



PART 1 - GENERAL

1.1.1 ADDENDUM

A. Addendum No. 01

1.1.2 PROJECT INFORMATION

- A. Project Name: **Public Works Garage and Salt Shed**
- B. Owner: **City of Chester**
- C. Owner Project Number: **2025-010**
- D. Architect: **CED Architecture, Inc.**
- E. Architect Project Number:
- F. Date of Addendum: **05/27/2025**

1.1.3 NOTICE TO BIDDERS

- A. This Addendum is issued **to all PennBid registered vendors** pursuant to the **Instructions to Bidders and Conditions of the Contract**. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.

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- B. The Bidder shall acknowledge receipt of this Addendum in the appropriate Acknowledgment field with their PennBid submission.
- C. The date for receipt of bids is **unchanged by this Addendum** at same time and location.
 - 1. Bid Date: 06/26/2025.

1.1.4 ATTACHMENTS

- A. This Addendum includes the following attached Documents and Specification Sections:
 - 1. Document: Addendum No1 letter, dated May 27, 2025 as issued electronically on PennBid.

2. Specifications: None at this time

B. This Addendum includes the following attached sheets:

1. General Sheet: N/A
2. Civil: N/A
3. Structural Sheet: N/A
4. Architectural: N/A
5. Fire-Protection Sheet: N/A
6. Plumbing Sheet: N/A
7. Mechanical Sheet: N/A
8. Electrical Sheet: N/A

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1.2.1 ADDENDUM

A. Addendum No. 02

1.2.2 PROJECT INFORMATION

- A. Project Name: **Public Works Garage and Salt Shed**
- B. Owner: **City of Chester**
- C. Owner Project Number: **2025-010**
- D. Architect: **CED Architecture, Inc.**
- E. Architect Project Number:
- F. Date of Addendum: **06/02/2025**

1.2.3 NOTICE TO BIDDERS

- A. This Addendum is issued **to all PennBid registered vendors** pursuant to the **Instructions to Bidders and Conditions of the Contract**. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.

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- B. The Bidder shall acknowledge receipt of this Addendum in the appropriate Acknowledgment field with their PennBid submission.

C. The date for receipt of bids is **unchanged by this Addendum** at same time and location.

1. Bid Date: 06/26/2025.

1.2.4 ATTACHMENTS

A. This Addendum includes the following attached Documents and Specification Sections:

1. Documents: N/A
2. Specifications:
 - a. Section 000110 Table of Contents, dated 06/02/2025, (Reissued).
 - b. Section 000115 List of Drawings Sheets, dated 06/02/2025, (Reissued).
 - c. Section 011000 Summary, dated 06/02/2025, (Reissued).
 - d. Section 012300 Alternates & Units Prices, dated 06/02/2025, (Reissued).
 - e. Section 015100 Temporary Utilities, dated 06/02/2025, (Reissued).
 - f. Section 084523 Fiberglass Sandwich-Panel Assemblies dated 06/02/25, (Reissued).
 - g. Section 105129 Phenolic Lockers dated 06/02/2025, (New).
 - h. Section 107300 Cantilevered Carports dated 06/02/2025, (New).
 - i. Section 133133 Framed Fabric Structures dated 06/02/2025, (New).
 - j. Section 263213.13 Diesel Emergency Engine Generators, dated 06/02/2025, (Reissued).
 - k. Section 263600 Transfer Switches, dated 06/02/2025, (Reissued).

B. This Addendum includes the following attached sheets:

1. General Sheet: N/A
2. Civil Highway Occupancy Permit Plans:
 - a. Sheet 1of6 Cover Sheet, dated 3/21/25, (New).
 - b. Sheet 2of6 General Notes, dated 3/21/25, (New).
 - c. Sheet 3of6 General Notes, dated 3/21/25, (New).
 - d. Sheet 4of6 Maintenance & Protection of Traffic, dated 3/21/25, (New).
 - e. Sheet 5of6 Maintenance & Protection of Traffic, dated 3/21/25, (New).
 - f. Sheet 6of6 Construction Plans, dated 3/21/25, (New).
3. Structural Sheet: N/A
4. Architectural:
 - a. Sheet A304 – Wall Sections - Garage, dated 06/02/2025, (Reissued).
 - b. Sheet A401 – Restroom/Locker Plans, Elevations & Details, dated 06/02/2025, (Reissued).
5. Fire-Protection Sheet: N/A
6. Plumbing Sheet:
 - a. Sheet P000 – Plumbing Symbols, Abbreviations, Legends & General Notes dated 06/02/2025, (Reissued).
 - b. Sheet P100 – Underground Plumbing plan dated 06/02/2025, (Reissued).
 - c. Sheet P101 – Plumbing Floor Plan dated 06/02/2025, (Reissued).
 - d. Sheet P102 – Natural Gas Piping Floor Plan dated 06/02/2025, (Reissued).
 - e. Sheet P103 – Salt Shed Plumbing Plan dated 06/02/2025, (Reissued).

- f. Sheet P401 – Enlarged Plumbing Plans dated 06/02/2025, (Reissued).
- g. Sheet P501 – Plumbing Details dated 06/02/2025, (Reissued).
- h. Sheet P600 – Plumbing Schedules dated 06/02/2025, (Reissued).
- i. Sheet P901 – Sanitary Waste & Vent Pipping Riser Diagrams dated 06/02/2025 (Reissued)
- j. Sheet P902 – Domestic Water Pipping & Natural Gas Pipping Riser Diagrams dated 06/02/2025 (Reissued)

7. Mechanical Sheet: N/A

8. Electrical Sheet:

- a. Sheet E101 Power Plan, Dated 06/02/2025, (Reissued)
- b. Sheet E601 Diagrams, Dated 06/02/2025, (Reissued)
- c. Sheet E801 Schedules, Dated 06/02/2025, (Reissued)

1.2.5 REVISIONS TO DIVISION 00 PROCUREMENT REQUIREMENTS AND CONTRACTING REQUIREMENTS

A. Specification Section **000110 Table of Contents, (Reissued)**

1. Sections have been added to and omitted from the table of contents.

- 3
- a. Section 009113 Addenda has been added
 - b. Section 105113 Metal Lockers has been omitted.
 - c. Section 105129 Phenolic Lockers has been added
 - d. Section 107300 Cantilevered Carports has been added

B. Specification Section **000115 List of Drawing Sheets, (Reissued)**

1. Section 02a Civil Highway Occupancy Plans have been added.

1.2.6 REVISIONS TO DIVISION 01 GENERAL REQUIREMENTS

A. Specification Section **011000 Summary, (Reissued).**

1. The below revisions correlate with Addendum No1.

- a. Paragraph 1.1 Project Information: Item E has been updated to remove the Construction Manager (CM) from Contract 1. The CM shall be awarded under a separate contract.
- b. Since the General Prime contractor is no longer the acting CM, the answer for PennBid RFI #13 shall be revised to the following: “Thank you for your inquiry. The Construction Manager shall be responsible to work with each prime contractor and the Owner to determine a Logistics Plan that works for everyone.”

2. Paragraph 1.1 Project Information: Item D has been updated to revise a typo in the

Architect's Project number.

3. The below revisions correlate with PennBid RFI response #15
 - a. Paragraph 1.3 Work By Owner: Item B Generator & Automatic Transfer Switch has been updated to reference Alternate#8.
4. The below revisions correlate with PennBid RFI response #25
 - a. Paragraph 1.3 Work By Owner: Item L Commercial Grade Electrical Vehicle Charging Stations has been added to indicate equipment procurement by owner and installation by contractor.

