occupied portion of the Project from injury or damage.

5.14.2. The Contractor shall protect the Project and existing or adjacent property from damage at all times and shall erect and maintain necessary barriers, lateral support, furnish and keep lighted necessary danger signals at night, and take reasonable precautions to prevent injury or damage to individuals or property.

5.14.3. Temporary Heating

5.14.3.1. The Contractor shall provide and pay for temporary heating, covering, and enclosures necessary to protect all Work and materials against damage by dampness and cold, to dry out the Work, and to facilitate the completion of Work.

5.14.3.2. Any permanent heating equipment used shall be turned over to GDPM in the condition and at the time required by the specifications.

5.14.4. The Contractor shall not load, or permit any part of the Project to be loaded, in any manner that endangers the Project, or any portion thereof.

5.14.4.1. The Contractor shall not subject any part of the Project or existing or adjacent property to stress or pressure that endangers the Project or property.

5.14.5. Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements

5.14.5.1. The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work sites, which are not to be removed under this Contract, and which do not unreasonably interfere with the Work required under this Contract.

5.14.5.2. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place.

- 5.14.5.2.1.** If any limbs or branches of trees are broken during performance of this Contract, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as specifically directed by GDPM.
- 5.14.5.3.** The Contractor shall protect from damage all existing improvements and utilities (1) at or near the work site and (2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor.
- 5.14.5.3.1.** Prior to disturbing the ground at the construction site, the Contractor shall ensure that all underground utility lines are clearly marked.
- 5.14.5.4.** The Contractor shall shore up, brace, underpin, secure, and protect as necessary all foundations and other parts of existing structures adjacent to, adjoining, and in the vicinity of the site, which may be affected by the excavations or other operations connected with the construction of the Project.
- 5.14.5.5.** Any equipment temporarily removed as a result of work under this Contract shall be protected, cleaned, and replaced in the same condition as at the time of award of this Contract.
- 5.14.5.6.** New work which connects to existing Work shall correspond in all respects with that to which it connects and/or be similar to existing Work unless otherwise required by the specifications.
- 5.14.5.7.** No structural members shall be altered or in any way weakened without the written authorization of GDPM, unless such work is clearly specified in the Plans or specifications.
- 5.14.5.8.** If the removal of the existing Work exposes discolored or unfinished surfaces, or work out of alignment, such surfaces shall be refinished, or the material replaced as necessary to make the continuous work uniform and harmonious.
- This, however, shall not be construed to require the refinishing or reconstruction of dissimilar finishes previously exposed, or finished surfaces in good condition, but in different plans or on different levels when brought together by the removal of intervening work, unless such refinishing or reconstruction is specified in the plans or specifications.
- 5.14.5.9.** The Contractor shall give all required notices to any adjoining or adjacent property owner or other party before commencement of any Work.
- 5.14.5.10.** The Contractor shall indemnify and save harmless GDPM from any damages on account of settlement or the loss of lateral support of adjoining property, any damages from changes in topography affecting drainage, and from all loss or expense and all damages for which GDPM may become liable in consequence of such injury or damage to adjoining and adjacent structures and their premises.
- 5.14.5.11.** The Contractor shall repair any damage to vegetation, structures, equipment, utilities, or improvements, including those that are the property of a third party, resulting from failure to comply with the requirements of this Contract or failure to exercise reasonable care in performing the work.
- If the Contractor fails or refuses to repair the damage promptly, GDPM may have the necessary Work performed and charge the cost to the Contractor.

5.14.6. Vibration, Noise, and Dust Control

5.14.6.1. The Contractor shall provide controls/barriers for vibrations, noise, and dust control in occupied buildings as required by the construction operations.

5.14.6.2. The Contractor will not be permitted to exhaust or release unfiltered air, dust, construction debris, or other undesirable products into the exterior atmosphere or into occupied areas of the building.

5.14.6.2.1. GDPM may limit or stop the Work if the Contractor does not maintain proper air-quality standards.

5.14.6.2.2. Such stoppage may result in a charge to the Contractor.

5.14.6.3. In certain occupied buildings, tasks might be of such a nature that noise and vibration cannot be tolerated.

- In such spaces and as approved by GDPM, Work may be scheduled for other than normal working hours.
- The Contractor is cautioned that weekend or overtime work, if required, shall be performed at no additional cost.
- Permission to work other than standard hours shall be received from GDPM prior to the occurrence.
- Weekend or overtime Work shall be reflected in the Construction Progress Schedule.

5.14.6.4. The Contractor is responsible for vibration control and control of transmission of noise arising from the Work.

5.14.6.5. Principal considerations that shall be given to noise and vibrations control are:

- Noise control in compliance with Occupational Safety and Health Administration (OSHA) shall be for all areas of the facility, including equipment rooms, boiler rooms, and fan rooms.
- Vibration control to limit sound produced by construction equipment, and for protection of the equipment existing in the building and the building structure.
- Vibration control to provide for the maximum usefulness of the facility by keeping levels of vibration within ranges conducive to peaceful enjoyment of residential living or work or other uses for which the facility was designed

5.15. General Warranty - Materials, Equipment and Workmanship

5.15.1. The Contractor warrants to GDPM and A/E that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise.

5.15.1.1. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit.

5.15.1.2. Work, materials, or equipment not conforming to these requirements may be considered defective.

5.15.1.3. If required by the A/E, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

5.15.2. If the Contractor breaches any of its obligations, the Contractor will pay the Owner for its damages and expenses, including but not limited to attorneys' and consultants' fees and expenses, arising out of or related to such breach.

5.15.2.1. The Contractor's obligation shall be joint and several.

5.15.3. Additional Warranties

5.15.3.1. The Contractor gives the Owner the following additional warranties:

5.15.3.1.1. If the Contractor's Work includes all or part of the exterior roofing system, provided that the Architect has designed the roofing system to be weather tight, the Contractor warrants that the roofing system will be weather tight; and

5.15.3.1.2. If the Contractor's Work includes all or part of the exterior wall system, provided that the Architect has designed the wall system to be weather tight, the Contractor warrants that the wall system will be weather tight. Weather tight shall mean the roofing and/or wall system does not permit any infiltration of water in any form that would have any adverse effect on GDPM's operations or the Project.

5.15.4. The Contractor shall, at the time of final completion of the Work and as a condition precedent to final payment to Contractor, assign to GDPM all manufacturer's warranties related to the materials and labor used in the Work and further agrees to perform the Work in such manner as to preserve any and all such manufacturer's warranties and deliver to the A/E the warranties, project manual, operating procedures, and other materials related to each of the building systems and materials included in the Contractor's Work and as required by the Specifications.

5.15.5. Upon notice of the breach of any of the warranties or guarantees identified herein, or any other warranties or guarantees under the Contract Documents, the Contractor, in addition to any other requirements in the Contract Documents, shall commence to correct such breach and all damage resulting therefrom within two (2) business days from written notice thereof, thereafter use its best efforts to correct such breach and damage to the satisfaction of GDPM and A/E, and, except when an extension of time is granted in writing by GDPM, correct such breach and damage to the satisfaction of GDPM within thirty (30) calendar days of such notice, or such other time as provided in the notice; provided, however, that if such notice is given after final payment the 2-day period shall be extended to seven (7) calendar days.

5.15.5.1. If the Contractor fails to commence to correct such breach and damage, or to correct such breach or damage as provided above, GDPM, without prejudice to any of its other rights or remedies at law or under the Contract Documents, may correct the breach without further notice to Contractor.

5.15.5.2. The Contractor shall pay GDPM's reasonable costs and expenses incurred in connection with the or related to such correction and/or breach, including without limitation GDPM's administrative, legal, and consulting expenses and additional service fees of the A/E.

5.15.5.3. The foregoing warranties and obligations of the Contractor shall survive final payment and/or termination of the Contract and shall not be limited by any other terms contained in the Contract Documents.

- 5.15.5.4.** If the Contractor fails to pay the GDPM any amounts due hereunder, the Contactor shall pay the GDPM, in addition to the amounts due, a late payment fee of one and one-half percent (1.5%) per month for each month or part thereof that the payments are not paid when due.
- 5.15.6.** Contractor shall bring to or store at the Site only the materials and equipment required for the Work. If possible, materials and equipment should be installed in their final positions when brought to the Site.
- 5.15.7.** All equipment, material, and articles furnished under this Contract shall be of the most suitable grade for the purpose intended, unless otherwise specifically provided in this Contract.
- 5.15.7.1.** References in the Contract to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition.
- 5.15.7.2.** The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of, and as approved by GDPM in writing, is equal to that named in the specifications, unless otherwise specifically provided in this Contract so long as Contractor has submitted a substitution request to GDPM.
- 5.15.7.3.** If the substituted material has not been approved by GDPM in writing, the substituted material may be considered Defective Work by GDPM or A/E.

5.15.8. Approval of Equipment and materials

- 5.15.8.1.** The Contractor shall obtain GDPM's approval of the machinery and mechanical and other equipment to be incorporated into the work.
- I. When requesting approval, the Contractor shall furnish to GDPM the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment.
 - II. When required by this contract or by GDPM, the Contractor shall also obtain GDPM's approval of the material or articles which the Contractor contemplates incorporating into the work.
 - III. When requesting approval, the Contractor shall provide full information concerning the material or articles.
 - IV. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.
- 5.15.8.2.** When required by the specifications or GDPM, the Contractor shall submit appropriately marked samples (and certificates related to them) for approval at the Contractor's expense, with all shipping charges prepaid.
- The Contractor shall label, or otherwise properly mark on the container, the material or product represented, its place of origin, the name of the producer, the Contractor's name, and the identification of the construction project for which the material or product is intended to be used.
- 5.15.8.3.** Certificates shall be submitted electronically describing each sample submitted for approval and certifying that the material, equipment or accessory complies with contract requirements. The certificates shall include the name and brand of the product, name of manufacturer, and the location where produced.

5.15.8.4. Approval of a sample shall not constitute a waiver of GDPM's right to demand full compliance with contract requirements.

- Materials, equipment and accessories may be rejected for cause even though samples have been approved.

5.15.8.5. Wherever materials are required to comply with recognized standards or specifications, such specifications shall be accepted as establishing the technical qualities and testing methods, but shall not govern the number of tests required to be made nor modify other Contract requirements.

- GDPM may require laboratory test reports on items submitted for approval or may approve materials on the basis of data submitted in certificates with samples.
- Check tests will be made on materials delivered for use only as frequently as GDPM determines necessary to insure compliance of materials with the specifications.
- The Contractor will assume all costs of retesting materials which fail to meet contract requirements and/or testing materials offered in substitution for those found deficient.

5.15.8.6. After approval, samples will be kept in the Project office until completion of work. They may be built into the work after a substantial quantity of the materials they represent has been built in and accepted.

5.15.9. BUILD AMERICA BUY AMERICIA BABA REQUIREMENTS: Pursuant to the Build America, Buy America Act (BABA), enacted as part of the Infrastructure Investment and Jobs Act (IIJA). Pub. L. 117-58, 41 U.S.C. § 8301 note, the Federal Financial Assistance used to fund this infrastructure project is required to apply a domestic content procurement preference (the “Buy America Preference” or “BAP”) for all construction, alteration, maintenance, or repair of infrastructure, including buildings and real property, unless application of the BAP has been waived by HUD. Additional details on fulfilling the BABA requirements can be found at:

https://www.hud.gov/program_offices/general_counsel/build_america_buy_america.

BABA is the Build America, Buy America Act. BABA requires any “infrastructure project” funded by any “Federal Financial Assistance” (FFA) apply a domestic content procurement preference, meaning that all iron, steel, manufactured products, and construction materials used in the infrastructure project have been produced in the United States, unless the awarding agency has issued a waiver of this requirement. This is called the “Buy American Preference” (BAP).

In order to ensure compliance with BABA requirements, Contractor will required to:

- Request waiver will be required if the contractor cannot fulfill BABA requirements.
- Provide sufficient product purchase info to enable GDPM to comply with the documentation requirements. Sufficient documentation may include:
 - A certificate from the manufacturer or reseller that the product complies with BABA;
 - For products that cost less than \$100 per product, a copy of a label that indicates the product was made in the United States; or
 - For small purchases of product that are less than the simplified acquisition threshold either a copy of a product specification that provides sufficient detail to conclude that the product complies with BABA or a communication other than a certification from a manufacturer or reseller of a product that confirms

that the product is BABA compliant.

5.15.10. Requirements concerning lead-based paint: The Contractor shall comply with the requirements concerning lead-based paint contained in the Lead-Based Paint Poisoning Prevention Act.

5.15.11. Substitutions

5.15.11.1. If the Contractor provides approved Substitutions that require changes to the Contract Documents, the Contractor shall be solely responsible for the additional costs incurred as a result, including without limitation changes to the design by the A/E.

5.15.11.2. GDPM shall consider Requests for Substitutions after the bid opening only when the Contractor can conclusively demonstrate to GDPM the following conditions:

- I. The specified Basis of Design Components, Acceptable Components, or previously approved Substitutions through no fault of the Contractor are not available; or
- II. The specified Basis of Design Components, Acceptable Components, or previously approved Substitutions will not perform as designed or intended.

5.15.11.3. The Contractor's incorporation of unapproved Substitutions in the Work shall constitute Defective Work.

5.15.11.4. If the Contractor provides an unacceptable Component, the Contractor shall be solely responsible for the costs of coordination and modification required.

5.16. Specifications and Drawings for Construction

5.16.1. The Contractor shall keep on the work site a stamped, permit set of the drawings and specifications and shall at all times give GDPM access thereto.

- 5.16.1.1.** Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both.
- 5.16.1.2.** In case of difference between drawings and specifications, the specifications shall govern.
- 5.16.1.3.** In case of a discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to GDPM, who shall promptly make a determination in writing.
- 5.16.1.4.** Any adjustment by the Contractor without such determination shall be at its own risk and expenses.
- 5.16.1.5.** GDPM shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.
- 5.16.2.** Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of GDPM is intended.
- 5.16.3.** Where "shown," indicated", "detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this Contract unless otherwise stated, the word "provided" as used herein shall be understood to mean "provide complete in one place" that is "furnished and installed".
- 5.16.4.** "Shop Drawings" means drawings, submitted to GDPM by the Contractor, subcontractor or any lower tier subcontractor, showing in detail, 1) the proposed fabrication and assembly of structural elements and 2) the installations (i.e., form, fit, and attachment details) of materials of equipment.
 - 5.16.4.1.** It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the Contractor to explain in detail specific portions of the work required by the Contract.
 - 5.16.4.2.** GDPM may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.
- 5.16.5.** If this Contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with other Contract requirements and shall indicate its approval thereon as evidence of such coordination and review.
 - 5.16.5.1.** Shop Drawings submitted to the A/E without evidence of the Contractor's approval may be returned for resubmission.
 - 5.16.5.2.** GDPM will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate GDPM's reasons therefore.
 - 5.16.5.3.** Any Work done before such approval shall be at the Contractor's risk.
 - 5.16.5.4.** Approval by the A/E shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this Contract, except with respect to approved variations.
- 5.16.6.** If shop drawings show variations from the Contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission.

5.16.6.1. If the A/E approves any such variation and GDPM concurs, GDPM shall issue an appropriate modification to the Contract, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

5.16.7. It shall be the responsibility of the Contractor to make timely requests to GDPM for such large scale and full size drawings, color schemes, and other additional information, not already in possession, which shall be required in the planning and production of the work.

5.16.7.1. Such requests may be submitted as the need arises, but each such request shall be filed with ample time to permit appropriate action to be taken by all parties involved so as to avoid delay.

5.16.8. The Contractor shall electronically submit to GDPM for approval (unless otherwise indicated) all shop drawings as called for under the various headings of the specifications.

5.16.8.1. As required by GDPM, the Contractor, upon completing the work under this Contract, shall furnish a complete set of drawings as finally approved.

5.16.8.2. These drawings show all changes and revisions made up to the time the work is completed and accepted.

5.16.9. Specifications and Drawings for Construction shall be included in all subcontracts at any tier.

5.16.9.1. It shall be the responsibility of the Contractor to ensure that all shop drawings prepared by subcontractors are submitted to GDPM.

5.17. As Built Drawings

5.17.1. "As-built drawings," means drawings submitted by the Contractor or subcontractor at any tier to show the construction of a particular structure or Work as actually completed under the Contract.

5.17.1.1. "As-built drawings" shall be synonymous with "Record Drawings".

5.17.2. As required by GDPM, the Contractor shall provide GDPM accurate information to be used in the preparation of permanent as-built drawings.

5.17.2.1. For this purpose, the Contractor shall record on one set of contract drawings all changes from the installations originally indicated, and record final locations of underground lines by depth from finish grade and by accurate horizontal offset distances to permanent surface improvements such as buildings, curbs, or edges of walks.

5.17.3. As Built Drawings shall be included in all subcontracts at any tier.

5.17.4. It shall be the responsibility of the Contractor to ensure that all As-Built Drawings prepared by subcontractors are submitted to GDPM.

5.18. Project Document Maintenance and Submittal

5.18.1. During Construction

5.18.1.1. The Contractor shall maintain in good order at a secure location on the Site:

- I. A complete copy of all Contract Documents; Shop Drawings, Product Data, samples and similar required submittals; manufacturer operating and maintenance instructions; certificates; warranties; RFIs and responses thereto; and other Project- related documents, all marked currently and accurately to record field changes and selections made during construction and to show

Actual installation where installation varies from Work as originally shown, including the exact location and depth of underground utility lines; and

II. A set of Drawings as approved by any applicable jurisdiction and Specifications.

5.18.1.2. Before submitting each Contract Payment Request, the Contractor shall record all changes on the Contract Documents, neatly in a contrasting color, noting new information not shown on the original Contract Documents.

- Failure to record all changes may cause payment to be withheld or delayed by GDPM.

5.18.1.3. The Contractor shall keep a record of changes made to the Specifications, noting particularly any approved variation from manufacturer's installation instructions and recommendations.

5.18.1.4. If the Contractor uses Shop Drawings to indicate as-built conditions, the Contractor shall cross-reference the Shop Drawing sheet numbers to the corresponding sheet numbers on the Contract Documents.

- The Contractor shall note related numbers where applicable.

5.18.2. Before Contract Completion

5.18.2.1. The Contractor, as a condition precedent to execution of the Certificate of Contract Completion and final payment, shall organize the As-Built Documents into manageable sets, bind the sets with durable paper cover sheets, and deliver the As-Built Documents to GDPM.

5.18.2.2. When applicable, The Contractor's As-Built Documents submission shall include, but is not limited to:

- I. Certificate of Occupancy;
- II. Inspection certificates for pressure piping, elevator, boiler, electrical, plumbing or piping purification, etc.
- III. Letter of Approval from the local fire authority or State Fire Marshal for the fire suppression system;
- IV. Operation and Maintenance Manuals, organized into suitable sets of manageable size;
- V. Indexed data bound in individual binders, with pocket folders for folded sheet information and appropriate identification marked on the front and the spine of each binder;
- VI. Neatly and accurately marked sets of As-Built Documents, and other Contract Documents reflecting the actual construction of the Project;
- VII. Detailed Drawings reflecting the exact location of any concealed utilities, mechanical or electrical systems, and components;
- VIII. Assignment to GDPM of all warranties and guarantees, including the most-recent address and telephone number of any Subcontractors or manufacturers;
- IX. An affidavit to certify that all Subcontractors have been paid in full for all Work performed or materials furnished for the Project;
- X. Final certified payroll reports; and

- XI. An affidavit to certify that the Contractor and each of its Subcontractors, regardless of tier, have complied with all requirements of HUD and the Ohio Revised Code.

5.18.2.3. By submitting the As-Built Documents to GDPM, the Contractor certifies that its As-Built Documents are complete, correct, and accurate.

5.19. Temporary Buildings and Transportation of Materials

5.19.1. Temporary buildings (e.g., storage sheds, shops, offices, sanitary facilities) and utilities may be erected by the Contractor only with the approval of GDPM and shall be built with labor and materials furnished by the Contractor without expense to GDPM.

5.19.1.1. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work.

5.19.1.2. With the written consent of GDPM, the buildings and utilities may be abandoned and need not be removed.

5.19.2. The Contractor shall, as directed by GDPM, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by GDPM.

5.19.2.1. When materials are transported in prosecuting the Work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any federal, state, or local law or regulation.

5.19.2.2. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage.

5.19.2.3. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

5.20. Facilities

5.20.1. The Contractor shall provide and maintain in a clean condition:

5.20.1.1. Suitable facilities, including temporary facilities, equipment, services, and enclosed storage for its use at the Site;

5.20.1.2. Adequate space, equipment, and furnishings to conduct progress meetings, and store approved documents and permits;

5.20.1.3. Adequate sanitary facilities for use by all Persons at the Site.

5.21. Progress Cleaning

5.21.1. The Contractor shall remove all waste materials, rubbish, and mud attributable to the Work in accordance with the Specifications, if applicable, and to an appropriate disposal location.

5.21.2. The Contractor shall perform weekly broom cleaning of hard flooring surfaces in the area of the Work.

5.21.3. The Contractor shall remove, at the end of each working day or more frequently, as appropriate, for the Project, all waste materials and rubbish from the disposal location.

5.21.4. The Contractor shall remove, as appropriate for the Project or as the A/E or GDPM directs, any waste materials or rubbish from areas adjacent to the Project.

5.21.5. The Contractor shall dispose of waste materials, rubbish, and construction debris in a lawful manner in approved recycling facilities or landfills and record of such disposal shall be available upon written request of GDPM.

5.21.6. If the Contractor fails to clean up during the progress of the Work, GDPM may clean up on behalf of the Contractor and at the Contractor's expense.

5.21.6.1. If the Contractor fails to maintain the areas adjacent to the Project clean and free of waste materials and rubbish, GDPM may also direct the local jurisdiction responsible for the area to have the area cleaned to its satisfaction at the Contractor's expense.

5.21.6.2. GDPM may deduct the cleaning costs from payments then or thereafter due the Contractor.

- If payments then or thereafter due the Contractor are not sufficient to cover those amounts, the Contractor shall immediately pay the amount of the insufficiency to GDPM.

5.21.7. The Contractor shall remove excavated material and spoil to a suitable off-site location approved by GDPM.

5.21.7.1. If GDPM designates a location on its property for disposal or storage of clean topsoil and/or subsoil in the Contract Documents, the Contractor shall remove such materials to the designated location.

5.22. Use of Premises

5.22.1. The Contractor shall use corridors, stairs, and elevators as designated by GDPM and only during those times that are designated by GDPM.

5.22.2. The Contractor shall exercise extreme care to not exceed the carrying capacity of elevators or damage the cab interior, including but not limited to damaging the cab padding, in any way.

5.22.3. Loitering or wandering through interior of buildings or exterior grounds outside the limits of the Work will not be permitted.

5.22.4. The Contractor shall confine its apparatus, materials, and the operations of its workers to the limits indicated by law, ordinances, permits and the directions of GDPM.

5.22.5. Unless expressly required or approved by GDPM, no signs or advertising of any kind will be permitted on or about the Site, except those appearing on trucks and trailers.

5.22.6. GDPM may deduct the costs associated with remedying Contractor's misuse of the premises from payments then or thereafter due the Contractor.

- If payments then or thereafter due the Contractor are not sufficient to cover those amounts, the Contractor shall immediately pay the amount of the insufficiency to GDPM.

5.23. GDPM Use of Premises / Possession Prior to Completion

5.23.1. GDPM shall have the right to take possession of or use any completed or partially completed part of the Work.

- I. Before taking possession of or using any Work, GDPM shall furnish the Contractor a list of items of Work remaining to be performed or corrected on those portions of the Work that GDPM intends to take possession of or use.

- II. However, failure of GDPM to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the Contract.
- III. GDPM's possession or use shall not be deemed acceptance of Work under the Contract.

5.23.2. While GDPM has such possession or use, the Contractor shall be relieved of the responsibility for:

- I. The loss of or damage to the Work resulting from GDPM's possession or use, notwithstanding the terms herein;
- II. All maintenance costs on the areas occupied; and
- III. Furnishing heat, light, power, and water used in the areas occupied without proper remuneration therefore.

5.23.3. If timely requested by the Contractor and if prior possession or use by GDPM delays the progress of the Work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the Contract shall be modified in writing accordingly.

5.24. **Smoking and Tobacco Products**

5.24.1. Smoking is not permitted at any property under construction, unless GDPM has a specifically designated area for smoking, and is not permitted within 50 feet of any entrance of a GDPM owned building.

5.24.2. This prohibition applies to new construction and rehabilitation.

5.24.3. The Contractor shall enforce these restrictions on any individual employed by the Contractor, or a Subcontractor.

5.24.4. A violation of GDPM's Non-Smoking Policy may result in a fee for damages to be made payable by Contractor to GDPM in the amount of \$250 per incident per day. Parties acknowledge and agree that this fee for damages is a reasonable amount to provide for the violation of the Non-Smoking Policy and is not necessarily putative in nature, but covers the actual reasonable cost to remedy such breach.

5.24.5. GDPM may deduct the costs associated with Contractor's breach of GDPM's Non-Smoking Policy from payments then or thereafter due the Contractor.

- If payments then or thereafter due the Contractor are not sufficient to cover those amounts, the Contractor shall immediately pay the amount of the insufficiency to GDPM.

5.25. **Correction of the Work**

5.25.1. ***Before Substantial Completion***

5.25.1.1. If the Contractor provides Defective Work or fails or neglects to perform the Work in accordance with the Construction Progress Schedule, GDPM or the A/E may issue a written notice to the Contractor and Contractor's Surety directing the Contractor to correct the Defective Work or recover schedule deficiencies.

- Unless otherwise specified in that written notice, the Contractor shall begin to correct the Defective Work and recover the schedule deficiencies within no more than three days after GDPM issues the written notice.

5.25.1.2. If the Contractor fails to commence and diligently pursue correction of Defective Work or recovery of schedule deficiencies within three (3) business days of Contractor's receipt of written notice from GDPM or the A/E, GDPM may correct the Defective Work or take action to recover schedule deficiencies without giving further notice to the Contractor or Contractor's Surety.

5.25.2. *During the Correction Period*

5.25.2.1. If GDPM issues a notice during the Correction Period, GDPM may correct the Defective Work itself without giving further notice to the Contractor or Contractor's Surety if the Contractor fails to:

- a. Notify GDPM in writing of the Contractor's intent to correct the Defective Work within 3 days after GDPM issues the notice; and
- b. Thereafter promptly commence and diligently pursue correction of Defective Work.

5.25.2.2. The Correction Period:

- a. Commences on the date of issuance of the written notice of Defective Work to Contractor and/or Contractor's surety and expires upon the date indicated in said written notice;
- b. Relates only to the Contractor's specific obligation and opportunity to correct the Work during the Correction Period;
- c. Does not establish a period of limitation with respect to any of the Contractor's other obligations under the Contract Documents;
- d. Has no relationship to the time within which GDPM may seek to enforce the Contract; and
- e. Does not establish a period of limitation with respect to the commencement of litigation to establish the Contractor's liability under the Contract or otherwise.

5.25.3. *After the Correction Period:*

5.25.3.1. GDPM may correct, at the Contractor's expense, the Defective Work without giving further notice to the Contractor or Contractor's Surety if the Contractor or Contractor's surety fails to

- a. Notify GDPM in writing of the intent to correct the Defective Work; and
- b. Promptly commence and diligently pursue correction of Defective Work.

5.25.4. *After Substantial Completion*

5.25.4.1. In addition to the Contractor's other obligations under the Contract Documents, if any of the Work is found to be Defective Work after Substantial Completion, the Contractor shall correct it promptly after receipt of written notice from GDPM to do so, unless GDPM has previously acknowledged and accepted the Defective Work in writing.

5.25.4.2. GDPM may send a copy of the written notice to the Contractor's Surety, but is not obligated to do so.

5.25.5. Emergency Correction of Defective Work

5.25.5.1. Notwithstanding any other provision of the Contract, if in GDPM's opinion the Defective Work presents a threat of imminent harm or danger to people, property, or the environment, GDPM may order the Contractor to immediately correct Defective Work or GDPM may correct the Defective Work, at Contractor's expense, itself without any prior notice to the Contractor or Contractor's Surety.

5.25.6. Responsibility for Costs of Correction

5.25.6.1. The Contractor shall pay all of the costs and damages associated with the correction of Defective Work and the recovery of schedule deficiencies.

5.25.6.2. Those costs and damages may include, but are not limited to:

- The related fees and charges of contractors, engineers, architects, attorneys, and other professionals; and
- The cost of correcting or replacing adjacent work.

5.25.6.3. GDPM may deduct those costs and damages from payments then or thereafter due the Contractor.

5.25.6.3.1. If payments then or thereafter due the Contractor are not sufficient to cover those amounts, the Contractor shall immediately pay the amount of the insufficiency to GDPM.

6. ARTICLE VI: SUBCONTRACTORS

6.1. Definitions: As used in this Contract:

6.1.1. "Subcontract" means any contract, purchase order, or other purchase agreement, including modifications and change orders to the foregoing, entered into by a subcontractor to furnish supplies, materials, equipment, and services for the performance of the prime contract or a subcontract.

6.1.2. "Subcontractor" means any supplier, vendor, or firm that furnished supplies, materials, equipment, or services to or for the Contractor or another subcontractor.

6.2. Evaluation and Approval

6.2.1. When submitting its Bid, the Contractor shall submit a Subcontractor and Material Supplier Declaration Form through which the Contractor identifies its Subcontractor and provide a list of subcontractors and material suppliers and equipment with bid.

6.2.2. Within 10 days after the Notice to Proceed, the Contractor shall submit to GDPM, an updated Subcontractor and Material Supplier Declaration form.

6.2.3. In its discretion, GDPM will evaluate the use of proposed subcontractors. If GDPM rejects any proposed Subcontractor, the Contractor shall propose a replacement Subcontractor with no adjustment of the Contract Sum. The proposed replacement will also be evaluated.

6.2.4. If requested by GDPM, Contractor must supply additional information on use of proposed subcontractor within five business days of such request. The Contractor's failure to timely submit the information regarding a proposed Subcontractor may result in withholding payment to Contractor.

6.3. Suspension/Debarment

6.3.1. The Contractor shall not enter into any subcontract with any subcontractor who has been denied participation by GDPM or has been temporarily or permanently denied participation in a HUD program or who has been suspended or debarred from participating in contracting programs by any agency of the United States Government or the State of Ohio.

6.4. Contractor's Responsibility

6.4.1. The Contractor shall be as fully responsible for the acts or omissions of its Subcontractors and of persons either directly or indirectly employed by them as for the acts or omissions of persons directly employed by the Contractor.

6.4.2. Contractor is responsible for scheduling and coordinating the Work of the Subcontractors.

6.4.3. The Contractor is fully responsible for any delay, interference, disruption, or hindrance attributable to the Contractor's Subcontractors.

6.4.4. The Contractors shall require that each of its Subcontractors have a competent supervisor at the Site whenever the Subcontractor is performing Work.

6.4.5. The Contractor shall use GDPM's form of Subcontract for each of its subcontractors And material suppliers. Contractor shall not agree to any provision, which seeks to bind GDPM, or with terms inconsistent with or at variance from these Contract Documents.

6.4.6. The Contractor will not be relieved of its full responsibility for Subcontractors and their performance of the Work by:

6.4.6.1. The participation of GDPM, HUD, or the A/E in the processes described under this ARTICLE VI SUBCONTRACTORS or other related provisions of the Contract Documents;
or

6.4.6.2. GDPM's rejection of a Subcontractor or failure to reject a Subcontractor.

6.5. Mandatory Contract Provisions/Forms

6.5.1. The Contractor shall insert appropriate clauses in all subcontracts to bind Subcontractors to the terms and conditions of this Contract insofar as they are applicable in the work of Subcontractors.

6.5.2. GDPM reserves the right to reassign accepted agreements

6.5.3. Nothing contained in the Contract Documents shall create any contractual relationship between any subcontractor and GDPM or between the Subcontractor and HUD.

6.5.4. The Contractor must include in the contract with its Subcontractors the applicable labor provisions and prevailing wages as was provided to the Contractor by GDPM.

6.5.5. No less than 10 days before the Work is to be performed by a Subcontractor, or within a shorter period as mutually agreed by the Contractor and GDPM, the Contractor shall submit to GDPM a complete copy of the executed Subcontract between the Contractor and Subcontractor.

6.6. Replacement of Subcontractors

6.6.1. The Contractor shall not replace any Subcontractor after execution of the Subcontract without prior written approval of GDPM.

6.6.2. The Contractor shall not add any subcontractors after the Contract Execution without

updating the Material Supplier and Subcontractor Form or prior to written approval of GDPM.

6.7. Contingent Assignment of Subcontract

6.7.1. The Contractor hereby assigns its Agreement with each Subcontractor to GDPM provided that the assignment is effective only after termination of the Contract by GDPM and only for those agreements that GDPM accepts by notifying Contractor and applicable Subcontractor in writing.

6.8. Prompt Payment of Subcontracts

6.8.1. The Contractor shall make payments to the Subcontractor in accordance with Applicable Law, including the Ohio Revised Code that include, without limitation, the requirements under this Section, 6.8 - Prompt Payment of Subcontracts.

6.8.2. If a Subcontractor requests payment in time to allow the Contractor to include the request in its Contractor Payment Application Request the Contractor, within ten calendar days after receipt of payment from GDPM, shall pay to the:

6.8.2.1. Subcontractor, an amount equal to the percentage of completion of the subcontractors contract allowed by GDPM for the amount of labor or work performed;

6.8.2.2. Material Supplier, an amount that is equal to all or a portion of the invoice for materials which represents the materials furnished by the material supplier

6.8.3. The Contractor may reduce the amount paid by any retainage provision contained in the Contract, invoice, or purchase order between the Contractor and Subcontractor and may withhold amounts that may be necessary to:

6.8.3.1. Resolve disputed liens or claims involving the Work or labor performed by the Subcontractor; or

6.8.3.2. Account for failure of the Subcontractor to perform its obligations under its agreement with the Contractor as required under the Ohio Revised Code.

6.8.4. Labor Payments: Within ten days of receipt of payment from GDPM, the Contractor shall pay Subcontractor in the following manner:

6.8.4.1. Partial payments to the Subcontractor for labor performed under either a Unit Price or lump sum Subcontract shall be made at the rate of 92 percent of the amount invoiced through the Subcontractor's request for payment that shows the Work of the Subcontractor is up to 50% complete.

6.8.4.2. After the Work of the Subcontractor is 50 percent complete, as evidenced by payments of at least 50 percent of the total amount due under the Subcontract, no additional funds shall be retained from payments for labor.

6.8.5. Material Payment

6.8.5.1. Required by ORC for payment to Contractor by GDPM:

- The Contractor shall pay the Subcontractor at the rate of 95% of the invoice cost, not to exceed the scheduled value in a unit price or lump sum Subcontract, for materials delivered to the Site, or other offsite storage location approved by GDPM, provided the Subcontractor provides the information required with its request for payment.

- The Contractor shall pay the Subcontractor at the rate of 100% of the scheduled

value for materials incorporated into the Project.

6.8.6. If Contractor fails to comply with the payment provisions set forth, the Contractor shall pay to the applicable Subcontractor, in addition to any payment due, interest in the amount of 18 percent per annum of the payment due, beginning the eleventh day following the receipt of payment from GDPM and ending on the date of full payment of the payment due plus interest.

6.8.7. If GDPM receives a Claim Affidavit from a Subcontractor, Subcontractor shall proceed in accordance with Applicable Law, including the Ohio Revised Code.

6.8.8. Laborers, Subcontractors, and Material Suppliers may secure payment rights in accordance with Applicable Law, including the Ohio Revised Code.

6.9. Subcontracting To Meet Diversity & Contracting Goals

6.9.1. The Contractor shall take the following steps to ensure that, whenever possible, Subcontracts are awarded to small business firms, minority firms, women's business enterprises, and labor surplus area firms:

6.9.1.1. Place qualified small and minority businesses and women's business enterprises on solicitations lists;

6.9.1.2. Ensure that small and minority businesses and women's business enterprises are solicited whenever they are potential resources

6.9.1.3. Divide total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses and women's business enterprises;

6.9.1.4. Establish a delivery schedule, where the requirements of the Contract permit, which encourages participation by small and minority businesses and women's business enterprises; and

6.9.1.5. Use the services and assistance of the U.S. Small Business Administration, the Minority Business Development Agency of the U.S. Department of Commerce, and State and local governmental small business agencies.

7 ARTICLE VII: SUBCONTRACTORS

7.1. GDPM Obligation

7.1.1. GDPM shall pay the Contractor the price as provided in the Contract.

7.2. Forms

7.2.1. Unless expressly authorized to the contrary, Contractor must use appropriate GDPM forms.

7.3. Step One-Pencil Application

7.3.1. The purpose of a pencil application (HUD Form) is assisting the Contractor in identifying any potential error or omission in the pay application.

7.3.2. If submitted timely (as set forth below) GDPM will review and help identify any potential issues. However, the GDPM Construction Administrator's approval or suggestion does not guarantee approval of the payment application by GDPM.

7.3.3. The Contractor shall initially submit a pencil application by no later than the 15th of each month.

7.3.4. Generally, the GDPM Construction Administrator will review the pencil application, and make any suggested corrections and return to the Contractor within a reasonable amount of time.

7.3.5. The Contractor shall then submit the final payment application to the GDPM Construction Administrator or project manager by the 23rd of each month.

7.3.6. Failure to submit a pencil application may result in a significant delay in payment.

7.4. Progress Payments

7.4.1.1. GDPM shall make progress payments approximately every 30 days as the work proceeds on estimates of Work accomplished which meets the standards of quality established under the Contract, as approved by GDPM.

7.4.1.2. Subject to GDPM's written determination and approval more frequent payments may be made to contractors which are qualified as small businesses.

7.4.2. Before the first progress payment under this contract, the Contractor shall furnish, in such detail as requested by GDPM, a breakdown of the total contract price showing the amount included therein for each principal category of the work, which shall substantiate the payment amount requested in order to provide a basis for determining progress payments.

- The breakdown shall be approved by GDPM and must be acceptable to HUD.
- If the contract covers more than one Project, the Contractor shall furnish a separate breakdown for each.
- The values and quantities employed in making up this breakdown are for determining the amount of progress payments and shall not be construed as a basis for additions to or deductions from the contract price.
- The Contractor shall prorate its overhead and profit over the construction period of the contract.

7.4.3. The Contractor shall submit, on forms provided by GDPM, periodic estimates showing the value of the work performed during each period based upon the approved breakdown of the contract price.

- Such estimates shall be submitted not later than ---- days in advance of the date set for payment and are subject to correction and revision as required.
- The estimates must be approved by GDPM prior to payment.
- If the contract covers more than one project, the Contractor shall furnish a separate progress payment estimate for each.

7.4.4. Along with each request for progress payments and the required estimates, the Contractor shall furnish the following certification, or payment shall not be made:

7.4.4.1. I hereby certify, to the best of my knowledge and belief, that:

- The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the Contract;
- Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements; and
- This request for progress payments does not include any amounts which the prime Contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract.

7.5. Allowances

7.5.1. The Contract Sum includes the Allowances (if any) identified in the Contract.

7.5.2. All allowances include the costs to the Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes.

7.6. Unit Prices

7.6.1. Where the Contract provides that all or a part of the Work is to be Unit Price Work, initially that Contract Sum will include for all Unit Price Work:

7.6.1.1. An amount equal to the sum of the established Unit Prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Contract

7.6.1.2. The Contractor's fee on that Unit Price Work

7.6.2. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Sum.

7.6.2.1. GDPM will determine the actual quantities and classifications of Unit Price Work performed by the Contractor.

7.6.2.2. Before final payment, an appropriate Change Order will be issued to reconcile the Contract Sum so that it reflects actual amount due to the Contractor on account of Unit Price Work actually performed.

7.7. Schedule of Values

7.7.1. Within seven days after issuance of Letter of Intent or other period as mutually agreed by the Contractor and GDPM, the Contractor shall submit to GDPM a Schedule of Values on a form provided for by GDPM, with separate amounts shown for labor and materials for each branch of Work.

7.7.1.1. The Contractor shall clearly indicate on the Schedule of Values, but is not necessarily limited to, the cost of payment and performance bond(s), permit costs, the amount(s) allocated, including separate items for the Contractor's Fee (Overhead and Profit), and the amount(s) of labor and materials, as appropriate.

7.7.2. The grand total shown on the Schedule of Values shall equal the total Contract Sum.

7.7.3. GDPM may use the approved Schedule of Values to determine cost or credit to GDPM resulting from any change in the Work.

7.7.3.1. The first items shall be a breakdown of the General Conditions Cost

7.7.3.2. The amounts for labor and materials shall accurately reflect the cost for each item.

7.7.3.2.1. The Contractor shall clearly indicate on the Schedule of Values, the amount(s) allocated, including separate items for Contractor's Fee (overhead and profit), for each Section 3 certified Business used in the performance of the Work.

7.7.3.2.2. Contractor's Fee shall be included in the totals for labor and materials.

7.7.3.3. If the material allocation exceeds 55 percent of the Contract Sum, the Contractor shall provide, upon request, sufficient information to support the higher percentage.

7.7.3.4. Subcontract Work shall show amounts for labor and materials.

7.7.3.2.3. Fringe benefits shall be shown as a part of labor costs.

7.7.3.5. When more than one major structure is included in the Work, the Contractor shall subdivide the Schedule of Values accordingly, with cost details for each structure shown separately.

7.7.3.6. The line items shall be coordinated with line items in the Project Schedule, which may require division of items of Work by area of the Project by floor, phase, or other appropriate area.

7.7.3.7. Mechanical and electrical Work shall be included in separate line items for all major pieces of equipment, and group smaller equipment items by type.

7.7.3.8. Line items shall be included for each Allowance, Punch List Work, and Project Record Document Submittals, delivery of attic stock, and specified demonstrations and training.

7.7.4. GDPM may return the Schedule of Values to the Contractor for re-submittal if it does not meet the requirements or contains insufficient items or details of the Work, or approve the Schedule of Values if GDPM determines that it conforms to section 7.7

7.7.5. No payment shall be made until the GDPM has approved the Contractor's Schedule of Values.

7.8. Labor Payments/Retainage

7.8.1. The unit or lump sum price stated in the contract shall be used in determining the amount to be paid and shall constitute full and final compensation for all the work.

7.8.2. Partial payment to the contractor for work performed under the lump sum price shall be based on a schedule prepared by the contractor and approved by GDPM and/or A/E who shall apportion the lump sum price to the major components entering into or forming a part of the work under the lump sum price.

7.8.3. GDPM shall make partial payments to the contractor for labor performed under either a unit or lump sum price contract at the rate of ninety per cent of the estimates prepared by Contractor and approved by the A/E.

7.8.4. All labor performed after the job is fifty percent completed shall be paid for at the rate of one hundred per cent of the estimates submitted by the contractor and approved by GDPM and/or the A/E.

7.9. Material Payments/Retainage

7.9.1. Provided such materials have been inspected and found to meet the specifications, GDPM shall pay the Contractor at the rate of ninety percent of the invoice cost, not to exceed the scheduled value in a Unit Price or lump sum contract, for materials delivered to the Site, or other off-Site storage location approved by GDPM, provided the Contractor provides the following information with the Contractor Payment Request:

- A list of the fabricated materials consigned to the Project, giving the place of storage, together with copies of invoices, in order to verify quantity and cost; and
- A certification of materials stored off-site, prepared by the Contractor and signed-off on by GDPM and/or the A/E, to evidence that the materials are in conformity with the Specifications and have been tagged with the Project name and number for delivery to the Project.

7.9.2. The Contractor shall directly reimburse GDPM and/or the A/E for all costs incurred to visit a storage site, other than the areas adjacent to the Site.

7.9.3. Provided such materials have been inspected and found to meet the specifications, GDPM shall pay the balance of the scheduled value when the materials are incorporated into and becomes a part of the Work.

7.9.4. When payment is allowed for materials delivered to the Site or other off-site storage location, approved by GDPM, but not yet incorporated into the Project, such material shall become the property of the GDPM, but if such material is stolen, destroyed, or damaged by casualty before being used, the contractor shall be required to replace it at the contractor's own expense.

7.9.5. GDPM may, at its sole discretion, retain any material not ultimately incorporated into the Project or return it to the Contractor for credit of an amount proportionate to the value of the extra materials.

7.9.6. Payment on approved estimates filed with GDPM or its representative shall be made within (30) thirty days.

7.9.7. Release of Retainage

7.9.7.1. When the Contractor has achieved Substantial Completion of all Work, and there is no other reason to retain funds; upon request of the Contractor, the funds retained in connection with the Work shall be released and paid to the Contractor, withholding only that amount necessary to assure faithful completion in the sole discretion of GDPM.

7.10. Payments Withheld

7.10.1. GDPM may withhold funds from or may assess Liquidated Damages against a Contractor Payment Request.

7.10.2. GDPM may decline to approve any Contractor Payment Request or part thereof, or nullify any previous Contractor Payment Request, in whole or in part, to the extent necessary in GDPM's sole opinion to protect GDPM from loss because of:

- Defective Work not remedied;
- Overpayment of any schedule of values line item without prior approval of related change order by Contracting Officer
- Overpayment due to calculation error;
- Damage caused by the Contractor;
- Reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- Reasonable evidence that the Work will not be completed within the Contract Times, and that the unpaid balance would not be adequate to cover damages under the Contract Documents for the anticipated delay;
- Failure to comply with Applicable Law including, but not limited to, the requirements of the Ohio Revised Code.

7.11. Payment Request

- 7.11.1. The Contractor and each of its subcontractors, regardless of tier, shall execute a Payment Release Affidavit to certify that the Contractor and each of its subcontractors, regardless of tier, have complied with all applicable requirements of the ORC, and to certify that all of its subcontractors have been paid in full for all Work performed or materials furnished under the Contract.
- 7.11.2. GDPM shall pay Contractor in approximately 30 days from the date of acceptance of the Payment Request.
- 7.11.3. The Contractor, as a condition precedent to final payment, shall complete all requirements of the Contract Documents.
- 7.11.4. Acceptance of final payment by the Contractor or a Subcontractor constitutes the payee's waiver of all claims against GDPM except those previously made in writing and identified by that payee as unsettled at the time of the final Contractor Payment Request.

8 Article VIII: Contract Modifications

8.1. Changes in Work

- 8.1.1. GDPM may order changes in the Work without invalidating the Contract, subject to the limitations set forth in this Article and elsewhere within the Contract Documents, a change in the Work may be accomplished by a Change Order, Change Directive, or order for a minor change in the Work.
- 8.1.2. Except as provided, no order, statement or conduct of GDPM shall be treated as a change or entitle the Contractor to an equitable adjustment.
- 8.1.3. Only GDPM's Contracting Officer has authority to modify any term or condition of this Contract. Any Contract modification shall be authorized in writing.
- 8.1.4. The Contracting Officer may modify the contract unilaterally:
- Pursuant to a specific authorization stated in a Contract clause; or
 - For administrative matters which do not change the rights or responsibilities of the parties.
- 8.1.5. All other contract modifications shall be in the form of supplemental agreements signed by the Contractor and GDPM.
- 8.1.6. Except as expressly stated herein, the Contractor's failure to obtain prior written authorization from GDPM for a change in the Work constitutes a waiver by the Contractor of an adjustment to the Contract Sum or Contract Time or both.
- 8.1.7. The Contractor shall perform all changes in the Work under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly with the change unless otherwise provided in the Change Order, Change Directive or order for a minor change in the Work.
- 8.1.8. **HUD Approval:** When a proposed modification requires the approval of HUD prior to its issuance; such modification shall not be effective until the required approval is received by GDPM.

8.2. Change Order

- 8.2.1. GDPM may, at any time, without notice to the sureties, by written order designated or

indicated to be a change order, make changes in the Work within the general scope of the

Contract including changes:

- In the specifications (including drawings and designs);
- In the method or manner of performance of the Work;
- GDPM-furnished facilities, equipment, materials, services, or site; or
- Directing the acceleration of the Work.

8.3. Increase or decrease of cost

8.3.1. If any change causes an increase or decrease in the Contractor's cost of, or the time required for the performance of any part of the Work under this contract, whether or not changed by any such order, GDPM shall make an equitable adjustment as set forth in Section 8.8 *Change Order Cost or Credit Determination* below and modify the Contract in writing.

8.3.2. The Contractor shall proportionally increase the amount of the Bond whenever the Contract Sum is increased.

8.3.3. If any notice of any change affecting the Contract is required by the provision of the Bond, notice is the Contractor's responsibility.

8.3.4. Except for an adjustment based on defective specifications, no proposal for any change shall be allowed for any costs incurred more than 20 days before the Contractor gives written notice as required.

8.3.4.1. In the case of defective specifications for which GDPM is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specification.

8.3.5. The Contractor must assert its right to an adjustment within 30 days after:

8.3.5.1. Receipt of a written change order, or

8.3.5.2. The furnishing of a written notice by submitting a written statement describing the general nature and the amount of the proposal.

8.3.6. If the facts justify it, GDPM may extend the period for submission.

8.4. Change Directive

8.4.1. Notwithstanding Form HUD-5370 Article 29(b), Parties agree that Change Order Directives may be utilized during the course of the Work.

8.4.2. A Change Directive is a written order prepared by GDPM directing a change in the Work and May, if necessary, state a proposed basis for adjustment, if any, of Contract Sum or Contract Time, or both.

8.4.3. A Change Directive shall be used to direct a change in the Work in the absence of a total agreement on the terms of a Change Order and shall only be used in the absence of total agreement on the terms of a Change Order concerning the associated change of the Work.

8.4.4. Upon receipt of a Change Directive, the Contractor shall promptly proceed with the change in the Work involved.

8.4.5. Within 14 days after receiving the Change Directive, the Contractor shall respond with a

Change Order Proposal for adjustment of the Contract Sum or Contract Time or both.

8.4.6. If the Contractor does not respond to the Change Directive as required above, GDPM shall determine the adjustments, if any, of the Contract Sum and Contract Times.

- If the Contractor does not agree with GDPM's determination, the Contractor shall initiate a claim within 10 days of the date on which GDPM issues the determination, and the Contractor's failure to do so shall constitute an irrevocable waiver the Claim.

8.4.7. If GDPM and the Contractor agree on the adjustment of the Contract Sum and Contract Time associated with the Change Order Directive, GDPM shall prepare an appropriate Change Order.

8.5. Change Order Procedure

8.5.1. Any Change Order Request must be in writing and submitted by the Contractor to GDPM in accordance with the Notice Provision.

8.5.2. The Contractor's cost of preparing and providing Proposals is included in the Contract Sum.

8.5.3. If GDPM Agrees with Change Order Proposal:

- GDPM shall prepare each Change Order, attach the supporting documentation, and issue the Change Order to the Contractor for signature.
- Within 3 days after issuance of Change Order to Contractor, Contractor must sign the Change Order and resubmit to GDPM.
- Change Order is not approved until GDPM's Contracting Officer signs the Change Order.

8.5.4. If GDPM disagrees with Change Order Proposal or Contracting Officer doesn't approve Change Order:

- GDPM will notify Contractor in writing with reasons; and
- Contractor has 14 days to modify the Change Order Request or invoke Article Dispute Resolution/Claim Procedure.
- Failure to reach an agreement on any proposal shall be a dispute under Article Dispute Resolution/Claim Procedure.

8.5.5. Nothing in the change order procedure, however, shall excuse the Contractor from proceeding with the contract change pursuant to an issued Change Directive.

8.6. Change Order Proposal

8.6.1. The Contractor's written proposal for equitable adjustment shall be submitted in the form of a lump sum proposal supported with an itemized breakdown of all increases and decreases in the contract with at least the following details:

8.6.1.1. Direct Costs:

- Materials (list individual items, the quantity and unit cost of each, and the aggregate cost)
- Transportation and delivery costs associated with materials
- Labor breakdowns by hours or unit costs (identified with specific Work to be performed)
- Construction equipment exclusively necessary for the change
- Costs of preparation and/ or revision to shop drawings resulting from the change
- Worker's Compensation and Public Liability Insurance

- Employment taxes under FICA and FUTA
- Bond Costs

8.6.1.2. Indirect Costs: Indirect costs may include overhead, general and administrative expenses, and fringe benefits not normally treated as direct costs.

8.6.1.3. Profit:

8.6.1.3.1. The amount of profit shall be negotiated and paid in accordance with Section 8.9 *Change Order Cost or Credit Determination* below and may vary according to the nature, extent, and complexity of the work required by the change.

- The allow-ability of the direct and indirect costs shall be determined in accordance with the Contract Cost Principles and Procedures for Commercial Firms in Part 31 of the Federal Acquisition Regulation (48 CFR 1-31), in effect on the date of this Contract.
- The Contractor shall not be allowed a profit on the profit received by any subcontractor.
- Equitable adjustments for deleted work shall include a credit for profit and may include a credit for indirect costs.
- On proposals covering both increases and decreases in the amount of the contract, the application of indirect costs and profit shall be on the net-change in direct costs for the Contractor or subcontractor performing the Work.

8.6.2. The Contractor shall include in the proposal its request for time extension (if any), and shall include sufficient information and dates to demonstrate whether and to what extent the change will delay the completion of the Contract in its entirety.

8.6.3. GDPM shall act on proposals within 30 days after their receipt, or notify the Contractor of the date such action will be taken. Equitable adjustments shall be made in accordance with Section

8.9 Change Order Cost or Credit Determination below

8.6.4. Failure to reach an agreement on any change order proposal shall be a dispute under the Disputes Article herein. Nothing in this Section, however, shall excuse the Contractor from proceeding with the contract as changed.

8.6.5. By signing a Change Order, the Contractor irrevocably certifies that the elements of a Change Order described herein are completely satisfied, and waives all rights, if any, to seek further adjustment of the Contract Sum or Contract Times, or both, at a later date with respect to the associated change in the Work, including without limitation on account of the "cumulative impact" of the associated change in the Work in combination with one or more of the other changes in the Work.

8.6.6. No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this Contract.

8.6.7. Except in an emergency endangering life or property, as determined by GDPM, no change shall be made by the Contractor without a prior written authorization from GDPM's Contracting Officer. When the Change Order is signed by the Contractor and GDPM's Contracting Officer, the fully executed Change Order modifies the Contract Documents and authorizes and directs the Contractor to proceed, and the Contractor shall promptly proceed

with the associated change in the Work.

8.7. Differing Site Conditions

8.7.1. The Contractor shall promptly, and before the conditions are disturbed, give a written notice to GDPM of:

- Subsurface or latent physical conditions at the site which differ materially from those indicated in this contract; or
- Unknown physical conditions at the site(s), of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the Contract. Written notice of the condition shall be given immediately to GDPM.
- The Contractor's failure to give notice of the Differing Site Condition as required shall constitute an irrevocable waiver of any associated claim.

8.7.2. GDPM shall investigate the site conditions promptly after receiving the notice.

- Work shall not proceed at the affected site, except at the Contractor's risk, until GDPM has provided written instructions to the Contractor.
- If the conditions do materially so differ and cause an increase or decrease in Contractor's cost of, or the time required for, performing any part of the Work under this Contract, whether or not changed as a result of the conditions, the Contractor shall file a claim in writing to GDPM within ten days after receipt of such instructions and, in any event, before proceeding with the Work.
- An equitable adjustment in the Contract price, the delivery schedule, or both shall be made under this Section and in accordance with Section 8.9 *Change Order Cost or Credit Determination* below, and the Contract modified in writing accordingly.

8.7.3. No request by Contractor for an equitable adjustment to the Contract under this Section shall be allowed, unless the Contractor has given the written notice required; provided that the time prescribed for giving such written notice may be extended by GDPM.

8.7.4. No request by Contractor for an equitable adjustment to the Contract under this Section shall be allowed if made after final payment under this contract.

8.7.5. If GDPM determines that the Contractor has not encountered a Differing Site Condition and the Contractor does not agree with that determination, the Contractor must initiate a Claim within 10 days of the date that GDPM issues its determination.

8.8. Minor Changes in the Work

8.8.1. Notwithstanding Form HUD-5370 Article 29(b), GDPM may order minor changes in the Work not involving adjustment of the Contract Sum or extension of the Contract Times and not inconsistent with the intent of the Contract Documents.

- Such changes shall be effected by written order ("no cost change order") issued to the Contractor.

8.8.2. The Contractor shall promptly carry out each order for a minor change in the Work if the Contractor agrees that the order does not involve adjustment of the Contract Sum and Contract Times.

8.8.3. If the Contractor reasonably believes that it would be entitled to an adjustment of the Contract Sum or Contract Times, or both, on account of an order for a minor change in the Work, the Contractor, within 3 business days after receiving the order, shall give GDPM written notice of the Contractor's position, and not proceed with the subject Work without

First receiving a Change Order related to it.

8.8.4. The Contractor waives its right to an adjustment of the Contract Sum or Contract Times on account of an order for a minor change in the Work by:

- a. Starting the Work that is the subject of the order for a minor change in the Work; or
- b. Failing to give the notice described herein within 3 business days after receiving the order for a minor change in the Work.

8.9. Change Order Cost or Credit Determination

8.9.1. Notwithstanding any provisions set forth in this Section 8.8 *Change Order Cost of Credit Determinations*, the allowability of any direct and indirect costs shall be determined in accordance with the Contract Cost Principles and Procedures for Commercial Firms in Part 31 of the Federal Acquisition Regulation (48 CFR1-31), as implemented by HUD Handbook 2210.18, in effect on the date of this Contract.

8.9.2. The maximum cost or credit resulting from a change in the Work shall be determined as described below.

- a. Proposals shall include the information required.
- b. A Unit Price Proposal shall only be valid when incorporated into the Contract by Change Order.
- c. The maximum cost or credit includes all compensation for impact costs. However, additional costs for impacts shall not be allowed.

8.9.3. The Contractor shall not assign any portion of the Work to another Person whereby the Contractor would benefit directly or indirectly from the double application of charges for overhead or profit.

8.9.4. GDPM may require notarized invoices for material costs and may audit the records of the Contractor and Subcontractors.

8.9.5. For each change in the Work, the Contractor shall furnish a detailed Proposal itemized on the Proposal Worksheet Summary Form published by GDPM through which the Contractor shall document the related changes in the Contract Sum.

- a. Any Subcontractor pricing shall also be itemized on the Proposal Worksheet Summary Form.

8.9.6. Pricing Criteria

8.9.6.1. This Section *Pricing Criteria* establishes the exclusive and maximum amount that GDPM shall pay for any Change Order, including, but not limited to, all amounts for interference with, delay, hindrance, disruption, or impact of the Work

- a. These Pricing Criteria also govern the value of deduct Change Orders and the Contractor's entitlement to additional compensation or damages through the claims and dispute resolution processes on account of changes in the Work.

8.9.6.2. In order to expedite the review and approval process, Proposals shall be prepared in the categories and order as listed below.

8.9.6.3. Contractor Personnel Costs

- a. The Contractor's on-Site management (including supervision and administrative personnel) are not subject to State or Federal Prevailing Wage Rates.
- b. These costs will be calculated on an hourly basis according to the rates acceptable to GDPM.
- c. In no event will the Contractor be entitled to an increase in the Contract Sum on

account of Contractor Personnel Costs unless the Contractor actually incurs

Additional Contractor Personnel Costs solely on account of the associated change in the Work.

8.9.6.4. Labor

- a. Field labor directly involved in the Work shall be based upon the actual rate of pay to the worker.
- b. If the Project is subject to payment of prevailing wage rates, field labor shall be paid according to the relevant classification of labor as established in the applicable prevailing wage determination.
- c. In no event will the Contractor be entitled to an increase in the Contract Sum on account of labor costs unless the Contractor actually incurs additional labor costs solely on account of the associated change in the Work.
- d. Under no conditions will the increase exceed those additional labor costs the Contractor actually incurs.
- e. The cost for supervision above the level of working forepersons (such as general forepersons, superintendent, project manager, etc.) Is included in the adjustment to Contractor Personnel Costs.

8.9.6.5. Fringes

- a. Fringe benefit credit for labor is only allowable for prevailing wage fringe benefits including, but not limited to, Health and Welfare, vacation, apprenticeship training, and certain types of pension plans.
- b. Each fringe benefit for which credit is requested shall be calculated on an hourly basis and listed as a separate line item.
- c. The Contractor shall submit documentation supporting the calculation of the amounts for each fringe benefit for each worker classification, including labor provided by Subcontractors.

8.9.6.6. Allowable Payroll Expenses: Allowable payroll expenses for labor including payroll taxes as well as other benefits that are required by Applicable Law, shall each be a separate line item.

8.9.6.7. Equipment Rentals

- a. All charges for certain non-owned heavy or specialized equipment at up to 100 percent of the documented rental cost
- b. No rental charges shall be allowed for hand tools, minor equipment, simple scaffolds, etc.
- c. Downtime due to repairs, maintenance and weather delays shall not be allowed.
- d. Contractor shall submit copies of actual paid invoices to substantiate rental costs.

8.9.6.8. Owned Equipment

- a. All charges for certain heavy or specialized equipment owned by the Contractor or Subcontractor performing the Work shall be paid at up to 100 percent of the cost listed by the current edition of the Associated Equipment Distributors' *AED Green Book* heavy equipment rental rates.
- b. No recovery shall be allowed for hand tools, minor equipment, simple scaffolds, etc.
- c. The longest period of time that the equipment is to be required for the Work shall be the basis for the pricing.
- d. Downtime due to repairs, maintenance, and weather delays shall not be allowed.

8.9.6.9. Trucking

- a. A reasonable delivery charge or per-mile trucking charge for delivery of required

Materials or equipment.

- b. Charges for use of a pick-up truck shall not be allowed.

8.9.6.10. Materials

- a. The actual cost (including all discounts, rebates or related credits) of all materials incorporated into the changed Work.
- b. Documentation shall show costs, quantities, or Unit Prices of all items, as appropriate.
- c. The cost or credit for reusable materials shall be limited to 33 percent of the material cost for each use.

8.9.6.11. Contractor's General Conditions Costs

- a. The Contractor's General Conditions Costs to the extent attributable to an associated change in the Contract Time for achievement of Final Acceptance resulting from the change in Work.
- b. In no event shall the Contract Sum adjustment per day of Contract Time adjustment exceed an amount equal to (1) the sum of the General Conditions Costs line items in the Contractor's Schedule of Values approved by GDPM, (2) divided by the total number of days of the original Contract Time for achievement of Final Acceptance.
- c. The Contractor shall:
 - o Exclude the bond premium from the Schedule of Values for the purposes of the calculation; and
 - o Include the actual adjustment of the Bond Premium attributable to an associated change in the Contract Sum.
- d. If the Contractor purchases Builder's Risk insurance for the Project, the Contract shall:
 - o Exclude the Builder's Risk insurance premium from the Schedule of Values for the purposes of the calculation; and
 - o Include the actual adjustment of the Builder's Risk insurance premium attributable to an associated change in the Contract Sum.

8.9.6.12. Subcontractor Overhead and Profit

- a. Adjustment of the Contract Sum on account of a change in Subcontractor-performed Work shall include the Subcontractor's aggregate overhead and profit allowance equal to 15 percent of the sum of the Subcontractor's costs that are associated with that changed Work.
- b. The allowance applies to each Subcontractor tier.
- c. The allowance covers:
 - 1. The costs required to schedule and coordinate the Work
 - 2. Telephone
 - 3. Telephone charges
 - 4. Facsimile
 - 5. Telegrams
 - 6. Postage
 - 7. Photos
 - 8. Photocopying
 - 9. Hand tools
 - 10. Simple scaffolds (one level high)
 - 11. Tool breakage

12. Tool repairs
13. Tool replacement
14. Tool blades
15. Tool bits
16. Home office estimating and expediting
17. Home office clerical and accounting support
18. Home office labor (management, supervision, engineering)
19. All other home office expense, legal services, travel, and parking expenses

- d. An exception is allowed for shop or engineering labor, which shall not be subject to Prevailing Wage rates for steel fabricators, sheet metal fabricators, and sprinkler system fabricators performing work off-site.
 - o Recovery for these matters shall be allowed on an hourly basis.
- e. An exception is allowed for field supervision labor, for those portions of the Change Order Work that will be performed, or was performed, at times when the superintendent is not required to be on site, including but not limited to overtime hours due to acceleration and/or extensions of the Contract Times.
 - o Recovery for this matter will be allowed on an hourly basis.

8.9.6.13. Contractor's Fee: Adjustment of the Contract Sum on account of a change in the Work shall include an allowance for the Contractor's Fee equal to 10 percent of the sum of the costs that are associated with that changed Work.

8.9.6.14. Miscellaneous

- a. Adjustment of the Contract Sum on account of a change in Work may include the following costs with no allowance for Contractor's Fee or Subcontractor overhead and profit.
 - The premium portion only for approved overtime (labor and fringes).
 - The straight time portion is included.

8.9.6.15. Costs that shall not be reimbursed for Change Order Work include the following

- b. Voluntary employee deductions including, but not limited to, deductions for charitable donations or U.S. savings bonds
- c. Employee profit sharing

8.10. Time Extension

8.10.1. Contractor's **Change** Order Proposal shall include sufficient information and dates to demonstrate whether and to what extent the change will delay the completion of the Contract in its entirety. Every adjustment of the Contract Times associated with any Change Order Proposal shall be determined as provided herein, which establishes the Contractor's maximum entitlement for any change in the Work, including without limitation all adjustments for interference, delay, hindrance, or disruption of the Work.

8.10.2. This **also** governs time adjustments for deduct Change orders and Contractor's entitlement to additional time through the claims and dispute resolution process on account of changes in the Work.

8.10.3. The Contractor shall substantiate all changes in the Contract Times with:

- a. A written description of the nature of the interference, disruption, hindrance or

Delay ("disruption or delay");

- b. Identification of Persons and events responsible for the disruption or delay;
- c. Date, or anticipated date, of commencement of the disruption or delay;
- d. Identification of activities by schedule activity number and name on the Construction Progress Schedule, which may be affected by the disruption or delay, or new activities created by the disruption or delay and the relationship with existing activities;
- e. Anticipated duration of the disruption or delay and of any remobilization period;
- f. Specific number of days of extension requested and specific number of days for remobilization requested;
- g. Recommended action to avoid or minimize any future disruption or delay; and
- h. A detailed written proposal for an increase in the Contract Sum which would fully compensate the Contractor for all costs of acceleration of the Work needed to completely overcome the associated delay, if any.

8.10.4. A Change Order may authorize extension of the Contract Time for specific elements, while maintaining milestone dates for unaffected elements. Such a Change Order may also authorize an appropriate adjustment to Liquidated Damages.

8.11. Critical Path

8.11.1. Time extensions shall depend upon the extent to which the Work on the critical path of the Construction Progress Schedule is affected.

8.12. Granting Time Extension

8.12.1. A Change Order granting a time extension may provide that the Contract Times shall be extended for only elements so interfered with, disrupted, hindered, or delayed and related remobilization and that shall not be altered and may further provide for adjustment of Liquidated Damages.

9 ARTICLE IX: DISPUTE RESOLUTION & CLAIM PROCEDURE

9.1. General

9.1.1. "Claim," as used in this Article, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to the contract.

9.1.2. A claim arising under the Contract, unlike a claim relating to the contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant.

9.1.3. A voucher, invoice, application for payment, or other routine request for payment that is not in dispute when submitted is not a Claim. However, the submission may be converted to a Claim by complying with the requirements of this Article, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

9.1.4. Except for disputes arising under the article entitled Labor Standards - Davis Bacon and Related Acts, herein, all disputes arising under or relating to this Contract, including any claims for damages for the alleged breach thereof which are not disposed of by agreement, shall be resolved under this Article.

9.1.5. All Claims by the Contractor shall be made in writing and submitted to GDPM for a written decision.

9.1.6.A claim by GDPM against the Contractor shall be subject to a written decision by the Contracting Officer.

9.2. Initiation of a Claim by Contractor

9.2.1. Every Claim shall accrue upon the date of occurrence of the event giving rise to the Claim.

9.2.2. Except as provided, the Contractor shall initiate every Claim by giving written notice of the Claim to GDPM within fourteen (14) days after occurrence of the event giving rise to the Claim, with the following exceptions:

9.2.2.1. The 14-day time limit on initiating a Claim arising from the response of an RFI by GDPM begins to run on the date of the response.

9.2.2.2. The 14-day time limit on initiating a Claim arising from GDPM's determination concerning a Differing Site Condition begins to run on the date of the determination.

9.2.2.3. Contractor's written notice of claim must be delivered to the Contracting Officer prior to GDPM's issuance of final contract payment.

9.2.3. The Contractor's written notice of a Claim shall provide the following information:

9.2.3.1. Nature and anticipated amount of the impact, including all costs for any interference, disruption, hindrance, or delay, which shall be calculated and be a fair and reasonably accurate assessment of the damages suffered or anticipated by the Contractor;

9.2.3.2. Identification of the circumstances responsible for causing the impact, including, but not limited to, the date or anticipated date, of the commencement of any interference, disruption, hindrance, or delay;

9.2.3.3. Identification of activities on the Construction Progress Schedule that will be effected by the impact or new activities that may be created and the relationship with existing activities;

9.2.3.4. Anticipated impacts and anticipated duration of any interference, disruption, hindrance, delay, or impact, and any remobilization period; and

9.2.3.5. Recommended action to avoid or minimize any interference, disruption, hindrance, delay, or impact.

9.2.4. The Contractor's failure to initiate a Claim as and when required shall constitute the Contractor's irrevocable waiver of the Claim.

9.3. Substantiation of Claims General

9.3.1. Within 30 days after the initiation of a Claim, the Contractor shall submit to the project manager or other GDPM designee, an electronic copy of all information and statements required to substantiate a Claim and all other information that the Contractor believes substantiates the Claim.

9.3.2. The Contractor shall file the one electronic copy with GDPM.

9.3.3. The Contractor shall substantiate all of its Claims by providing the following minimum information:

- A narrative of the circumstances, which gave rise to the Claim, including without limitation the start date of the event or events and the actual or anticipated finish date;
- Detailed identification of the Work affected by the event giving rise to the Claim;

- Copies of the Contractor's daily log for each day of impact;
- Copies of relevant correspondence and other information regarding or supporting Contractor's entitlement;
- Copies of any and all information related to the Contractor's costs, including all job cost reports, bid take offs, and other financial information related to the Contractor's Claim;
- A notarized certification

9.4. Substantiation of Claims for increase of the Contract Sum

9.4.1.In addition to the minimum information required by Contractor, the Contractor shall substantiate each Claim for an increase of the Contract Sum with:

- Written documentation of the actual additional direct and indirect costs to the Contractor due to the event giving rise to the Claim;
- A written statement from the Contractor that the increase requested is the entire increase in the Contract Sum associated with the Claim; and
- The general substantiation documentation.

9.5. Substantiation of Claims for Extension of the Contract Time

9.5.1.In addition to the minimum information required by Contractor, the Contractor shall substantiate each Claim for an extension of the Contract Times with:

- Written documentation of the actual delay to the critical path of the Construction Progress Schedule due to the event giving rise to the Claim;
 - A detailed written Proposal for an increase in the Contract Sum that would fully compensate the Contractor for all costs of acceleration of the Work needed to completely overcome the associated delay, A written statement from the Contractor that the extension requested is the entire extension of the Contract Times associated with the Claim; and
- The general substantiating documentation.
- In addition, if adverse weather conditions are the basis for a Claim for additional time, the Contractor shall document the Claim with data substantiating that weather conditions were abnormal for the period, could not have been reasonably anticipated, and had an adverse effect on a critical element of the scheduled construction.

9.6. Certification of a Claim

9.6.1.The Contractor shall certify each Claim within 30 days after initiating the Claim or before Contract Completion, whichever is earlier, by providing the notarized certification specified below, signed and dated by the Contractor:

"The undersigned Contractor certifies that the Claim is made in good faith; that the supporting data is accurate and complete to the best of the Contractor's knowledge and belief; that the amount requested is a fair, reasonable, and necessary adjustment for which the Contractor believes that GDPM is liable; and that the undersigned is duly authorized to certify the Claim on behalf of the Contractor."

9.7. Delay and Delay Damage Limitations

9.7.1. Subject to other provisions of the Contract, the Contractor will be entitled to an extension of the Contract Times if Contractor demonstrates that delay is "excusable". To be excusable, the delay must be a delay in the commencement or progress of Work on the critical path of the Construction Progress Schedule and shall be caused by acts of unforeseeable nature or the public enemy, acts of the government not arising from the Contractor's failure to comply with Applicable Law, fires, floods, epidemics, weather, and labor disputes beyond the Contractor's control. The delay shall be beyond the control of the Contractor and without fault or negligence of Contractor and shall be unforeseeable prior to submitting a response to the initial solicitation for construction Work.

9.7.2. Notwithstanding any other provision of the Contract Documents to the contrary, the Contractor shall not be entitled to an increase in the Contract Sum, or an extension of the Contract Times, or both:

- On account of the impact of any normal adverse weather on any of the Work or on account of the impact of any abnormal adverse weather on Work not on the critical path;
- Unless contractor demonstrates that the event giving rise to the claim caused a delay to the overall completion of the Contract;
- To the extent that a delay occurs concurrently with a delay attributable to the Contractor; or
- On account of the delay of any Work not on the critical path.

9.7.3. When the Contractor is prevented from completing any part of the Work on the critical path within the Contract Time due to weather conditions, provided the Contractor properly initiates a Claim, the Contract Time will be extended by one (1) day for each work day lost due to weather that delays Work on the critical path in excess of those in the following table:

| Month(s) | Number of Workdays Lost Due To Weather |
|--------------------|--|
| January & February | 8 |
| March | 7 |
| April | 6 |
| May | 5 |
| June - August | 4 |
| September | 5 |
| October - December | 6 |

9.7.4. Contractor shall not be entitled to an increase in Contract Time and/or Contract Sum for non- delays. Non-excusable delays include, but are not limited to, delays which are foreseeable or preventable by the Contractor (e.g. financial difficulties, supplier delays where supplies are obtainable from other source, defective specifications where defect is apparent prior to start of the Contract Work.).

9.7.5. Notwithstanding any other provision of the Contract Documents to the contrary, the Contractor shall not be entitled to an increase in the Contract Sum or any type of damages on account of a delay in the commencement or progress of Work on the critical path. Such claims may be compensable in limited circumstances and in accordance with the following:

9.7.5.1. GDPM Ordered Suspension of Work. Increased sum may be permitted for increased costs of performance, excluding profit, for "unreasonable delays", ordered by GDPM.

- 9.7.5.2.** Constructive Suspension of Work: work is prevented by GDPM without express order of Contracting Officer (e.g. delay in issuance of notice to proceed, delay in availability of site, delay due to interference with Contractor's Work, delay of approvals, delay in inspections).
- 9.7.5.3.** If GDPM does not order a Suspension of Work, the delay will generally not be compensable unless Contractor demonstrates that GDPM is solely at fault for the delay (E.g. GDPM implied duty to cooperate).
- 9.7.5.4.** For such delay claims, Contractor must notify GDPM in writing within 14 days of event giving rise to the claim.
- 9.7.5.5.** For such delay claims, potential recovery is limited to:
- 9.7.5.5.1. Indirect cost increase that occurred during the extended performance period;
 - 9.7.5.5.2. Unabsorbed office overhead that occurred during the extended performance; period
 - 9.7.5.5.3. Material cost increases that occur during the delay;
 - 9.7.5.5.4. Lost productivity caused by the delay;
 - 9.7.5.5.5. Damages directly related to or attributable to the delay.
- 9.7.6.** Notwithstanding any other provision of the Contract Documents to the contrary, the Contractor shall not be entitled to an increase in the Contract Sum or any type of damages arising from a delay in the commencement or progress of Work caused by the occurrence or non-occurrence of an event beyond GDPM's control such as acts of Nature or the public enemy, acts of the government, fires, floods, epidemics, labor disputes, unusual delivery delays, weather, or damages caused by the Contractor.

9.8. Derivative Claims

- 9.8.1.** Notwithstanding any other provision of the Contract Documents to the contrary, if GDPM prosecutes a claim, suit, or appeal against a Separate Consultant or Separate Contractor to recover damages the Contractor suffers on account of the acts or negligent acts of a Separate Consultant or Separate Contractor or person or entity for whom either is legally responsible, GDPM's liability to the Contractor shall not exceed the amount GDPM actually recovers from the Separate Consultant or Separate Contractor on account of those damages less the costs GDPM incurs recovering them. GDPM is not obligated to prosecute any such claim, suit, or appeal.

9.9. Claim Decision

- 9.9.1.** GDPM shall, within 60 (unless otherwise indicated) days after receipt of the request, decide the claim or notify the Contractor of the date by which the decision will be made.
- 9.9.2.** The Contracting Officer's decision shall be final unless the Contractor:
- Appeals in writing to a higher level at GDPM in accordance with GDPM's policy and procedures;
 - Refers the appeal to an independent mediator or arbitrator; or
 - Files suit in a court of competent jurisdiction. Such appeal(s) must be made within 15 days after receipt of GDPM's decision.