B. Specification Section 012300 Alternates and Unit Prices, (Reissued).

1. The below revisions correlate with PennBid RFI response #25
 - a. Paragraph 3.1 Schedule of Alternates: Alternate #3 has been revised to indicate new work scope for the EV charging Stations which will be procured by the owner and installed by the Electrical Prime Contractor.
2. The below revisions correlate with PennBid RFI response #15
 - a. Paragraph 3.1 Schedule of Alternates: Alternate #8 has been added for procurement options for the Generator and Automatic Transfer switch.

C. Specification Section 015100 Temporary Utilities, (Reissued).

1. The below revisions correlate with PennBid RFI response #23
 - a. Paragraph 1.6 Temporary Electricity: Note A has been revised to indicate the appropriate utility company.

1.2.7 REVISIONS TO DIVISION 08 OPENINGS

A. Specification Section 084523 Fiberglass Sandwich-Panel Assemblies, (Reissued).

1. The below revisions correlate with PennBid RFI response #10
 - a. Paragraph 1.5 Performance requirements: Items A & B have been revised to indicate wind load and deflection limit parameters.

1.2.8 REVISIONS TO DIVISION 10 SPECIALTIES

A. Specification Section 105113 Metal Lockers, (Omitted)

1. The below revisions correlate with PennBid RFI response #9.

- a. Entire section has been omitted and replaced with section 105129 Phenolic Lockers

B. Specification Section **105129 Phenolic Lockers, (New)**

1. The below revisions correlate with PennBid RFI response #9.
 - a. Entire section was not included in the original bid package and has been added in lieu of section 105113 Metal Lockers.

C. Specification Section **107300 Cantilevered Carports, (New).**

1. Entire section was not included in the original bid package and has been added for clarifications

1.2.9 REVISIONS TO DIVISION 13 SPECIAL CONSTRUCTION

A. Specification Section **133133 Framed Fabric Structures, (New).**

1. This revisions aligns with PennBid RFI responses #4, #8, #31.
 - a. Entire section was not included in the original bid package and has been added for clarifications

1.2.10 REVISIONS TO DIVISIONS 26 SPECIFICATION SECTIONS

A. Specification Section **263213.13 Diesel Emergency Engine Generators, (Reissued).**

1. Paragraph 2.1 Manufacture: The service load size has been revised to reference one line diagram.
2. Paragraph 2.3 Engine Generator Assembly Description: The service load size has been revised to reference one line diagram.

B. Specification Section **263600 Transfer Switches, dated 06/02/2025, (Reissued).**

1. Paragraph 2.1 Manufacture: The service load size has been revised to reference one line diagram.

1.2.11 REVISIONS TO DRAWING SHEETS

A. Sheet **A304 Wall Sections - Garage (Reissued).**

1. The below revisions correlate with PennBid RFI response #19
 - a. **Drawing #1/A304:** Wall Section has been revised to indicate additional support for the Horizontal wall panels.

B. Sheet **A401 Restroom/Locker Plans, Elevations & Details (Reissued).**

1. The below revisions correlate with PennBid RFI response #7.
 - a. **Drawings #2/A401, #4/A401, #6/A401, #7/A401, #8/A401, #9/A401, #10/A401, #12/A401:** Interior elevations have been revised to indicate floor mounted toilet partitions in lieu of ceiling mounted toilet partitions.
 - b. **General notes:** Notes have been revised for construction clarifications.

C. Sheet **P000 Plumbing Symbols, Abbreviations, Legends & General Notes (Reissued).**

1. The below revisions correlate with PennBid RFI response #56.
 - a. The entire drawing has been updated for clarity purposes

D. Sheet **P100 Underground Plumbing Plan (Reissued).**

1. The below revisions correlate with PennBid RFI response #56.
 - a. **Title Block, General Notes and Keynotes:** Drawing has been updated for clarity purposes

E. Sheet **P101 Plumbing Floor Plan (Reissued).**

1. **Plan #1/P101:** Revised domestic water supply connections to GWH-1
2. The below revisions correlate with PennBid RFI response #56.
 - a. **Title Block, General Notes and Keynotes:** Drawing has been updated for clarity purposes

F. Sheet **P102 Natural Gas Piping Floor Plan (Reissued).**

1. **Plan #1/P102:** Revised natural gas supply connections to GWH-1
2. The below revisions correlate with PennBid RFI response #56.
 - a. **Title Block, General Notes and Keynotes:** Drawing has been updated for clarity purposes

G. Sheet **P103 Salt Shed Plumbing Floor Plan (Reissued).**

1. The below revisions correlate with PennBid RFI response #56.
 - a. **Title Block, General Notes and Keynotes:** Drawing has been updated for clarity purposes

H. Sheet **P401 Enlarged Plumbing Plan (Reissued).**

1. The below revisions correlate with PennBid RFI response #56.

- a. **Title Block, General Notes and Keynotes:** Drawing has been updated for clarity purposes
- I. **Sheet P501 Plumbing Details (Reissued).**
 - 1. The below revisions correlate with PennBid RFI response #56.
 - a. The entire drawing has been updated for clarity purposes
- J. **Sheet P600 Plumbing Schedules (Reissued).**
 - 1. The below revisions correlate with PennBid RFI response #56.
 - a. **Schedules, Title Block, General Notes and Keynotes:** Drawing has been updated for clarity purposes
- K. **Sheet P901 Sanitary Waste & Vent Pipping Riser Diagrams (Reissued).**
 - 1. The below revisions correlate with PennBid RFI response #56.
 - a. **Title Block, General Notes:** Drawing has been updated for clarity purposes
- L. **Sheet P902 Domestic Water Pipping & Natural Gas Pipping Riser Diagrams (Reissued).**
 - 1. **Plan #1/P501:** Revised domestic water supply and Natural gas supply connections to GWH-1
 - 2. The below revisions correlate with PennBid RFI response #56.
 - a. **Title Block, General Notes:** Drawing has been updated for clarity purposes
- M. **Sheet E101 Power Plan (Reissued).**
 - 1. The below revisions correlate with PennBid RFI response #34.
 - a. **Drawing #1/E101:** Power placeholder added for owner provided signage.
 - b. **Power Keynotes:** Keynote #22 added to identify signage power work scope.
- N. **Sheet E601 Diagrams (Reissued).**
 - 1. The below revisions correlate with PennBid RFI response #47
 - a. **Drawing #1/E601:** One line Diagram revised to indicate conduit and cable line sets to/from ATS-E.
- O. **Sheet E801 Schedules (Reissued).**
 - 1. The below revisions correlate with PennBid RFI response #34
 - a. **Branch Panel RP4:** Power requirements added for owner provided signage.

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1.3.1 ADDENDUM

A. Addendum No. 03

1.3.2 PROJECT INFORMATION

- A. Project Name: **Public Works Garage and Salt Shed**
- B. Owner: **City of Chester**
- C. Owner Project Number: **2025-010**
- D. Architect: **CED Architecture, Inc.**
- E. Architect Project Number:
- F. Date of Addendum: **06/03/2025**

1.3.3 NOTICE TO BIDDERS

- A. This Addendum is issued **to all PennBid registered vendors** pursuant to the **Instructions to Bidders and Conditions of the Contract**. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.

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- B. The Bidder shall acknowledge receipt of this Addendum in the appropriate Acknowledgment field with their PennBid submission.

- C. The date for receipt of bids is **unchanged by this Addendum** at same time and location.

- 1. Bid Date: 06/26/2025.

1.3.4 ATTACHMENTS

- A. This Addendum includes the following attached Documents and Specification Sections:

- 1. Document: Addendum No.3 letter with links for Pre-Bid meeting video/audio prepared by Greg Shaffer Officer of Procurement, dated June 3, 2025 as issued electronically on PennBid.
- 2. Specifications: None at this time

B. This Addendum includes the following attached sheets:

1. General Sheet: N/A
2. Civil: N/A
3. Structural Sheet: N/A
4. Architectural: N/A
5. Fire-Protection Sheet: N/A
6. Plumbing Sheet: N/A
7. Mechanical Sheet: N/A
8. Electrical Sheet: N/A

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1.4.1 ADDENDUM

A. Addendum No. 04

1.4.2 PROJECT INFORMATION

- A. Project Name: **Public Works Garage and Salt Shed**
- B. Owner: **City of Chester**
- C. Owner Project Number: **2025-010**
- D. Architect: **CED Architecture, Inc.**
- E. Architect Project Number:
- F. Date of Addendum: **06/05/2025**

1.4.3 NOTICE TO BIDDERS

- A. This Addendum is issued **to all PennBid registered vendors** pursuant to the **Instructions to Bidders and Conditions of the Contract**. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.

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- B. The Bidder shall acknowledge receipt of this Addendum in the appropriate Acknowledgment field with their PennBid submission.

- C. The date for receipt of bids is **unchanged by this Addendum** at same time and location.

1. Bid Date: 06/26/2025.

1.4.4 ATTACHMENTS

A. This Addendum includes the following attached Documents and Specification Sections:

1. Documents: Phase II Environmental Site Assessment, as prepared by Colliers Engineering and Design, inc. Dated April, 2025
2. Specifications:
 - b. Section 230923 Direct Digital Control (DDC) System for HVAC, dated 06/05/2025, (Reissued).

A. This Addendum includes the following attached sheets:

1. General Sheet: **N/A**
2. Civil:
 - a. Sheet 3.0 Site Plan, dated 6/05/25, (Reissued).
 - b. Sheet 4.0 Grading Plan, dated 6/05/25, (Reissued).
 - c. Sheet 5.0 Utilities Plan, dated 6/05/25, (Reissued).
 - d. Sheet 5.1 Profiles, dated 6/05/25, (Reissued).
 - e. Sheet 6.0 Soil Erosion & Sediment Control Plan, dated 6/05/25, (Reissued).
 - f. Sheet 6.1 Soil Erosion & Sediment Control Details, dated 6/05/25, (Reissued).
 - g. Sheet 6.2 Soil Erosion & Sediment Control Details, dated 6/05/25, (Reissued).
 - h. Sheet 8.1 Landscape Details, dated 6/05/25, (Reissued).
 - i. Sheet 10.3 Fence Construction Details, dated 6/05/25, (Reissued).
 - j. Sheet 11.0 PCSM Plan, dated 6/05/25, (Reissued).
 - k. Sheet 15.0 PCSM Notes, dated 6/05/25, (Reissued).
3. Structural Sheet: **N/A**
4. Architectural: **N/A**
5. Fire-Protection Sheet: **N/A**
6. Plumbing Sheet: **N/A**
7. Mechanical Sheet: **N/A**
8. Electrical Sheet: **N/A**

1.4.5 REVISIONS TO DIVISION 00 PROCUREMENT REQUIREMENTS AND CONTRACTING REQUIREMENTS

B. Specification Section **009113 Addenda, (Reissued)**

1. Sections have been revised to include Addendum No.03 & Addendum No.04

1.4.6 REVISIONS TO DIVISIONS 23 SPECIFICATION SECTIONS

C. Specification Section **230923 Direct Digital Control (DDC) System for HVAC, (Reissued).**

1. The below revisions correlate with PennBid RFI response #60
 - a. Paragraph 1.3 Approved Control Systems: Item A has been revised to include Scheider Electrical Controls as an approved vendor.
 - b. Paragraph 2.2 Communication: Item A has been revised to indicate new work scope criteria.

1.2.7 REVISIONS TO DRAWING SHEETS

A. Sheet **3.0 Site Plan (Reissued)**.

1. The below revisions correlate with PennBid RFI response #52
 - a. **Drawing #1/3.0:** Fence enclosure height revised.
2. The below revisions correlate with PennBid RFI response #65 & #66
 - a. **PA Act 2 Remediation Notes:** Paragraphs have been added ahead of numerical notes to indicate Pre-Acquisition Due Diligence, SPLP Value for Manganese and Remediation Measures.
 - b. **PA Act 2 Remediation Notes:** Numerical notes have been revised to comply with DEP comments.
3. The below revisions correlate with PennBid RFI response #51
 - a. **Notes:** Note added to indicate pedestrian gate work scope

B. Sheet **4.0 Grading Plan (Reissued)**.

1. The below revisions correlate with PennBid RFI response #65 & #66
 - a. **PA Act 2 Remediation Notes:** Paragraphs have been added ahead of numerical notes to indicate Pre-Acquisition Due Diligence, SPLP Value for Manganese and Remediation Measures.
 - b. **PA Act 2 Remediation Notes:** Numerical notes have been revised to comply with DEP comments.

C. Sheet **5.0 Utilities Plan (Reissued)**.

1. **Plan #1/5.0:** Note added to comply with DEP comments regarding work scope with the Sewer Authority.
2. **Act 2 Remediation Notes:** Notes have been revised to comply with DEP comments.

D. Sheet **5.1 Profiles (Reissued)**.

1. The below revisions correlate with PennBid RFI response #40

- a. **Profile Drawing S1-UGB #1:** HDPE pipe size has been revised to 6”.
- b. **Profile Drawing S12-UGB #1:** HDPE pipe size has been revised to 6”.

E. Sheet **6.0 Soil Erosion & Sediment Control Plan (Reissued).**

1. **Act 2 Remediation Notes:** Notes added to sheet to comply with DEP comments.

F. Sheet **6.1 Soil Erosion & Sediment Control Details (Reissued).**

1. **Standard Construction Detail #3-16 (ABACT) Pumped Water Filter Bag:** Note has been revised to add scope to comply with DEP comments.

G. Sheet **6.2 Soil Erosion & Sediment Control Details (Reissued).**

1. **Standard Construction Detail #4-17 (ABACT) Stone and Concrete Block Inlet Protection – Type C inlet:** Note has been revised to add scope to comply with DEP comments.
2. **Standard Construction Detail #4-18 (ABACT) Stone and Concrete Block Inlet Protection – Type M inlet:** Note has been revised to add scope to comply with DEP comments.
3. **Storm Sewer flow to surface waters map:** Map added to comply with DEP comments.
4. **Sheet Landscape Specification Notes:** Copy revised notes from Sheet 11.0 to comply with DEP comments. Reference Section notes 1.2.7(K)(2)(a-i) in this addend for additional information.

H. Sheet **8.1 Landscape Details (Reissued).**

1. **Evergreen Tree Planting Detail:** Notes have been added to identify additional scope to comply with DEP comments.
2. **Ground Cover/Perennial Planting Detail:** Notes have been added to identify additional scope to comply with DEP comments.
3. **Ornamental Grass Planting Detail:** Notes have been added to identify additional scope to comply with DEP comments.
4. **Multi-Leader Tree Planting Detail:** Notes have been added to identify additional scope to comply with DEP comments.
5. **Deciduous Tree Planting Detail:** Notes have been added to identify additional scope to comply with DEP comments.