9.9.3.The Contractor shall proceed diligently with performance of the contract, pending final resolution of any request for relief, claim, appeal, or action arising under or relating to the contract, and comply with any decision of GDPM.

9.10. Audit of a Claim

9.10.1. All Claims shall be subject to audit at any time following filing of the Claim, whether or not the Claim is part of a lawsuit.

9.10.2. The audit may be performed by GDPM staff or by a consultant engaged by GDPM.

9.10.3. The audit may begin upon 10-days' notice to the affected Contractor or affected Subcontractor.

9.10.4. The Contractor shall cooperate with the request.

9.10.5. Failure of the Contractor or Subcontractor to produce sufficient records to allow GDPM to audit and verify a Claim shall constitute an irrevocable waiver of the Claim or portion of the Claim that could not be completely audited.

9.10.6. The Contractor shall make available to GDPM all Contractor and Subcontractor documents related to the Claim including, without limitation, the following documents:

1. Daily time sheets and superintendent's daily reports;
2. Union agreements, if any, and employer agreements;
3. Insurance, welfare, fringes, and benefits records;
4. Payroll tax returns;
5. Material invoices, purchase orders, Subcontracts, and all material and supply acquisition contracts;
6. Material cost distribution worksheets;
7. Equipment records (list of Contractor equipment, rates, etc.);
8. Vendor rental agreements and Subcontractor invoices;
9. Subcontractor payment certificates;
10. Canceled checks (payroll and vendors);
11. Job cost report;
12. Job payroll ledger;
13. General ledger, general journal, (if used) and all subsidiary ledgers and journals together with all supporting documentation pertinent to entries made in these ledgers and journals;
14. Cash disbursements journal;
15. Financial statements for all years reflecting operations on the Project;
16. Income tax returns for all years reflecting operations on the Project;
17. Depreciation records on all equipment utilized whether the records are maintained by the Contractor, its accountant, or others;
18. If a source other than depreciation records is used to develop costs for the Contractor's internal purposes in establishing the actual cost of owning and operating equipment, all other source documents;

19. All documents that reflect the Contractor's actual profit and overhead during the years the Project was being performed;
20. All documents related to the preparation of the Contractor's Bid, including the final calculations on which the Bid was based, unless the documents are placed in escrow under provisions of the Instructions to Bidders;
21. All documents that relate to the Claim together with all documents that support the amount of damages as to the Claim;
22. Worksheets used to prepare the Claim establishing the cost components for items of the Claim including, but not limited to, labor, fringes, benefits and insurance, materials, equipment, Subcontractors, and all documents that establish the periods of time, individuals involved, the hours and rate of pay for the individuals; and
23. All other documents requested by GDPM to review the Claim.

9.11. False Certification of a Claim

9.11.1. If the Contractor falsely certifies all or any part of a Claim, the portion of the Claim falsely certified shall be denied, and may be sufficient cause for GDPM to exclude Contractor from future contracting opportunities.

9.11.2. The Contractor shall not knowingly present or cause to be presented to GDPM a false or fraudulent Claim. "*Knowingly*" shall have the same meaning as in the Federal False Claims Act.

9.12. If the Contractor knowingly presents or causes to be presented a false or fraudulent Claim, then the Contractor shall be liable to the GDPM for the same civil penalty and damages as the United States Government would be entitled to recover and shall also indemnify and hold GDPM harmless from all costs and expenses, including GDPM's attorneys' and consultants' fees and expenses incurred in investigating and defending against such Claim and in pursuing the collection of such penalty, damages and fees and expenses.

9.13. Claims based upon Defective Specifications: Contractor may be entitled to compensation for increased costs of performance when increased cost is due to Contractor following GDPM-provided defective design specifications.

9.14. Claims based on GDPM ordered Change: If the Contracting Officer makes a direct change Within the scope of the contract, Contractor may be entitled to an increase in Contract Sum or Time if the change increases or decreases the cost or time of performance. Recovery under this provision is limited to changes by the Contracting Officer or a formally designated representative. Contractor shall not be entitled to compensation for any change ordered by un-designated person even if such person is a GDPM agent or employee. Claims for changes must be asserted within 14 calendar days after written change order.

9.15. Claims based upon Differing Site Conditions: To be compensable, Claims based upon Differing Site Conditions is limited to the following:

9.15.1. Differing Site Condition must be an actual physical condition of the job site.

9.15.2. Differing Site Condition must have existed at the time of contract commencement

9.15.3. Differing Site Condition must not have been discoverable during site inspection.

9.15.4. Differing Site Condition must be of a nature that materially differs from conditions indicated in the information provided by GDPM in the solicitation documents.

9.15.5. Differing Site Condition must be an unknown and unusual condition that differs materially from what is ordinarily encountered on the particular type of Work in the particular locality (it must be unusual for that particular area).

9.16.Subcontractor Claims: A subcontractor shall not submit a claim directly to GDPM. Any claim related to a Subcontractor must be brought directly by and certified by the Contractor as if the Claim were brought by the Contractor itself. The Contractor may "sponsor" the Subcontractor Claim only by affirmatively and clearly agreeing to do so in writing and must be expressly permitted in the initial agreement between Contractor and Subcontractor. Any claim falsely certified will subject the Contractor to debarment from future GDPM contracting opportunities.

9.17. Initiation of Claim by GDPM: All GDPM initiated Claims must be presented within eight (8) Years of notice of event giving rise to the Claim unless such claim is based upon breach of warranty in which case the term of the warranty shall apply.

10. ARTICLE X: SUSPENSION AND TERMINATION

10.1. Suspension of the Work

10.1.1. The Contracting Officer may order the Contractor in writing to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of GDPM.

10.1.2. If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted by an act of GDPM in the administration of this Contract, or by GDPM's failure to act within the time specified (or within a reasonable time if not specified) in this Contract, an adjustment shall be made for any increase in the cost of performance of the Contract (excluding profit) necessarily caused by such unreasonable suspension, delay, or interruption and the Contract modified in writing accordingly.

10.1.3. However, no adjustment shall be made for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor or for which any equitable adjustment is provided for or excluded under any other provision of this Contract.

10.1.4. A claim shall not be allowed:

- For any costs incurred more than 14 calendar days before the Contractor shall have notified GDPM in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order); and
- Unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, for interruption, but no later than the date of final payment under the Contract.

10.1.5. If GDPM suspends the Work under this Article and the Contractor submits a proper Payment Request, subject to all other provisions of the Contract Documents, the Contractor shall be entitled to payment of compensation due under the Contract Documents for the Work performed before the suspension based upon the Schedule of Values.

10.1.6. GDPM, without prejudice to any other right or remedy it may have, may order the Contractor in writing to suspend, delay, or interrupt the performance of the Work in whole or in part for such period as GDPM may determine for any of the following reasons:

- Defective Work;

- The Contractor is causing undue risk of damage to any part of the Project or adjacent area;
- The Contractor fails to furnish or perform the Work in such a way that the complete Work will conform to the requirements of the Contract Documents; or
- Any other cause GDPM reasonably believes justifies suspension.

10.1.7. GDPM's exercise of its right to suspend the Work shall not entitle Contractor to any adjustment of the Contract Sum, Contract Time or both.

10.1.8. Upon receipt of the notice of suspension, the Contractor shall cease Work on the suspended activities and take all necessary or appropriate steps to limit disbursements and minimize respective costs.

10.1.9. The Contractor shall furnish a report to GDPM within 5 days of receiving the notice of suspension, describing the status of the Work, including, but not limited to, results accomplished, resulting conclusions, and other information as GDPM may require.

10.1.10. GDPM's right to stop the Work shall not give rise to any duty to exercise the right for the benefit of the Contractor or any other party, and GDPM's exercise or failure to exercise the right shall not prejudice any of GDPM's other rights including the right to suspend the Work in the future under the same or similar circumstances.

10.2. Termination for Convenience

10.2.1. GDPM, through the Contracting Officer, may terminate this contract in whole, or in part, whenever the Contracting Officer determines that such termination is in the best interest of GDPM.

10.2.2. Any such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which the performance of the work under the contract is terminated, and the date upon which termination becomes effective.

10.2.3. Upon delivery of the Notice of Termination, the Contractor shall immediately proceed with performance of the following duties in accordance with instructions from GDPM:

1. Cease operations as specified in the Notice;
2. Place no further orders and enter into no further subcontracts for materials, labor, services, or facilities, except as necessary to complete continued portions of the Project;
3. Terminate all subcontracts and orders to the extent they are related to the Work terminated;
4. Proceed with Work not terminated; and
5. Take actions that may be necessary, or that GDPM may direct, for the protection and preservation of the terminated Work.

Failure to do any actions set forth in this Provision (**10.2.3**), may lead to Contractor's liability for actual damages as a result of Contractor's failure to protect the Work.

10.2.4. If the performance of the work is terminated, either in whole or in part, GDPM shall be liable to the Contractor for reasonable and proper costs resulting from such termination upon the receipt by GDPM of a properly presented claim setting out in detail:

1. The total cost of the work performed to date of termination less the total amount of contract payments made to the Contractor;
2. The cost of settling and paying claims under subcontracts and material orders for

Work performed and materials and supplies delivered to the site, payment for which has not been made by GDPM to the Contractor or by the Contractor to the subcontractor or supplier;

3. The cost of preserving and protecting the work already performed until GDPM or assignee takes possession thereof or assumes responsibility therefore; and
4. An amount constituting a reasonable profit on the value of the work performed by the Contractor.

10.2.5. Unless GDPM deems in writing that additional time is needed for review, GDPM will act on the Contractor's claim within 60 days of receipt of the Contractor's claim.

10.2.6. Any disputes are expressly made subject to the Article titled ***Dispute Resolution and Claim Procedure*** of this Contract.

10.2.7. If GDPM terminates the Work the termination shall not affect the rights or remedies of GDPM against the Contractor then existing or which may thereafter accrue.

10.2.8. Notwithstanding this Provision **10.2 Termination for Convenience**, if GDPM terminates the Work but there exists an event of Contractor's default, the Contractor shall be entitled to receive only such amounts as it would be entitled to receive following the occurrence of an event of default as provided for below.

10.3. Termination for Cause/Default

10.3.1. If the Contractor materially breaches this Contract, including without limitation, the Contractor refuses or fails to prosecute the work, or any separable part thereof, with the diligence that will insure its completion within the time specified in this Contract, or any extension thereof, or fails to complete said work within this time, GDPM may, by written notice to the Contractor, terminate the right to proceed with the work (or separable part of the work) that has been delayed. Other examples of material breaches of the Contract include but are not limited to:

- Refusal to remedy defective work;
- Failure to supply enough properly skilled workers or proper materials;
- Failure to provide revised Construction Progress Schedule or Recovery Plan;
- Failure to properly make payment to Subcontractors or Consultants; or
- Disregarding laws, ordinances, or rules, regulations, or orders of a public authority with jurisdiction over the Project.

10.3.2. In the event of a Termination under this Provision, GDPM may take over the work and complete it, by contract or otherwise, and may take possession of and use any materials, equipment, and plant on the work site necessary for completing the work.

10.3.3. The Contractor and its sureties shall be liable for any damage to GDPM resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by GDPM in completing the Work.

10.3.4. In accordance with the Ohio Revised Code, if GDPM intends to exercise its termination right, GDPM shall issue not less than 5 days written notice ("5-Day Notice") to the Contractor and the Contractor's Surety. However, notwithstanding any provision of the Contract to the contrary, the issuance of the 5-Day Notice is not a condition precedent to GDPM's exercise of its rights and GDPM's decision to not issue a 5-Day Notice will not

Prejudice GDPM's rights under this Contract.

- 10.3.5.** If the Contractor fails to satisfy the requirements set forth in the 5-Day Notice within 15 days of receipt of the 5-Day Notice or as otherwise specified in the Notice, GDPM may declare the Contractor in default, terminate the Contract, and employ upon the Work the additional force or supply materials or either as appropriate, and remove Defective Work.
- 10.3.6.** If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the Parties will be the same as if the termination had been for convenience of GDPM.
- 10.3.7.** If the Contract is terminated, the Contractor's Surety may perform the Contract. Contractor and its Surety are subject to the following provisions and Contractor shall ensure the following provisions are contained within the Agreement between the Surety and Contractor regarding the Work that is the subject of this Contract.
- 10.3.7.1.** If the Contractor's Surety does not commence performance of the Contract within 10 days of the date of Contract termination, GDPM may complete the Work by means that GDPM deems appropriate.
- 10.3.7.2.** GDPM may take possession of and use all materials, facilities, and equipment at the Site or stored off-site, for which GDPM has paid.
- 10.3.7.3.** If GDPM notifies the Contractor's Surety that the Contractor is in default or terminates the Contract, the Surety shall promptly and in not more than 21 days complete an investigation of the claimed material default or termination.
- 10.3.7.4.** As part of such investigation, the Surety shall visit the offices of the Contractor, A/E and GDPM to review the available project records.
- 10.3.7.5.** If the Surety proposes to take over the Work, the Surety shall do so no later than the expiration of such 21 day period or 10 days after the date GDPM terminates the Contract, whichever is later.
- 10.3.7.6.** If GDPM terminates the Work, and the Surety proposes to provide a replacement contractor, the replacement contractor shall be fully capable of performing the Work in accordance with the Contract Documents, including meeting all the requirements of the Contract Documents. If the Contractor is terminated, the replacement contractor shall not be the Contractor.
- 10.3.7.7.** The surety shall provide GDPM with the results of its investigation, including any written report or documents.
- 10.3.7.8.** Termination for Cause/Default is in addition to GDPM's other rights under the Contract Documents and is not intended to create any rights of the Surety, including but not limited to the right to take over the Contractor's obligations.
- 10.3.7.9.** If the Contract is terminated for cause, the Contractor shall not be entitled to further payment. If the unpaid balance of the Contract Sum exceeds the costs of finishing the Work, including without limitation the fees and charges of engineers, architects, attorneys, and other professionals and court costs, and other damages incurred by GDPM and not expressly waived, the Contractor or Surety shall immediately pay the amount of insufficiency to GDPM.
- 10.3.7.9.1.** This obligation for payment shall survive termination of the Contract.
- 10.3.7.10.** If the Contractor's Surety performs the Work, the provisions of the Contract Documents govern the Surety's performance, with the Surety in place of Contractor

In all provisions including, but not limited to, provisions for payment for the Work, and provisions of the right of GDPM to complete the Work.

10.4. If GDPM terminates the Contract, the termination shall not affect any rights or remedies of GDPM against the Contractor then existing or which may thereafter accrue.

10.5. GDPM's retention or payment of funds due to the Contractor shall not release the Contractor or the Contractor's Surety from liability for performance of the Work in accordance with the Contract Documents.

10.6. Contractor Insolvency

10.6.1. *Bankruptcy of Contractor:* If the Contractor files a voluntary petition in bankruptcy or has an involuntary petition in bankruptcy filed against it, the Contractor, the Contractor as the debtor-in- possession, or the trustee of the Contractor's bankruptcy estate shall notify GDPM in writing within 5 days of such filing and file a motion to assume or reject the Contract within 20 days after the filing of the petition and shall diligently prosecute that motion to conclusion so as to obtain an order granting or denying that motion within 45 days after the filing of the petition.

- The failure to file and prosecute that motion Contractor shall constitute a material breach of the Contract as time is of the essence with respect to Contractor's performance of all terms of this Contract.
- The Contractor agrees to the granting of relief from the automatic stay of the Bankruptcy Code, to permit GDPM to terminate the Contract for cause in such instance and issue and serve all notices necessary to terminate the Contract or arising out of termination of the Contract and to take any other action necessary to terminate the Contract.

10.6.2. *Receivership or Assignment for the Benefit of Creditors:* If the Contractor makes a general assignment for the benefit of creditors or if a receiver is appointed for all or a substantial part of Contractor's business or property, GDPM shall serve written notice to the Contractor and Contractor's Surety stating that any failure of the Contractor to provide adequate assurance of continued performance shall be considered a rejection of the Contract, which shall result in termination of the Contract for cause.

- Such termination of the Contract need not be evidenced by an order of any court

10.7. A Contractor's right to Proceed shall not be terminated for Cause or the Contractor charged with damages under this the Provisions for Termination for Cause/ Default as set forth above if:

10.7.1. The delay in completing the Work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include

1. Acts of God, or of the public enemy;
2. Acts of GDPM or other governmental entity in either its sovereign or contractual capacity,
3. Acts of another contractor in the performance of contract with GDPM;
4. Fire;
5. Floods;
6. Epidemics;
7. Quarantine restrictions;

8. Strikes;
9. Freight embargos;
10. Unusually severe weather; or
11. As determined by GDPM, delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of either the Contractor or Subcontractors and suppliers.

10.7.2. The Contractor, within 10 days from the beginning of such delay as set forth in this Provision, unless otherwise extended by GDPM, shall notify GDPM in writing of the causes of delay.

10.7.3. GDPM's Contracting Officer shall ascertain the facts and extent of the delay.

10.7.4. If in the judgment of GDPM's Contracting Officer, the findings of fact warrant such action, time for completing the Work shall be extended by written modification to the Contract. The findings of fact of the Contracting Officer shall be reduced to a written decision which shall be subject to the provisions of the Article titled Dispute Resolution and Claim Procedure.

11 ARTICLE XI: CONSTRUCTION CLOSEOUT

11.1. Final Cleaning

11.1.1. Before requesting the Substantial Completion inspection of the Work, the Contractor shall clean the Site, remove waste materials and rubbish attributable to the Project, and restore the property to an acceptable condition so that upon Substantial Completion, the site is ready for occupancy by GDPM.

11.1.2. If the Contractor performs any Work after final cleaning, the Contractor shall clean the affected area as provided above so that upon Substantial Completion, the site is ready for occupancy by GDPM.

11.1.3. Final cleaning shall be done to the reasonable satisfaction of GDPM.

11.1. Inspection and Construction of the Work

11.1.1. The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the Work performed under the Contract conforms to all Contract requirements.

11.1.2. All Work is subject to GDPM inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the Contract.

11.1.3. GDPM inspections and tests are for the sole benefit of GDPM and shall not:

- Relieve the Contractor of responsibility for providing adequate quality control measures;
- Relieve the Contractor of responsibility for loss or damage of the material before acceptance;
- Constitute or imply acceptance; or
- Affect the continuing rights of GDPM after acceptance of the completed work.

11.1.4. The presence or absence of the GDPM inspector does not relieve the Contractor from any Contract requirement. And, the inspector is not authorized to change any term or condition of the specifications without the Contracting Officer's written authorization.

11.1.5. All instructions and approvals with respect to the work shall be given to the Contractor by

GDPM and shall be in writing.

11.1.6. The Contractor shall promptly furnish, without additional charge, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by GDPM.

11.1.7. GDPM may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes re-inspection or retest necessary.

11.1.8. GDPM shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size and performance tests shall be performed as described in the Contract Documents.

11.2. Routine Inspections

11.2.1. At its discretion, GDPM may conduct routine inspections of the construction Site on a daily basis.

11.2.2. The Contractor shall, without charge, replace or correct Work found by GDPM not to conform to contract requirements, unless GDPM decides that it is in its interest to accept the Work with an appropriate adjustment in Contract Sum.

11.2.3. The Contractor shall promptly segregate and remove rejected material from the premises.

11.2.4. If the Contractor does not promptly replace or correct rejected Work, GDPM may:

11.3.4.1. By Contract or otherwise, replace or correct the Work and charge the cost to the Contractor; or

11.3.4.2. Terminate for default the Contractor's right to proceed.

11.2.5. If any work requiring inspection is covered up without approval of GDPM, it must, if requested by GDPM, be uncovered at the expense of the Contractor.

11.2.6. If at any time before final acceptance of the all Work, GDPM considers it necessary or advisable, to examine Work already completed by removing or tearing it out, the Contractor, shall on request, promptly furnish all necessary facilities, labor, and material.

- If such Work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray all the expenses of the examination and of satisfactory reconstruction.
- If, however, such Work is found to meet the requirements of the Contract, GDPM shall make an equitable adjustment to cover the cost of the examination and reconstruction, including, if completion of the Work was thereby delayed, an extension of time.

11.3. Substantial Completion

11.3.1. Contractor's Punch List

1. When the Contractor considers the Work, or a designated portion thereof, Substantially Complete, the Contractor shall inspect the Work and prepare a list of Defective Work and incomplete or unacceptable Work ("Contractor's Punch List").
2. The Contractor shall list all items of Work not in compliance with the Contract Documents, including items the Contractor is requesting to be deferred.
3. The Contractor shall proceed to correct all items listed on the Contractor's Punch List and

certify that the incomplete items listed on the Contractor's Punch List are to its knowledge an accurate and complete list by signing the Contractor's Punch List.

4. The Contractor's failure to include an item on the Contractor's Punch List shall not alter the Contractor's responsibility to complete the Work in accordance with the Contract Documents.
5. The Contractor shall submit the signed Contractor's Punch List to GDPM together with a request for a Substantial Completion inspection of the Work.

11.3.2. Substantial Completion Inspection

1. The Contractor shall notify GDPM, in writing, as to the date when, in its opinion, all or a designated portion of the Work will be substantially completed and ready for inspection.
2. If GDPM and/or the A/E determine that the state of preparedness is as represented, GDPM will promptly arrange for the inspection.
3. Unless otherwise specified in the Contract, GDPM shall accept, as soon as practicable after completion and inspection, all work required by the Contract or that portion of the Work that GDPM determines and designates can be accepted separately.
4. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or GDPM's right under any warranty or guarantee.
5. Within 3 business days after receipt of the request for the Substantial Completion inspection of the Work, GDPM shall notify the Contractor of acceptance or rejection of the request, stating reasons for any rejection.
6. Within 7 days after its acceptance of the Contractor's request, GDPM and/or the A/E shall conduct the Substantial Completion inspection to determine whether the Work, or designated portion, is in conformity with the Contract Documents and Substantially Complete.
7. If GDPM and/or the A/E determines that the Work is Substantially Complete, within 3 business days after the Substantial Completion inspection, GDPM and/or the A/E shall prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion and include a list of Defective, incomplete, or unacceptable Work ("GDPM's Punch List").
8. GDPM's Punch List shall include:
 - The items on the Contractor's Punch List that are not yet completed or corrected as of the date of the Substantial Completion inspection; and
 - Comments from GDPM.

11.3.3. GDPM shall submit the Certificate of Substantial Completion to the Contractor for their written acceptance.

11.3.4. Upon their acceptance and consent of the Contractor's Surety, and subject to GDPM's right to withhold payment, GDPM shall release retainage.

11.3.5. GDPM and/or the A/E's failure to include an item on GDPM's Punch List shall not alter the Contractor's responsibility to complete the Work in accordance with the Contract Documents.

- If GDPM subsequently determines that the Work is not

substantially Complete, GDPM may request compensation for related expenses.

- GDPM may deduct the additional expenses from payments then or thereafter due the Contractor.
- If payments then or thereafter due the Contractor are not sufficient to cover those amounts, the Contractor shall immediately pay the amount of the insufficiency to GDPM.

11.3.6. Completion of Punch List Items

1. The Contractor shall complete all items on GDPM's Punch List prior to date of Final Contract Completion.
2. After completing all items on GDPM's Punch List, the Contractor shall provide a written request for Final Inspection of the Work.
3. If Work on the Punch List cannot be timely completed, the Contractor shall submit a change order in accordance with the provisions of this Contract.
4. Within 3 business days after receipt of the request for the Final Inspection of the Work, GDPM and/or the A/E shall complete a Final Inspection of the Work for compliance with the Contract Documents.
5. If multiple inspections of items on GDPM's Punch List are required due to the Contractor's failure to properly and timely complete them, the Contractor shall pay any additional costs incurred by the A/E and GDPM resulting from any attendant delay.
6. GDPM may deduct those additional costs from payments then or thereafter due the Contractor. If payments then or thereafter due the Contractor are not sufficient to cover those amounts, the Contractor shall immediately pay the amount of the insufficiency to GDPM.

11.4. Demonstration and Training, Operating Appurtenances

11.4.1. The Contractor, as a condition precedent to execution of the Certificate of Contract Completion and final payment, shall perform demonstration and training of GDPM's maintenance staff and other staff as requested by GDPM.

11.4.2. The Contractor, as a condition precedent to execution of the Certificate of Contract Completion and final payment, shall organize and submit operating appurtenances and loose items related to operation and maintenance of the completed Project to GDPM, including, but not limited to:

- Keys to door and window hardware, panels, and other devices not directly provided to GDPM from the manufacturer;
- Operating handles, levers, cranks, specialized wrenches or drivers, remote controls, and similar items; and
- Extra materials (e.g., attic stock).

11.5. Acceptance of Defective Work

11.5.1. Defective Work may only be knowingly accepted by GDPM in writing instead of GDPM requiring its removal or correction, in which case the Contract Sum must be equitably reduced to account for the reduction in benefit of the Work received by GDPM on account of the Defective Work.

11.5.2. GDPM may only accept Defective Work through a deduct Change Order that makes explicit reference to Acceptance of Defective Work

11.5.3. None of the following will constitute acceptance of Defective Work, a release of the Contractor's obligation to perform the Work in accordance with the Contract, or a waiver of any rights set forth in the Contract or otherwise provided by Applicable Law:

1. Observations or inspections by GDPM or the A/E;
2. The making of any payment;
3. Substantial Completion or the issuance of a Certificate of Substantial Completion;
4. Partial Occupancy and GDPM's use or occupancy of the Work or any part of it;
5. Contract Completion or the issuance of a partial or final Certificate of Contract Completion;
6. Any review or approval of a submittal;
7. Any inspection, test, or approval by other Persons; or
8. Any correction of Defective Work by GDPM.

11.6. Building Commissioning

11.6.1. If the Project scope includes building commissioning, the Contractor shall participate in the Commissioning Process, as prescribed in the Contract Documents.

11.6.2. The Contractor shall permit the A/E, GDPM, or a third-party Commissioning Agent ("CxA") if applicable, access to commission performance based equipment, fixtures, and/or systems (e.g., HVAC, fire protection, smoke evacuation, fume hoods, emergency power, etc.), prior to Substantial Completion.

11.6.3. The A/E, GDPM, or CxA, if applicable, shall promptly notify, in writing, the Contractor of any deficiency identified during the Commissioning Process.

11.6.4. To facilitate the Commissioning Process, the Contractor shall submit 4 sets of Operation and Maintenance manuals for dynamic and engineered systems to GDPM and CxA, if applicable, for approval. This submission shall occur within 30 days of obtaining approval of all related Contractor submittals required by the Contract Documents.

11.7. Partial Contract Completion

11.7.1. When items of Work cannot be completed until a subsequent date, GDPM shall prepare a partial Certificate of Contract Completion that shall include a detailed list of the deferred Work and the date(s) by which the Contractor will complete that Work.

11.7.2. GDPM shall submit the partial Certificate of Contract Completion to Contractor for their written acceptance. Upon their acceptance of the partial Certificate of Contract Completion and consent of the Contractor's Surety, GDPM may release payment to the Contractor, as determined in the sole discretion of GDPM.

11.8. Final Contract Completion

11.8.1. When all items on GDPM's Punch List have been completed to the satisfaction of GDPM, all requirements of the Contract Documents have been completed, and the provisions have been fulfilled, GDPM shall prepare and recommend execution of final Contract payment.

11.8.2. The date that GDPM executes the final Contract payment is the date of Contract Completion.

11.8.3. Nothing in Contract Completion shall constitute a waiver of GDPM's ability to pursue damages as the result of any breach of the Contract by the Contractor or Liquidated Damages.

11.9. Partial Occupancy: if the building authority with jurisdiction over the project issues a partial certificate of occupancy, GDPM may occupy or use a portion of the Project prior to Contract Completion. The Contractor shall be relieved of the obligation to maintain the area accepted for partial Occupancy, but shall remain obligated to complete and correct the Work and to carry insurance as required by the Contract Documents during performance of any such Work.

12. Article XII: Warranty

12.1. Warranty of Title: Contractor warrants good title to all materials, supplies, and equipment incorporated in the Work and agrees to deliver the premises together with all improvements thereon free from any claims, liens or charges, and agrees further that neither it nor any other person, firm or corporation shall have any right to a lien upon the premises or anything appurtenant thereto.

12.2. Warranty of Construction

12.2.1. Contractor warrants to GDPM that all materials and equipment furnished under this Contract shall be new and of good quality unless otherwise required or permitted by the Contract Documents. In addition, Contractor warrants that work performed under this Contract conforms to the contract requirements and is free of any defect in equipment, material, or workmanship performed by Contractor or any subcontractor or supplier at any tier.

- a. This warranty shall continue for a period of one-year from the date of final acceptance of the Work.
- b. If GDPM takes possession of any part of the Work prior to final acceptance, this warranty shall continue for a period of one year from the date GDPM takes possession.
- c. Work not conforming to the requirements, including Substitutions not properly approved and authorized, may be considered Defective Work.
- d. If Contractor or a Subcontractor recommends a particular product, material, system, or item of equipment for incorporation into the Project and GDPM accepts that recommendation, the above warranty includes a warranty from Contractor to GDPM that the recommended product, material, system, or item of equipment is fit and appropriate for the associated purpose.
- e. If required by GDPM, Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

12.2.2. Contactor shall remedy, at Contractor's expense, any failure to conform, or any defect. Further, Contractor shall remedy, at Contractor's expense, any damage to GDPM-owned or controlled real or personal property when the damage is the result of: (1) Contractor's failure to conform to contract requirements; or (2) any defects of equipment, material, workmanship or design furnished by Contractor.

12.2.3. Contractor shall restore any work damaged in fulfilling the terms and conditions of Warranty of Construction. Contractor's warranty with respect to work repaired or replaced will run for not less than one year of repair or replacement.

12.2.4. GDPM shall notify Contractor, in writing, within a reasonable time after the discovery of any failure, defect or damage. If Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, GDPM shall have the right to replace,

repair or otherwise remedy the failure, defect, or damage at Contractor's expense.

12.2.5. With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, Contractor shall:

- a. Obtain all warranties that would be given in normal commercial practice;
- b. Require all warranties to be executed in writing, for the benefit of GDPM; and
- c. Enforce all warranties for the benefit of GDPM.

12.2.6. In the event Contractor's warranty under this provision has expired, GDPM may bring suit to enforce a subcontractor's or manufacturer's or supplier's warranty.

12.2.7. Unless a defect is caused by the negligence of the Contractor or its subcontractor or supplier at any tier, Contractor shall not be liable for the repair or defect of material or design furnished by GDPM or for the repair of any damage that results from any defect in GDPM furnished material or design.

12.2.8. Notwithstanding any provisions herein to the contrary, the establishment of time periods in this Article relate only to the specific obligation of the Contractor to correct the work and have no relationship to the time within which its obligation to comply with the contract may be sought to be enforced, or to the time within which proceedings may be commenced to establish Contractor's liability with respect to its obligations other than specifically to correct the work.

12.2.9. This Warranty shall not limit GDPM's rights under the Inspection and Acceptance of Construction related provisions within this Contract with respect to latent defects, gross negligence or fraud.

12.3. Warranty Walk-through Contractor: At GDPM's request, Contractor shall perform a walkthrough of the property no earlier than three months prior to the expiration of any Warranty. If Contractor is unavailable for the warranty walk-thru, the warranty shall be extended until the time Contractor is available.

12.4. All warranties, including but not limited to, material, equipment and special warranties and warranties otherwise required by the Contract Documents shall be issued in the name of GDPM, or shall be transferrable to GDPM and shall commence, unless otherwise indicated in the Contract Documents, upon issuance of certification of substantial completion.

13 Article XII: Bonds and Insurance

13.1. Bid Bond/Guaranty

13.1.1. The Contractor shall provide to GDPM a bid guaranty in the form of either: (1) a bond for 10% of the bid; or (2) a certified check, cashier's check or letter of credit revocable only at the option of GDPM and shall be in the amount of 10% of the bid.

13.1.2. The bid guaranty shall be conditioned to provide that Contractor will, after award, enter into a contract with GDPM in accordance with the bid, plans, details, and specifications.

13.1.3. If the bidder fails to enter into the Contract and GDPM awards Contract to next lowest bidder, the bidder and the surety on the bidder's bid are liable to GDPM for the lesser of either:

- The difference between the bid and that of the next lowest bidder; or
- For a penal sum in the amount of 10% of the bid.

13.1.4. If GDPM does not award the Contract to the next lowest bidder but resubmits the Project for bidding, the bidder failing to enter into the Contract and the surety on the bidder's bond are liable to GDPM for a penal sum not to exceed 10% of the amount of the bid.

13.1.5. Where GDPM accepts a bid but the bidder fails or refuses to enter into a proper contract in accordance with the bid, plans, details, and specifications within ten days after Notice of Intent, the bidder and surety on any bond are liable for the amount of the difference between the bidder's bid and the next lowest bidder.

13.1.6. All bid guaranties shall be payable to GDPM, be for the benefit of GDPM and be deposited with GDPM.

13.2. Payment and Performance Bond

13.2.1. Contract Commencement does not occur until GDPM receives a Payment and Performance Bond

13.2.2. Contractor must, within 10 days of GDPM's delivery of signed Contract to Contractor, unless otherwise specified by GDPM in writing, deliver to GDPM a payment and performance bond with a penal sum in the amount of 100% of the Contract Sum (which includes all acceptable alternates).

13.2.3. The payment and performance bond must contain a condition that indemnifies GDPM against all damages suffered by Contractor's failure to perform the Contract according to the provisions and in accordance with the plans, details, and specifications and to pay all lawful claims of subcontractors, material suppliers, and laborers for labor performed or material furnished in carrying forward, performing or completing the Contract.

13.2.4. The bond shall be obtained from companies holding certificates of authority as acceptable sureties and shall be listed on the U.S. Treasury Circular 570 (T-List).

13.2.4.1. Each company shall be licensed to do business in Ohio and satisfactory to GDPM.

13.2.5. The Contractor shall submit with the executed Bond:

13.2.5.1. A certified copy of the authority to act (power of attorney) of the agent signing the Bond on behalf of the Surety, and

13.2.5.2. A current signed Certificate of Compliance issued by the Ohio Department of Insurance demonstrating that Surety is licensed to do business in Ohio.

13.2.6. If the Contract Sum increases at any time such that it exceeds the sum of the Bond, the Contractor shall cause the penal sum of the Bond to be increased such that the sum equals one-hundred percent (100%) of the increased Contract Sum.

13.2.7. Any time Contractor increases the sum of the Bond, the Contractor shall deliver to GDPM written consent of the affected Surety confirming the increased sum. GDPM's receipt of that written consent is a condition precedent to GDPM's obligation to pay the Contractor for any portion of the Work associated with the increase.

13.2.8. If notice of any change affecting the Contract is required by any Surety or by the provision of any Bond, the Contractor shall provide that notice.

13.3. Form of Bond: All bonds and guarantees must be provided for on a form deemed acceptable by GDPM and must be drafted and executed in accordance with all HUD and State of Ohio requirements. Unless otherwise so indicated, Contractor shall use GDPM's Bond Forms.

13.4. General Insurance Requirements

13.4.1. Prior to commencing Work, Contractor and each subcontractor shall furnish GDPM with certificates of insurance demonstrating coverage that meets the Minimum Contractor Coverage Requirements as outlined below is in full force and will insure all operations under the Contract.

13.4.2. Throughout the performance of the Work or longer as may be described below, Contractor and each Subcontractor shall obtain, pay for and keep in force, the minimum insurance coverage.

13.4.3. On a case-by-case basis, GDPM and Contractor may agree to adjust the below requirements for any particular subcontractor.

13.4.4. All insurance shall be carried with companies which are financially responsible and admitted to do business in the State of Ohio.

13.4.5. If any such insurance is due to expire during the construction period, Contractor (including subcontractors, as applicable) shall not permit the coverage to lapse and shall furnish evidence of coverage to GDPM.

13.4.6. All certificates of insurance, as evidence of coverage, shall provide that no coverage may be canceled or non-renewed by the insurance company until at least 30 days prior written notice has been given to GDPM.

13.5. Minimum Contractor Coverage Requirements

13.5.1. Workers' Compensation: The amount of Workers' Compensation coverage shall be in accordance with the State of Ohio Workers' Compensation laws.

13.5.2. Commercial General Liability: With a combined single limit for bodily injury and property damage of not less than \$1,000,000 per occurrence unless otherwise specified by GDPM in writing, to protect Contractor and each subcontractor against claims for bodily injury or death and damage to the property of others. This shall cover the use of all equipment, hoists, and vehicles on the site(s) not covered by Automobile Liability.

13.5.2.1. If Contractor has a "claims made" policy, then the following additional requirements apply: (1) the policy must provide a "retroactive date" which must be on or before the execution date of the Contract; and (2) the extended reporting period may not be less than five years following the completion date of the Contract.

13.5.3. Employers Liability Coverage: Unless otherwise specified by GDPM in writing, Contractor shall maintain employer's liability coverage with:

13.5.3.1. An each accident limit of not less than \$1,000,000;

13.5.3.2. A disease each-employee limit of not less than \$1,000,000; and

13.5.3.3. A disease policy limit of not less than \$1,000,000.

13.5.4. Automobile Liability: On owned and non-owned motor vehicles used on the site(s) or in connection therewith for a combined single limit for bodily injury and property damage of not less than \$ 1,000,000 per occurrence.

- 13.5.5. Builder's Risk Insurance:** Before commencing Work, Contractor shall furnish GDPM with a certificate of insurance evidencing that Builder's Risk (fire and extended coverage) Insurance on all work in place and/or materials stored at the building site(s), including foundations and building equipment, is in force.
- 13.5.5.1.** The Builder's Risk Insurance shall be for the benefit of the Contractor and GDPM as their interests may appear and each shall be named in the policy or policies as an insured.
- 13.5.5.2.** If installing equipment supplied by GDPM, Contractor shall carry insurance on such equipment from the time Contractor takes possession thereof until the Contract work is accepted by GDPM.
- 13.5.5.3.** The Builder's Risk Insurance need not be carried on excavations, piers, footings, or foundations until such time as work on the superstructure is started. Builder's Risk coverage need not be carried on landscape work.
- 13.5.5.4.** Policies shall furnish coverage at all times for the full cash value of all completed construction, as well as materials in place and/or stored at the site(s), whether or not partial payment has been made by GDPM.
- 13.5.5.5.** Contractor may terminate this insurance on buildings as of the date taken over for occupancy by GDPM.
- 13.5.5.6.** The amount of Builder's Risk coverage shall not be less than the total completed value of the Project, including the value of permanent fixtures and decorations, with a deductible of not more than \$25,000 per occurrence. Any deductible over the amount specified in this provision shall be authorized in writing by GDPM.
- 13.5.5.7.** Coverage shall include a provision to pay the reasonable extra costs of acceleration and expediting temporary and permanent repairs to, or permanent replacement of, damaged property.
- 13.5.5.8.** This shall include overtime wages and the extra costs of "express" or other means of expedited transportation and/or delivery of supplies necessary to the repair or replacement.
- 13.5.5.9.** Coverage shall include "soft costs endorsement" including, but not limited to, the reasonable extra costs of the A/E and reasonable Contractor extension or acceleration costs.
- 13.5.5.10.** Coverage shall include material in transit or stored in off-site and identified for the Project.
- 13.5.5.11.** Coverage shall waive all rights between GDPM, Contractor, and Subcontractors at any tier, for damages caused by fire or any other perils to the extent of actual recovery of any insurance proceeds under the policy.
- 13.5.5.12.** Coverage shall include appropriate sub-limits for installation coverage.
- 13.5.5.13.** Coverage shall include provisions for mechanical or electrical breakdown, or boiler system testing.
- 13.5.5.14.** Coverage shall include temporary structures and scaffolding, along with collapse coverage.
- 13.5.5.15.** Coverage shall be primary to all other applicable insurance.

13.5.5.16. The builder's risk policy shall specifically permit partial occupancy by GDPM prior to Contract Completion and coverage shall remain in effect until all punch items are completed.

13.5.5.17. The Contractor's tools and equipment shall not be covered under the builder's risk policy. It is the Contractor's sole responsibility to maintain such coverage, which shall be included in its Overhead (a component of Contractor's Fee) and not included as a separate item in Contractor's Schedule of Values.

13.5.5.18. If Contractor is involved solely in the installation of material and equipment and not in new building construction, Contractor shall purchase and maintain a builder's risk, builder's risk-renovations, or installation floater insurance policy that complies with this Provision.

13.5.6. *Umbrella/Excess Liability:* Contractor may employ an umbrella/excess liability policy to achieve the above required minimum coverage. Unless otherwise specified by GDPM in writing, for Construction Contracts in excess \$1,000,000, the Contractor shall maintain umbrella/excess liability coverage with a limit of not less than \$2,000,000 (in addition to the above-required limits) if the Work (or Work to be performed by the Subcontractor) includes any of the following:

- a. Brick/block masonry;
- b. Exterior caulking/sealant;
- c. Cast-in-place or precast concrete;
- d. Damp proofing/waterproofing;
- e. Electrical;
- f. Elevator;
- g. Exterior glass and/or glazing;
- h. Exterior marble, granite, and/or other stonework;
- i. Miscellaneous metals;
- j. Plaster/stucco;
- k. Plumbing;
- l. HVAC;
- m. Roofing and/or sheet metal;
- n. Scaffolding;
- o. Spray-on fireproofing;
- p. Sprinkler and/or fire protection; or
- q. Structural steel and/or metal deck.

13.5.7. Unless otherwise specified by GDPM in writing, Contractor shall maintain umbrella/excess liability coverage with a limit of not less than \$5,000,000 (in addition to the above-required limits) if the Work (or the Work to be performed by the Subcontractor) includes any of the following:

- a. Caissons and/or piles;
- b. Major Demolition;

- c. Excavation and/or utility work;
- d. Sheeting, shoring, and/or underpinning;
- e. Window washing equipment; or
- f. Wrecking.

13.5.8. Professional Liability: Unless otherwise specified by GDPM in writing, Contractor shall maintain professional liability insurance (including without limitation for sprinkler and/or fire protection and other design-build work included in the Work) without design-build exclusions with a limit not-less than \$1,000,000 each claim and an annual-aggregate limit of not less than \$2,000,000.

13.5.8.1. The professional liability policy shall have an effective date on or before the date that Contractor first started to provide any Project-related services.

13.5.8.2. Upon submission of the associated certificate of insurance and at each policy renewal, the Contractor shall advise GDPM in writing of any actual or alleged claims that may erode the professional liability limits.

13.5.8.3. Contractor shall maintain the professional liability insurance in effect for no less than 5 years after the earlier of the termination of the Contract or Substantial Completion of all Work.

13.5.9. Additional Property Insurance: For any demolition, blasting, excavating, tunneling, shoring, or similar operations, the Contractor shall provide and maintain Property Damage Liability insurance with a limit of liability equal to the limit as specified in the applicable provisions of this Article.

13.5.10. Equipment Coverage:

13.5.10.1. GDPM will not insure or be liable for damage to any Contractor or Subcontractor owned, leased, rented, or borrowed tools, equipment, or vehicles.

13.5.10.2. Contractor and Subcontractors are solely responsible for maintaining all insurance necessary to cover their tools, equipment, and vehicles.

13.5.11. Pollution Coverage: Contractor shall maintain Pollution Liability Insurance, including Asbestos Liability Insurance, covering liability for bodily injury, property damage, and environmental damage resulting from "sudden accidental" or "gradual" pollution and related cleanup costs incurred by the Contractor, all arising out of the Work to be performed under this contract. Combined single limit per occurrence shall not be less than \$500,000, or the equivalent. Annual aggregate limit shall not be less than \$1,000,000.

13.6. Waivers of Subrogation

13.6.1. To the fullest extent permitted by Applicable Law, Contractor waives all rights against GDPM and its agents and employees for damages to the extent covered by any insurance, except rights to the proceeds of that insurance.

13.6.2. All policies shall accomplish the waiver of subrogation by endorsement or otherwise.

13.6.3. GDPM and Contractor waive all rights against each other for damages caused by fire or other perils to the extent actual recovery of any insurance proceeds under any property insurance or builder's risk insurance applicable to the Work.

14. Article XIV: Indemnification

- 14.1.** To the fullest extent permitted by federal and State Law, Contractor shall indemnify, defend, and hold harmless the Indemnified Parties from and against all claims, costs, damages, losses, fines, penalties, and expenses (including but not limited to all fees and charges of attorneys and other professionals, and all court, arbitration, or other dispute-resolution costs) arising out of or in connection with the Project.
- 14.2.** The Contractor shall be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence, and shall take proper safety and health precautions to protect the Work, the workers, the public, and the property of others. Contractor shall hold and save GDPM, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.
- 14.3.** Contractor's indemnification obligations under this Article exists regardless of whether or not and the extent to which the claim, damage, loss, fine, penalty, or expense is caused by a party indemnified pursuant to this Article.
- 14.4.** Nothing in this Article obligates Contractor to indemnify any individual or entity from and against the consequences of that individual or entity's own negligence.
- 14.5.** Contractor's obligations under this Article shall not extend to the liability of the A/E, A/E's consultants, agents, representatives, or employees for negligent preparation or approval of Drawings, Specifications, Change Orders, opinions, and other responsibility of the A/E, except to the extent covered by Contractor's insurance.
- 14.6.** In claims against an Indemnified Party by any direct or indirect employee (or the survivor or personal representative of that employee) of the Contractor or a person or entity for whom the Contractor may be liable, the indemnification obligations under this Article will not be limited by a limitation on the amount or type of damages, compensation, or benefits payable under workers' compensation acts, disability benefit acts, or other employee benefits acts.
- 14.7.** Contractor's indemnification obligation under this Article will survive termination of the Contract and Contract Completion.
- 14.8.** GDPM may deduct, from the Contract Sum, the claims, losses, fines, penalties, and expenses for which Contractor is liable under this Article.
- 14.9.** If those claims, damages, losses, fines, penalties and expenses exceed the unpaid balance of the Contract Sum, Contractor shall immediately pay the difference to GDPM.

15. Article XV: Damages

15.1. Liquidated Damages

- 15.1.1.** If Contractor fails to complete the work within the time specified in the contract, or any extension, the Contractor shall pay to GDPM as liquidated damages in accordance with the table below.
- 15.1.1.1.** If different completion dates are specified in the contract for separate parts or stages of the work, the amount of liquidated damages shall be assessed on those parts or stages which are delayed.
- 15.1.1.2.** To the extent that Contractor's delay or nonperformance is excused under another clause in this contract, liquidated damages shall not be due GDPM.
- 15.1.1.3.** Contractor remains liable for damages caused other than by delay.

- 15.1.2. If GDPM terminates Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned GDPM in completing the work.
- 15.1.3. If GDPM does not terminate Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.
- 15.1.4. If Contractor fails to achieve a Milestone within the associated Contract Time, it would be difficult, if not impossible, to determine GDPM's resulting damages.
- 15.1.5. Therefore, if the Contractor fails to achieve a Milestone within the associated Contract Time, the Contractor shall (at GDPM's option) pay to or credit GDPM the Liquidated Damages per day sum determined according to the following schedule for each day that the Contractor fails to achieve a Milestone within the associated Contract Time.

| Total Contract Sum | Daily Liquidated Damages |
|------------------------------|---------------------------------|
| Less than \$150,000 | \$200 |
| \$150,000-\$500,000 | \$400 |
| \$500,000.01 - \$1,000,000 | \$500 |
| \$1,000,000.01 - \$2,000,000 | \$1,000 |
| More than \$2,000,000 | \$2,000 |

- 15.1.6. If Contractor simultaneously fails to achieve two or more Milestones, GDPM shall be entitled to recover the sum of the associated Liquidated Damages per day rates.
- 15.1.7. The Liquidated Damages described are only intended to compensate GDPM for the direct damages it incurs as a result of Contractor's failure to achieve the Milestones within their associated Contract Times.
- 15.1.8. The Liquidated Damages described are not intended to compensate GDPM for any damages GDPM incurs on account of:
 - 15.1.8.1. Any claims attributable to Contractor that are brought by others including Separate Consultants and Separate Contractors; or
 - 15.1.8.2. Any failure of Contractor to timely, properly, and completely perform the Contract other than the failure to achieve the Milestones within their associated Contract Times.
- 15.1.9. The parties acknowledge that the above-listed Liquidated Damages per day sums are not penalties, and they each irrevocably waive the right (if any) to challenge the validity and enforceability of those Liquidated Damages per day sums.
 - 15.1.9.1. Notwithstanding any other provision of the Contract Documents to the contrary, if a court determines that the Liquidated Damages per day sums or their application are void and unenforceable, GDPM shall be entitled to recover the actual damages that it incurs on account of the Contractor's failure to achieve one or more of the Milestones within the Contract Times.
- 15.1.10. In addition to other rights that GDPM may have relative to the Liquidated Damages, GDPM may deduct the Liquidated Damages from the Contract Sum as the damages accrue. If payments then or thereafter due to the Contractor are not sufficient to cover such amounts, Contractor shall immediately pay the amount of the insufficiency to

GDPM.

15.2. Mutual Waiver of Consequential Damages

15.2.1. Except for the Liquidated Damages provided for above, GDPM and Contractor each waive against the other all Claims for consequential damages that may arise out of or relate to this Contract.

15.2.1.1. GDPM's waiver includes Claims for loss of use, income, profit, revenue, financing, cost of capital, business and reputation, management and employee productivity, and consequential damages arising from termination of the Contract or related to insolvency.

15.2.1.2. The Contractor's waiver includes:

15.2.1.2.1. Claims for unabsorbed home-office overhead;

15.2.1.2.2. Any other form of overhead in excess of that specifically

provided for; **15.2.1.2.3.** Delay damages except as otherwise specifically

provided for; **15.2.1.2.4.** Increased cost of funds for the Project;

15.2.1.2.5. Lost opportunity to work on other projects;

15.2.1.2.6. Losses of financing, business, and reputation;

15.2.1.2.7. Loss of profit except anticipated profit, arising directly from properly performed Work;

15.2.1.2.8. Loss of bonding capacity; and

15.2.1.2.9. Consequential damages arising from termination of the Contract or related to insolvency.

15.2.2. Notwithstanding Section 15.2.1, this Section 15.2:

15.2.2.1. Does not apply to any damages that would be covered by insurance provided in connection with the Project if the Contract did not include Section 15.2.1;

15.2.2.2. Does not apply to Contractor's indemnity obligations for third-party claims against the Indemnified Parties even if those claims are for damages that Section 15.2.1 would otherwise preclude;

15.2.2.3. Does not preclude GDPM's recovery of Liquidated Damages; and

15.2.2.4. Does not apply to Claims for damages arising from GDPM's or Contractor's gross negligence or willful misconduct.

15.3. This Article 15 shall survive termination of the Contract.

16 Article XVI: Labor Standards Davis-Bacon and Related Acts

16.1.1. All rulings and interpretations of the Davis Bacon and Related Acts contained in 29 CFR Part 3 are herein incorporated by reference in this Contract.

16.2. Minimum Wages

16.2.1. All laborers and mechanics employed under this Contract in the development or construction of the project(s) involved will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the

Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which shall be attached to the Contract Documents and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

- 16.2.2.** Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the regular weekly period, are deemed to be constructively made or incurred during such weekly period.
- 16.2.3.** Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4).
- 16.2.4.** Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.
- 16.2.5.** The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5 and the Davis-Bacon poster (WH-1321)) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.
- 16.2.6.** Any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination.
- 16.2.7.** HUD shall approve any additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:
 - 16.2.7.1.** The work to be performed by the classification requested is not performed by a classification in the wage determination;
 - 16.2.7.2.** The classification is utilized in the area by the construction industry; and
 - 16.2.7.3.** The proposed wage rate, including bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- 16.2.8.** If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employee Standards Administration, U.S. Department of Labor, Washington, DC 20210.
- 16.2.9.** The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.
- 16.2.10.** In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where

appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator of the Wage and Hour Division for determination.

16.2.11. The Administrator or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30 day period that additional time was necessary.

16.2.12. The wage rate (including fringe benefits where appropriate) shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in classification.

16.2.13. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

16.2.14. If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met.

16.2.15. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

16.3. Withholding of Funds

16.3.1. HUD or its designee shall, upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract.

16.3.2. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working in the construction or development of the Project, all or part of the wages required by the contract, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

16.3.3. HUD or its designee may, after written notice to the Contractor, disburse such amounts withheld for and on account of the Contractor or subcontractor to the respective employees to whom they are due.

16.4. Payrolls and Basic Records

16.4.1. Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working in the construction or development of the Project. Such records shall contain:

16.4.1.1. The name, address, and social security number of each such worker;

16.4.1.2. His or her correct classification

- 16.4.1.3.** Hourly rates of wages paid, including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in the Davis-Bacon Act;
 - 16.4.1.4.** Daily and weekly number of hours worked;
 - 16.4.1.5.** Deductions made; and
 - 16.4.1.6.** Actual wages paid.
- 16.4.2.** Whenever the Secretary of Labor has found, under 29 CFR 5.5, that the wages of any laborer or mechanic include the amount of costs reasonably anticipated in providing benefits under a plan or program described in the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.
- 16.4.3.** Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.
- 16.4.4.** The Contractor shall submit for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer for transmission to HUD or its designee.
- 16.4.5.** The payrolls submitted shall set out accurately and completely all of the information required to be maintained.
- 16.4.6.** This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
- 16.4.7.** The Contractor is responsible for the submission of copies of payrolls by all subcontractors (Approved by the Office of Management and Budget under OMB Control Number 1214-0149).
- 16.4.8.** Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
- 16.4.8.1.** That the payroll for the payroll period contains the information required to be maintained and that such information is correct and complete;
 - 16.4.8.2.** That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3; and
 - 16.4.8.3.** That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the Contract.
- 16.4.9.** The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirements for submission of the "Statement of Compliance".
- 16.4.10.** The falsification of any of the above certifications may subject the Contractor or

subcontractor to civil or criminal prosecution under Title 18 and Title 31 of the United States Code.

16.5. Records

- 16.5.1.** The Contractor or subcontractor shall make the records available for inspection, copying, or transcription by authorized representatives of HUD or its designee, the Contracting Officer, or the Department of Labor and shall permit such representatives to interview employees during working hours on the job.
- 16.5.2.** If the Contractor or Subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds.
- 16.5.3.** Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

16.6. Apprentices & Trainees

- 16.6.1.** Apprentices will be permitted to work at less than predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship and Training, Employer and Labor Services (OATELS), or with a State Apprenticeship Agency recognized by OATELS, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by OATELS or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.
- 16.6.2.** The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program.
- 16.6.3.** Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.
- 16.6.4.** In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.
- 16.6.5.** Where a Contractor is performing construction on a project in a locality other than that in which registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or Subcontractor's registered program shall be observed.
- 16.6.6.** Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination.
- 16.6.7.** Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program.
- 16.6.8.** If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification.

16.6.9. If the Administrator of the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

16.6.10. In the event OATELS, or a State Apprenticeship Agency recognized by OATELS, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable pre-determined rate for the work performed until an acceptable program is approved.

16.7. Trainees

16.7.1. Except as provided for in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

16.7.2. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

16.7.3. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination.

16.7.4. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program.

16.7.5. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices.

16.7.6. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed.

16.7.7. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed.

16.7.8. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work until an acceptable program is approved.

16.8. **Equal Employment Opportunity:** The utilization of apprentices, trainees, and journeymen shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended and 29 CFR Part 30.

16.9. **Compliance with Copeland Act requirements:** Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this Contract

16.10. **Contract Termination; Debarment:** A breach of this Article may be grounds for termination of the contract and for debarment as a Contractor and a subcontractor.

16.11. **Disputes Concerning Labor Standards:** Disputes arising out of the labor standards provisions of Disputes Concerning Labor Standards shall not be subject to ARTICLE 9 DISPUTE RESOLUTION/CLAIM PROCEDURE of this contract. Such disputes shall be resolved in accordance

with the procedures of the Department of Labor. Disputes within the meaning of Disputes Concerning Labor Standards include disputes between the Contractor (or any of its subcontractors) and GDPM, HUD, the U.S. Department of Labor, or the employees or their representatives.

16.12. Certification of Eligibility: By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded contracts by virtue of the Davis-Bacon Act or 29 CFR 5.12.

16.12.1. No part of this contract shall be subcontracted to any person or firm ineligible for award of a United States Government contract by virtue of the Davis-Bacon Act or 29 CFR 5.12.

16.12.2. The penalty for making false statements is prescribed in the U. S. Criminal Code 18 U.S.C. 1001.

16.13. Contract Work Hours and Safety Standards Act: As used in this provision - Contract Work Hours and Safety Standards Act, the terms "laborers" and "mechanics" include watchmen and guards.

16.13.1. Overtime Requirements

16.14. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics, including watchmen and guards, shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one half pay for all hours worked in excess of 40 hours in such workweek.

16.15. Violation; liability for unpaid wages; Liquidated Damages

16.15.1. In the event of any violation, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages.

16.15.2. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages.

16.15.3. Such liquidated damages shall be computed with respect to each individual laborer or mechanic (including watchmen and guards) employed in violation, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages.

16.16. Withholding for unpaid wages and liquidated damages

16.16.1. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages.

16.17. Subcontracts

16.17.1. The Contractor or subcontractor shall insert in any subcontracts all the provisions contained in subcontracts, and such other clauses as HUD or its designee may by

appropriate instructions require, and also a clause requiring the subcontractors to include these provisions in any lower tier subcontracts.

16.17.2. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all these provisions.

16.18. Non-Federal Prevailing Wage Rates

16.18.1. Any prevailing wage rate (including basic hourly rate and any fringe benefits), determined under State or tribal law to be prevailing, with respect to any employee in any trade or position employed under the contract, is inapplicable to the contract and shall not be enforced against the Contractor or any subcontractor, with respect to employees engaged under the contract whenever such non-federal prevailing wage rate exceeds:

16.18.1.1. The applicable wage rate determined by the Secretary of Labor pursuant to the Davis- Bacon Act (40 U.S.C. 276(a)) to be prevailing in the locality with respect to such trade;

16.18.1.2. An applicable apprentice wage rate based thereon specified in an apprenticeship program registered with the U.S. Department of Labor (DOL) or a DOL- recognized State Apprenticeship Agency; or

16.19. An applicable trainee wage rate based thereon specified in a DOL-certified trainee program.

17 ARTICLE XVIII: SECTION 3

17.1. In order to promote Employment, Training, and Contracting Opportunities for Low-Income Persons, the Contractor shall participate in GDPM's Section 3 Program.

17.1. The work to be performed under this Contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended.

17.2. The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

17.3. The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement Section 3.

17.4. As evidence by the execution of the Contract, the parties to this Contract certify that they are under no contractual or other impediments that would prevent them from complying with the Part 135 regulations.

17.5. The Contractor agrees to send to each labor organization or representative of workers with which the Contractor has a collective bargaining agreement or other understanding, if any, a narrative advising the labor organization or workers' representative of the Contractor's commitments, and will post copies of this notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice.

17.6. The notice shall describe the preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work will begin.

17.7. The Contractor agrees to include this Article - SECTION 3 in every subcontract subject to

compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this Article upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135

17.8. The Contractor will not subcontract with any subcontractor where the Contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.

17.9. The Contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the Contractor is selected but before the Contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the Contractor's obligations under 24 CFR Part 135.

17.10. Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

17.11. Section 3 Reporting Requirements:

- Contractor must acknowledge and abide by any request for Section 3 documentation made by GDPM. In addition, contractor must follow any specific Section 3 reporting requirements required by GDPMS procurement department.

18 ARTICLE XVIII: Equal Opportunity Prohibition against Discrimination

18.1. During the performance of this contract, the Contractor agrees as follows:

18.1.1. Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, sexual orientation, or handicap.

18.1.2. The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, national origin, or handicap. Such action shall include, but not be limited to:

18.1.2.1. Employment;

18.1.2.2. Upgrading;

18.1.2.3. Demotion;

18.1.2.4. Transfer;

18.1.2.5. Recruitment or recruitment advertising;

18.1.2.6. Layoff or termination;

18.1.2.7. Rates of pay or other forms of compensation; and

18.1.2.8. Selection for training, including apprenticeship.

18.1.3. The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by GDPM that explain this Article.

18.1.4. The Contractor shall, 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 race, color, religion, sex, national origin, or handicap.

18.1.5. The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be

provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this Article, and post copies of the notice in conspicuous places available to employees and applicants for employment.

18.1.6. The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

18.1.7. The Contractor shall furnish all information and reports required by Executive Order 11246, as amended, the Rehabilitation Act of 1973, as amended, and by rules, regulations, and orders of the Secretary of Labor, pursuant thereto.

18.1.8. The Contractor shall permit access to its books, records, and accounts by the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

18.1.9. In the event of a determination that the Contractor is not in compliance with this Article or any rules, regulations, or order of the Secretary of Labor, this contract may be canceled, terminated or suspended in whole or in part, and the Contractor may be declared ineligible for further Government Contracts, or Federally assisted construction contracts under the procedures authorized, in Executive Order 11246, as amended.

18.1.10. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended, the rules, regulations, and orders of the Secretary of Labor, or as otherwise provided by law, including the following as provided by ORC:

18.1.10.1. In the event Contractor fails to comply with these nondiscrimination provisions, GDPM shall deduct from the amount payable to the Contractor a forfeiture of the statutory penalty pursuant to ORC for each person who is discriminated against or intimidated.

18.1.10.2. The Contract may be terminated or suspended in whole or in part by GDPM and all money due hereunder may be forfeited in the event of a subsequent violation of the foregoing nondiscrimination provisions.

18.1.11. The Contractor shall include the terms and conditions of this Article in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

18.1.12. The Contractor shall take such action with respect to any subcontract or purchase order as the Secretary of Housing and Urban Development or the Secretary of Labor may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the Contractor may request the United States to enter into the litigations to protect the interests of the United States.

18.1.13. Compliance with the requirements of this Article shall be to the maximum extent consistent with, but not in derogation of compliance with the Indian Self-Determination and Education Assistance Act and the Indians Preference Clause of this Contract.

18.2. The Contractor shall cooperate fully with the States Equal Opportunity Coordinator (EOC), with any other official or agency of the state of federal government that seeks to eliminate unlawful employment discrimination, and with all other state and federal efforts to assure equal employment practices under the Contract.

19 ARTICLE XIX: HEALTH, SAFETY, AND ACCIDENT PREVENTION

19.1. Contractor Obligations. In performing this contract, the Contractor shall:

- 19.1.1. Take reasonable precautions to ensure safety of individuals on the Project;
- 19.1.2. Ensure that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his/her health and/or safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation;
- 19.1.3. Protect the lives, health, and safety of other persons;
- 19.1.4. Prevent damage to property, materials, supplies, and equipment;
- 19.1.5. Avoid work interruptions;

19.2. For these purposes, the Contractor shall:

- 19.2.1. Comply with regulations and standards issued by the Secretary of Labor (failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act);
- 19.2.2. Include the terms of this Article in every subcontract that such terms will be binding on each subcontractor. The Contractor shall be responsible for its subcontractors' compliance with the provisions of this Article;
 - 19.2.2.1. The Contractor shall take such action with respect to any subcontract as GDPM, the Secretary of Housing or Secretary of Labor shall direct as a means of enforcing such provisions.
- 19.2.3. Maintain an accurate record of exposure data on all accidents incident to work performed under this contract resulting in death, traumatic injury, occupational diseases or damages to property, materials, supplies, or equipment, and shall report this data in the manner prescribed by applicable law;
- 19.2.4. Pay any fine or cost incurred because of Contractor's violation, or alleged violation, of any Applicable Law.

19.3. Notification of Non-Compliance Procedure

- 19.3.1. GDPM shall notify the Contractor of any noncompliance with these requirements and of the corrective action required. This notice, when delivered to the Contractor or the Contractor's representative at the site of the work, shall be deemed sufficient notice of the noncompliance and corrective action required.
- 19.3.2. After receiving the notice, the Contractor shall immediately take corrective action.
- 19.3.3. If the Contractor fails or refuses to take corrective action promptly, GDPM may issue an order stopping all or part of the work until satisfactory corrective action has been taken.
- 19.3.4. The Contractor shall not base any claim or request for equitable adjustment for additional time or money on any stop order issued under these circumstances.

19.4. Safety Plan

- 19.4.1. The Contractor is responsible for designing and implementing its own site-specific safety

plan, including compliance with OSHA regulations and such plan shall meet or exceed GDPM's site-specific safety plan (if any).

19.4.2. Before starting any Work, the Contractor shall submit to GDPM a copy of the Contractor's site-specific safety plan and safety manuals.

19.5. Safety Data Sheets

19.5.1. The Contractor shall identify any material it uses at the Site with a Safety Data Sheet ("SDS") meeting the requirements of OSHA's Hazardous Communication Standard.

19.5.2. The Contractor shall maintain a notebook containing all of its applicable SDSs.

19.5.3. This notebook shall be kept at the Site for the duration of the Project.

19.6. Hazardous Materials

19.6.1. Prohibition against Hazardous Materials: The Contractor shall not introduce Hazardous Materials to the Project.

19.6.2. Work Stoppage Due to Hazardous Materials:

- a. If the Contractor encounters material the Contractor reasonably believes to be, or contain, a Hazardous Material that has not been rendered harmless, the Contractor shall immediately stop Work in the affected area and verbally report the condition to GDPM, and within 1 business day deliver written notice of the condition to GDPM.
- b. GDPM will promptly determine the necessity of GDPM retaining a qualified environmental consultant to evaluate the suspected Hazardous Material and to issue a related written report.
- c. Where appropriate, GDPM will engage a licensed abatement contractor to remove the material or render it harmless as directed.
- d. The Contractor shall resume Work in the affected area upon written notice from GDPM that: (1) The suspect material was evaluated and found not to be or contain a Hazardous Material; or (2) The suspect material has been removed or rendered harmless.
- e. If the Contractor knowingly or negligently proceeds with the Work in an area where a Hazardous Material exists and has not been rendered harmless, the Contractor shall be solely responsible for all related claims, damages, losses, and expenses, including, but not limited to, attorneys' fees, arising out of or resulting from performing the Work in the affected area.
- f. The term "rendered harmless" means that the level of exposure is less than any applicable exposure standards set forth in Applicable Law.

19.7. Fires or Hot-Work

19.7.1. Contractor shall not burn any fires on the Site(s).

19.7.1.1. The Contractor shall notify the Project Manager 24 hours before the start of non-routine or non-recurring hot-work.

- a. Use of sources of fire, flame or sparks and flammable materials shall be kept to an absolute minimum.
- b. At the beginning of the Project, the Contractor shall inform the Project Manager of its intent to use blowtorches, welding apparatus or similar exposed flame

and sparking devices.

- c. Similar notice shall be given in regard to the use of flammable liquids, adhesives, and cleaners.

19.7.2. The Contractor shall furnish an appropriate number of fire extinguishers (minimum of 1), which shall be within the immediate areas where work is being done at all times. The extinguisher shall be adequate and suitable for the class of fire likely to be caused by the Contractor's operations.

19.8. Explosives and Blasting

19.8.1. The Contractor shall not conduct blasting on, or bring explosives to the Work Site without written approval of GDPM and other authorities with jurisdiction.

19.8.2. The Contractor shall perform all blasting, storing, and handling of explosives as required under Applicable Law.

19.8.3. The Contractor shall carry appropriate liability insurance coverage, as required by the Contract Documents, for its blasting and explosives storage and handling operations.

19.8.3.1. Immediately upon request, the Contractor shall deliver evidence of that insurance to GDPM.

20 ARTICLE XX: CONTRACT DOCUMENTS AND CONTRACT RECORDS

20.1. Examination and Retention of Contractor's Records

20.1.1. GDPM, HUD, or the Comptroller of the United States, or any of their duly authorized representatives shall, until 6 years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this Contract for the purpose of making audit, examination, excerpts, and transcriptions.

20.1.2. The Contractor agrees to include in first-tier subcontracts under this contract a clause substantially the same as 20.1.1. "Subcontract," as used in Examination and Retention of Contractor's Records, excludes purchase orders not exceeding \$10,000.

20.1.3. The periods of access and examination for records relating to (1) appeals under the DISPUTE RESOLUTION/CLAIM PROCEDURE Article of this contract, (2) litigation or settlement of claims arising from the performance of this contract, or (3) costs and expenses of this contract to which GDPM, HUD, or Comptroller General or any of their duly authorized representatives has taken exception, shall continue until disposition of such appeals, litigation, claims, or exceptions.

20.1.4. If a dispute arises with any other Person about whether that Person should be given access to the documents, the Contractor or Subcontractor as applicable, shall indemnify GDPM against all costs, expenses, and damages, including but not limited to attorneys' fees, incurred or paid by reason of that dispute.

20.1.5. The right of inspection, audit, and reproduction extends to all documents necessary to permit adequate evaluation of the cost of pricing data submitted along with the computations and projections used therein.

20.1.6. If the Contract has been terminated, in whole or in part, the records relating to the Work terminated shall be made available to GDPM for a period of 6 years from the date of any applicable final settlement or payment, as applicable.

20.2. Examination and Audit o/ Contractor's Records

- 20.1.7.** GDPM may examine all books, records, documents and other data of the Contractor and its Subcontractors related to the bidding, pricing, or performance of the Work for the purpose of evaluating any Contractor Payment Request, Proposal, Modification, or Claim.
- 20.1.8.** The above referenced materials shall be made available at the office of the Contractor or Subcontractor, as applicable, at all reasonable times for inspection, audit, and reproduction until the expiration of 6 years after the date of Substantial Completion of all Work.
- 20.1.8.1.** The Contractor shall maintain, and require its Subcontractors to maintain complete and accurate business records at its principal place of business.
- 20.1.8.1.1.** If the principal place of business is greater than 50 miles from the Site, the Contractor shall timely make records available, and shall require its Subcontractors to timely make records available, at the office of GDPM upon request for the records.
- 20.1.8.2.** To the extent that the Contractor or Subcontractor, as applicable, informs GDPM in writing that any documents provided to GDPM are trade secrets, GDPM shall treat these documents, to the extent permitted by law, as trade secrets of the Contractor or Subcontractor, as applicable.
- 20.1.8.2.1.** If a dispute arises with any other Person about whether that Person should be given access to the documents, the Contractor or Subcontractor as applicable, shall indemnify GDPM against all costs, expenses, and damages, including but not limited to attorneys' fees, incurred or paid by reason of that dispute.
- 20.1.9.** The right of inspection, audit, and reproduction extends to all documents necessary to permit adequate evaluation of the cost of pricing data submitted along with the computations and projections used therein.
- 20.1.10.** If the Contract has been terminated, in whole or in part, the records relating to the Work terminated shall be made available to GDPM for a period of 6 years from the date of any applicable final settlement or payment, as applicable.
- 20.1.11.** Records that relate to disputes, litigation, or settlement of Claims arising out of the performance of the Work shall be made available until the dispute, litigation or Claims have been finally decided or settled.

20.3. Ownership of Contract Documents

- 20.1.12.** GDPM shall have exclusive ownership of, all proprietary interest in, and the right to full and exclusive possession of all information, materials and documents discovered or produced by Contractor pursuant to the terms of this Contract, including but not limited to reports, memoranda, drawings or letters concerning the research and reporting tasks of this Contract.
- 20.1.13.** For data other than computer software, the Contractor grants to GDPM and others acting on its behalf, a paid-up, nonexclusive, irrevocable, world-wide license in such copyrighted data to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly by or on behalf of GDPM.
- 20.1.14.** GDPM alone owns the Contractor's Documents and the Contract Documents and

every right, title, and interest therein.

20.1.15. The Contractor must execute and deliver and cause its agents and subcontractors to execute and deliver, to GDPM any transfers, assignments, documents or other instruments necessary to vest in GDPM the complete right, title, interest in and ownership of the Contractor's Documents.

20.1.16. The Contractor may retain copies of the Contractor's Documents and the Contract Documents for information, reference, and performance of the Work.

20.1.17. The submission or distribution of the Contractor's Documents or the Contract Documents to meet official regulatory requirements or for similar purposes in connection with the Project is not a waiver of GDPM's reserved rights in the Contractor's Documents.

20.1.18. Any unauthorized use of the Contractor's Documents or the Contract Documents shall be at the sole risk of the entity making the unauthorized use.

20.4. Intent of Contract Documents

20.1.19. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of Work by the Contractor.

20.1.20. The Contract Documents are complementary, and what is required by one is binding as if required by all.

20.1.21. The Contractor shall provide all labor materials necessary for the entire completion of the Work described in the Contract Documents and reasonably inferable to produce the intended results.

20.1.22. The Drawings govern dimensions, details, and location of the Work.

20.1.23. The Specifications govern the quality of materials and workmanship.

20.1.24. The organization of the Specifications in divisions, sections, and articles, and the arrangement of Drawings shall not restrict the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

20.1.25. Unless otherwise defined in the Contract Documents, words that have well known technical or construction industry meanings are used within those recognized meanings.

20.5. Use of Electronic Files

20.1.26. GDPM and Contractor reasonably expect that they will provide electronic files to each other to facilitate the design and construction of the Project consistent with current practices and customs in the construction industry.

20.1.27. GDPM and Contractor acknowledge that the use of electronic files involves risks not generally associated with the use of paper documents. Those risks may include, but not be limited to, alteration (inadvertent or intentional) and deterioration, both of which may not be apparent through casual observation.

20.1.28. In the event of a discrepancy between information contained in a paper version of a document and the electronic file of that document, the paper will govern.

20.1.29. Use of electronic files does not relieve the Contractor of its responsibility for the preparation, completeness, or accuracy of the Contractor's Documents.

20.6. Order of Precedence

20.1.30. In the event of any inconsistency or conflict within any of the Contract Documents, the Contractor shall provide the better quality of Work and comply with the stricter requirement.

20.1.31. In the event of a conflict between the contract and any applicable state or local law or regulation, the state or local law or regulation shall prevail; provided that such state or local law or regulation applies to GDPM and does not conflict with, or is less restrictive than applicable federal law, regulation, or Executive Order.

20.1.31.1. In the event of such a conflict, applicable federal law, regulation, and Executive Order shall prevail.

21 ARTICLE XXI: MISCELLANEOUS

21.1. **Assignment:** The Contractor shall not assign or transfer any interest in this contract; except that claims for monies due or to become due from GDPM under the contract may be assigned to a bank, trust company, or other financial institution.

21.1.1. Such assignments of claims shall only be made with the written concurrence of GDPM.

21.1.2. If the Contractor is a partnership, this contract shall inure to the benefit of the surviving or remaining member(s) of such partnership as approved by GDPM.

21.1.3. *Assignment of Anti-trust Claims:* By signing the Agreement, the Contractor assigns, conveys and transfers to GDPM any right, title, and interest to any claims or causes of action it may have or acquire under state or federal antitrust laws relating to any goods, products, or services purchased, procured, or rendered to GDPM pursuant to the Contract.

21.1.4. GDPM and Contractor each bind themselves, their successors, assigns and legal representatives, to the other party to this Contract and to the successors, assigns, and legal representatives of the other party with respect to the Contract.

21.2. **Contractor Performance Evaluation:** GDPM may evaluate the Contractor's Performance at any time including without limitation during the progress of the Work, at the completion of a phase of the Project, and/or completion of the Project.

21.2.1. GDPM shall retain the evaluation.

21.2.2. The Contractor may request a copy of the completed evaluation(s).

21.2.3. If the Contractor wishes to comment or take exception to any rating or remark, the Contractor must send a response in writing to GDPM within 30 days of Contract Completion and/or Termination.

21.2.4. GDPM may use the evaluation(s) in determining the responsibility of the Contractor for award of future contracts.

21.2.5. Poor evaluations may lead to a determination that Contractor is not responsible and therefore ineligible for award of future contracts for a period of not less than one year.

21.2.6. GDPM may request information from the Contractor for use in evaluating the A/E's performance. If information is requested, the Contractor shall comply in a timely and responsive manner.

21.2.7. If a breach of the Contract is committed by the Contractor or is attributable to a Subcontractor, that breach will be used in the responsibility analysis of the Contractor and Subcontractor (where applicable) for future contracts or subcontracts for a period of 5 years

after the date of the breach unless said breach results in Contractor being placed on debarment list, then for the period provided therein.

21.3. *Prohibition against Liens:* The Contractor is prohibited from placing a lien on GDPM's property. This prohibition shall apply to all subcontractors at any tier and all material suppliers.

21.4. *Conflict of Interest*

21.4.1. Interest of Members of Congress: No member of or delegate to the Congress of the United States of America shall be admitted to any share or part of this contract or to any benefit that may arise therefrom.

21.4.2. Interest of Members, Officers, or Employees and Former Members, Officers, or Employees: No member, officer, or employee of GDPM, no member of the governing body of the locality in which the Project is situated, no member of the governing body of the locality in which GDPM was activated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the Project, shall, during his or her tenure, or for one year thereafter, have any interest, direct or indirect, in this Contract or the proceeds thereof.