I. Sheet **10.3 Fence Construction Details (Reissued).**

1. The below revisions correlate with PennBid RFI response #2 & #52
 - a. **6’ High Ornamental Aluminum Fence:**
 - 1) Detail title has been renamed to 6ft in lieu of 9ft
 - 2) Standard Height has been revised to 6ft high in lieu of 9ft high.
 - b. **6’ High Ornamental Aluminum Man Gate:**

- 1) Detail title has been renamed to 6ft in lieu of 9ft
 - 2) Standard Height has been revised to 6ft high in lieu of 9ft high.
2. The below revisions correlate with PennBid RFI responses #45, #51, #63 & #64
- a. **Galvanized Steel Chain Link Fence (Security) Detail:** Note #1 has been revised to indicate the correct mesh size, wire gauge thickness and finish
 - b. **Chain Link Fence Single Gate Detail:** Note #1 has been revised to indicate the correct mesh size, wire gauge thickness and finish
 - c. **8' Chain Link Fence Rolling Gate:**
 - 1) Title has been revised to 8ft high in lieu of 9ft high
 - 2) Note has been revised to indicate the correct mesh size, wire gauge thickness and finish
- J. Sheet **11.0 PCSM Plans (Reissued).**
1. **Act 2 Remediation Notes:** Notes added to sheet to comply with DEP comments.
- K. Sheet **15.0 PCSM Notes (Reissued).**
1. **Storm Sewer flow to surface waters map:** Map added to comply with DEP comments.
 2. **Sheet Landscape Specification Notes:** Revise and add notes for landscape work scope to comply with DEP Comments
 - a. **Material Notes:** Scope notes added to comply with DEP comments
 - b. **Sequence Notes:** Scope notes added to comply with DEP comments
 - c. **Stabilization Notes:** Scope notes added to comply with DEP comments
 - d. **Recommended Mulching Specifications:** Scope notes added to comply with DEP comments
 - e. **NPDES Permit Notes:** Scope notes added to comply with DEP comments
 - f. **Permanent seed Mixture:** Add notes A & B
 - g. **Environmental Due Diligence:** Scope notes added to comply with DEP comments
 - h. **E&S Planning and Design – Section 102.4(B)(4):** Scope notes added to comply with DEP comments
 - i. **Measures Provided to Minimize Thermal Impacts:** Scope notes added to comply with DEP comments.

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1.5.1 ADDENDUM

A. Addendum No. 05

1.5.2 PROJECT INFORMATION

- A. Project Name: **Public Works Garage and Salt Shed**
- B. Owner: **City of Chester**
- C. Owner Project Number: **2025-010**
- D. Architect: **CED Architecture, Inc.**
- E. Architect Project Number:
- F. Date of Addendum: **06/12/2025**

1.5.3 NOTICE TO BIDDERS

- A. This Addendum is issued **to all PennBid registered vendors** pursuant to the **Instructions to Bidders and Conditions of the Contract**. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.
- B. The Bidder shall acknowledge receipt of this Addendum in the appropriate Acknowledgment field with their PennBid submission.
- C. The date for receipt of bids is **unchanged by this Addendum** at same time and location.
 - 1. Bid Date: 06/26/2025.

1.5.4 ATTACHMENTS

- A. This Addendum includes the following attached Documents and Specification Sections:
 - 1. Documents: N/A
 - 2. Specifications:
 - a. Section 000110 Table of Contents, dated 06/12/2025, (Reissued).
 - b. Section 009113 Addenda, dated 06/12/2025. (Reissued)
 - c. Section 026000 Contaminated Site Material Removal & Soil Capping, dated 06/12/2025, (Reissued).
 - d. Section 034800 Precast Concrete Wall Caps, dated 06/12/2025, (New)
 - e. Section 089119 Fixed Louvers, dated 06/12/2025, (New).
 - f. Section 093013 Ceramic Tile, Dated 06/12/2025, (Reissued).
 - g. Section 102800 Toilet, Bath and Laundry Accessories, (Reissued).
 - h. Section 144500 Heavy Duty Vehicle Lifts, Dated 06/12/2025, (Reissued).

B. This Addendum includes the following attached sheets:

1. General Sheet: N/A
2. Civil: N/A
3. Structural Sheet: N/A
4. Architectural:
 - a. Drawing A503: Exterior Details
5. Fire-Protection Sheet: N/A
6. Plumbing Sheet: N/A
7. Mechanical Sheet: N/A
8. Electrical Sheet: N/A

1.5.5 REVISIONS TO DIVISION 00 PROCUREMENT REQUIREMENTS AND CONTRACTING REQUIREMENTS

A. Specification Section **000110 Table of Contents, (Reissued)**

1. The below revisions correlate with PennBid RFI response #79.
 - a. Section 089119 Fixed Louvers has been added to provide the required work scope for procuring and installing fixed louvers.
2. The below revisions correlate with PennBid RFI response #82
 - a. Section 034800 Precast Concrete Wall Caps has been added to provide the required work scope for procuring and installing the caps at the trash enclosure
3. Section 080671 has been revised to provide the correct spelling for “Door”
4. Section 312500 & Section 312513 have been revised to provide the correct spelling for “Erosion”

B. Specification Section **009113 Addenda, (Reissued)**

1. Paragraph 1.1.3 has been revised to reference the “Acknowledgment field with their PennBid submission” in lieu of the “Bid Form.”
2. Paragraph 1.2.3 has been revised to reference the “Acknowledgment field with their PennBid submission” in lieu of the “Bid Form.”
3. Paragraph 1.2.5(A)(1), Items (a,b,c&d) have been added for clarification
4. Paragraph 1.3.3 has been revised to reference the “Acknowledgment field with their PennBid submission” in lieu of the “Bid Form.”
5. Paragraph 1.4.3 has been revised to reference the “Acknowledgment field with their PennBid submission” in lieu of the “Bid Form.”
6. Paragraphs 1.5.1 through 1.5.12 have been added to include Addendum No.05

1.5.6 REVISIONS TO DIVISION 02 EXISTING CONDITIONS

A. Specification Section **026000 Contaminated Site Material Removal & Soil Capping, (Reissued)**

1. The “Draft” watermark has been removed from the document. No other revisions have been made to this specification section.

1.5.7 REVISIONS TO DIVISION 03 CONCRETE

A. Specification Section **034800 Precast Concrete Wall Caps, (New)**

1. The below revisions correlate with PennBid RFI response #82
 - a. Section 034800 Precast Concrete Wall Caps has been added to provide the required work scope for procuring and installing wall caps at the trash enclosure.

1.5.8 REVISIONS TO DIVISION 08 OPENINGS

A. Specification Section **089119 Fixed Louvers, (New)**

1. The below revisions correlate with PennBid RFI response #79
 - a. Section 089119 Fixed Louvers has been added to provide the required work scope for procuring and installing fixed louvers.

1.5.9 REVISIONS TO DIVISION 09 FINISHES

A. Specification Section **093013 Ceramic Tile, (Reissued)**

1. The below revisions correlate with PennBid RFI response #70
 - a. Paragraph 3.8 Interior Ceramic Tile Schedule, Item A(1) has been Omitted.
 - b. Paragraph 3.8 Interior Ceramic Tile Schedule, Item A(2) has been revised to remove the reference to “Shower 315.”
 - c. Paragraph 3.8 Interior Ceramic Tile Schedule, Item B has been Omitted in its entirety.
 - d. Paragraph 3.8 Interior Ceramic Tile Schedule, Item B has been Omitted in its entirety.
 - e. Paragraph 3.8 Interior Ceramic Tile Schedule, Item C(2) has been Omitted.
 - f. Paragraph 3.8 Interior Ceramic Tile Schedule, Item D has been Omitted in its entirety.

1.5.10 REVISIONS TO DIVISION 10 SPECILATIES

A. Specification Section **102800 Toilet, Bath and Laundry Accessories, (Reissued)**

1. The below revisions correlate with PennBid RFI response #75
 - a. Paragraph 1.2 Summary, Item A(3) has been Omitted.
 - b. Paragraph 2.2 Washroom Accessories, Item C has been revised to coordinate with drawings for a “Combo Paper Towel Dispenser and Waste Receptacle.”
 - c. Paragraph 2.2 Washroom Accessories, Item C(7) has been added to reference the basis of design on the drawings.
 - d. Paragraph 2.2 Washroom Accessories, Item H “High Speed Warm Air Dryer” has been Omitted

1.5.11 REVISIONS TO DIVISION 14 CONVEYING EQUIPMENT

A. Specification Section **144500 Heavy Duty Vehicle Lifts, (Reissued)**

1. The below revisions correlate with PennBid RFI response #58 & #73
 - a. Paragraph 1.1 Section Includes, Item A(1) & A(2) have been omitted
 - b. Paragraph 1.1 Section Includes, Item A(3) has been added to indicate the Heavy Duty Twin Post Vehicle Lift for this project.
 - c. Paragraph 1.5 References, Item B has been revised to include ANSI/ALI ALCTV Standards for vehicle lifts.
 - d. Paragraph 1.5 References, Item D has been added to indicate that any substitutions offered must be a model that has been in production for a minimum of 5 years
 - e. Paragraph 1.7 Warranty, Item A has been revised to indicate the basis of design warranty duration of 25 years.
 - f. Paragraph 1.7 Warranty, Items B, C, D & E have been added to reflect the Basis of design warranty parameters per component
 - g. Paragraph 2.1 Manufacturers, Item A has been revised to indicate Mohawk Lifts, Model TP-30 and manufacturers contact info for the Basis of Design.
 - h. Paragraph 2.2 MODULAR INGROUND AXLE ENGAGING LIFTS, 3 POST has been omitted in its entirety.
 - i. Paragraph 2.3 75,000 LB PARALLELOGRAM DRIVE ON FLUSH MOUNTED LIFT has been omitted in its entirety.
 - j. Paragrph 2.4 30,000LB HEAVY DUTY TWIN POST VEHICLE LIFT has been added in its entirety.

1.5.12 REVISIONS TO DRAWING SHEETS

A. Sheet **A503 Exterior Details (Reissued).**

1. The below revision correlates with PennBid RFI response #74

a. **Drawing #2/A503:** “INSULATION AT PILE CAPS” has been Omitted.

B. **Sheet A506 Interior Details (Omitted).**

1. The below revision correlates with PennBid RFI response #78

a. **Drawing A506:** “INTERIOR DETAILS” has been Omitted.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF DOCUMENT 009113

DIVISION 0 - PROCUREMENT AND CONTRACTING REQUIREMENTS

000101	PROJECT TITLE PAGE
000000	CITY OF CHESTER FRONT END
000107	SEALS PAGE
000110	TABLE OF CONTENTS
000115	LIST OF DRAWING SHEETS
002600	PROCUREMENT SUBSTITUTION PROCEDURES
008520	PROJECT FORMAS AND DOCUMENTS
009113	ADDENDA

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012300	ALTERNATE AND UNIT PRICES
012500	SUBSTITUTION PROCEDURES
012900	PAYMENT PROCEDURES
013000	ADMINISTRATIVE REQUIREMENTS
013100	COORDINATION
013200	CONSTRUCTION PROGRESS DOCUMENTATION
013300	SUBMITTAL PROCEDURES
013300.01	SUBMITTAL COVER SHEET
013500	ELECTRONIC DOCUMENT TRANSFER
013500.01	ELECTRONIC DOCUMENT TRANSFER AGREEMENT
014100	SPECIAL INSPECTIONS AND TESTING
014100.01	STATEMENT OF SPECIAL INSPECTIONS
014200	REFERENCES
015000	TEMPORARY FACILITIES AND CONTROLS
015100	TEMPORARY UTILITIES
015630	WATER CONTROL
015690	CONSTRUCTION CLEANING
015700	FINAL CLEANING
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017700	CLOSEOUT PROCEDURES
018000	MAINTENANCE
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023200.01	GEOTECHNICAL REPORT DATED 11/14/2024
023200.02	STORMWATER INFILTRATION EXPLORATION 11/14/2024
024119	SELECTIVE DEMOLITION
026000	CONTAMINATED SITE MATERIAL REMOVAL & SOIL CAPPING

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- 032000 CONCRETE REINFORCING
- 033000 CAST-IN-PLACE CONCRETE
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- 042200 CONCRETE UNIT MASONRY

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- 055213 PIPE AND TUBE RAILINGS

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- 061600 SHEATHING
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- 064116 PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

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- 071113 BITUMINOUS DAMPROOFING
- 071900 WATER REPELLENTS
- 072100 THERMAL INSULATION
- 072500 WEATHER BARRIERS
- 072600 VAPOR RETARDERS
- 076200 SHEET METAL FLASHING AND TRIM
- 076526 SELF-ADHEARING SHEET FLASHING
- 077200 ROOF ACCESSORIES
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- 078443 JOINT FIRESTOPPING
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- 081113 HOLLOW METAL DOORS AND FRAMES
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- 083113 ACCESS DOORS AND FRAMES
- 083323 OVERHEAD COILING DOORS
- 083613 SECTIONAL DOORS
- 084523 FIBERGLASS SANDWICH PANEL ASSEMBLIES
- 087100 DOOR HARDWARE
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089119 FIXED LOUVERS

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210523	GENERAL-DUTY VALVES FOR WATER-BASED FIRE SUPPRESSION PIPING
210529	HANGERS AND SUPPORTS FOR FIRE SUPPRESSION PIPING AND EQUIPMENT
210533	HEAT TRACING FOR FIRE SUPPRESSION PIPING
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- 211100 FACILITY FIRE-SUPPRESSION WATER SERVICE PIPING
- 211119 FIRE DEPARTMENT CONNECTIONS
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- 220517 SLEEVES AND SLEEVE SEALS FOR PLUMBING PIPING
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- 220523.12 BALL VALVES FOR PLUMBING PIPING
- 220523.14 CHECK VALVES FOR PLUMBING PIPING
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- 220529 HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT
- 220533 HEAT TRACING FOR PLUMBING PIPING
- 220553 IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT
- 220593 TESTING, ADJUSTING AND BALANCING FOR PLUMBING
- 220719 PLUMBING PIPING INSULATION
- 221113 FACILITY WATER DISTRIBUTION PIPING
- 221116 DOMESTIC WATER PIPING
- 221119 DOMESTIC WATER PIPING SPECIALTIES
- 221123.13 DOMESTIC WATER PACKAGED BOOSTER PUMPS
- 221313 FACILITY SANITARY SEWER
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- 22319.13 SANITARY DRAINS
- 221323 SANITARY WASTE INTERSEPTORS
- 221513 GENERAL-SERVICE COMPRESSED AIR PIPING
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- 224213.16 COMMERCIAL URINALS
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- 224216.16 COMMERCIAL SINKS
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230553	IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT
230593	TESTING, ADJUSTING, AND BALANCING FOR HVAC
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230993.11	SEQUENCE OF OPERATION FOR HVAC DDC
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235523.13	LOW-INTENSITY, GAS-FIRED, RADIANT HEATERS
235533.16	GAS-FIRED UNIT HEATERS
237339	INDOOR, DIRECT-FIRED HEATING AND VENTILATING UNITS
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262213	LOW-VOLTAGE DISTRIBUTION TRANSFORMERS
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262713	ELECTRICITY METERING
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262813	FUSES
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263600	TRANSFER SWITCHES
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- 329100 SOIL PREPARATION
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- 333100 SANITARY UTILITY DRAINAGE PIPING
- 334100 STORM UTILITY DRAINAGE PIPING
- 334416 UTILITY TRENCH DRAINS
- 334600 PCSM REPORT
- 334713 UNDERGROUND BASIN LINERS