21.5. *Limitation on Payments Made to Influence Certain Federal Financial Transactions*

21.5.1. The Contractor agrees to comply with Title 31, United States Code which prohibits the use of Federal appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions:

21.5.1.1. The awarding of any Federal contract;

21.5.1.2. The making of any Federal grant;

21.5.1.3. The making of any Federal loan;

21.5.1.4. The entering into of any cooperative agreement; or

21.5.1.5. The modification of any Federal Contract, grant, loan, or cooperative agreement.

21.5.2. The Contractor further agrees to comply with the requirement of the Act to furnish a disclosure (OMB Standard Form LLL, Disclosure of Lobbying Activities) if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

21.6. *Procurement of Recovered Materials:* In accordance with the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, the Contractor shall procure items designated in guidelines of the Environmental Protection Agency (EPA) 40 CFR that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition.

21.6.1. The Contractor shall procure items designated in the EPA guidelines that contain the highest percentage of recovered materials practicable unless the Contractor determines that such items (1) are not reasonably available in a reasonable period of time; (2) fail to meet reasonable performance standards, which shall be determined on the basis of the guidelines of the National Institute of

Standards and Technology, if applicable to the item; or (3) are only available at an unreasonable price.

21.6.2. This provision *Procurement of Recovered Materials* shall apply to items purchased under this contract where:

21.6.2.1. The Contractor purchases in excess of \$10,000 of the item under this contract; or

21.6.2.2. During the preceding: (1) purchased any amount of the items for use under a contract that was funded with Federal appropriations and was with a Federal agency or a State agency or agency of a political subdivision of a State; and (2) purchased a total of in excess of \$10,000 of the item both under and outside that contract.

21.7. *Royalties and Patents:* The Contractor shall pay all royalties and license fees and assume all costs incident to the use, in the performance of the Work or the incorporation in the Work, of any design, inventions, process, product, or device that is the subject of patent rights or copyrights held by others.

21.7.1. Contractor shall defend all suits or claims for infringement of any patent rights or copyrights and shall save GDPM harmless from loss on account thereof; except that GDPM shall be responsible for any such loss when a particular design, process, or the product of a particular manufacturer or manufacturers is specified and the Contractor has no reason to believe that the specified design, process, or product is an infringement.

21.7.2. If, however, the Contractor has reason to believe that any design, process or product specified is an infringement of a patent or copyright, the Contractor shall promptly notify the Contracting Officer.

21.7.2.1. Failure to give such notice shall make the Contractor responsible for resultant loss.

21.8. *Contract Period:* The Contractor shall complete all Work required within the required number of days of the effective date of the contract as set forth in the solicitation, supplemental terms, or within the time schedule established in the notice to proceed issued by GDPM.

21.9. *Other Contracts:* GDPM may undertake or award other contracts for additional work at or near the site of the work under this contract.

21.9.1. The Contractor shall fully cooperate with the other contractors and with GDPM employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by GDPM.

21.9.2. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by GDPM employees.

21.10. *Drug-Free Workplace:* Each contractor shall be enrolled in and in good standing and shall require all subcontractors with whom the Contractor is in contract for the public improvement to be enrolled in and be in good standing in the Bureau of Workers' Compensation's Drug-Free Workplace Program or a comparable program approved by the Bureau that meets the requirements specified in the Revised Code prior to a subcontractor providing labor at the project site of the public improvement.

21.11. *Energy Efficiency and Sustainability Requirements:* The Contractor shall comply with mandatory standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act for the State in which the work under the contract is performed.

21.11.1. If the Project is designed and constructed under the Leadership in Energy and Environmental Design ("LEED" Rating System developed by the U.S. Green Building

Council or another rigorous rating system used to facilitate achievement of sustainability goals for the Project, the Contractor shall provide submittals certifying achievement of sustainable designed rating system criteria for verification by the Green Building Certification Institute or other third party in accordance with the Contract Documents.

21.12. Clean Air and Water: The contractor shall comply with the Clean Air Act, as amended 42 USC, the Federal Water Pollution Control Water Act, as amended 33 U.S.C., and standards issued pursuant thereto in the facilities in which this contract is to be performed.

21.13. Public Relations: Public relations or publicity about the Project shall be solely within the control of and consent of GDPM.

21.13.1. Contractor shall submit to GDPM all advertising and publicity related material relating to this Contract, including without limitation, information provided in social media, wherein GDPM's name is mentioned or language used from which the connection of GDPM's name may, in GDPM's judgment, be inferred or implied.

21.13.2. Contractor shall not publish or use such advertising and publicity matters without prior express written consent of GDPM.

21.14. Governing Law: This Contract shall be governed and construed exclusively by its terms and by the laws of the State of Ohio and any suit filed to enforce any term of this Contract shall be filed only in a court of competent jurisdiction in Montgomery County, Ohio. The parties to this Contract shall comply with Applicable Law.

21.15. Written Notice: Notice under the Contract Documents shall be validly given if delivered personally to a member of the organization for whom the notice is intended.

21.16. Taxes: Parties acknowledge that GDPM is a tax exempt entity and Contractor must use tax exemption status for all purchases made for the Project in which tax exemption is permitted under law.

21.17. Computing Time: When the Contract Documents refer to a period of time by a number of days, the period shall be computed to exclude the first and include the last day of the period. If the last day of the period falls on a Saturday or Sunday, or a legal holiday, that day shall be omitted from the computation and the period shall end on the next business day.

21.17.1. Except as excluded, the Contract Times and all other periods referred to in the Contract Documents includes Saturdays, Sundays, and all days defined as legal holidays below.

21.17.2. The standard workdays for the Work are Monday through Friday, excluding legal holidays.

21.17.3. The Legal Holidays are as follows:

- New Year's Day
- Martin Luther King Jr. Day
- President's Day
- Memorial Day
- Independence Day
- Labor Day
- Columbus Day
- Veterans Day
- Thanksgiving Day

- Christmas Day

- 21.18. Time is of the Essence:** All time limits set forth in the Contract Documents are of the essence.
- 21.18.1.** By signing this Contract, Contractor acknowledges that the Contract Times are reasonable, taking into consideration the usual weather and other conditions prevailing in the locality of the Project.
- 21.18.2.** By Signing the Construction Schedule, the Contractor acknowledges that the specified milestone dates are reasonable, taking into consideration the usual weather and other conditions prevailing in the locality of the Project.
- 21.18.3.** The Notice to Proceed Establishes the date for commencement of the Work.
- 21.18.4.** The Contractor acknowledges that it may be subject to interference, disruption, hindrance, or delay in the progress of the Work from any cause. The sole remedy for such interference, disruption, hindrance, or delay shall be an extension of the Contract Time, unless otherwise required by law.
- 21.19. Extent of Contract:** The Contract Documents represent the entire and integrated agreement between GDPM and the Contractor and supersede all prior negotiations, representations, or agreement, either written or oral. This Contract may be executed in any number of counterparts, each of which shall be regarded as original and all of which constitute but one and the same instrument. The captions and headings in this Contract are for convenience only and in no way define, limit, or describe the scope or intent of any of the provisions or sections hereof.
- 21.20. Severability:** If any provision of this Contract is determined by a court having jurisdiction to be unenforceable to any extent, the rest of the provisions of this Contract will remain enforceable to the fullest extent permitted by law.
- 21.21. Electronic Signature:** Any party hereto may deliver a copy of its counterpart signature page of any Contract Documents via email, fax, or web-based project management software. Each party shall be entitled to rely upon a scanned or facsimile signature of the other party in such a manner as if such a signature were an original.
- 21.22. No Third Party Interest:** Except as expressly provided herein, no person or entity, other than GDPM and Contractor, will have any right or interest under the Contract, and the Contract does not create a contractual relationship of any kind between any persons or entities other than GDPM and the Contractor.
- 21.23. No Waiver:** The failure of GDPM or Contractor to insist on any one or more instances upon strict performance of any one or more of the provisions of the Contract or to exercise any rights under the Contract or provided by law will not be construed as a waiver or relinquishment of that provision or of the right to subsequently demand strict performance or exercise the right and the rights will continue unchanged and remain in full force and effect.
- 21.24. Survival of Obligations:** All representations, indemnity obligations, warranties, guarantees, and other expressed continuing obligations under the Contract, will survive final payment, completion and acceptance of the Work, and termination or completion of the Contract.
- 21.25. Force Majeure:** Neither party shall be liable for failure to perform if such failure is caused by conditions beyond its control including, but not limited to, Acts of God, Government restrictions (including the denial or cancellation of any export or other necessary license), wars, and/or insurrections.
- 21.26. Privacy:** The Contractor agrees to Comply with the Privacy Act of 1974 (the Act) and the

agency rules and regulations issued under the Act and any Personal information collected, used, or acquired in connection with this Contract shall be protected against unauthorized use, disclosure, modification or loss. Contractor shall ensure that its directors, officers, employees, subcontractors or agents use personal information solely for the purposes of accomplishing the services set forth herein.

21.26.1. Contractor agrees not to release, divulge, publish, transfer, sell or otherwise make known to unauthorized persons personal information without express written consent of GDPM or otherwise required by law.

21.26.2. Contractor agrees to indemnify and hold harmless GDPM for any damages related to Contractor's unauthorized use of personal information.

21.27. ***Contractor Status:*** It is understood that the Contractor is an independent contractor and is not to be considered an employee of GDPM, or assume any right, privilege or duties of an employee.

Specifications

Specifications for:

Moderate Rehabilitation of Imperial Court - RAD Conversion

137 Imperial Court
149 Imperial Court
Vandalia, Ohio 45377



Prepared for:

Greater Dayton Premier Management

400 Wayne Avenue
Dayton, Ohio 45410
937.910.7500

Website posting at www.gdpm.org

Prepared by:



RDA GROUP ARCHITECTS

7662 PARAGON ROAD | DAYTON, OH 45459 | 937.610.3440

Bid Set
April 22, 2024

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137 Imperial Court

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SECTION 01 10 00 - SUMMARY

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Summary:
 - 1. Contract description.
 - 2. Scope of Work.
 - 3. Contractor's use of premises.
 - 4. Specification conventions.
- B. Contractor / General Requirements
- C. Price and Payment Procedures:
- D. Administrative Requirements:
- E. Submittals:
- F. Quality Requirements:
- G. Temporary Facilities and Controls:
- H. Product Requirements:
- I. Execution Requirements:

1.2 CONTRACT DESCRIPTION

- A. Project Identification: Imperial Court RAD Conversion
- B. Project Location: 137 Imperial Court, Vandalia, OH 45377
149 Imperial Court, Vandalia, OH 45377
- C. Owner: Greater Dayton Premier Management
400 Wayne Avenue
Dayton, Ohio 45410
937.910.7500 phone
- D. Architect: RDA Group Architects, LLC
7662 Paragon Road
Dayton, OH 45459
937.610.3440 phone
- E. PME Engineering: Building Systems Engineering, LTD
1370 N. Fairfield Road, Suite E
Beavercreek, OH 45432
937.306.1468 phone
- F. Environmental Consulting: Mac Paran Consulting
3959 Fulton Grove Road
Cincinnati, OH 45245
513.752.9111 Phone

1.3 SCOPE OF WORK

- A. Work of the Project includes the rehabilitation [2] 6-unit apartment buildings.
 - 1. All specific scope items shall be coordinated and reviewed on the drawings and specifications as applicable.
 - 2. Site/Exterior Improvements:
 - a. Replacement of concrete walks, curbs, and driveway approaches.

- b. Mill and repave existing asphalt driveways and parking lots. Modifications to existing asphalt pavement to restore to lawn in identified locations.
- c. Storm system improvements
- d. Utility Improvements
- e. Replacement of landscaping and plantings
- 3. Exterior Building Improvements:
 - a. Repoint masonry facades where indicated.
 - b. Repair CMU foundations where indicated.
 - c. Remove existing, install new windows into existing openings.
 - d. Remove existing, install new shingle roof systems.
 - e. Remove existing, install new low slope roof systems [alternate: new wood truss roof structure and shingle roof systems]
 - f. Remove existing, install new exterior doors where indicated.
 - g. Remove existing, install new fiber cement / composite siding and trim, soffits, and fascia where indicated.
 - h. Painting of siding, trim, and soffits as indicated. Painting of all affected building components requiring paint.
 - i. Installation of new exterior lighting, address plaques, mailboxes, and related exterior components as indicated.
- 4. Interior Improvements:
 - a. Abatement per environmental specifications.
 - b. Selective demolition / removal of the existing interior finishes, partitions, and accessories complete to suit proposed rehabilitation.
 - c. Removal of existing plumbing, mechanical, and electrical components as scheduled to suit work.
 - d. Repair or replacement of any deteriorated/damaged framing or finishes.
 - e. Installation of new gypsum board wall and ceiling finishes where indicated; including fire resistant rated assemblies. Skimcoat / re-finish all existing walls / ceilings scheduled to remain.
 - f. Repair existing or install new kitchen cabinets as indicated.
 - g. Remove existing, install new countertops.
 - h. Install new appliances
 - i. Installation of new bathroom plumbing fixtures, finishes, and accessories as indicated.
 - j. Repair / refinish existing, or install new interior doors, frames, and casing as indicated.
 - k. Installation of new interior trim components as indicated.
 - l. Installation of new interior shelving, cleats, hanging rods, etc. as indicated
 - m. Installation of new floor finishes as indicated.
 - n. Painting of all non-prefinished building components as indicated
 - o. New plumbing fixtures and accessories as indicated
 - p. New water heaters as indicated.
 - q. Install new passive radon mitigation systems as indicated.
 - r. Installation of new split system forced air HVAC system / mini-splits, associated air devices, accessories, and controls as indicated.
 - s. New Electrical fixtures and devices; branch circuitry as indicated.
 - t. Electrical system installations for arc-fault, tamper resistant, and ground fault improvements as indicated.
 - u. Protect any finishes scheduled to remain.
 - v. Final cleaning.
- B. Contractor shall provide all materials and labor for work as noted herein for a complete project.
 - 1. **IMPORTANT:** Contractor shall field verify all existing conditions, and coordinate all applicable requirements as related to the scope of the work.

2. Drawings indicate general diagrammatic areas/extent of work, but in no way indicate the intricate nature of the work required for the successful completion of the project.
 3. Conditions will vary between units. All conditions shall be verified for each individual unit.
- C. Contractor shall provide any and all ancillary work related to the above work scope including repair of any contractor damaged finishes within the work area.
- D. Contractor shall be responsible for the appropriate coordination with GDPM.

1.4 CONTRACTOR'S USE OF SITE

- A. Refer to drawings for units which will remain OCCUPIED during the course of the project. Contractor shall take all measures necessary to minimize the impact on the occupants, provide protective measures at areas of work. Provide safe living environment for Residents at all times.
1. Work must be undertaken and scheduled to allow occupancy.
 2. Maintain access to existing parking areas [coordinate with GDPM during site improvements when access will be limited]
- B. Limit use of site and premises to allow:
1. Maintenance personnel to access the buildings.
 2. Continued occupancy of adjacent dwelling units during the project.
- C. Perform all work between the hours of 8 AM and 5 PM Monday through Friday, unless work outside these hours and days is requested and granted by the Owner.

1.5 OWNER/TENANT OCCUPANCY

- A. Some units are currently occupied and will remain occupied throughout the duration of the project. Residents currently occupying the units NOT identified as OCCUPIED will be relocated to permit the work as scheduled. NO relocation is planned as part of this project for the units indicated as OCCUPIED.
1. All work shall be coordinated to permit continued occupancy of the units.
- B. Contractor shall be responsible for the appropriate notification of GDPM and Residents. Coordinate with GDPM as appropriate.
- C. All work shall be coordinated to efficiently move from one section of the building/sites to another in a logical fashion around the project sites.
- D. Contractor shall provide a detailed construction schedule with specific dates, activities, etc. to GDPM to coordinate with residents.
1. Coordinate with GDPM to minimize conflict, and to facilitate residents as necessary.
 2. Update schedules as appropriate for weather delays, progress, etc.
- E. Contractor shall erect temporary protection as required to protect jobsite and residents. Provide protection around work areas at the site, public areas, etc.
- F. Daily work wrap up: The Contractor shall plan the work and provide enough manpower to this contract to ensure that work progresses in an orderly manner. The OCCUPIED units shall be returned to habitable and functional condition at the end of each work day.
1. Functional use shall mean that the bathroom, kitchen, living room, and bedrooms are usable at the end of the day. Additionally, it shall mean that building systems are in use at the end of the day, including electrical systems, life safety [smoke alarms, etc.], plumbing systems [both water supply and hot water], and mechanical systems are in operation to provide conditioning of the unit.
- G. Project shall be staffed every day with a full crew capable of timely completion of work.
- H. Contractor shall have all in-house and sub-contractors staffing scheduled, materials, accessories, etc. on-site and ready for installation prior to beginning work for any particular day. Advise project team if there are issues with scheduling prior to starting of work.

1.6 TIME FOR COMPLETION

- A. Contract Period
 - 1. Upon issuance of a contract from the Owner, Supply a work start date within [5] working days. A start date and completion date will be negotiated and a notice to proceed will be issued stating those dates.
 - 2. Consideration for material lead-times will be given for establishing the NTP dates as applicable.
 - 3. Notify the Architect, in writing, upon determination of any delay in material delivery.
- B. The time for completion of this contract work is Three Hundred Sixty Five [365] calendar days from the date of the Notice to Proceed.
 - 1. The start date established on the notice to proceed will be communicated and agreed to between GDPM and the Contractor upon execution of the Owner-Contractor Agreement.
 - 2. Final schedule and phasing will be coordinated with the contractor.
 - 3. The Contractor shall anticipate that all units currently occupied and scheduled for relocation shall be made available at the start of the project.
 - 4. The Buildings will be turned over one at a time.
- C. The Contractor shall notify GDPM in writing fourteen [14] days prior to the Contract Completion date if an extension of contract time is necessary with a request for the extension and the reasoning for such request.
 - 1. Failure to comply may result in enforcement of liquidated damages, cancellation of the contract, and possible disablement from future bidding opportunities.
- D. The Contractor shall notify GDPM in writing seven [7] days prior to substantial completion of the project.
- E. It is anticipated that the work of this contract will begin Summer 2024. It will be up to the contractor's responsibility to expedite submittals process and order materials to accommodate the construction schedule.
- F. Coordinate construction schedule/activities with holidays, etc. so as to not inconvenience residents unnecessarily over holiday weekends, etc.
- G. Failure to complete work in the specified contract period will be cause for enforcement of liquidated damages per GDPM requirements.

1.7 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.

1.8 CONTRACTOR / GENERAL REQUIREMENTS

- A. Visit the project sites to verify general and pertinent conditions and take measurements necessary for bidding purposes. Arrangements to visit the site may be made by contacting Kevin Arnold or Glen Moss at GDPM.
- B. Pay for all building permits, trade permits, ROW permits, and any other required permits and inspections necessary to complete all work related to these specifications. Comply with Federal, State, and Local Codes. All work shall comply with HUD General Conditions of the Contract for Construction [HUD Form 5370]
- C. Taxes: Contractor shall pay all applicable taxes, including applicable sales and use taxes, and other taxes as required by governing law.
 - 1. GDPM is a tax-exempt entity.
 - 2. Tax Exempt forms shall be provided upon request.
- D. The Contractor shall provide dumpsters or trash containers needed and shall not use GDPM dumpsters or trash containers at any time for removal of materials, trash, or debris related to

the Contractor's work. Debris shall be removed from the site regularly and be placed within appropriate trash receptacles. All work areas shall be kept neat at all times. Trash shall not be permitted to be left around the site. All considerations must be taken for resident safety. No trash or debris shall be left on the ground.

1. Run magnet around work areas daily to pickup stray nails, etc. when appropriate.

- E. The Contractor is responsible for furnishing workers with potable drinking water and any/all sanitary requirements for the workers during the project. Use of GDPM facilities and property is prohibited.
- F. Contractor shall provide portable generator or required equipment as needed for the completion of the work. Contractor shall not use GDPM and/or resident electricity.
- G. A Contractor, working under a contractual agreement with **GDPM, MUST BE IN COMPLIANCE WITH OSHA STANDARDS 1926 – REGULATIONS FOR CONSTRUCTION.** Any and all sub-contractors, doing work on this project, **MUST ALSO BE IN COMPLIANCE WITH OSHA STANDARDS.** Non-compliance shall be a basis for making a bid non-responsive. And, if a Contractor or sub-contractor is found to be in **VIOLATION (NON-COMPLIANCE) AT ANY TIME**, this could be a basis for termination of the purchase order/contract.
- H. **IMPORTANT: Failure to show or mention petty details shall not be warranted for the omission of anything necessary for the proper completion of the work.**
- I. **The plans and specifications are intended to depict the general scope, layout and quality of workmanship required. The documents are not an “instruction manual” to execute the work nor are they intended to show or describe in detail every item necessary for the proper installation of the work. The means and methods required to execute the work described is the sole responsibility of the Contractor. The Contractor shall include the ancillary work required, whether explicitly stated or not, for the proper completion of the work as intended. The Contractor is required to meet or exceed building code requirements, applicable industry standards, ASTM standards, and/or manufacturer installation requirements as they relate to the work.**
- J. **The plans and specifications represent a single complete design package indicating the intended scope of the project in its entirety. As such, the project is structured to be awarded to a single Prime Contractor. The documents do not delineate bid packages or assign responsibilities to any subsequent subcontractors, dictate construction sequencing, nor provide coordination between any “trades”. Such activities are the responsibility of the holder of the construction contract. In the event of a discrepancy within the drawings or between the drawings and the specifications, the more stringent requirement represented in the documents shall prevail.**
- K. Contractor shall not take advantage of any clerical errors, omissions, contradictions, or conflicts that may develop in plans, specifications, or details. Such errors, ambiguities and discrepancies shall be reported to the Architect immediately for clarification, revision, or correction prior to the submission of bids. If no notification is given, it shall be assumed that all specifications and conditions will be met.
- L. Submission of a bid shall be considered the Contractor's Certification that the bid is based upon equipment and/or materials that meet or exceed the standards set forth by specification or equipment and/or materials identification. Should a Contractor's product be determined not equal to that specified, the Contractor shall be required to provide and install a product acceptable as equal by the Architect at no additional cost to the Owner.
- M. The submission of a bid shall indicate that the Contractor has visited the project site and is familiar with the conditions as they exist, and the modifications that may be necessary to provide a complete and professional finished project.
- N. **Asbestos containing materials:** Refer to Section 02 50 00.

- O. **Lead base paint:** Refer to Section 02 50 00.
- P. **Mold Remediation:** Refer to Section 02 50 00.
- Q. There is a strict **NO SMOKING** policy for all work. Any worker found smoking on the jobsite will be subject to removal from the project. No exceptions. Habitual offenders may be subject to a fine in the amount of \$500 per occurrence.
- R. Security: Contractor's Liability for Vandalism
 - 1. Contractor shall be responsible at the Contractor's cost and expense, for the securing and protection of the project which is under the control of the Contractor, and for the repair and replacement of the work until that portion of the work is accepted as completed by the Owner. The Contractor shall take the measures necessary to provide such security.
 - 2. Contractor shall be liable for and shall promptly repair or otherwise remedy any and all damages to said portion of the project and of the accepted construction work caused by vandalism up to \$5,000.00 per incident. Contractor shall indemnify and hold the Owner harmless from and against all damages, liabilities, costs and expenses, including, without limitation, reasonable attorney fees, which may be imposed upon or incurred by the Owner as a result of the Contractor's failure to comply with the requirements of this section.
- S. Insurance: **Refer to GDPM Terms and Conditions.**
 - 1. Contractor to provide copy of Certificate of Insurance to GDPM.
 - 2. Contractor to submit evidence of Worker's Compensation insurance coverage and builder's risk insurance.
- T. Damages: Any and all damages to Housing Authority Property or resident property shall be repaired equivalent to the existing by the Contractor at no cost to the Authority. **NO EXCEPTIONS.**
- U. Safety: The work will be accomplished within a high traffic area and the Contractor is responsible for taking all safety precautions necessary or directed to ensure public safety.
 - 1. RDA nor GDPM are safety consultants. Any and all safety provisions shall be managed and coordinated by the Contractor.
- V. Provide appropriate notification of Residents prior to starting work.

1.9 CONTRACTOR QUALIFICATIONS

- A. The Contractor and/or Sub-contractors must establish their qualifications with GDPM for their ability to complete this type of work. Qualifications may be established by:
 - 1. Provide references of similar projects, past performance, financial disclosures, etc. in the interest of selection of the lowest and best bidder for the project.
 - 2. Providing a letter of approval for the installation of the products from the manufacturer.
 - a. Contractor must be properly trained and approved by the manufacturer for the installation of the products.
 - 3. Providing a recommendation from the supplier of the products.
 - 4. Demonstrating to GDPM the capability to do the work. The Contractor will have a minimum of five years documented experience in similar work.
- B. The Contractor will be responsible for all work performed by the Sub-contractors.

1.10 RESPONSIBILITIES OF THE CONTRACTOR

- A. Protect all finishes and equipment scheduled to remain.
- B. Contractor shall commence and complete work as noted in the contract.
- C. Contractor shall furnish labor, materials, equipment, and management required to complete the project.

- D. Contractor shall furnish all required logistics required to accomplish the work – including lifts, scaffolding, ladders, trash chutes, safety equipment, etc.
 - 1. All contractor staging areas and layout areas, etc. shall be coordinated and approved by the Owner prior to the start of the project.
- E. Contractor shall visit the site to become thoroughly familiar with all working conditions, check and verify all dimensions, and site conditions. Any dimensions given or referred to in the specification or drawing is to be used purely as approximate and not as a basis for exact amounts for bidding. Contractor shall promptly advise the Architect of any discrepancies, errors with the specifications and drawings before bidding the work.
- F. Contractor to provide a valid Certificate of Insurance, follow all Workman’s Compensation requirements and regulations, and conduct all work according to OSHA recognized safe work practices.
- G. All bonds, payment schedule, insurance shall be as noted in the contract documents.
- H. The plans and specifications are intended to depict the general scope, layout and quality of workmanship required, they are not intended to show or describe in detail every item necessary for the proper installation of the work, nor are the documents an instruction manual of how to accomplish the work.
- I. The contractor shall provide Safety Data Sheets [SDS] on all products used.
 - 1. Submit directly to Owner. RDA does not review nor approve SDS.

1.11 REFERENCES

- A. Conform to reference standards by date of issue current as of date of Contract Documents.
- B. When specified reference standard conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

1.12 WARRANTIES AND GUARANTEES

- A. General: The warranty and guarantee provisions of the General Conditions apply to all work of the contract, including but not limited to the following specific categories related to individual units of work specified in various sections of these specifications:
 - 1. **Refer to GDPM Contract Requirements / Terms and Conditions for additional information / requirements.**
 - 2. Special Project Warranty (Guarantee): A warranty specifically written and signed by the Contractor for a defined portion of the work, and, where required, countersigned by sub-contractor, installer, manufacturer, or other entity engaged by the Contractor.
 - 3. Specified Product Warranty: A warranty which is required by the contract documents, to be provided for a manufactured product incorporated in the Work, regardless of whether manufacturer has published a similar warranty without regard for specific incorporation into the work, or has written and executed a special project warranty as a direct result of contract document requirements.
 - 4. Coincidental Product Warranty: A warranty which is not specifically required by the Contract Documents (other than as specified in this Section); but which is available on a product incorporated into the work, by virtue of the fact that the manufacturer of the product has published a warranty in connection with purchases and users of the product without regard for specific applications except as otherwise limited by terms of the warranty.

PART 2 GENERAL REQUIREMENTS

- A. **Contractor shall follow all applicable requirements of the Owner’s Terms and Conditions. If there should be a conflict between the Owner Requirements and those herein, the higher standard shall apply.**
- B. Required Inspections by GDPM

1. Contact GDPM Project Manager to:
 - a. Inform GDPM when the job is actually going to start to allow resident notification.
 - b. Mockup inspections.
 - c. Inspection at random or when problems / field conditions arise.
 - d. Final Inspection.
 - e. Punchlist requirements.
 - f. Acceptance of the project by GDPM.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01 20 00 - PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Schedule of values.
- B. Applications for payment.
- C. Change procedures.
- D. Defect assessment.
- E. Unit prices.
- F. Alternates.
- G. Project Allowances.

1.2 PREVAILING WAGE REQUIREMENTS

- A. The work of this project is subject to Davis-Bacon Prevailing Wages.
- B. Include in the bid amount all applicable prevailing wages.
- C. Provide payroll reports indicating compliance to the Owner on a monthly basis.
 - 1. Pay Applications will not be processed without approved payroll reports submitted to the Owner.

1.3 TAXES

- A. GDPM is tax exempt. Tax Exempt Certificates will be provided upon request.
- B. GDPM will not compensate the Contractor for any taxes paid on the project.

1.4 SCHEDULE OF VALUES

- A. Submit schedule on AIA G702 / G703 or other approved HUD forms.
- B. Submit Schedule of Values in duplicate three days prior to the Pre-Construction meeting for approval by Architect and Owner.
- C. Approved Schedule of Values will be signed at the Pre-Construction meeting.
- D. Format: Utilize Table of Contents of this Project Manual. Identify each line item with number and title of major specification Section. Identify site mobilization/general conditions, bonds and insurance.
 - 1. Schedule of values should be broken down by building and also by division / work scope for each building.
- E. Revise schedule to list approved Change Orders, with each Application for Payment.

1.5 APPLICATIONS FOR PAYMENT

- A. Submit **three** copies of each pay application on AIA G702/G703 HUD form 51001. Submit "pencil copy" one week prior to application for review and approval by Architect and Owner.
 - 1. Pencil copy shall be submitted via email for review.
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
- C. Payment Period: Monthly. First pay application at 30 days into contract period.

- D. Submit updated construction schedule with each Application for Payment as applicable to the work. Failure to submit the updated construction schedule can delay the processing of the Application for Payment.
- E. Submit all required waivers of lien/partial release of lien, payroll reports as required by GDPM, etc. Failure to submit required paperwork can delay the processing of the Application for Payment

1.6 CHANGE PROCEDURES

- A. The Architect or Owner may issue a Proposal Request including a detailed description of proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change. Contractor will prepare and submit estimate within 5 days.
- B. On Owner's approval of a proposal from Contractor, Owner will issue a Change Order for all changes to Contract Sum and for all changes to the Contract Time.
- C. Stipulated Sum/Price Change Order: Based on Proposal Request and Contractor's fixed price quotation.
- D. Unit Price Change Order: For contract unit prices and quantities, the Change Order must be executed prior to beginning any work. The Order will be based on fixed unit price basis provided in the Bid Form.
- E. Construction Change Order: Architect may issue directive, on AIA / HUD Forms signed by Owner, instructing Contractor to proceed with changes in the Work. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute change.
- F. Change Order Forms: AIA / HUD Approved Forms with all required backup documentation.
- G. Correlation Of Contractor Submittals:
 - 1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
 - 2. Promptly revise progress schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
 - 3. Promptly enter changes in Project Record Documents.
- H. The Architect will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions on Architect's approved forms.
- I. **Important: All change orders must be fully executed prior to beginning any work. Failure to comply will result in contractor request being denied and completed at no cost to GDPM.**

1.7 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of the Architect/Owner, it is not practical to remove and replace the Work, the Architect/Owner will direct appropriate remedy.
- C. Authority of Architect/Owner to assess defects and identify payment adjustments is final.
- D. Non-Payment For Rejected Products: Payment will not be made for rejected products.

1.8 UNIT PRICES

- A. Architect will take measurements and compute quantities accordingly. Provide assistance in taking of measurements.

- B. Unit Price Includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application or installation of item of the Work; overhead and profit.
- C. Final payment for Work governed by unit prices will be made on basis of actual measurements and quantities accepted by Architect/Engineer multiplied by unit sum/price for Work incorporated in or made necessary by the Work.
- D. Unit Price Schedule: Refer to Bid Form

1.9 ALTERNATES

- A. Alternates listed on Bid Form will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work.

1.10 SCHEDULE OF ALTERNATES

- A. **ADD Alternate #1:** 149 Imperial Court: Remove existing low slope roof system complete, modify / re-frame as required for installation of new pre-engineered wood roof trusses, decking, shingle roof systems, includes extension of all vents, flues, etc. thru the new roof system, includes all related ancillary work at soffits, fascias, gutters and downspouts. Coordinate with drawings, specifications, and work scope noted.
- B. **ADD Alternate #2:** Provide the scheduled work scope at the Occupied Units [Unit #1] at 137 Imperial Court. Coordinate with drawings, specifications, and work scope noted.
- C. **ADD Alternate #3:** Provide the scheduled work scope at the Occupied Units [Unit #2, 3, 5, & 6] at 149 Imperial Court. Coordinate with drawings, specifications, and work scope noted.
- D. **ADD Alternate #4:** Remove existing solid surface countertops complete, install new plastic laminate countertops, back splashes, and end splashes at units #2, 3, 5, & 6 at 137 Imperial Court and at units #1, & 4 at 149 Imperial Court. Coordinate with drawings, specifications, and work scope noted.
- E. **ADD Alternate #5:** 137 Imperial Court: Remove existing shingle roof, underlayment, and flashing to the deck. Install new ice and water shield, underlayment, shingle roof system, all related flashing, terminations, etc. install new aluminum cladding over existing fascia. Remove existing, install new gutters and downspouts. Coordinate with drawings, specifications, and work scope noted.
- F. **ADD Alternate #6:** 137 Imperial Court: Remove existing, install new vinyl windows at existing openings. Coordinate with drawings, specifications, and work scope noted.
- G. **ADD Alternate #7:** Add \$25,000 to the building systems / integrity / contingency allowance in the project

1.11 PROJECT ALLOWANCES

- A. Building & Systems / Unforeseen Conditions Allowance:
 - 1. Provide in bid a draw down allowance in the amount of **\$75,000 [seventy five thousand dollars]** for Building & Systems / Unforeseen Conditions to address existing building / site / systems conditions as they interface with the project.
- B. Permit Allowance:
 - 1. Provide in bid a draw down allowance in the amount of **\$10,000 [ten thousand dollars]** for building permits. *Allowance shall be for actual / direct costs only, all labor, coordination, etc. shall be included in the bid amount.*

- C. Contractor's costs for Products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit are included in Change Orders authorizing expenditure of funds from this project allowance.
- D. Any expenditure from this allowance shall be reviewed and approved by Architect and GDPM prior to executing the work.
- E. Any unused amounts will be credited back to GDPM at the completion of the project by a change order.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01 25 00 – SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.1 WORK INCLUDES

- A. Includes administration and procedural requirement for Substitutions.
 - 1. Substitutions' for Cause: Changes due to project conditions, such as unavailable of product.
 - 2. Substitutions' for Convenience: Changes that may offer advantages to the Owner.

1.2 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 manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions / Approved Equal: Submit request for substitution as outlined in this section for manufacturers not named.
 - 1. RDA/Owner is the decision maker if the proposed "approved equal" is in fact equal and approved. Any decision rendered is final.
 - 2. Any Contractor, Sub-contractor, or Supplier who makes their own judgement as to "approved equal" and includes within their bid without a formal approval is doing so at their own risk.

1.3 SUBSTITUTIONS PROCEDURES

- A. RDA will consider requests for Substitutions by the Bidder only [not materials suppliers, etc].
- B. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- C. A request constitutes a representation that the Bidder:
 - 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.
- D. Substitution Procedure
 - 1. **Submit copy of request for Substitution for consideration to RDA no later than SEVEN [7] days before bid opening date.**
 - 2. Submit shop drawings, product data, and applicable certified test results attesting to proposed product equivalence. Burden on proof is on proposer.
 - 3. RDA will notify Contractor in writing of decision to accept or reject request within 5 days of receipt of request or request additional information or documentation for evaluation.
- E. Substitutions will not be considered when they are indicated or implied on Submittals, without written request or when acceptance will require revision to the Contract Documents.
- F. If the Substitution will require modifications to the Contract / Bidding Documents, the cost for updating the documents shall be paid by the Contractor making the request.
- G. Substitutions will not be considered after award of the project without justification.
- H. Approved substitutions will be identified by Addenda.
 - 1. Bidders shall not rely upon approvals made in any other manner.

END OF SECTION

SECTION 01 30 00 - ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Coordination and project conditions.
- B. Preconstruction meeting.
- C. Progress meetings.
- D. Pre-installation meetings.
- E. Daily Job Logs.
- F. Cutting and patching.
- G. Special procedures.

1.2 COORDINATION AND PROJECT CONDITIONS

- A. Coordinate scheduling, submittals, and Work of various sections of Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.
- 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, conceal pipes, ducts, and wiring within construction. Coordinate locations of fixtures and outlets with finish elements. Coordinate rough in locations for accessibility, clearances, maneuvering, etc.
- E. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion.
- 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 FIELD VERIFICATION

- A. Prior to ordering materials, Contractor shall verify the actual dimensions of existing conditions and assume responsibility for workable solutions for all new work. Verification that new work and items are workable for existing conditions while providing adequate clearances is the responsibility of the contractor.

1.4 PRECONSTRUCTION MEETING

- A. GDPM will schedule preconstruction meeting after Notice of Award for affected parties.
- B. 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.

6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 7. Scheduling.
 8. Use of premises by Owner and Contractor.
 9. GDPM requirements for procedures and inspections
 10. Construction facilities and controls provided by Owner.
 11. Security and housekeeping procedures.
 12. Application for payment procedures.
 13. Procedures for maintaining record documents.
 14. Requirements for start-up of equipment.
 15. Inspection and acceptance of equipment put into service during construction period.
- C. Architect will record minutes and distribute copies via email within two days after meeting to participants and those affected by decisions made.

1.5 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at bi-weekly intervals.
1. Contractor to provide suitable accommodations for holding meetings on-site with a layout table, chairs, etc.
- B. Architect will make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.
- C. Attendance Required: Job superintendent, major subcontractors and suppliers, Architect, Owner, 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.
- E. Architect shall record minutes and distribute copies via email within two days after meeting to participants and those affected by decisions made.

1.6 PRE-INSTALLATION MEETINGS

- A. When required in individual specification sections, convene pre-installation meetings at Project site prior to commencing work of specific section.
- B. Require attendance of parties directly affecting, or affected by, Work of specific section.
- C. Notify GDPM one week 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 JOB LOGS

- A. Maintain a daily job log that indicates the personnel on-site and activities performed (including all sub-contractors)
- B. Indicate any safety concerns and incidents.
- C. Indicate weather conditions.
- D. Indicate any visitors or other personnel visiting the project site.
- E. Job log shall be accessible to GDPM and Architect upon request.
 - 1. Email GDPM with daily reports upon request.

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. For painted surfaces, paint entire wall from corner to corner, floor to ceiling.
- K. Identify hazardous substances or conditions exposed during the Work to Architect for decision or remedy.

3.2 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.

- B. If, in the opinion of the Architect/Owner, it is not practical to remove and replace the Work, the Architect/Owner will direct appropriate remedy.
- C. Authority of Architect/Owner to assess defects and identify payment adjustments is final.
- D. Non-Payment For Rejected Products: Payment will not be made for rejected products.

3.3 SPECIAL PROCEDURES

- A. Materials: As specified in product sections; match existing with new 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. Remove, cut, and patch Work in manner to minimize damage and to permit restoring products and finishes to original or specified condition.
- H. Refinish existing visible surfaces to remain in renovated rooms and spaces, to renewed condition for each material, with neat transition to adjacent finishes.
- I. Where new Work abuts or aligns with existing, provide smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
- J. 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 for review.
- K. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
- L. Finish surfaces as specified in individual product sections.

END OF SECTION

SECTION 01 33 00 - 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. Manufacturer's instructions.
- H. Construction Photographs

1.2 SUBMITTAL PROCEDURES

- A. Contractor to submit product data and shop drawings for all applicable components of the project. Refer to individual sections for additional requirements.
 - 1. Contractor to provide a submittal log at the beginning of the project for review by RDA / Owner. Submittal log shall identify proposed submittals by Spec Section.
 - 2. RDA review of the submittals will be general in nature and does not relieve the Contractor in any way of the responsibility in compliance with the contract requirements, manufacturer requirements, and/or applicable codes.
- B. Submittals shall be accomplished in a digital [PDF format].
 - 1. Any hard copies received will be scanned and returned electronically.
 - 2. Provide those submittals required to maintain orderly progress of the work and those required for early lead time for manufacturer fabrication.
 - 3. Contractor shall not simply download information directly from a manufacturer's website without a review of the information and **identifying the particular products being utilized**. Mark each component to identify applicable products, models, options, and other data. Supplement manufacturer's standard data to provide information unique to this project. Non-identified submittals will be rejected.
- C. Submittals shall have a Submittal form / cover sheet to identify Project, Contractor, subcontractor or supplier; and pertinent Contract Document references.
 - 1. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.
 - 2. Contractor shall sign off on submittals indicating their review of the data provided.
- D. Apply Contractor's stamp, signed or initialed, certifying that review, 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. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of completed Work.
- F. Revise and resubmit submittals as required; identify changes made since previous submittal.
- G. All submittals shall be accomplished at the beginning of the project to allow the proper ordering of materials for the project.
 - 1. Failure by the Contractor to provide submittals in a timely fashion does not change the project start date nor contract period.

- H. Any materials on the job site that have not been reviewed as part of the submittal process are subject to rejection / removal from the job-site. Any work undertaken without review of the submittal data is at the Contractor's risk and subject to rejection or replacement at no cost to the Owner if submittals are not in conformance with the project documents.
- I. Schedule submittals to expedite Project, and deliver to Owner. Coordinate submission of related items.
- J. For each submittal for review, allow seven [7] days excluding delivery time to and from Contractor.
- K. Allow space on submittals for Contractor and Architect review stamps.
- L. When revised for resubmission, identify changes made since previous submission.
- M. Distribute copies of reviewed submittals as appropriate (electronically as appropriate). Instruct parties to promptly report inability to comply with requirements.
- N. All submittals shall be completed within the first 30 days of the project.

1.3 SUBMITTALS / PRODUCT DATA / SHOP DRAWINGS

- A. Product Data/Shop Drawings:
 - 1. Submitted to RDA for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
 - 2. All shop drawings shall be to scale, submit drawings on sheets no larger than 24-inch x 36 inch, all other product data can be on 8 ½ X 11-inch sheets.
- B. Samples for Review:
 - 1. Submitted to RDA for review and selection for aesthetic, color, or finish.
 - 2. Submit samples of finishes from full range of manufacturer's standard colors, textures, and patterns for Owners selection.
 - 3. Submit samples to illustrate functional and aesthetic characteristics of Product.
- C. Personnel/Other Contractors
 - 1. Submit a list of all subcontractors and on-site personnel with the list of lead contact and associated phone numbers.
 - 2. Submit emergency contact sheet with contacts for an emergency – 24/7 call list.
- D. Contract Items:
 - 1. Submit Certificate of Insurance, Worker's Comp Certificates as required by Owner.
 - 2. Submit bonds if applicable to the contract.
 - 3. Submit a written Construction Schedule / Implementation and Sequencing Plan outlining starting points and length of time to complete work in each section.
- E. Safety Data Sheets: Submit Safety Data Sheets [SDS] on all products to the Owner.
 - 1. RDA does not review / approve any SDS sheets.
- F. Site Specific Safety Plan
 - 1. Provide to Owner for their Review.
- G. Site Logistics Plan
 - 1. Provide to Owner for their Review.

1.4 SAMPLES

- A. Physical Samples: Submit to Architect for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
 - 1. Physical samples are required to allow Architect to make selections for color and finish. Electronic images of colors/finishes, etc. are not sufficient.

- B. Samples For Selection as Specified in Product Sections:
 - 1. Submit to Architect for aesthetic, color, or finish selection.
 - 2. Submit samples of finishes from full range of manufacturers' standard colors, textures, and patterns for Architect 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 2 copies of each sample, Architect will retain 1 copy.
- F. Reviewed samples which may be used in the Work are indicated in individual specification sections.

1.5 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit manufacturer printed instructions for delivery, storage, assembly, installation, [start-up,] adjusting, and finishing, in quantities specified for Product Data.

1.6 MANUFACTURER'S CERTIFICATES

- A. When specified in individual specification sections, submit certifications by manufacturer to Owner, 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.

1.7 CONSTRUCTION PROGRESS SCHEDULES

- A. Utilize Microsoft Project Schedule or similar spreadsheet with separate line for each major section of Work or operation, identifying first work day of each week.**
- B. Illustrate order and interdependence of activities and sequence of work; how start of given activity depends on completion of preceding activities, and how completion of activity may restrain start of subsequent activities. Illustrate complete sequence of construction by activity, identifying work of separate buildings/units.
- C. Submit initial progress schedule in duplicate within three [3] days prior to the Preconstruction meeting for Architect/Owner review. Schedule will be reviewed and approved at the Preconstruction Meeting by all project team members.
- D. Submit revised schedules with each Application for Payment, identifying changes since previous version. Indicate estimated percentage of completion for each item of Work at each submission.
- E. Participate in joint review and evaluation of project schedule with Architect/Owner at each submittal.
- F. Evaluate project status to determine work behind schedule and work ahead of schedule. Indicate changes required to maintain Date of Substantial Completion.
- G. After review, revise project schedule incorporating results of review, and resubmit electronically to all parties within 3 days.

1.8 PROPOSED PRODUCTS LIST

- A. Within 5 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. All products for the project shall be ordered in the first 30 days of the contract. Contractors failure to order materials is not a reason for a time extension or selection of an alternate material. This is imperative to allow work as scheduled.
- C. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.9 CERTIFICATES

- A. When specified in individual specification sections, submit certification by manufacturer, installation/application subcontractor, or Contractor to Architect, 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 Architect/Engineer.

1.10 MANUFACTURER'S INSTRUCTIONS

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

1.11 CONSTRUCTION PHOTOGRAPHS

- A. Provide digital photographs of construction throughout progress of Work as taken by project superintendent as applicable to document the existing conditions, work in progress, completed work, project wrap up, etc. It is in the best interest of the contractor to document the conditions as this is an occupied unit project.
- B. Deliver photographs to Architect/Owner upon request on CD. Catalog and index in chronological sequence with date indexed.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01 40 00 - QUALITY REQUIREMENTS/PROJECT INSPECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Quality control and control of installation.
- B. GDPM Construction Inspection Procedures
- C. Tolerances
- D. References.
- E. Mock-up requirements.
- F. Examination & Inspection.

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 Architect/Owner 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 GDPM CONSTRUCTION INSPECTION PROCEDURES

- A. GDPM Staff have clear goals with regard to the importance of thorough construction inspection that ensures compliance with the bid documents. The compliance documents shall include the project specifications, drawings, contract, notice to proceed, codes, regulations and ordinances.
- B. GDPM intends for a GDPM Staff (Project Manager) and an A/E representative to routinely monitor the Contractor's work and progress on all projects. Quality control is an important element which is the responsibility of the Contractor. The Contractor shall provide full cooperation with all inspection steps through the construction process and include such coordination in the base bid of the project.
- C. Accessibility to the work shall be arranged by the Contractor. The necessary ladders, scaffolding, hoisting, etc shall be provided by the Contractor in order to make all areas of the work available to the construction inspector and consultant. The contractor shall have his authorized representative (superintendent) available to interface with and assist with the inspection process.
- D. Acceptance of Conditions:
 - 1. The construction inspector and consultant shall not allow work to proceed when there is a construction deficiency document in place that has not been cleared.

2. The construction inspector and consultant shall not allow work to proceed that requires mock-ups until such mock up is acceptable. Subsequent work in like kind shall be equal to or better than the mock-up.
- E. Prior to final completion, the contractor is to be required to inspect all of his work. He shall correct any deficiencies and enter a document that all of the contracted for work has been completed within the scope of the contract and request "final inspection" by the GDPM representative.**
- F. The final inspection shall result in either complete acceptance or generation of a punch list that is to be corrected in a timely manner and back punched by GDPM and the consultant.
- G. After review by GDPM Project Manager, GDPM will review project acceptance with site and senior staff for final acceptance of the project. This review may prompt additional punchlist work that may need to be completed.**
- H. If work that is clearly not complete, the Punchlist will be suspended until such time that it is evident that the Contractor has completed and reviewed/inspected their own work.**
- I. The final inspection acceptance shall include approval and sign-off by the construction inspector, construction coordinator and consultant. Sign off approvals
- J. The warranty blanketing the contract will not be allowed to commence until all work under the contract is completed and accepted for beneficial use by GDPM.
 1. This will be accomplished on a building by building basis.
- K. An anniversary inspection for the one year interval following acceptance of the project shall be performed and documented by the construction coordinator and consultant.

1.4 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 Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

1.5 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 Architect before proceeding.
- E. Neither contractual relationships, duties, nor responsibilities of parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in reference documents.

1.6 MOCK-UP REQUIREMENTS

- A. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

- B. Accepted mock-ups shall be comparison standard for remaining Work follow requirements of individual sections.
- C. Provide mockups of the work as directed / required by the Architect / GDPM.

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

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SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Temporary Utilities
- B. Construction Facilities
- C. Temporary Controls
- D. Removal of utilities, facilities, and controls

1.2 SITE CONTROL

- A. Coordinate site control and access with Owner.
- B. Contractor will have site control and shall maintain site / building control while work residents have been temporarily relocated to accomplish rehabilitation work. Building security shall be the responsibility of the contractor during this time.
- C. Contractor will maintain the site for lawn care, snow removal, etc. during the course of the project.

1.3 TEMPORARY UTILITIES

- A. Refer to GDPM's Terms and Conditions

1.4 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. Provide and maintain temporary lighting for construction operations and for site security/access. Provide repairs as applicable.
- B. Provide and maintain additional lighting as required for construction operations.
- C. Permanent building lighting may be utilized during construction.

1.5 TEMPORARY HEATING/COOLING

- A. Provide temporary heating / cooling to facilitate the project. Pay for the cost to maintain temporary heating / cooling. Existing systems may remain in place until new systems are installed to the extent feasible.

1.6 TEMPORARY VENTILATION

- A. Ventilate enclosed areas to achieve curing of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- B. Provide temporary fan units as required to maintain clean air for construction operations.

1.7 TELEPHONE SERVICE

- A. Provide, maintain, and pay for cellular telephone service for project superintendent.

1.8 EMAIL

- A. Provide email service for project superintendent. **Email communication will be an important tool for all information and communication on this project.**

1.9 TEMPORARY WATER SERVICE

- A. Connect to existing water source for construction operations.
- B. Extend branch piping with outlets located so water is available by hoses with threaded connections.

1.10 TEMPORARY SANITARY FACILITIES

- A. Provide temporary sanitary facilities for use during construction. Maintain daily in clean and sanitary condition.
 - 1. Contractor may not use resident toilet facilities for temporary facilities.
 - 2. Contractor may not use new plumbing fixtures for temporary facilities.
- B. Provide potable drinking water for workers.

1.11 FIELD OFFICES AND SHEDS

- A. Provide securable on-site space for storage as required by the contractor. Contractor shall coordinate with GDPM for approved location of such storage space. Obtain required right of way permits, etc. if storage is placed in street.
- B. Provide location where field drawings and related documents can be safely stored on-site out of weather to prevent damage.
- C. Provide field office for construction operations as deemed necessary by Contractor. Contractor shall pay for field offices and related expenses. One of the units to be modernized may be used.

1.12 VEHICULAR ACCESS

- A. Utilize existing street parking / driveways / parking areas for construction activities. Contractor shall not block or prohibit vehicular access to adjacent buildings / parking areas. Do not allow driving/parking in turf areas.
- B. Provide unimpeded access for emergency vehicles. Maintain 20 feet wide driveways with turning space between and around combustible materials.
- C. Provide and maintain access to fire hydrants and control valves free of obstructions.

1.13 PARKING

- A. Use of designated existing on-site driveways / street parking used for construction traffic is permitted. Tracked vehicles not allowed on paved areas. Do not block resident vehicles or those of adjacent buildings with a shared driveway.
- B. Use of designated areas of existing parking facilities used by construction personnel is permitted.
- C. Do not allow heavy vehicles or construction equipment in parking areas.
- D. Maintenance:
 - 1. Maintain traffic and parking areas in sound condition free of excavated material, construction equipment, products, mud, snow, and ice.
 - 2. Maintain existing and permanent paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.
- E. Removal, Repair:
 - 1. Repair existing and permanent facilities damaged by use, to original or specified condition.

1.14 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition **DAILY**.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing spaces.

- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and rubbish from site daily and dispose off-site. Sort and recycle as applicable.
- E. Provide dumpsters or trash containers needed for the proper removal of project materials, trash, or debris related to the work. Keep all work areas and project sites neat and free of trash and clutter at all times. Project site consists of occupied apartment units. Do not leave trash around the project site. Take all considerations necessary for safety.

1.15 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual specification sections. Restore any damaged work to new condition.

1.16 FIRE PREVENTION FACILITIES

- A. Prohibit smoking within building or on site under construction. **NO SMOKING IS PERMITTED ON SITE [INTERIOR OR EXTERIOR]. NO EXCEPTIONS.**
- B. Establish fire watch for cutting and welding and other hazardous operations capable of starting fires. Maintain fire watch before, during, and after hazardous operations until threat of fire does not exist.
- C. Portable Fire Extinguishers: NFPA 10; 10 pound capacity, 4A-60B: C UL rating.
 - 1. Provide one fire extinguisher at each building under construction.
 - 2. Provide minimum one fire extinguisher in storage shed.

1.17 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas.
- B. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.
- C. Protect Work existing premises from theft, vandalism, and unauthorized entry.

1.18 SECURITY

- A. Security Program:
 - 1. Protect Work and existing premises from theft, vandalism, and unauthorized entry.
 - 2. Maintain program throughout construction period until Owner occupancy
- B. Entry Control:
 - 1. Restrict entrance of persons into Project site.
 - 2. Allow entrance only to authorized persons with proper identification.
 - 3. Maintain log of workers and visitors, make available to Owner on request.

1.19 DUST CONTROL

- A. Execute Work by methods to minimize raising dust from construction operations.
- B. Provide positive means to prevent air-borne dust from dispersing into atmosphere and to other areas of the unit. Provide temporary visqueen (or similar) dust control measures to minimize the spread of dust and debris. Provide drop cloths, protective coverings as necessary.

1.20 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary work.

- C. Restore existing and permanent facilities used during construction to original condition.
Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Product requirements.
- B. Product options and substitution procedures.
- C. 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.
- D. **Products shall be ordered in the first 30 days of the contract. Provide documentation of orders upon request.**
- E. **It shall be solely the Contractor's responsibility to order products to allow timely delivery for installation. The failure to order materials early in the project shall not be a reason for a contract time extension or additional costs related to expedited shipping and/or delivery. Nor shall this be a reason for a product substitution.**

1.3 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.

1.4 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.

1.5 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. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

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

1.6 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only:
 - 1. Any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers with NO Provision for "Approved Equal":
 - 1. Products of one of the manufacturers named and meeting specifications, NO options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with Provision for "Equal / Approved Equal" Substitutions :
 - 1. Products of one of manufacturers named and meeting specifications.
 - 2. Submit request for substitution [Approved Equal] for any manufacturer not named in accordance with "Product Substitution Procedures".

1.7 PRODUCT SUBSTITUTION PROCEDURES – REFER TO SECTION 01 25 00

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.
- B. Cord and Plug: Furnish minimum 6 foot cord and plug including grounding connector for connection to electric wiring system. Cord of longer length is specified in individual specification sections.

2.2 TOLERANCES

- A. Monitor fabrication and installation tolerance control of installed Products over suppliers, manufacturers, Products, site conditions, and workmanship, to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply fully with manufacturer's tolerances.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01 70 00 - EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Close-out of the actual work, including warranties, project record documents and operations / maintenance manuals, and final cleaning. Close-out of all contract obligations.

1.2 CLOSEOUT PROCEDURES

- A. Contractor shall notify Owner five [5] days prior to the work being complete to establish the desired inspection date. Owner / RDA will either proceed with the inspection or notify Contractor of unfulfilled requirements.
 - 1. 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 punch list inspection.
- B. Owner / RDA shall inspect the completed project and notify the Contractor of any deficiencies. Deficiencies will form 'punch list' for final acceptance.
- C. Provide submittals to Owner required by authorities having jurisdiction.
- D. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.3 PUNCHLIST REQUIREMENTS

- A. The Contractor shall review and inspect all work prior to notifying the Owner for a Punchlist inspection of the work. Provide written documentation certifying review along with documentation of Contractor generated Punchlist.
- B. If work is clearly not complete, the Punchlist will be suspended until such time that it is evident that the Contractor has completed and reviewed/inspected their own work.**
 - 1. RDA anticipates [1] punchlist inspection and [1] back-punch / final inspection as part of our services to the Owner.
 - 2. Failures by the Contractor to complete the work, complete punchlists, etc. may result in a backcharge to the Contractor for the additional time to closeout the project.
- C. GDPM requires a multi-phase signoff of the work for final acceptance.
 - 1. GDPM Project Manager.
 - 2. GDPM Site Management Staff.
 - 3. GDPM Senior Management Staff.
- D. After review by GDPM Project Manager and Consultant, GDPM will review project acceptance with site and senior staff for final acceptance of the project. This review may prompt additional punchlist work that may need to be completed.
- E. The Contractor shall review and provide the noted repairs and corrective work necessary at each of the Punchlist inspections to allow project close out.
- F. The Contractor shall provide adequate time in the construction schedule to accomplish punchout work within the overall contract period indicated within the bid documents.
- G. The failure to identify any punchlist item during a walk through / inspection does not release the Contractor from contractual responsibility to address any item during the warranty period.

1.4 SUBSTANTIAL COMPLETION

- A. If Requested by the owner, a Certificate of Substantial Completion will be issued upon completion of all the work as required.

1.5 FINAL CLEANING

- A. Execute final cleaning on a **unit by unit / building by building** basis at completion of work in each unit prior to final project assessment / punch list inspection.
 - 1. Clean interior and exterior surfaces exposed to view.
 - 2. Remove manufacturer or temporary labels, stains, and foreign substances from surfaces.
 - 3. Polish transparent and glossy surfaces.
 - 4. Vacuum carpeted and soft surfaces.
 - 5. Clean interiors of all cabinetry.
 - 6. Clean all fixtures and finishes.
 - 7. Replace filters of operating equipment.
 - 8. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.
 - 9. Clean site; sweep paved areas, rake clean landscaped surfaces.
 - 10. Remove waste and surplus materials, rubbish, and construction facilities from site.
- B. Restore all work staging and lay-out areas to pre-construction conditions, including but not limited to, removal of debris, temporary facilities, grading and grass seeding and cleaning or repair of impacted structures.

1.6 STARTING OF SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify RDA and GDPM seven [7] 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 Contractor's personnel in accordance with manufacturer's instructions.

1.7 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel prior to date of Substantial Completion.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- C. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled times, at Project Site location.
- D. 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.
- E. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time at equipment location/project site.
- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

1.8 TESTING, ADJUSTING AND BALANCING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

1.9 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 from landscaped areas.

1.10 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 Directives/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. Submit documents to Architect.

1.11 OPERATION AND MAINTENANCE DATA

- A. Submit TWO sets prior to final inspection, bound in 8-1/2 x 11 inch text pages, three D side ring binders with durable plastic covers.
 - 1. **Submit one copy for review by the Architect/Owner, electronic submission preferred.** Submit at 75% of overall gross contract completion. Failure to submit O+M at this point will delay Applications for Payment.
 - 2. Prepare one final copy upon approval and correction of any missing or deficient items by the Architect/Owner.
 - 3. Provide (2) CDs of the O+M Manual in PDF format that is formatted and organized to match the hard copy.
- B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS" and title of project. Label on the front and spine of the binder.
- C. Internally subdivide binder contents with permanent page dividers, logically organized, with tab titles legibly printed under reinforced laminated plastic tabs.
- D. Contents:
 - 1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, subcontractors, and major equipment suppliers.
 - 2. Part 2: Permit and Inspection Information
 - 3. Part 3: Project submittals, organized by CSI division

4. Part 4: Operation and maintenance instructions, arranged by system.
 - a. Building Products, Equipment, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations.
 - b. 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.
 - c. 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.
 - d. 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.
 - e. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
 - f. Include original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
 - g. Include original shop drawing submittals, fold larger submittals to fit into binder.
5. Part 5: Project documents and certificates.
 - a. Obtain warranties and bonds executed in duplicate by responsible subcontractors, suppliers, and manufacturers.
6. Part 6: Colors / finishes / samples
7. Part 7: Other documentation required.

1.12 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Furnish spare parts, maintenance, and extra products in quantities specified in individual specification sections.
- B. Deliver to Owner and place in location as directed; obtain receipt prior to final payment. Items shall be boxed and labeled with contents.

1.13 PROJECT WARRANTIES

- A. All work undertaken as part of the project shall be warranted for a period of not less than [1] year. Individual sections / products may have specific additional warranty requirements.
- B. Obtain warranties and bonds executed by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of project.
- C. Provide notarized copies of warranty documents to the Owner.
 1. Execute and assemble transferable warranty documents from subcontractors, suppliers, and manufacturers.
 2. Verify documents are in proper form, contain full information, and are notarized.
- D. Original warranties are required to be provided to the Owner prior to final payment.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 02 41 16 - SELECTIVE DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Demolishing designated building equipment and fixtures.
 - 2. Demolishing designated construction.
 - 3. Cutting and alterations for completion of the Work.
 - 4. Removing designated items for salvage by GDPM.
 - 5. Protecting items designated to remain.
 - 6. Removing demolished materials.

1.2 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of capped utilities, concealed utilities discovered during demolition and any subsurface obstructions or conditions that require noting.

1.3 QUALITY ASSURANCE

- A. Conform to applicable code for demolition work, dust control, protection, products requiring electrical disconnection and re-connection

1.4 SCHEDULING

- A. Schedule Work to coincide with improvements of the unit.
- B. Coordinate utility and building service interruptions with Owner.
- C. Do not disable or disrupt site fire or life safety systems without three days prior written notice to Owner.
- D. Schedule tie-ins to existing systems to minimize disruption.

1.5 PROJECT CONDITIONS

- A. Cease operations immediately if structure appears to be in danger and notify Architect. Do not resume operations until directed.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 PREPARATION

- A. Notify affected utility companies before starting work and comply with their requirements.
- B. Call Local Utility Line Information service not less than three working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas. Supplement with private locator company as is applicable and required to fully locate and identify existing underground utilities, including both public and private.
- C. Mark location and termination of utilities.
- D. Erect, and maintain temporary barriers and security devices including warning signs and lights, and similar measures, for protection of the public, Owner, and existing improvements indicated to remain.

- E. Erect and maintain weatherproof closures for exterior openings as applicable to work/scope.
- F. Erect and maintain temporary partitions.
- G. Prevent movement of structure; provide temporary bracing and shoring as required.
- H. Provide appropriate temporary signage.
- I. Do not close or obstruct building egress path.
- J. Do not disable or disrupt building fire or life safety systems without **three** days prior written notice to Owner. Coordinate with Fire Department / Building Official.
- K. Protect existing structure / items to remain.

3.2 SALVAGE REQUIREMENTS

- A. Coordinate with Owner to identify building components and equipment required to be removed and delivered to Owner.
- B. Tag components and equipment Owner designates for salvage.
- C. Protect designated salvage items from demolition operations until items can be removed.
- D. Carefully remove building components and equipment indicated to be salvaged.
- E. Disassemble as required to permit removal from building.
- F. Package small and loose parts to avoid loss.
- G. Mark equipment and packaged parts to permit identification and consolidation of components of each salvaged item.
- H. Prepare assembly instructions consistent with disassembled parts. Package assembly instructions in protective envelope and securely attach to each disassembled salvaged item.
- I. Deliver salvaged items to location identified by GDPM. Obtain signed receipt from GDPM.

3.3 RECYCLING AND WASTE REDUCTION

- A. Implement measures to reduce waste going to Landfills by creating a recycling and waste reduction plan for all demolition activities.
- B. Sort demolition debris as applicable to separate different salvageable and recyclable materials.
- C. Provide necessary hauling and coordination to such facilities.
- D. Identify materials to be recycled as part of the project and submit an itemized list to the Architect/Owner along with the location. Submit proposed documentation prior to the start of work.
- E. Continuous recycling and waste reduction throughout the course of construction.
- F. Provide area designated for sorting of materials in an effort to maximize the potential recycling efforts.
- G. Maintain a log of waste refuse by type/weight/volume and of recycling efforts by the same.

3.4 DEMOLITION

- A. Provide all demolition and removals necessary for the proposed work. Field coordinate all conditions with the design intend on the drawings.
 - 1. Drawings are diagrammatic and may not reflect the full extent of demolition / removals required to accomplish the proposed scope of work.

2. The Contractor shall coordinate design intent and verify that all demolition work and restoration / repair work required is included in the scope of the project, regardless of specifically being noted on the drawings.
 3. Work includes abandoned furnishings, equipment, building components that are required to be removed to render rent ready.
 4. Confirm with GDPM personnel prior to demolition to verify any items to be salvaged and turned over to GDPM.
- B. Provide abatement of hazardous materials from the buildings as applicable for the completion of the work. Refer to the requirements of the report by Mac Paran Consulting.
 - C. Conduct demolition to minimize interference with adjacent and occupied buildings/units.
 - D. Maintain protected egress from and access to adjacent existing buildings/units at all times.
 - E. Cease operations immediately when structure appears to be in danger and notify Architect/Engineer.
 - F. Disconnect and remove utilities within demolition areas, refer to Drawings.
 - G. Cap and identify abandoned utilities at termination points when utility is not completely removed.
 - H. Do not close or obstruct roadways or sidewalks without permits.
 - I. Demolish in orderly and careful manner. Protect existing improvements.
 - J. Carefully remove building components indicated to be reused.
 - K. See drawings for items to be salvaged and turned over to GDPM.
 - L. Disassemble components as required to permit removal.
 - M. Box and label contents for all items scheduled to salvage. Obtain sign off.
 - N. Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.
 - O. Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.
 - P. Remove temporary Work.

3.5 CLEAN UP

- A. Remove demolished materials from site as work progresses.
- B. Leave areas of work in clean condition.

END OF SECTION

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SECTION 02 41 19 - SEALERS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Sealers for smoke damage to framing and finishes.

1.2 SUBMITTALS

- A. Product Data: Submit data for each sealer, application, and accessories.

1.3 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.
- B. Installer: Company specializing in performing Work of this section with minimum three years experience.

PART 2 PRODUCTS

2.1 SEALERS

- A. Shellac Base Primer / Sealer: Zinzzler B-I-N Shellac Based Primer by Rustoleum or Equal
 - 1. Shellac Base
 - 2. Weight per gallon: 9.8 lbs/gal
 - 3. Solids by weight: 51.0%
 - 4. Solids by Volume: 29.0%
 - 5. DFT: 075-0.9 mils per coat

2.2 HOT THERMAL FOG

- A. Concentrated, solvent based odor removal chemical formulated for application via thermal fogging apparatus: ODORx Thermo 55 by ProRestore or Equal
- B. Thermal Fogger: as applicable to produce a dry fog at a particle size of 0.25 to 0.50 microns. Small particle size allows for complete penetration of the contaminated surfaces as well as reduction of airborne odor particles.

PART 3 EXECUTION

3.1 APPLICATION

- A. Remove existing finishes as specified on drawings / scope of work.
- B. Soda-blast, scrape, etc. charring from exposed floor trusses as required by the conditions. Report framing deficiencies to Architect.
- C. Surfaces should be clean, dry, sound, and free of excess dust, dirt, chalky material, grime, grease, oil, wax, mildew, contamination that interfere with adhesion.
- D. Follow all installation / application instructions from the product manufacturer.
- E. Apply [1] coat of primer / sealer to all exposed surfaces to seal in smoke / odor.
- F. Apply dry fog of the attic space with thermal fogger to seal in smoke / odor.
- G. Apply additional applications as necessary to completely seal / block all odors.

END OF SECTION

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SECTION 02 50 00 - HAZARDOUS MATERIALS SPECIFICATIONS

PART 1 GENERAL

1.1 SAMPLING

- A. Mac Paran Consulting provided sampling of the existing building materials including asbestos, lead based paint, and mold / microbial growth. Copies of these reports are available for review.

1.2 SUMMARY

- A. The contractor shall provide the appropriate abatement of the identified materials per the specifications prepared by Mac Paran Consulting that follow this section, using industry standard practices as identified for the proper execution of the proposed renovations to the buildings. The contractor shall provide all necessary protection, air testing, removal, and disposal.
- B. Contractors must comply with Occupational Safety and Health Administration regulation 29 CFR 1926.62 "Lead in Construction Standard" as well as the Environmental Protection Agency Lead, Renovation, Repair and Painting Rule.
- C. Contractor shall follow all applicable EPA rules and regulations when working with hazardous materials. It shall be the contractor's responsibility to remain in compliance at all times during the project.
- D. Hazardous materials exist at various areas of the project site as identified.
- E. If any work person encounters any material which they suspect may be hazardous or toxic, they shall immediately advise the Owner. The contractor shall take immediate and appropriate action to protect the building users and workers in accordance w/ federal, state, and local laws, codes and regulations. The architect and architect's consultants shall have no responsibility for the discovery, presence, handling, removal or disposal of or exposure of persons to hazardous materials in any form at the projects site, including but not limited to asbestos, asbestos products, polychlorinated biphenyl (pcb) or other toxic substances.
 - 1. The contractor is hereby advised that RDA Group Architects, LLC is not a design professional in the determination of the presence of hazardous materials, nor is RDA a design professional involved in making recommendations regarding the testing, removal, encapsulation or other corrective measures pertaining to hazardous materials.
 - 2. If the work which is to be performed under the contract interfaces in any way with the existing components which contain hazardous materials, it is the contractor's responsibility to contact the owner's environmental consultant regarding the proper means & methods to be utilized in dealing with hazardous materials.
 - 3. By execution of the contract for construction, the contractor hereby agrees to bring no claim for negligence, breach of contract, indemnity or otherwise against the architect, his principles, employees, agents or consultants if such a claim in any way would involve the investigation of or remedial work related to hazardous materials in the project.
 - 4. By execution of the contract for construction, the contractor further agrees to defend, indemnify and hold the architect, his principles, employees, agents or consultants harmless from any such asbestos or other hazardous materials related claims that may be brought by the contractor's subcontractors, suppliers or other third parties who may be acting under the direction of the contractor pursuant to this project.

1.3 EXECUTION

- A. Contractor shall be fully responsible for the proper removal and disposal of materials. All work shall be performed by trained individuals in accordance with the requirements of this Section, all current Federal, State, and Local laws/regulations.

END OF SECTION

Cincinnati

3959 Fulton Grove Rd.
Cincinnati, Ohio 45245
(513) 752-9111
(513) 752-7973 (Fax)

Cleveland

3100 E. 45th Street
Suite 446
Cleveland, Ohio 44127
(216) 916-7378
(513) 752-7973 (Fax)

Florida

11982 Granite Woods Loop
Venice, Florida 34292
(513) 265-3299

Services

Phase I ESA's
Phase II Investigations
Asbestos
Lead-Based Paint
Industrial Hygiene
Indoor Air Quality/Mold
Radon
Safety
Training

Indoor Air Quality Investigation Report

**137 Imperial Court, Unit 2
Vandalia, Ohio 45377**

Prepared for:

**Greater Dayton Premier Management
400 Wayne Avenue
Dayton, Ohio 45410
(937) 910-7500**

Prepared by:



m.a.c. Paran Consulting Services, Inc.

April 2022

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1.0 Executive Summary

m.a.c. Paran Consulting Services, Inc. (m.a.c. Paran) was contracted by Greater Dayton Premier Management to perform an indoor air quality investigation within Unit 2 of 137 Imperial Court, Vandalia, Ohio 45377. The investigation was performed on April 7, 2022 by Ms. Barbara Cox.

The following observations were made, or conditions reported, during the investigation:

- The unit was vacant at the time of the investigation. Visible suspect microbial growth was observed within one of the bedrooms.
- An inspection of the structure's exterior revealed a section of damaged foundation at the northeast corner. The location of the damaged foundation is immediately outside the bedroom containing visible suspect microbial growth.
- Temperature within the unit was below industry established recommendation, with a reading of 63.4° Fahrenheit. Relative humidity within the unit exceeded industry established recommendation, with a reading of 64.1%.

Mold spore air samples were collected within the unit and outdoors. The air sample results provided the following information:

- The mold spore air sample collected within the unit was issued a "High" MoldSCORE™ by the laboratory. A "High" MoldSCORE™ indicates a high likelihood that mold growth originated from an indoor source.

A tape sample was collected from carpeted flooring located within the bedroom containing visible suspect microbial growth. Results of the tape sample revealed a high level of *Aspergillus* and a low level of *Penicillium* mold spores.

Based upon the visual inspection and sampling results, the following recommendations are offered:

- It is recommended that a structural engineer be retained to evaluate the exterior of the structure. Following correction of identified structural issues (if present), it is recommended that the flooring located within the bedroom be removed and replaced, the unit be thoroughly cleaned with a disinfectant, the unit's air be filtered through a high efficiency particulate air (HEPA) filtered air scrubber, and that the heating, ventilation, and air conditioning (HVAC) ducts be cleaned and disinfected.

2.0 Evaluation Methodology

Total Mold Air Sampling

Air samples for fungal spores were collected onto Allergenco-D particle samplers using a Buck BioAire B520 sampling pump at a calibrated flow rate of 15 liters per minute of air. Samples were collected over a period of five minutes for a total of 75 liters. The samples were shipped for analysis to EmLab/PK Laboratory.

Tape Sampling

Clear adhesive tape was used to collect samples of suspect microbial growth. After the tape was adhered to the suspect microbial growth, the tape was placed onto a glass slide and then secured in a plastic holder. The samples were analyzed by EmLab/P&K Laboratory by direct microscopic examination.

Moisture, Temperature and Relative Humidity

Moisture, temperature, and relative humidity levels were measured using a direct read Protimeter MMS2 moisture meter.

3.0 Evaluation Criteria

Total Mold Air Sampling

There are no health standards for airborne microorganisms. There are at least three reasons why no health standards are in place: 1) airborne microorganisms are a mixture of many genera and species and the composition of the mixture is constantly changing; 2) there are no definitive studies linking health affects to exposure concentrations; and 3) human response to airborne microorganisms is widely variable. Relationships between health effects and environmental microorganisms must be determined through the combined contributions of medical, epidemiological, and environmental evaluation.

Samples for airborne fungi are interpreted by comparing total airborne concentrations and the distributions of fungal genera and species in samples from test locations to reference samples. Reference samples are collected from the outdoor air and sometimes from areas similar to test locations that have no observed or reported problems, if such a location is available. The following comparisons are performed. Other information may be used for interpretation on a case-by-case basis.

- In general, airborne fungal concentrations at indoor test locations should be lower than concentrations outdoors.
 - If indoor air fungal concentrations are higher than concentrations measured outdoors, indoor fungal sources may be suspected.
- In general, airborne fungal genera and species distributions at indoor test locations should be similar to distributions outdoors and at indoor reference locations.
 - The consistent presence of moisture indicator fungi (Table 1) at test locations over and beyond background reference concentrations indicates a damp indoor environment and an atypical exposure.
 - The dominating presence of one or two kinds of moisture indicator fungi at test locations and the absence of the same kind at reference locations indicates degraded air quality.

The EMLab P&K analytical report includes an analysis called the MoldSCORE™. The MoldSCORE™, rated on a scale from low to high, indicates the likelihood, based upon the air sample laboratory data, whether there is unusual or excessive mold growth in the sampled indoor areas. A MoldSCORE™ rating of <150 is low and indicates a low probability of spores originating inside. A MoldSCORE™ rating of >250 is high and indicates a high probability that the spores originated from inside, presumably from indoor mold growth. A MoldSCORE™ between 150 and 250 indicates a moderate likelihood of indoor fungal growth. This result, by itself, is evidence for, but does not prove, the absence of indoor mold growth in the location sampled.

Table 1. Moisture indicator fungi

| These fungi if detected indoors are generally associated with water damage (not an all-inclusive list) | | | These fungi are common outdoors but are also known to grow in water damaged building materials |
|--|---|--|--|
| <i>Aspergillus</i> spp. <i>Penicillium</i> spp. <i>Acremonium</i> spp. <i>Sporobolomyces</i> spp. <i>Stachybotrys chartarum</i> <i>Memnoniella echinata</i> | <i>Tritirachium oryzae</i> <i>Ulocladium botrytis</i> <i>Fusarium</i> spp. <i>Ulocladium chartarum</i> <i>Chaetomium</i> spp. <i>Paecilomyces</i> spp. | <i>Eurotium</i> spp. <i>Oidiodendron</i> spp. <i>Rhodotorula</i> spp. <i>Trichoderma</i> spp. <i>Wallemia</i> spp. Yeasts | <i>Alternaria</i> spp. <i>Cladosporium</i> spp. <i>Epicoccum</i> spp. <i>Basidiomycetes</i> |

Tape Sampling

Samples were examined for the presence of mold growth, as indicated by groups, clumps, and/or chains of single spore types, usually accompanied by intact mycelial and/or sporulating structures. These areas of growth are then identified to genus name, if possible. Quantities are estimated and graded on a scale from "Low" to "High," with "High" denoting the highest amount.