END OF SECTION 000110

3

CONTAMINATED SITE MATERIAL REMOVAL & SOIL CAPPING

PART 1 GENERAL

02 60 00.01 **GENERAL CONDITIONS:** All of the Project “General Documents” apply to work specified in this Section; consult them in detail for applicable instructions.

PART 2 PRODUCTS

02 60 00.02 **WORK INCLUDED:** Provide all labor, materials, plant, tools, equipment and management services necessary for proper soil capping of pervious area (approximately 26,164 square feet) located at the proposed City of Chester Department of Public Works (DPW) facility as described on the following documents which are part of “Preliminary/Final Land Development Plan for City of Chester – Project Type: Public Works Facilities – Location: 2nd St. & Pennell St., City of Chester, PA 19013” prepared by Colliers Engineering & Design, Inc. (CED) dated April 28, 2025 (included in bid package):

- a. Sheet Title: Site Plan – Sheet Number: 3.0
- b. Sheet Title: Grading Plan – Sheet Number: 4.0
- c. Sheet Title: Utilities Plan – Sheet Number: 5.0
- d. Sheet Title: Landscape Details – Sheet Number: 8.1

PART 3 EXECUTION

02 60 00.03 **CODES AND STANDARDS:** The Contractor shall abide by all rules, regulations, codes, and industry standards for the remediation of soil in Pennsylvania.

02 60 00.04 **SCOPE OF WORK:** The Contractor’s scope of work shall be as follows:

- a. The Contractor shall have all underground utilities and piping in the vicinity of the soil capping area located.
- b. The Contractor shall verify the location of soil capping area prior to capping.
- c. The Contractor shall prepare a Health and Safety Plan (HASP).
- d. The Contractor shall select an off-site soil recycling/disposal facility per the CED Cut/Fill Plan and obtain approval of the CED Environmental Consultant.
- e. The Contractor shall complete removal of the impacted soil in the soil capping area to a depth of two (2) feet below surface grade and then install an orange geotextile

demarcation fabric barrier per Pennsylvania Department of Environmental Protection (PADEP) “Land Recycling Program Technical Guidance Manual (Document No. 261-0300-101 dated March 27, 2021) Section II “Act 2 Remediation Process” Appendix II-A “The Use of Caps as Activity and Use Limitations”. The Contractor shall observe soils (stockpiled, excavation floor and excavation sidewalls) for environmental impact. If environmental impact is discovered, the Contractor shall contact the CED Environmental Consultant immediately. The Contractor shall abide by the handling and storage procedures in PADEP Appendix II-A described above.

- f. The contractor shall stockpile soils removed from the excavation, and cover with a tarp top and bottom.
- g. Upon approval by the CED Environmental Consultant, Contractor shall:
 - Place an orange geotextile demarcation fabric barrier (Mirafi 140NL/O Orange Delineation Geotextile Fabric <https://www.paramountmaterials.com/products/mirafi-140nl-o-orange-geotextile-fabric-15-x-360-roll-tencate> or equivalent) over the entire bottom of the pervious area excavation
 - Prior to backfill, perform a survey by a PA-Licensed Land Surveyor of the pervious area including the orange geotextile demarcation fabric barrier
 - Backfill excavation with material meeting the definitions of “clean fill” and “clean fill concentration limits (CFCLs)” per PADEP “Management of Fill Policy” (Document No. 258-2182-773 dated January 16, 2021); Contractor shall provide a copy of a completed PADEP Form FP-001 “Certification of Clean Fill” (including electronic acknowledgements from PADEP for signatures by the donor site and by the City of Chester DPW facility construction site) to the CED Environmental Consultant prior to import of clean fill material to City of Chester DPW facility construction site
- h. Contractor shall restore the area per Site Plan.
- i. Contractor shall collect waste classification (soil) samples as required by the approved off-site recycling/disposal facility.
- j. Upon approval from the off-site recycling/disposal facility and CED Environmental Consultant, Contractor shall load and transport impacted soil to the off-site recycling/disposal facility.

The Contractor is required to obtain all permits to perform the work, including but not limited to, a PADEP Act 90 Residual Waste Transporter license.

02 60 00.05 **SUBMITTALS:**

- a. Health and Safety Plan (HASP) per 29 CFR 1910.120
- b. Recycling/Disposal Facility: Submit name and location of off-site recycling/disposal facility for impacted soil for approval by the CED Environmental Consultant prior to export from the site
- c. Material Source: Submit name and location of imported materials source for clean fill material for pervious area excavation via completed PADEP Form FP-001 "Certification of Clean Fill" (including electronic acknowledgements from PADEP for signatures by the donor site and by the City of Chester DPW facility construction site) per PADEP "Management of Fill Policy" (Document No. 258-2182-773 dated January 16, 2021)
- d. Disposal documentation for the impacted soils removed shall be provided per PADEP "Land Recycling Program Technical Guidance Manual (Document No. 261-0300-101 dated March 27, 2021) Section II "Act 2 Remediation Process"

02 60 00.06 **WORK BY CED ENVIRONMENTAL CONSULTANT:** The CED Environmental Consultant shall be responsible for the following during the course of the above work:

- a. Observe excavation and removal operations in the field
- b. Review and approval of clean fill materials proposed for import
- c. Review and approval of off-site soil recycling/disposal facility
- d. Perform the required site assessment of supervising same if the Owner retains others for such purposes
- e. Prepare reports documenting the excavation, removal and clean fill backfill of the pervious area

END OF SECTION 026000

3 PRECAST CONCRETE WALL CAPS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Concrete wall and pier caps

1.2 REFERENCES

- A. American Society of Testing and Materials (ASTM International)

ASTM C33	Concrete Aggregates
ASTM C39	Concrete Compressive Strength
ASTM C144	Aggregate for Masonry Mortar
ASTM C150	Portland cement
ASTM C595	Standard Specification for Blended Hydraulic Cements
ASTM C642	Water Absorption, Density, Voids in Hardened Conc
ASTM C666	Rapid Freeze/Thaw Resistance of Conc
ASTM C979	Pigments for Integrally Colored Concrete

1.3 SUBMITTALS

- A. Samples: Submit two full-sized samples of each type of precast concrete unit to show the full range of color and texture of unit for selection and approval. If sealer is to be applied to precast concrete slab, apply sealer on one sample.
- B. Product Data: Submit product data for specified products.
- C. Warranty: Provide certified copies of manufacturer's product warranties.
- D. Shop Drawings (Optional)
1. Indicate layout, corners, terminals, radius sizes, junctions with dissimilar materials, accessories and setting details.