Temperature and Relative Humidity

The perception of comfort is related to one’s metabolic heat production, the transfer of heat to the environment, physiological adjustments, and body temperature. Heat transfer from the body to the environment is influenced by factors such as temperature, relative humidity, air movement, personal activities, and clothing. ASHRAE specifies conditions in which 80% or more of the occupants would be expected to find the environment thermally comfortable. Assuming slow air movement and 50% relative humidity, the operative temperatures recommended by ASHRAE range from 68-78 degrees Fahrenheit in the winter and 73-79 degrees Fahrenheit in the summer. The difference between the two is largely due to seasonal clothing selections. ASHRAE also recommends that relative humidity be maintained between 30 and 60 percent.

4.0 Airborne Mold Spore/Tape Sampling Results

Airborne Mold Spore Sampling Results

| Location | Total Spore Concentration (Spores/m ³) | Spore Identification (Spores/m ³) | MoldSCORE™ |
|----------|--|--|------------|
| Unit 2 | 420,000 | Penicillium/Aspergillus types- 420,000 | High |
| Outdoors | 2,100 | Ascospores- 370 Basidiospores- 1,200 Cladosporium- 370 Penicillium/Aspergillus types- 110 | N/A |

Tape Sampling Results

| Location | Total Spore Concentration (Spores/m ³) |
|--------------------------------|--|
| Rear Bedroom Carpeted Flooring | Aspergillus species- High Penicillium- Low |

5.0 Conclusion

In conclusion, the following is recommended:

- It is recommended that a structural engineer be retained to evaluate the exterior of the structure. Following correction of identified structural issues (if present), it is recommended that the flooring located within the bedroom be removed and replaced, the unit be thoroughly cleaned with a disinfectant, the unit's air be filtered through a high efficiency particulate air (HEPA) filtered air scrubber (for at least 48 hours), and that the heating, ventilation, and air conditioning (HVAC) ducts be cleaned and disinfected.

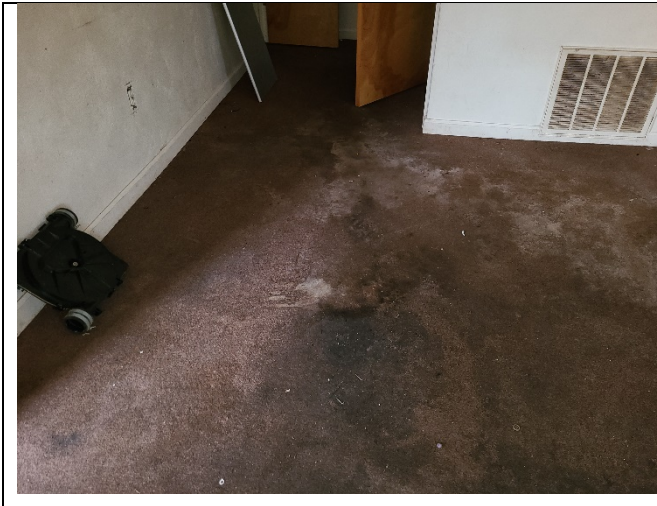
Respectfully,

A handwritten signature in black ink, appearing to read "Barbara G. Cox". The signature is fluid and cursive, with a prominent initial "B" and a long, sweeping underline.

Barbara G. Cox
Project Manager

Appendix I

Photographs



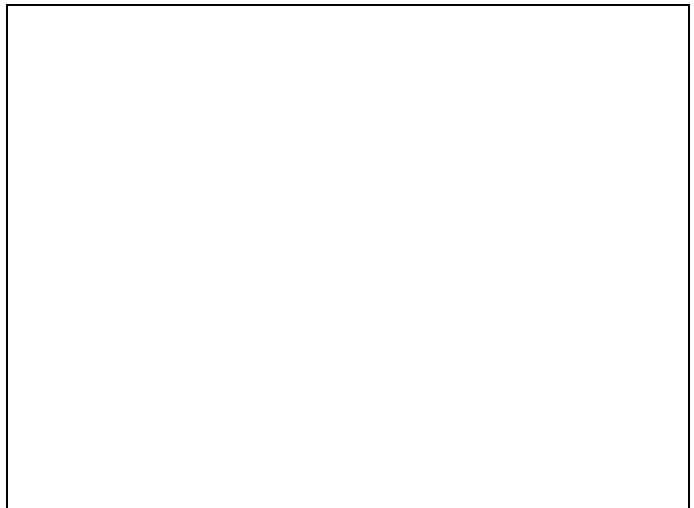
1. Suspect microbial growth located in bedroom



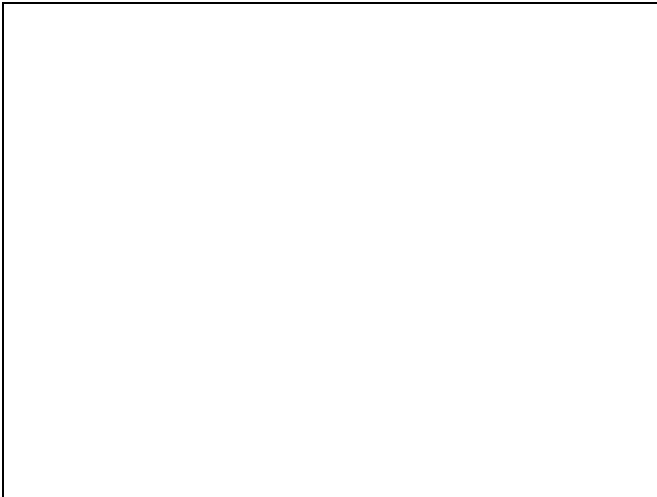
2. Suspect microbial growth located in bedroom



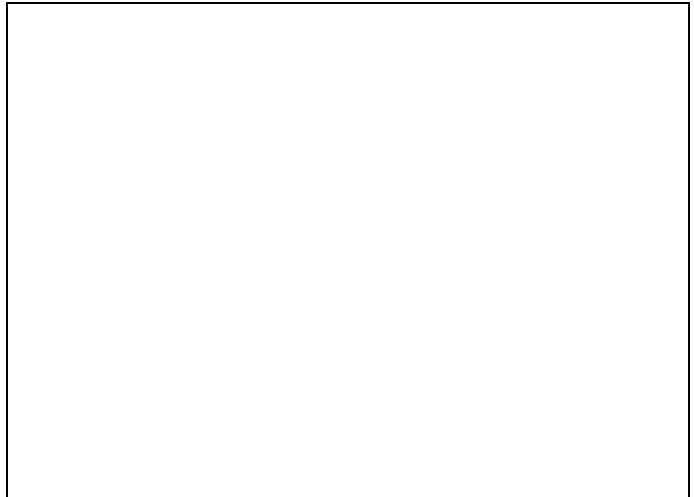
3. Damaged foundation located at the northeast corner of the structure



4. Intentionally left blank



5. Intentionally left blank



6. Intentionally left blank

Appendix II

Laboratory Report



20-Apr-2022

Bobbie Cox
M.A.C. Paran Consulting
3959 Fulton Grove Road
Cincinnati, OH 45245

Re: **Hallmark Meridian;**

Work Order: **22040311**

Dear Bobbie,

ALS Environmental received 4 samples on 08-Apr-2022 02:05 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Laboratory Group. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 14.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Shawn Smythe

Electronically approved by: Shawn Smythe

Shawn Smythe
Project Manager

Report of Laboratory Analysis

ADDRESS 4388 Glendale Milford Rd Cincinnati, OH 45242- | PHONE (513) 733-5336 | FAX (513) 733-5347

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: M.A.C. Paran Consulting
Project: Hallmark Meridian;
Work Order: 22040311

Work Order Sample Summary

| <u>Lab Samp ID</u> | <u>Client Sample ID</u> | <u>Matrix</u> | <u>Tag Number</u> | <u>Collection Date</u> | <u>Date Received</u> | <u>Hold</u> |
|--------------------|-------------------------|---------------|-------------------|------------------------|----------------------|--------------------------|
| 22040311-01 | HM-1 | Water | | 4/7/2022 09:00 | 4/8/2022 14:05 | <input type="checkbox"/> |
| 22040311-02 | HM-2 | Water | | 4/7/2022 09:00 | 4/8/2022 14:05 | <input type="checkbox"/> |
| 22040311-03 | HM-3-M108 | Water | | 4/7/2022 09:00 | 4/8/2022 14:05 | <input type="checkbox"/> |
| 22040311-04 | HM-4-M108 | Water | | 4/7/2022 09:00 | 4/8/2022 14:05 | <input type="checkbox"/> |

Client: M.A.C. Paran Consulting
Project: Hallmark Meridian;
Work Order: 22040311

Case Narrative

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Results relate only to the items tested and are not blank corrected unless indicated.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

ALS is an EPA recognized NLLAP laboratory for lead paint, soil, and dust wipe analyses under its AIHA-LAP accreditation.

ALS Environmental

Date: 20-Apr-22

Client: M.A.C. Paran Consulting

Project: Hallmark Meridian;

Work Order: 22040311

Sample ID: HM-1

Lab ID: 22040311-01

Collection Date: 4/7/2022 09:00 AM

Matrix: WATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|----------|--------|------|--------------|----------|-----------------|--------------------------|
| PH pH | 8.6 | | E9040B | pH Units | 1 | Analyst: JAP 4/8/2022 |

Note:

ALS Environmental

Date: 20-Apr-22

Client: M.A.C. Paran Consulting
 Project: Hallmark Meridian;
 Sample ID: HM-2
 Collection Date: 4/7/2022 09:00 AM

Work Order: 22040311
 Lab ID: 22040311-02
 Matrix: WATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|----------------------|--------------|------|----------------|-------------|-----------------------------|--------------------|
| METALS BY ICP | | | SW6010B | | Prep: SW3010A 4/11/22 09:42 | Analyst: AZ |
| Aluminum | ND | | 0.50 | mg/L | 1 | 4/19/2022 06:11 PM |
| Arsenic | ND | | 0.010 | mg/L | 1 | 4/11/2022 11:59 AM |
| Barium | ND | | 0.10 | mg/L | 1 | 4/11/2022 11:59 AM |
| Beryllium | ND | | 0.010 | mg/L | 1 | 4/11/2022 11:59 AM |
| Cadmium | ND | | 0.010 | mg/L | 1 | 4/11/2022 11:59 AM |
| Calcium | 21 | | 0.20 | mg/L | 1 | 4/19/2022 06:11 PM |
| Chromium | ND | | 0.010 | mg/L | 1 | 4/11/2022 11:59 AM |
| Cobalt | ND | | 0.020 | mg/L | 1 | 4/11/2022 11:59 AM |
| Copper | 0.082 | | 0.025 | mg/L | 1 | 4/19/2022 06:11 PM |
| Iron | ND | | 0.20 | mg/L | 1 | 4/11/2022 11:59 AM |
| Lead | 0.036 | | 0.015 | mg/L | 1 | 4/19/2022 06:11 PM |
| Lithium | ND | | 0.10 | mg/L | 1 | 4/11/2022 11:59 AM |
| Manganese | ND | | 0.050 | mg/L | 1 | 4/11/2022 11:59 AM |
| Molybdenum | ND | | 0.10 | mg/L | 1 | 4/11/2022 11:59 AM |
| Nickel | ND | | 0.050 | mg/L | 1 | 4/11/2022 11:59 AM |
| Phosphorus | ND | | 0.10 | mg/L | 1 | 4/11/2022 11:59 AM |
| Platinum | ND | | 0.10 | mg/L | 1 | 4/11/2022 11:59 AM |
| Selenium | ND | | 0.030 | mg/L | 1 | 4/11/2022 11:59 AM |
| Silver | ND | | 0.050 | mg/L | 1 | 4/11/2022 11:59 AM |
| Tellurium | ND | | 0.10 | mg/L | 1 | 4/11/2022 11:59 AM |
| Thallium | ND | | 0.050 | mg/L | 1 | 4/11/2022 11:59 AM |
| Tin | ND | | 0.10 | mg/L | 1 | 4/11/2022 11:59 AM |
| Titanium | ND | | 0.10 | mg/L | 1 | 4/11/2022 11:59 AM |
| Tungsten | ND | | 0.10 | mg/L | 1 | 4/11/2022 11:59 AM |
| Vanadium | ND | | 0.050 | mg/L | 1 | 4/11/2022 11:59 AM |
| Yttrium | ND | | 0.10 | mg/L | 1 | 4/11/2022 11:59 AM |
| Zinc | ND | | 0.20 | mg/L | 1 | 4/11/2022 11:59 AM |
| Zirconium | ND | | 0.10 | mg/L | 1 | 4/11/2022 11:59 AM |

Note:

ALS Environmental

Date: 20-Apr-22

Client: M.A.C. Paran Consulting

Project: Hallmark Meridian;

Work Order: 22040311

Sample ID: HM-3-M108

Lab ID: 22040311-03

Collection Date: 4/7/2022 09:00 AM

Matrix: WATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|----------|--------|------|--------------|----------|-----------------|--------------------------|
| PH pH | 8.4 | | E9040B | pH Units | 1 | Analyst: JAP 4/8/2022 |

Note:

ALS Environmental

Date: 20-Apr-22

Client: M.A.C. Paran Consulting

Project: Hallmark Meridian;

Work Order: 22040311

Sample ID: HM-4-M108

Lab ID: 22040311-04

Collection Date: 4/7/2022 09:00 AM

Matrix: WATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|----------------------|------------|------|----------------|-------------|-----------------------------|--------------------|
| METALS BY ICP | | | SW6010B | | Prep: SW3010A 4/11/22 09:42 | Analyst: AZ |
| Aluminum | 1.5 | | 0.50 | mg/L | 1 | 4/19/2022 06:15 PM |
| Arsenic | ND | | 0.010 | mg/L | 1 | 4/11/2022 12:03 PM |
| Barium | ND | | 0.10 | mg/L | 1 | 4/11/2022 12:03 PM |
| Beryllium | ND | | 0.010 | mg/L | 1 | 4/11/2022 12:03 PM |
| Cadmium | ND | | 0.010 | mg/L | 1 | 4/11/2022 12:03 PM |
| Calcium | 21 | | 0.20 | mg/L | 1 | 4/19/2022 06:15 PM |
| Chromium | ND | | 0.010 | mg/L | 1 | 4/11/2022 12:03 PM |
| Cobalt | ND | | 0.020 | mg/L | 1 | 4/11/2022 12:03 PM |
| Copper | ND | | 0.025 | mg/L | 1 | 4/19/2022 06:15 PM |
| Iron | ND | | 0.20 | mg/L | 1 | 4/11/2022 12:03 PM |
| Lead | ND | | 0.015 | mg/L | 1 | 4/19/2022 06:15 PM |
| Lithium | ND | | 0.10 | mg/L | 1 | 4/11/2022 12:03 PM |
| Manganese | ND | | 0.050 | mg/L | 1 | 4/11/2022 12:03 PM |
| Molybdenum | ND | | 0.10 | mg/L | 1 | 4/11/2022 12:03 PM |
| Nickel | ND | | 0.050 | mg/L | 1 | 4/11/2022 12:03 PM |
| Phosphorus | ND | | 0.10 | mg/L | 1 | 4/11/2022 12:03 PM |
| Platinum | ND | | 0.10 | mg/L | 1 | 4/11/2022 12:03 PM |
| Selenium | ND | | 0.030 | mg/L | 1 | 4/11/2022 12:03 PM |
| Silver | ND | | 0.050 | mg/L | 1 | 4/11/2022 12:03 PM |
| Tellurium | ND | | 0.10 | mg/L | 1 | 4/11/2022 12:03 PM |
| Thallium | ND | | 0.050 | mg/L | 1 | 4/11/2022 12:03 PM |
| Tin | ND | | 0.10 | mg/L | 1 | 4/11/2022 12:03 PM |
| Titanium | ND | | 0.10 | mg/L | 1 | 4/11/2022 12:03 PM |
| Tungsten | ND | | 0.10 | mg/L | 1 | 4/11/2022 12:03 PM |
| Vanadium | ND | | 0.050 | mg/L | 1 | 4/11/2022 12:03 PM |
| Yttrium | ND | | 0.10 | mg/L | 1 | 4/11/2022 12:03 PM |
| Zinc | ND | | 0.20 | mg/L | 1 | 4/11/2022 12:03 PM |
| Zirconium | ND | | 0.10 | mg/L | 1 | 4/11/2022 12:03 PM |

Note:

ALS Environmental

Date: 20-Apr-22

Client: M.A.C. Paran Consulting
Work Order: 22040311
Project: Hallmark Meridian;

QC BATCH REPORT

Batch ID: **82137** Instrument ID **ICP1** Method: **SW6010B**

| MBLK | | Sample ID: MBLK-82137-82137 | | | Units: mg/L | | Analysis Date: 4/11/2022 11:32 AM | | | |
|------------|--------|------------------------------------|---------|---------------|-----------------------|---------------|--|------|--------------|------|
| Client ID: | | Run ID: ICP1_220411A | | | SeqNo: 2705910 | | Prep Date: 4/11/2022 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Aluminum | ND | 0.50 | | | | | | | | |
| Arsenic | ND | 0.010 | | | | | | | | |
| Barium | ND | 0.10 | | | | | | | | |
| Beryllium | ND | 0.010 | | | | | | | | |
| Cadmium | ND | 0.010 | | | | | | | | |
| Calcium | 0.1527 | 0.20 | | | | | | | | J |
| Chromium | ND | 0.010 | | | | | | | | |
| Cobalt | ND | 0.020 | | | | | | | | |
| Copper | ND | 0.025 | | | | | | | | |
| Iron | ND | 0.20 | | | | | | | | |
| Lead | ND | 0.015 | | | | | | | | |
| Lithium | ND | 0.10 | | | | | | | | |
| Magnesium | ND | 0.20 | | | | | | | | |
| Manganese | ND | 0.050 | | | | | | | | |
| Molybdenum | ND | 0.10 | | | | | | | | |
| Nickel | ND | 0.050 | | | | | | | | |
| Phosphorus | ND | 0.10 | | | | | | | | |
| Platinum | ND | 0.10 | | | | | | | | |
| Selenium | ND | 0.030 | | | | | | | | |
| Silver | ND | 0.050 | | | | | | | | |
| Sodium | ND | 2.0 | | | | | | | | |
| Tellurium | ND | 0.10 | | | | | | | | |
| Thallium | ND | 0.050 | | | | | | | | |
| Tin | ND | 0.10 | | | | | | | | |
| Titanium | ND | 0.10 | | | | | | | | |
| Tungsten | ND | 0.10 | | | | | | | | |
| Vanadium | ND | 0.050 | | | | | | | | |
| Yttrium | ND | 0.10 | | | | | | | | |
| Zinc | ND | 0.20 | | | | | | | | |
| Zirconium | ND | 0.10 | | | | | | | | |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: M.A.C. Paran Consulting
 Work Order: 22040311
 Project: Hallmark Meridian;

QC BATCH REPORT

Batch ID: **82137** Instrument ID **ICP1** Method: **SW6010B**

| LCS | | Sample ID: LCS-82137-82137 | | | | Units: mg/L | | Analysis Date: 4/11/2022 11:36 AM | | |
|------------|--------|-----------------------------------|---------|---------------|-----------------------|--------------------|-----------------------------|--|--------------|------|
| Client ID: | | Run ID: ICP1_220411A | | | SeqNo: 2705911 | | Prep Date: 4/11/2022 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Aluminum | 0.977 | 0.50 | 1.1 | 0 | 88.8 | 67.4-110 | 0 | | | |
| Arsenic | 1.019 | 0.010 | 1.1 | 0 | 92.6 | 81.7-107 | 0 | | | |
| Barium | 1.021 | 0.10 | 1.1 | 0 | 92.8 | 81.2-107 | 0 | | | |
| Beryllium | 0.9614 | 0.010 | 1.1 | 0 | 87.4 | 80-120 | 0 | | | |
| Cadmium | 1.044 | 0.010 | 1.1 | 0 | 94.9 | 80-120 | 0 | | | |
| Calcium | 1.102 | 0.20 | 1.1 | 0 | 100 | 80-122 | 0 | | | |
| Chromium | 1.025 | 0.010 | 1.1 | 0 | 93.2 | 80-120 | 0 | | | |
| Cobalt | 0.961 | 0.020 | 1.1 | 0 | 87.4 | 80-120 | 0 | | | |
| Copper | 0.9598 | 0.025 | 1.1 | 0 | 87.2 | 80-120 | 0 | | | |
| Iron | 1.039 | 0.20 | 1.1 | 0 | 94.4 | 80-120 | 0 | | | |
| Lead | 1.021 | 0.015 | 1.1 | 0 | 92.8 | 84.6-109 | 0 | | | |
| Lithium | 0.9771 | 0.10 | 1.1 | 0 | 88.8 | 80-120 | 0 | | | |
| Magnesium | 1.064 | 0.20 | 1.1 | 0 | 96.8 | 80-120 | 0 | | | |
| Manganese | 0.9434 | 0.050 | 1.1 | 0 | 85.8 | 80-120 | 0 | | | |
| Molybdenum | 0.9623 | 0.10 | 1.1 | 0 | 87.5 | 80-120 | 0 | | | |
| Nickel | 0.9591 | 0.050 | 1.1 | 0 | 87.2 | 80-120 | 0 | | | |
| Phosphorus | 0.9823 | 0.10 | 1.1 | 0 | 89.3 | 80-120 | 0 | | | |
| Platinum | 1.128 | 0.10 | 1.1 | 0 | 102 | 80-120 | 0 | | | |
| Selenium | 1.038 | 0.030 | 1.1 | 0 | 94.4 | 80-120 | 0 | | | |
| Silver | 0.9442 | 0.050 | 1.1 | 0 | 85.8 | 80-120 | 0 | | | |
| Sodium | 0.9554 | 2.0 | 1.1 | 0 | 86.8 | 80-120 | 0 | | | J |
| Tellurium | 0.9783 | 0.10 | 1.1 | 0 | 88.9 | 80-120 | 0 | | | |
| Thallium | 0.9818 | 0.050 | 1.1 | 0 | 89.2 | 80-120 | 0 | | | |
| Tin | 0.9542 | 0.10 | 1.1 | 0 | 86.8 | 80-120 | 0 | | | |
| Titanium | 0.9571 | 0.10 | 1.1 | 0 | 87 | 80-120 | 0 | | | |
| Tungsten | 0.9588 | 0.10 | 1.1 | 0 | 87.2 | 80-120 | 0 | | | |
| Vanadium | 0.9649 | 0.050 | 1.1 | 0 | 87.7 | 80-120 | 0 | | | |
| Zinc | 0.9632 | 0.20 | 1.1 | 0 | 87.6 | 80-120 | 0 | | | |
| Zirconium | 0.984 | 0.10 | 1.1 | 0 | 89.4 | 80-120 | 0 | | | |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: M.A.C. Paran Consulting
 Work Order: 22040311
 Project: Hallmark Meridian;

QC BATCH REPORT

Batch ID: **82137** Instrument ID **ICP1** Method: **SW6010B**

| LCSD | | Sample ID: LCSD-82137-82137 | | | | Units: mg/L | | Analysis Date: 4/11/2022 11:40 AM | | |
|------------|--------|------------------------------------|---------|---------------|-----------------------|--------------------|-----------------------------|--|--------------|------|
| Client ID: | | Run ID: ICP1_220411A | | | SeqNo: 2705912 | | Prep Date: 4/11/2022 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Aluminum | 0.9948 | 0.50 | 1.1 | 0 | 90.4 | 67.4-110 | 0.977 | 1.81 | 20 | |
| Arsenic | 1.044 | 0.010 | 1.1 | 0 | 94.9 | 81.7-107 | 1.019 | 2.45 | 20 | |
| Barium | 1.059 | 0.10 | 1.1 | 0 | 96.3 | 81.2-107 | 1.021 | 3.65 | 20 | |
| Beryllium | 0.9828 | 0.010 | 1.1 | 0 | 89.4 | 77.1-102 | 0.9614 | 2.21 | 20 | |
| Cadmium | 1.073 | 0.010 | 1.1 | 0 | 97.5 | 77.6-114 | 1.044 | 2.73 | 20 | |
| Calcium | 1.111 | 0.20 | 1.1 | 0 | 101 | 80-122 | 1.102 | 0.795 | 20 | |
| Chromium | 1.032 | 0.010 | 1.1 | 0 | 93.8 | 72.9-109 | 1.025 | 0.727 | 20 | |
| Cobalt | 0.9854 | 0.020 | 1.1 | 0 | 89.6 | 77.8-108 | 0.961 | 2.51 | 20 | |
| Copper | 0.9644 | 0.025 | 1.1 | 0 | 87.7 | 77.3-109 | 0.9598 | 0.48 | 20 | |
| Iron | 1.045 | 0.20 | 1.1 | 0 | 95 | 75.6-110 | 1.039 | 0.581 | 20 | |
| Lead | 1.049 | 0.015 | 1.1 | 0 | 95.4 | 73.7-110 | 1.021 | 2.74 | 20 | |
| Lithium | 0.9958 | 0.10 | 1.1 | 0 | 90.5 | 80-120 | 0.9771 | 1.9 | 20 | |
| Magnesium | 1.07 | 0.20 | 1.1 | 0 | 97.3 | 80-120 | 1.064 | 0.505 | 20 | |
| Manganese | 0.9518 | 0.050 | 1.1 | 0 | 86.5 | 73.6-103 | 0.9434 | 0.894 | 20 | |
| Molybdenum | 0.9916 | 0.10 | 1.1 | 0 | 90.2 | 76.6-102 | 0.9623 | 3.01 | 20 | |
| Nickel | 0.9841 | 0.050 | 1.1 | 0 | 89.5 | 75.2-103 | 0.9591 | 2.57 | 20 | |
| Phosphorus | 1.003 | 0.10 | 1.1 | 0 | 91.2 | 80-120 | 0.9823 | 2.08 | 20 | |
| Platinum | 1.123 | 0.10 | 1.1 | 0 | 102 | 80-120 | 1.128 | 0.391 | 20 | |
| Selenium | 1.073 | 0.030 | 1.1 | 0 | 97.6 | 70.7-106 | 1.038 | 3.32 | 20 | |
| Silver | 0.9606 | 0.050 | 1.1 | 0 | 87.3 | 77.5-99.3 | 0.9442 | 1.72 | 20 | |
| Sodium | 0.9813 | 2.0 | 1.1 | 0 | 89.2 | 70-115 | 0.9554 | 0 | 20 | J |
| Tellurium | 1.013 | 0.10 | 1.1 | 0 | 92.1 | 80-120 | 0.9783 | 3.46 | 20 | |
| Thallium | 0.99 | 0.050 | 1.1 | 0 | 90 | 73.7-111 | 0.9818 | 0.837 | 20 | |
| Tin | 0.9771 | 0.10 | 1.1 | 0 | 88.8 | 80-120 | 0.9542 | 2.37 | 20 | |
| Titanium | 0.962 | 0.10 | 1.1 | 0 | 87.4 | 75.2-104 | 0.9571 | 0.504 | 20 | |
| Tungsten | 0.987 | 0.10 | 1.1 | 0 | 89.7 | 80-120 | 0.9588 | 2.91 | 20 | |
| Vanadium | 0.9704 | 0.050 | 1.1 | 0 | 88.2 | 80-120 | 0.9649 | 0.568 | 20 | |
| Zinc | 0.9865 | 0.20 | 1.1 | 0 | 89.7 | 75.4-104 | 0.9632 | 2.39 | 20 | |
| Zirconium | 1.006 | 0.10 | 1.1 | 0 | 91.4 | 80-120 | 0.984 | 2.21 | 20 | |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: M.A.C. Paran Consulting
 Work Order: 22040311
 Project: Hallmark Meridian;

QC BATCH REPORT

Batch ID: **82137** Instrument ID **ICP1** Method: **SW6010B**

| MS | | Sample ID: 22040301-03A MS | | | | Units: mg/L | | Analysis Date: 4/11/2022 11:48 AM | | |
|------------|--------|-----------------------------------|---------|---------------|-----------------------|--------------------|-----------------------------|--|--------------|------|
| Client ID: | | Run ID: ICP1_220411A | | | SeqNo: 2705914 | | Prep Date: 4/11/2022 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Aluminum | 1.122 | 0.50 | 1.1 | 0 | 102 | 75-125 | 0 | | | |
| Arsenic | 1.081 | 0.010 | 1.1 | 0 | 98.3 | 75-125 | 0 | | | |
| Barium | 1.058 | 0.10 | 1.1 | 0 | 96.2 | 75-125 | 0 | | | |
| Beryllium | 0.9837 | 0.010 | 1.1 | 0 | 89.4 | 75-125 | 0 | | | |
| Cadmium | 1.129 | 0.010 | 1.1 | 0.05801 | 97.3 | 75-125 | 0 | | | |
| Calcium | 119.8 | 0.20 | 1.1 | 122.9 | -280 | 75-125 | 0 | | | SO |
| Chromium | 1.015 | 0.010 | 1.1 | 0 | 92.2 | 75-125 | 0 | | | |
| Cobalt | 0.9325 | 0.020 | 1.1 | 0 | 84.8 | 75-125 | 0 | | | |
| Copper | 0.9681 | 0.025 | 1.1 | 0 | 88 | 75-125 | 0 | | | |
| Iron | 1.032 | 0.20 | 1.1 | 0 | 93.8 | 75-125 | 0 | | | |
| Lead | 0.9821 | 0.015 | 1.1 | 0 | 89.3 | 59.3-111 | 0 | | | |
| Lithium | 1.069 | 0.10 | 1.1 | 0.1074 | 87.5 | 75-125 | 0 | | | |
| Magnesium | 30.96 | 0.20 | 1.1 | 29.69 | 116 | 75-125 | 0 | | | O |
| Manganese | 1.076 | 0.050 | 1.1 | 0.1422 | 84.9 | 75-125 | 0 | | | |
| Molybdenum | 0.9849 | 0.10 | 1.1 | 0.00725 | 88.9 | 75-125 | 0 | | | |
| Nickel | 0.9427 | 0.050 | 1.1 | 0.01613 | 84.2 | 75-125 | 0 | | | |
| Phosphorus | 1.064 | 0.10 | 1.1 | 0 | 96.7 | 75-125 | 0 | | | |
| Platinum | 1.165 | 0.10 | 1.1 | 0 | 106 | 75-125 | 0 | | | |
| Selenium | 1.099 | 0.030 | 1.1 | 0 | 99.9 | 75-125 | 0 | | | |
| Silver | 0.9802 | 0.050 | 1.1 | 0 | 89.1 | 75-125 | 0 | | | |
| Sodium | 76.91 | 2.0 | 1.1 | 78.8 | -172 | 75-125 | 0 | | | SO |
| Tellurium | 1.003 | 0.10 | 1.1 | 0 | 91.1 | 75-125 | 0 | | | |
| Thallium | 1.014 | 0.050 | 1.1 | 0 | 92.2 | 75-125 | 0 | | | |
| Tin | 0.9535 | 0.10 | 1.1 | 0 | 86.7 | 75-125 | 0 | | | |
| Titanium | 0.9724 | 0.10 | 1.1 | 0 | 88.4 | 75-125 | 0 | | | |
| Tungsten | 0.9894 | 0.10 | 1.1 | 0 | 90 | 75-125 | 0 | | | |
| Vanadium | 0.984 | 0.050 | 1.1 | 0 | 89.4 | 75-125 | 0 | | | |
| Yttrium | 0.806 | 0.10 | 1.1 | 0 | 73.3 | 75-125 | 0 | | | S |
| Zinc | 7.349 | 0.20 | 1.1 | 6.426 | 83.9 | 75-125 | 0 | | | O |
| Zirconium | 0.9821 | 0.10 | 1.1 | 0 | 89.3 | 75-125 | 0 | | | |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: M.A.C. Paran Consulting
 Work Order: 22040311
 Project: Hallmark Meridian;

QC BATCH REPORT

Batch ID: **82137** Instrument ID **ICP1** Method: **SW6010B**

| MSD | | Sample ID: 22040301-03A MSD | | | | Units: mg/L | | Analysis Date: 4/11/2022 11:51 AM | | |
|------------|--------|------------------------------------|---------|---------------|-----------------------|--------------------|-----------------------------|--|--------------|------|
| Client ID: | | Run ID: ICP1_220411A | | | SeqNo: 2705915 | | Prep Date: 4/11/2022 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Aluminum | 1.152 | 0.50 | 1.1 | 0 | 105 | 75-125 | 1.122 | 2.61 | 20 | |
| Arsenic | 1.092 | 0.010 | 1.1 | 0 | 99.3 | 73.2-107 | 1.081 | 0.962 | 20 | |
| Barium | 1.063 | 0.10 | 1.1 | 0 | 96.6 | 75-125 | 1.058 | 0.456 | 20 | |
| Beryllium | 0.9892 | 0.010 | 1.1 | 0 | 89.9 | 73.5-104 | 0.9837 | 0.558 | 20 | |
| Cadmium | 1.136 | 0.010 | 1.1 | 0.05801 | 98 | 76.4-108 | 1.129 | 0.68 | 20 | |
| Calcium | 125.7 | 0.20 | 1.1 | 122.9 | 260 | 75-125 | 119.8 | 4.84 | 20 | SO |
| Chromium | 1.002 | 0.010 | 1.1 | 0 | 91.1 | 73-104 | 1.015 | 1.25 | 20 | |
| Cobalt | 0.937 | 0.020 | 1.1 | 0 | 85.2 | 70.4-102 | 0.9325 | 0.482 | 20 | |
| Copper | 0.9569 | 0.025 | 1.1 | 0 | 87 | 68.6-107 | 0.9681 | 1.17 | 20 | |
| Iron | 1.014 | 0.20 | 1.1 | 0 | 92.2 | 75-125 | 1.032 | 1.77 | 20 | |
| Lead | 0.9909 | 0.015 | 1.1 | 0 | 90.1 | 59.3-111 | 0.9821 | 0.892 | 20 | |
| Lithium | 1.097 | 0.10 | 1.1 | 0.1074 | 89.9 | 75-125 | 1.069 | 2.52 | 20 | |
| Magnesium | 30.73 | 0.20 | 1.1 | 29.69 | 95 | 75-125 | 30.96 | 0.749 | 20 | O |
| Manganese | 1.058 | 0.050 | 1.1 | 0.1422 | 83.3 | 75-125 | 1.076 | 1.65 | 20 | |
| Molybdenum | 0.9946 | 0.10 | 1.1 | 0.00725 | 89.8 | 75-125 | 0.9849 | 0.978 | 20 | |
| Nickel | 0.9492 | 0.050 | 1.1 | 0.01613 | 84.8 | 75-125 | 0.9427 | 0.686 | 20 | |
| Phosphorus | 1.054 | 0.10 | 1.1 | 0 | 95.8 | 75-125 | 1.064 | 0.945 | 20 | |
| Platinum | 1.12 | 0.10 | 1.1 | 0 | 102 | 75-125 | 1.165 | 3.95 | 20 | |
| Selenium | 1.108 | 0.030 | 1.1 | 0 | 101 | 71.3-104 | 1.099 | 0.798 | 20 | |
| Silver | 0.9633 | 0.050 | 1.1 | 0 | 87.6 | 74.6-98.9 | 0.9802 | 1.74 | 20 | |
| Sodium | 80.5 | 2.0 | 1.1 | 78.8 | 154 | 75-125 | 76.91 | 4.56 | 20 | SO |
| Tellurium | 1.004 | 0.10 | 1.1 | 0 | 91.3 | 75-125 | 1.003 | 0.143 | 20 | |
| Thallium | 1.008 | 0.050 | 1.1 | 0 | 91.6 | 67.8-114 | 1.014 | 0.566 | 20 | |
| Tin | 0.9408 | 0.10 | 1.1 | 0 | 85.5 | 75-125 | 0.9535 | 1.34 | 20 | |
| Titanium | 0.9595 | 0.10 | 1.1 | 0 | 87.2 | 75-125 | 0.9724 | 1.33 | 20 | |
| Tungsten | 0.9792 | 0.10 | 1.1 | 0 | 89 | 75-125 | 0.9894 | 1.04 | 20 | |
| Vanadium | 0.971 | 0.050 | 1.1 | 0 | 88.3 | 68.5-103 | 0.984 | 1.33 | 20 | |
| Yttrium | 0.8009 | 0.10 | 1.1 | 0 | 72.8 | 75-125 | 0.806 | 0.63 | 20 | S |
| Zinc | 7.437 | 0.20 | 1.1 | 6.426 | 91.9 | 75-125 | 7.349 | 1.19 | 20 | O |
| Zirconium | 1.003 | 0.10 | 1.1 | 0 | 91.2 | 75-125 | 0.9821 | 2.09 | 20 | |

The following samples were analyzed in this batch:

| | |
|--------------|--------------|
| 22040311-02A | 22040311-04A |
|--------------|--------------|

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: M.A.C. Paran Consulting
Project: Hallmark Meridian;
WorkOrder: 22040311

**QUALIFIERS,
ACRONYMS, UNITS**

| <u>Qualifier</u> | <u>Description</u> |
|------------------|---|
| * | Value exceeds Regulatory Limit |
| a | Not accredited |
| B | Analyte detected in the associated Method Blank above the Reporting Limit |
| E | Value above quantitation range |
| H | Analyzed outside of Holding Time |
| J | Analyte detected below quantitation limit |
| n | Not offered for accreditation |
| ND | Not Detected at the Reporting Limit |
| O | Sample amount is > 4 times amount spiked |
| P | Dual Column results percent difference > 40% |
| R | RPD above laboratory control limit |
| S | Spike Recovery outside laboratory control limits |
| U | Analyzed but not detected above the MDL |

| <u>Acronym</u> | <u>Description</u> |
|----------------|-------------------------------------|
| DUP | Method Duplicate |
| E | EPA Method |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| MBLK | Method Blank |
| MDL | Method Detection Limit |
| MQL | Method Quantitation Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| PDS | Post Digestion Spike |
| PQL | Practical Quantitation Limit |
| SDL | Sample Detection Limit |
| SW | SW-846 Method |

| <u>Units Reported</u> | <u>Description</u> |
|-----------------------|--------------------|
| mg/L | |
| pH Units | |

Sample Receipt Checklist

Client Name: **MACPARAN-CINCINNATI**

Date/Time Received: **08-Apr-22 14:05**

Work Order: **22040311**

Received by: **AB**

Checklist completed by Alec Bolender 08-Apr-22
eSignature Date

Reviewed by: Shawn Smythe 11-Apr-22
eSignature Date

Matrices: water

Carrier name: Client

Shipping container/cooler in good condition? Yes No Not Present

Custody seals intact on shipping container/cooler? Yes No Not Present

Custody seals intact on sample bottles? Yes No Not Present

Chain of custody present? Yes No

Chain of custody signed when relinquished and received? Yes No

Chain of custody agrees with sample labels? Yes No

Samples in proper container/bottle? Yes No

Sample containers intact? Yes No

Sufficient sample volume for indicated test? Yes No

All samples received within holding time? Yes No

Container/Temp Blank temperature in compliance? Yes No

Sample(s) received on ice? Yes No

Temperature(s)/Thermometer(s):

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

Water - VOA vials have zero headspace? Yes No No VOA vials submitted

Water - pH acceptable upon receipt? Yes No N/A

pH adjusted? Yes No N/A

pH adjusted by:

Login Notes: not cooled

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:



ALS Environmental
 4388 Glendale Milford Rd.
 Cincinnati, Ohio 45242
 Phone: (800)-458-1493 or
 (513) 733-5336
 Fax: (513) 733-5347

ANALYTICAL REQUEST FORM

12753

REGULAR Status

RUSH Status Required - ADDITIONAL CHARGE

RESULTS REQUIRED BY _____ DATE _____

CONTACT ALS LABORATORY GROUP PRIOR TO SENDING SAMPLES

22040311

Date 4/8/22 Purchase Order No. _____

Billing Address (if different)
Same

Company Name M.A.C. Paron Consulting

Address 3959 Fulton Grove Rd.

Cincinnati, OH 45246
City State Zip

Send Report To: Bobbie Cox

Quote No. _____

Email Address bobbie@macparan.com

Sampling Site Hallmark Meridian

Telephone (513) 383-6263

Date/Time of Collection 4/7/22 / 9AM

Fax Telephone () _____

Project No. Hallmark

| Lab Use Only | Client Sample Number | Media Type | Sample Volume (Liters) | ANALYSES REQUESTED - Use Method Number if Known |
|--------------|----------------------|------------|------------------------|---|
| 01 | NM-1 | | 250 ml | pH |
| 02 | NM-2 | | | Metals |
| 03 | NM-3-M108 | | | pH |
| 04 | NM-4-M108 | | | Metals |
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Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

CHAIN OF CUSTODY

| | | | |
|---|---------------------------|---|-----------------------------|
| Relinquished by: (Signature) <u>[Signature]</u> | Date / Time <u>4-8-22</u> | Received by: (Signature) <u>[Signature]</u> | Date / Time <u>4/8 1405</u> |
| Relinquished by: (Signature) | Date / Time <u>2:10</u> | Received by: (Signature) | Date / Time |

| ALS LAB USE ONLY | | | | DELIVERY METHOD: | | CLIENT | DROP BOX | FEDEX | UPS |
|------------------|-------------|-----------------|---------|------------------|-----------|-------------|----------|---------|---------|
| COOLER TEMP: | °C | pH ADJUSTMENTS: | | STD MAIL | PRTY MAIL | ALS | COURIER | OTHER: | |
| COOLING METHOD: | <u>NONE</u> | COOLER | WET ICE | DRY ICE | ICE PACK | <u>NONE</u> | COOLER | PACKAGE | SAMPLES |
| EQUIP. RETURNED: | | | | | | | | | |

Appendix III

Consultant's Qualifications

EDUCATION

Cincinnati College of Mortuary Science, Bachelor of Science. 1997. Graduated Magna Cum Laude

Certified Indoor Air Quality Council, Certified Indoor Environmentalist, 2002

Environmental Training Center, Lead Inspector/Risk Assessment, 2001

University of Cincinnati, Building Inspection/Management Planner Courses, 2001

META, Asbestos Contractor Supervisor, 2003

National Institute of Occupational Safety and Health, Sampling and Evaluating Airborne Asbestos Dust, NIOSH 582, 2001.

#1 Radon Tester, LLC, Radon Measurement Course for Testers and Mitigators, 2010

EXPERIENCE

May 2001-Present, Occupational Hygienist; **m.a.c. Paran Consulting Services, Incorporated**. Performs industrial hygiene field measurements and assessments. Manages various asbestos and lead abatement projects throughout Ohio. Performs indoor air quality investigations and remediation oversight. Conducts Phase I Environmental Site Assessments per ASTM standards.

1993-May, 2001 E.C. Nurre Funeral Home. Responsible for pre-arranged funeral services, embalming, and restorative art. Managerial responsibilities included coordination of funeral services, burial permits, death certificates and pastoral representation. Implemented an account receivables management process providing families with alternatives for paying final expenses, and enabling staff to approach the topic of payment in a non-offensive manner. Provided volunteer outreach to the community in order to promote the funeral home's commitment to the area it serves.

1992-1993 United Family Life. Promoted pre-need funeral products to funeral homes in the southern region of Ohio and conducted continuing education programs to funeral directors within the region.

1990-1992 Ohio Funeral Directors Association. Aided in the development and instrumentation of Master Trust II, a program aimed at providing investment alternatives for funds obtained in funeral pre-arrangement. Acted as liaison between investment companies and the Master Trust Committee, a panel of funeral director volunteers. Managed day to day activities of the trust.

1987-1990 Huntington Trust Company. Administered claims processing, budgeting and billing activity for the Ohio Funeral Directors Association's Master Trust. Developed and maintained database programs to streamline production and mailing of claim payments to funeral homes. Acted as primary liaison between the Ohio Funeral Directors Association and its consultants.

1977-1981 US Marine Corps. Corporal. Honorable Discharge

PROFESSIONAL CERTIFICATIONS

Asbestos Hazard Abatement Specialist, Ohio Environmental Protection Agency

Asbestos Hazard Evaluation Specialist, Ohio Environmental Protection Agency

Asbestos Management Planner, Kentucky Department for Environmental Protection Lead

Renovation, Repair and Painting (LRRP) Course Instructor

Lead Inspector/Risk Assessor, Ohio Department of Health

Lead Inspector/Lead Assessor, Kentucky Department for Environmental Protection

Radon Tester, Ohio Department of Health

American Council for Accredited Certification, Certified Indoor Environmentalist

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SECTION 03 01 00 - MAINTENANCE OF CONCRETE

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Concrete surface repair.
 - 2. Concrete crack repair.
 - 3. Concrete sealer.

1.2 SUBMITTALS

- A. Product Data: Submit product standards, physical and chemical characteristics, technical specifications, limitations, maintenance instructions, and general recommendations regarding each material.
 - 1. Concrete repair products.
- B. Samples: Submit color samples for patches exposed to view in finished construction and required to match existing.
- C. Manufacturer's Instructions: Submit mixing instructions.

1.3 MOCK-UP

- A. Construct mockup panel illustrating patching method, color and texture of repair surface.
- B. Prepare one mockup of each type of patching/repair procedure.
- C. Locate where directed by Architect.
- D. Incorporate accepted mockup as part of Work.

PART 2 PRODUCTS

2.1 BASIS OF DESIGN

- A. General basis of design for all systems is SIKA, other manufacturers accepted provided bidder/contractor submission of complete technical data of proposed products/systems for review by Architect.

2.2 CONCRETE SELF-LEVELING UNDERLAYMENT MIX

- A. Concrete Leveling Mix: one-component, fast drying, cementitious skim mortar ideal for repair or reprofiling of concrete slabs. Zero feather edge to ½" thickness application. Sika, Sika Level SkimCoat
 - 1. Flexural strength ASTM C-293: 1,300 psi at 28 days.
 - 2. Compressive strength ASTM C-109: 3,700 psi at 28 days
- B. Concrete Leveling Mix: one-component, polymer modified, self-leveling underlayment ideal for repair or reprofiling of concrete slabs. Zero feather edge to ½" thickness application. Sika, Sika Level-125
 - 1. Flexural strength ASTM C-293: 1,150 psi at 28 days.
 - 2. Compressive strength ASTM C-109: 4,000 psi at 28 days
- C. Concrete Leveling Mix: one-component, cementitious underlayment, self-leveling underlayment ideal for repair or reprofiling of concrete slabs. Zero feather edge to ½" thickness application. Sika, Sika Level-325
 - 1. Flexural strength ASTM C-293: 1,500 psi at 28 days.
 - 2. Compressive strength ASTM C-109: 5,300 psi at 28 days

2.3 CONCRETE REPAIR / CEMENTITIOUS MORTAR –PARTIAL DEPTH REPAIRS

- A. Concrete Repair/Patch Cementitious Mortar: one-component, rapid hardening [ASTM C-928], early strength gaining, cementitious mix for repairs on horizontal surfaces.
 - 1. Flexural strength ASTM C-293: 1,000 psi at 28 days.
 - 2. Bond strength ASTM C-882: 2,500 psi at 28 days,
 - 3. Compressive strength ASTM C-109: 7,000 psi at 28 days
- B. Sika, SikaQuick 1000 or Equal

2.4 CONCRETE SEALER

- A. Concrete Sealer for new and existing concrete slabs on grade. Solvent based liquid membrane forming curing compound to seal surfaces with abrasion and stain resistant coating, non-yellowing resin. 100% acrylic polymer blend, fast drying solvent blend.
 - 1. SIKA Scofield Cureseal 100

PART 3 EXECUTION

3.1 REMOVALS

- A. Remove all existing finish flooring – tile, VCT, epoxy paint from the existing concrete slabs. Remove/strip sealer from existing unfinished concrete slabs.
- B. Prep existing concrete / substrate for new floor systems as specified.

3.2 EXAMINATION

- A. Verify surfaces are ready to receive work.
- B. Beginning of installation means acceptance of existing surfaces.

3.3 PREPARATION

- A. Provide all temporary shoring and bracing as required for intended work.
- B. Provide all required formwork, tools, and equipment as required for intended work.
- C. Clean concrete surfaces of dirt, laitance, corrosion, or other contamination; wire brush using water; rinse surface and allow to dry.
- D. Flush out cracks and voids with chemical solvent or water to remove laitance and dirt. Chemically neutralize by rinsing with water.
- E. For areas patched with epoxy mortar, remove all broken and soft concrete. Remove corrosion from steel. Clean surfaces mechanically; wash with acid; rinse with water.

3.4 APPLICATION –CEMENTITIOUS MORTAR PARTIAL DEPTH REPAIR

- A. Clean all surfaces of contaminants.
 - 1. Clean and prep all exposed reinforcing steel.
 - 2. Replace deteriorated reinforcing steel with new as indicated on the drawings.
- B. Prime substrate in accordance with manufacturer requirements.
- C. Mixing: mechanically mix per manufacturer requirements. Mix to a uniform consistency with a thorough mixing and proper proportioning of the two components.
 - 1. Add 3/8" course aggregate at desired quantity to uniform consistency as necessary.
- D. Screed level.
- E. Finish with float or light broom finish in accordance with approved mockup for desired finish texture.

- F. Cure concrete per ACI recommendations using wet burlap, water mist,
 - 1. Do not use curing compounds for curing of concrete.
- G. Avoid contact with aluminum materials to prevent adverse chemical reaction and possible failure of the repair. Insulate potential areas of contact by coating aluminum with epoxy.

3.5 APPLICATION – SELF-LEVELING MORTAR REPAIR

- A. Prepare concrete by mechanical means, shot blast, sandblast, scarifying to achieve a matt, glaze free open textured surface.
- B. Prime substrate in accordance with manufacturer requirements.
- C. Mixing: mechanically mix per manufacturer requirements. Mix to a uniform consistency with a thorough mixing and proper proportioning of the two components.
- D. Install in accordance with manufacturer requirements using a flat edge steel trowel.
- E. Screed level.

3.6 APPLICATION – CONCRETE SEALER

- A. Prep and clean surface per manufacturer requirements – clean from all prior sealers, curing compounds, oils, and foreign matters that may prevent penetration or adhesion. Meet Concrete Surface Profile of 1.
- B. Distribute / Apply sealer per manufacturer requirements. Apply with garden sprayer and back roll with roller.

3.7 SCHEDULE / GENERAL REPAIR SCOPE

- A. Clean / prep all existing concrete slabs after removal of existing floor finishes.
- B. Remove all existing surface coatings, adhesives, mortar, etc. and patch repairs.
- C. Remove all existing spalling and previous repair areas/patches.
- D. Apply cementitious repairs to all areas of affected surfaces and to level various areas of the concrete slab between spaces within the building.
 - 1. Intent of repairs is to provide a smooth, uniform, floor slab free of voids, divots, and other irregularities in the finish, ready for a new finish floor system. Repairs shall be from edge to edge, across the entire floor system without exception.
 - 2. Floor repairs shall be accomplished to the satisfaction of the finish floor manufacturer / system as specified. Contractor to coordinate all requirements, and provide scope for the same.
- E. Apply sealant [Sika, Sikaflex 1A or Equal] to joints and cracks.
- F. Prepare for new finishes to concrete surfaces as indicated.
- G. Apply sealer to new / existing concrete where noted and concrete is intended to be left exposed.

END OF SECTION

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SECTION 03 30 00 - CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Formwork.
 - 2. Reinforcement and Accessories.
 - 3. Cast-in place concrete.
 - 4. Finishing and curing.

1.2 SYSTEM DESCRIPTION

- A. Design, engineer and construct formwork, shoring, and bracing in accordance with ACI 301 to conform to the design and applicable code requirements to achieve concrete shape, line, and dimension as indicated on the drawings.
- B. Vapor Retarder Permeance: Maximum 1 perm when tested in accordance with ASTM E96/E96M, water method.

1.3 SUBMITTALS

- A. Design Data: Submit mix designs, admixtures, reinforcement, and anchors.

1.4 QUALITY ASSURANCE

- A. Construct and erect concrete formwork, reinforcing, and cast-in-place concrete in accordance with ACI 301.

PART 2 PRODUCTS

2.1 FORM MATERIALS AND ACCESSORIES

- A. Form Materials: At discretion of Contractor and per building conditions.
- B. Form Release Agent: Colorless mineral oil not capable of staining concrete or impairing natural bonding characteristics of coating intended for use on concrete.
- C. Slab Edge Joint Filler: ASTM D1751, Premolded asphaltic board, 1/2 inch thick; as applicable to the conditions.
- D. Vapor Retarder: ASTM E1745 Class A; 6 mil thick clear polyethylene film; type recommended for below grade application. Furnish joint tape recommended by manufacturer.

2.2 REINFORCEMENT MATERIALS

- A. Reinforcing Steel: ASTM A615/A615M, 60 ksi yield grade, deformed billet bars, uncoated finish.
- B. Welded Plain Wire Fabric: ASTM A185/A185M; in flat sheets; unfinished. [WWM 6x6-W2.9-W2.9]
- C. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for support of reinforcing; plastic tipped or non-corroding for supports in slabs forming finished ceilings or where supports are exposed to weather.
- D. Fabricate concrete reinforcement in accordance with ACI 301.
- E. Non-shrink grout: Pre-mixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.

2.3 CONCRETE MATERIALS

- A. Cement: ASTM C150, Normal-Type I Portland type.

- B. Fly Ash/Slag [coal combustion by-product]: ASTM C 618, Class C.
- C. Fine and Coarse Aggregates: ASTM C33.
- D. Water: Clean and not detrimental to concrete.
- E. Air Entrainment Admixture: ASTM C260.
- F. Fiber Mesh Reinforcing: ASTM 1116-C.
- G. Bonding Agent: Latex emulsion.
- H. Non-shrink Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.

2.4 CONCRETE MIX

- A. Mix and deliver concrete in accordance with ASTM C94/C94M, Option A.
- B. INTERIOR CONCRETE SLAB: Furnish concrete of the following strength:
 - 1. Compressive strength 3,000 psi (28 day). Fibermesh reinforced
 - 2. Slump limit of 4 inches at point of placement.
 - 3. Minimum Cement Content: 600 pounds/cu yd.
 - 4. Maximum water-cement ratio: 0.45
 - 5. Air Entrainment: none
 - 6. Transit Mixed.
- C. EXTERIOR CONCRETE SLAB: Refer to Section 32 13 13.
- D. Add air entraining agent to concrete mix for concrete work exposed to exterior.

2.5 GRANULAR BASE

- A. Interior Slabs:
 - 1. Install ODOT Item 703 #6, 3/8" – 3/4" clean, uniformly graded crushed stone or gravel. Existing gravel base may remain if found to be in good condition.
- B. Exterior Slabs: Refer to Section 32 13 13.

2.6 COMPOUNDS, HARDENERS AND SEALERS

- A. Membrane Curing Compound and Sealer: ASTM C1315 Type I, Class A. Dayton Superior or Equal
 - 1. Install only at areas not receiving finish flooring system.

PART 3 EXECUTION

3.1 FORMWORK ERECTION

- A. Erect formwork, shoring and bracing to achieve design requirements.
- B. Apply form release agent to formwork prior to placing form accessories and reinforcement.
- C. Clean forms as erection proceeds, to remove foreign matter.

3.2 INSERTS, EMBEDDED COMPONENTS, AND OPENINGS

- A. Provide formed openings where required for work to be embedded in and passing through concrete members.
- B. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.
- C. Install concrete accessories straight, level, and plumb.

- D. Place joint filler at perimeter of floor slab, penetrations, and isolation joints.

3.3 REINFORCEMENT PLACEMENT

- A. Place reinforcement, supported and secured against displacement.
- B. Ensure reinforcing is clean, free of loose scale, dirt, or other foreign coatings.
- C. Do not weld reinforcement bars for assembly.
- D. Space reinforcement bars with a minimum clear space in accordance with ACI 301 of not less than 1 inch.
- E. Maintain concrete cover around reinforcement in accordance with ACI 301 of not less than 1 1/2" inches for concealed work and 3 inches for concrete exposed to weather.

3.4 PLACING CONCRETE

- A. Install 4 inch minimum thickness granular base over undisturbed soils and compact as applicable.
- B. Install vapor retarder under interior slabs on grade in accordance with ASTM E1643. **Lap joints and seal watertight using manufacturer supplied tape.**
- C. Repair damaged vapor retarder with vapor retarder material, lap over damaged areas minimum 6 inches and seal watertight.
- D. Place concrete continuously between predetermined expansion, control and construction joints. Do not break or interrupt successive pours creating cold joints.
- E. Separate slabs-on-grade from vertical services with 1/2 inch joint filer, extended from bottom of slab to within 1/4 inch of finished slab surface.
- F. Where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack with non-shrink grout.
- G. Form 3/4" chamfer at all exposed outside corners and edges.
- H. Screed slabs-on-grade level.

3.5 FORM REMOVAL

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.
- B. Remove formwork progressively and in accordance with code requirements.

3.6 FLOOR FINISHING

- A. Finish concrete floor surfaces in accordance with ACI 301.
- B. Uniformly spread, screed, and float concrete.
 - 1. Smooth finish at interior slabs and garage slabs.
 - 2. Light broom finish at exterior slabs; troweled and retraced joints [no sawcut control joints].
- C. Maintain surface flatness, with maximum variation of 1/8 inch in 10 ft.
- D. Control joints:
 - 1. Locate at maximum of 10'-0" o.c. each way.
 - 2. Sawcut joints permitted only at concealed concrete areas.
 - 3. Trowel joints and retrace at all exposed concrete areas.

3.7 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

1. Protect concrete footings from freezing for a minimum of 7 days.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete for not less than 7 days.

3.8 ERECTION TOLERANCES

A. Install reinforcement within tolerances required by ACI 301.

3.9 FIELD QUALITY CONTROL

A. Perform field inspection and testing in accordance with ACI 301 at the request of Architect/DMHA.

B. Strength Test Samples:

1. Sample concrete and make one set of three cylinders for every 25 cu yds or less of each class of concrete placed.

C. Field Testing:

1. Measure slump and temperature for each compressive strength concrete sample.

2. Measure air content in air entrained concrete for each compressive strength concrete sample.

D. Cylinder Compressive Strength Testing:

1. Test Method: ASTM C39.

2. Test Acceptance: In accordance with ACI 301.

3. Test two cylinders at 28 days.

4. Dispose remaining cylinders when testing is not required.

3.10 DEFECTIVE CONCRETE

A. Modify or replace concrete not conforming to required lines, details and elevations, as directed by Architect/Engineer.

END OF SECTION

SECTION 04 01 00 - MAINTENANCE OF MASONRY

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Water and/or chemical cleaning of masonry surfaces, water repellent.

1.2 SUBMITTALS

- A. Product Data: Submit data on cleaning solutions, water repellent.
- B. Manufacturer's Installation Instructions: Products selected for use, manufacturer's installation instructions.

1.3 QUALITY ASSURANCE

- A. Perform Work according to ACI 530 and ACI 530.1 requirements.
- B. Installer: Company specializing in performing Work of this Section with three years' experience.
- C. Coordinate work with masonry repairs, re-pointing, limited brick replacement, etc.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Repoint mortar joints and repair masonry only when air temperature is between and 40°f and 90°f and is predicted to remain so for at least 7 days after completion of work.
 - 1. In accordance with ACI 530.1
- B. Hot-weather requirements: protect masonry repair and mortar-joint pointing when temperature and humidity conditions produce excessive evaporation of water from mortar and repair materials. Provide artificial shade and wind breaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 90°f and above.
 - 1. In accordance with ACI 530.1
- C. Patch masonry only when air and surface temperatures are between and 55°f and 100°f and are predicted to remain above 55°f for at least 7 days after completion of work. On days when air temperature is predicted to go above 90°f, schedule patching work to coincide with time that surface being patched will be in shade or during cooler morning hours.
- D. Provide shoring, bracing, or support to prevent movement, settlement, or collapse of structure, work under demolition, or adjacent work to remain.
- E. Prevent grout or mortar used in assembly and repair work from staining face of surrounding surfaces. Immediately remove grout and mortar in contact with exposed surfaces.
- F. Protect sills, ledges, and projections from mortar droppings.

1.5 SEQUENCING

- A. Perform repointing after cleaning masonry surfaces.

PART 2 PRODUCTS

2.1 MASONRY RESTORATION AND CLEANING

- A. Cleaning Agent: Low Acid Cleaning Solution; Prosoco Sure Klean Light Duty Restoration Cleaner or Equal.

2.2 WATER REPELLENT

- A. Free flowing, colorless liquid, non water based.
 - 1. ProSoCo, 'Sure Klean', Weather Seal Siloxane PD'
 - 2. Diedrich Chemicals, 303S-7 Siloxseal'

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify surfaces to be cleaned are ready for Work of this Section.

3.2 PREPARATION

- A. Close off and/or seal areas, landscaping, materials, and surfaces not receiving work of this Section to protect from damage.

3.3 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, spray applied at low pressure. Do not use metal scrapers or brushes. Do not use acidic or alkaline cleaners.
- B. Clean masonry debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.
- C. Sweep and rake adjacent pavement and grounds to remove masonry debris. Where necessary, pressure wash surfaces to remove mortar, dust, dirt, and stains.

3.4 GENERAL CLEANING

- A. As work proceeds and on completion, remove excess mortar, smears, droppings.
- B. Clean dirt and light staining from all brick surfaces.
- C. If the specified chemicals and cleaning processes do not remove graffiti, paint, or other stains, contact Architect for direction.
- D. Perform cleaning working from top to bottom working in sections around the building at one elevation at a time.
- E. Use spray equipment that provides controlled application at volume and pressure indicated. Adjust pressure and volume to ensure cleaning methods do not damage masonry.

3.5 SURFACE CLEANING APPLICATION

General: Cleaners shall be installed in accordance with the recommendation of the manufacturer.

- A. All masonry surfaced shall be cleaned utilizing a pressure water spray (1,000 p.s.i. max.).
 - 1. Intent of cleaning program is to remove all surface staining, dirt and fungal growth.

3.6 WATER REPELLANT APPLICATION

General: Water repellant shall be installed in accordance with the recommendation of the manufacturer.

- A. All masonry surfaced shall have the water repellant installed utilizing a low-pressure water spray (50 psi max.), brush or roller at the rate recommended by the manufacture. Flow coat to saturation point, allow for penetration 5 -10 minutes.

3.7 SCHEDULES

- A. Refer to drawings for extent of work.
- B. Clean existing masonry at all buildings

END OF SECTION

SECTION 04 05 03 - MASONRY MORTARING AND GROUTING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes mortar and grout for masonry, parging for CMU foundations.

1.2 SUBMITTALS

- A. Samples: Submit two samples of mortar illustrating mortar color and color range.
- B. Project data: Submit product data on mortar mix.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 530 Building Code Requirements for Masonry Structures and ACI 530.1 Specification for Masonry Structures.
- B. Sustainable Design Requirements:
 - 1. Recycled Content Materials: Furnish materials with recycled content.
 - 2. Regional Materials: Furnish materials extracted, processed, and manufactured within 500 miles of Project site.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Repoint mortar joints and repair masonry only when air temperature is between and 40°f and 90°f and is predicted to remain so for at least 7 days after completion of work.
 - 1. In accordance with ACI 530.1
- B. Hot-weather requirements: protect masonry repair and mortar-joint pointing when temperature and humidity conditions produce excessive evaporation of water from mortar and repair materials. Provide artificial shade and wind breaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 90°f and above.
 - 1. In accordance with ACI 530.1
- C. Patch masonry only when air and surface temperatures are between and 55°f and 100°f and are predicted to remain above 55°f for at least 7 days after completion of work. On days when air temperature is predicted to go above 90°f, schedule patching work to coincide with time that surface being patched will be in shade or during cooler morning hours.
- D. Provide shoring, bracing, or support to prevent movement, settlement, or collapse of structure, work under demolition, or adjacent work to remain.
- E. Prevent grout or mortar used in assembly and repair work from staining face of surrounding surfaces. Immediately remove grout and mortar in contact with exposed surfaces.
- F. Protect sills, ledges, and projections from mortar droppings.

1.5 SEQUENCING AND SCHEDULING

- A. Order re-pointing mortar immediately after approval of samples. Take delivery of and store at project site a sufficient quantity of mortar to complete project.
- B. Perform re-pointing after repair of existing masonry, including replacing existing masonry with new masonry materials and cleaning.
- C. As scaffolding is removed, patch any anchor holes used to attach scaffolding. Patch holes in mortar joints in accordance with section covering re-pointing masonry.

PART 2 PRODUCTS

2.1 FACTORY-MIXED MORTAR

- A. Match original mortar remnants on brick as determined from field sampling and laboratory analysis at the mortar manufacturers plant. Match for color, texture and compressive strength.

2.2 COMPONENTS

- A. Portland Cement: ASTM C150, Type I, gray color.
- B. Premix Mortar for below grade applications: ASTM C387/C387M, Type S using gray color cement.
- C. Premix Mortar for above grade applications: ASTM C387/C387M, Type N using colored cement.
- D. Mortar Aggregate: ASTM C144, standard masonry type.
- E. Hydrated Lime: ASTM C206, Type N.
- F. Mortar Color: color as selected by Architect from full range of available colors for above grade applications.
- G. Grout Aggregate: ASTM C404, fine.
- H. Water: Clean and potable.
- I. Bonding Agent: Latex type.
- J. Calcium chloride is not permitted.

2.3 MIXES

- A. Mortar Mixes:
 - 1. Mortar for Structural Masonry: ASTM C270, Type S using Proportion specification.
 - 2. Mortar for Non-Structural Masonry: ASTM C270, Type N using Proportion specification.
 - 3. Mortar For Glass Unit Masonry: ASTM C270, Type O using Property specification.
- B. Mortar Mixing:
 - 1. Thoroughly mix mortar ingredients in accordance with ASTM C270 in quantities needed for immediate use.
 - 2. Add mortar color.
- C. Grout Mixing:
 - 1. Mix grout in accordance with ASTM C94/C94M.
 - 2. Do not use anti-freeze compounds to lower freezing point of grout.
- D. Mixing Procedures:
 - 1. Measure materials by volume or equivalent weight. Do not measure by shovel; use known measure.
 - 2. To hydrate mortar, thoroughly mix ingredients dry. Mix again, adding only enough water to produce a damp mix which will retain its form when pressed in a ball. After keeping mortar in this dampened condition for 1-2 hours, add sufficient water to form proper consistency.
 - 3. Mix mortar using a clean mechanical batcher for 3-5 minutes or by hand until completely mixed.
 - 4. Place mortar within two hours of final mixing.
 - 5. Do not re-temper or use partially hardened materials

2.4 PARGING / COATING FOR CMU FOUNDATIONS

- A. Cement based waterproof coating for concrete and masonry breathable, waterproof, and resistant to positive and negative hydrostatic pressure.

1. Thoroseal by Degussa or equal. Additive with Acryl 60.

2.5 ACCESSORIES

- A. Adjustable Anchors / Wire Ties to Connect to Existing Structure: Anchors / Wire Ties that allow for vertical and / or horizontal adjustment but resist tension and compression forces on the wall.
 1. Adjustable ties with pintle and eye connections with an adjustment of +/- 1 inch.
- B. Flexible Flashing:
 1. Self-adhering, flexible membrane flashing; cross laminated polyethylene film; self-healing; Nominal 40 mils thick.
 - a. WR Meadows; Air-Shield Thru-Wall Flashing
 - b. Grace Products, Perm-A-Barrier Wall Flashing
 - c. York, York Seal Peel & Stick Flashing
- C. Compressible Expansion Joint Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; formulated from closed cell neoprene or urethane. Sized as applicable to conditions.
- D. Weeps: Cellular Plastic Weep: One piece, flexible extrusion made from UV-resistant polypropylene copolymer, full height and width of head joint and depth 1/8 inch less than other wythe of masonry.

PART 3 EXECUTION

3.1 PREPARATION

- A. Protect persons, motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm resulting from masonry restoration work. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during course of restoration and cleaning work.
- B. Prevent mortar from staining face of surrounding masonry and other surfaces. Cover sills, ledges, and projections to protect from mortar droppings. Keep wall area wet below rebuilding and pointing work to discourage mortar from adhering. Immediately remove mortar in contact with exposed masonry and other surfaces. Clean mortar splatters from scaffolding at end of each day.

3.2 INSTALLATION

- A. Install mortar in accordance with ACI 530.1 Specification for Masonry Structures.

3.3 FIELD QUALITY CONTROL

- A. Testing of Mortar Mix: In accordance with ASTM C780.
- B. Testing of Grout Mix: In accordance with ASTM C1019.

3.4 GENERAL CLEANING

- A. As work proceeds and on completion, remove excess mortar, smears, droppings.
- B. Clean dirt and light staining from all brick surfaces.
- C. If the specified chemicals and cleaning processes do not remove graffiti, paint, or other stains, contact Architect for direction.
- D. Perform cleaning working from top to bottom working in sections around the building at one elevation at a time.
- E. Use spray equipment that provides controlled application at volume and pressure indicated. Adjust pressure and volume to ensure cleaning methods do not damage masonry.

3.5 REPOINTING MASONRY

- A. Joint raking: rake out all joints to be pointed by hand, using a mason's chisel that is not more than 1/4" thick or by approved hand grinding methods. If grinding is used, wet methods are required to minimize dirt and dust. Rake or grind out mortar from joints to depths equal to 2-1/2 times their widths but not less than 1-inch nor less than required to expose sound, un-weathered mortar.
1. Remove mortar to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum or flush joints to remove dirt and loose debris. No abrasive methods of cleaning shall be used.
 2. Do not spall edges of masonry units or widen joints. Replace masonry units which become damaged.
 - a. Do not use power-operated grinders without Architect's written approval based on submission by Contractor of a satisfactory quality-control program and demonstrated ability of operators to use tools without damaging masonry. Quality control program shall include provisions for supervising performance and preventing damage due to worker fatigue.
 3. Replace any units which become damaged.
 4. If the existing bricks have worn rounded edges, recess final mortar slightly from face to a point where joint face will not be wider than the original joint.
- B. Joint Pointing:
1. Rinse masonry joint surfaces with water to remove any dust and mortar particles. Time application of rinsing so that, at time of pointing, excess water has evaporated or run off, and joint surfaces are damp but free of standing water.
 2. Apply first layer of pointing mortar to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8-inch until uniform depth is formed. Compact each layer thoroughly and allow to become thumbprint-hard before applying next layer.
 3. After joints are filled to uniform depth, place remaining pointing mortar in 3 layers with each of first and second layers filling approximately 2/5 of joint depth and third layer the remaining 1/5. Fully compact each layer and allow to become thumbprint-hard before applying next layer. Take care not to spread mortar over edges onto masonry surfaces, or to featheredge mortar.
 4. When mortar is thumbprint-hard, tool joints to match original appearance of joints as determined by the architect. Remove excess mortar from edge of joint by brushing.
 5. Cure mortar by maintaining in damp condition for not less than 72 hours.

3.6 PARGING

- A. Parge concrete/CMU foundation walls as follows:
1. Provide all required tuckpointing of mortar joints prior to parging.
 2. Dampen masonry walls prior to parging.
 3. Surface Preparation
 - a. Surface preparation is extremely important for proper adhesion. Substrates must be sound, and free of dust, dirt, laitance, paints, oils, grease, curing compounds, or any other contaminants. Verify substrate has properly cured. Concrete should obtain 80% of design strength, typically achieved within 3 to 14 days. If efflorescence is present, mechanically remove it before proceeding.
 - b. All holes and cracks must be patched before installation.
 - c. Extremely smooth surfaces such as precast and cast-in-place concrete will require roughening or brush blast to ensure good adhesion.
 4. Mixing
 - a. Thoroseal is to be mixed with a mixing liquid consisting of a blend of Acryl 60 diluted with water. Dilute and mix per manufacturer requirements.
 - b. Refer to manufacturer requirements for blending, consistency, and for pot life.
 5. Application

- a. ThoroSeal may be applied with a brush or broom or equivalent stiff fiber brush. Spray application not permitted. The substrate must be completely dampened with water before application starts. Do not saturate the substrate, but keep it cool and damp throughout the application.
- b. It is essential that the first coat be thoroughly worked into the substrate to completely fill and cover all voids, holes, and nonmoving cracks. Finish with a horizontal stroke for an even coat.
- c. Allow to cure 24 hours, then apply the second coat and finish with a vertical stroke. Above grade, the second coat can be replaced with a Thoro high-build architectural coating to achieve better color uniformity.
- d. On block or masonry walls, allow 5-7 days before applying second coat to eliminate joint read through.

3.7 FINAL CLEANING

- A. Where re-pointing work precedes cleaning of masonry, allow mortar to harden at least 30 days prior to final cleaning.
- B. After mortar has fully hardened, thoroughly clean exposed masonry surfaces using stiff nylon or fiber brush and clean water, spray applied at low pressure.

3.8 SCHEDULES

- A. General: Contractor to verify all existing masonry conditions, including anchorage to substrate, to determine scope of masonry repairs. Refer to drawings and additional work allowances to be included in the bid.
- B. CMU Foundations: Tuckpoint exposed mortar joints in CMU foundation wall where required by conditions.
- C. Limestone Sills: Remove and reset all limestone sills that are loose, displaced, or disbonded. If stone is cracked, broken, or missing, install a new limestone sill to match existing. Replacement will be a field change if needed. Re-point joints in 2 piece sills.
- D. Masonry Repairs:
 1. Remove damaged, cracked, spalled, or dislocated masonry units as required by conditions.
 2. Replace damaged masonry with new or salvaged masonry as applicable to the repair. Install new masonry per Section 04 20 00. Tooth into existing masonry as appropriate.
- E. Masonry Tuckpointing:
 1. Tuck point existing mortar joints where indicated and as required by existing conditions.
 2. Tuck point locations of removed hose bibs, address plaques, building equipment, electrical service, conduits, wiring, etc. that were anchored into the mortar joints.

END OF SECTION

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SECTION 04 20 00 - UNIT MASONRY

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes concrete and brick masonry units; anchorage, and accessories.

1.2 PERFORMANCE REQUIREMENTS

- A. Clay Masonry Compressive Strength (f'm): 1,500 psi; determined by unit strength method.

1.3 SUBMITTALS

- A. Product Data: Submit masonry units and wall ties and other accessories.
- B. Samples: Submit two samples of brick to illustrate color, texture and extremes of color range.
 - 1. Contractor shall coordinate with brick suppliers to find brick match to the existing brick color on the buildings.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with MSJC Code (ACI 530/ASCE 5/TMS 402) and MSJC Specification (ACI 530.1/ASCE 6/TMS 602).

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Repoint mortar joints and repair masonry only when air temperature is between and 40°f and 90°f and is predicted to remain so for at least 7 days after completion of work.
 - 1. In accordance with ACI 530.1
- B. Hot-weather requirements: protect masonry repair and mortar-joint pointing when temperature and humidity conditions produce excessive evaporation of water from mortar and repair materials. Provide artificial shade and wind breaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 90°f and above.
 - 1. In accordance with ACI 530.1
- C. Patch masonry only when air and surface temperatures are between and 55°f and 100°f and are predicted to remain above 55°f for at least 7 days after completion of work. On days when air temperature is predicted to go above 90°f, schedule patching work to coincide with time that surface being patched will be in shade or during cooler morning hours.
- D. Provide shoring, bracing, or support to prevent movement, settlement, or collapse of structure, work under demolition, or adjacent work to remain.
- E. Prevent grout or mortar used in assembly and repair work from staining face of surrounding surfaces. Immediately remove grout and mortar in contact with exposed surfaces.
- F. Protect sills, ledges, and projections from mortar droppings.

1.6 MOCKUP

- A. Mockup masonry installation at one area, including mortar and accessories for review by Architect and Owner.
- B. Acceptable panel illustrating results of work will become standard for work of this section.

PART 2 PRODUCTS

2.1 BRICK UNIT MASONRY ASSEMBLIES

- A. Manufacturers:
 - 1. The Belden Brick Co.
 - 2. Glen-Gary Brick.

3. Bowerstone Shale Co.
 4. Equal.
- B. Facing Brick: ASTM C216, Type FBS, Grade MW; color and texture as selected by Architect from full range of available colors/textures. Match existing brick.
1. Brick Size and Shape: modular size.
 2. It shall be the contractor's responsibility to locate the appropriate brick match for each of the buildings.
- C. Precast Concrete sills: fabricated to suit opening, sized as required. Positive slope out to face of wall, extend 1 inch past face of brick.

2.2 CONCRETE MASONRY UNIT ASSEMBLIES

- A. Manufacturers:
1. Snyder Brick & Block or Equal.
- B. Hollow Load Bearing Concrete Masonry Units: ASTM C90; normal weight.
- C. Solid Load Bearing Concrete Masonry Units: ASTM C90, normal weight.
- D. Hollow Non-Loading Bearing Concrete Masonry Units: ASTM C129, normal weight.
- E. Concrete Masonry Units: Size and Shape: Nominal modular size of 8 x 16 x 8 inches. Furnish special units for 90 degree corners, bond beams, bullnosed corners, and lintels.

2.3 ACCESSORIES

- A. Joint Reinforcement: ASTM A951: ladder/truss type, steel, 0.148 inch diameter side rods with 0.148 inch diameter cross ties; hot dip galvanized.
- B. Wall Ties: Corrugated formed sheet metal, 1" x 7" inch size x 20 gage thick; ASTM A153/A153M hot dip galvanized. Provide fasteners suitable for fastening through insulation board into framing [if applicable].
- C. Reinforcing Steel: ASTM A615, 60 ksi yield grade, deformed billet bars, uncoated finish.
- D. Mortar and Grout: As specified in Section 04 05 03.
- E. Self stick SBS type flashing, size and type to suit installation.
- F. Lap Sealant: Butyl type as specified in Section 07 90 00.
- G. Joint Filler: Closed cell polyethylene; oversized 50 percent to joint width; self expanding; 3/8 inch wide x by maximum lengths.
- H. Building Paper: ASTM D226; Type II, No. 30 unperforated asphalt felt.
- I. Weeps: Preformed plastic tubes, sloped thru mortar joint.
- J. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials, recommended by masonry unit manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify field conditions are acceptable and are ready to receive Work.

3.2 PREPARATION

- A. Coordinate placement of anchors supplied by other sections.

3.3 INSTALLATION

- A. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- B. Coursing of Concrete Masonry Units:
 - 1. Bond: Running
 - 2. Coursing: One unit and one mortar joint to equal 8 inches.
 - 3. Mortar Joints: Concave.
- C. Coursing of Brick units:
 - 1. Bond: Running
 - 2. Coursing: Three units and three mortar joint to equal 8 inches.
 - 3. Mortar Joints: Concave.
- D. Weeps: Install weeps in outer wythe at 24 inches oc horizontally above through-wall flashing, at bottom of walls, and other locations where the downward flow of water will be stopped.
- E. Cavity Wall: Do not permit mortar to drop or accumulate into cavity air space or to plug weep holes.
- F. Joint Reinforcement and Anchorage – CMU Foundation walls:
 - 1. Install vertical reinforcement at 48 inches on center per the drawings. Grout cores to receive reinforcing solid.
- G. Joint Reinforcement And Anchorage - Masonry Veneer:
 - 1. Install horizontal joint reinforcement 16 inches oc. Place joint reinforcement continuous in first and second joint below top of walls.
 - 2. Place masonry joint reinforcement in first horizontal joint above and below openings.
 - 3. Secure wall ties to stud framed backing and embed into masonry veneer at maximum 16 inches oc vertically and 16 inches oc horizontally.
 - 4. Place wall ties at maximum 8 inches oc vertically within 8 inches of jamb of wall openings.
 - 5. Place wall ties at maximum 8 inches on center horizontally within 8 inches of head and sill of wall openings.
- H. Masonry Flashings:
 - 1. Extend flashings horizontally through outer wythe at foundation walls, above ledge or shelf angles and lintels and turn down on outside face to form drip.
 - 2. Turn flashing up minimum 8 inches and seal to sheathing over wood framed back-up.
 - 3. Lap end joints and seal watertight.
 - 4. Turn flashing, fold, and seal at corners, bends, and interruptions.
- I. Grouted Components:
 - 1. Reinforce CMU foundation wall per drawings.
 - 2. Place and consolidate grout without displacing reinforcing.
 - 3. Fill masonry cores with grout per Section 04 05 14.
- J. Cutting And Fitting:
 - 1. Cut and fit for pipes, conduit, sleeves, grounds, etc. Coordinate with other sections of work to provide correct size, shape, and location.
- K. Cleaning:
 - 1. Remove excess mortar and mortar smears as work progresses.
 - 2. Clean soiled surfaces with cleaning solution.
- L. Tolerances:
 - 1. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.

2. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

3.4 SCHEDULES

- A. Install new masonry veneer at infill of existing openings where indicated on drawings. Tooth into existing masonry veneer.
- B. Remove and replace defective or deteriorated masonry with new masonry where indicated on drawings. Tooth into existing masonry veneer.

END OF SECTION

SECTION 05 52 00 - METAL FABRICATIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes steel fabrications and bollards.

1.2 REFERENCES

- A. ASTM International:
1. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
 2. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 3. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
 4. ASTM A501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
 5. ASTM A513 - Standard Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing.
- B. SSPC: The Society for Protective Coatings:
1. SSPC - Steel Structures Painting Manual.
 2. SSPC Paint 20 - Zinc-Rich Coating, Type I - Inorganic and Type II - Organic.

1.3 DESIGN REQUIREMENTS

- A. Design handrail, guardrail, and attachments to resist forces as required by Ohio Building Code. Apply loads non-simultaneously to produce maximum stresses.
1. Guard Top Rail and Handrail Concentrated Load: 200 pounds applied at any point in any direction.
 2. Guard Top Rail Uniform Load: 50 pounds per linear foot applied in any direction.
 3. Intermediate Rails, Panels, and Baluster Concentrated Load: 50 pounds applied to 1 sf area.

1.4 SUBMITTALS

- A. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.
- B. Samples: Submit samples of components upon request by Architect.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with the following:
1. Structural Steel: AISC 303.
 2. High Strength Bolted Connections: RCSC Specification for Structural Joints Using ASTM A 325 or A 490 Bolts.
- B. Finish joints in accordance with NOMMA Guideline 1.

1.6 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

PART 2 PRODUCTS

2.1 STRUCTURAL STEEL

- A. Channels and Angles: ASTM A36/A36M. 36 ksi.
- B. Structural Pipe: ASTM A53/A53M, Grade B.

- C. Structural Plates: ASTM A36/A36M. 36 ksi.

2.2 BOLTS, CONNECTORS, AND ANCHORS

- A. Bolts: Heavy hex, structural type.
 - 1. ASTM A325; Type 1, hot dipped galvanized, or Type 3, plain.
- B. Nuts: ASTM A563 heavy hex type.
 - 1. Finish: Hot dipped galvanized.
- C. Washers: ASTM F436; Type 1, circular. Furnish clipped washers where space limitations require.
 - 1. Finish: Hot dipped galvanized.
- D. Anchor Rods: ASTM F1554; Grade 55, weldable.
- E. Threaded Rods: ASTM A36/A36M.
 - 1. Finish: Hot dipped galvanized.

2.3 WELDING MATERIALS

- A. Welding Materials: AWS D1.1; type required for materials being welded.

2.4 FABRICATION

- A. Continuously seal joined members by continuous welds. Grind exposed welds smooth.
- B. Fabricate connections for bolt, nut, and washer connectors.
- C. Fit and shop assemble components in largest practical sizes for delivery to site.
- D. Fabricate components with joints tightly fitted and secured. Furnish spigots and sleeves to accommodate site assembly and installation.
- E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- F. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.
- G. Exterior Components: Continuously seal joined pieces by continuous welds. Drill condensate drainage holes at bottom of members at locations not encouraging water intrusion.
- H. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- I. Exposed Welded Joints: NOMMA Guideline 1 Joint Finish 2.
- J. Accurately form components to suit stairs and landings, to each other and to building structure.
- K. Accommodate for expansion and contraction of members and building movement without damage to connections or members.

2.5 FINISHES

- A. Prepare structural component surfaces in accordance with SSPC SP 3 or as required by conditions.
- B. Shop prime structural steel members.
- C. Galvanizing: ASTM A123/A123M; hot dip galvanize after fabrication.
- D. Galvanizing for Bolts, Connectors, and Anchors:
 - 1. Hot-Dipped Galvanizing:
 - a. Bolts, Nuts, and Washers: ASTM F2329.
 - b. Connectors and Anchors: ASTM A153/A153M.
 - 2. Mechanical Galvanizing: ASTM B695; Class 50 minimum.

2.6 ACCESSORIES

- A. Grout: Non-shrink type, pre-mixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing additives, capable of developing minimum compressive strength of 5,000 psi at 28 days.
- B. Shop Primer: SSPC Paint 15, Type 1, red oxide.
- C. Touch-Up Primer: Match shop primer.
- D. Touch-Up Primer for Galvanized Surfaces: SSPC Paint 20 Type I Inorganic.

2.7 FINISHES

- A. Prepare surfaces in accordance with SSPC SP 1 and requirements of finish coating system.
- B. Shop prime items with one coat. Do not prime surfaces in direct contact with concrete or where field welding is required.
- C. Finish coatings per Section 09 90 00.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify field conditions are acceptable and are ready to receive work.
- B. Verify concealed blocking and reinforcement is installed and correctly located to receive wall mounted handrails.

3.2 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Supply items required to be cast into concrete and/or embedded in masonry with setting templates, to appropriate sections.

3.3 ERECTION

- A. Allow for erection loads, and for sufficient temporary bracing to maintain structure safe, plumb, and in alignment until completion of erection and installation of permanent bracing.
- B. Field weld components indicated.
- C. Do not field cut or alter structural members without approval of Architect/Engineer.
- D. After erection, touch up welds and abrasions to match shop finishes.

3.4 ERECTION TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum Offset From Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

3.5 GROUT INSTALLATION

- A. Shim bearing plates and equipment supports to proper elevation, snug tighten anchor bolts.
- B. Fill void under bearing surface with grout. Install and pack grout to remove air pockets.
- C. Moist cure grout.
- D. Remove forms after grout is set. Trim grout edges to form smooth surface, splayed 45 degrees.
- E. Tighten anchor bolts after grout has cured for a minimum of 3 days.

3.6 FIELD QUALITY CONTROL

- A. Bolted Connections: Inspect in accordance with AISC 303.
 - 1. Visually inspect all bolted connections.
 - 2. For Direct Tension Indicators, comply with requirements of ASTM F959. Verify that gaps are less than gaps specified in Table 2.
- B. Welding:
 - 1. Certify welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies.
 - 2. Visually inspect all welds.
 - 3. Ultrasonic Inspection: ASTM E164; perform on all full penetration welds.
- C. Correct defective bolted connections and welds.

END OF SECTION

SECTION 06 10 00 - ROUGH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes structural wall and roof framing, built-up structural members, non-structural interior wall framing, wall sheathing; subfloor sheathing; sill gaskets and flashings; preservative and fire retardant treatment; electrical panel backboards; blocking and related furring and framing materials.

1.2 REFERENCES

- A. American National Standards Institute:
1. ANSI A135.4 - Basic Hardboard.
 2. ANSI A208.1 - Mat-Formed Wood Particleboard.
- B. American Wood-Preservers' Association:
1. AWPA M4 - Standard for the Care of Preservative-Treated Wood Products.
 2. AWPA U1 - Use Category System: User Specification for Treated Wood.
- C. ASTM International:
1. ASTM C1396/C1396M - Standard Specification for Gypsum Board.
 2. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 3. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
 4. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.
- D. Forest Stewardship Council:
1. FSC Guidelines - Forest Stewardship Council Guidelines.
- E. Green Seal:
1. GS-36 - Aerosol Adhesives.
- F. National Lumber Grades Authority:
1. NLGA - Standard Grading Rules for Canadian Lumber.
- G. Northeastern Lumber Manufacturers Association:
1. NELMA - Standard Grading Rules for Northeastern Lumber.
- H. South Coast Air Quality Management District:
1. SCAQMD Rule 1168 - Adhesive and Sealant Applications.
- I. Southern Pine Inspection Bureau:
1. SPIB - Standard Grading Rules for Southern Pine Lumber.
- J. U.S. Department of Commerce National Institute of Standards and Technology:
1. DOC PS 1 - Construction and Industrial Plywood.
 2. DOC PS 2 - Performance Standard for Wood-Based Structural-Use Panels.
 3. DOC PS 20 - American Softwood Lumber Standard.
- K. West Coast Lumber Inspection Bureau:
1. WCLIB - Standard Grading Rules for West Coast Lumber.
- L. Western Wood Products Association:
1. WWPA G-5 - Western Lumber Grading Rules.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with the following agencies:

1. Lumber Grading Agency: Certified by DOC PS 20.
 2. Wood Structural Panel Grading Agency: Certified by EWA - The Engineered Wood Association.
 3. Plywood Grading Agency: Certified by APA.
 4. Lumber: DOC PS 20.
 5. Wood Structural Panels: DOC PS 1 or DOC PS 2.
- B. Perform Work in accordance with Ohio Building Code.
- C. Apply label from agency approved by authority having jurisdiction to identify each preservative treated and fire retardant treated material.

PART 2 PRODUCTS

2.1 LUMBER MATERIALS

- A. Lumber Grading Rules: SPIB, ASLS.
- B. Beam Framing: southern yellow pine species, No. 1 grade, 2" and wider size classification, 19 percent maximum moisture content.
- C. Joist Framing: southern yellow pine species, No. 1 grade, 2" and wider size classification, 19 percent maximum moisture content.
- D. Columns: southern yellow pine species, No. 2 grade, 4" and wider size classification, 19 percent maximum moisture content.
- E. Non-structural Light Framing: Stress Group D, spruce, pine, fir species, 19 percent maximum moisture content.
- F. Studding: Stress Group D, spruce, pine, fir species, 19 percent maximum moisture content.
- G. Sill Plate: AWWA C2 Lumber, Stress Group D, spruce, pine, and fir species, and 19 percent maximum moisture content, pressure preservative treated.

2.2 SHEATHING MATERIALS

- A. Wall Sheathing: ANSI A208.1, Oriented Strand Board [OSB]; wood chips set with waterproof resin binder; unsanded faces; 7/16 inch thickness; 48x96 inch sized sheets
- B. Roof Sheathing: ANSI A208.1, Oriented Strand Board [OSB]; wood chips set with waterproof resin binder; unsanded faces; 7/16 inch thickness; 48x96 inch sized sheets [match existing conditions]
- C. Subfloor Sheathing: APA Rated Sheathing Structural I, Span Rating 24/16, Exposure Durability 1, unsanded; 3/4 inch thickness; 48x96 inch sized sheets. Alternate: 1x6 lumber infill.
- D. Electrical Panel Back Board: 3/4 inch thick Plywood, sized for application

2.3 UNDERLAYMENT

- A. Plywood Underlayment: Rated Sheathing Structural I, Span Rating 24/16, Exposure Durability 1, sanded; 1/4 or 1/2 inch thickness [conform to flooring installation requirements]; 48x96 inch sized sheets.
- B. Cement Board: Refer to Section 09 21 16.
- C. Luan Plywood Underlayment: 1/4 inch Thickness, sanded, 48x96 inch sized sheets.

2.4 FIREBLOCKING AND FIRESTOPPING

- A. Fireblocking: Solid lumber, structural wood panel, or particleboard.

1. Solid lumber nominal 2 inches thick.
 2. Structural wood panel 23/32 inch thick with joints backed by structural wood panel.
- B. Draftstopping: Gypsum board or OSB
1. Gypsum board: 1/2 inch thick.
 2. OSB: 7/16 inch thick.

2.5 ACCESSORIES

- A. Fasteners and Anchors:
1. Fasteners: ASTM A153/A153M, hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
 2. Nails and staples: ASTM F1667.
- B. Die Stamped Connectors: galvanized steel, specific type/profile as applicable
- C. Structural Framing Connectors: Galvanized steel, sized to suit framing conditions.
1. Simpson or Equal.
- D. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Powder actuated fasteners into slab. Hilti or Equal. All anchors sized to suit application and loads.
- E. Sill Gasket: Plate width, closed cell foam strip.
- F. Sill Flashing: Polyethylene Sheet or Galvanized Steel.
- G. Subfloor Glue: ASTM D3498, water base, waterproof.
- H. Weather Resistive Barrier / Building Paper: ASTM D226; spun bonded polyethylene, Tyvek or Equal. Coordinate with existing conditions as appropriate.

2.6 WOOD TREATMENT

- A. Wood Preservative (Pressure Treatment): AWPA U1, Commodity Specification A-Sawn Products or F-Wood Composites using water-borne preservative with .25 pcf retention.
- B. Fire Retardant Treatment: Chemically treated and pressure impregnated, having flame spread of 25 or less when tested in accordance with ASTM E 84 and showing no evidence of significant progressive combustion when test is continued for an additional 20 minute period, Exterior or Interior Type.
- C. Moisture Content After Treatment: Kiln dried (KDAT).
1. Lumber: Maximum 19 percent.
 2. Structural Panels: Maximum 15 percent.

PART 3 EXECUTION

3.1 FRAMING

- A. Set structural members level and plumb, in correct position.
- B. Fasten framing in accordance with Ohio Building Code.
- C. Place horizontal members crown side up.
- D. Make provisions for erection loads, and for sufficient temporary bracing to maintain structure safe, plumb, and in alignment until completion of erection and installation of permanent bracing.
- E. Provide all required shoring and temporary bracing required to support structure prior to removing any load-bearing components.

- F. Construct load bearing framing members full length without splices.
- G. Double members at openings. Space short studs over and under opening to stud spacing.
- H. Place full width continuous sill flashings under framed walls on cementitious foundations. Lap flashing joint 4 inches.
- I. Place sill gasket directly on cementitious foundation. Puncture gasket clean and fit tight to protruding foundation anchor bolts.
- J. All exterior framing intended to be left exposed to weather shall be pressure treated and anchored with galvanized fasteners and appropriate connectors.
- K. All framing in contact with concrete shall be treated. Interior or exterior walls.
- L. Frame new walls, partitions, and openings to suit conditions and as designed.
- M. Install solid 2x bearing at each end of beams and headers. Ensure that blocking is positioned with full support/blocking under to existing bearing conditions. Install supplemental blocking as required between joists, framing, etc.
- N. Bridge joists at mid-space with solid 2x blocking.

3.2 SHEATHING

- A. Install sheathing over framing members in full size sheets in accordance with APA Construction Guide.
- B. Fasten sheathing in accordance with Ohio Building Code.
- C. Install subfloor sheathing with longer edge perpendicular to floor framing with end joints staggered. Secure sheet edges over firm bearing. Attach sheathing with subfloor glue and appropriate fasteners.
- D. Install underlayment in accordance with APA Construction Guide.
 - 1. 3d x 1 ¼" ring shank nails at 3" at perimeter and 6" in field. **No staples permitted.**
 - 2. Glue to subfloor as applicable by condition.
- E. Secure wall sheathing with ends staggered, over firm bearing.
- F. Install new underlayment at areas of wood framed floor systems where required for new finish flooring. Remove all existing underlayment down to original subfloor as required.
- G. Place WRB/building paper over wall sheathing, weather lap joints and end laps, staple in place. Coordinate flashing installation to ensure continuous water resistant barrier.
- H. Install electrical panel back board with plywood sheathing. Size back board by 12 inches beyond size of electrical panel.

3.3 FIREBLOCKING AND DRAFTSTOPPING

- A. Install fireblocking to cut off concealed draft openings as required.
 - 1. Concealed Framed Wall and Furred Spaces: Install fireblocking vertically at floor and ceiling levels and horizontally.
 - 2. Connections Between Horizontal and Vertical Spaces: Install fireblocking between vertical walls and partitions and the following:
 - a. Horizontal floor and roof framing.
 - b. Soffits, dropped ceilings, cove ceilings and other horizontal concealed spaces.

3.4 SITE APPLIED WOOD TREATMENT

- A. Treat site sawn cuts. Brush apply one coat of preservative treatment on untreated wood in contact with cementitious materials.

B. Allow preservative to cure prior to erecting members.

3.5 TOLERANCES

A. Framing members: $\frac{1}{4}$ inch from indicated position, maximum.

END OF SECTION

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SECTION 06 17 53 - SHOP-FABRICATED WOOD TRUSSES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes shop fabricated wood trusses for floor and roof framing; bridging, bracing, and anchorage.

1.2 SYSTEM DESCRIPTION

- A. Design Floor Live Load: 100 lbs/sq ft with deflection limited to 1/360 of span.
- B. Design Roof Live Load: 25 lbs/sq ft with deflection limited to 1/240 of span.
- C. Roof trusses shall have raised heel / energy style truss design to allow full depth insulation to the exterior face of the exterior wall. Refer to Drawings.
- D. Roof truss design shall be in accordance with the Drawings.

1.3 REFERENCES

- A. APA-The Engineered Wood Association:
 - 1. APA/EWA TB 200 - Fire Retardant Treated Plywood.
- B. American Wood-Preservers' Association:
 - 1. AWPA M4 - Standard for the Care of Preservative-Treated Wood Products.
 - 2. AWPA U1 - Use Category System: User Specification for Treated Wood.
- C. ASTM International:
 - 1. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - 2. ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
 - 3. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
 - 4. ASTM B695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel
 - 5. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 6. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
 - 7. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.
- D. Forest Stewardship Council:
 - 1. FSC Guidelines - Forest Stewardship Council Guidelines.
- E. Southern Pine Inspection Bureau:
 - 1. SPIB - Standard Grading Rules for Southern Pine Lumber.
- F. Truss Plate Institute:
 - 1. TPI 1 - National Design Standard for Metal Plate Connected Wood Truss Construction.
- G. U. S Department of Commerce National Institute of Standards and Technology:
 - 1. DOC PS 1 - Construction and Industrial Plywood.
 - 2. DOC PS 2 - Performance Standard for Wood-Based Structural-Use Panels.
 - 3. DOC PS 20 - American Softwood Lumber Standard.
- H. West Coast Lumber Inspection Bureau:
 - 1. WCLIB - Standard Grading Rules for West Coast Lumber.
- I. Western Wood Products Association:
 - 1. WWPA G-5 - Western Lumber Grading Rules.

1.4 SUBMITTALS

- A. Shop Drawings: Indicate sizes and spacing of trusses and associated components, web and chord sizes, plate sizes, fastener descriptions and spacings, loads and truss cambers, framed openings, and other related design information. Submit design calculations and full engineered drawings sealed by an Ohio Design Professional to be submitted to the Building Department for approval.
- B. Product Data: Submit truss configurations, bearing and anchor details, bridging and bracing, and any other erection details.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with the following:
 - 1. Lumber Grading Agency: Certified by DOC PS 20.
 - 2. Plywood Grading Agency: Certified by APA.
 - 3. Lumber: DOC PS 20.
 - 4. Wood Structural Panels: DOC PS 1 or DOC PS 2.
- B. Truss Design, Fabrication, and Installation: In accordance with TPI 1.
- C. Fire Rated Wall Construction: Rating and details as required.
- D. Surface Burning Characteristics:
 - 1. Fire Retardant Treated Materials: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.
- E. Apply label from agency approved by authority having jurisdiction to identify each preservative treated and fire retardant treated material.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five years experience.
- B. Design trusses under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of Ohio.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 00 00 - Product Requirements: Product storage and handling requirements.
- B. Store truss depth in vertical position resting on intermittent bearing pads.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Lumber Grading Rules: RIS, SPIB.
- B. Wood Members: Single top and bottom chord, Stress Group D, species per truss manufacturer and in accordance with Section 06 10 00. Finger scarfing not permitted.
- C. Steel Plate Connectors: TPI 1, Section 6; hot dip galvanized; die stamped with integral teeth; size and type per truss manufacturer.
- D. Truss Bridging: Type, size and spacing recommended by truss manufacturer.

2.2 ACCESSORIES

- A. Wood Blocking: softwood lumber, S/P/F species, construction grade.

- B. Fasteners and Anchors:
 - 1. Fasteners: ASTM A153/A153M, hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
 - 2. Nails and Staples: ASTM F1667.

2.3 FABRICATION

- A. Fabricate trusses to achieve structural requirements specified.
- B. Fabricate top chord extensions as required.
- C. Frame special sized openings in web framing as required.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify wall framing and all supports and openings are ready to receive trusses.

3.2 PREPARATION

- A. Coordinate placement of bearing items.

3.3 ERECTION

- A. Set members level and plumb, in correct position.
- B. Make provisions for erection loads, and for sufficient temporary bracing to maintain structure plumb, and in alignment until completion of erection and installation of permanent bracing.
- C. Do not field cut or alter structural members without approval of Architect.
- D. Place headers and supports to frame openings.
- E. Frame openings between trusses with lumber in accordance with Section 06 10 00.
- F. Coordinate placement of sheathing with work of this Section.

3.4 ERECTION TOLERANCES

- A. Framing Members: 1/4 inch maximum, from indicated position.

END OF SECTION

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SECTION 06 20 00 - FINISH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes interior and exterior finish carpentry items, other than shop prefabricated casework; solid surface components; solid surface window sills, closet rods and shelving, hardware and attachment accessories.

1.2 SUBMITTALS

- A. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, finishes, and accessories.
- B. Samples: Submit two samples illustrating wood grain, colors/finishes and profiles.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with AWI Quality Standards, Custom Grade.
- B. Surface Burning Characteristics: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

PART 2 PRODUCTS

2.1 EXTERIOR FINISH CARPENTRY

- A. Miscellaneous Exterior Trim: Clear pine. 1x material by widths as indicated on drawings and to match existing conditions. Aluminum wrap where indicated / to match existing conditions.
- B. Shutters: Vinyl Construction, Standard Raised Panel Shutter as manufactured by Mid America Building Components or Equal. As selected from the full range of available colors. Size 15" wide x height of window/opening.
- C. Refer to Section 07 46 00 for Fiber Cement Siding and Composite Trim.

2.2 FINISH CARPENTRY

- A. Finger jointed softwood lumber and moldings for painted finish. Grade in accordance with AWI Custom, clear white pine or poplar species, plain sawn, maximum moisture content of 6 percent; primed for painted finish.
- B. Softwood plywood: Graded in accordance with AWI Custom veneer with lumber core; birch face species, rotary cut, primed for painted finish.
- C. Hardwood Lumber/Trim: Graded in accordance with AWI Custom; Oak species, plain sawn, maximum moisture content of 6 percent; of quality suitable for transparent finish.
- D. Hardwood Flooring: 2 1/4" oak strip flooring, tongue and groove, match existing. Grade to match existing for grain and finish and of quality for transparent finish.

2.3 INTERIOR FINISH COMPONENTS

- A. Plastic Laminate Countertops: Refer to Section 12 35 30.
- B. Solid Surface Tub / Shower Surround / Lavatory Tops: Refer to Section 06 61 16
- C. Solid Surface Window Sills: Existing to remain – repair if required by conditions.
- D. Solid Surface Lavatory top, Shower Surround / Accessories: Refer to Section 06 61 16.
- E. Wire Closet Shelving / Closet Rod: open-wire closet shelving system with rod system. ClosetMaid Close Mesh Shelf and Rod or Equal.
 - 1. 12" shelf depth with hanging rod below
 - 2. Vinyl coated steel, PVC vinyl thickness 9-11 mills

3. Support brackets at 36" on center max.
4. End caps at all open or cut ends.
- F. Closet Rod [Contractor Alternate]: 1 5/16" heavy weight white closet rod, cut to length, white or chrome steel wall brackets and intermediate supports [at maximum of 36" o.c.]. Manufactured by Lido Designs or Equal.
 1. Anchor wall brackets into 1x6 cleats mounted to walls/framing.
- G. Closet / Storage / Pantry / Linen Shelving [Contractor Alternate]: 3/4" medium density fiberboard [MDF], sanded, bullnose edge. Install on 1x cleats mounted to blocking in the wall.
- H. Non-Rated Access Panels [located within individual dwelling units]:
 1. Access panels: sized as required by conditions or equipment requiring servicing.
 - a. 1/2" thick finish A / C grade plywood, painted.
 - b. 2 1/4" colonial profile trim surround, installed to overlap the perimeter of opening.
 - c. Screwed into framing.
 - d. Plastic access panels secured to framing may be permitted at interior partitions in inaccessible locations [cabinets, closets, etc.] for plumbing access points, etc.
- I. Fire Rated Access Panels: Refer to Section 08 31 13.
- J. Non-Fire Rated Access Panels located in common areas: Refer to Section 08 31 13.

2.4 ACCESSORIES

- A. Fasteners and Anchors:
 1. Fasteners: Size and type to suit application, stainless steel for exterior, high humidity and treated wood locations, plain finish elsewhere.
 2. Nails and Staples: ASTM F1667.
- B. Contact Adhesives: Water Base type.
- C. Wall Adhesive: Cartridge type, compatible with wall substrate, capable of achieving durable bond.
- D. Primer: Alkyd primer sealer type.
- E. Hardware: as required to suit application.

2.5 FABRICATION

- A. Fabricate to AWI Custom standards.

2.6 SHOP FINISHING

- A. Sand work smooth and set exposed nails and screws.
- B. Apply wood filler in exposed nail and screw indentations.
- C. On items to receive transparent finishes, use wood filler matching surrounding surfaces and of types recommended for applied finishes.
- D. Stain, seal, and varnish exposed to view surfaces, refer to Section 09 90 00.
- E. Seal internal surfaces and semi-concealed surfaces.
- F. Seal surfaces in contact with cementitious materials.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify field conditions are acceptable and are ready to receive work.

3.2 PREPARATION

- A. Prime paint surfaces of items or assemblies in contact with cementitious materials, before installation.

3.3 INSTALLATION

- A. Install work in accordance with AWI Custom quality standard.
 - 1. Set and secure materials and components in place, plumb and level.
 - 2. Install trim by nails.
 - 3. Miter trim and return to wall where applicable.
 - 4. Install hardware.
- B. Preparation For Finish:
 - 1. Sand work smooth and set exposed fasteners. Apply wood filler in exposed fastener indentations.
 - 2. Site Finishing: Refer to Section 09 90 00.

3.4 SCHEDULES

- A. Exterior
 - 1. Miscellaneous exterior trim: clear pine over lumber framing, prepare for painted finish or wrapped with metal cladding as indicated.
 - 2. Exterior siding, trim: Refer to Section 07 46 00.
 - 3. Shutters: Vinyl shutters at openings as indicated on elevations
- B. Interior:
 - 1. Base trim: 3 1/4" colonial profile, painted finish.
 - a. Provide new 1 1/2" colonial shoe mold at all areas.
 - 2. Door casing, misc. trim: 3 1/4" colonial profile, painted finish.
 - 3. Wire Shelving / Hanging Rod: 12" deep wire shelving with hanging rod.
 - 4. Closet shelving: 12" deep MDF shelves with bullnose edge, painted finish. Set on 1x4 or 1x6 cleats mounted to wall framing. [Contractor Alternate]
 - 5. Miscellaneous interior trim: pine, sized to suit conditions, painted finish.
 - 6. Window stool: solid surface, extend past face of wall by 1", install 2 1/4" painted colonial trim below.
 - 7. Access panels within dwelling units: sized as required by conditions or equipment requiring servicing.
 - a. 1/2" thick finish A / C grade plywood, painted.
 - b. 2 1/4" colonial profile trim surround, installed to overlap the perimeter of opening.
 - c. Screwed into framing.
 - d. Plastic access panels secured to framing may be permitted at interior partitions in inaccessible locations [cabinets, closets, etc.] for plumbing access points, etc.
 - 8. Rated and Common Area Access Panels: Refer to Section 08 31 13.

END OF SECTION

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SECTION 06 61 16 - SOLID SURFACING FABRICATIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes cast plastic/solid surface fabrications.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. Underwriters Laboratories Inc.:
 - 1. UL - Fire Resistance Directory.

1.3 SUBMITTALS

- A. Shop Drawings: Indicate dimensions, thicknesses, required clearances, tolerances, materials, colors, finishes, fabrication details, field jointing, adjacent construction, methods of support, integration of plumbing components, and anchorages.
- B. Product Data: Submit data on specified component products, electrical characteristics and connection requirements.
- C. Samples: Submit **two** samples representative of solid surface chips illustrating color, texture, and finish.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit list of approved cleaning materials and procedures required; list of substances harmful to component materials, Include instructions for stain removal, surface and gloss restoration.

1.5 QUALITY ASSURANCE

- A. Surface Burning Characteristics: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

1.7 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

1.8 WARRANTY

- A. Provide manufacturer's standard warranty for lavatory sinks, shower/bath wall systems.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Swan Corporation, or Equal.

2.2 COMPONENTS

- A. Solid Surface Resin: Homogeneous compression molded material composed of acrylic resins or polyester/acrylic blend, fire-retardant filler materials, fiber reinforcement, and integral coloring agents; stain resistant to domestic chemicals and cleaners; meeting ANSI Z124.3; ASTM E84, ASTM D 570.

1. Construction make up:
 - a. Nominal sheet thickness of 0.25"
 - b. Nominal countertop thickness of 0.75"
 - c. Nominal bathtub/shower wall sheet thickness of 0.225"
 - d. Nominal shower base thickness as determined by manufacturer.
- B. Color: as selected from ALL manufacturer colors.
- C. Polishing Cream: Compatible polishing cream to achieve specified sheen to gel coat.
- D. Adhesive: type approved by manufacturer, cartridge dispensed.

2.3 FABRICATION

- A. Fabricate components by mold to achieve shape and configuration.
- B. Gel coat exposed finish surfaces smooth and polish to low sheen, uniform finish.
- C. Radius corners and edges.
- D. Provide holes and cutouts for plumbing and bath accessories as indicated on the drawings.
- E. Cure components prior to shipment, except sheet materials requiring site handling.

2.4 ACCESSORIES

- A. Supply materials for installation of products as specified in manufacturer's printed instructions including color matched silicone sealant and adhesives where applicable.
- B. Supply accessory components as indicated in the schedule in this section.

2.5 SHOP FINISHING

- A. Color: color as selected by Architect from full range of standard and premium color options.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions are ready to accept solid surfacing materials.
- B. Verify joint preparation and affected dimensions are acceptable.

3.2 PREPARATION

- A. Provide anchoring devices for installation.
- B. Provide templates and rough-in measurements.

3.3 INSTALLATION

- A. Align work plumb and level.
- B. Rigidly anchor to substrate to prevent misalignment.
- C. Seal to adjacent construction in accordance with appropriate sealant.

3.4 ERECTION TOLERANCES

- A. Maximum Variation From Indicated Dimension: **1/8** inch.
- B. Maximum Offset From Indicated Position: **1/8** inch.

3.5 CLEANING

- A. Clean and polish fabrication surfaces.

3.6 SCHEDULES

- A. Lavatory Top: Swanstone Chesapeake Single Bowl Lavatory Top, sized per drawings, 3 1/2 inch backsplash and side splash panel, 1 1/4 inch thick top with eased edges; integral bowl with overflow. Color as selected by Architect.
- B. Tub Surround: Swanstone Bathtub 3-Panel Wall Kit, SSIT-60-3, designed to fit tub area 33 1/2 inch deep x 60 inches wide or smaller. Back panel with integral trim, two side panels with integral trim, 2 bathtub apron strips, two corner moldings. Provide nominal 4 inch trim surround at each side and along top of shower walls. Cut / trim to fit as applicable, cut and return into window openings where they occur [Swanstone Window Trim Kit]. Color as selected by Architect.
 - 1. Provide [1] corner shelf SS-7211 or Equal
 - 2. Provide [2] corner soap dishes ES-2 or Equal
- C. Accessible Transfer Shower: Swanstone Veritek Perfomix Transfer Trench Drain Shower, FTF-3838 shower base. Swanstone Shower Wall Kit, SK-366272. Back panel with integral trim, two side panels with integral trim, two corner moldings. Cut / trim to fit as applicable. Color as selected by Architect
 - 1. Provide [1] recessed shelf/alcove RS-2215 or Equal
 - 2. Provide [2] corner soap dishes ES-2 or Equal
 - 3. Field installed shower accessories – grab bars, seat, etc.

END OF SECTION

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SECTION 07 01 50 – PREPARATION FOR REROOFING

PART 1 GENERAL

1.1 WORKS INCLUDES, BUT IS NOT LIMITED TO:

- A. Roof Membrane Removals, Other Removal Summary and Re-Cover/Reroof Preparation:
 - 1. Remove existing shingle roof systems, flashing, complete to the deck.
 - 2. Remove existing low slope – EPDM / BUR roof systems complete to the wood deck.
 - 3. Remove existing flashing, penetration boots, etc.
 - 4. Remove existing gutters and downspouts.
 - 5. Remove existing metal clad fascia covers as outlined.
 - 6. Removal and replace all damaged or deteriorated wood decking.
- B. Removal of existing perimeter base flashing [metal, membrane, composite, coatings and single ply as applicable] and associated equipment supports and related items.
- C. Removal of wood nailers, fascia and blocking as applicable to the work. Wood members that are securely bolted or adequately fastened or can be adequately fastened to the structure per specs and are in a dry good condition can remain in place. Remove deteriorated and damaged wood members.
- D. Removal of sheet metal items such as flashings, edges, bib flashings, copings, counter-flashings, pitch pans, fascia/rake, corrugated panels and like components necessary for application of new membrane.
- E. Removal of existing unused curbs, deteriorated or rotted/weak decking, abandon equipment as noted on the drawings.
- F. Removal of equipment support and related items as necessary to provide new supports/stands as required by the building code.
- G. Removal of existing curbs, vents and covering associated openings as noted on the drawings.
- H. Other removals necessary to accomplish the new work.

1.2 QUALITY ASSURANCE

- A. Work shall be performed in strict accordance with the terms and conditions of all municipal and state regulation and local codes.
- B. Demolition shall comply with the requirements of ANSI - American National Standard Safety Requirements for Demolition.
- C. Conduct demolition work in a manner that will minimize disruption of owner's normal operations. Coordinate work activities daily with Owner.
- D. Properly protect all facility surfaces and associated landscaping from damages due to normal demolition operation. Return all areas to their original condition at no charge to the Owner.
- E. Drainage Testing: The Contractor shall test each roof drain and/or downspouts/scuppers for proper water flow and notify the Owner of any clogged drainage and drains that cannot have the roof membrane secured with the existing clamping ring [broken, bolts, etc] before commencement of work. Commencement of work shall constitute acceptance of drainage device and any costs to unclog or repair these items shall be borne by the Contractor.
- F. Do not remove existing roofing membrane or components when weather conditions threaten integrity of building contents.

1.3 COORDINATION

- A. All utilities and mechanical rooftop equipment will remain active during normal work hours, unless approved otherwise by the Owner.

- B. All removals shall be legally disposed, except those indicated to be reinstalled, salvaged or to remain Owner's property. Comply with hauling and disposal regulations of authorities having jurisdiction and EPA notification regulations.

1.4 FIELD CONDITIONS

- A. Do not overload structure with storage of materials, verify roof deck weight capacity and location of structural supports, only items needed that day shall be stored on the roof. Limit loads on roof to 25 pounds per square foot for uniformly distributed loads for wood decks. **Provide temporary securement of existing membrane to prevent membrane blow off while installing new roof system, if applicable.**
- B. Do not apply roofing system during inclement weather or when the chance is 40% or greater, percentage as listed on www.weather.com for the local area, percentage as listed when read at 7 AM local time or at time of work commencement. Proceed with roofing and associated work when weather conditions will permit unrestricted use of materials and quality control of the work being installed.
- C. Building space underneath roof work is utilized by on-going operations. Coordinate all work with Owner including, material storage and contractor parking. Owner's approval required before proceeding with the work. **Contractor must provide overhead protection for Owner's workers, public, visitors, etc from falling materials/debris at building entry points.**

PART 2 PRODUCTS

2.1 INFILL MATERIALS

- A. N/A

PART 3 EXECUTION

3.1 DECK PREPARTION/REPAIRS

- A. Wood Deck: Replace any rotted or loose decking, fasten in place as outlined in rough carpentry section.
 - 1. Existing thickness of wood decks is not known / confirmed. Field verify and match existing thickness as applicable.

3.2 DUST / FUME CONTROL

- A. Contractor to take measures to avoid dust, dirt and debris from entering the building. Throwing material off the roof is prohibited; provide an enclosed chute, crane or raised dump truck to remove roofing materials. Contractor shall provide a tarp or other protection of walls where material is being removed.
- B. Contractor must take special precautions around deck penetrations, including but not limited to installation and removal of reinforced visqueen below the roof deck to protect property below.
 - 1. Interior protection must be accomplished by Owner during removal of the any large penetrations. Contractor to coordinate as required to accomplish this work.
- C. Special precautions shall be taken to avoid fumes from entering the facilities through air intakes. Provide charcoal filters or other filtration media as necessary to cover intakes, coordinate with owner.

3.3 TRAFFIC

- A. Conduct demolition operations and the removals of debris to ensure minimum interference with streets, walks and other adjacent facilities. Do not close or obstruct streets or walks, without permission from owner and authorities having jurisdiction.

3.4 DISPOSAL OF MATERIALS

- A. Remove from the site, all debris, rubbish and other materials resulting from the demolition operations, are not being reused as soon as possible. The landfill used for disposal shall be approved for type of materials being disposed. Comply with local laws, EPA regulations when transporting materials from the site.
- B. All materials that are to be reused in the new work shall be removed, cleaned and stored in a safe place until reinstallation, as applicable.

3.5 ASBESTOS REMOVAL / NOTIFICATION

- A. If asbestos is found during course of work, all removals shall be in accordance with written guidelines provided by OSHA Asbestos Construction Standard [29 CFR 1926.1101], and State, County and EPA guidelines as applicable. Contractor must be OSHA trained meeting the requirements of 29 CFR 1926.1101 for the removal, handling and monitoring of removed material.
- B. Indicate receipt and acceptance of hazardous wastes, such as asbestos containing materials, by a landfill licensed to accept such materials. Notify and provide all documentation to the Owner for disposal of asbestos. All costs for asbestos removal, permitting and handling will be included in the bid if noted herein. No suspect ASBESTOS containing materials have been found.
- C. All asbestos removals shall be in a manner not to cause the roofing fibers to become crumbed, pulverized or airborne, these materials shall be handled as Category I and II non-friable asbestos. Should asbestos be encountered noted or not, that has become friable due to the actions of the Contractor or the condition of the material, the Contractor shall secure the services of an abatement contractor to remove the material and an independent firm to monitor removal activities and procedures [removal plan required]. Contractor shall pay for this abatement contractor if asbestos became friable due to their removal procedures. Notify Owners rep if asbestos has been encountered that was not noted, prior to removal.

3.6 UTILITIES / EQUIPMENT

- A. Where electrical lines, refrigerant line sets, equipment, controls, etc. interface with the performance of the work, they shall be temporality removed, replaced and made fully operational as soon as possible, a 48-hour notice and approval from Owner is required before any removals can take place. The Contractor has the responsibly to verify the operational status of all equipment before removals take place.
- B. The Contractor must notify the Owner of any non-operational items prior to removal, commencement of work constitutes acceptance of equipment and any costs to make operational shall be borne by the Contractor.

END OF SECTION

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SECTION 07 21 00 - THERMAL INSULATION

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes batt thermal insulation and vapor retarder in exterior walls, blown thermal insulation in ceilings/roof construction; expanding foam insulation for joints and cracks in the building envelope.

1.2 SYSTEM DESCRIPTION

- A. System performance to provide continuity of thermal barrier and vapor retarder at building enclosure elements in conjunction with air barrier materials.
- B. Vapor Retarder Permeance: Maximum 1 perm when tested in accordance with ASTM E96/E96M, water method.

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's product data including thermal performance of materials. Provide recycled content and emissions information as part of the product data.

1.4 QUALITY ASSURANCE

- A. Furnish and label cellulose loose fill insulation in accordance with CPSC 16 CFR 1209 and CPSC 16 CFR 1404.
- B. Insulation Installed in Concealed Locations Surface Burning Characteristics:
 - 1. Foam Plastic Insulation: Maximum 75/450 flame spread/smoke developed index when tested in accordance with ASTM E84.
 - 2. Other Insulation: 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.
- C. Insulation Installed in Exposed Locations Surface Burning Characteristics:
 - 1. Other Insulation Materials: 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.
 - 2. Attic Floor Insulation: Minimum 0.12 watt per sq cm critical radiant flux when tested in accordance with ASTM E970.

PART 2 PRODUCTS

2.1 BUILDING INSULATION

- A. Insulation Manufacturers:
 - 1. Certainteed.
 - 2. Johns Manville.
 - 3. Owens-Corning Fiberglass.
 - 4. Dow Building Products
- B. Mineral Fiber Insulation Manufacturers:
 - 1. Roxul AFB or Equal
- C. Two part closed cell polyurethane expandable insulation
 - 1. Dow Building Solutions, Great Stuff or Approved Equal.

2.2 COMPONENTS

- A. Batt Insulation for walls: ASTM C665, preformed glass fiber batt, friction fit, conforming to the following:
 - 1. Thermal Resistance: R of 13.
 - 2. Facing: Kraft paper.

- B. Blanket Insulation for fire resistance rated demising walls: ASTM C665 Type 1; ASTM E90; preformed mineral fiber batt/blanket; friction fit, conforming to the following:
 - 1. Thermal Resistance: R of 13; 3 1/2 inch thickness [match wall assembly thickness].
 - 2. Facing: None.
- C. Blanket Insulation for fire resistance rated demising floors: ASTM C665 Type 1; ASTM E90; preformed mineral fiber batt/blanket; friction fit, conforming to the following:
 - 1. Thermal Resistance: R of 30; 7 1/4 inch thickness.
 - 2. Facing: None.
- D. Fiber Fill Insulation: ASTM C764, glass fiber type, bulk for pneumatic placement.
- E. Ventilation Baffles: Formed rigid fiberboard or cardboard used with fiber fill insulation, sized to fit between roof framing members to permit cross ventilation of attic and eave. Provide complete vertical return down to meet top of top plate at wall framing. Length as required by conditions and provide clear ventilation path to ridge.

2.3 ACCESSORIES

- A. Adhesive: Type recommended by insulation manufacturer for application.
- B. Exterior Walls, Sill Seal Insulation: Poly foam sill seal gasket, 3 1/2" wide roll type installation. Owens Corning Foam SealR or Equal.
- C. Slab on Grade Sheet Vapor Barrier: 6 mil polyethylene film.
- D. Tape: Polyethylene self-adhering type, mesh reinforced, 2 inch wide.
- E. Insulation Fasteners: Impaling clip of galvanized steel or nylon with washer retainer and clips, to be adhered to surface to receive board insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify substrate, adjacent materials, and insulation boards are dry and ready to receive insulation.

3.2 INSTALLATION

- A. Vapor Barrier
 - 1. Install vapor barrier over compacted granular base in accordance with manufacturer requirements.
 - 2. Tape and seal all laps, joints, tears, etc. per the manufacturer requirements to maintain the continuous air seal.
- B. Exterior Walls, Sill Seal Insulation:
 - 1. Roll sill seal gasket onto top of foundation wall. Butt all ends tightly together.
 - 2. Pierce at anchor bolt locations.
- C. Exterior Wall Batt Insulation:
 - 1. Install in exterior walls without gaps or voids.
 - 2. Fit insulation tight in spaces. Leave no gaps or voids.
 - 3. Install with factory applied membrane facing warm side of building spaces. Attach flanges of facing to framing members.
 - 4. Seal vapor retarder to framing to ensure airtight installation.
- D. Demising Wall Blanket Insulation:
 - 1. Install in demising walls without gaps or voids.
 - 2. Fit insulation tight in spaces. Leave no gaps or voids.
- E. Floor Blanket Insulation:

1. Install in demising walls without gaps or voids.
 2. Fit insulation tight in spaces. Leave no gaps or voids.
- F. Attic Ventilation Air Baffles:
1. Install pre-formed attic air baffles between each truss bay along the perimeter of the building. Return baffles down to meet exterior edge of top plate.
 2. Maintain required clearance between underside of roof sheathing per shingle manufacturer requirements.
 3. Maintain required depth between top plate and baffle to maintain a minimum level of R-21 to exterior edge of top plate.
 4. Extend baffles sufficiently to allow insulation to the described depth/thickness.
- G. Ceilings/Attic Blow in Insulation:
1. Place insulation pneumatically, tight in truss bay spaces.
 2. Place insulation against baffles. Do not impede natural attic ventilation from eave to ridge.
 3. Place against and behind mechanical and electrical services within plane of insulation.
 4. Completely fill intended spaces. Leave no gaps or voids.
- H. Expanding polyurethane insulating foam insulation/sealant:
1. Clean surfaces from debris, dust, and dirt.
 2. Spray in place using care not to apply to adjacent surfaces.
 3. Trim back flush or slightly behind finish surfaces.

3.3 SCHEDULES

- A. Exterior Wall Sill Seal Insulation: ¼" thick foam roll under bottom plate, at areas of new sill plate.
- B. Exterior Stud Wall Insulation: New R13 batt, kraft faced, friction fit. Exterior walls where impacted by other work / existing framing is exposed.
- C. Demising Stud Wall Insulation: New R13 mineral wool blanket, friction fit. All demising walls where impacted by other work / existing framing is exposed.
- D. Demising Floor Insulation: New R30 mineral wool blanket, friction fit. All floors where finishes have been removed and where impacted by other work / existing framing is exposed.
- E. Attic Spaces: New R-38 blown in attic insulation. Install new baffles at eaves. Maintain existing insulation where it exists, supplement / blow in above existing to a minimum of R-38. All attics.
- F. Gaps/Cracks in floor slab around openings for bathtubs, piping, etc. and around perimeter of building foundation where wall meets slab: Fill gap or crack with expanding polyurethane foam sealant.
- G. Miscellaneous gaps and cracks in building envelope: Fill gaps with expanding foam sealant where applicable such as gaps at window and door openings, etc. Install minimal expansion foam at all locations where sealant may bow or warp materials.
- H. Expanding foam sealant: Install at all joints of stud/plate, sheathing, penetration of wiring into stud cavity top/bottom plates, into box/cable penetrations, around openings and other cracks/joints in building envelope. Install at all interior partitions at wiring, etc. through top/bottom plates.
- I. Expanding foam sealant: Install at all penetrations of ductwork, conduits, etc. through the floor, walls or ceiling. Cap all chases with a rigid air barrier as applicable for the condition. Seal all HVAC boots, electrical boxes, etc. to the gypsum board finishes.
- J. Expanding foam sealant: Install at backside of all stud cavity bays at joint between each wood stud and face of exterior sheathing. Typical all exterior walls where framing is exposed and as impacted by other work.

- K. Expanding foam sealant: Fill all cavities at framed building corners, etc. with foam sealant. Refer to drawings for framing details.
- L. Special Note: Refer to the air-sealing guidelines and requirements as part of Green Communities Requirements, and follow applicable requirements. All insulation shall be installed and certified as Grade 1 installation in accordance with Energy Star requirements.
- M. Note: Fibrous insulation is NOT acceptable as part of the air sealing strategies in the building envelope.**

END OF SECTION

SECTIONS 07 31 13 - SHINGLES AND ACCESSORIES

PART 1 GENERAL

1.1 WORK INCLUDES, BUT NOT LIMITED TO:

General: Intent of roof replacement project is to provide a functional 50-year new water resistance shingle system, resisting wind uplift pressures, thermally induced movement and exposure to weather without failure. Roof system must have been tested and approved [industry standard test] and have field experience by the manufacturer.

- A. Removal of existing shingles/underlayment and related items.
- B. Installation of shingles and underlayment.
- C. Installation of associated ice and water shield membrane and synthetic underlayment.
- D. Installation of vents, pipe boots and accessories.

1.2 APPLICABLE REFERENCES

- A. The following references form a part of this specification.
 - 1. ASTM D3462 Asphalt Shingles, Fiberglass, Class A, Mineral surfaced
 - 2. ASTM D1970 Rubberized Asphalt Membrane.
 - 3. ASTM B209 Aluminum.
 - 4. ASTM E 108 Fire Test of Roof Coverings
 - 5. [SMACNA] Sheet Metal and Air Conditioning Contractors Association- 6th Edition or Current Manual
 - 6. [OSHA] Occupational Safety and Health Administration, Guidelines
 - 7. ANSI/SPRI WD-1 Wind Design Standards
 - 8. CertainTeed, Shingle Applicators Manual [Current Edition].
 - 9. ASTM D3161 Wind Testing for Steep Sloped Roofing.
 - 10. ASTM D226/D4869 Underlayment.
 - 11. ASTM D7158 H, Wind Rating for Asphalt Shingles

1.3 PRECAUTIONS

- A. Do not install shingles or roofing when the temperature is below 45 degrees F or when rain or snow is falling.
- B. Do not overload the structure with storage of materials or equipment.

1.4 SEQUENCING/SCHEDULING AND PROTECTION

- A. Building space underneath roof work is utilized by on-going operations. Coordinate all work with Owner including, material storage and contractor parking. Owner's approval required before proceeding with the work. **Contractor must provide overhead protection for Owners / Residents / Visitors, etc from falling materials/debris at building entry points and other hazard locations.**
- B. Coordinate the work of installing all associated items in such sequence that will not necessitate movement of workers and equipment over completed roof areas.
- C. Sequence work so that all underlayment, flashing, etc. is installed to produce a watertight condition as work progresses.
- D. Protect building surfaces/interior spaces against damage from roofing work. It is the Contractor's responsibility to take any necessary actions to prevent construction-related leaks, to include but not limited to repairing watertight existing surrounding roofing scheduled to be replaced or overlaid. Surround roofing areas include roof top material storage areas, workers roof top access to from roofing work site areas and any drainage system [roof drain-scuppers] leak issues located in work area. Contractor must include the cost to deal with these existing

leak sources into the overall project unless the Owner is made aware of these leak sources prior to commencement of the project.

- E. Provide, erect barricades, guardrails as required by applicable regulatory advisory to protect occupants of building and workers.

1.5 MANUFACTURER'S WARRANTY [Shingles/Protective Membrane]

- A. Provide a manufacturer's warranty for both repairs/replacements due to any faults in the material and workmanship [Total System Responsibility]. Any leak repairs/replacement due to normal wear and tear, membrane defects, workmanship defects, damage due to wind speeds as noted [10 meters above ground], shall be performed at no charge to the owner through the period of the warranty.
 - 1. Shingles: Furnish a 15 year, 110 miles per hour wind warranty, 15-year algae resistance warranty, [50] fifty-year manufacturer's defects warranty with a prorated 10-year labor and material replacement warranty.
 - 2. Protective Membrane: Furnish a [30] thirty year prorated waterproof warranty.
 - 3. Vents: Lifetime warranty.

1.6 MEETINGS/COORDINATION

- A. A pre-installation conference one week prior to commencing work of this section will be mandatory. All parties responsible for work in this section are required to attend.
- B. Progress meetings will be held during construction. Memos resulting from these meetings will be provided to the Owner and Contractor by owner's rep.
- C. Daily reporting by the Contractor is required.
 - 1. Contractor to email project team daily with outline summary of work accomplished, any problems encountered such as bad deck, etc.
 - 2. Contractor to email project team on days when weather prohibits work to indicate a 'weather day'

PART 2 PRODUCTS

2.1 ASPHALT SHINGLES

- A. ASTM D 3462, CertainTeed SAINT-GOBAIN, Landmark PRO, Dimensional, two-piece laminated fiber glass construction, UL class A rating, 240 -267 pounds per square, self-sealing type, class F, algae resistance, wind rated and a manufactures defects and replacement warranty. Color to be selected by Owner from full range of colors.
 - 1. All shingles shall be from the same dye lot.

2.2 FASTENERS

- A. General: Fasteners/Anchors: strength, type and configuration must meet the required pull test resistance for each attachment application. Fasteners rate and pattern must be FMG or local code approved to meet the intent of the wind uplift rating specified. The contractor shall determine fastener lengths, minimum embedment: steel-3/4 inch, concrete/concrete block-1 1/4 inch, gypsum 2 inches and wood blocking 1 1/4 inch [decking 3/4 inch]. All fasteners shall be corrosion resistant steel in accordance with meeting ASTM F1667 [2015].

2.3 ACCESSORIES

- A. Cap Nails for Underlayment: Simplex, Plex-Cap, length as required to penetration wood decking 3/4 inch.
- B. Nails for shingles: Round wire type, corrosion resistant, 3/8-inch minimum diameter head, 11- or 12-gauge shank, length as required to penetration wood decking 3/4 inch [use longer nails for attachment of ridge vent, when required].

- C. Ridge Vents: CertainTeed filtered ridge vent, shingle-over vent, 9 Inches or 12 inches wide, polypropylene construction, internal baffles to deflect wind and drainage system, weep holes, 9 square inches of net free venting per linear foot, color black.
- D. Roof [static vents]: Lomanco, 750 series, slant back, weather tight sealed collar, pre-finished aluminum, size as required. Color to closely match shingle color.
- E. Pipe Boots: Manning Building Products 'Perma-boot or Protech Specialty Products , pipe boot.
- F. Plastic Cement: ASTM D4586, Asphalt type with mineral fiber components, free of toxic solvents, capable of setting within 24 hours at temperatures of 75 degrees F and 50 percent RH.
- G. Lap Cement: Fibrated cutback asphalt type, recommended for use in application of underlayment, free of toxic solvents.
- H. Flashing Materials:
 - 1. Sheet Flashings: As specified in Section 07 62 00.
 - 2. Gutters and Downspouts: As specified on Section 07 71 23.
- I. Base Flashing: 24 gauge galvanized steel, 4 inch roof / vertical flange, 7 inch long.

2.4 SHINGLE UNDERLAYMENT/RUBBERIZED ASPHALT PROTECTIVE MEMBRANE

- A. Ice and Water Shield: ASTM D 1970, CertainTeed WinterGuard or Equal, 40 mil thick self-adhering membrane with strippable release paper, homogeneous rubberized asphalt waterproofing compound, fiberglass reinforced, skid resistant sand / granular surface, self sealing
- B. Synthetic Underlayment: ASTM D-828; Synthetic high strength woven roof underlayment; 100% polypropylene fabrication; CertainTeed Roof Runner or Equal.
 - 1. Install and secure using the pre-printed nailing pattern for increased wind resistance.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify all existing and newly replaced wood decks are level and smooth after existing roof system, underlayment, and deteriorated decking is removed. Verify deck surfaces are dry, free of ridges, warps, or voids.
- B. Remove and replace deteriorated wood decking [deteriorated framing/conditions allowance].
- C. Verify roof penetrations and plumbing stacks are in place and flashed to deck surface.
- D. Verify roof openings are correctly framed.

3.2 PREPARATION

- A. Fill knot holes and surface cracks with latex filler at areas of eave and valley protection membrane. Cover knot holes with sheet metal.
- B. Broom clean deck surfaces under ice dam membrane and underlayment.
- C. Ensure penetrations are correctly framed.
- D. Fill all holes in areas where eave/valley protection membrane is being installed.
- E. Replace any deteriorated wood decking.

3.3 SHINGLE UNDERLAYMENT AND ICE AND WATER SHIELD MEMBRANE

- A. Ice and Water Shield Membrane Installation:
 - 1. Install ice and water shield membrane parallel with eave edge, flush with face of eave edge flashing with edges lapped shingle style and ends lapped and staggered between

- rows. Unroll underlayment parallel to the eave. Install over the drip edge at the eave flashing and under the rake edge flashing. Install underlayment in accordance with manufacturer's instructions without distortions capable of preventing shingles from sealing.
2. Weather lap joints minimum 2 inches at side laps and 6 inches at end laps.
 3. Secure underlayment in place with fasteners at the perimeter of the roll and in field of roll per manufacturer installation instructions.
 4. Install self-adhered protective ice and water shield membrane / underlayment at the following areas / conditions with careful detailing: Eaves, intersections of roof-wall [1 full sheet], rake / roof edges [1 full sheet], and valleys [1 full sheet centered in valley].
- B. Synthetic Underlayment Installation:
1. Install synthetic underlayment parallel to the eave edge with edges lapped shingle style and ends lapped and staggered between rows. Install underlayment in accordance with manufacturer's instructions without distortions capable of preventing shingles from sealing.
 2. Weather lap joints a minimum of 3 inches at side laps and 6 inches at end laps.
 3. Weather lap and seal items projecting through or mounted on roof watertight with plastic cement.
 4. Secure underlayment in place with fasteners at the perimeter of the roll and in field of roll per manufacturer installation instructions.
 5. Install synthetic roof underlayment at all roof areas which do not receive ice and water shield.
- C. Synthetic Underlayment Installation for roof slopes between 2:12 and 4:12
1. Install [2] layer application in accordance with the manufacturer's installation instructions for low slope applications.

3.4 ACCESSORIES INSTALLATION

General, all accessories shall be installed in accordance with manufacturer's written guidelines with installation summary as outlined herein.

- A. Ridge Vents shall be installed on ridges as where shown. After the underlayment is installed. Cut roof deck on both sides of the ridge. Center ridge vent over opening and nail in place. Install ridge shingles with nails long enough to penetrate the deck 1 inch.
- B. Intake Vents shall be installed on the lower section of the roof just above the eaves as shown. After the underlayment is installed, cut a slot thru the decking to allow for the venting. Center the vent over the opening and nail in place. Install new underlayment over the vent, over the underlayment install the starter shingles. Nail pattern may be deviated to avoid nailing into the slot.
- C. Static Box Vents to be located as shown and evenly spaced. Center the vent between rafters and approx. 24 inches down from the ridge. Saw out the deck where the vent is being installed. If the shingles have been installed, remove the nails so the flashing flange of the vent will slide under the shingles with the embossed arrow pointing up centered over opening. Once the throat of the vent is aligned, apply roof cement to the bottom of the vent. Seven nails are required to fasten the vent keeping the nail heads under shingles where possible or applying roof cement to exposed nail heads in accordance with manufacturer's recommendations.
- D. Metal Flashing and Accessories Installation:
1. Flashings shall be provided at the intersection of the roofs, adjoining walls, or projections through the deck.
 2. Shingle base flashing shall be installed in accordance with SMACNA Fig. 4-22A recommendations.
 3. Counter-flashing shall be surface mounted attached with wood fasteners as applicable fitted with EPDM washer at 12 inches on center with minimum of 1 inch embedment.

Apply bead of sealant on the top of the flashing. Counter flashing shall overlap base flashing sheet metal a minimum of 3 inches and shall terminate no lower than 4 inches above the finished roof surface, unless approved by the manufacturer.

4. Weather lap joints minimum 2 inches and seal weather tight with plastic cement.
5. Secure in place with nails. Conceal fastenings.
6. Flash and seal Work weather tight, projecting through or mounted on roofing with plastic cement.

3.5 SHINGLE APPLICATION

General, all shingles shall be installed in accordance with manufactures written guidelines.

- A. Apply starter strips at eaves. Starter strips shall consist of one layer of strip shingles laid with cutouts reversed. Project strip 1/2 inch beyond eaves line to form a drip overlap. Fasten strip in place within row of nails 1 inch above lower edge and spaced 3 inches on center. Lay first course of shingles directly on top of starter strip, flush with drip edge. Succeeding courses shall have chalk lines snapped as required for proper alignment. Nail 1 inch from each end of the shingle and 12 inches from each end, **6 nails per shingle**. All 6 nails must be placed on a white line 5-5/8 above the butt edge of the shingle. A cutout must never overlap another cutout in the below course. Firmly press each tab into the factory applied sealant. If the sealant appears not to be adhering the shingle apply new sealant.
- B. Ridges shall be 3-tab shingles cut in three sections or ridge shingles. Bend shingle at center, nail in place using 2 nails each located 4-1/2 inches from the exposed butt end and 1 inch from the side edge. Place to avoid exposed nails, all exposed nails shall have roof cement applied over nail heads. Use nails long enough to penetrate thru both layers of shingles and into wood 3/4 inch. Shingles installed over ridge vents shall have nails long enough to penetrate shingle all layers and into decking 1 inch.
- C. Valleys shall be the closed cut type [no metal], Install full length [course] shingles 12 inches beyond the valley center, nail shingles in place avoiding nails 6 inches from the center of valley. Chalk a line in the valley center, then cut shingles along chalk line using a sheet metal under shingles avoiding cut thru shingles below. Trim corners of each shingles at a 45-degree angle and apply sealant under shingles on both sides of the valley and any other area requiring sealant. Follow printed manufacturers installation instructions.

3.6 CLEAN UP

- A. Clean up all debris resulting from each day's work.

END OF SECTION

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SECTION 07 46 00 - FIBER CEMENT SIDING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes fiber cement siding for walls and soffits, composite trim, flashings, accessories, and fastenings.

1.2 SUBMITTALS

- A. Product Data: Submit data indicating materials, component profiles, fastening methods, jointing details, sizes, surface texture, finishes, and accessories.
- B. Samples: Submit two samples illustrating surface texture and color.

1.3 PRODUCT HANDLING:

- A. Stack siding and trim on edge or lay flat on a smooth, level surface. Protect edges and corners from chipping. Store under cover and keep dry prior to installing.

1.4 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.5 WARRANTY

- A. Limited product warranty against manufacturing defects for 30 years, non pro-rated

PART 2 PRODUCTS

2.1 FIBER CEMENT SIDING / SOFFITS

- A. Non-asbestos fiber-cement siding to comply with ASTM C1186, Grade II, Type A.
- B. Manufacturers:
 - 1. James Hardie
 - 2. Approved Equal.
- C. Siding to meet the following building code compliance National Evaluation Report NER 405; US Department of Housing and Urban Development Materials Release 1263. Non-asbestos fiber cement siding to be non-combustible when tested in accordance with ASTM E136.
- D. HardiePanel vertical siding, HardieSoffit requirement for Materials:
 - 1. Fiber-cement Siding - complies with ASTM C 1186 Type A Grade II.
 - 2. Fiber-cement Siding - complies with ASTM E 136 as a noncombustible material.
 - 3. Fiber-cement Siding - complies with ASTM E 84 Flame Spread Index = 0, Smoke Developed Index = 5.
 - 4. National Evaluation Report No. NER 405 (BOCA, ICBO, SBCCI, IBC, IRC).
 - 5. International Code Council Evaluation Services Report No. ESR-1844.
 - 6. International Code Council Evaluation Services Report No. ESR-2290
 - 7. International Code Council Evaluation Services Report No. ESR-2273.
- E. Panel Siding: Hardie Panel Vertical Siding, 48x96 inch sized sheets, Select Cedarmill finish
- F. Soffits
 - 1. Net Free Ventilation: 5 sq inches of net free ventilation per linear foot.
 - 2. Factory sealed on 5 sides.
 - 3. Thickness: 1/4 inch.
 - 4. Vented Cedarmill, 24 inch wide sheets x 8'-0" long [cut to width as required by existing conditions].

- G. Trim Accessories: As applicable to the installation

2.2 COMPOSITE TRIM

- A. Exterior synthetic/composite trim, ASTM C 1185
 - 1. Manufactured by Boral TruExterior Trim or Equal
- B. Properties:
 - 1. Density, ASTM C 1185, 40 to 50 pcf.
 - 2. Water Absorption, ASTM D 570: Less than 1.5 percent.
 - 3. Fungi Rot, AWPA E10:
 - a. White Rot: Negligible Loss.
 - b. Brown Rot: Negligible Loss.
 - 4. Termite Resistance, AWPA E1: Greater than 9.0 with 10 being impervious.
 - 5. Flexural Strength, ASTM C 1185: Greater than 1,600 psi
 - 6. Nail Withdraw, ASTM D 1761: Greater than 50 lbf/in.
 - 7. Coefficient of Linear Expansion, ASTM D 6341: 1.40E-05 in/in/degree F
 - 8. Flame Spread, ASTM E 84: Between 25 and 29.
 - 9. Smoke Developed, ASTM E 84: Less than 450.
- C. Trim Sizes: Coordinate with drawings as applicable.
 - 1. 1x3, 1x4, 1x6 trim at fiber cement siding panels [or sized as required to suit installation]
 - 2. 1x8 / 1x10 trim at fascia and rake
 - 3. Exposed Texture: Smooth.

2.3 PRE-FINISHING

- A. Factory applied primer system.
- B. Field applied final paint coating, Refer to Section 09 90 00.

2.4 FASTENERS

- A. Wood Framing: 16 gauge, galvanized ring shank nails or screws as applicable to the installation and meeting manufacturer requirements.

2.5 ACCESSORIES

- A. Flashings: 28 gauge thick metal to match siding.

PART 3 EXECUTION

3.1 PREPARATION

- A. Verify framing conditions are within allowable tolerances without twists, bows, waves, etc.
- B. Verify air infiltration barrier is installed and wall surfaces are ready to receive siding.

3.2 INSTALLATION

- A. Install flashing around wall openings, etc.
- B. Trim/Fascia and Rake
 - 1. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate a minimum of $\frac{3}{4}$ " into framing or full thickness of sheathing. Additional fasteners may be required to ensure adequate installation. Place fasteners no closer than $\frac{3}{4}$ " and no further than 2" from side edge of trim.
 - 2. Trim inside corners with a single board.
 - 3. Install single board at outside corner then align second corner board to outside edge of first board. Do not fasten trim board to trim board.
 - 4. Allow $\frac{1}{8}$ " gap between trim and siding.
- C. Siding:

1. Install materials in strict accordance with manufacturer's installation instructions.
 2. Install metal Z flashing and provide a 1/4 inch gap at horizontal panel joints.
 3. Place fasteners no closer than 3/8 inch from panel edges and 2 inches from panel corners.
 4. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.
 5. Maintain clearance between siding and adjacent finished grade.
 6. Specific framing and fastener requirements refer to Tables 2 and 3 in International Code Council Evaluation Report No. ESR-2290.
 7. Use off-stud metal jointer when vertical joints occur between framing members.
- D. Soffits:
1. Fasten into structural framing. Fasteners must penetrate a minimum of 3/4" into framing. Additional fasteners may be required to ensure adequate installation.
 2. Position ventilation toward fascia side.
 3. Place fasteners no closer than 1" and no further than 2" from side edge of trim.
 4. Install panels in moderate contact at ends, caulk joint.
- E. Align level, and plumb.
- F. Install metal flashings at sills, head of wall openings, and all areas required by siding manufacturer.
- G. Seal watertight.

3.3 FINISHING

- A. Apply full finish field coating over the factory primed siding and trim. Refer to Section 09 90 00.

END OF SECTION

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SECTIONS 07 53 00 / 07 72 00 – SELF- ADHERED [EPDM] ROOFING AND ACCESSORIES

PART 1 - GENERAL

1.1 WORK INCLUDES, BUT NOT LIMITED TO:

General: Intent of project is to provide a functional 20-year new watertight roof system, resisting wind uplift pressures, thermally induced movement and exposure to weather without failure. Roof system must have been tested by an approved testing agency and have field experience by the manufacturer. Provide and install all roof components and accessories for a complete watertight roof system.

- A. Clean and dry deck surface.
- B. Installation of a new EPDM roofing system, self-adhered system [see roof schedules].
- C. Installation of new flat stock and tapered insulation and insulation saddles.
- D. Installation of new membrane flashings and roof accessories.
- E. Raising existing curbs on mechanical units, vents, etc and rework, disconnect/ extend ducting/ electrical /gas lines to accommodate new insulation heights, flashings, penetration covers and sheet metal as required. Electrical connections/utility hookups removed and reinstalled by Electrical contractor as applicable.
 - 1. All work required for plumbing, mechanical, and electrical disconnect and reconnect, rework, etc. as necessary for the proper execution of the work shall be included within the Contractor's scope – this will NOT be accomplished by the Owner, unless specifically noted.

1.2 APPLICABLE REFERENCES

- A. The following references form a part of this specification.
 - 1. ASTM C 1289-13 Polyiso Insulation Board, Type II, Class 2, Grade 2 and HD Cover Board, Type II, Class 4, Grade 1
 - 2. ASTM E108 Fire Test of Roof Coverings.
 - 3. [FMG] Factory Mutual Global - Current Approval System [NAV assembly numbers], Loss Prevention Data Sheets for Roof Deck Securement for Above Deck Roof Components, Perimeter Flashings, Wind Design-ANSI/FM 4474, Approval Standard FM 4470 and Roof Loads for Construction
 - 4. [UL] Underwriters Laboratories - Roofing Materials and Systems Directory, Fire Resistance Directory, Current Edition.
 - 5. [NRCA] National Roofing Contractors Association - Current Roofing and Waterproofing Manual.
 - 6. [AISC] Manual of Steel Construction
 - 7. [OSHA] Occupational Safety and Health Administration, Guidelines
 - 8. [ASCE] 7-10 Minimum Design Loads for Buildings
 - 9. [ANSI/SPRI/FM] 4435 ES-1 Wind Design for Edge Systems
 - 10. [NFPA] National Fire Protection Association, 58 Liquefied Petroleum Gas Code
 - 11. [ANSI/SPRI] WD-1 Wind Design Standards
 - 12. ASTM D4637 Ethylene Propylene Diene Monomer [EPDM].

1.3 SUBSTITUTIONS / EQUALS

- A. When a particular make or trade name is specified, it shall indicate the standard quality required. Bidders proposing substitutions shall submit the following seven [7] days prior to bid date. Refer to Contract Documents.
 - 1. Refer to Section 01 25 00 – Substitution Requests.

1.4 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in manufacturing EPDM roofing membranes specified in this section, with minimum 10 years' experience.
 - 1. All roofing materials supplied must be manufactured or manufacturer approved by the company furnishing the warranty including the metal roof edge and coping [if integrated in the roof membrane] - single source responsibility. The manufacturer must manufacture the membrane material furnished as a minimum.
 - 2. The roofing material manufacturer [manufacturer of record] must submit a letter stating that the applicator is approved to use the products as furnished, is licensed to install their material in the state in which the project is located, that the applicator can obtain the warranties as outlined in the specifications in accordance with the roof system requirements and details as drawn and the products are acceptable for use on the surfaces to which they are being applied. In addition, an outline of the roofing system components product name and their securement requirements shall be included with the letter.
- B. Applicator: Company specializing in applying single ply with minimum 5 years documented experience, never been terminated by a manufacturer for workmanship problems, be approved for minimum 5 years by the manufacturer for use of their materials and can provide the warranties as specified. No deviations from the roof membrane products specified herein unless approved by the Owner.
- C. Inspection: Prior to, during mid-point installation and at completion, an inspection shall be made by the manufacturer's representative to assure that the roofing system is/has been installed in accordance with their requirements and recommendations.
 - 1. An inspection status report at mid-point of construction shall be prepared by the manufacturer's rep, no later than 3 days after the inspection.
- D. Training: The roof foremen or at least 1 assistant working on this project must either be a 'Journeymen Roofer' or have attended and completed the roof material membrane manufacturer's approved installation course herein within the last two years of the bid date with the membrane/s specified herein. **[Certificate of proof required or letter from manufacturer as part of the submittal]**. Roof foremen must have a minimum of 5 years' experience with application of EPDM roof systems and be able to interpret specifications and drawings [Contract documents must be always on-site].
- E. Drainage Testing: The Contractor shall test each roof drain and/or downspouts/scuppers for proper water flow and notify the Owner of any clogged drainage and drains that cannot have the roof membrane secured with the existing clamping ring [broken, bolts, etc] before commencement of work. Commencement of work shall constitute acceptance of drainage device and any costs to unclog or repair these items shall be borne by the Contractor.
- F. Contractor shall have a large waterproof tarp on site for sudden inclement weather.
- G. Contractor to provide any power necessary to accomplish the work, Owner may or not provide power.
- H. Existing membrane penetrations or leak sources within work area must be repaired watertight before commencement of new work.

1.5 REGULATORY PERFORMANCE REQUIREMENTS

- A. Fire Hazard Classification: Underwriters Laboratories [UL], Use only Class A fire-rated materials as tested in accordance with ASTM E 108 or UL 790 for exterior fire.
- B. American Society of Civil Engineers [ASCE], Factory Mutual Global Corporation [FMG]/Roof Material Manufacturer/NRCA: Roof materials supplied must be FMG approved meeting FM 4470 test standards, meeting the intent of the test criteria set forth in FMG/ANSI standard 4474 and ANSI/SPRI WD-1 to resistance the uplift wind design pressures as noted on the

drawings and for FMG windstorm resistance classifications, to support internal/external fire, [metal decks], to support corrosion resistance fasteners/anchors and impact resistance for severe hail [SH] rating. The roof membrane manufacturer in compliance with the building code must provide the roof assembly securement requirements to resist the wind pressures as noted along with meeting the roof warranty wind requirements and other requirements as shown and outlined in the specifications. The manufacturer's roof assembly securement must not be less stringent than the ASCE 7-10 calculations or FMG [if insured] and must be successfully tested to resist wind uplift pressure according with ANSI/SPRI WD-1 standard. A field pull [ANSI/SPRI FX-1] or adhesion test [ANSI/SPRI 1A-1] will be necessary prior to commencing work when conditions are different than manufacturer's assembly test criteria for their approval to meet the design pressures or required by the state building codes or be conducted per RDA Architects request. If a test has been accomplished the results will be provided herein.

- C. Occupational Safety and Health Administration [OSHA]:
 - 1. Asbestos roof materials training for the removal, handling and monitoring.
 - 2. Roofing safety requirements for torch application.
 - 3. Walking working surfaces and fall protection standards.