1.4 SUBSTITUTIONS

- A. Refer to Section 013000 "Administrative Requirements" for procedures.

1.5 QUALITY ASSURANCE

- A. Compliance with Regulations: Comply with requirements of state and local building codes and with rules and regulations relating to building accessibility. Regulatory Requirements and Approvals: [Specify applicable requirements of regulatory agencies].
 - 1. [Code agency name].
 - a. [Report or approval number].

Specifier Note: Retain paragraph below for erected assemblies (either onsite or offsite) required for review of construction, coordination of work of several sections, testing or observation of operation. Mock-ups, when accepted or approved, establish standards by which work will be judged. Coordinate below with Division 01

- B. Qualifications of Manufacturer: Company specializing in manufacture of precast concrete wall cap units with a minimum of 10 continuous years of documented experience.
- C. Qualifications of Subcontractor: Subcontractor shall submit evidence of skill and not less than 5 years of experience in this product type.
- D. Pre-installation Conference: As directed by the Architect
- E. Precast concrete units shall have a compressive strength of 5,000 PSI minimum.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials to the installation site in the manufacturer's original packaging. Packaging shall contain manufacturer's name, customer name, order, identification number, and other related information.
- B. Handle and store precast concrete units in accordance with manufacturer's recommendations.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Install mortar, set caps and grout when surface temperature is a minimum of 50 degrees F (10 degrees C) and rising but no greater than 90 degrees F (32 degrees C).
- B. Do not install mortar, set caps or grout when inclement weather conditions are expected within 48 hours of completion.

1.8 EXTRA MATERIALS

- A. Extra materials: Provide _ pcs of each size, color and accessories specified.

1.9 WARRANTY

- A. Provide warranty covering precast concrete wall cap units against defects in material and workmanship for a period of 5 years. Unusual abuse and neglect are excepted.
- B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

PART 2 - PRODUCTS

2.1 MANUFACTURER

Stepstone, LLC (Or Equal)
17025 South Main Street
Gardena, CA 90248
(310) 327-7474
(800) 572-9029
FAX (310) 217-1424
www.stepstoneprecast.com

2.2 MATERIALS

- A. Precast concrete wall cap units shall be precast concrete, consisting of Portland cement, aggregate, and color admixtures.
1. Portland cement: ASTM C 150, Type III, high early strength.
 2. Aggregate: ASTM C 33.
 3. Color Admixture: By Davis Colors, or equal, as required to achieve color as selected.
 4. Aggregate for exposed aggregate surface: As selected.
 5. Portland Cement Mortar that meets or exceeds ANSI A118.4 requirements when mixed with water or a latex admixture, and is designed for installation of large format tile – Pedestrian Installation.
 6. Grout that meets or exceeds ANSI A118.7 when mixed with water or a latex admixture.

B. Precast concrete wall cap unit style

1. Square Modular Wall Cap

2.3 COLORS AND FINISHES

A. Colors: Davis Colors (or equal), integral color admixture. Integral color shall be throughout entire product. Finish color shall not be added as a face mix.

<u>With Slag</u>		<u>Without Slag</u>		<u>Slate-Finish (Sonorastone)</u>	
1401	Granada White	1801	Granada White	1501	Granada White
1404	French Gray	1804	French Gray	1504	French Gray
1405	Iceberg Green	1805	Iceberg Green	1506	Almond
1406	Almond	1806	Almond	1507	Cafe Brown
1407	Cafe Brown	1807	Cafe Brown	1510	Caramel
1410	Caramel	1810	Caramel	1512	Agave
1412	Agave	1812	Agave	1513	Porcelain
1413	Porcelain	1813	Porcelain	1516	Brick Red
1416	Brick Red	1816	Brick Red	1521	Kona
1421	Kona	1821	Kona	1524	Pebble
1421	Pebble	1824	Pebble	1525	Adobe
1425	Adobe	1825	Adobe		

B. Finishes: Walking surfaces of precast concrete units shall have minimum coefficient of friction of 0.60, wet and dry.

1. Smooth

C. Field Application of Sealer:

1. In geographic regions exposed to freeze-thaw conditions field-applied sealing the entire area, including joints, after installation is mandatory.
2. Conform to sealer manufacturer's recommendations for application and maintenance of sealer.
3. Install (2) coats of Prosoco Concrete Silane WB20 or equal

2.4 PHYSICAL PROPERTIES:

- A. Compressive strength: Minimum 5,000 PSI
- B. Size and Finish Schedule:

1. Square Modular Wall Cap

Size	Smooth	Sandblast	Slate
7-1/4" x 24" x 2-1/2"			
9-1/4" x 24" x 2-1/2"	X		
13-1/4" x 24" x 3-3/8"			
20-1/4" x 24" x 3-3/8"			

2. Square Modular wall cap Corners: 9-1/4"x12"x12"x2-1/2" Smooth

- C. All wall cap styles have straight, end and corner pieces. Select wall cap styles have coordinating standard radius pieces.
- D. Unit size: Within 1/8" of designated length, width and thickness.
- E. Weight: 133 lbs/ft³
- F. Water absorption: Not more than 6.0 % average, not more than 7.0 % for any individual unit for standard colors.
- G. Wall Cap units will contain on average 6% entrained air, with no individual piece under 5%.
- H. Resistance to Freeze-Thaw: Wall cap units will resist 300 freeze thaw cycles in accordance with ASTM C666 Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.

2.5 FABRICATION

- A. Wall Cap units shall be hand-made, wet-cast of cement conforming to ASTM C 150, Type III, aggregates conforming to ASTM C 33, and pigments for integrally colored concrete conforming to ASTM C979.

2.6 SOURCE QUALITY CONTROL

- A. Concrete for Wall Cap units shall be tested frequently to assure that mixes provide units having not less than 5,000 psi compressive strength at 28 days (average test strength not less than 4,500 psi).
- B. Minor chips, hairline cracks, air voids and slight variations in color and finish are normal in precast concrete. When viewed in typical daylight illumination from a distance of 20 feet, minor chips, hairline cracks and air voids that cannot be seen with the naked eye are not grounds for rejection.

3.1 EXAMINATION

- A. Examine all surfaces.
- B. Verify all dimensions of in-place and subsequent construction.
- C. Notify the Contractor in writing of conditions detrimental to the proper and

timely completion of the work.

- D. Do not proceed with the work until unsatisfactory conditions have been corrected.
- E. Installation of precast concrete wall caps, and associated construction, constitutes acceptance of the adjacent and underlying construction.

3.2 PREPARATION

- A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
 - 1. Ensure all substrates are clean and free of contaminants and have a roughened surface to encourage bonding.

3.3 CLEANING

- A. Clean exposed surfaces of precast concrete units. Use cleaners appropriate for precast concrete finishes and colors. Acid based cleaners will permanently alter finish and color.

3.4 SEALING

- A. Field-applied sealer for the prevention of freeze-thaw is optional in mild climates. If precast concrete units are factory sealed, test for compatibility before applying additional sealer.
- B. In geographic regions exposed to freeze-thaw conditions field-applied sealing the entire area, including joints, after installation is mandatory in order to maintain Stepstone's warranty. Follow sealer manufacturer's instructions for application and maintenance of the sealer.

3.5 COMPLETION

- A. Protect precast concrete units from damage due to subsequent building operations.
- B. After installation and before completion, inspect precast concrete units for construction damage and obtain new precast concrete units if required.
- C. Immediately prior to final acceptance of project, clean precast concrete units.