1.6 STATE/FACTORY MUTUAL [FM] APPROVALS AND STANDARDS *[these approvals/standards reference the design products contained herein. Equal products must provide applicable product approvals].*

- A. AMERICAN SOCIETY OF CIVIL ENGINEERS - Minimum Design Loads for Buildings and Other Structures.
 - 1. ANSI/ASCE Revision 7-10 - refer to wind pressure zones on the drawings.

1.7 MEETINGS/COORDINATION

- A. A pre-installation conference one week prior to commencing work of this section will be mandatory. All parties responsible for work in this section are required to attend.
- B. Progress meetings will be held during construction. Memos resulting from these meetings will be provided to the Owner and Contractor by RDA.
- C. Daily reporting by the Contractor is required.
 - 1. Contractor to email project team daily with outline summary of work accomplished, any problems encountered such as bad deck, etc.
 - 2. Contractor to email project team on days when weather prohibits work to indicate a 'weather day.'

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Do not overload structure with storage of materials, verify roof deck weight capacity and location of structural supports, only items needed that day shall be stored on the roof. Limit loads on roof to 25 pounds per square foot for uniformly distributed loads for metal/gypsum decks, 75 pounds per square for concrete decks. Provide temporary securement of existing membrane to prevent membrane blow off while installing new roof system.
- B. Store and protect products in accordance with manufacturer's instructions.
- C. Deliver products in manufacturer's original containers, dry, undamaged, with seals and labels intact. All materials must be UL or FM labeled.
- D. Store products in weather-protected environment [manufacturer's plastic wrap is accepted for proper protection if approved by the manufacturer, unless wrap is broken, torn, removed], clear of ground 4 inches min. and moisture. Use breathable tarps for moisture protection as needed. Protect unwrapped foam insulation and liquids from direct sunlight exposure. Water damaged materials will be marked 'rejected' by the Contractor/Owner or RDA and removed from the site.

- E. Storage of flammable liquids in buildings is prohibited. All combustible debris shall be removed from the site daily.
- F. Storage shall be in areas designated by Owner.

1.9 WEATHER CONDITIONS

- A. Do not apply roofing system during inclement weather or when the chance is 40% or greater, percentage as listed on www.weather.com for the local area, percentage as listed when read at 7 AM local time or at time of work commencement. Proceed with roofing and associated work when weather conditions will permit unrestricted use of materials and quality control of the work being installed.
- B. Do not apply roofing system to damp or frozen deck surface.
- C. Adverse weather conditions e.g. extreme temperature, high winds, high humidity, and moisture could have a detrimental effect on adhesives, contact manufacturer for acceptable tolerances. See additional restrictions specified herein.

1.10 SEQUENCING AND SCHEDULING

- A. Building space underneath roof work is utilized by on-going operations. Coordinate all work with Owner including material storage and contractor parking. Owner's approval required before proceeding with the work. Contractor must provide overhead protection for Owner's workers, public, visitors, etc from falling materials/debris at building entry points.
- B. Coordinate the work of installing all associated items in such sequence that will not necessitate movement of workers and equipment over completed roof areas.
- C. Sequence daily work of new roofing to be limited only that can be covered and made 100% watertight at the end of each day, including full adhesion of the membrane, flashings and night seals. No temporary roofing shall be allowed unless approved by Owner.

1.11 MANUFACTURER'S WARRANTIES

- A. Provide a manufacturer's warranty for both repairs/replacements due to any faults in the material and workmanship [Total System Responsibility]. Any leak repairs/replacement due to normal wear and tear, membrane defects, workmanship defects, damage due to wind speeds up to 72 mph [10 meters above ground], shall be performed at no charge to the Owner through the period of the warranty. Roof warranty shall be a no dollar limit type [NDL] with no penal sum, covering all insulation, fasteners, membrane, flashings, liquid flashing, metal coping/edging, regardless of the manufacturer. Warranty must be transferable and must be signed by the Manufacturer of record and the Owner, if required. When a Contractor warranty is provided or implied, this warranty must bind the Manufacturer and Contractor, for the terms of their agreement, to perform any necessary repairs/replacements for the term of the warranty [in most cases two years].
 - 1. .060-inch-thick EPDM Roof Membrane shall be warranted for [20] twenty years.
- B. In the event of a default by the Contractor, the Manufacturer will provide a new contractor to fulfill the warranty obligation.

1.12 PORTABLE FIRE EXTINGUISHERS

- A. Two standard listed multipurpose dry chemical fire extinguishers, NFPA 10, with 10-pound capacity and an ABC UL rating shall be provided and located 20 horizontal feet from the work area. Additional fire extinguishers shall be provided for different roof levels/work sites.
 - 1. Contractor to ensure all personnel are trained to use fire extinguishers.

PART 2 PRODUCTS

General: All products shall be state approved, and Building Code approved as applicable, meeting all manufacturers full system roof warranty requirements. *Some items below may not be required for this project but are outlined herein if required during course of work due to changing conditions or changes in scope.*

2.1 ROOFING SYSTEM DESCRIPTIONS

General: System Assembly Applications/Scopes, Roof Removal and Replacement.

- A. Manufacturers and Membrane Products and Membrane Designation: [Single Ply]: Ethylene Diene Monomer [EPDM] .060 inches thick, non-reinforced, self-adhered, color black.
 - 1. Firestone Building Products, Fullforce EPDM
 - 2. Carlisle SynTec., Sure-Seal FR EPDM SAT.
- B. Insulation [polyisocyanurate] Manufacturers:
 - 1. Firestone Building Products
 - 2. Carlisle SynTec
- C. Cover Board [CB]:
 - 1. Firestone, ISOGARD HD
 - 2. Carlisle, SecurShield HD FR
- D. Base Flashing Designations: same as roof system unless manufacturer requires a different product for their warranty or as noted herein. Use manufacturer approved liquid membrane system product for flashing conditions where flashing height is less than 6 inches and unusual shaped metal supports and other areas as required by the manufacturer where noted or as required by condition. Use manufacturer approved molded products where liquid flashing system will not provide a watertight condition.
 - 1. Other Flashing Designation- Manufacturer's approved details for 20-year warranty.

The Contractor's quote must match the roof system including all components and application procedures [cover board, fasteners, membrane and etc.] The roofing schedules set the parameters for the roof system assembly and its application procedures.

ROOFING SYSTEM SCHEDULES

ROOF SYSTEM [EPDM]

Low Sloped Wood Deck

| | |
|------------------|--|
| Preparation: | See Preparation for Reroofing and the proposed roof matrix. |
| New Insulation: | ¼ inch per foot tapered insulation [reverse sloped as required to level deck] with starting thickness of +/- 1 ½ inches, loose laid over clean wood deck [tack in place as needed] |
| New Insulation: | ¼ inch per foot tapered insulation with starting thickness of +/- ½ inch, loose laid over clean wood deck [tack in place as needed] |
| New Cover Board: | One-layer, flat stock, HD cover board on top of new insulation, mechanically fastened thru all layers of insulation into wood deck. |
| New Top Sheet: | One ply EPDM membrane, adhered to the new cover board. |

2.2 SHEET MATERIALS/COMPONENTS

General: all membrane component flashings, etc shall match the same color as the membrane.

- A. Elastomeric Sheet: ASTM D4637, type I, class A material, cured, synthetic, non-polyester reinforced, self-adhered, single ply membrane composed of Ethylene Propylene Diene Monomer [EPDM], BLACK, .060 inches thick.
- B. Membrane Flashing: ASTM D4811, Type II, .055 -.060 inches thick, black, non-reinforced, semi-cured, synthetic, single ply EPDM.
- C. Self-Adhesive Flashing: un-cured .045 inches thick, EPDM membrane laminated to 35 mil EPDM tape adhesive.
- D. Lap Splice Tape: .035 inches thick, EPDM-based, formulated for compatibility w/EPDM membrane, self-adhering, cured, width as required.
- E. Adhesive Primer: Solvent based synthetic rubber based formulated for compatibility w/EPDM membrane.
- F. Splice Adhesive: Synthetic polymer-based, if required.
- G. Bonding Adhesive: N/A.
- H. Water Block Seal: Butyl rubber sealant.
- I. Splice Cleaner: Organic solvent mixture.

2.3 INSULATION AND COVER BOARD

General: All flat stock insulation or cover board shall be from the same manufacturer. Board configuration: 48-inch x 96-inch thickness [mechanically fastened] or 48-inch x 48-inch thickness for adhered [adhesive] applied. Mixing of insulation panels from different manufacturers is not acceptable. All insulation/cover board shall be supplied and approved by the membrane manufacturer and must meet FMG 4450 or UL 1256 as a tested assembly.

- A. Flat Board Stock: ASTM C1289, closed cell polyisocyanurate, square edge/rigid board, type II, class 2, grade 2, coated bonded inorganic glass fiber reinforced mat facers on both sides, square edges, minimum 20 psi compressive strength, size boards as approved for application and by the roof membrane manufacturer.
 - 1. Includes in-fill for tapered saddles and/or insulation. Thickness as outlined.
- B. Tapered: ASTM C1289, closed cell polyisocyanurate rigid board; type II, class 2, grade 2, coated bonded inorganic glass fiber reinforced mat facers on both sides, factory tapered, minimum 20 psi compressive strength, size boards as approved for application and as supplied by the roof membrane manufacturer. The roofing Contractor and the tapered insulation manufacturer designer must assume design/application responsibility for the performance of the submitted tapered insulation layout.
- C. Cover Board: ASTM C 1289, Type II, class 4, grade 1 [80-109 PSI], 1/2-inch-thick, polyisocyanurate, square edge/rigid board, coated bonded inorganic facer with a water-resistant high-density closed cell core.
 - 1. Top layer over new insulation.

2.4 CANTS / EDGE

- A. Cant Strips and Tapered Edge Strips: Perlite, fire resistant, performed to 45 degree angle and 18 inch long tapered edge strip, tapered front to back as required by the Manufacturer.

2.5 ROOF FASTENERS and ACCESSORIES *[some items may not be required for this project]*

General: Fasteners/Anchors: strength, type and configuration must meet the required pull test resistance for each attachment application. Fastener's rate and pattern must be FMG, or local code approved to meet the intent of the wind uplift rating specified. The Contractor shall determine

fastener lengths, minimum embedment: wood-1 1/4 inch. Fastener manufacturers listed are ITW Buildex, IWT Red Head, OMG and Tru-Fast or equal. All fasteners shall be corrosion resistant steel in accordance with meeting or ASTM F1667 [2015] or type 304 stainless steel.

- A. Summary of fasteners and requirements are as follows:
1. Roofing and Other Nails: square or round head, ring shanked galvanized or non-ferrous type, length and diameter as required to suit application.
 2. Metal Counterflashing and other LG metal sheets to Wood: ITW Buildex, 'TruGrip, #9, self-piercing, corrosion resistance steel shank with EPDM washer.
 3. Metal Counterflashing and Other LG Sheet Metal [exposed] to Masonry: ITW Buildex, 1/4 inch, 'Scots Tapcon', stainless steel-hex head, ATF treads, corrosion resistant steel shank, with EPDM washer.
 4. Termination Bars [exposed] to Masonry: ITW Buildex, 1/4 inch, 'Scots Tapcon', stainless steel-hex head, ATF treads, corrosion resistant steel shank, with EPDM washer.
 5. Insulation Fasteners/Plate, Metal Deck: Steel, HD #14, red, phillips head, superior corrosion resistance with a 3-inch round metal cap, meeting FMG 4470 standard requirements and must be supplied or approved by the roofing manufacturer for their warranty.
 6. Edge Securement [EPDM]: Reinforced perimeter fastening strip RTS, 6 in. wide, .045 in. thick, polyester scrim reinforced, with factory laminated self-adhering tape, fastened in place to the wall or the deck at 12 inches on center with manufacturer approved fasteners and plates.
 7. General Purpose Stainless Steel: Series 304 fasteners, with or w/out EPDM washers.
- B. Summary of accessories items and requirements as follows:
1. Pre-Molded Manufactured Accessories: Molded EDPM, color to match field, .050-.075 inch thick, pipe flashings, etc. Manufacturer warranted accessories.
 2. Pourable Sealer: Polyurethane, Manufacturer's standard.
 3. Termination Bars: Aluminum 1.3-inch-wide, 10 feet long, 1.08 inch [min.] thick bars with flat or with [integral caulk edge], as applicable per manufacturer.
 4. Pipe Supports/Hangers:
 - a. Manufactured by Portable Pipe Hangers, Adjustable, stainless metal components, polypropylene base, 'type SS8 – C or R [up to 2 1/2 inch pipes] or PP10' [up to 3 1/2 inch pipes], as required for conditions.
 - b. Manufactured by OMG, Pipe-Guard, non-adjustable, PGM-BK, PGS-BK, PGTS-BK pipes up to 2 inches, as required for conditions.
 - c. Manufactured by Advanced Supports Products, EcoCurb or equal. Pipe supports for Condensate Lines/Piping.
 5. Rail Curbs: Manufactured by Pate, type es-1, es-2 or es-5, as required for condition, size as required by unit base size including unit tie downs or as shown.
 6. Vent Pipe Extenders: Manufactured by Tubos, Clearwater, FL, PVC pipe extenders.
 7. Edge Securement: Seam perimeter fasteners with 2-inch steel seam plates, anchoring an RPF strip, 6-inch-wide, .045-inch-thick, polyester scrim reinforced, with and without factory laminated self-adhering tape.
 8. Bib Metal: 24-gauge stainless steel or pre-finished [match housing color] steel, minimum 4 inch wide.
 9. Equipment enclosure: 24-gauge stainless steel, shop or pre-manufactured with top fabricated [angled] to allow no moisture from entering the pipe areas, access to pipes required. Install mortar in the bottom of base with polyurethane pourable sealer poured around pipes [2-inch depth minimum]. Seal pipes that exit enclosure with sealant/foam.

2.6 SEALANTS/TAPES

- A. General Use: ASTM C920, Type S, Grade NS, Class 25 as required for each joint condition, single component, elastomeric silicone polymer, non-staining, non-shrinking, non-sagging, and ultra-violet resistance, clear or to match surrounding existing color.
 - 1. Tremco's 'Dymonic' [basis for sealant]. Provide where sealant is exposed to weather or movement exceeds butyl sealant capability.
- B. Butyl Sealant: ASTM C1311, single component, solvent released butyl rubber sealant, polyisobutylene plasticized.
- C. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release paper.

PART 3 EXECUTION

3.1 EXAMINATION / LEVEL SURFACE CONDITIONS

- A. Verify that surfaces and site conditions are ready to receive work. Verify that deck is clean and smooth, free of depressions, irregularities, or projections, properly leveled, start of work constitutes acceptance of conditions.
 - 1. Verify that all wood blocking, nailers are securely anchored in place.
- B. Areas of substrate where ponding water will occur [3/4" deep or greater] one hour after rainfall] shall be built-up in accordance with the leveling fill manufacturer's recommendations prior to the installation of the final mineral surfaced cap ply sheet. Failure to perform this action could result in total roof removal, string leveling prior to final ply recommended.

3.2 PROTECTION

- A. Protect building surfaces/interior spaces against damage from roofing work. It is the Contractor's responsibility to take any necessary actions to prevent construction-related leaks, to include but not limited to repairing watertight existing surrounding roofing scheduled to be replaced or overlaid. Surround roofing areas include roof top material storage areas, workers roof top access to from roofing work site areas and any drainage system [roof drain-scuppers] leak issues located in work area. Contractor must include the cost to deal with these existing leak sources into the overall project unless the Owner/Owners rep is made aware of these leak sources prior to commencement of the project.
- B. Provide, erect barricades, guardrails as required by applicable regulatory advisory to protect occupants of building and workers.
- C. Cover all drains and other openings intended for drainage during construction to prevent clogging of system, remove at the end of each day to allow for drainage.
- D. Special precautions shall be taken to avoid fumes from entering the facilities through air intakes, coordinate with owner to deal with active A/C units.

3.3 INSULATION / COVER BOARD APPLICATION

General: Secure insulation/cover board to roof deck to the requirements of FMG loss Prevention Data Sheet 1-28 and 1-29 to include additional securement at the corners and perimeters. Install insulation including saddles [if required] as shown on the contractor/manufacturer-approved layout. This layout must be capable of draining the roof completely into drainage elements after 48 hours following a rainfall with an outside average temperature of 65 For higher [partly sunny or sunny conditions]. The layout pattern must not block the flow of rainwater into any roof top unit/ventilator.

- A. Wood Decks: Loose laid/tack in place to the wood deck. Install new tapered insulation, tapered saddles and new cover board over existing deck, as applicable and as shown. Mechanically fasten the cover board thru insulation into the deck below in accordance with the Manufacturer's /Contractors approved layout, including the new tapered insulation saddles.

Insulation shall be installed with long joints continuous and short joints staggered no less than 12 inches to a maximum of half the board length/width from the joints in adjacent rows. Any portion of an insulation board that falls within the calculated perimeter or corner zones has the increased securement applied over the entire board. Offset joints of top insulation layers/cover board from bottom layers/saddles no less than 6 inches.

- B. Level all decks as necessary prior to starting work.
- C. Apply no more insulation than can be sealed watertight with roofing membrane in the same day. Cut insulation to fit neatly to perimeter blocking and around penetrations through the roof, maximum joint width 3/8 inch.
- D. All ventilators, A/C unit curbs, supports etc. [square or rectangle] will have a tapered edge strip [formed as a saddle] placed around the high side of unit to slope water from unit. Ventilators, A/C unit, supports etc. curbs over 2 feet wide will require insulation saddles sloped 1/2 inch per foot.
- E. Provide adequate separation of insulation between hot exhaust stacks.

3.4 MEMBRANE APPLICATION AND BONDING

General: Install roofing sheets as per manufacturer's recommendations and the following summary of requirements. Only install membrane when outside temperature of 40-degree F or higher.

- A. Beginning at the low point of the roof, place the membrane without stretching over the acceptable substrate and allow membrane to relax a minimum of 30 minutes before attachment or splicing.
- B. After making sure the sheet is placed in its final position seams shed water or parallel to the water flow, adjoin sheets in a manner that all lap seams along the length of the membrane overlap 3 inches for application of seam tape. The membrane should be smooth, clean, and free of wrinkles and buckles.
- C. Starting from the center split of the exposed release liner, remove the liner on both sides at a 45-degree angle beyond the membrane edge. Remove approx. 5 feet of release liner from one end of the sheet and adhered it to the cover board. Do not fold the length of the roll in half. Keeping the membrane flat and secured and seams aligned continue removing the release liner. Removal of the liner should be accomplished by two people.
- D. Use a stiff bristled broom and apply pressure to initiate adhesion. Broom the installed membrane across the width working towards the roof edge. Do not use a weighted roller.

3.5 MEMBRANE SPLICING [Factory Applied Tape]

- A. Position the sheet at the splice area by overlapping membrane. Tack the sheet back with primer at 5' centers and at factory splices or as necessary to hold back the membrane at the splicing area. Remove excess amounts of dusting agent on the sheet and at factory splices using a stiff push broom. Apply primer to both surfaces at the same time to allow the same flash off time. Additional scrubbing is required at areas that may have become contaminated or have excess amounts of dusting agent, and at all factory splices.
- B. Position the seam splice tape on the bottom sheet, aligning the edge of the release paper with the markings. When adhering factory adhered tape, pull the backing from the tape and allow the top sheet to fall freely onto the exposed primed surface. Immediately roll the splice tape with a 3 inch-4-inch-wide silicone or silicone sleeved steel hand roller or a short nap 3-inch paint roller.
- C. When the seam splice tape has been installed for the entire splice length, trim the top sheet as necessary to assure that 1/8 inch-1/2 inch of the seam splice tape will be exposed on the finished splice. Broom the entire length of the splice as the release paper is being removed.

- D. Roll the splice using a 1-1/2 inch-2-inch-wide silicone or silicone sleeved steel hand roller, first across the splice, and then along the entire length of the splice.

3.6 FLASHING APPLICATIONS – Vertical Surfaces, etc.

General: Secure membrane when there is an angle change greater than 2 inch 12 inches with a reinforced perimeter fastening strip [RPS] fastened to the deck or wall, see manufacturer's recommendations for exceptions.

- A. Remove loose or unsecured flashings, mineral surfaced or coated flashings and excessive asphalt to provide a smooth, sound surface for new flashings.
- B. Apply primer to wall surface allow to dry. Roll the field EPDM membrane up the vertical surface evenly and carefully to minimize wrinkles.
- C. Install T-Joint covers at field and other splice intersections as required by manufacturer. Apply tape at laps if membrane is not self-adhered type throughout out the sheet [edge to edge].
- D. Provide termination directly to the vertical by a termination bar set in water block seal and other requirements as shown on the drawings.

3.7 FLASHING APPLICATION - Edge, Pipes and Drains.

General: Install flashing sheets over cants strips and other vertical surfaces, at edges and penetrations through roof as per manufacturer's recommendations, requirements of FMG loss Prevention Data Sheet 1-49 including details and the following requirements.

- A. EDGES
 - 1. Apply primer to the metal edging and membrane. Remove approximately 2 ft.-3 ft. of release paper from the seam flashing and apply to the metal flange and membrane. Lap adjacent rolls of seam flashing a minimum of one inch with a 2 inch-3-inch-wide silicone or silicone sleeved steel hand roller, roll the seam flashing ensure proper adhesion. Additional attention must be given to factory splice intersections and to any change in plane.
 - 2. Apply 6-inch length of seam flashing, a seam Joint Cover, or 6-inch x 6-inch form flash to the inside edge of the seam flashing at all overlaps and at all intersections between the seam flashing and field fabricated splices.
 - 3. Apply seam edge treatment at the intersections of the flashing sections.
 - 4. If the roof edge includes a metal edge and sealant is not applied between the laps in the metal edging, an additional piece of seam flashing shall be applied over the metal lap to the top of the metal edge, after the initial application of seam flashing. Seam edge treatment shall be applied at the intersections of the two flashing sections.
- B. PIPES
 - 1. Flash pipes with manufacturer's pre-molded flashing to max. extent possible or form flash only when pre-molded flashing is not available. Prime and install an additional 12-inch seam flashing over pre-molded flange.

3.8 LIQUID FLASHING

- A. Liquid flashing [LF] system [PMA] shall be installed on a clean roof surface with a reinforced polyester fleece fabric in a multi-layer [resin/fleece/resin] configuration with PMA resin applied [fully saturating fabric] at 2 gallons per square feet with resin top coat, Extending vertically and 8 beyond the base of penetration. LF shall be installed where noted or as required by condition per the manufacturer. Install in accordance with manufacturer's printed detail or as shown.

3.9 INSTALLATION OF ROOF ACCESSORIES

- A. Expansion joint, and other accessories not noted herein shall be installed in accordance with the manufacturer's recommendations and as shown on the drawings.
- B. Rail curbs, equipment stands, and pipe supports shall be installed in accordance with the manufacturer's instructions. Anchoring to substrate and tie downs as shown. Place curbs on deck and position curbs ends to allow water to flow toward drains or gutters.
- C. Equipment enclosure shall be 24-gauge stainless steel, shop or pre-manufactured with top fabricated [angled] to allow no moisture from entering the pipe areas. Install mortar in the bottom of base with polyurethane pourable sealer poured around pipes [2-inch depth minimum]. Seal pipes that exit enclosure with sealant/foam.
- D. Penetration pans shall have mortar installed in the bottom of pitch pans with polyurethane pourable sealer [2-inch min] filled to the top of the pan, then slope.

3.10 FIRE SAFETY

- A. Measures to be implemented by the contractor to minimize the possibility of fire and to provide a safe work environment. It is the responsibility of the contractor performing any work to comply with the safety provisions of the National Fire Codes pertaining to such work along with other requirements specified herein. In the event of a fire of any size, contractor shall notify the Local Fire Department.

3.11 WATER CUT-OFF

- A. At the end of the day's work or when precipitation is imminent, a water cut-off or other waterproof protection shall be provided to ensure a watertight condition is obtained, between the new and existing conditions, remove cut-off prior to resuming the installation of the roofing system.

3.12 CLEANING

- A. In areas where finished surfaces are soiled by any other source of soiling caused by work of this section, consult manufacturer for cleaning advice.

END OF SECTION

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SECTIONS 07 62 00/07 71 00 - SHEET METAL, FLASHING

PART 1 GENERAL

1.1 WORK INCLUDES BUT NOT LIMITED TO:

General: Intent of project is to provide new sheet metal components for the new roof systems and related fascia / rake components.

- A. Removal of existing sheet metal items as noted and in the preparation of reroofing section.
- B. Installation of new sheet metal items:
 - 1. Wind-rated edge, ES-1 approved as applicable.
 - 2. Drip edges [face less than 3 ½ inches, non-wind rated]
 - 3. Fascia and rake metal covers.
 - 4. Fasteners.
 - 5. Bib flashing, counter flashing and other sheet metal items.
 - 6. Gutters and downspouts.

1.2 APPLICABLE REFERENCES

- A. General: The following references form a part of this specification.
 - 1. ASTM A653 Metallic Coated, Sheet Steel [Galvanized], Grade A, Hot Dipped, Zinc Coated, Coating Class G90.
 - 2. ASTM A792, Metallic Coated, Sheet Steel [Galvalume and Galvalume plus], Grade 40, Coating Class A250 [galvalume] or AZ55 [galvalume plus], 55 % Aluminum-45 % Zinc Alloy.
 - 3. ASTM A755, Pre-Finished, Sheet Steel [Galvanized/galvalume], Grade 40, Coating Class A250 or G90, Pre-painted by the coil coating process.
 - 4. ASTM B209, Aluminum.
 - 5. ASTM E108 Fire Test of Roof Coverings.
 - 6. [FMG] Factory Mutual Global - Current Approval System [NAV assembly numbers], Loss Prevention Data Sheets for Roof Deck Securement for Above Deck Roof Components, Perimeter Flashings, Wind Design-ANSI/FM 4474, Approval Standard FM 4470 and Roof Loads for Construction
 - 7. [UL] Underwriters Laboratories - Roofing Materials and Systems Directory, Fire Resistance Directory, Current Edition.
 - 8. [NRCA] National Roofing Contractors Association - Current Roofing and Waterproofing Manual, including shop-fabricated edge metal testing data.
 - 9. [AISC] Manual of Steel Construction
 - 10. [SMACNA] Sheet Metal and Air Conditioning Contractors Association-Current Manual
 - 11. [OSHA] Occupational Safety and Health Administration, Guidelines
 - 12. [ASCE] 7-10 Minimum Design Loads for Buildings
 - 13. [ANSI/SPRI/FM] 4435 standard ES-1-17 Wind Design for Edge Systems
 - 14. [NFPA] National Fire Protection Association, 58 Liquefied Petroleum Gas Code
 - 15. [ANSI/SPRI] WD-1 Wind Design Standards

1.3 QUALITY ASSURANCE

- A. Fabricator/Installer: Company specializing with skilled workers in sheet metal with minimum 5 years documented experience, never been terminated by a manufacturer for workmanship problems and be capable of providing the warranties as specified.
- B. Sheet Metal items and installation shall comply with SMACNA's [Architectural Sheet Metal] and NRCA [Roofing] current manuals.

1.4 COORDINATION

- A. Coordinate sheet metal flashing, trim layout installation with adjoining roofing to provide a leakproof, secure, non-corrosive installation.

1.5 PERFORMANCE REQUIREMENTS

- A. Fire Hazard Classification: Underwriters Laboratories [UL], Use only Class A fire-rated materials as tested in accordance with ASTM E 108 or UL 790 for exterior fire.
- B. Install sheet metal items to withstand wind loads, structural movement, by preventing buckling, opening of joints, hole elongation, failure of joint sealant, failure of connections and other detrimental effects.
- C. All perimeter metal items [copings and edges] must have been tested to resist equal or greater wind design load.

1.6 DELIVERY, STORAGE and HANDLING

- A. Do not overload structure with storage of materials; verify roof deck weight capacity and location of structural supports, only items needed that day shall be stored on the roof. Limit loads on roof to 25 pounds per square foot for uniformly distributed loads for wood decks. Store and protect products in accordance with manufacturer's instructions.
- B. Deliver products in manufacturer's original containers, dry, undamaged, with seals and labels intact. Protect sheet metal items during transportation and handling.
- C. Store products in weather-protected environment [manufacturer's plastic wrap is accepted for proper protection, unless wrap is broken, torn, removed], clear of ground 4 inches minimum and exposure from direct sunlight. Use breathable tarps for moisture protection as needed. Damaged materials will be marked 'rejected' by the contractor/owner or Owner's rep. and removed from the site.
- D. Storage of flammable liquids in buildings is prohibited. All combustible debris shall be removed from the site daily.

1.7 WEATHER CONDITIONS

- A. Do not apply materials during inclement weather, high winds or when the chance of rain is 60% or greater, percentage as listed on [www: weather.com](http://www.weather.com) for the local area, percentage as listed when read at 7 AM local time or at time of work commencement.

1.8 SEQUENCING and SCHEDULING

- A. Building space underneath roof work is utilized by on-going operations. Coordinate all work with Owner including, material storage, scaffolding [as required] and contractor parking. Owner's approval required before proceeding with the work. **Contractor must provide overhead protection for owner's workers from falling materials/debris at building entry points.**

1.9 MANUFACTURERS WARRANTIES

- A. Provide a manufacturer's warranty for both repairs/replacements due to any faults in the material and workmanship. Any repairs/replacement due to normal wear and tear, material finish defects and workmanship defects. Warranty shall cover finish fading, chalking, cracking, peeling or failure of paint to adhere to base metal.
 - 1. Sheet metal items shall be warranted watertight for [20] twenty years by the roof membrane manufacturer.
 - 2. Sheet metal manufacturer of record must provide a [20] twenty-year finish warranty for the metal fascia, coping and edge as outlined herein, covering, finish and base metal. Warranty shall be a lifetime warranty for defects of material or failure to resist wind speeds.
 - 3. Sheet metal coping and roof edges that terminate or attach into the roof membrane shall be warranted for winds up to 72 MPH by the roof membrane manufacturer [part of the warranty]. Pre-manufactured items regardless of their location must be warranted by the

metal manufacturer for winds to meet or exceed 120 mph [90 mph edges] and also be certified to meet or exceed the design pressure and other requirements as stated herein.

- B. In the event of a default by the contractor, the manufacturer will provide a new contractor to fulfill the warranty obligation.

1.10 PORTABLE FIRE EXTINGUISHERS

- A. Two standard listed multipurpose dry chemical fire extinguisher, NFPA 10, with 10-pound capacity, 4A-60B:C UL rating shall be provided and located near the work area. Additional fire extinguishers shall be provided for different roof levels/work sites.
1. Contractor to ensure all personnel are trained to use fire extinguishers.

1.11 DEFINITIONS

- A. Shop fabricated includes items that will be formed at the fabricators shop predominately by press brake. Prefabricated or manufactured items will be plant manufactured ready for installation. Both items must be wind rated in compliance with ANSI/SPRI/FM ES-1-17

PART 2 PRODUCTS

General: All products shall be state approved and Building Code approved as applicable. Some items below may not be required for this project, but are outlined herein if required during course of work due to changing conditions or changes in scope.

2.1 FABRICATION

- A. Fabricate sheet metal items to comply with recommendations in SMACNA [architectural Sheet metal manual] and NRCA [NRCA roofing manual]. Conceal fasteners and expansion provisions where possible on exposed to view items. Provide expansion provisions as recommended where lapped or bayonet type expansion cannot be used.

2.2 FASTENERS/SPECIALTY ITEMS

General: Fasteners/Anchors: strength, type and configuration must meet the required pull test resistance for each attachment application. Fasteners rate and pattern must be FMG or local code approved to meet the intent of the wind uplift rating specified. The contractor shall determine fastener lengths, minimum embedment: steel 3/4-inch, concrete/concrete block-1 ¼ inch, and wood-1 1/4 inch. Fastener manufacturers listed are ITW Buildex, IWT Red Head and Tru-Fast or equal. All fasteners shall be corrosion resistant steel in accordance with meeting ASTM F1667 or type 304 stainless. *Wind rated copings and edges required - see details for selection of item.*

A. Summary of fasteners and requirements are as follows:

1. Metal Counterflashing and other LG metal sheets to Wood, ITW Buildex, 'Scots Tek's' [AB point] stainless steel-hex head, ¼ inch, corrosion resistance steel shank with EPDM washer.
2. Metal Counterflashing and Other LG Sheet Metal [exposed] to Masonry, ITW Red Head, 1/4 inch, 'Scots Tapcon', stainless steel-hex head, HL treads, corrosion resistant steel shank, with EPDM washer.
3. Termination Bars [exposed] to Masonry, ITW Red Head, ¼ inch, 'Scots Tapcon', stainless steel-hex head, HL treads, corrosion resistant steel shank, with EPDM washer.
4. General Purpose Stainless Steel: Series 304 fasteners, with or w/out EPDM washers.

B. Summary of specialty items and requirements as follows:

1. Continuous Cleats: Galvanized steel, 22 gauge.
2. Counter-flashing: Pre-finished, 24 gauge metal, fabricated in lengths maximum 12 feet, designed to be removable. CF to be notched and lapped at inside corners and joints. Flashings shall be provided at the intersection of the roofs, adjoining walls or projections through the deck [chimney/ vent stacks etc.].

3. Wind-Rated Coping [pre-manufactured only]: Pre-finished, .032 or .040 aluminum coping cap as shown, without exposed fasteners cleated on both sides, [continuous cleated or anchor clips configuration cleats] tapered style [toward roof], butt joint. Provide factory-fabricated corners, intersections. Concealed 8-inch-wide splice plates which must allow the cap to expand and contract freely while locked in place, continuous cleats or with a heavy gage metal anchor clips [12 inch wide] anchored to nailer/substrate in accordance with print approvals [maximum spacing three feet on center-two feet in corners]. Size and shape as shown or to match existing wall width, roof membrane manufacturer approved and warranted to meet or exceed design pressures/winds speeds [see manufacturer's warranties]. 20-year leak proof warranty by the roof membrane manufacturer and 20-year finish warranty by the metal manufacturer. Copings shall be ANSI/SPRI/FM 4435 ES-1-17 tested and approved for winds speeds up to 120 MPH. Pre-Manufactured by Metal Era's 'Perma-Tite Coping or equivalent.
4. Wind-Rated Drip Edge/Gravel Stop - face over 3 ½ inches: [Shop fabricated or pre-manufactured – ES 1 approved] Pre-finished .032 inch thick prefinished aluminum cover over a continuous cleat with 1 inch projected on top, slotted or prepared for fastener locations on the cleat face. Size, length and shape/profile as shown, roof membrane manufacturer approved and 20-year finish warranty by the metal manufacturer. ANSI/SPRI/FM ES-1/class Number 4435 Standard tested and approved and approved for winds up to 90 mph. Pre-Manufactured by Metal Era, One System, Drip Edge/Gravel Stop.
5. Fascia / Rake Cover: .032 inch thick pre-finished aluminum, brake formed to profiles required.
6. Downspouts: .024 inch thick pre-finished aluminum, corrugated rectangular profile with smooth with flat lock seams, complete with mitered elbows, size 3 x 4 inches, unless otherwise noted.
7. Gutter: Pre-finished, .032 inch thick pre-finished aluminum, K style profile, continuous, straight back, size 6 inch x 4 1/2 inch, with gutter spacers, spaced at 24 inches on center. Complete with end pieces, outlet tubes and other items required. Fabricate expansion joints, expansion joint covers with same metal as the gutter. Longest length possible, 50 foot maximum, between expansion butt joints. SMACNA Figure 1-6 Lap Type
8. Gutter Guards: Perforated aluminum sheet 0.027 inch thickness, with baked enamel finish. Fabricated to fit into front of gutter and slip under first row of shingles. Secure to top edge of gutter. 4'-0" long sections. Color selected by Architect. Leaf Relief TP300 or Equal.
9. Splash guard: Pre-finished aluminum valley splash guards, standard size and type. Locate at all internal corners along the terminate of valleys at the gutter.
10. Downspout Hangers: 1/16-inch-thick aluminum. Straps with hidden anchors
11. Drip Edge / Edge Metal at Low Slope Roof Systems [non-wind rated] - face less than 3 ½ inches: .032 inch thick prefinished aluminum
12. Drip Edge at Shingle Roof Systems: .024 inch thick prefinished aluminum
13. Step Flashing, Sheet Metal: 24 gauge pre-finished galvanized metal as shown.

2.3 SHEET METAL

General: Roof membrane manufacturer supplied and approved components [copings/fascia edges - if required/shown] must be used, these sheet metal components must be pre-manufactured and be tested and approved in accordance with ANSI/SPRI/FM ES-1 test method, FM Class Number 4435 approved standard and must be included into the roof warranty. Fabricated by Metal Panel System, Architectural Products, Metal Era, Pac-Clad Peterson, Una-Clad, Drexel Metals or Dimensional Metals, etc., *[Drip edge/gravel stop edge - roof penetrating flange type, may be pre-manufactured or shop fabricated, the metal manufacturer may allow the contractor to use their metal/materials/installation methods and shop fabricate and install the items in accordance with their wind rated ES-1 and FM 4435 standard approved tested drip/gravel stop edge rated requirements, only will be accepted if the metal manufacturer and/or*

the contractor is a certified ES-1 sheet metal shop and will provide/support the wind and finish warranties as outline herein and meet RDA design requirements].

All other metal shall be shop fabricated in accordance with SMACNA 6th Edition or other details or pre-manufactured as shown. All pre-finished metal shall be fabricated using aluminum unless not available. All metal components not incorporated into the roof system and is not outlined herein or shown on the drawings shall be fabricated with .032 prefinished aluminum otherwise directed by RDA.

- A. Pre-Finished Sheet Steel [Galvalume]: ASTM A792, grade 40, class A250, 24 or 22 gauge [as noted], primed and preprinted by coil coating, finished exposed to view side with a fluoropolymer Kynar 500 PVDF resin coating and a wash coat .5 mil thick applied to the reverse side, 20-year warranty covering fade, chalking and film integrity. Colors as selected by owner.
- B. Sheet Steel [Galvalume Plus]: ASTM A792, grade 40, 24 or 22 gauge [as noted], coating class AZ55, coated with an organic resin .012 to .090 inches thick, thermally cured. Finished on both sides with a fine sparkle appearance. 20-year warranty covering fade, chalking and film integrity. Colors as selected by owner.
- C. Pre-Finished Sheet Steel [Galvanized]: ASTM A755/A653, G90, 24 or 22 gauge [as noted], primed and preprinted by coil coating, finished exposed to view side with a fluoropolymer Kynar 500 PVDF resin coating and a wash coat .5 mil thick applied to the reverse side, 20-year warranty covering fade, chalking and film integrity. Colors as selected by owner.
- D. Pre-Finished Aluminum: ASTM B209, 3105 H15 alloy, thickness .032, .040 or .050 [or as noted], primed and repainted by the coil coating, finished exposed to view side with a fluoropolymer kynar 500 PVDF resin coating and a wash coat .5 mil thick applied to the reverse side, 20-year warranty covering fade, chalking and film integrity. Colors as selected by the owner.
- E. Galvanized Sheet Steel: ASTM A653, hot dipped, zinc-coated, G90, gauges as shown.

2.4 SEALANTS/TAPES

General: Provide joint sealants, backings and other materials as required to seal joint that are compatible with each other based on test and field experience.

- A. ASTM C920, Type S, Grade NS, Class 25 as required for each joint condition, single component, elastomeric silicone polymer, non-staining, non-shrinking, non-sagging and ultra-violet resistance, clear or to match surrounding existing color.
 - 1. Provide where sealant is exposed or movement exceeds butyl sealant capability.
- B. Gutter: GE Silicone II or equal, Clear in color.
- C. Butyl Sealant: ASTM C1311, single component, solvent released butyl rubber sealant, polyisobutylene plasticized.
- D. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release paper.

PART 3 EXECUTION

3.1 EXAMINATION AND CONDITIONS

- A. Verify that surfaces and site conditions are ready to receive work.

3.2 PROTECTION

- A. Protect building surfaces/interior spaces against damage from work.
- B. Provide, erect barricades, guardrails as required by applicable regulatory advisory to protect occupants of building and workers.

3.3 INSTALLATION OF SHEET METAL AND SPECIALTY ITEMS

General: Sheet metal items shall be installed in accordance with manufacturers and NRCA's/SMACNA recommendations and details from their current manual. Anchor sheet metal items securely in place with provisions for expansion. Use items as required to complete the sheet metal or drainage system. Where dissimilar metals contact each other, protect against galvanic action by coating material as recommended by the fabricator. Seal joints with sealant as required for a watertight condition.

- A. Continuous cleat [for non-pre-manufactured metal components]: Cleats shall not exceed 12 feet in length; allow a ¼ inch gap between pieces. Fasten cleat to wood nailer top as applicable at 4 inches on center [staggered pattern-1 inch from edge] with corrosion resistant annular threaded nails [3/16-inch head], long enough to penetrate the wood 1 ¼ inch.
- B. Termination bars shall be placed no more than 1 1/2 inches down from top of base flashing and be fastened at 6 inches on center with concrete self-tapping [tapcon] or wood fasteners, as applicable fitted with an EPDM washer. Provide sealant at top edge of bars.
- C. Counter-flashing [CF] shall be surfaced mounted [SM] or in existing or new riglets/receivers with lap joints 4 inches. Attach SM with concrete self-tapping [tapcon] or wood fasteners, as applicable fitted with an EPDM washer at 12 inches on center, 1-inch minimum embedment. Attach riglets installed CF with components recommended by the manufacturer, including metal wedges and edge crimping. Apply a bead of sealant on the top of 45% angle lip of the metal flashing, if SM type. CF shall overlap base flashing a minimum of three inches, fit tightly to base flashing and shall terminate no lower than 4 inch above finished roof surface, unless approved by the manufacturer.
- D. Wind Rated pre-manufactured ES-1 approved coping sections shall be jointed together with a butt type joint with 8-inch-wide concealed splice located underneath the 10 to 12-foot-long panels, which must allow to expand and contract freely while locked in place. Provide factory-fabricated corners, intersections and ends. Coping metal anchor clips to be anchored to wood nailer or surface material at splice joints and within the coping panel [approx. every three feet on center-2 feet in corners.] or coping that is installed using continuous cleats on both sides shall have cleats anchored on top of nailer at 12 inches on center. Provide self-adhered or adhered 60 mil thick EPDM or TPO or PVC over nailers/substrate to allow moisture to drain off edges without moisture to enter wall under coping cap [provide non-curing dual sealant strips on each side of splice plates]. Both methods shall use stainless steel fasteners or other fasteners to meet the wind resistance rating pressures as shown and as recommended by coping manufacturer **print approvals**. Coping shall have a 4-inch vertical end flange where terminating into wall, counter-flash flanges.
- E. Wind Rated ES-1 approved continuous cleated drip edge/gravel stop shall have the cleat face anchored into the nailer face at 12 inches on center. Space cleats as outlined by the metal manufacturer. The exposed to view metal edge to be cleated and fastened on top of the nailer at 6 inches on center. Strip-in flange with membrane over the top of the fastened roof flange. Edge face shall be a single piece extending down to overlap and cover nailers and down exterior wall. Follow manufacturer installation instructions.
- F. Downspouts shall be attached to the gutter with screws. Ensure downspout sections are attached to the wall with 1 1/2-inch-wide, .063-inch-thick aluminum straps [2 per 10 foot section] - Fig 1-35G SMACNA 6th Edition, using 2 fasteners per strap [provide if none exist]. Downspouts terminating at ground or roof shall be provided with an elbow fitting and a concrete splash block [provide a roof membrane sheet under blocks that terminate on the roof]. If existing receivers are available downspouts shall be inserted into receives, provide size and shape adapters as necessary.

- G. Gutter to be attached to fascia / substrate at 24 inches on center thru spacers/gutter back. Screws to penetrate wood 1 ¼ inch. Provide mitered corners, end caps, splash guards and other items required. Drip edge shall extend into gutter 2-3 inches.

3.4 INSTALLATION

- A. Comply with SMACNA's "Architectural Sheet Metal Manual." Allow for thermal expansion; set true to line and level. Install Work with laps, joints, and seams permanently watertight and weatherproof; conceal fasteners where possible.
 - 1. Roof-Edge Flashings: Secure metal flashings at roof edges according to FM Loss Prevention Data Sheet 1-49 for specified wind zone.
- B. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
- C. Fabricate nonmoving seams in sheet metal with flat-lock seams. For metals other than aluminum, tin edges to be seamed, form seams, and solder.
- D. Separations: Separate non-compatible metals or corrosive substrates with a coating of asphalt mastic or other permanent separation.
- E. Install gutters in one continuous sections sloped at ¼"- ½" every 20'-0" maximum. Anchor gutters to building using concealed gutter hanger brackets at 24" on center typical screwed directly into fascia/building structure. Attach aluminum gutters to fascia between ½" and 1" below drip edge of shingle. Shingle should extend 1" over gutter.
 - 1. Install gutter expansion joints at maximum of 50' intervals.
- F. Sheet Metal: Join lengths with formed seams sealed watertight. Flash and seal gutters to downspouts and accessories.
- G. Direct downspout to discharge to existing underground storm drain piping or to new precast concrete splashblock.

3.5 CLEANING

- A. In areas where finished surfaces are soiled by any other source of soiling caused by work of this section, consult manufacturer for cleaning advice.

END OF SECTION

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SECTION 07 84 00 - FIRESTOPPING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Firestopping through-penetrations of fire rated assemblies.
 - 2. Firestopping joints in fire rated assemblies.
 - 3. Firestopping tops of fire rated walls.
 - 4. Smoke sealing at joints between floor slabs and exterior walls.
 - 5. Smoke sealing penetrations and joints of smoke partitions.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 2. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
 - 3. ASTM E814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops.
 - 4. ASTM E1966 - Standard Test Method for Fire-Resistive Joint Systems.
- B. Forest Stewardship Council:
 - 1. FSC Guidelines - Forest Stewardship Council Guidelines.
- C. Intertek Testing Services (Warnock Hersey Listed):
 - 1. WH - Certification Listings.
- D. South Coast Air Quality Management District:
 - 1. SCAQMD Rule 1168 - Adhesive and Sealant Applications.
- E. Underwriters Laboratories Inc.:
 - 1. UL 263 - Fire Tests of Building Construction and Materials.
 - 2. UL 1479 - Fire Tests of Through-Penetration Firestops.
 - 3. UL 2079 - Tests for Fire Resistance of Building Joint Systems.
 - 4. UL - Fire Resistance Directory.

1.3 DEFINITIONS

- A. Firestopping (Through-Penetration Protection System): Sealing or stuffing material or assembly placed in spaces between and penetrations through building materials to arrest movement of fire, smoke, heat, and hot gases through fire rated construction.

1.4 PERFORMANCE REQUIREMENTS

- A. Conform to UL for fire resistance ratings and surface burning characteristics.

1.5 SUBMITTALS

- A. Product Data: Submit data on product characteristics, performance and limitation criteria.
- B. Manufacturer's Installation Instructions: Submit preparation and installation instructions.
- C. Manufacturer's Certificate: Certify products meet or exceed specified requirements and applicable code requirements.

1.6 QUALITY ASSURANCE

- A. Through Penetration Firestopping of Fire Rated Assemblies: UL 1479 or ASTM E814 with 0.10 inch water gage minimum positive pressure differential to achieve fire F-Ratings and temperature T-Ratings as indicated on Drawings, but not less than 1-hour.
 - 1. Floor / Wall Penetrations: Fire F-Ratings as indicated on Drawings, but not less than 1-hour.
- B. Through Penetration Firestopping of Non-Fire Rated Floor and Roof Assemblies: Materials to resist free passage of flame and products of combustion.
- C. Fire Resistant Joints in Fire Rated Floor, Roof, and Wall Assemblies: ASTM E1966 or UL 2079 to achieve fire resistant rating as indicated on Drawings for assembly in which joint is installed.
- D. Surface Burning Characteristics: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Maintain this minimum temperature before, during, and for minimum 3 days after installation of materials.
- B. Provide ventilation in areas to receive solvent cured materials.

PART 2 PRODUCTS

2.1 FIRESTOPPING

- A. Manufacturers:
 - 1. 3M Fire Protection Products
 - 2. United States Gypsum Co.
 - 3. Equal.
- B. Product Description: Different types of products by multiple manufacturers are acceptable as required to meet specified system description and performance requirements; provide only one type for each similar application.
 - 1. Silicone Firestopping Elastomeric Firestopping: Single component silicone elastomeric compound and compatible silicone sealant.
 - a. Interior Sealants and Sealant Primers: Maximum volatile organic compound content in accordance with SCAQMD Rule 1168.
 - 2. Foam Firestopping Compounds: Single component foam compound.
 - 3. Fiber Stuffing and Sealant Firestopping: Composite of mineral fiber stuffing insulation with silicone elastomer for smoke stopping.
 - 4. Intumescent Firestopping: Intumescent putty compound which expands on exposure to surface heat gain.

2.2 ACCESSORIES

- A. Primer: Type recommended by firestopping manufacturer for specific substrate surfaces and suitable for required fire ratings.
- B. Installation Accessories: Provide clips, collars, fasteners, temporary stops or dams, and other devices required to position and retain materials in place.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify openings are ready to receive firestopping.

3.2 PREPARATION

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter affecting bond of firestopping material.
- B. Remove incompatible materials affecting bond.
- C. Install backing materials to arrest liquid material leakage.

3.3 APPLICATION

- A. Install material at fire rated construction perimeters and openings containing penetrating sleeves, piping, ductwork, conduit and other items, requiring firestopping.
- B. Apply primer where recommended by manufacturer for type of firestopping material and substrate involved, and as required for compliance with required fire ratings.
- C. Apply firestopping material in sufficient thickness to achieve required fire and smoke rating to uniform density and texture.
- D. Place foamed material in layers to ensure homogenous density, filling cavities and spaces. Place sealant to completely seal junctions with adjacent dissimilar materials.

3.4 FIELD QUALITY CONTROL

- A. Inspect installed firestopping for compliance with specifications and submitted schedule.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

- A. Protect adjacent surfaces from damage by material installation.

END OF SECTION

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SECTION 07 90 00 - JOINT PROTECTION

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes sealants and joint backing.

1.2 SUBMITTALS

- A. Product Data: Submit data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

1.3 ENVIRONMENTAL REQUIREMENTS

- A. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.

1.4 QUALITY ASSURANCE

- A. Sealant shall be installed by a qualified sealant applicator for any/all joint sealant exposed to view. Owner reserves the right to request a mockup of the quality for the joint sealant installation.

PART 2 PRODUCTS

2.1 JOINT SEALERS

- A. Manufacturers:
 - 1. Tremco [basis of design]
 - 2. Sika
 - 3. GE Silicones.
 - 4. Pecora Corp.
 - 5. DAP
- B. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.
- C. Low-Emitting Interior Sealants: Sealants and sealant primers used inside the weatherproofing system shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- D. Liquid-Applied Sealants: Comply with ASTM C920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- E. Suitability for Contact with Food: Where elastomeric sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.
- F. Additional Movement Capability: Where additional movement capability is specified, provide products with the capability, when tested for adhesion and cohesion under maximum cyclic movement per ASTM C719, to withstand the specified percentage change in the joint width existing at the time of installation and remain in compliance with other requirements of ASTM C920 for uses indicated.
- G. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range, unless otherwise noted.

2.2 SILICONE JOINT SEALANTS:

- A. **Type S-1:** Single component, nonsag, Silicone Joint Sealant: ASTM C920, Type S, Grade NS, Class 100/50, Use NT

1. Tremco Spectrem 1 or Spectrem 800 or Equal
- B. **Type S-2:** Single Component, nonsag, Silicone Joint Sealant: ASTM C920, Type S, Grade NS, Class 50, use NT
 1. Tremco Spectrem 2 or Spectrem 3 or Equal
- C. **Type S-3:** Multi-Component, Nonsag, Silicone Joint Sealant: ASTM C920, Type M, Grade NS, Class 50, Use NT
 1. Tremco Spectrem 4-TS or Equal
- D. **Type S-4:** Single Component, nonsag, Traffic-Grade, Silicone Joint Sealant: ASTM C920, Type S, Grade NS, Class 100/50, Use T
 1. Tremco Spectrem 800 or Equal
- E. **Type S-5:** Mildew Resistant, Single Component, Silicone Joint Sealant: ASTM C920, Type S, Grade NS, Class 25, Use NT
 1. Tremco Tremsil 200 Sanitary or Equal

2.3 URETHANE JOINT SEALANTS

- A. **Type U-1:** Single Component, nonsag, Urethane Joint Sealant: ASTM C920, Type S, Grade NS, Class 25 or 35, Use NT:
 1. Tremco Dymonic or Dymonic FC or Equal
- B. **Type U-2:** Single Component, nonsag, Traffic Grade, Urethane Joint Sealant: ASTM C920, Type S, Grade NS, Class 25, Use T.
 1. Tremco Vulkem 116 or Equal.
- C. **Type U-3:** Multi-Component, nonsag, Urethane Joint Sealant: ASTM C920, Type M, Grade NS, Class 25, Use T.
 1. Tremco Dymeric 240 or Dymeric 240 FC or Equal
- D. **Type U-4:** Multi-Component, nonsag, Urethane Joint Sealant: ASTM C920, Type M, Grade NS, Class 25, Use NT.
 1. Tremco Vulken 227 or Equal
- E. **Type U-5:** Multi-Component, nonsag, Traffic Grade, Urethane Joint Sealant: ASTM C920, Type M, Grade NS, Class 25, Use T.
 1. Tremco Vulken 227 or Equal

2.4 BUTYL JOINT SEALANTS

- A. **Type B-1:** Butyl Rubber based Joint Sealants: ASTM C 1311
 1. Tremco General Purpose Butyl Sealant or Equal

2.5 LATEX JOINT SEALANTS

- A. **Type L-1:** Latex Joint Sealant: Acrylic latex or Siliconized Acrylic Latex: ASTM C834, Type OP, Grade NF or better
 1. Tremco Tremflex 834 or Equal.
- B. **Type L-2:** Paintable Mildew-Resistant Latex Joint Sealant: Acrylic Latex or Siliconized Acrylic Latex: ASTM C834, Type OP, Grade NF or better.
 1. Tremco Tremflex 834 or Equal.

2.6 ACCESSORIES

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C1330, Type C (closed-cell material with a surface skin) as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and

density to control sealant depth and otherwise contribute to producing optimum sealant performance:

1. Oversized to 30 to 50 percent larger than joint width.
- C. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F. Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.
 - D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.
 - E. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated. Non-staining type, recommended by sealant manufacturer to suit application.
 - F. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
 - G. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify substrate surfaces and joint openings are ready to receive work.
- B. Verify joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

- A. Remove loose materials and foreign matter impairing adhesion of sealant.
- B. Clean and prime joints.
- C. Perform preparation in accordance with ASTM C1193.

3.3 INSTALLATION

- A. Perform installation in accordance with ASTM C1193.
- B. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.
- C. Install bond breaker where joint backing is not used.
- D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.**
- E. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- F. Tool joints concave.

3.4 SCHEDULE

- A. Joint-Sealant Application: Exterior joints in vertical surfaces and non-traffic horizontal surfaces.
 1. Joint locations such as, but not limited to:
 - a. Construction joints in cast-in-place concrete.
 - b. Control joints in unit masonry.
 - 1) Provide joint sealants slightly darker than the adjacent masonry units. Provide multiple colors as may be required for match.

- c. Perimeter joints between masonry, concrete, or stone and frames of doors, windows, storefronts, louvers, and similar openings.
 - d. Lintels and shelf angles to masonry construction.
 - e. Butt joints between metal panels.
 - f. Control and expansion joints in ceiling/soffit and similar overhead surfaces.
 - g. Exterior joints between dissimilar materials where the joining of the two surfaces leaves a gap between the meeting materials or components as may be dictated by various methods of construction to make building watertight.
 - h. Other joints as indicated on Drawings.
 2. Provide one of the following acceptable sealants as approved by manufacturer for substrates and uses indicated: **Type S-1, Type S-2, Type S-3**
 3. Color: As selected by Architect from manufacturer's full range of colors.
- B. Joint-Sealant Application: Interior joints in horizontal traffic surfaces.
1. Joint locations such as, but not limited to:
 - a. Isolation joints in cast-in-place concrete slabs.
 - b. Perimeter of floor slabs or concrete curbs which abut vertical surfaces.
 - c. Areas around all piping systems that penetrate the slab or foundation walls below grade (utility trenches, electrical conduits, plumbing penetrations, etc.).
 - d. Control and expansion joints in tile flooring.
 - e. Other joints as indicated on Drawings.
 2. Provide one of the following acceptable sealants as approved by manufacturer for substrates and uses indicated: **Type S-4**
 3. Color: As selected by Architect from manufacturer's full range of colors.
- C. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal non-traffic surfaces, subject to movement, unless otherwise noted.
1. Joint locations such as, but not limited to:
 - a. Control joints on exposed interior surfaces of exterior walls.
 - b. Interior joints where interior partitions meet exterior walls of dissimilar materials and components.
 - c. Other joints as indicated on Drawings.
 2. Provide one of the following acceptable sealants as approved by manufacturer for substrates and uses indicated: **Type U-1**
 3. Color: As selected by Architect from manufacturer's full range of colors. Paintable Sealant, prep for painted finish.
- D. Joint-Sealant Application: Interior joints in vertical surfaces subject to abuse and movement.
1. Joint locations such as, but not limited to:
 - a. Vertical joints, including control joints and joints between masonry and structural support members, on exposed surfaces of interior unit masonry walls and partitions.
 2. Provide one of the following acceptable sealants as approved by manufacturer for substrates and uses indicated: **Type U-2**
 3. Color: As selected by Architect from manufacturer's full range of colors.
- E. Joint-Sealant Application: Interior joints in vertical surfaces not subject to movement.
1. Joint locations such as, but not limited to:
 - a. Interior perimeter joints of exterior openings.
 - b. Perimeter joints between interior wall surfaces and frames of interior doors, windows, and elevator entrances.
 - c. Interior joints between dissimilar materials where a gap is created where materials meet, unless otherwise noted.
 2. Provide one of the following acceptable sealants as approved by manufacturer for substrates and uses indicated: **Type L-1, Type L-2**
 3. Color: As selected by Architect from manufacturer's full range of colors.

- F. Joint-Sealant Application: Mildew-resistant interior joints in non-painted vertical surfaces and horizontal nontraffic surfaces.
1. Joint locations such as, but not limited to:
 - a. Interior joints between plumbing fixtures and adjoining floors and counters.
 - b. Joints between countertops and backsplashes.
 - c. For interior joints in non-painted vertical and horizontal surfaces where incidental food contact may occur.
 - d. Tile control and expansion joints where indicated.
 - e. Other joints as indicated on Drawings.
 2. Provide one of the following acceptable sealants as approved by manufacturer for substrates and uses indicated: **Type S-5**
 - a. For potable water storage sealant shall be certified by National Sanitation Foundation as conforming to the requirements of NSF Standard 61 – Drinking Water System Components – Health Effect.
 - b. For surfaces where incidental food contact may occur sealant must comply with United States Department of Agriculture (USDA) guidelines for incidental food contact with cured sealant.
 3. Color: As selected by Architect from manufacturer's full range of colors.
- G. Joint-Sealant Application: Mildew-resistant interior joints in painted vertical surfaces and horizontal non-traffic surfaces.
1. Joint locations such as, but not limited to:
 - a. Interior joints between plumbing fixtures and adjoining painted walls.
 - b. Joints where countertops or backsplashes intersect painted walls.
 - c. For interior joints in painted vertical and horizontal surfaces where incidental food contact may occur.
 2. Provide one of the following acceptable sealants as approved by manufacturer for substrates and uses indicated: **Type L-2**
 3. Color: As selected by Architect from manufacturer's full range of colors.
- H. Joint-Sealant Application: Interior or exterior joints in vertical surfaces between laps in fabrications of sheet metal.
1. Provide one of the following acceptable sealants as approved by manufacturer for substrates and uses indicated: **Type U-1**
 2. Color: As selected by Architect from manufacturer's full range of colors.
- I. Joint-Sealant Application: Exterior joints under metal thresholds and saddles, sill plates, or as bedding sealant for sheet metal flashing and frames of metal or wood.
1. Provide one of the following acceptable sealants as approved by manufacturer for substrates and uses indicated: **Type S-1, Type U-1, Type B-1**
 2. Color: As selected by Architect from manufacturer's full range of colors.

END OF SECTION

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SECTION 08 14 00 - WOOD DOORS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes pre-hung interior flush wood doors and frames at unit entry doors and within individual dwelling units.

1.2 SUBMITTALS

- A. Shop Drawings: Indicate:
 - 1. Door opening criteria, elevations, sizes, types, swings, undercuts required, special beveling, special blocking for hardware, and factory machining criteria.
 - 2. Cutouts for glazing and louvers.
- B. Product Data:
 - 1. Door core materials and construction.
 - 2. Veneer species, type and characteristics.
 - 3. Factory finishes.
- C. Samples:
 - 1. Two of door construction, veneer cut and grain pattern. Show veneer slices, pattern, joints, etc. Illustrate wood grain, stain color and sheen and variation in finish color.

1.3 QUALITY ASSURANCE

- A. Perform Work according to AWI AWS Section 9, Premium Grade.
- B. Finish doors according to AWI AWS Section 5 Premium Grade.
- C. Fire-Rated Door Construction: Conform to one of following:
 - 1. NFPA 252; with neutral pressure level at 40 inches maximum above sill at five minutes into test.
 - 2. UL 10C.
 - 3. Twenty-Minute Fire-Rated Corridor and Smoke Barrier Doors: Fire tested without hose stream test.
- D. Installed Fire-Rated Door Assembly: Conform to NFPA 80 for fire-rated class as indicated.
- E. Smoke and Draft Control Doors: Tested according to UL 1784 and installed according to NFPA 105.
 - 1. Air Leakage: Maximum 3.0 cfm/sq ft of door opening with 0.10 inch w.g. pressure differential.
- F. Attach label from agency approved by authority having jurisdiction to identify each fire-rated door.
 - 1. Indicate temperature rise rating for stair doors.
 - 2. Attach smoke label to smoke and draft control doors.
- G. Manufacturer: Company specializing in manufacturing products specified in this Section with three years' experience.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Protect wood doors during transit, storage, and handling to prevent damage, soiling, and deterioration. Comply with requirements of referenced ANSI standard and recommendations of WDMA pamphlet "How to Store, Handle, Finish, Install, and Maintain Wood Doors," as well as with manufacturer's instructions.

- B. Identify each door with individual opening numbers that correlate with designation system used on shop drawings for door, frames, and hardware, and STC or fire rating where applicable, using temporary, removable, or concealed markings.
- C. Polybag protect each door for shipment and handling.
- D. Environmental Limitations: Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized and will be maintained in storage and installation areas during the remainder of the construction period to comply with requirements of the referenced quality standard for Project's geographical location.

1.5 WARRANTY

- A. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.
- B. Interior Doors:
 - 1. Factory-Finished Doors: Furnish life of installation warranty from Manufacturer.
 - 2. Site or Shop Finished: Must match building standard.

PART 2 PRODUCTS

2.1 FLUSH WOOD DOORS

- A. Manufacturers:
 - 1. VT Industries – White Birch slabs must be finished to match building standard
 - 2. Five Lakes – White Birch slabs must be finished to match building standard
 - 3. Approved Equal
- B. Flush Interior Doors: Solid core.
 - 1. Thickness: 1-3/8 inches [interior dwelling unit doors] & 1-3/4 inches [unit entry doors]
 - 2. Core: Particle Board Core, flush doors
 - 3. Face Construction: five-ply.
 - 4. Performance Duty Level: Extra Heavy duty.
 - 5. Quality Grade: Premium with Grade A faces.
- C. Performance / Design Criteria:
 - 1. Performance Duty Level: WDMA I.S. 1A.
 - 2. Fire Resistance: As indicated on drawings / door schedule.

2.2 MATERIALS

- A. Door Cores: AWI AWS Section 9.
 - 1. Solid Core, Non-Fire-Rated:
 - a. Type: PC; particleboard, ANSI A208.1.
 - 2. Solid Core, Fire-Rated: Category A for positive pressure fire test.
 - a. Type FD; fire-resistive composite.
- B. Interior Door Faces:
 - 1. Transparent Finished Faces: Wood veneer.
 - a. Species: Natural White Birch.
 - b. Veneer Cut: Rotary cut.
 - c. Veneer Matching: Center matched or Book matched to match existing
 - d. Face Matching: Running. Pair match multiple door leaves in single opening.
- C. Facing Adhesive: Type I - waterproof.
- D. Frames: Brown Moulding Company or Equal:
 - 1. Clear white pine wood jambs $\frac{3}{4}$ " x 4 $\frac{13}{16}$ " ± [single piece jamb] with $\frac{1}{2}$ " x 1 $\frac{1}{2}$ " applied stops. Sides dadoed to receive head.
 - 2. Frames suitable for painted finish.

2.3 ACCESSORIES

- A. Hinges: 1 ½ pair 3 ½" x 3 ½", 26D finish.

2.4 FABRICATION

- A. Fabricate doors according to AWI AWS Section 9 requirements.
- B. Astragals for Double Doors: None
- C. Furnish lock blocks at lock edge and top of door for closer for hardware reinforcement.
- D. Vertical Exposed Edge of Stiles: Wood veneer matching door facing.
- E. Fit door edge trim to edge of stiles after applying veneer facing.
- F. Bond edge banding to cores.
- G. Factory machine doors for finish hardware according to hardware requirements and dimensions. Do not machine for surface hardware. Refer to Section 08 71 00.
- H. Factory-fit doors for frame opening dimensions identified on Shop Drawings.
- I. Provide edge clearances according to AWI AWS Section 9.

2.5 FINISHES

- A. Finish Work according to AWI AWS Section 5; Premium Grade.
- B. Transparent Finish System: Stained, semi-gloss sheen to match existing.
 - 1. System 5; conversion varnish.
 - 2. System 11; catalyzed polyurethane.
- C. Factory finish doors according to approved sample.
- D. Seal door top edge with color sealer to match door facing.
- E. Prep frames for site finishing, painted finish.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install doors according to AWI AWS Section 9 and manufacturer's instructions.
- B. Field Fitting and Trimming:
 - 1. Trim non-rated door width by cutting equally on both jamb edges.
 - 2. Trim door height by cutting bottom edges to maximum of 3/4 inch.
 - a. Trim fire door height at bottom edge only, according to fire-rating requirements.
 - 3. Machine cut doors for hardware installation.
- C. Coordinate installation of doors with installation of frames specified in Section 08 12 14 and hardware specified in Section 08 71 00.
- D. Coordinate installation of glass and glazing as specified in Section 08 80 00.

3.2 TOLERANCES

- A. Conform to AWI AWS Section 9 requirements for following:
 - 1. Fit and clearance tolerances.
 - 2. Gaps.
 - 3. Flushness.
 - 4. Flatness.
 - 5. Squareness.

3.3 SCHEDULE

- A. Refer to Door and Frame Schedule on Drawings.

END OF SECTION

SECTION 08 31 13 - ACCESS DOORS AND FRAMES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: **Fire-resistive-rated and non-rated** Access doors and panels with frames.

1.2 SUBMITTALS

- A. Product Data: Indicate sizes, types, finishes, hardware, scheduled locations, fire-resistance listings, and details of adjoining Work.
- B. Manufacturer's Installation Instructions: Include rough-in dimensions.

1.3 QUALITY ASSURANCE

- A. Fire-Rated Access Door Construction:
 - 1. Wall Access Doors: NFPA 252 or UL 10B.
 - 2. Ceiling Access Doors: ASTM E119 or UL 263.
- B. Installed Fire-Rated Access Door Assembly: Conform to NFPA 80 for fire-rated class as indicated.
- C. Attach label from agency approved by authority having jurisdiction to identify each fire-rated access door.

1.4 COORDINATION

- A. Coordinate Work with Work requiring controls, valves, traps, dampers, cleanouts, and similar items requiring operation being located behind finished surfaces.

PART 2 PRODUCTS

2.1 ACCESS DOORS AND PANELS

- A. Flush Framed Access Doors (Type 1): Frames and nominal 1 inch wide exposed flanges of 16 gage steel and door panels of 14 gage steel.
- B. Fire-Rated Access Doors (Type 2): Frames and nominal 1 inch wide exposed flanges of minimum 16 gage steel and door panels of 20 gage steel. Provide self-closing and latching doors with cam lock.

2.2 FABRICATION

- A. Fabricate units of continuous welded construction; weld, fill, and grind joints to assure flush and square unit.
- B. Wall and Ceiling Access Door and Panel Hardware:
 - 1. Hinge: Standard continuous or concealed spring pin type, 175-degree steel hinges.
 - 2. Lock: Self-latching lock. Screw driver slot for quarter turn cam lock.

2.3 SHOP FINISHING

- A. Base Metal Protection: Prime coat units with baked on primer.
- B. Finish: to match adjacent wall/ceiling surface.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Set concealed frame type units flush with adjacent finished surfaces.

- B. Position unit to provide convenient access to concealed Work requiring access.
- C. Install fire-rated units according to NFPA 80 and requirements for fire listing.

3.2 SCHEDULES

- A. Provide and install access panels where required by existing construction, utilities, etc. Field coordinate requirements, sizes, and locations.

END OF SECTION

SECTION 08 41 13 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes aluminum-framed storefronts including aluminum and glass doors, frames, hardware, receivers, and accessories.

1.2 SYSTEM DESCRIPTION

- A. Aluminum-Framed Storefront System: Tubular aluminum sections with supplementary internal support framing as required, factory fabricated, factory finished, glass infill, related flashings, anchorage and attachment devices.
- B. System Assembly: Site assembled or Factory unitized assembly as applicable.
- C. System Design: Provide for expansion and contraction within system components caused by temperature cycling. Design and size members to withstand loads caused by pressure and suction of wind.
- D. Air Infiltration: Limit air leakage through assembly to 0.06 cfm/min/sq ft of wall area, measured at reference differential pressure across assembly of 6.24 psf when tested in accordance with AAMA/WDMA 101/I.S.2 or ASTM E283.
- E. Water Leakage: None, when measured in accordance with AAMA/WDMA 101/I.S.2 or ASTM E331 with test pressure difference of 20 percent of design pressure, with minimum differential of 2.86 lbf/sq ft and maximum of 12.00 lbf/sq ft.
- F. Uniform Load Deflection: < L/175 at 50 PSF positive and negative
- G. System Internal Drainage: Drain water entering framing system to exterior.

1.3 SUBMITTALS

- A. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related Work and expansion and contraction joint location and details.
- B. Product Data: Submit component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, and internal drainage details.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with AAMA SFM-1 and AAMA MCWM-1 - Metal Curtain Wall, Window, Store Front and Entrance - Guide Specifications Manual.
- B. Surface Burning Characteristics:
 - 1. Foam Insulation: Maximum 75/450 flame spread/smoke developed index when tested in accordance with ASTM E84.
- C. Apply label from agency approved by authority having jurisdiction to identify each foam plastic insulation board.
- D. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five years experience.
- E. Installer: Company specializing in performing Work of this section with minimum five years experience.

1.5 WARRANTY

- A. Furnish five year manufacturer warranty for insulated glass and factory finishes.

PART 2 PRODUCTS

2.1 ALUMINUM-FRAMED STOREFRONTS

- A. Manufacturers:
 - 1. Capitol Aluminum and Glass
 - 2. Kawneer
 - 3. EFCO
 - 4. Manko
 - 5. Graham
 - 6. Approved Equal
- B. Product Description: Aluminum-framed storefronts, extruded aluminum, including interior systems, with aluminum and glass doors, glazing, and hardware.

2.2 COMPONENTS

- A. Frames: Thermally broken extruded aluminum; flush glazing stops. Frames for interior glazing need not to be thermally broken.
 - 1. 2 inch sightline
 - 2. 4 1/2 inch depth
 - 3. Glass: Center glazed with elastomeric gaskets exterior and interior of glass
- B. Doors: 1 3/4 inches thick, nominal 5 inch wide top rail and vertical stiles, 12 inch wide bottom rail, square glazing stops.
- C. Glass and Glazing: 1 inch insulated glazing as specified in Section 08 80 00.
- D. Hardware: As specified in Section 08 71 00.
- E. Aluminum Extrusions: Alloy and temper recommended by aluminum storefront manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.060" wall thickness at any location for the main frame and complying with ASTM B 221: 6063-T6 alloy and temper. Extrusions for aluminum doors shall be 0.125" wall thickness and glazing stops to be 0.060" thick.
 - 1. Fabricate custom extrusions as required for a complete installation and to suit conditions. Coordinate with Architect and Owner as applicable.
- F. Reinforcing Members: Aluminum, nonmagnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated. [as required by work].
- G. Flashings: Minimum 0.32 inch thick aluminum.
- H. Steel Sections: ASTM A36/A36M, Structural shapes to suit mullion sections; galvanized.
- I. Primer: Zinc chromate for factory application and field touch-up.
- J. Fasteners: Aluminum, nonmagnetic stainless steel or other materials to be non-corrosive and compatible with aluminum members, trim hardware, anchors, and other components.
- K. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated.
- L. Thermal Barrier: A minimum 1/4 inch separation between the interior and exterior aluminum created by intermittent polymer clips.
- M. Perimeter Sealant and Backing Materials: Specified in Section 07 90 00.

- N. Weatherstripping: Manufacturer standard, replaceable compression type of molded neoprene or molded PVC.

2.3 STOREFRONT FRAMING SYSTEM

- A. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.
- B. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials. Stainless steel where exposed
- C. Perimeter Anchors: When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action

2.4 FABRICATION

- A. Fabricate doors and frames allowing for minimum clearances and shim spacing around perimeter of assembly.
- B. Accurately and rigidly fit and secure joints and corners, flush, hairline, and weatherproof.
 - 1. Provide means to drain water passing joints, condensation occurring within the framing members, and moisture migrating within the system to the exterior.
 - 2. Provide physical and thermal isolation of glazing from framing members.
- C. Arrange fasteners, attachments, and jointing to ensure concealment from view.
- D. Prepare components with internal reinforcement for door hardware [and door operator / hinge hardware].

2.5 SHOP FINISHING

- A. Anodized Aluminum Surfaces: AA-M12C22A44, Architectural Class I 0.7 mils clear anodized coating conforming to AAMA 611.
- B. Concealed Steel Items: Galvanized to ASTM A123/A123M; galvanize after fabrication.
- C. Apply bituminous paint to concealed aluminum and steel surfaces in contact with cementitious or dissimilar metals.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify wall openings and adjoining air and vapor seal materials are ready to receive work of this section.

3.2 INSTALLATION

- A. Install doors, frames, glazing, hardware, and flashings in accordance with AAMA MCWM-1 - Metal Curtain Wall, Window, Store Front and Entrance - Guide Specifications Manual.
- B. Use anchorage devices to securely attach frame assembly to structure.
- C. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- D. Coordinate attachment and seal of air and vapor retarder materials. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- E. Coordinate installation of hardware with Section 08 71 00.
- F. Coordinate installation of glass with Section 08 80 00; separate glass from metal surfaces.

- G. Coordinate installation of perimeter sealants with Section 07 90 00.
- H. Tolerances:
 - 1. Variation from Plane: 1/8 inch per foot maximum or 1/4 inch per 30 feet; whichever is less.

END OF SECTION

SECTION 08 53 00 - VINYL WINDOWS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes factory fabricated tubular extruded vinyl windows with fixed and operating sash [horizontal sliders and double hung], glass, and framed insect screens.
 - 1. Energy star rated window units for Climate Zone 5.

1.2 SYSTEM DESCRIPTION

- A. Windows and Sliding Doors: Extruded tubular plastic sections, factory fabricated, fusion welded, vision glass, related flashings, anchorage and attachment devices.
- B. System Design: Performance to provide for expansion and contraction within system components caused by temperature cycling. Design and size members to withstand loads caused by pressure and suction of wind in accordance with applicable code.
- C. Water Leakage: None, when measured in accordance with ASTM E331.
- D. System Internal Drainage: Drain water entering framing system, to exterior.
- E. Thermal Movement: Design sections to permit thermal expansion and contraction of plastic as compared to glass, infill, and perimeter opening construction.

1.3 REFERENCES

- A. American Architectural Manufacturers Association (AAMA):
 - 1. AAMA 502 - Voluntary Specification for Field Testing of Newly Installed Fenestration Products.
- B. American Architectural Manufacturers Association/Window & Door Manufacturers Association/Canadian Standards Association (AAMA/WDMA/CSA):
 - 1. AAMA/WDMA/CSA 101/I.S.2/A440 - Standard/Specification for Windows, Doors, and Skylights.
- C. National Fenestration Rating Council (NFRC):
 - 1. NFRC 100 - Procedure for Determining Fenestration Product U-factors.
 - 2. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.

1.4 PERFORMANCE REQUIREMENTS

- A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance materials, components, accessories, and fabrication unless more stringent requirements are indicated.
- B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:
 - 1. Minimum Performance Class: R.
 - 2. Minimum Performance Grade: 20.
- C. Fabricate windows to AAMA Gold Label Certification Program for thermal performance and air, water, and structural integrity.
- D. Forced Entry Resistance: Meet the requirements of ASTM F588 for Type A [sliding sashes], Grade 10.
- E. Air Infiltration: Maximum air leakage through fixed glazing and framing areas of 0.30 cfm/sq ft of fixed wall area as determined according to ASTM E283 at a minimum static-air-pressure differential of 1.57 lbf/sq ft.

- F. Operating Force: Maximum allowable lb force of 20 lbf for horizontal sliders.
- G. Water Penetration: Minimum water resistance of 2.86 psf for entry level R20 structural rating.
- H. U-Factor, Total Unit, NFRC 100: $U = 0.30 \text{Btu/sq ft x}^\circ\text{h x degrees F}$.
 - 1. Window Unit shall be Energy Star Rated for Climate Zone 5.
- I. Visible Transmittance, Total Unit, NFRC 200 maximum whole window SHGC of 0.30.
- J. Window Certification:
 - 1. Test windows to AAMA Gold Label Certification Program for thermal performance and air, water, and structural integrity.
 - 2. Provide certification label on each window.

1.5 SUBMITTALS

- A. Shop Drawings: Indicate opening dimensions, framed opening tolerances, affected related work; and installation requirements.
- B. Product Data: Submit component dimensions, anchorage and fasteners, glass, and internal drainage details. Indicate Energy Star compliance.
- C. Test Reports: Submit manufacturer's test reports from independent testing agency indicating the vinyl windows meet or exceed the specified performance requirements.
- D. Samples: Provide [2] samples of exposed finishes.

1.6 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Manufacturer regularly engaged, for past 10 years, in manufacture of vinyl windows of similar type to that specified.
- B. Installer's Qualifications:
 - 1. Installer regularly engaged, for past 5 years, in installation of vinyl windows of similar type to that specified.
 - 2. Employ persons trained for installation of vinyl windows.
- C. Mockup:
 - 1. Construct mock-ups of vinyl windows for evaluation of preparation techniques and installation workmanship.
 - a. Construct mock-ups using same materials for use in the Work.
 - b. Construct mock-ups at locations determined by Architect.
 - c. Do not proceed until workmanship of mock-ups are approved by Architect.
 - d. Approved Mock-ups: Standard for workmanship of vinyl windows.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery and Acceptance Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage and Handling Requirements:
 - 1. Store and handle materials in accordance with manufacturer's instructions.
 - 2. Keep materials in manufacturer's original, unopened containers and packaging until installation.
 - 3. Store materials in clean, dry area indoors.
 - 4. Do not store materials directly on floor.
 - 5. Protect materials and finish during storage, handling, and installation to prevent damage.

1.8 WARRANTY

- A. Furnish limited ten [10] year manufacturer warranty for insulated glass units and vinyl window components.

PART 2 PRODUCTS

2.1 VINYL WINDOWS

- A. Manufacturers:
 - 1. Simonton Windows by PlyGem: 5050 Reflections Series, Slider. [BASIS OF DESIGN]
 - 2. Jeldwen Windows: Premium Vinyl Series
 - 3. Soft Lite Windows: Barrington Vinyl Window Series.
 - 4. Crystal Windows: Series 300R
- B. Product Description:
 - 1. Unit Frame: Extruded tubular plastic with welded corner construction.
 - 2. Windows: Conform with AAMA 101 Designations for windows required for Horizontal Slider & Double Hung window operation.
 - 3. Type: 2-lite slider, 3-lite slider, and double hung
 - 4. Sizes: As indicated on drawings. Custom sized to fit existing rough openings. Do not allow reduction of the net operable area at emergency escape and rescue openings.
 - 5. Frame and Sash Color: As selected from full range of available colors, including premium colors. Interior and Exterior Surfaces to be the same color.

2.2 COMPONENTS

- A. Extruded PVC frames and sashes: AAMA 303 hollow, multi-chambered sections of extruded polyvinyl chloride (PVC), with integral ultra-violet degradation resistance. Fusion Welded frame and sash.
- B. Frame
 - 1. Frame Thickness: +/- 3-1/4 inches
 - 2. Construction: Welded
 - 3. Screen Track: Integral
 - 4. Sill: sloped design sill out from unit/building wall.
- C. Sash
 - 1. Construction: Welded
 - 2. Glazing Bead: Color Matched, dual durometer
- D. Glass and Glazing Materials:
 - 1. Gas: Air / Argon Filled Airspace
 - 2. Glass Strength: Single Strength
 - 3. Glass Type: Low E
 - 4. Dual Pane Insulated Glass: 3/4 inch thickness
 - 5. Spacer: Supercept Window Spacer System
 - 6. Glass Package: Energy Star, Climate Zone 5.
 - 7. Insulating Glass: SIGMA sealed double pane float glass with clear outer pane and Low E 366 coating with Argon Filled airspace; total thickness 3/4 inch minimum. U-Value of 0.30 or Less
 - 8. Safety glass conforming to ANSI Z97.1 and applicable codes where required.
- E. Hardware: Manufacturer's standard window and door hardware based on following requirements. Hardware to match frame and sash color.
 - 1. Sash Lock: [2] Lever handles with cam lock.
 - 2. Rollers / Gliders: Corrosion resistant Rollers

3. Safety Latch: safety catch to limit operation of window opening for security and safety purposes.
- F. Sills, Stools, and Aprons: Tubular plastic; slope sills for positive wash; extend 1/2 inch beyond wall face; one piece full width of opening.
- G. Frame Expanders: Vinyl frame expanders/receptors sized as required to suit opening extending to meet existing construction and ready to accept new window units.
- H. Insect Screens:
 1. Frame: Roll formed
 2. Size: to fit half of window unit.
 3. Mesh: Fiberglass mesh set into frame and secured.
- I. Weather Stripping: Dual fin seal at sash perimeter, triple weather stripped at sash edges, closed cell foam weather stripping, configured for flexible fit.
- J. Trim/Closure: Vinyl trim stock for interior perimeter/jamb application. Color to match window units.
 1. Field Coordinate size requirements to conceal any gap between original window and new window.
- K. Fasteners: Galvanized steel.
- L. Anchor Devices: Galvanized steel.
- M. Sealant and Backing Materials: Specified in Section 07 90 00.

2.3 FABRICATION

- A. Fabricate framing, mullions and sash members with fusion welded corners and joints, in rigid jig. Supplement frame sections with internal reinforcement where required for structural rigidity.
- B. Form snap in glass stops, closure molds, weather stops, and flashings of extruded PVC for tight fit into window frame section.
- C. Install glass using exterior dry method of glazing.
- D. Double weatherstrip operable units.

2.4 SHOP FINISHING

- A. Exterior Surfaces: as selected from Manufacturer's premium colors.
- B. Interior Surfaces: Manufacturer's premium colors.
- C. Screens: Match window frame color with light screening.
- D. Operators/Hardware: color to match unit

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify rough openings are correctly sized and located.
- B. Examine abutting wall flashing, vapor retarders, weather barriers, and other components to ensure weathertight window installation.
- C. Verify rough opening dimensions, sill levelness, and operational clearances are acceptable.
- D. Notify Architect of conditions that would adversely affect installation or subsequent use.
- E. Do not begin installation until unacceptable conditions are corrected.

3.2 PREPARATION

- A. Prepare opening to permit correct installation of frame and achieve continuity of air and vapor retarder seal.

3.3 INSTALLATION

- A. Use anchorage devices to securely attach frames to structure.
- B. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work. Anchor windows securely in place to supporting substrate. Verify that windows are installed in proper relation to wall flashing and other abutting materials to achieve a watertight installation.
- C. Install vinyl windows in accordance with manufacturer's instructions at locations indicated on the Drawings.
- D. Install vinyl windows plumb, level, square, true to line, and without distortion.
- E. Anchor vinyl windows securely in place to supports.
- F. Verify vinyl windows are installed in proper relation to wall flashing and other abutting materials. Coordinate attachment and seal of air and vapor retarder materials. Pack fibrous insulation (or low expansion foam) in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- G. Install vinyl windows weathertight.
- H. Verify vinyl windows open, close, and lock properly.
- I. Install interior vinyl trim at perimeter of window unit as applicable to the conditions.
- J. Coordinate installation of perimeter sealants and backing materials with Section 07 90 00.

3.4 ADJUSTING

- A. Adjust operating components to ensure a tight fit at contact points and weather stripping for smooth operation and weathertight closure.
- B. Replace damaged glass.
- C. Remove and replace with new material, damaged components that cannot be successfully repaired, as determined by Architect.

3.5 CLEANING

- A. Clean vinyl windows promptly after installation in accordance with manufacturer's instructions.
- B. Do not use harsh cleaning materials or methods that could damage windows.

3.6 SCHEDULES

- A. Refer to drawings.
- B. Refer to drawings/schedules for tempered glazing requirements.

END OF SECTION

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SECTION 08 71 00 - DOOR HARDWARE

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes hardware for doors.
 - 1. All hardware components to be ADA/UFAS compliant.
 - 2. New cylinders and keys for all units.

1.2 SUBMITTALS

- A. Shop Drawings:
 - 1. Indicate locations and mounting heights of each type of hardware, schedule, and catalog cuts.
 - 2. Submit manufacturer's parts list, and templates.
- B. Manufacturer's installation instructions: Submit special procedures, and perimeter conditions requiring special attention.

1.3 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of installed cylinders and their master key code.
- B. Operation and Maintenance Data: Submit data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
- C. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with the following requirements:
 - 1. ANSI A156 series.
 - 2. NFPA 80 - Fire Doors and Windows.
 - 3. NFPA 101 - Life Safety Code.
- B. Furnish hardware marked and listed in BHMA Directory of Certified Products.
- C. Coordinate work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware and recessed items.
 - 1. Provide templates or actual hardware as required to ensure proper preparation of doors and frames.
- D. Coordinate Owner's keying requirements during course of work.

1.5 WARRANTY

- A. Furnish five year manufacturer warranty for door hardware.

1.6 MAINTENANCE SERVICE

- A. Provide special wrenches and tools applicable to each different or special hardware component.

PART 2 PRODUCTS

2.1 DOOR HARDWARE

- A. Lockset, Latch Set, and Cylinder Manufacturers:
 - 1. Falcon Lock or Equal Model W-Series, Dane Handle Design 6 pin cover style for Exterior Doors, Unit Entry Doors, and Common Building Areas

2. Falcon Lock or Equal Model W-Series, Dane Handle Design 6 pin cover style for Interior Doors within Unit.
- B. Deadlock Manufactures:
1. Falcon Lock or Equal Model D241 6 pin cover style.
- C. Cylinders: Falcon interchangeable "A" keyway cores, 6 pin type.
- D. Door Viewer Manufacturers:
1. Rockwood Model 622

2.2 COMPONENTS

- A. General Hardware Requirements: Where not specifically indicated, comply with applicable ANSI A156 standard for type of hardware required. Furnish each type of hardware with accessories as required for applications indicated and for complete, finished, operational doors.
1. Templates: Furnish templates or physical hardware items to door and frame manufacturers sufficiently in advance to avoid delay in Work.
 2. Reinforcing Units: Furnished by door and frame manufacturers; coordinated by hardware supplier or hardware manufacturer.
 3. Fasteners: Furnish as recommended by hardware manufacturer and as required to secure hardware.
 - a. Finish: Match hardware item being fastened.
- B. Hinges: ANSI A156.1, full mortise type, template type, ANSI A156.7, complying with following general requirements unless otherwise scheduled.
1. Widths: Sufficient to clear trim projection when door swings 180 degrees.
 2. Number: Furnish minimum three hinges to 90 inches high, four hinges to 120 inches high for each door leaf.
 - a. Residential Interior Wood Doors: Furnish minimum three hinges.
 - b. Size and Weight: Doors 1-3/8" thick: 3-1/2" size.
 3. Pins: Furnish nonferrous hinges with non-removable pins (NRP) at exterior doors, non rising pins at interior doors.
 4. Tips: Flat button tips with matching plug.
 5. Provide three spare sets.
- C. Locksets: Furnish locksets compatible with specified cylinders. Furnish standard strikes with extended lips to protect trim from being marred by latch bolt verify type of cutouts provided in metal frames.
1. Bored (Cylindrical) Locksets: ANSI A156.2, Series 4000, Grade 2 unless otherwise indicated.
- D. Latch Sets: Match locksets. Typical 2-3/4" backset. Furnish standard strikes with extended lips to protect trim from being marred by latch bolt.
1. Bored (Cylindrical) Latchsets: ANSI A156.2, Series 4000, Grade 2 unless otherwise indicated.
- E. Closers: ANSI A156.4 modern type with cover, surface mounted center or offset pivot closers; full rack and pinion type with steel spring and non-freezing hydraulic fluid; closers required for fire rated doors unless otherwise indicated.
1. Adjustability: Furnish controls for regulating closing, latching, speeds, and back checking.
 2. Arms: Type to suit individual condition; parallel-arm closers at reverse bevel doors and where doors can swing full 180 degrees.
 3. Location: Mount closers on inside of exterior doors, room side of interior doors typical; mount on pull side of other doors.
 4. Operating Pressure: Maximum operating pressure as follows.
 - a. Interior Doors: Maximum 5 pounds.

- b. Exterior Doors: Maximum 10 pound.
 - c. Fire Rated Doors: As required for fire rating, maximum 15 pounds.
- F. Push/Pulls, Gaskets, Thresholds, and Trim: Furnish as indicated in Schedule, with accessories as required for complete operational door installations.
- 1. Push/Pulls: ANSI A156.6; Furnish straight push-pull type pulls with bolts to secure from opposite door face.
 - 2. Kickplates: ANSI A156.6, metal; 8 inch high, 1 inch less than door width; stainless steel.
 - 3. Weatherstripping: Furnish continuous weatherstripping at top and sides of exterior doors.
 - 4. Fire Rated Gaskets: Furnish continuous fire rated gaskets at top and sides of fire rated doors [unit entry doors].
 - 5. Thresholds: Maximum 1/2 inch height; requirements to ensure accessibility for persons with disabilities.
 - 6. Door Sweeps: Surface mounted door sweep with pile type weatherstripping. 26D finish at metal frame.
 - 7. Hinge Stops: Rockwood 528 stops
 - 8. Wall Plates: Plastic wall mounted protection plate, 5 inch diameter, adhesive mounted
- G. Cylinders: Furnish new interchangeable cores, Falcon C606, 6 pin design with "A" standard keyway to **match GDPM standard installation, including master keying schedule.**
- H. Keying: Keyed as directed by Owner to integrate with existing Keying Schedule.
- 1. Keys: Nickel silver. Stamp keys with "DO NOT DUPLICATE".
 - 2. Supply keys in the following minimum quantities
 - a. 5 master keys.
 - b. 3 keys per residential unit.
- I. Pocket Door Hardware
- 1. Privacy Latch: Johnson Hardware #1521 Suncrest Privacy Door Lock with Emergency Release.
 - 2. Back to Back Pulls: Hagar Co.: Round Wrought Door Pulls H5D, 5 1/2" center to center spacing. Installation for back to back.
- J. By-Pass Door Hardware:
- 1. Johnson Hardware #100SM, Soft Close, side mount
 - 2. Johnson Hardware 30 Series Flush Pulls, one per door leaf [match original size as applicable]
- K. Bi-Fold Door Hardware:
- 1. Johnson Hardware #200FS Side mounted Bi-Fold Door Hardware
 - 2. Johnson Hardware: Wood knob set, stain to match door slab.
- L. Door Viewers: 1-way viewing, three precision ground optical glass lenses, 180 degree angle viewing.

2.3 ACCESSORIES

- A. Lock Trim: Furnish levers with 2 3/8" rose.
- B. Through Bolts: Through bolts and grommet nuts are not permitted on door faces in occupied areas unless no alternative is possible.
 - 1. Do not permit through bolts on solid wood core doors.

2.4 FINISHING

- A. Finishes: ANSI A156.18; with following finishes except where otherwise indicated in Schedule at end of section.
 - 1. Hinges:
 - a. BHMA 626, satin finish.
 - 2. Typical Exterior Exposed and High Use Interior Door Hardware:

- a. BHMA 626, satin chromium plated brass.
3. Typical Interior Door Hardware:
 - a. BHMA 626, satin chromium plated brass.
4. Thresholds: Finish appearance to match door hardware on exterior face of door.
 - a. BHMA 628, satin aluminum, clear anodized.
5. Other Items: Provide manufacturer's standard finishes matching similar hardware types on same door, and maintaining acceptable finish considering anticipated use and BHMA category of finish.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify doors and frames are ready to receive work and dimensions are as indicated on shop drawings and as instructed by manufacturer.

3.2 INSTALLATION

- A. Coordinate mounting heights with door and frame manufacturers. Use templates provided by hardware item manufacturer.
- B. Mounting Heights from Finished Floor to Center Line of Hardware Item: Comply with manufacturer recommendations and applicable codes.
 1. Locksets: 38 inches
 2. Dead Bolt: 48 inches
 3. Top Hinge: Jamb manufacturer's standard, but not greater than 10 inches from head of frame to centerline of hinge.
 4. Bottom Hinge: Jamb manufacturer's standard, but not greater than 12-1/2" from floor to centerline of hinge.
 5. Intermediate Hinges: Equally spaced between top and bottom hinges and from each other.
 6. Door Viewers:
 - a. Door viewer: 48" and 60" AFF at accessible units.

3.3 ADJUSTING

- A. Adjust hardware for smooth operation.

3.4 SCHEDULE

- A. Refer to drawings for Hardware sets
 1. The hardware sets are intended to establish type and standard of quality when used together with these section requirements. Examine Drawings and Specifications and furnish proper hardware for door openings.

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Hardware Set H-1: Existing Building Main Entrance

| | |
|-------------------|---|
| Hinges: | Existing to Remain |
| Push / Pull: | Existing to Remain |
| Lockset: | None [blank cylinder opening if required] |
| Closer: | New Overhead parallel arm closer |
| Threshold: | New accessible / saddle style threshold |
| Weatherstripping: | New Pile Type or Bulb Type Weatherstripping |

Hardware Set H-2: Unit Entrance

| | |
|--------------------------------|--|
| Hinges: | New 1 ½ pair ball bearing hinges [26D finish] |
| Hinge Stops: | New [2] Rockwood 528 |
| Wall Plate: | New plastic wall plate |
| Kick Plate: | New 8" high x full width stainless steel kick plate [entry side] |
| Latchset: | New W101 – Passage Function 26D |
| Deadbolt: | New D241 – single throw deadbolt 26D |
| Closer: | New Overhead parallel arm closer |
| Door Viewer: | New Door Viewer |
| Threshold: | New accessible / saddle style threshold |
| Smoke Seal / Weatherstripping: | New Bulb Type Smoke Seal / Weatherstripping |
| Bottom Sweep: | New Pile Type Bottom Sweep |

Hardware Set H-3: Passage Set

| | |
|--------------|---|
| Hinges: | New 1 ½ pair ball bearing hinges [26D finish] |
| Hinge Stops: | New [2] Rockwood 528 |
| Wall Plate: | New plastic wall plate |
| Latchset: | New W101 – Passage Function 26D |

Hardware Set H-4: Privacy Set

| | |
|--------------|---|
| Hinges: | New 1 ½ pair ball bearing hinges [26D finish] |
| Hinge Stops: | New [2] Rockwood 528 |
| Wall Plate: | New plastic wall plate |
| Lockset: | New W301 – Privacy Function 26D |

Hardware Set 5: Storeroom Function

| | |
|--------------------------------|---|
| Hinges: | New 1 ½ pair ball bearing hinges [26D finish] |
| Hinge Stops: | New [2] Rockwood 528 |
| Wall Plate: | New plastic wall plate |
| Closer: | New Overhead parallel arm closer |
| Lock Set: | New W581 – Storeroom Function 26D |
| Threshold | ADA/UFAS Compliant Anodized Aluminum |
| Smoke Seal / Weatherstripping: | New Bulb Type Smoke Seal / Weatherstripping |
| Bottom Sweep: | New Pile Type Bottom Sweep |

Hardware Set H-6: Double Door

Hinges: New [2] 1 ½ pair ball bearing hinges [26D finish]
Hinge Stops: New [4] Rockwood 528
Wall Plate: New [2] plastic wall plates
Lockset: New W12 – [2] Dummy Pulls 26D
Catch: New Ives 349B Ball Catch 26D

Hardware Set H-7: New Building Main Entrance

Hinges: New 1 ½ pair ball bearing hinges 26D
Push / Pull: Push / pull bar by door supplier
Lockset: None [blank cylinder opening if required]
Closer: New Overhead parallel arm closer
Threshold: New accessible / saddle style threshold
Weatherstripping: New Pile Type or Bulb Type Weatherstripping

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Hardware Set H-1: Existing Building Main Entrance

Hinges: Existing to Remain
Push / Pull: Existing to Remain
Lockset: None [blank cylinder opening if required]
Closer: New Overhead parallel arm closer
Threshold: New accessible / saddle style threshold
Weatherstripping: New Pile Type or Bulb Type Weatherstripping

Hardware Set H-2: Unit Entrance

Hinges: New 1 ½ pair ball bearing hinges [26D finish]
Hinge Stops: New [2] Rockwood 528
Wall Plate: New plastic wall plate
Kick Plate: New 8" high x full width stainless steel kick plate [entry side]
Latchset: New W101 – Passage Function 26D
Deadbolt: New D241 – single throw deadbolt 26D
Closer: New Overhead parallel arm closer
Door Viewer: New Door Viewer
Threshold: New accessible / saddle style threshold
Smoke Seal / Weatherstripping: New Bulb Type Smoke Seal / Weatherstripping
Bottom Sweep: New Pile Type Bottom Sweep

Hardware Set H-3: Passage Set

Hinges: New 1 ½ pair ball bearing hinges [26D finish]
Hinge Stops: New [2] Rockwood 528
Wall Plate: New plastic wall plate
Latchset: New W101 – Passage Function 26D

Hardware Set H-4: Privacy Set

Hinges: New 1 ½ pair ball bearing hinges [26D finish]
Hinge Stops: New [2] Rockwood 528
Wall Plate: New plastic wall plate
Lockset: New W301 – Privacy Function 26D

Hardware Set H-5: Bi-Fold Set

Bi-Fold Track: New Johnson Hardware Bi-Fold Set [26D finish]
Pulls: New Wood Pulls to match doors

Hardware Set H-6: Bi-Pass Set

Bi-Fold Track: New Johnson Hardware Bi-Pass Set [26D finish]
Pulls: New Flush Pulls

See Part 2.2 Components above for accessories and other hardware.

END OF SECTION

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SECTION 08 80 00 - GLAZING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Glass glazing for exterior windows and doors [Storefront glazing only].

1.2 SYSTEM DESCRIPTION

- A. System performance to achieve continuity of building enclosure air barrier and vapor retarder with glass and glazing materials of this section.
- B. Glass Thickness: Select minimum thickness in accordance with ASTM E1300 to resist specified design loads.
- C. Structural Design: Design in accordance with applicable code for most critical combination of wind, snow, seismic, and dead loads.
- D. Exterior Glass Deflection: Maximum of 1/175 of glass edge length or 3/4 inch, whichever is less with full recovery of glazing materials.
- E. Interior Glass Deflection: Maximum differential deflection for two adjacent unsupported edges when 50 plf force is applied to one panel at any point up to 42 inches above finished floor less than thickness of glass.
- F. Thermal and Solar Optical Performance: Measured or calculated in accordance with the following:
 - 1. U-Values: NFRC 100.
 - 2. Solar Heat Gain Coefficients: NFRC 200.
 - 3. Solar Optical Properties: NFRC 300.

1.3 SUBMITTALS

- A. Product Data:
 - 1. Glass: Provide structural, physical, and thermal and solar optical performance characteristics, size limitations, special handling or installation requirements.
- B. Samples: Submit two samples, illustrating glass, coloration.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with GANA Glazing Manual for glazing installation methods.
- B. Apply label from agency approved by authority having jurisdiction to identify each fire rated glass lite.

1.5 WARRANTY

- A. Furnish ten year manufacturer warranty including coverage for sealed glass units from seal failure, interpane dusting, misting, and replacement of defective glass.

PART 2 PRODUCTS

2.1 GLAZING MANUFACTURERS

- A. PPG
- B. Pilkington
- C. Old Castle

2.2 FLOAT GLASS MATERIALS

- A. Annealed Glass: ASTM C1036, Type 1 transparent flat, Quality Q3, float glass.

1. Furnish annealed glass except where heat strengthened or tempered glass is required to meet specified performance requirements.
- B. Tempered Glass: ASTM C1048, Type 1 transparent flat, Quality Q3, Kind FT fully tempered, Condition A uncoated, float glass with horizontal tempering.

2.3 FLOAT GLASS PRODUCTS

- A. Clear Glass: Annealed, Tempered float glass as specified; Class 1 clear.
 1. Clear annealed glass (FG-CA)
 2. Clear tempered glass (FG-CT).
 3. Minimum Thickness: 1/4 inch.
- B. Tinted Glass: Annealed, Tempered float glass as specified; Class 2 tinted.
 1. Tinted annealed glass (FG-TA).
 2. Tinted tempered glass (FG-TT).
 3. Minimum Thickness: 1/4 inch.
 4. Tint: Gray
- C. Low E Glass: Annealed, Tempered float glass as specified; Class 2 tinted.
 1. Tinted Low E annealed glass (FG-ETA).
 2. Tinted Low E tempered glass (FG-ETT).
 3. Minimum Thickness: 1/4 inch.
 4. Tint: Gray.
 5. Solar Light Transmittance: 40 percent minimum.
 6. Solar Heat Gain Coefficient: 0.40 maximum.

2.4 INSULATING GLASS PRODUCTS

- A. Insulating Glass: ASTM E2190; factory assembled units consisting of sealed lites of glass separated by a dehydrated interspace. glass elastomer edge seal; place reflective film within unit; purge interpane space with dry hermetic air.
 1. Total Unit Thickness: 1 inch unless otherwise indicated.
 - a. 1/4-inch outer pane thickness, gray tinted
 - b. 1/2-inch air space – argon filled
 - c. 1/4-inch inner pane thickness, low E coated [Guardian Sunguard SuperNeutral 68]
 2. Spacer: Chromatech warm edge spacer bar or Equal
 3. Sealing System: Dual-Seal
 4. Insulating Glass Unit Edge Seal Construction: Aluminum, thermally broken, as required to meet thermal performance requirements of the opening.

2.5 GLAZING GASKETS

- A. Dense Compression Gaskets: Molded or extruded gaskets of material indicated below, complying with standards referenced with name of elastomer indicated below, and of profile and hardness required to maintain watertight seal:
 1. EPDM, ASTM C 864.
 2. Silicone, ASTM C 1115.
 3. Thermoplastic polyolefin rubber, ASTM C 1115.

2.6 GLAZING SEALANTS

- A. Elastomeric Glazing Sealants: Materials compatible with adjacent materials including glass, and glazing channels.
- B. Pre-Formed Glazing Tape: Butyl-based elastomeric tape, Size to suit application.

2.7 GLAZING ACCESSORIES

- A. Setting Blocks: Elastomeric material recommended by glass manufacturer, 80 to 90 Shore A durometer hardness.

- B. Spacer Shims: Elastomeric material recommended by glass manufacturer, 50 to 60 Shore A durometer hardness.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify openings for glazing are correctly sized, within tolerance, and glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.

3.2 PREPARATION

- A. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- B. Prime surfaces scheduled to receive sealant.

3.3 INSTALLATION

- A. Perform installation in accordance with GANA Glazing Manual.
 - 1. Glazing Sealants: Comply with ASTM C1193.
- B. Exterior Wet/Dry Method (Preformed Tape and Sealant) Installation:
 - 1. Cut glazing tape to length and set against permanent stops. Seal corners by butting tape and dabbing with compatible butyl sealant.
 - 2. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete continuity of air and vapor seal.
 - 3. Place setting blocks at **1/3** points.
 - 4. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to attain full contact at perimeter of pane or glass unit.
 - 5. Fill gap between glazing and stop with elastomeric glazing sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch below sight line.
 - 6. Apply cap bead of elastomeric glazing sealant along void between stop and glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.4 CLEANING

- A. Remove glazing materials from finish surfaces.
- B. Remove labels after Work is complete.
- C. Clean glass and adjacent surfaces.

3.5 SCHEDULE

- A. Exterior doors / Storefronts: 1 inch insulated, low-E, tinted glass. All glazing to be tempered

END OF SECTION

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SECTION 09 21 16 - GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes gypsum board with joint treatment; tile backer board.

1.2 SUBMITTALS

- A. Product Data: Submit data on each type of gypsum board, backer board, joint tape and accessories.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with GA-201 - Gypsum Board for Walls and Ceilings. GA-214 - Recommended Specification: Levels of Gypsum Board Finish. GA-216 - Recommended Specifications for the Application and Finishing of Gypsum Board. GA-600 - Fire Resistance Design Manual.
- B. Surface Burning Characteristics:
1. Textile Wall Coverings: Comply with one of the following:
 - a. Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.
- C. Mock-up:
1. Provide mockup of the quality of finishes for one wall that indicates the level of finish quality. Approved mockup will become standard for comparing other work.
 2. Provide mockup of the quality of finishes for one ceiling area that indicates the level of finish quality for knockdown stomped ceiling finishes. Approved mockup will become standard for comparing other work.

PART 2 PRODUCTS

2.1 GYPSUM BOARD ASSEMBLIES

- A. Manufacturers:
1. United States Gypsum Co.
 2. BPB Americas Inc.
 3. G-P Gypsum Corp.
 4. National Gypsum Co.
 5. Certainteed.
- B. Gypsum Board [Type GB-1]: ASTM C1396; 1/2 inch thick, maximum available length in place; ends cut square, tapered square edges.
- C. Gypsum Board [Type GB-2]: ASTM C1396; ASTM D3273, mold-moisture resistant, 1/2 inch thick, maximum available length in place; ends cut square, tapered square edges.
- D. Gypsum Board [Type GB-3]: ASTM C1396; Type X fire resistant type, high density; 5/8 inch thick, maximum available length in place; ends cut square, tapered square edges.
- E. Gypsum Board [Type GB-4]: ASTM C1396; mold-moisture resistant, Type X fire resistant type; 5/8 inch thick, maximum available length in place; ends cut square, tapered square edges.
- F. Tile / Shower Backer Boards [Type TB-1]:
1. Cement Tile Backer Board: ASTM A118.9; high density, glass fiber reinforced; 1/2 inch thick; mold resistant.
 2. Tile Backer Board Joint Tape: 2 inch wide, coated glass fiber tape for joints and corners.

2.2 ACCESSORIES

- A. Gypsum Board Accessories: ASTM C1047; metal, metal and paper combination; corner beads, edge trim, and expansion joints.
 - 1. Metal Accessories: Galvanized steel.
 - 2. Edge Trim: Type LC or U bead.
- B. Joint Materials: ASTM C475/C475M, reinforcing tape, joint compound, and water.
- C. Fasteners: ASTM C1002; Type S12 hardened screws, length to suit application.
- D. Gypsum Board Screws: ASTM C1002; Type W or S hardened screws, length to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify site conditions are ready to receive work.

3.2 INSTALLATION

- A. Gypsum Board:
 - 1. Install gypsum board in accordance with GA-216 and GA-600.
 - 2. Fasten gypsum board to furring or framing with screws.
 - 3. Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials.
 - 4. Seal cut edges and holes in moisture resistant gypsum board with sealant.
- B. Joint Treatment:
 - 1. Finish in accordance with GA-214 Level 4.
 - a. Level 5 finish at areas receiving tile backer board or paperless gypsum board.
 - 2. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 3. Feather coats onto adjoining surfaces so camber is maximum 1/32 inch.

3.3 SCHEDULE

- A. Match existing / adjacent finishes as applicable to the conditions. General intent is repair existing gypsum board finishes to a Level 4 standard finish. Prep, repair, and skim as required to achieve desired finish.
- B. Interior walls [except where noted otherwise]: GB-1. Level 4 finish.
- C. Interior Walls at Wet Areas: GB-2. Level 4 Finish.
- D. Interior Ceilings: GB-1. Level 4 finish.
- E. Interior Ceilings at Wet Areas: GB-2. Level 4 finish.
- F. Interior Walls / Ceilings at Demising Wall Locations: GB-3 or GB-4 as applicable, Level 4 finish.
- G. Interior walls to receive tile / solid surface finishes: TB-1 or GB-2 as applicable and per manufacturer installation instructions.

END OF SECTION

SECTION 09 26 13 - GYPSUM VENEER PLASTERING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Veneer plaster / Skim coat over existing plaster or gypsum board surfaces.

1.2 SUBMITTALS

- A. Product Data: Veneer plaster products.

1.3 QUALITY ASSURANCE

- A. Apply gypsum base according to ASTM C844 and GA 216.
- B. Apply gypsum veneer plaster according to ASTM C843.
- C. Veneer plaster Work according to GA 216.
- D. Fire-Rated Wall and Floor Construction: in conjunction with Section 09 21 16 and the drawings.
- E. Manufacturer: Company specializing in manufacturing products specified in this Section with three years' experience.
- F. Installer: Company specializing in performing Work of this Section with three years' experience.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply veneer plaster when substrate or ambient air temperature is less than 50 degrees F nor more than 80 degrees F; for 24 hours prior to, during operations and after, until building heating system can maintain spaces above minimum temperature.

PART 2 PRODUCTS

2.1 GYPSUM VENEER PLASTER

- A. Manufacturers:
 - 1. USG
 - 2. Georgia Pacific
 - 3. National Gypsum

2.2 COMPONENTS

- A. Gypsum Veneer Plaster: ASTM C587.
- B. Gypsum Base: Refer to Section 09 21 16 for gypsum board base materials.
- C. Gypsum Veneer Base Accessories: ASTM C1047; metal; corner beads, edge trim, and expansion joints.
- D. Reinforcing Tape, Joint Compound, Adhesive, Water, Fasteners: GA 216.
- E. Bond Coat: ASTM C631, vinyl polymer type.

2.3 ACCESSORIES

- A. Gypsum Board Screws: ASTM C954; length to suit application.
 - 1. Screws for Wood Framing: Type W.

2.4 MIXES

- A. Mix plaster according to ASTM C587.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify gypsum base is flat, joints are taped and sanded, and surface is ready to receive Work of this Section. Verify joint and surface perimeter accessories are in place.
- B. Verify gypsum plaster base has been installed according to ASTM C844, is flat, smooth and surface is ready to receive Work. Verify joint and surface perimeter accessories are in place.

3.2 PREPARATION

- A. Clean surfaces of dust or loose matter.

3.3 INSTALLATION

- A. Install gypsum base according to GA 216. Refer to Section 09 21 16.
- B. Use drywall screws to fasten gypsum board to framing substrate.
- C. Install accessories.
- D. Tape, fill, and sand filled joints, edges, corners, openings, and fixings to produce surface ready to receive veneer finish.
- E. Feather coats onto adjoining surfaces so joint camber is maximum 1/32 inch.
- F. Apply gypsum veneer plaster according to ASTM C843.
- G. Apply single coat of veneer plaster immediately after dampening substrate to thickness of 1/16 to 3/16 inch in thickness or as required to suit existing conditions.
- H. Finish surface of veneer plaster to **smooth skim coat finish to match new adjacent gypsum board finishes.**

3.4 ERECTION TOLERANCES

- A. Maximum Variation from Specified Thickness: Plus or minus 1/32 inch.

3.5 SCHEDULES

- A. Existing plaster/ gypsum board finishes to remain: Repair walls from prior damage and as a result of cut-patch operations for proposed work. Apply new full skim coat gypsum veneer skim coat over the entire surface of the existing finishes scheduled to remain where impacted by the work. New finish shall be smooth and consistent with the finish of new gypsum board, Level 4 finish.

END OF SECTION

SECTION 09 30 00 - TILING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes ceramic tile for interior floor and wall applications; and thresholds at door openings.

1.2 SUBMITTALS

- A. Product Data: Submit information on tile and grout, instructions for using grouts and adhesives.
- B. Samples: Submit tile and grout samples illustrating pattern, color variations, and grout joint size variations.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with TCA Handbook and ANSI A108.1 Series/A118.1 Series.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Do not install adhesives in unventilated environment.
- B. Maintain ambient and substrate temperature of 50 degrees F during installation of mortar materials.

1.5 ALLOWANCE

- A. Allow \$8.00/sf for the purchase of the tile excluding all accessories and installation.

PART 2 PRODUCTS

2.1 TILE

- A. Manufacturers:
 - 1. Dal Tile International.
 - 2. American Olean Tile Co.
 - 3. Crossville Porcelain Stone.
 - 4. Florida Tile.

2.2 COMPONENTS

- A. Porcelain Floor Tile: ANSI A137.1, conforming to the following:
 - 1. Moisture Absorption: 0 to 0.5 percent.
 - 2. Size: 12x12 x5/16 inch
 - 3. Shape: Square.
 - 4. Edge: Square/Eased.
 - 5. Surface Finish: Unglazed.
 - 6. Color: As selected from full range of standard colors.
- B. Base: Same as floor tile if there is no wall tile above.
 - 1. Length: 12" length.
 - 2. Height: 3" or 4".
 - 3. Bottom Edge: Square
 - 4. Top Edge: Eased.
 - 5. Moisture Absorption: 0 to 0.5 percent.
 - 6. Surface Finish: Unglazed.
 - 7. Color: As selected.
- C. Mortar Materials:
 - 1. Mortar Bed Materials: ANSI A108.1A; portland cement, sand, latex additive, and water; proportioned in accordance with applicable code.

2. Mortar Bond Coat Materials:
 - a. Dry-Set Portland Cement type: ANSI A118.1.
 - b. Latex-Portland Cement type: ANSI A118.4.
- D. Grout Materials:
 1. Standard Grout: Latex-Portland cement type as specified in ANSI A118.6; color as selected, sanded at floor, unsanded at walls [as applicable]
 2. Silicone Rubber Grout: Silicone sealant, moisture and mildew resistant type, complying with ANSI A118.6, color as selected.
- E. Cementitious Backer Board: Refer to Section 09 21 16.
- F. Thresholds:
 1. Extruded aluminum, with integral edge strip and bullnosed edge applicable to floor transition.
 2. Sloped profile as required to meet applicable threshold requirements for accessibility.
- G. Tile Floor Edging: Extruded Aluminum to suit condition.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify surfaces are ready to receive work.

3.2 PREPARATION

- A. Install cementitious backer board. Tape joints and corners, cover with skim coat of mortar to feather edge.

3.3 INSTALLATION

- A. Install tile, and grout in accordance with applicable requirements of ANSI A108.1 through A108.10, and TCA Handbook recommendations.
- B. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor, base and wall joints.
- C. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.
- D. Grout tile joints. Use standard grout unless otherwise indicated.
- E. Floors:
 1. Over interior cementitious backer unit substrates, install in accordance with TCA Handbook Method F113, dry-set or latex-portland cement bond coat, with standard grout.
- F. Wall Tile:
 1. Over cementitious backer units install in accordance with TCA Handbook Method W244, using membrane at bathrooms, kitchens.
 2. Over gypsum wallboard on wood studs install in accordance with TCA Handbook Method W243, thin-set with dry-set or latex-portland cement bond coat, unless otherwise indicated.

END OF SECTION

SECTION 09 64 00 - RESILIENT WOOD FLOORING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes resilient plank flooring.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data.
- B. Samples:
 - 1. Submit manufacturer's complete set of color samples for initial selection.

1.3 QUALITY ASSURANCE

- A. Surface Burning Characteristics:
 - 1. Floor Finishes: Class I, minimum 0.45 watts/sq cm when tested in accordance with NFPA 253.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Maintain temperature in storage area between 55 degrees F and 85 degrees F.
- B. Store materials for not less than 48 hours prior to installation in area of installation at temperature of 65 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F. Maintain relative humidity between 40% and 60% during installation.

1.5 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics: For resilient tile flooring, as determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
 - 1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

1.6 WARRANTY

- A. Furnish twenty [20] year warranty on Vinyl Plank Flooring.

PART 2 PRODUCTS

2.1 TILE FLOORING

- A. Manufacturers:
 - 1. Tarkett Luxury Vinyl Planks, Event
 - 2. Armstrong, Vinyl Plank Flooring, LUXE Best Collection.
 - 3. Congoleum Corp.
- B. Vinyl Plank Flooring: ASTM F1066:
 - 1. Tile Standard: ASTM F 1700, Class III, Type B, printed film vinyl tile, embossed surface
 - 2. Size: 4 x 36 inch.
 - 3. Wear Layer Thickness: 30 mil [embossed]
 - 4. Total Thickness: 0.120 inch
 - 5. Surface Treatment: Polyurethane – Reinforced
 - 6. Installation Method: Glue Down
 - 7. Pattern: Surface woodgrain pattern, as selected from full range of manufacturers colors.

2.2 ACCESSORIES

- A. Subfloor Filler: Premix latex; type recommended by floor material manufacturer.
- B. Primers and Adhesives: Waterproof, types recommended by floor material manufacturer.

- C. Moldings and Edge Strips: Same material as flooring as applicable, molded rubber other locations.
- D. Sealer and Wax: Types recommended by floor material manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify concrete floors are dry to maximum moisture content as recommended by manufacturer, and exhibit negative alkalinity, carbonization, and dusting.
- B. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

3.2 PREPARATION

- A. Clean substrate.
- B. Fill minor low spots and other defects with sub-floor filler.
- C. Repair concrete surfaces in accordance with ASTM F 710.
- D. Wood subfloors shall have a 1/4 or 1/2 inch APA approved underlayment plywood.
- E. Fill cracks, holes, depressions and irregularities in the substrate with good quality Portland cement based underlayment leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.
- F. Apply primer as required to prevent "bleed-thru" or interference with adhesion by substances that cannot be removed. Apply primer to substrate surfaces per manufacturer.

3.3 INSTALLATION

- A. Layout flooring planks in accordance with manufacturer's recommendations. Set flooring in place. Bond planks together, and floating over subfloor.
- B. Install tile flooring with joints and seams parallel to building lines.
- C. Scribe flooring to produce tight joints at items penetrating flooring.
- D. Where floor finishes are different on opposite sides of door, terminate flooring under centerline of door.
- E. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated. Secure resilient strips by adhesive.
- F. Adhere base tight to wall and floor surfaces.
- G. Fit joints tightly and make vertical. Miter internal corners. At external corners, V cut back of base strip to 2/3 of its thickness and fold.

3.4 CLEANING

- A. Remove excess adhesive from surfaces without damage.

3.5 SCHEDULE

- A. Vinyl Plank Flooring: at areas identified on the drawings.

END OF SECTION

SECTION 09 65 00 – RESILIENT RUBBER FLOORING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes resilient tile flooring; resilient base; thresholds and resilient stair accessories

1.2 REFERENCES

- A. ASTM International:
1. ASTM F1344 - Standard Specification for Rubber Floor Tile.
 2. ASTM F1861 - Standard Specification for Resilient Wall Base.
- B. National Fire Protection Association:
1. NFPA 253 - Standard Method of Test for Critical Radiant Flux for Floor Covering Systems Using a Radiant Heat Energy Source.
- C. South Coast Air Quality Management District:
1. SCAQMD Rule 1113 - Architectural Coatings.
 2. SCAQMD Rule 1168 - Adhesive and Sealant Applications.

1.3 SUBMITTALS

- A. Shop Drawings: Indicate seaming plan, custom patterns and inlay designs.
- B. Product Data: Submit data describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Samples:
1. Submit manufacturer's complete set of color samples for initial selection.
 2. Submit **two** samples, illustrating color and pattern for each resilient product specified.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning

1.5 QUALITY ASSURANCE

- A. Surface Burning Characteristics:
1. Base Material: Class I, minimum 0.45 watts/sq cm when tested in accordance with NFPA 253.
- B. Accessibility: Base shall comply with accessibility requirements ICC/ANSI A117.1.
1. Exceed Federal Standards and ADA requirements for slip-resistance.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum ten years documented experience.
1. Manufacturers Qualifications: Product manufacturer will have a technical installation representative available at the job site at the start of the installation to insure there are no conditions which will compromise the installation of the material and that the material is being installed according to industry standards, practices and manufacturers guidelines. The manufacturer's technical representative will document and confirm that the substrate, material, and installation are in compliance with manufacturer's guidelines and accepted industry standards and practices.
 - a. Any noticed defect with the product or installation system will require the response of the manufacturer's technical field service personnel on site to determine cause, correction or replacement.

- B. Installer: Company specializing in performing Work of this section with minimum ten years documented experience.
 - 1. An installer is "qualified" if trained by the manufacturer or a certified INSTALL [International Standards and Training Alliance] resilient covering installer.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by Tarkett, but not less than 55 deg F (13 deg C) or more than 85 deg F (29 deg C).

1.8 PROJECT CONDITIONS / ENVIRONMENTAL REQUIREMENTS

- A. Install resilient products after other finishing operations, including painting, have been completed. If that is not possible due to the compressed schedule, provide all required protection of the floor system after installation until turnover of the space.
- B. Maintain ambient temperatures within range recommended by the manufacturer, but not less than 65 deg F or more than 85 deg F in spaces to receive resilient products during the following time periods:
 - 1. 48 hours before installation.
 - 2. During installation.
 - 3. 48 hours after installation.
- C. Maintain the ambient relative humidity between 40% and 60% during installation.
- D. Until Substantial Completion, maintain ambient temperatures within range recommended by the manufacturer, but not less than 55 deg F or more than 85 deg F.

1.9 EXTRA MATERIALS

- A. Furnish an additional 5% of each type of floor, base and accessories.
- B. Document attic stock, properly label, and turn over to Owner.

1.10 WARRANTY

- A. Provide five [5] year manufacturer warranty for all resilient flooring, base, and accessories.

PART 2 PRODUCTS

2.1 TILE FLOORING

- A. Manufacturers:
 - 1. Tarkett North America / Johnsonite [Basis of Design]
- B. Rubber Tile: ASTM F1344; Class I-B- Homogenous Composition of 100% synthetic rubber: Tarkett / Johnsonite Color Splash Speckled Rubber Tile
 - 1. Size: 24 x 24 inch.
 - 2. Overall Thickness: 0.125 inch.
 - 3. Colors: manufacturer standard color mix as approved by Architect and Owner.
 - 4. Surface Texture:
 - a. Hammered at all floors unless specifically noted otherwise
 - b. Raised Round at treads, ramps or other areas if specifically noted.
 - 5. Test data:
 - a. Hardness (ASTM D2240): ≥ 85 Shore A
 - b. Abrasion Resistance (ASTM D3389): Passes
 - c. Thickness Tolerance (ASTM F386): Passes
 - d. Resistance to Chemicals (ASTM F925): Passes
 - e. Static Load Resistance (ASTM F970): 250 psi

- f. Resistance to Heat (ASTM F 1514): $\Delta E \leq 8$
- g. Size/Squareness Tolerance (ASTM F2055): Passes
- h. Dimensional Stability (ASTM F2199): Passes
- i. Static Coefficient of Friction (ASTM D 2047): ≥ 0.8 SCOF, exceed ADA requirements for slip-resistance.
- j. Flammability (ASTM E648, Critical Radiant Flux): Class 1 (≥ 0.45 W/cm²)

2.2 RESILIENT BASE

- A. Manufacturers:
 - 1. Tarkett North America [Basis of Design]
 - 2. Approved Equal.
- B. Base: ASTM F1861 Type TP – Thermoplastic, Rubber; coved style:
 - 1. Height: 4 inch.
 - 2. Thickness: 0.125 inch thick.
 - 3. Finish: Satin or Matte.
 - 4. Length: 4 foot sections.
 - 5. Outside Corners: Premolded or precut. Corners shall be a minimum of 4 inches in length each direction.
 - 6. Inside Corners: Job formed

2.3 STAIR COVERING

- A. Manufacturers:
 - 1. Tarkett North America [Basis of Design]
 - 2. Must be the same manufacturer as rubber flooring system.
- B. Rubber Stair Treads: FS RR-T-650, Composition A; full width and depth of stair tread in one piece; tapered thickness; nosing not less than 2 inches deep. Tarkett / Johnsonite Color Splash Speckled Rubber Tile
 - 1. Nominal Thickness: 0.1875 inch.
 - 2. Nosing Style: Square or round to match existing conditions.
 - 3. Colors: manufacturer standard color mix as approved by Architect and Owner.
 - 4. Surface Pattern: Hammered or as directed by Owner.
- C. Stair Risers: Maintain height and length in one piece, matching treads in material and color:
 - 1. Thickness: 0.125 inch.
- D. Stair Nosings: 1-1/2 inch horizontal return, 1-1/2 inch vertical return, full width of stair tread in one piece:
 - 1. Material: Rubber.
 - 2. Nominal Thickness: 0.125 inch.
 - 3. Pattern: Smooth.

2.4 ACCESSORIES

- A. Transition Moldings and Edge Strips, same material as flooring or metal as applicable. Refer to drawings.

2.5 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated and coordinate with substrate.
- B. Primer: A primer may be required and must be verified by the manufacturer.
- C. Adhesives: Water-resistant type recommended by manufacturer to suit floor tile and substrate conditions indicated.

1. Adhesives shall be approved by manufacturer for use over concrete substrates with maximum RH of 85 percent (ASTM F2170) and maximum pH of 9.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the work.
- B. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.
- D. Verify floor and wall surfaces are free of substances capable of impairing adhesion of new adhesive and finish materials.

3.2 PREPARATION

- A. Contractor shall provide all required field verification of conditions, quantity take-offs, layout confirmations, etc. as applicable to the work.
- B. Prohibit traffic until filler is cured.
- C. Clean substrate.
- D. Apply primer as required to prevent "bleed-thru" or interference with adhesion by substances cannot be removed.
- E. Do not install resilient products until they are same temperature as the space where they are to be installed.
 1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.
- F. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.3 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protection of resilient products.
- B. Perform the following operations immediately after completing resilient product installation:
 1. Remove adhesive and other blemishes from exposed surfaces.
 2. Sweep and vacuum surfaces thoroughly.
 3. Damp-mop surfaces to remove marks and soil.
- C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
 1. Prohibit traffic on resilient flooring for 48 hours after installation.
 2. No heavy traffic, rolling loads, or furniture placement for 72 hours after installation.
- D. Wait 72 hours after installation before performing initial cleaning.
- E. A regular maintenance program must be started after the initial cleaning.

3.4 SCHEDULE

- A. Refer to Drawings.

END OF SECTION

SECTION 09 90 00 - PAINTING AND COATING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes surface preparation and field application of paints and other coatings.
- B. Paint/Stain all exposed surfaces, new and existing, unless otherwise indicated.
 - 1. Exterior Work:
 - a. Exterior wood and fiber cement siding, soffits and trim.
 - b. Door Frames.
 - c. Metal railings and handrails.
 - d. Steel lintels.
 - e. Steel bollards
 - 2. Interior Work
 - a. Walls and ceilings.
 - b. Interior trim and casing
 - c. Doors and frames.
 - d. Shelving and miscellaneous components.
- C. Do not paint prefinished items, finished metal surfaces, operating parts, labels, and materials obviously intended to be left exposed such as brick and tile.
- D. Unless otherwise indicated do not paint concealed surfaces.
- E. Obtain primers and undercoat materials for each coating system from the same manufacturer as the finish coats. Primer and finish coat shall be factory applied, finish coat shall be field applied.
- F. **Extra Materials:** Deliver to Owner **any extra materials**, properly labeled, factory sealed, of each color and type of finish coat paint used on project for each building in contract. Materials shall be signed for by GDPM Construction Inspector.
- G. Minimum surface temperature of 50 degrees required for all coating systems.
- H. Store all materials in tightly closed containers when not in use, away from heat, electrical equipment, sparks and open flames. Use approved bonding and grounding procedures. Keep out of the reach of children and residents.
- I. Transfer materials to approved containers with complete and appropriate labeling.

1.2 APPLICATORS QUALIFICATIONS

- A. Engage an experienced applicator with a minimum of five years experience and who has completed painting systems application similar in materials and extend to those indicated for the Project and that have resulted in a construction record of successful in-service performance.

1.3 SUBMITTALS

- A. Product Data and Color Samples: Provide product data on each coating system component indicating VOC and environmental requirements. Coordinate coating systems for each material/substrate.

1.4 MOCKUP

- A. Full-coat finish sample (benchmark sample) of each type of coating, substrate, color, and finish required in area of not less than 100 sq. ft. Comply with PDCA P5. Contractor shall not begin work until final approval is given on color and finish.

1.5 REFERENCES AND REGULATIONS:

- A. Standards: Comply with applicable provisions and recommendations of the following, except when otherwise shown or specified:
 - 1. OSHA Safety Standards for the Construction Industry, Title 29 - Labor, Subtitle B – Regulations Relating to Labor, Occupational Safety and Health Administration (OSHA) 1926, 07/01/93 editions.
 - 2. OSHA Worker Safety and Health Act Regulation 29 CFR No. Parts 1900 through 1910.1400, 07/01/93 and later editions.
 - 3. SSPC Volume 1, Good Painting Practice, 1989 edition.
 - 4. SSPC Volume 2, Systems and Specifications, 1991 edition, Surface Preparation Guide and Paint Application Specifications of the Steel Structures Painting Council.
 - 5. NACE Standards, Volume I and II, 1992 editions of the National Association of Corrosion Engineers.
 - 6. SSPC and NACE Painter Safety Guidelines, latest editions.
- B. Requirements of Regulatory Agencies, conform with the following:
 - 1. Clean Air Act (CAA) – hazardous Air Emissions by U.S. EPA or State Agency under Regulation 40 CFR 61 or state equivalent.
 - 2. Clean Water Act (CWA) – hazardous Water Releases by U.S. EPA or State Agency under Regulation 40 CFR 116 through 117 or state equivalent.
 - 3. Toxic Substances Control Act (TSCA) – Toxic substance by U.S. EPA under Regulation 40 CFR 761.
 - 4. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or “SuperFund”) – Uncontrolled Hazardous Waste Sites and Hazardous Substance Release by U.S. EPA under Regulation 40 CFR 302.
 - 5. Resource Conservation and Recovery Act (RCRA) – Generation, Transportation, Treatment, Storage and Disposal of hazardous waste by U.S. EPA or State Agency under Regulation 40 CFR 260 through 267 or state equivalent.
 - 6. Hazardous and Solid Waste Amendments (HSWA) – Further regulation of hazardous waste by U.S. EPA or State Agency under Regulation 40 CFR through 267 or state equivalent.
 - 7. Hazardous Material Transportation Act (HMTA) – Transportation of Hazardous Material by DOT or State Agency under Regulation 49 CFR 171 through 179 or state equivalent.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit maintenance and cleaning instructions.

1.7 QUALITY ASSURANCE

- A. Surface Burning Characteristics:
 - 1. Fire Retardant Finishes: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Store and apply materials in environmental conditions required by manufacturer's instructions.

PART 2 PRODUCTS

2.1 COLORS AND FINISHES

- A. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.
 - 1. Lead: Measurable lead content in either the pigment or binder will not be permitted.
 - 2. The finish coats shall match colors selected.
- B. Finish Quality:
 - 1. Finishes shall exhibit a high quality, commercial grade appearance of uniform thickness.

2. Finishes shall be free of runs, sags, drips, waves, orange peel, festoons, dry spray, cloudiness, spotting, ropiness, brush marks, roller marks, fish eyes or other surface imperfections, voids, discontinuities, pinholes, holidays and overspray.
3. Final coat shall be uniform in texture, color and gloss, and shall provide an acceptable match with the approved drawdown sample sheet.

2.2 COATINGS

- A. Manufacturer
 1. Sherwin-Williams (SW)
 2. PPG Porter
 3. Benjamin Moore
- B. Colors: As selected from a full range of manufacturer's offerings, including premium colors.
- C. Contractor shall provide for a minimum of the following:
 1. Exterior Finishes: 3 colors per building [exterior color schemes and color selections may vary per building, plan accordingly]
 2. Interior Finishes: 4 colors – ceiling, walls, accent wall, and trim

2.3 EXTERIOR COATINGS

- A. Exterior Alkyd Wood Primer: SW A-100 "Exterior Oil Wood Primer, Y24W20, or equal.
 1. Alkyd based wood primer
 2. VOC: maximum 326 g/L; 2.72 lb/gal
 3. Volume solids: 58% +/- 2%
- B. Exterior Latex Primer Sealer: SW PrepRite ProBlock B51 Series, or equal.
 1. Interior/Exterior Latex Primer Sealer.
 2. VOC: maximum 96 g/L; 0.80 lb/gal
 3. Volume solids: 36 +/- 2%
- C. Exterior Latex Paint: SW Duration Exterior Latex Satin K33 Series, or equal.
 1. Acrylic based exterior satin finish top coat
 2. VOC: < 50 g/L; 0.42 lb/gal
 3. Volume solids: 39 +/- 2%
- D. Acrylic Primer: SW DTM Acrylic Primer/Finish B66W1, or equal.
 1. Acrylic emulsion waterborne, corrosion resistant coating
 2. VOC: maximum 150 g/L; 1.25 lb/gal
 3. Volume solids: 46 +/- 2%
- E. Acrylic Coating: SW DTM Acrylic Coating B66-100 Series Gloss, or equal.
 1. Acrylic emulsion finish topcoat
 2. VOC: maximum 250 g/L; 2.08 lb/gal
 3. Volume solids: 38 +/- 2%
- F. Acrylic Coating: SW DTM Acrylic Gloss Enamel, or equal.
 1. Acrylic emulsion finish topcoat
 2. VOC: maximum 250 g/L; 2.08 lb/gal
 3. Volume solids: 38 +/- 2%
- G. Epoxy Primer: SW Recoatable Epoxy Primer or equal.
 1. Rust inhibitive high build catalyzed polyamide/bisphenol A epoxy primer.
 2. VOC: Unreduced 295 g/L; 2.46 lb/gal
 3. Volume solids: 81% +/- 2%

2.4 INTERIOR COATINGS

- A. Interior Latex Primer: SW ProMar 200 Zero VOC Wall Primer B28W02600, or equal.
 1. Interior Latex Primer

2. VOC: maximum 0g/L; 0.0 lb/gal
 3. Volume Solids: 26 +/- 2%
- B. Interior Latex: SW ProMar 200 Zero VOC Interior Latex Flat B30-2600 Series, or equal.
1. Interior Latex Flat Acrylic
 2. VOC: maximum 0g/L; 0.0 lb/gal
 3. Volume Solids: 41 +/- 2%
- C. Interior Latex: SW ProMar 200 Zero VOC Eg-Shel B20-2600 Series, or equal.
1. Interior Latex Eggshell Acrylic
 2. VOC: maximum 0g/L; 0.0 lb/gal
 3. Volume Solids: 42 +/- 2%
- D. Interior Latex: SW ProMar 200 Zero VOC Semi-Gloss B31-2600 Series, or equal.
1. Interior Latex Semi-Gloss Acrylic
 2. VOC: maximum 0g/L; 0.0 lb/gal
 3. Volume Solids: 39 +/- 2%
- E. Interior Acrylic Primer: SW Pro Industrial DTM Acrylic Primer B66W1
1. Interior Acrylic Primer
 2. VOC: <150 g/L, 1.25 lb/gal
 3. Volume Solids: 46% +/- 2%
- F. Interior Acrylic Finish: SW DTM Acrylic Finish B66W01151 Series
1. Interior Acrylic Coating
 2. VOC: <50 g/L, 0.42 lb/gal
- G. Wood Conditioner: Sherwin Williams Min-Wax Pre-Stain Wood Conditioner
1. VOC: 350 g/L
 2. Volume Solids: 10.24%
- H. Wood Stain: Sherwin Williams Min-Wax Performance Series Tintable Wood Stain 250 VOC.
1. VOC: 250 g/l; 2.08 lb/gal.
 2. Volume Solids: 76% - 37% +/- 2%
- I. Sanding Sealer: Sherwin Williams Min-Wax Performance Series Fast-Dry Sanding Sealer
1. VOC: 542 g/L
 2. Volume Solids: 39% +/- 2%
- J. Satin Varnish: Sherwin Williams Min-Wax Fast-Drying Polyurethane 350 VOC.
1. VOC: maximum 350 g/l
 2. Volume Solids: 53.0-57.0%

2.5 PRE-CLEANING AND SURFACE PREPARATION PRODUCTS

- A. Pre-cleaning Agents
1. SW No Rinse Prepaint Cleaner
 2. Great Lakes Laboratories, Product 899, No Rinse Cleaner
 3. Krud Kutter
 4. Or approved equal
 5. Potable water
- B. Pre-cleaning (Power Wash) Equipment
1. Capacity to continuously deliver 3-5 gpm at 2,500 psig of 180-200 degree F hot water.
 2. Cleaning system shall affect the 32-ounce per gallon dilution.
 3. Manufacturer: Alkota, Model 565T with model 520 water heater or approved equal.
 4. Power wash with 15 degree tip capable of delivering hot water at 2500 psig.
- C. Power Tool Surface Preparation Media:
1. Scotch Brite No. 07451 by 3 M Corporation, Surface Conditioning disc.
 - a. Properties

- b. Texture: A Medium
 - c. Maximum Speed: 18,000 RPM
2. Clean "N" Strip Disco No CSD2 by 3 M Corporation
- a. Texture: Course
 - b. Maximum Speed: 8,000 RPM
 - c. Or approved equal.

PART 3 EXECUTION

3.1 SURFACE PREPARATION

- A. Comply with paint manufacturer's written instructions for surface preparation, environmental and substrate conditions, product mixing, and application.
- B. Perform all surface preparation in accordance with SSPC specifications, guidelines and good painting practices.
- C. Remove all dirt, grease, oil and other foreign material by 180-200 degree F hot water pressure cleaning with chemical injection of an emulsifying cleaner, Great Lakes No Rinse Cleaner at 32 oz. per gallon or equal.
- D. Patch all holes and imperfections with spackle joint compound and sand smooth.
- E. Seal all stains from water, smoke, ink, pencil, grease, etc. with SW Prep-Rite Interior Latex Primer or equal.
- F. Remove all rust and mill scale using 3M Clean and Strip non-woven plastic disks. SSPC-SP-3.
- G. Fill all cracks, voids and crevices with caulk after priming the surface.
- H. Do not paint until surface is thoroughly dry and in sound condition.

3.2 APPLICATION

- A. Examination and Verification of Condition: Contractor shall verify the areas and conditions under which the work is to be performed and notify the Owner in writing of conditions detrimental to the proper and timely completion of the Work. Do not proceed with the Work until satisfactory conditions have been corrected. Do not coat over chalk, dirt, scale, moisture, oil, surface contaminants, coatings that have exceeded the manufacturer's re-coat guidelines, or conditions otherwise detrimental to the formation of a durable high quality coating system.
- B. Comply with manufacturer's instructions and SSPC Good Paint Practices Volumes 1 and 2.
- C. Comply with OSHA regulations, City of Dayton, State of Ohio and Federal laws, ordinances, and guidelines.
- D. Coating systems require a minimum surface temperature of 77 degrees F at 50% RH for proper drying and curing with a minimum temperature of 50 degrees and a maximum relative humidity of 85%. Follow label directions for each type of coating. Substrate temperatures to be coated shall be a minimum of 5 degree F above dew point and rising. Ambient surface to be painted and coating materials shall be a minimum maintained temperature of 50 degree F for 24 hours.
- E. Refer to MSDS sheets before using any product.
- F. All surfaces must be thoroughly dry before coating applications.
- G. Apply coatings using brush or roller only.
- H. Labor and materials shall be guaranteed for five years against disbondment, fading that results in non-uniform finish color and chalking.

3.3 EXTERIOR PAINT APPLICATION SCHEDULE

- A. Exterior wood trim, door frames, etc.: As follows:
 - 1. Wood Alkyd Primer: SW A-100 Exterior Oil Wood Primer, Y24W20 at 2.3 MILS DFT per coat, one coat
 - 2. Exterior Latex Coating: SW Duration Exterior Latex Satin K33 Series at 2.0-4.0 MILS DFT per coat- two coats.
- B. Fiber Cement Siding, Soffits, and Composite Trim:
 - 1. Primer: Factory Applied
 - 2. Exterior Latex Coating: SW Duration Exterior Latex Satin K33 Series at 2.0-4.0 MILS DFT per coat- two coats.
- C. Aluminum: As follows:
 - 1. Flat Acrylic Primer: SW DTM Acrylic Primer/Finish at 2.5 MILS DFT per coat, one coat.
 - 2. Semi-Gloss, Acrylic Coating: SW DTM Acrylic Semi-Gloss Enamel at 2.5 to 4 MILS DFT per coat, two coats.
- D. Miscellaneous metals and steel lintels as follows:
 - 1. Flat Acrylic Primer: SW DTM Acrylic Primer/Finish at 2.5 MILS DFT per coat, one coat.
 - 2. Semi-Gloss, Acrylic Coating: SW DTM Acrylic Semi-Gloss Enamel at 2.5 to 4 MILS DFT per coat, two coats.

3.4 INTERIOR PAINT APPLICATION SCHEDULE

- A. Gypsum Board:
 - 1. Gypsum board ceilings:
 - a. Interior Latex Primer: SW ProMar 200 Zero VOC Primer at 1.3 MILS DFT per coat, one coat.
 - b. Interior Latex: SW ProMar 200 FLAT Interior Latex at 1.7 MILS DFT per coat, two coats.
 - 2. Gypsum board walls and ceilings in bathrooms, kitchens:
 - a. Interior Latex Primer: SW ProMar 200 Zero VOC Primer at 1.3 MILS DFT per coat, one coat.
 - b. Interior Latex: SW ProMar 200 Zero VOC Semi-Gloss Interior Latex with M-1 mildew inhibitor at 1.6 MILS DFT, two coats.
 - 3. Gypsum board walls in all other areas:
 - a. Interior Latex Primer: SW ProMar 200 Zero VOC Primer at 1.3 MILS DFT per coat, one coat.
 - b. Interior Latex: SW ProMar 200 Zero VOC Eggshell Interior Latex at 1.6 MILS DFT, two coats.
- B. Painted Woodwork, Trim Components and Door Frames:
 - 1. Interior Latex Primer: SW ProMar 200 Zero VOC Primer at 1.3 MILS DFT per coat, one coat.
 - 2. Interior Latex: SW ProMar 200 Zero VOC Semi-Gloss Interior Latex at 1.6 MILS DFT, two coats.
- C. Steel Substrates [hollow metal doors, frames, miscellaneous metal surfaces, access panels]:
 - 1. Interior Primer: SW DTM Acrylic Primer at 2.5-5.0 MILS DFT, one coat, where required for spot priming / bare metal conditions.
 - 2. Interior Acrylic: SW Pro Industrial DTM Acrylic Semi-Gloss Interior Coating at 2.5-4.0 MILS DFT, two coats.
- D. Stained Interior Finish Carpentry / Wood Doors [if not pre-finished]
 - 1. Wood Conditioner: SW Min-Wax Pre-Stain Wood Conditioner, One Coat
 - 2. Wood Stain: SW Min-Wax Performance Series Tintable Wood Stain 250 VOC, One Coat
 - 3. Sealer: SW Min-Wax Performance Series Fast-Dry Sanding Sealer, one coat.
 - 4. Satin Varnish: SW Min-Wax Fast-Dry Polyurethane, two coats.

3.5 CLEAN UP

- A. Clean site and remove debris and empty cans daily. Remove all paint from adjacent surfaces. Clean spills and splatters immediately.
- B. Clean hands and tools immediately after use with soap and water for water based products and with mineral spirits for oil based products.
- C. Follow manufacturer's safety recommendations when using mineral spirits.

3.6 ENVIRONMENTAL REQUIREMENTS

- A. Store and apply materials in environmental conditions required by manufacturer's instructions.

END OF SECTION

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SECTION 10 00 00 - SPECIALTIES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes address plaques, mailboxes

1.2 SUBMITTALS

- A. Shop Drawings: Indicate component locations, dimensions, details of blocking and attachment, and anchors.
- B. Product Data: Submit data on Product and accessories.

PART 2 PRODUCTS

2.1 CAST ALUMINUM ADDRESS PLAQUES

- A. Suppliers:
 - 1. Dayton Stencil Works Company
 - 2. Approved equal.
- B. Products:
 - 1. Front Entry at each building: Cast aluminum address plaques: 6" high x 14" wide x 1/2" thick with raised numbers and border with brushed finish, painted background with screw attachment. With three digits per plaque, coordinate with Architect. Colors as selected by Architect all custom colors, include any upcharge for custom colors in bid.
 - 2. Provide Type II Braille, glue on address marking for unit all new and existing building address plaques at aluminum address plaque.

2.2 INTERIOR DWELLING UNIT ADDRESS NUMBERS

- A. Provide 3" high unit numbers at each dwelling unit entrance door.
 - 1. Adhesive backed individual numbers.
 - 2. [1] numbered unit at each door.
 - a. Provide Type II Braille, glue on address marking for all units all buildings.
 - 3. Finish as suitable to complement finishes of other components.

2.3 INTERIOR WALL MOUNTED MAILBOXES

- A. Recessed Vertical Mailbox Unit, Salsbury Industries, 1250 Series, 4 door mailbox unit, anodized aluminum or Equal. Lockable mailboxes

2.4 EXTERIOR WALL MOUNTED MAILBOXES

- A. Surface Mounted – Traditional Mailbox, Standard – Horizontal Style with top hinged lid. Provide address number / unit number label at each mailbox. Color: black

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify surfaces and internal wall blocking are ready to receive work and opening dimensions are as instructed by manufacturer.

3.2 INSTALLATION – ADDRESS PLAQUES

- A. Install address plaques at existing walls near location of existing address plaque to be removed. Coordinate exact location with Architect.

3.3 INSTALLATION – DWELLING UNIT SIGNAGE

- A. Install dwelling unit signage adjacent to each dwelling unit entrance door.

3.4 SCHEDULE

- A. Address plaques: One at front entry door of each as shown on drawings [coordinate scope with drawings].
- B. Dwelling Unit Entrance Doors: One at each entrance door to each dwelling unit.
- C. Mailboxes: coordinate scope with drawings.

END OF SECTION

SECTION 10 28 00 - BATH ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes bath accessories.

1.2 SUBMITTALS

- A. Product Data: Submit data on accessories describing size, finish, details of function, attachment methods.

PART 2 PRODUCTS

2.1 TOILET AND BATH ACCESSORIES

- A. Manufacturers:
 - 1. American Specialties, Inc.
 - 2. Bobrick Washroom Accessories
 - 3. A&J Washroom Accessories
 - 4. Broan / Nutone

2.2 COMPONENTS

- A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
 - 1. Grind welded joints smooth.
 - 2. Fabricate units made of metal sheet of seamless sheets, with flat surfaces.
- B. Stainless Steel Sheet: ASTM A666, Type 304.
- C. Stainless Steel Tubing: ASTM A269, stainless steel.
- D. Galvanized Sheet Steel: ASTM A653, G90 zinc coating.
- E. Mirror Glass: Float glass, Type I, Class 1, Quality q2 (ASTM C 1036), with silvering, copper coating, and suitable protective organic coating to copper backing in accordance with FS A-A-3002.
- F. Fasteners, Screws, and Bolts: Hot dip galvanized.
- G. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.3 ACCESSORIES

- A. Toilet Tissue Holder (recessed): Wall mounted, stainless steel, rectangular-shaped bracket and back plate for concealed attachment, satin finish.
 - 1. Manufactured by ASI, #7402.
- B. Towel Bar 18" and 24" bar with back plate for concealed attachment, satin finish, 3/4" square bar
 - 1. Manufactured by ASI, #7360.
- C. Grab Bar: 18", 24", 36", 42" and 48" and corner grab bar with back plate for concealed attachment, stainless steel satin finish, 1 1/2" diameter
 - 1. Manufactured by ASI, #3200 Type 01.
 - 2. Manufactured by ASI, #3574 Type 01, corner shower grab bar
- D. Robe Hook: Single hook type.

1. Manufactured by ASI, #7340.
- E. Mirror:
1. Manufactured by ASI #600 Series, 18" wide x 36" high
 2. Stainless steel, Type 304 with #8 finish
- F. Medicine Cabinet:
1. Basco WM331-W, surface mounted Medicine cabinet, 18" x 36"
 2. Stainless steel framed mirror door concealing storage cabinet equipped with swing door with magnetic catch with continuous piano hinge.
 3. Four adjustable stainless steel shelves.
 4. Baked Enamel Interior finish.
- G. Medicine Cabinet [recessed]:
1. ASI #0952, recessed Medicine cabinet, 18" x 24"
 2. Stainless steel framed mirror door concealing storage cabinet equipped with swing door with magnetic catch with continuous piano hinge.
 3. Four adjustable stainless steel shelves.
 4. Baked Enamel Interior finish.
- H. Shower Curtain Rod:
1. Manufactured by ASI, #1214, with concealed mounted brackets.
 2. Length: 60" +/- (cut length of opening)
- I. Shower Curtain Hooks:
1. Manufactured by ASI, #1200-SHU
- J. Shower Seat:
1. Manufactured by ASI, # 8205, left or right hand as required for conditions.
 2. Padded seat, folding, accessible type.

2.4 FACTORY FINISHING

- A. Stainless Steel: **Satin finish.**
- B. Baked Enamel: Pretreat to clean condition, apply one coat primer and minimum two coats baked enamel.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify exact location of accessories for installation and that blocking is in place to receive accessory.

3.2 PREPARATION

- A. Deliver inserts and rough-in frames to site. Provide templates and rough-in measurements.
- B. Install solid 2 x 8 (minimum) blocking behind all accessories.

3.3 INSTALLATION

- A. Install plumb and level, securely and rigidly anchored to substrate.
- B. Mounting Heights and Locations: As indicated on Drawings:

END OF SECTION

SECTION 10 44 00 - FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Fire extinguishers; fire extinguisher cabinets.

1.2 PERFORMANCE REQUIREMENTS

- A. Conform to **NFPA 10 and City of Vandalia Fire Department Requirements**.
- B. Provide extinguishers classified and labeled by UL for purpose specified and indicated.
- C. Provide fire extinguisher cabinets classified and labeled by UL or testing firm acceptable to authority having jurisdiction for purpose specified and indicated.

1.3 SUBMITTALS

- A. Shop Drawings: Indicate cabinet physical dimensions, rough-in measurements for recessed cabinets, wall bracket mounted measurements, location, fire ratings.
- B. Product Data: Extinguisher operational features, color and finish, anchorage details.
- C. Manufacturer's Installation Instructions: Special criteria and wall opening coordination requirements.
- D. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Test, refill or recharge schedules, and re-certification requirements.

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Do not install extinguishers when ambient temperature are capable of freezing extinguisher ingredients.

PART 2 PRODUCTS

2.1 FIRE EXTINGUISHERS

- A. Manufacturers:
 - 1. Larsen
 - 2. Kidde
 - 3. Equal
- B. Dry Chemical Type: Aluminum tank, with pressure gage; Class A: B: C, Size 10.

2.2 FIRE PROTECTION CABINETS

- A. Manufacturers:
 - 1. Larsen or Equal.
- B. Metal: Formed sheet steel, white baked enamel finish.
- C. Configuration: Semi-recessed type, sized to accommodate accessories.
- D. Door: Horizontal Duo steel with clear acrylic glazing; latch access.
- E. Cabinet Mounting Hardware: Appropriate to cabinet.
- F. Form cabinet enclosure with right angle inside corners and seams.
- G. Pre-drill for anchors.

- H. Hinge doors for 180-degree opening with continuous piano hinge.
- I. Weld, fill, and grind components smooth.
- J. Glaze doors with resilient channel gasket glazing.

2.3 ACCESSORIES

- A. Extinguisher Brackets: Formed steel, white enamel finish.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify rough openings for cabinet are correctly sized and located.

3.2 INSTALLATION

- A. Install cabinets maximum 48 inches from finished floor to top of extinguisher handle.
- B. Install wall brackets maximum 48 inches from finished floor to top of extinguisher handle.
- C. Position cabinet signage as required by authorities having jurisdiction.

3.3 SCHEDULES

- A. Fire Extinguisher Cabinets: Surface Mounted or Semi-Recessed Fire Rated Cabinets in Common Areas as indicated on drawings, or as approved by City of Vandalia Fire Department.
- B. Fire Extinguishers: 1 per unit.

END OF SECTION

SECTION 11 31 00 - RESIDENTIAL APPLIANCES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes Energy Star rated appliances: refrigerator, range with anti-tip kit, range hood and splash plates.

1.2 SUBMITTALS

- A. Product Data: Submit data on equipment and accessories.
- B. Manufacturer's Installation Instructions: Submit manufacturer's installation instructions.

1.3 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit relevant instructions.

PART 2 PRODUCTS

2.1 RESIDENTIAL EQUIPMENT

- A. Manufacturers:
 - 1. General Electric
 - 2. Whirlpool
 - 3. Maytag
 - 4. Hotpoint

2.2 APPLIANCES – STANDARD UNITS

- A. Refrigerator: GE Model GTE18GTNRWW, 17.5 cubic feet capacity, free standing type, self defrosting, double door with freezer compartment over, upfront temperature controls, meat keeper and crisper, glass shelves, white color. Energy Star Rated.
- B. Range: GE Model JB256DMWW, electric freestanding type, porcelain enamel top with four coil top burners with front controls, self-cleaning oven below with top and bottom elements, with two porcelain-enameled steel racks, vision panel, interior oven light, white color.
- C. Range Hood: GE JVX5305DJWW, 30" range hood, ducted, two speed with fan control, light control with [2] 15W energy efficient appliance bulbs, white color, Energy Star Rated.
- D. Splash guard: Broan SP300108, 30" x 24", white color. Locate behind range.
- E. Range Fire Suppression System: Louisville Fire & Safety, Stovetop Firestop Venthod or Equal. Fire suppression powder canister, attach with magnets to underside of range hood.

2.3 APPLIANCES – ACCESSIBLE UNITS

- A. Refrigerator: GE Model GTE18GTNRWW, 17.5 cubic feet capacity, free standing type, self defrosting, double door with freezer compartment over, upfront temperature controls, meat keeper and crisper, glass shelves, white color. Energy Star Rated, ADA Compliant.
- B. Range: GE Model JD630DFWW, electric drop-in, glass top with four top burners with front controls, self-cleaning oven below with top and bottom elements, with two porcelain-enameled steel racks, vision panel, interior oven light, white color, ADA Compliant.
- C. Range Hood: GE JVX5305DJWW, 30" range hood, ducted, two speed with fan control, light control with [2] 15W energy efficient appliance bulbs, white color, Energy Star Rated. Wire to switch located on wall.
- D. Splash guard: Broan SP300108, 30" x 24", white color. Locate behind range.

- E. Range Fire Suppression System: Louisville Fire & Safety, Stovetop Firestop Venthood or Equal. Fire suppression powder canister, attach with magnets to underside of range hood.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify openings and utility services are ready to receive work and opening dimensions are as indicated on shop drawings and instructed by manufacturer.

3.2 INSTALLATION

- A. Appliances
 1. Set and adjust unit's level and plumb.
 2. Connect to utilities and make units operational.
 3. Activate units to confirm correct operation.
 4. Turn refrigerators on to moderate temperature setting.
 - a. Locate door handle as required. Field verify door swing.
 5. Range: Install anti-tip safety device on range.
 6. Range Hood: Recirculating type
 7. Install range splash plates, install with adhesive to wall and color match screws.

END OF SECTION

SECTION 12 20 00 - WINDOW TREATMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes vinyl mini-blinds and operating hardware.

1.2 SUBMITTALS

- A. Product Data: Submit data indicating physical and dimensional characteristics, operating features.
- B. Samples: Submit two samples illustrating slat materials and finish, color, cord type and color.

PART 2 PRODUCTS

2.1 HORIZONTAL BLINDS

- A. Manufacturers:
 - 1. Bali Blinds, Vinyl Blinds, 1" lightblocker blinds
 - 2. Hunter Douglas
 - 3. Levolor
 - 4. Equal

2.2 COMPONENTS

- A. Mini Blinds: 1" vinyl horizontal slat louvers hung from full-width aluminum head rail with full-width bottom rail; manual control to raise or lower by cord attached to stiffened lower blind edge with full range locking, blade angle adjustment by control wand.
 - 1. Slat Support: Woven polypropylene cord, ladder configuration.
 - 2. Pull Cord: Braided nylon.
 - 3. Color: As selected from manufacturer's standard colors.
 - 4. Roller Mechanism: Internally fitted with hardware for blind operation.
 - 5. Attachment Hardware: Type recommended by blind manufacturer. Brackets shall be heavy-duty type.

2.3 FABRICATION

- A. Fabricate blinds to fit within openings with uniform edge clearance of 1/2 inch.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify openings are ready to receive the Work.

3.2 INSTALLATION

- A. Secure in place with flush countersunk fasteners.
- B. Adjust blinds for smooth operation.
- C. Provide blinds at each window opening, sized to fit openings.

END OF SECTION

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SECTION 12 35 30 - RESIDENTIAL CASEWORK

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes shop fabricated residential cabinet units with hardware and plastic laminate counter tops for Kitchen.

1.2 SUBMITTALS

- A. Shop Drawings: Indicate casework locations, scale plans, elevations and clearances required.
- B. Product Data: Submit data on component profiles, sizes, assembly methods, and schedule of finishes.
- C. Samples: Submit two wood samples, 2 x 2 inch in size of the final wood stain/finish selection and rings for counter top finish selection.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with KCMA (Directory of Certified Cabinet Manufacturers) - Certification Program.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Install after interior temperature and humidity are controlled and stabilized.

PART 2 PRODUCTS

2.1 KITCHEN AND BATHROOM CASEWORK

- A. Manufacturer
 - 1. Advanta Cabinets [Echelon] – Extreme Series
 - 2. Evans
 - 3. TruWood
 - 4. Smart Cabinets
 - 5. Kountry Wood
- B. Kitchen and bathroom cabinets:
 - 1. Traditional HUD severe use
 - 2. Face Frames: $\frac{3}{4}$ " solid wood, mortised and tenoned, glued and staples. Stiles 1 $\frac{1}{2}$ " wide, Mulls, 3" wide, Rails 1 $\frac{3}{4}$ " wide.
 - 3. End Panels: $\frac{1}{2}$ ", 5 ply hardwood grade plywood.
 - 4. Backs: $\frac{1}{4}$ " A-2 grade hardwood plywood.
 - 5. Shelves and Wall Cabinet Bottoms: $\frac{1}{2}$ ", wood banded front edge, hardwood plywood.
 - a. Full depth shelves in pantry and linen cabinets, slide out shelves in pantry cabinets.
 - 6. Doors and Drawer fronts: $\frac{3}{4}$ " solid oak doorframe. Raised Panel Doors. Cathedral wall cabinet door style – MATCH EXISTING
 - 7. Base Bottoms: $\frac{1}{2}$ " exterior hardwood plywood.
 - 8. Toe Kick: $\frac{3}{4}$ " pressure treated solid lumber.
 - 9. 4" toe kick height, match OAK cabinet face.
 - 10. Drawer Bottom: Sides and back 11/16" "C" grade solid lumber. Front dovetails and back dados, glued and staples.
 - 11. Scribe trim, fillers, other miscellaneous panels [countertop support brackets]: manufacturer supplied components of same species and finish as cabinets as required by conditions.
 - 12. **All exposed to view surfaces to be oak finish, match existing.**

- C. Kitchen cabinets and vanity frame/panel – UFAS Accessible Units:
1. Traditional HUD severe use, ADA/UFAS Compliant Construction
 2. Face Frames: $\frac{3}{4}$ " solid wood, mortised and tenoned, glued and staples. Stiles 1 $\frac{1}{2}$ " wide, Mulls, 3" wide, Rails 1 $\frac{3}{4}$ " wide.
 3. End Panels: $\frac{1}{2}$ ", 5 ply hardwood grade plywood.
 4. Backs: $\frac{1}{4}$ " A-2 grade hardwood plywood.
 5. Shelves and Wall Cabinet Bottoms: $\frac{1}{2}$ ", wood banded front edge, hardwood plywood.
 - a. Full depth shelves in pantry and linen cabinets, slide out shelves in pantry cabinets.
 6. Doors and Drawer fronts: $\frac{3}{4}$ " solid oak doorframe. Recessed Panel Doors.
 7. Base Bottoms: $\frac{1}{2}$ " exterior hardwood plywood.
 8. Toe Kick: $\frac{3}{4}$ " pressure treated solid lumber.
 9. 8" toe kick height, match OAK cabinet face.
 10. Drawer Bottom: Sides and back 11/16" "C" grade solid lumber. Front dovetails and back dados, glued and staples.
 11. Scribe trim, fillers, other miscellaneous panels [countertop support brackets]: manufacturer supplied components of same species and finish as cabinets as required by conditions.
 - 12. All exposed to view surfaces to be oak finish.**
- D. Hardware
1. Hinges: Manufacturers standard high quality steel wrap around hinge with self-closing feature.
 2. Slides: 100#, high quality epoxy coated steel, extreme grade, side mounted or equal.
 3. Provide slide out shelves at all pantry and base cabinets at UFAS accessible units
 4. Pulls: Manufacturer: Armstrong or equal and as follows:
 - a. Model: BP76313-BN
 - b. Length: 4-1/8"
 - c. Width: 5/16"
 - d. Projection: 1-3/16"
 - e. Material: Zinc Die cast

2.2 FACTORY FINISHING

- A. Exposed To View Surfaces: Stain, seal and varnish.
- B. Interior Surfaces: Manufacturers standard.

2.3 PLASTIC LAMINATE COUNTERTOPS

- A. Manufacturers:
1. Formica
 2. Wilsonart
 3. Arborite
- B. Plastic Laminate: NEMA LD 3, Grade HGS laminate.
1. Substrate: $\frac{3}{4}$ " exterior plywood backing with one coat water lox transparent finish.
 2. Countertop Configuration: As follows:
 - a. Front Style: Waterfall.
 - b. Cove Type: Post formed laminate supported at junction of top and backsplash by wood cove molding.
 - c. Backsplash: 4" Curved or waterfall shape
 - d. End Splash: 4" Square edge.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify adequacy of backing and location of mechanical and electrical outlets.

3.2 PREPARATION

- A. Install supplementary support framing.

3.3 INSTALLATION

- A. Set and secure casework in place rigid, plumb, and level.
- B. Provide cutouts for plumbing fixtures, appliances, and other fixtures and fittings.
- C. Use fixture attachments at concealed locations for wall mounted components.
- D. Use concealed joint fasteners to align and secure adjoining cabinet units and counter tops
- E. Carefully scribe casework against other building materials, leaving gaps of 1/32 inch maximum. Use filler strips not additional overlay trim for this purpose.
- F. Secure cabinet and counter bases to floor using appropriate anchorage.
- G. Adjust moving or operating parts to function smoothly and correctly.
- H. Install backsplashes and end splashes.
- I. Install door and drawer hardware.

END OF SECTION

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SECTION 31 10 00 - SITE CLEARING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Removing surface debris, paving, curbs, etc.
 - 2. Removing designated plant life.
 - 3. Removing topsoil and subsoil.
 - 4. Rough grading and site contouring.

1.2 SUBMITTALS

- A. Product Data: Submit data for herbicide.

PART 2 PRODUCTS

2.1 SITE CLEARING

- A. Herbicide: approved by authority having jurisdiction.

PART 3 EXECUTION

3.1 PREPARATION

- A. Call Local Utility Line Information service not less than three working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.

3.2 PROTECTION

- A. Locate, identify, and protect utilities indicated to remain, from damage.
- B. Protect trees, plant growth, and features designated to remain, as final landscaping.
- C. Protect bench marks, [survey control points,] [and existing structures] from damage or displacement.

3.3 CLEARING

- A. Clear areas required for access to site and execution of Work.
- B. Remove paving, curbs, and other site improvements to be removed.
- C. Remove trees and shrubs. Remove stumps, main root ball and root system.
- D. Apply herbicide to remaining stumps or plant life to inhibit growth.

3.4 ROUGH GRADING

- A. Identify required lines, levels, contours, and datum.
- B. Identify known underground, above ground, and aerial utilities. Stake and flag locations.
- C. Notify utility company to remove and relocate utilities as applicable.
- D. Excavate topsoil and subsoil from areas to be further excavated, re-landscaped or re-graded.
- E. Stockpile topsoil in area designated on site.
- F. Remove excess topsoil and subsoil not being reused, from site.

3.5 CLEAN UP

- A. Remove debris, rock larger than 1.5 cu ft, and extracted plant life from site.

END OF SECTION

SECTION 31 20 00 - EARTH MOVING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes site grading, removal of topsoil and subsoil, trenching, backfilling, and compacting.

PART 2 PRODUCTS

2.1 SOIL MATERIALS

- A. Topsoil: Reusable excavated or Imported friable loam; free of subsoil, roots, grass, weeds, large stone, and foreign matter. ASTM D 4268, pH range of 5.5 to 7, minimum of 4 percent organic material content.
 - 1. Amend existing in place surface soil to produce topsoil. Verify suitability of surface soil to produce topsoil. Surface soil may be supplemented with imported or manufactured topsoil from off-site sources.
- B. Subsoil: Excavated material, graded free of lumps larger than 6 inches, rocks larger than 2 inches, organic material, and debris. ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, and SM or a combination there of.

2.2 FILL MATERIALS

- A. Type A - Select Granular Material: Coarse stone: Pit run, washed natural stone; free of shale, clay, friable material, sand, debris.
 - 1. Grading: AASHTO M147; Grade 57.

2.3 ACCESSORIES

- A. Geotextile Fabric: See 32 90 00.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Call OUPS to mark locations of all underground utilities a minimum of 3 working days prior to starting work.
- B. Identify required lines, levels, contours, and datum.
- C. Notify Architect/Engineer of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.
- D. Maintain and protect existing utilities to remain.
- E. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil bearing water runoff of airborne dust to adjacent properties.
- F. Prevent surface water and ground water from entering excavations, from ponding on prepared sub-grades, and from flooding the project site and surrounding areas.

3.2 PROTECTION OF ADJACENT WORK

- A. Grade excavation top perimeter to prevent surface water run-off into excavation or to adjacent properties.
- B. Contractor shall be responsible for damage to utilities caused by construction operations.

3.3 TOPSOIL EXCAVATING

- A. Do not excavate wet topsoil.

- B. Excavate topsoil and stockpile for reuse.

3.4 SUBSOIL EXCAVATING

- A. Do not remove wet subsoil. Remove groundwater by pumping to keep excavations dry.
- B. Excavate subsoil required for construction operations, and other Work.
- C. Slope banks [to angle of repose or less, until shored].
- D. Do not interfere with 45 degree bearing splay of foundations.
- E. Correct unauthorized excavation at no cost to Owner.
- F. Fill over-excavated areas under structure bearing surfaces in accordance with direction by Architect/Engineer.
- G. Stockpile subsoil in area designated on site. Remove excess subsoil not being reused from site.

3.5 TRENCHING

- A. Cut trenches sufficiently wide to enable installation of utilities and allow inspection.
- B. Hand trim excavation and leave free of loose matter.
- C. Support pipe during placement and compaction of bedding fill.
- D. Backfill trenches to required contours and elevations.
- E. Place and compact fill materials as for Backfilling.

3.6 BACKFILLING

- A. Backfill areas to contours and elevations. Use unfrozen and unsaturated materials.
- B. Backfill systematically, as early as possible, to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.
- C. Place geotextile fabric over unstable subsoil.
- D. Place material in continuous layers as follows:
 - 1. Soil Materials: Maximum 8 inches compacted depth.
 - 2. Fill Materials: Maximum 6 inches compacted depth.
- E. Employ placement method so not to disturb or damage utilities in trenches.
- F. Maintain optimum moisture content of backfill materials to attain required compaction density.
- G. Slope grade away from building minimum 1/2" per 1 ft, unless noted otherwise.

3.7 PLACING TOPSOIL

- A. Place topsoil in areas where seeding and planting is scheduled.
- B. Fine grade topsoil eliminating rough or low areas. Maintain levels, profiles, and contours of subgrade.
- C. Remove large stone, roots, grass, weeds, debris, and foreign material while spreading.
- D. Lightly compact placed topsoil. 85% proctor.
- E. Leave stockpile area and site clean and raked, ready to receive landscaping.

END OF SECTION

SECTION 31 21 13 - RADON MITIGATION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Passive Building Radon Venting system.

1.2 SYSTEM DESCRIPTION

- A. Radon venting system consists of the following:
 - 1. Permeable floor slab base course.
 - 2. Sealing joints, cracks, and other penetrations through floor slab.
 - 3. Piping to exhaust underslab air to above the roofline.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with EPA requirements.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.

PART 2 PRODUCTS

2.1 PIPE MATERIALS

- A. Pipe: ASTM D2729; polyvinyl chloride pipe.
 - 1. Joints: Socket ends for solvent welding.
 - 2. Joint Cement: ASTM D2564, solvent type.
 - 3. Fittings: Polyvinyl chloride.

2.2 ACCESSORIES

- A. Penetration Boot: Form using vapor retarder with stainless steel clamping ring.
- B. Roof Flashing: Boot type.
- C. Vent Cap: Plastic with screen to prevent insect intrusion.
- D. Joint Filler: Compressible PVC foam type with recovery rate of minimum 95 percent.
- E. Tape: Self-adhering type, 2 inch wide, compatible with vapor retarder.
- F. Electrical Junction Box: As required for electrical connection to fan.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify slab on grade subbase is compacted, graded, and ready to receive work.
- B. Verify subbase elevations are as indicated on Drawings.

3.2 VAPOR RETARDER INSTALLATION

- A. Install vapor retarder over entire base course surface at open areas of slab.
- B. Lap joints minimum 12 inches. Seal laps with one continuous bead of sealant. Tape joints to retain retarder in place.
- C. Inspect vapor retarder immediately before placing concrete for slab on grade.

1. Repair tears and punctures with patches extending minimum 12 inches beyond extent of tears and punctures.
2. Seal and tape repairs as specified for lap joints.

3.3 PASSIVE RADON SYSTEM INSTALLATION

- A. Drill concrete slab where indicated on drawings, or otherwise approved by Architect and Contractor.
- B. Install passive radon vent piping from below slab to above roof line.
- C. Seal slab penetrations.
- D. Extend electrical junction box to location to suit installation for future fan.
- E. Refer to attached details.

END OF SECTION

SECTION 31 23 17 - TRENCHING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Excavating trenches for utilities outside building to utility service.
 - 2. Compacted fill from top of utility bedding to subgrade elevations.
 - 3. Backfilling and compaction.

1.2 QUALITY ASSURANCE

- A. Perform Work according to City of Vandalia standards as applicable.

1.3 FIELD MEASUREMENTS

- A. Verify field measurements, inverts, etc prior to fabrication.

1.4 COORDINATION

- A. Verify Work associated with lower elevation utilities is complete before placing higher elevation utilities.

PART 2 PRODUCTS

2.1 FILL MATERIALS

- A. Subsoil / Granular Fill: Type as required to suit conditions, suitability installed in compacted lifts.

2.2 ACCESSORIES

- A. Geotextile Fabric: Non-biodegradable, woven.

PART 3 EXECUTION

3.1 LINES AND GRADES

- A. Lay pipes to lines and grades indicated.
 - 1. Architect/Engineer may make changes in lines, grades, and depths of utilities when changes are required for Project conditions.
- B. Use laser-beam instrument with qualified operator to establish lines and grades.

3.2 PREPARATION

- A. Call local utility line information service not less than three working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.
- B. Identify required lines, levels, contours, and datum locations.
- C. Protect plant life, lawns and other features remaining as portion of final landscaping.
- D. Protect bench marks, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- E. Maintain and protect above and below grade utilities indicated to remain.
- F. Establish temporary traffic control when trenching is performed in public right-of-way. Relocate controls as required during progress of Work.

3.3 TRENCHING

- A. Excavate subsoil required for utilities to utility service.

- B. Perform excavation within 24 inches of existing utility service according to utility's requirements.
- C. Cut trenches sufficiently wide to enable installation and allow inspection. Remove water or materials that interfere with Work.
- D. Excavate bottom of trenches maximum 24 inches wider than outside diameter of pipe.
- E. Excavate trenches to depth required for utilities. Provide uniform and continuous bearing and support for bedding material and pipe and utilities.
- F. Do not interfere with 45-degree bearing splay of foundations.
- G. When Project conditions permit, slope side walls of excavation starting 24 inches above top of pipe. When side walls cannot be sloped, provide sheeting and shoring to protect excavation as specified in this Section.
- H. When subsurface materials at bottom of trench are loose or soft, excavate to greater depth as directed by Architect/Engineer until suitable material is encountered.
- I. Cut out soft areas of subgrade not capable of compaction in place. Backfill and compact to density equal to or greater than requirements for subsequent backfill material.
- J. Trim excavation. Remove loose matter.
- K. Correct areas over excavated areas with compacted backfill as specified for authorized excavation or replace with fill concrete as directed by Architect/Engineer.
- L. Remove excess subsoil not intended for reuse, from Site.

3.4 SHEETING AND SHORING

- A. Sheet, shore, and brace excavations to prevent danger to persons, structures and adjacent properties and to prevent caving, erosion, and loss of surrounding subsoil.
- B. Support trenches more than 5 feet deep excavated through unstable, loose, or soft material. Provide sheeting, shoring, bracing, or other protection to maintain stability of excavation.
- C. Design sheeting and shoring to be removed at completion of excavation Work.
- D. Repair damage caused by failure of sheeting, shoring, or bracing and for settlement of filled excavations or adjacent soil.
- E. Repair damage to [new] [and] [existing] Work from settlement, water or earth pressure or other causes resulting from inadequate sheeting, shoring, or bracing.

3.5 BACKFILLING

- A. Backfill trenches to contours and elevations with unfrozen fill materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.
- C. Place geotextile fabric prior to placing subsequent fill materials.
- D. Place material in continuous layers as follows:
 - 1. Subsoil Fill: Maximum 8 inches compacted depth.
 - 2. Structural Fill: Maximum 6 inches compacted depth.
 - 3. Granular Fill: Maximum 6 inches compacted depth.
- E. Employ placement method that does not disturb or damage foundation perimeter drainage, utilities in trench, and any other obstructions or utilities encountered.
- F. Maintain optimum moisture content of fill materials to attain required compaction density.
- G. Protect open trench to protect the public/residents.

3.6 TOLERANCES

- A. Top Surface of Backfilling Under Paved Areas: Plus or minus 1 inch from required elevations.
- B. Top Surface of General Backfilling: Plus or minus 1 inch from required elevations.

3.7 FIELD QUALITY CONTROL

- A. Perform laboratory material tests according to ASTM D1557.
- B. Perform in place compaction tests according to following:
 - 1. Density Tests: ASTM D1556.
 - 2. Moisture Tests: ASTM D3017.
- C. When tests indicate Work does not meet specified requirements, remove Work, replace, compact, and retest.

3.8 PROTECTION OF FINISHED WORK

- A. Reshape and re-compact fills subjected to vehicular traffic during construction.

END OF SECTION

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SECTION 32 01 16 - ASPHALT PAVING REHABILITATION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Repair and replacement of existing asphaltic concrete paving as identified.

1.2 SUBMITTALS

- A. Product Data:
 - 1. Submit product information for asphalt and aggregate materials.
 - 2. Submit mix design with laboratory test results supporting design.

1.3 QUALITY ASSURANCE

- A. Perform Work according to State of Ohio, ODOT standards as applicable.
 - 1. State of Ohio Department of Transportation Construction and Materials Specifications Guide shall be used as a reference for all applicable materials, construction conditions, operations, and finished products, etc.
- B. Mixing Plant: Conform to State of Ohio, ODOT standard.
- C. Obtain materials from same source throughout.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. When ambient air temperature is below **50** degrees F, obtain Architect approval prior to proceeding with Work.
- B. Place bitumen mixture when temperature is not more than 15 degrees F below bitumen suppliers bill of lading and not more than maximum specified temperature.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Subgrade: ODOT Item 204.
 - 1. Compact the subgrade materials that have a maximum dry density of 100 to 105 pounds per cubic foot to not less than 102 percent of maximum dry density. Compact all other subgrade materials to not less than 100 percent of maximum dry density. Determine the maximum dry density using AASHTO T99, AASHTOT T272, or test section method in Supplement 1015.
- B. Aggregate Base Course: ODOT Item 304.
 - 1. 98% of the material's maximum dry density as determined by the modified Proctor Test (AASHTOT-180 or ASTM D-1557)
- C. Asphalt Concrete Base Course: ODOT Item 301.
- D. Tack Coat for Chip & Seal Primer: ODOT Item 702.04
 - 1. ASTM D2027, MC-3000; medium curing, cutback asphalt.
- E. Tack Coat: ODOT Item 407.
 - 1. Use one of following types: 702.04 RS-1, SS-1, SS-1h, CRS-1, CSS-1, or CSS-1h; or 702.13
- F. Intermediate Asphalt Surface: ODOT Item 448, Type 1, medium duty.
- G. Asphaltic Concrete Surface Course: ODOT Item 448, Type 1, medium duty.
- H. Sealcoat: ASTM D244; ASTM D 2939
 - 1. Asphalt Emulsion Pavement Sealer with mineral/sand filler, polymer additive, water.

- I. Spot Primer: Oil spot primer formulated to ensure adhesion of pavement sealer to oil, gas, grease, and chemical stained areas on asphalt pavement.
- J. Crack Seal: ODOT Item 423.
 - 1. Type II; mixture of PG 64-22 certified binder and polyester fibers; hot applied type. Modified, single component, rubber/asphalt joint and crack sealant. Formulated for sealing asphalt cracks.
- K. Reinforcing Fabric: ODOT Section 457 Heavy Duty, high strength pavement repair geocomposite membrane for the reinforcements of pavement joints and cracks. PavePrep by Crafcoc or Equal.
 - 1. Top Layer: heat resistant, high strength woven polyester reinforcing fabric
 - 2. Binder/Intermediate Layer: Flexible, high density asphalt mastic bitumen
 - 3. Bottom Layer: non-woven heat resistant polyester fabric.
 - 4. Size: 12 inches wide x 50' roll
 - 5. Tensile Strength: ASTM D412, Die C: 2000 psi min.
 - 6. Elongation: ASTM D412 Die C: 20% min.

2.2 EQUIPMENT

- A. Milling Unit: Type for intended purpose as follows:
 - 1. Self-propelled; wheel base sufficient to maximize leveling action.
 - 2. Capable of loosening pavement material to thicknesses identified.
- B. Compactor: 3 ton minimum steel wheeled vibratory rollers

PART 3 EXECUTION

3.1 PREPARATION

- A. General:
 - 1. Install Work in accordance with ODOT and City of Vandalia standards, including all base and preparation.
 - 2. Scheduling: Schedule and manage work to minimize cold joints in the paving system. Coordinate requirements with Owner prior to mobilizing on the job.
 - 3. Clean all existing surfaces and remove any foreign debris.
 - 4. Ensure positive drainage to storm drains/ catch basins throughout. Provide leveling course as required to attain proper drainage [confirm conditions with Owner prior to proceeding].
- B. Mechanically sweep, blow, or scrub pavement surfaces immediately prior to commencement of Work. Clean pavement surfaces of all loose foreign matter. Verify surfaces are dry.
- C. Protect existing improvements, adjacent finishes, overhanging trees, and plant life from heat damage by individual shielding and water spray.
- D. Protect manhole covers and frames, catch basin covers and frames.

3.2 ASPHALT REPAIRS

- A. **General Requirements for Repairs:**
 - 1. Call 811 before you dig.
 - 2. The area and depths for asphalt repairs are displayed and listed on the Defect/Treatment Map and Treatment List. Each contractor bidding is responsible for verifying all dimensions. Every patch will be milled to the excavated depth stated on the Defect Treatment Map and Treatment List unless otherwise modified by the Owner. The subgrade will be proof rolled to ensure stability prior to placement of asphalt. Weak areas will be reported to the Owner. All finished patches must be level with the existing surface and possess only 90 degree angles. Finished surface must not trap or hold water on or adjacent to new patch. Contractor will be responsible to maintain positive drainage across all repaired areas. Price will include removal from site of all excavated materials to an approved off-site location. If any edges

break during construction, edges will be re-cut square and replaced with full depth asphalt per specification. If any cracking of the sub-base or base asphalt occurs during the lay down of wearing course you are to inform the Owner immediately. No raveling of the finished surface will be accepted.

3. All asphalt pavement materials are to meet or exceed state department of transportation standards. These standards are referenced in the Asphalt Materials Table.

B. 4" – 6" thickness Asphalt Patch

1. Call 811 before you dig. Provide Owner with confirmation number.
2. Mill specified area and dispose of excavated materials at an authorized dump site.
3. Proof roll subgrade and notify Owner of "soft spots" prior to backfill.
4. Re-compact subgrade prior to backfill.
5. Prep and apply Tack Coat as needed to vertical perimeter and base of patch area.
6. Install 2"-4" compacted layer of base asphalt. Compact using 3 ton or greater vibratory rollers if patch size and location allows for roller access.
7. Install 2" compacted layer of surface asphalt. Compact using 3 ton or greater vibratory rollers if patch size and location allows for roller access.
8. Seal all edges of patch using non-tracking sealant.

C. New Asphalt Paving: 2 1/2" base course, 1 1/2" wear course

1. Remove existing paving complete including aggregate base if applicable.
2. Adjust sub-grade elevations to prep for new asphalt paving and to match adjacent elevations of parking lot.
3. Install new compacted aggregate base course.
4. Notify Owner of any subgrade deficiencies requiring undercut.
5. Upon approval of Owner, repair soft areas with appropriate depth asphalt per patch specification and using specific materials that meet or exceed ODOT standards.
6. NOTE: Contractor responsible to maintain positive drainage across entire lot. Contact Owner for additional directive as needed by existing conditions.
7. Prime entire area with Tack Coat at a rate of 0.10 Gallons/SY.
8. Machine install 2 1/2" of finished compacted thickness base course asphalt over primed area. Minimum thickness of finished, compacted pavement to be 2 1/2" and asphalt tonnage yield should be based on 2 1/2" compacted minimum thickness. Tickets will be collected at end of each day and final tonnage yield must be within 5% of expected 2 1/2" fully compacted yield.
9. Apply RS-2 or CRS-2 asphalt emulsion uniformly to existing surfaces at a rate of 0.40 to 0.50 gal/yd².
10. Machine install 1 1/2" of finished compacted thickness surface asphalt over primed area. Minimum thickness of finished, compacted pavement to be 2" and asphalt tonnage yield should be based on 1 1/2" compacted minimum thickness. Tickets will be collected at end of each day and final tonnage yield must be within 5% of expected 1 1/2" fully compacted yield.
11. Compact using 3 ton or greater vibratory rollers.
12. Seal all edges of paved area where matched to existing asphalt surfaces using non-tracking sealant.
13. Reset all signage, repin parking blocks; replace all speed bumps per existing.
14. Repaint per existing layout unless otherwise specified.

D. 1 1/2" Asphalt Overlay with full milling

1. Mill specified asphalt area 1 1/2" and dispose of grindings at an authorized dump site.
 - a. Profile mill as required for grade / plane modifications.
2. NOTE: Contractor responsible to maintain positive drainage across entire lot. Contact Owner for additional directive as needed by existing conditions.
3. Mill butt joints and/or adjust elevations of drainage structures as necessary to provide for proper drainage per slope tolerances noted above. All areas abutting catch basins must

- allow for full 1 1/2" compacted thickness of finished overlay and allow for positive drainage into structures. No tapered edges will be permitted and no ponding will be accepted.
4. Provide power sweeper and vacuum truck to ensure clean area for asphalt work.
 5. Proof roll subject area, mark soft pockets, areas of excess yielding, and any other area that requires further compaction.
 - a. Notify Owner of any subgrade deficiencies requiring undercut.
 - b. Upon approval of Owner, repair soft areas with appropriate depth asphalt per patch specification and using specific materials that meet or exceed ODOT standards.
 6. Prime entire area with Tack Coat at a rate of 0.10 Gallons/SY.
 7. Machine install leveling course as necessary to remove any low spots.
 8. Machine install 1 1/2" of finished compacted thickness surface asphalt over primed area. Minimum thickness of finished, compacted pavement to be 1 1/2 inches and asphalt tonnage yield should be based on 1 1/2 inches compacted minimum thickness. Tickets will be collected at end of each day and final tonnage yield must be within 5% of expected 1 1/2 inch fully compacted yield.
 9. Compact using 3 ton or greater vibratory rollers.
 10. Seal all edges of paved area where matched to existing asphalt surfaces using non-tracking sealant.
 11. Reset all signage, repin parking blocks; replace all speed bumps per existing.
 12. Repaint per existing layout unless otherwise specified.

3.3 ASPHALT MAINTENANCE REPAIRS

A. Crack Sealing

1. All Longitudinal, transverse and block cracks are to be thoroughly cleaned using compressed air lance as necessary. Remove all vegetation and debris from cracks. Clean lot of all debris.
 - a. Notify Owner in advance if size [width or depth] of crack exceeds the manufacturer's recommendations for crack fill. Request directive to proceed.
2. Seal cracks per ASTM D3405/D6690
3. All fatigue crack areas are to be circled by filling perimeter of area. Do not fill interior of any fatigue (alligator) crack areas.

3.4 SCHEDULES

- A. Refer to Drawings for extent and type of paving repair or replacement.

END OF SECTION

SECTION 32 01 26 – CONCRETE PAVING REHABILITATION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Repair and replacement of existing concrete paving as identified on Drawings.
 - 2. Parking Lot accessories

1.2 SYSTEM DESCRIPTION

- A. Paving and Base: Designed for Parking.

1.3 SUBMITTALS

- A. Product Data:
 - 1. Submit product information for concrete, cement, and aggregate materials.
 - 2. Submit mix design with laboratory test results supporting design.

1.4 QUALITY ASSURANCE

- A. Perform Work according to State of Ohio, ODOT standards as applicable.
 - 1. State of Ohio Department of Transportation Construction and Materials Specifications Guide shall be used as a reference for all applicable materials, construction conditions, operations, and finished products, etc.
 - 2. Perform Work in accordance with ACI 330.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Subgrade: ODOT Item 204.
 - 1. Compact the subgrade materials that have a maximum dry density of 100 to 105 pounds per cubic foot to not less than 102 percent of maximum dry density. Compact all other subgrade materials to not less than 100 percent of maximum dry density. Determine the maximum dry density using AASHTO T99, AASHTOT T272, or test section method in Supplement 1015.
- B. Aggregate Base Course: ODOT Item 304 [304.01 and 304.02].
 - 1. 98% of the material's maximum dry density as determined by the modified Proctor Test (AASHTOT-180 or ASTM D-1557)
- C. Concrete: ODOT Item 452 Nonreinforced Portland cement concrete pavement [transportation center]
- D. Concrete: ODOT Item 499.
 - 1. Class QC 1, 4,000 PSI design strength at 28 days; 2,000 Coulombs maximum Permeability; Cement Content minimum 520 lb.; well –graded aggregate
 - 2. Maximum slump 4 inches.
 - 3. Air Content: 6% +/- 2%; ASTM C260
- E. Cement: ASTM C150 Normal Type I Portland type, gray color.
- F. Fine and Coarse Aggregates: ASTM C33, Class 4S.
- G. Water: ASTM C94, potable, Clean, not detrimental to concrete without deleterious amounts of chloride ions.

2.2 ACCESSORIES

- A. Forms: Wood or steel material, profiled to suit conditions; conform to ACI 301.

- B. Joint Filler: ASTM D1751; Asphalt impregnated wood fiberboard.
- C. Dowels/Reinforcing Steel: ASTM A615; Epoxy Coated steel Grade 60, deformed billet bars. ODOT Item 709.
- D. Reinforcement Mesh: 6x6-W4.0xW4.0 welded wire reinforcement
- E. Liquid Surface Sealer: Penetrating Silane/Siloxane Sealer; clear, non-yellowing UV resistant; vapor permeable.
- F. Curing Compound: ASTM C309, white pigmented water based liquid membrane.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Verify gradients and elevations of base.
- B. Verify compacted base is ready to support paving and imposed loads.
- C. Moisten substrate to minimize absorption of water from fresh concrete.
- D. Sawcut and remove existing concrete to allow installation of new concrete as indicated.

3.2 FORMING

- A. Place and secure forms to correct location, dimension, and profile. Secure forms to allow the placement of concrete to be continuous and true.
- B. Place joint filler in joints, vertical in position, in straight lines. Secure to formwork.
- C. Place control joints at maximum 30 foot intervals. Align joints.
- D. Place joint filler between paving components and other appurtenances.
- E. Chamfer outside corners and edges of permanently exposed concrete. – $\frac{3}{4}$ " chamfer

3.3 PLACING CONCRETE

- A. Place concrete in accordance with ACI 330.
- B. Place reinforcement to achieve pavement and concrete alignment as appropriate.
- C. Check with electronic level that the correct slopes have been achieved to provide drainage.
- D. Do not disturb reinforcement or formwork components during concrete placement.
- E. Place concrete continuously between predetermined joints.
- F. Apply surface sealer per manufacturer's instructions.

3.4 CONCRETE REPAIRS

A. General Requirements for Repairs:

1. The dimensions and depths for concrete repairs are displayed and listed on the Drawings. Each contractor bidding must be responsible for verifying all dimensions. Every patch will be saw cut with 90 degree angles and excavated to the depth stated on the Drawings or as needed to proposed subgrade depth beneath the finished grade. The subgrade will be proof rolled to ensure stability when going full depth. Proper subgrade compaction is CRITICAL. Weak areas will be reported to the Owner.
2. All finished patches will be level with the existing surface and rectangular in shape. If any edges break during construction, they will be re-cut and replaced with full depth concrete per specification. No slumping or cracking of the finished surface will be accepted. Price will include the removal of all excavated materials to an approved off-site location.

3. All concrete pavement materials are to meet or exceed state department of transportation [ODOT] standards. These standards are referenced in the Concrete Materials Table.

B. 4" Concrete Patch [Typical Concrete Walk Replacement]

1. All Concrete Repairs to conform to ACI 330.
2. Call 811 before you dig. Provide Owner with confirmation number.
3. Saw cut and excavate specified area and dispose of excavated materials at an authorized dump site.
4. Core drill 4" into any adjacent/existing slab every 2' on center and at midpoint of existing slab thickness. Install 0.5" Diameter rebar.
5. Form as needed for installation of new concrete area.
6. Install 4" layer of 4000 psi Concrete.
7. Finish concrete surface to client's preference / match existing conditions/finish.
8. Saw cut joints in proper pattern and at proper depth to prevent curing cracks. All cracking which occurs after curing are to be sealed by contractor at contractor's expense. Excessive cracking could constitute job rejection.

C. 6" Concrete Patch [Typical Concrete Drive Approach / Curb Cut Replacement]

1. All Concrete Repairs to conform to ACI 330.
2. Call 811 before you dig. Provide Owner with confirmation number.
3. Saw cut and excavate specified area and dispose of excavated materials at an authorized dump site.
4. Core drill 4" into any adjacent/existing slab every 2' on center and at midpoint of existing slab thickness. Install 0.5" Diameter rebar.
5. Form as needed for installation of new concrete area.
6. Install 6" layer of 4000 psi Concrete.
7. Finish concrete surface to client's preference / match existing conditions/finish.
8. Saw cut joints in proper pattern and at proper depth to prevent curing cracks. All cracking which occurs after curing are to be sealed by contractor at contractor's expense. Excessive cracking could constitute job rejection.

3.5 CONCRETE PAVING

A. 6" Concrete Paving

1. All Concrete Repairs to conform to ACI 330.
2. Call 811 before you dig. Provide Owner with confirmation number.
3. Install new 6" aggregate base over prepped sub-grade.
4. Form as needed for installation of new concrete area.
5. Place reinforcing mesh as indicated in details.
6. Install new 6" concrete paving.
7. Finish concrete surface to Owner's preference / match existing conditions/finish.
8. Saw cut joints in proper pattern and at proper depth to prevent curing cracks. All cracking which occurs after curing are to be sealed by contractor at contractor's expense. Excessive cracking could constitute job rejection.

3.6 CONCRETE CURB

A. Remove and Replace Concrete Barrier Curb

1. Excavate existing damaged curb, dispose of excavated materials at an authorized dump site.
2. Construct forms to install new curb identical in dimension, line and grade to existing curbing.
3. Use appropriate hand forms to match new curb identical to existing curbing.
4. Install 4000 psi Concrete.
5. Apply cure and seal product upon installation.
6. Backfill as necessary to restore adjacent areas in rear and face of curb to original condition.

B. Remove and Replace Concrete Curb and Gutter

1. Excavate existing damaged curb, dispose of excavated materials at an authorized dump site.
2. Construct forms to install new curb identical in dimension, line and grade to existing curbing.
3. Use appropriate hand forms to match new curb identical to existing curb.
4. Install 4000 psi Concrete.
5. Apply cure and seal product upon installation.
6. Backfill as necessary to restore adjacent areas in rear and face of curb to original condition.

3.7 PARKING LOT ACCESSORIES

- A. Accessible Parking Signage: Provide and install signage in accordance with the detail drawings.

3.8 FINISHING

- A. Apply curing compound on exposed surfaces as applicable to conditions.
- B. Apply Surface Sealer on exposed surfaces.
- C. Paving Surfaces: Medium broom finish - or as required to match existing conditions and finish.

END OF SECTION

SECTION 32 17 13 - PARKING BUMPERS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Precast concrete parking bumpers.

1.2 COORDINATION

- A. Coordinate Work with pavement placement and parking striping.

1.3 SUBMITTALS

- A. Product Data: Unit configuration, dimensions.

PART 2 PRODUCTS

2.1 CONCRETE BUMPERS

- A. Cement: ANSI/ASTM C150, portland Type I - Normal; white color.
- B. Concrete Materials: ASTM C33; water and sand.
- C. Reinforcing Steel: ASTM A615/A615M, 60 ksi yield grade, deformed billet bars, uncoated finish, strength and size commensurate with precast unit design.
- D. Air Entrainment Admixture: ANSI/ASTM C260.
- E. Concrete Mix: Minimum 5,000 psi, 28-day strength, air entrained to 5 to 7 percent.
- F. Use rigid molds, constructed to maintain precast units uniform in shape, size and finish. Maintain consistent quality during manufacture.
- G. Embed reinforcing steel, and drill or sleeve for two dowels.
- H. Cure units to develop concrete quality, and to minimize appearance blemishes including non-uniformity, staining, or surface cracking.

2.2 CONFIGURATION

- A. Nominal Size: 5 inches high, 9 inches wide, 6 feet long.
- B. Profile: Manufacturer's standard; match existing if appropriate; provide drainage slots.

2.3 ACCESSORIES

- A. Dowels: Cut Reinforcing Steel, unfinished; 1/2 inch diameter.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install units without damage to shape or finish. Replace or repair damaged units.
- B. Install units in alignment with adjacent Work.
- C. Fasten units in place with two dowels for each bumper.

3.2 SCHEDULE

- A. Remove existing, install new parking bumpers where indicated and noted on drawings. Pin to asphalt after being set in position.

END OF SECTION

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SECTION 32 17 23 - PAVEMENT MARKINGS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Traffic lines and markings.
 - 2. Paint.

1.2 SUBMITTALS

- A. Product Data: Paint formulation for each type of paint.
- B. Manufacturer's Certificate: Products meet or exceed specified requirements.
- C. Test and Evaluation Reports: Submit source and acceptance test results according to AASHTO M247.
- D. Manufacturer's Instructions: Application temperatures, eradication requirements, application rate, line thickness, type of glass beads, bead embedment and bead application rate, and any other data on proper installation.

1.3 QUALITY ASSURANCE

- A. Perform Work according to State of Ohio, ODOT standards.
- B. Manufacturer: Company specializing in manufacturing products specified in this Section with five years' experience.
- C. Applicator: Company specializing in performing Work of this Section with five years' experience.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Invert containers several days prior to use when paint has been stored more than two months. Minimize exposure to air when transferring paint. Seal drums and tanks when not in use.

1.5 AMBIENT CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside temperature ranges required by paint product manufacturer.
- B. Do not apply exterior coatings during rain or snow when relative humidity is outside humidity ranges, or moisture content of surfaces exceed those required by paint product manufacturer.
- C. Do not apply paint when temperatures are expected to fall below 50 degrees F for 24 hours after application.
- D. Volatile Organic Content (VOC). Do not exceed State or U.S. EPA maximum VOC on traffic paint.

1.6 WARRANTY

- A. Furnish one-year manufacturer's warranty for traffic paints.

PART 2 PRODUCTS

2.1 PAINTED PAVEMENT MARKINGS

- A. Performance / Design Criteria:
 - 1. Paint Adhesion: Adhere to road surface forming smooth continuous film one minute after application.
 - 2. Paint Drying: Tack free by touch so as not to require coning or other traffic control devices to prevent transfer by vehicle tires within two minutes after application.

- B. Paint: Ready mixed, conventional and fast dry waterborne traffic paints, lead-free, non-toxic, NASSHTO Test Deck, minimum retroreflectance of 100 mcds, durability rating of 6 or more after in place for nine months; within following limits: Sherwin Williams, Pro-Park 113.80 or Equal.
 - 1. Volume Solids: 62 +/- 2%
 - 2. Weight Solids 77 +/- 2%
 - 3. VOC <50 g/L; <0.42 lb/gal

2.2 EQUIPMENT

- A. Continuous Longitudinal Line Application Machine:
 - 1. Dual-nozzle paint gun to simultaneously apply parallel lines of indicated width in solid or broken patterns or various combinations of those patterns.
 - 2. Pressurized bead gun to automatically dispense glass beads onto painted surface, at required application rate.
 - 3. Measuring device to automatically and continuously measure length of each line placed, to nearest foot.
 - 4. Device to heat paint for fast dry applications.
- B. Machine Calibration:
 - 1. Calibrate equipment to be in conformance with ODOT requirements as applicable.
 - 2. Paint Guns: Calibrate to simultaneously apply paint binder at uniform rates as specified with an allowable tolerance of plus or minus 1 mil.
 - 3. Bead Guns: Calibrate to dispense glass beads simultaneously at specified rate. Check guns by dispensing glass beads into gallon container for predetermined fixed period of time. Verify weight of glass beads.
- C. Other Equipment:
 - 1. For application of crosswalks, intersections, stop lines, legends and other miscellaneous items by walk behind strippers, hand spray or stencil trucks, apply with equipment meeting requirements of this Section. Do not use hand brushes or rollers.

PART 3 EXECUTION

3.1 PREPARATION

- A. Maintenance and Protection of Traffic:
 - 1. Prevent interference with marking operations and to prevent traffic on newly applied markings before markings dry.
 - 2. Coordinate access requirements with Owner prior to application of markings.
- B. Surface Preparation.
 - 1. Clean and dry paved surface prior to painting.
 - 2. Blow or sweep surface free of dirt, debris, oil, grease or gasoline.
 - 3. Spot location of final pavement markings as specified and as indicated by applying pavement spots 25 feet o.c.

3.2 APPLICATION

- A. Agitate paint for 1 to 15 minutes prior to application to ensure even distribution of paint pigment.
- B. Dispense paint at ambient temperature or heated as applicable to wet film thickness of 15 mils.
- C. Unless material is track free at end of paint application convoy, use traffic cones to protect markings from traffic until track free. When vehicle crosses a marking and tracks it or when splattering or over spray occurs, eradicate affected marking and resultant tracking and apply new markings.

3.3 TOLERANCES

- A. Maximum Variation from Wet Film Thickness: 1 mil.

- B. Maximum Variation from Wet Paint Line Width: Plus or minus 1/8 inch.
- C. Maintain cycle length for skip lines at tolerance of plus or minus 6 inches per 40 feet and line length of plus or minus 3 inches per 10 feet.

3.4 FIELD QUALITY CONTROL

- A. Inspect for incorrect location, insufficient thickness, line width, coverage, retention, uncured or discolored material, and insufficient bonding.
- B. Repair lines and markings, which after application and curing do not meet following criteria:
 - 1. Incorrect Location: Remove and replace incorrectly placed patterns.
 - 2. Insufficient Thickness, Line Width, Paint Coverage, Glass Bead Coverage or Retention: Prepare defective material by acceptably grinding or blast cleaning to remove substantial amount of beads and to roughen marking surface. Remove loose particles and debris. Apply new markings on cleaned surface according to this Section.
 - 3. Uncured or Discolored Material, Insufficient Bonding: Remove defective markings according to this Section and clean pavement surface 1 foot beyond affected area. Apply new markings on cleaned surface according to this Section.
- C. Replace defective pavement markings as specified throughout warranted period. Replace markings damaged by anti-skid materials, chemical deicers, snow plowing or other loss of marking material regardless of cause. When markings are damaged by pavement failure or by Owner's painting, crack sealing, or pavement repair operations, Contractor is released from warranty requirements for damaged Work.
- D. Replace failed or defective markings in entire section of defective markings within 30 days after notification when any of following exists during warranty period:
 - 1. Marking is discolored or exhibits pigment loss, and is determined to be unacceptable by Owner.
 - 2. More than 15 percent of area of continuous line, or more than 15 percent of combined area of skip lines, within any 528 foot section of roadway is missing.
- E. Replace pavement marking material under warranty using original or better type material. Continue warranty to end of original warranty period even when replacement materials have been installed as specified.
- F. When eradication of existing paint lines is necessary, eradicate by shot blast or water blast method. Do not gouge or groove pavement more than 1/16 inch during removal. Limit area of removal to area of marking plus 1 inch on all sides. Prevent damage to transverse and longitudinal joint sealers, and repair any damage according to requirements in Section 32 12 16.

3.5 PROTECTION

- A. Protect painted pavement markings from vehicular and pedestrian traffic until paint is dry and track-free. Follow manufacturer's recommendations or use minimum of 30 minutes. Consider barrier cones as satisfactory protection for materials requiring more than two minutes dry time.

3.6 PAVEMENT MARKING APPLICATION / REQUIREMENTS

- A. Thoroughly clean pavement surface of all dirt and debris.
- B. Stripe new asphalt lot as indicated.
- C. Paint to be applied at a wet mil thickness of 15 mm, 1 coat.
- D. The all markings shall be applied with a commercial motorized striping machine.

END OF SECTION

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SECTION 32 90 00 - PLANTING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Preparation of soil and fertilizer.
 - 2. Placement of plant life.

1.2 SUBMITTALS

- A. Product Data: Submit list of plant material sources, data for fertilizer and other accessories.
- B. Comply with ANSI Z60.1, "American Standard for Nursery Stock," for trees, shrubs, ground covers, and plants.

1.3 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Include pruning objectives, types and methods; types, application frequency, and recommended coverage of fertilizer.

1.4 QUALIFICATIONS

- A. Nursery: Company specializing in growing and cultivating plant life specified in this section.
- B. Qualifications of workmen: Provide at least one person who shall be present at all times during execution of this portion of the work and who shall be thoroughly familiar with the type of materials being installed and the best methods for their installation and who shall direct all work performed under this section.
- C. Maintenance Services: Performed by installer.

1.5 WARRANTY

- A. Furnish two year warranty including one continuous growing season including coverage of plants from death or unhealthy conditions.
- B. Replacements: Plants of same size and species as specified, planted in next growing season, with new warranty beginning on date of replacement.

1.6 MAINTENANCE SERVICE

- A. Maintain seeded areas and plant life for three months from Date of Substantial Completion. Seeded areas and plant life shall be well established and exhibit growth at the time of turn over to Owner.

PART 2 PRODUCTS

2.1 TREES, PLANTS, AND GROUND COVER

- A. Trees, Plants and Ground Cover: Species and size identified in Plant Schedule as indicated on Drawings, grown in climatic conditions similar to those in locality of the Work.
- B. Balled and Burlapped Shrubs: Well-shaped, fully branched, healthy, vigorous nursery-grown stock.
- C. Ground Covers and Plants: Established and well rooted in removable containers or integral peat pots.
- D. Fertilizer For Plantings: Fertilizer shall be 20-10-5 Agriform Planting tablets manufactured by Sierra Chemical Company, 1-408-263-8080 or equal and suitable for application with approved equipment. Delivered to the site in bags or other convenient containers, each fully

labeled, conforming to applicable State Fertilizer Law, and bearing the name, trade name or trademark, and warranty of the producer.

2.2 SOIL AND SOIL MODIFICATION MATERIALS

- A. Topsoil: ASTM D 5268, Fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, free of subsoil, clay or impurities, plants, weeds and roots, free of stones 1 inch or larger. Equal to ODOT Item 653.
- B. Fertilizer: Fifty percent of elements derived from organic sources,
- C. Lime: ASTM C602, Class T agricultural limestone containing a minimum 80 percent calcium carbonate equivalent.
- D. Organic Mulch: Double shredded hardwood mulch.
- E. Weed-Control Barrier: Polypropylene or polyester nonwoven fabric.
- F. Organic Compost: leaf and mushroom compost to be added to mulch at 1 cubic yard per 5 cubic yards of mulch.
- G. Tree Gator Bags
- H. Weed-Control Additive: Preen weed control.

2.3 ACCESSORIES

- A. Mulching Material: Composted, double shredded hardwood bark, dark brown in color.
- B. Landscape fabric: doubly reinforced polypropylene fabric with a 28-mil thickness. Install under all new landscape areas.

2.4 UNDERGROUND STORM DRAINAGE

- A. 4" or 6" corrugated drain piping, solid or perforated type. Connect to downspout boot and extend to storm water as designed.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Verify required underground utilities are in proper location.
- B. Prepare subsoil to eliminate uneven areas. Maintain profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- C. Scarify subsoil to depth of 6 inches.

3.2 PLACING TOPSOIL

- A. Spread topsoil to minimum depth of 6 inches. Rake smooth.
- B. Grade topsoil to eliminate rough, low or soft areas. Slope for positive drainage.
- C. Place topsoil into pits and beds intended for plant root balls to minimum thickness of 6 inches.
- D. At affected areas of the site, strip existing topsoil and stockpile for reuse. Spread as required to meet new grades.
- E. Provide additional fill as required to complete the work. Additional fill material shall be free of organic matter, rubbish, debris, and rocks greater than 4" diameter.

3.3 PLANTING

- A. Install landscape fabric at landscape beds. Install 3 inch mulch bed at all landscape areas.

- B. Set plants in pits or beds partly filled with prepared topsoil mixture. Backfill soil mixture.
- C. Saturate soil with water when pit or bed is half full of top soil and again when full.
- D. General:
 - 1. All plantings shall be done between the dates of March 1 and June 1 or September 1 and November 1. All other plantings to be done between the dates of June 2nd and August 31 to be Wilt Proofed (or equal) and a watering schedule shall be maintained by the Contractor until acceptance by Owner.
 - 2. Plant areas: Planting areas are pits, or prepared planting beds, for trees, shrubs and vines where indicated on the drawings.
 - 3. Topsoil for planting operations shall be furnished by the Contractor.
 - 4. The depth of planting areas is the depth below the finished grade.
- E. Shrub pits:
 - 1. Dig and prepare shrub pits or beds prior to planting to a minimum depth of 8".
 - 2. Width of the pits - at least greater in diameter than their ball of earth or spread of roots.
 - 3. Add 21 gram 'Agriform' planting tablets, to planting pit, manufactured by Sierra Chemical Co. (1-408-263-8080) or equal. Backfill planting pit halfway with planting soil mixture and place tablet beside rootball about 1" from root tips. Do not place in bottom of hole. Follow manufacture's recommended application rates for size of plant installed.
 - 4. Set shrubs so as to allow sufficient depth. Properly set the crown of plant at the finished surface of the bed.
 - 5. Backfill topsoil about the roots and thoroughly settle by watering. Form a mound of earth around each shrub so as to produce a shallow saucer.
 - 6. Edge the bed in a neat line as directed and make sure an even 6" layer of topsoil remains over entire area.
 - 7. Dress all beds with a uniform 3" layer of finely shredded hardwood bark.
- F. Tree Gator Bags:
 - 1. Contractor to supply and install tree gator bags on all trees planted.
 - 2. Contractor to be responsible for proper filing and maintenance of tree gator bags until acceptance by owner.

3.4 MAINTENANCE

- A. Mow grass at regular intervals to maintain maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at each mowing. Contractor to maintain through at least 3 mowings.
- B. Contractor to water to prevent grass and soil from drying out.
- C. Control growth of weeds.

3.5 GUARANTEE PERIOD

- A. Guarantee period shall begin at the issuance of the Substantial Completion and shall end exactly two years from that date.
- B. At the conclusion of the guarantee period, a final inspection of the work will be made to determine the condition of the plant material. All plant material not in a healthy or 40% defoliated growing condition will be noted.
- C. Remove the material so noted from the site at the direction of the Architect and replace during the following planting season with the materials of like kind and size and in a manner specified for the original planting at no extra cost.
- D. Guarantee period also applies to replaced material.

END OF SECTION

SECTION 32 92 19 – SEEDING / SITE REPAIR

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Seeding and Site Repairs related to asphalt and concrete repair and replacement.

1.2 DEFINITIONS

- A. Weeds: Vegetative species other than specified species to be established in given area.

1.3 SUBMITTALS

- A. Product Data: Topsoil, Seed mix, fertilizer, mulch, and other accessories.

1.4 QUALITY ASSURANCE

- A. Provide seed mixture in containers showing percentage of seed mix, germination percentage, inert matter percentage, weed percentage, year of production, net weight, date of packaging, and location of packaging.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

PART 2 PRODUCTS

2.1 SEED MIXTURE

- A. Seed Mixture: Green Velvet's Finest mixture, fescue or bluegrass to match existing and for soils conditions, sun/shade, etc. ODOT Item 659.
- B. Commercial Fertilizer for seed: Commercial-grade complete fertilizer, consisting of 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
- C. Slow-Release Fertilizer: Granular fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium; 5 percent nitrogen; 10 percent phosphorous; and 5 percent potassium; by weight.
- D. Straw Mulch: Clean, mildew- and seed-free salt hay or threshed straw.

2.2 SOIL AND SOIL MODIFICATION MATERIALS

- A. Topsoil: ASTM D 5268, Fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, free of subsoil, clay or impurities, plants, weeds and roots, free of stones 1 inch or larger. Equal to ODOT Item 653.
- B. Fertilizer: Fifty percent of elements derived from organic sources,
- C. Lime: ASTM C602, Class T agricultural limestone containing a minimum 80 percent calcium carbonate equivalent.
- D. Organic Compost: leaf and mushroom compost to be added to mulch at 1 cubic yard per 5 cubic yards of mulch.
- E. Weed-Control Additive: Preen weed control.

2.3 ACCESSORIES

- A. Mulching Material: Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are **not** acceptable.

2.4 SOURCE QUALITY CONTROL

- A. Analyze to ascertain percentage of nitrogen, phosphorus, potash, soluble salt content, organic matter content, and pH value.
- B. Provide recommendation for fertilizer and lime application rates for specified seed mix as result of testing.
- C. Testing is not required when recent tests and certificates are available for imported topsoil. Submit these test results to testing laboratory. Indicate, by test results, information necessary to determine suitability.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify prepared soil base is ready to receive Work of this Section.

3.2 PLACING TOPSOIL

- A. Spread topsoil to minimum depth of 6 inches. Rake smooth.
- B. Grade topsoil to eliminate rough, low or soft areas. Slope for positive drainage.
- C. Place topsoil into pits and beds intended for plant root balls to minimum thickness of 6 inches.
- D. At affected areas of the site, strip existing topsoil and stockpile for reuse. Spread as required to meet new grades.
- E. Provide additional fill as required to complete the work. Additional fill material shall be free of organic matter, rubbish, debris, and rocks greater than 4" diameter.

3.3 SEEDING

- A. Apply seed at a rate of 10 lb per 1000 sq ft, evenly in two intersecting directions.
- B. Immediately following seeding, apply agricultural mulch to a thickness of 1/8 inches.
- C. Apply water with fine spray immediately after each area has been mulched.

3.4 SEED PROTECTION

- A. Identify seeded areas with stakes and string around area periphery.

3.5 MAINTENANCE

- A. Water to prevent grass and soil from drying out. Maintain until vigorously growing.
- B. Control growth of weeds. Apply herbicides. Remedy damage resulting from improper use of herbicides.
- C. Immediately reseed areas showing bare spots.
- D. Repair washouts or gullies.

3.6 SCHEDULE OF SITE REPAIR

- A. Backfill areas impacted by work with topsoil to match existing grade.
- B. Re-seed area impacted by work.
- C. Apply mulch/straw.
- D. Water and maintain seed until vigorously growing.

END OF SECTION

SECTION 32 92 23 - SODDING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Preparation of subsoil.
 - 2. Placing topsoil.
 - 3. Fertilizing.
 - 4. Sod installation.
 - 5. Maintenance.
- B. General: Restore all turf areas affected by site work with the installation of new sod.

1.2 DEFINITIONS

- A. Weeds: Vegetative species other than specified species to be established in given area.

1.3 SUBMITTALS

- A. Product Data: Sod grass species, fertilizer, mulch, and other accessories.
- B. Test Reports: Indicate topsoil nutrient and pH levels with recommended soil supplements and application rates.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Maintenance instructions, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer.

1.5 QUALITY ASSURANCE

- A. Sod: Root development capable of supporting its own weight without tearing, when suspended vertically by holding upper two corners.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver sod on pallets in rolls. Protect exposed roots from dehydration.
- B. Do not deliver more sod than can be laid within 24 hours.

1.7 COORDINATION

- A. Coordinate with installation of underground sprinkler system piping and watering heads.

1.8 MAINTENANCE SERVICE

- A. Maintain sodded areas immediately after placement until grass is well established and exhibits vigorous growing condition for two cuttings.

PART 2 PRODUCTS

2.1 SOD

- A. Sod: TPI Certified Nursery grown grade; cultivated grass sod; type indicated in this Section; with strong fibrous root system, free of stones, burned or bare spots; containing no more than 5 weeds per 1,000 sq ft.
 - 1. Green Velvet Turf Type Tall Fescue, blend of elite Turf Type Tall Fescue Varieties, with up to 10% Kentucky Bluegrass, drought tolerant.

2.2 SOIL MATERIALS

- A. Topsoil: ASTM D 5268, Fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, free of subsoil, clay or impurities, plants, weeds and roots, free of stones 1 inch or larger. Equal to ODOT Item 653.

2.3 ACCESSORIES

- A. Fertilizer: Commercial grade; recommended for grass, with fifty percent of elements derived from organic sources; of proportion necessary to eliminate deficiencies of topsoil.
- B. Water: Clean, fresh and free of substances or matter capable of inhibiting vigorous growth of grass.
- C. Wood Pegs: Softwood, sufficient size and length to anchor sod on slope.

2.4 HARVESTING SOD

- A. Machine cut sod and load on pallets according to TPI.
 - 1. Minimum 1/2 inch and maximum 1 inch topsoil base.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify prepared soil base is ready to receive Work of this Section.

3.2 PREPARATION OF SUBSOIL

- A. Prepare sub-soil and eliminate uneven areas and low spots.
- B. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- C. Remove foreign materials and undesirable plants and their roots. Do not bury foreign material beneath areas to be sodded.
- D. Remove contaminated subsoil.
- E. Scarify subsoil to depth of 3 inches where topsoil is to be placed.
- F. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted subsoil.

3.3 LAYING SOD

- A. Moisten prepared surface immediately prior to laying sod.
- B. Lay sod immediately after delivery to Site to prevent deterioration.
- C. Lay sod tight with no open joints visible, and no overlapping; stagger end joints 12 inches minimum. Do not stretch or overlap sod pieces.
- D. Lay smooth. Align with adjoining grass areas.
- E. Place top elevation of sod 1/2 inch below adjoining paving, curbs.
- F. On slopes 6 inches per foot and steeper, lay sod perpendicular to slope and secure every row with wooden pegs at maximum 2 feet o.c. When using "big roll," lay sod parallel to slope. Drive pegs flush with soil portion of sod.
- G. Do not place sod when temperature is less than 32 degrees F.
- H. Water sodded areas immediately after installation. Saturate sod to 4 inches of soil.

- I. After sod and soil have dried, roll sodded areas to bond sod to soil and to remove minor depressions and irregularities.
- J. Roll before first watering.

3.4 MAINTENANCE

- A. Contractor to water sod until established.
- B. Mow grass at regular intervals to maintain at maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at each mowing. Contract to maintain until 1st 3 mowings.
- C. Neatly trim edges and hand clip where necessary.
- D. Immediately remove clippings after mowing and trimming.
- E. Water to prevent grass and soil from drying out.
- F. Roll surface to remove or irregularities.
- G. Control growth of weeds. Apply herbicides. Remedy damage resulting from improper use of herbicides.
- H. Immediately replace sod on areas showing deterioration or bare spots.
- I. Protect sodded areas with warning signs during maintenance period.

END OF SECTION

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SECTION 33 01 31 – DRAINAGE SYSTEM REPAIRS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Repairs to existing drainage system components as indicated on the drawings.

1.2 QUALITY ASSURANCE

- A. Perform Work according to ODOT standards as applicable.

1.3 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Aggregate: size and type as suitable for conditions.
- B. Asphalt: Refer to Section 32 01 16.
- C. Concrete: Refer to Section 32 01 26.
- D. Mortar: Non-Shrink, Cementitious Grouting Mortar
1. ASTM C 109; Compressive strength greater than 8,000 PSI
 2. ASTM C 496; Tensile strength greater than 500
 3. ASTM C 78; Flexural strength greater than 1,000
 4. ASTM C-666; 300 Cycles RDF 99%

2.2 MANHOLE FRAMES AND COVERS

- A. Maintain and reuse existing manhole frames and covers. Replace in like kind if damaged.
- B. Accessories:
1. Joint Sealant: ASTM C990.
 2. Bolts: Stainless steel ASTM F593; galvanized ASTM F1554.
- C. New Catch Basin: 24x24 pre-cast concrete storm structure, core for piping outlets. Traffic bearing lid / grate frame.

PART 3 EXECUTION

3.1 DRAINAGE REPAIRS

A. General drainage requirements:

1. Call 811 before you dig.
2. The suggested location for drainage repairs are displayed and listed on the Drawings. Each contractor bidding must be responsible for verifying all dimensions and determining most effective location for final placement of pipe to achieve maximum remediation of groundwater. Every area must be saw cut deep enough to prevent damage to adjacent pavement during excavation and must be done with 90 degree angles and to the depth stated on the Drawings.
3. All finished trench patches must be done in lifts and must be level with the existing surface and rectangular in shape. No bird baths or ponding will be acceptable. If any edges break during construction, they will be re-cut and replaced with full depth asphalt per specification. No settlement or cracking of the finished surface will be accepted during the first year after

installation. Any settlement which occurs must be repaired at contractor's expense. Price will include the removal of all excavated materials to an off-site location.

B. Concrete Collar Repair

1. Saw cut and excavate a square patch with each side having a minimum distance of 24" from the edge of the utility structure frame, and having a depth of 8". Dispose of excavated materials at an authorized dump site.
2. Re-compact subgrade.
3. Install 4000 psi Concrete in prepared cavity finishing the surface with positive drainage towards the utility structure frame.
4. Finish concrete surface to match existing as appropriate, medium broom finish typical.
5. Saw cut expansion joints at each corner at 45 degree angles relative to the side of the collar.

C. Catch Basin Tuck Point

1. Remove existing utility structure lid.
2. Inspect all precast risers, brick and mortar for damage.
3. Inspect all walls, floor and lateral unions of adjoining pipes for damage.
4. Remove all loose brick and mortar or structurally damaged precast risers. Remove from site.
5. Replace any loose brick and mortar or precast risers with same or better material.
6. Tuck point any damaged unions or floor with structural mortar.
7. Spray apply or hand apply structural mortar on all walls of structure top to bottom and to a thickness of at least half an inch
8. Application must cure for minimum of 24 hours without exposure to water (rain, runoff, and surface drainage of any kind).
9. Replace existing lid.

D. Rebuild Catch Basin

1. Excavate adjacent pavement 24" off edge of frame and grate.
2. Remove frame and grate.
3. Remove all loose or damaged brick and mortar.
4. Verify integrity of basin floor.
5. Repair any basin floor defects.
6. Place mortar mix, and replace brick to grade.
7. Allow proper cure time before setting frame and grate.
8. Replace excavated pavement per original to achieve positive drainage into basin.
9. Seal all edges using non-tracking sealant.

E. New Catch Basin:

1. Excavate for new catch basin as indicated on drawings.
2. Install / set new catch basin at elevations required by site conditions.

END OF SECTION

SECTION 33 05 16 - UTILITY STRUCTURES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes precast concrete utility structures:
 - 1. Drainage system catch basins.
 - 2. Drainage system inlets.
 - 3. Drainage system junction boxes.
 - 4. Frames and covers.
 - 5. Access hatches.

1.2 DESIGN REQUIREMENTS

- A. Design structures for minimum loads according to ASTM C857 and ASTM C890.
 - 1. Roof Live Load: Comply with following loading conditions, including impact load:
 - a. Light Traffic: ASTM C857; A-8, maximum 8,000 lb each wheel.
 - 2. Wall Live Load: Accommodate surcharge from roof live load.
 - 3. Base Live Load: Accommodate roof and wall live loads transferred to base.
 - 4. Dead Loads: Actual weight of materials producing static load.

1.3 SUBMITTALS

- A. Shop Drawings:
 - 1. Indicate structure locations, elevations, sections, piping, sizes and elevations of penetrations.
- B. Product Data:
 - 1. Frames and covers, component construction, features, configuration, dimensions.

1.4 QUALITY ASSURANCE

- A. Perform structural design according to ACI 318.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Store precast concrete structures to prevent damage to Owner's property or other public or private property. Repair property damaged from materials storage.
- B. Mark each precast structure by indentation or waterproof paint showing date of manufacture, manufacturer, and identifying symbols and numbers shown on Drawings to indicate its intended use.

PART 2 PRODUCTS

2.1 PRECAST CONCRETE UTILITY STRUCTURES

- A. Precast Concrete Utility Structures: Reinforced precast concrete.
- B. Foundation Slab: Precast concrete or cast in place concrete, leveled top surface.

2.2 FRAMES AND COVERS

- A. Product Description: ASTM A48/A48M, Class 30B Cast iron construction.
 - 1. Lid: Machined flat bearing surface, removable lid, open checkerboard grille cover design.
 - 2. Grate: type to suit conditions/application
 - 3. Nominal Size: 24 x 24 inches

2.3 ACCESSORIES

- A. Joint Sealants and Joint Gaskets:
 - 1. Gasket Joints for Circular Concrete Pipe: ASTM C443; standard rubber gaskets.

2. External Sealing Bands: ASTM C877; Type I rubber and mastic bands.
 3. Preformed Joint Sealants for Concrete Pipe and Box Sections: ASTM C990.
- B. Pipe Entry Connectors: ASTM C923.
- C. Grout:
1. Cement Grout: Portland cement, sand and water mixture with stiff consistency to suit intended purpose.
 2. Non-Shrink Grout: ASTM C1107/C1107M; premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2,400 psi in 48 hours and 7,000 psi in 28 days.

2.4 CONCRETE MIX

- A. Select proportions for normal weight concrete according to ACI 318 and ACI 211.1.
- B. Admixtures: Include admixture types and quantities indicated in concrete mix designs approved through submittal process.
1. Do not use calcium chloride.

2.5 FABRICATION

- A. Fabricate precast concrete utility structures according to ACI 318 and NPCA Quality Control Manual for Precast Plants.
- B. Fabricate precast concrete utility structures to size, configuration, knock out panels, and openings.
- C. Construct forms to provide uniform precast concrete units with consistent dimensions.
- D. Clean forms after each use.
- E. Install reinforcing by tying or welding to form rigid assemblies. Position reinforcing to maintain minimum 1/2 inch cover. Secure reinforcement to prevent displacement when placing concrete.
- F. Position and secure embedded items to prevent displacement when placing concrete.
- G. Deposit concrete in forms. Consolidate concrete without segregating aggregate.
- H. Provide initial curing by retaining moisture using one of following methods:
1. Cover with polyethylene sheets.
 2. Cover with burlap or other absorptive material and keep continually moist.
 3. Apply curing compound according to manufacturer's instructions.
- I. Provide final curing according to manufacturer's standard.
- J. Remove forms without damaging concrete.

2.6 CONCRETE FINISHES

- A. Formed Surfaces Not Exposed to View: As formed.
- B. Unformed Surfaces: Finish with vibrating screed or hand float.
1. Permitted: Color variations, minor indentations, chips, and spalls.
 2. Not permitted: Major imperfections, honeycomb, or other defects.
- C. Exposed to View Finishes: Troweled:

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify subgrade and bedding is properly prepared, compacted and ready to receive Work of this Section.

3.2 PREPARATION

- A. Inspect precast concrete structures immediately prior to placement in excavation to verify are internally clean and free from damage. Remove and replace damaged units.

3.3 INSTALLATION

- A. Install underground precast utility structures according to ASTM C891.
- B. When lowering structures into excavations and joining pipe to units, take precautions to ensure interior of pipeline and structure remains clean.
- C. Install concrete base to elevation and alignment indicated.
- D. Install precast concrete utility structures to elevation and alignment indicated.
- E. Assemble multi-section structures by lowering each section into excavation.
 - 1. Clean joint surfaces.
 - 2. Install watertight joint seals according to manufacturer's instructions using gasket joints, or as recommended by supplier / installer.
- F. Remove knockouts or cut structure to receive piping without creating openings larger than required to receive pipe. Fill annular space with grout.
- G. Connect pipe to structure and seal watertight. Cut pipe flush with interior of structure.
- H. Grout base to achieve slope to exit piping. Trowel smooth.
- I. Set frame and cover level without tipping, to elevations indicated.

END OF SECTION

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SECTION 33 41 00 - STORM UTILITY DRAINAGE PIPING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes site storm sewerage drainage piping, fittings and accessories, and bedding; connection of drainage systems and catch basins.

1.2 SUBMITTALS

- A. Product Data: Submit data indicating pipe, pipe accessories, and structures.
- B. Manufacturer's Installation Instructions: Submit special procedures required to install Products specified.

1.3 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Accurately record actual locations of pipe runs, connections, catch basins, cleanouts, and invert elevations.
- B. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

PART 2 PRODUCTS

2.1 STORM DRAINAGE

- A. Sewer Pipe Materials:
 - 1. Reinforced Concrete Pipe: ASTM C76, Class III; mesh reinforcement; diameter as indicated on drawings, bell and spigot end joints.
 - a. Reinforced Concrete Pipe Joint Device: ASTM C443, rubber compression gasket joint.
 - 2. Plastic Pipe: ASTM D2729, polyvinyl chloride (PVC) material; diameter as indicated on drawings, bell and spigot solvent sealed joint end.
 - 3. Corrugated high density polyethylene pipe: HDPE, corrugated exterior, smooth interior, perforated and solid type, sizes as indicated on drawings. ASTM F2648.
 - a. Bell and spigot joint per ASTM F2648; spun-on or welded ball and valley or saddle gasket.

2.2 ACCESSORIES

- A. Pipe Joints: Mechanical clamp ring type, expanding and contracting sleeve, neoprene ribbed gasket for positive seal.
- B. Fittings: Same material as pipe molded or formed to suit pipe size and end design, in required tee, bends, elbows, cleanouts, reducers, traps and other configurations required.
- C. Filter Fabric: Non-biodegradable, woven type.

2.3 CATCH BASINS AND AREA DRAINS

- A. Lid and Frame: Cast iron construction: manufactured by Neenah or Equal.
- B. Shaft Construction and Concentric Cone Top Section: Reinforced precast Concrete pipe sections, lipped male/female dry joints
- C. Base Pad: Cast-In-Place Concrete, refer to drawings.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on layout drawings.

3.2 PREPARATION

- A. Hand trim excavations to required elevations. Correct over excavation with fine aggregate.
- B. Remove large stones or other hard matter capable of damaging piping or impeding consistent backfilling or compaction.

3.3 BEDDING

- A. Excavate pipe trench in accordance with Section 31 10 00 for work of this section. Hand trim excavation for accurate placement of pipe to elevations indicated.
- B. Place bedding material at trench bottom, level materials in continuous layer not exceeding 8 inches compacted depth.
- C. Maintain optimum moisture content of bedding material to attain required compaction density.

3.4 INSTALLATION - PIPE

- A. Install pipe, fittings, and accessories in accordance with ASTM D2321. Seal joints watertight.
- B. Place pipe on bed of filter aggregate.
- C. Lay pipe to slope gradients noted on drawings with maximum variation from indicated slope of 1/8 inch in 10 feet.
- D. Install aggregate at sides and over top of pipe. Install top cover to minimum compacted thickness of 12 inches, compact to 95 percent.
- E. Do not displace or damage pipe when compacting.
- F. Connect to structures as indicated on drawings.

3.5 INSTALLATION - CATCH BASINS AND CLEANOUTS

- A. Form bottom of excavation clean and smooth to correct elevation.
- B. Form and place Cast-In-Place Concrete base pad, with provision for storm sewer pipe end sections.
- C. Level top surface of base pad; sleeve concrete shaft sections to receive storm sewer pipe sections.
- D. Establish elevations and pipe inverts for inlets and outlets as indicated on Drawings.
- E. Mount lid and frame level in grout, secured to top cone section to elevation indicated.

END OF SECTION