END OF SECTION 034800



PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes fixed extruded-aluminum louvers.
- B. Related Requirements:
 - 1. Section 081113 "Hollow Metal Doors and Frames" for louvers in hollow-metal doors.
 - 2. Section 084523 "Fiberglass Sandwich Panel Assemblies" for louvers in transparent window framed systems.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. For louvers specified to bear AMCA seal, include printed catalog pages showing specified models with appropriate AMCA Certified Ratings Seals.
- B. Shop Drawings: For louvers and accessories. Include plans, elevations, sections, details, and attachments to other work. Show frame profiles and blade profiles, angles, and spacing.
- C. Color Samples: For each type of metal finish required.

1.3 WARRANTY

- A. Special Finish Warranty: Manufacturer agrees to repair or replace components on which finishes fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Louvers shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of louver components, noise or metal fatigue caused by louver-blade rattle or flutter, or permanent damage to fasteners and anchors. Wind pressures shall be considered to act normal to the face of the building.

1. Wind Loads: Determine loads based on a uniform pressure of 30 lbf/sq. ft., acting inward or outward.
- B. Seismic Performance: Louvers, including attachments to other construction, shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
- C. Louver Performance Ratings: Provide louvers complying with requirements specified, as demonstrated by testing manufacturer's stock units identical to those provided, except for length and width according to AMCA 500-L.

2.2 FIXED EXTRUDED-ALUMINUM LOUVERS

A. Horizontal Drainable-Blade Louver:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Airline Louvers; a division of Mestek, Inc.
 - b. Greenheck.
 - c. Ruskin.
2. See "Louver Schedule" on mechanical drawings for Basis of Design.
3. Louver Depth: 4 inches.
4. Frame and Blade Nominal Thickness: Not less than 0.080 inch.
5. Frame options: Flange Framed.
6. Mullion Type: Exposed.
7. Louver Performance Ratings:
 - a. Free Area: Not less 54%.
 - b. Point of Beginning Water Penetration: Not less than 989 fpm.
 - c. Air Performance: Not more than 0.10-inch wg static pressure drop at 700-fpm free-area intake velocity.
 - d. Air Performance: Not more than 0.15-inch wg static pressure drop at 950-fpm free-area exhaust intake velocity.
8. AMCA Seal: Mark units with AMCA Certified Ratings Seal.

2.3 LOUVER SCREENS

A. General: Provide screen at each exterior louver.

1. Screen Location for Fixed Louvers: Interior face.
2. Screening Type: Insect screening.

B. Louver Screen Frames: Same type and form of metal as indicated for louver to which screens are attached.

C. Louver Screening for Aluminum Louvers:

1. Insect Screening: Flattened, expanded aluminum, as per manufacturer.

2.4 MATERIALS

- A. Aluminum Extrusions: ASTM B221, Alloy 6063-T5, T-52, or T6.
- B. Aluminum Sheet: ASTM B209, Alloy 3003 or 5005, with temper as required for forming, or as otherwise recommended by metal producer for required finish.
- C. Fasteners: Use types and sizes to suit unit installation conditions.
 1. Use Phillips flat-head tamper-resistant screws for exposed fasteners unless otherwise indicated.
 2. For fastening aluminum, use aluminum or 300 series stainless-steel fasteners.
 3. For color-finished louvers, use fasteners with heads that match color of louvers.
- D. Post-installed Fasteners for Concrete and Masonry: Torque-controlled expansion anchors, fabricated from stainless-steel components, with allowable load or strength design capacities calculated according to ICC-ES AC193 and ACI 318 greater than or equal to the design load, as determined by testing according to ASTM E488/E488M conducted by a qualified testing agency.
- E. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.

2.5 ALUMINUM FINISHES

- A. Color Anodic Finish: AAMA 611, AA-M12C22A32/A34, Class II, 0.010 mm or thicker.
 1. Color: As selected by Architect.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Locate and place louvers level, plumb, and at indicated alignment with adjacent work.
- B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.
- C. Provide perimeter reveals and openings of uniform width for sealants and joint fillers.
- D. Protect unpainted galvanized- and nonferrous-metal surfaces that are in contact with concrete, masonry, or dissimilar metals from corrosion and galvanic action by applying a heavy coating of bituminous paint or by separating surfaces with waterproof gaskets or nonmetallic flashing.

3.2 ADJUSTING

- A. Restore louvers damaged during installation and construction, so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by Architect, remove damaged units and replace with new units.

END OF SECTION 089119

CERAMIC TILING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Solid surface thresholds.
 - 2. Waterproof membrane for thinset application at shower.
 - 3. Crack isolation membrane.
 - 4. Metal edge strips.
- B. Related Requirements:
 - 1. Section 079200 "Joint Sealants" for sealing of expansion, contraction, control, and isolation joints in tile surfaces.
 - 2. Section 092900 "Gypsum Board" for cementitious backer units and glass-mat, water-resistant backer board.

1.3 DEFINITIONS

- A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1 apply to Work of this Section unless otherwise specified.
- B. ANSI A108 Series: ANSI A108.01, ANSI A108.02, ANSI A108.1A, ANSI A108.1B, ANSI A108.1C, ANSI A108.4, ANSI A108.5, ANSI A108.6, ANSI A108.8, ANSI A108.9, ANSI A108.10, ANSI A108.11, ANSI A108.12, ANSI A108.13, ANSI A108.14, ANSI A108.15, ANSI A108.16, and ANSI A108.17, which are contained in its "Specifications for Installation of Ceramic Tile."
- C. Module Size: Actual tile size plus joint width indicated.
- D. Face Size: Actual tile size, excluding spacer lugs.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review requirements in ANSI A108.01 for substrates and for preparation by other trades.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
- C. Samples for Verification:
 - 1. Full-size units of each type and composition of tile and for each color and finish required.
 - 2. Assembled samples mounted on a rigid panel, with grouted joints, for each type and composition of tile and for each color and finish required. Make samples at least 12 inches square, but not fewer than four tiles. Use grout of type and in color or colors approved for completed Work.
 - 3. Full-size units of each type of trim and accessory for each color and finish required.
 - 4. Stone thresholds in 6-inch lengths.
 - 5. Metal edge strips in 6-inch lengths.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Master Grade Certificates: For each shipment, type, and composition of tile, signed by tile manufacturer and Installer.
- C. Product Certificates: For each type of product.
- D. Product Test Reports: For tile-setting and -grouting products and certified porcelain tile.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Tile: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.
 - 2. Grout: Furnish quantity of grout equal to 3 percent of amount installed for each type, composition, and color indicated.

1.8 QUALITY ASSURANCE

A. Installer Qualifications:

1. Installer is a five-star member of the National Tile Contractors Association or a Trowel of Excellence member of the Tile Contractors' Association of America.
2. Installer's supervisor for Project holds the International Masonry Institute's Foreman Certification.
3. Installer employs Ceramic Tile Education Foundation Certified Installers.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.
- D. Store liquid materials in unopened containers and protected from freezing.

1.10 FIELD CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations for Tile: Obtain tile of each type and color or finish from single source or producer.
 1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.
- B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from single manufacturer and each aggregate from single source or producer.
 1. Obtain setting and grouting materials, except for unmodified Portland cement and aggregate, from single manufacturer.

2. Obtain waterproof membrane and crack isolation membrane, except for sheet products, from manufacturer of setting and grouting materials.
- C. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer:
1. Stone thresholds.
 2. Waterproof membrane.
 3. Crack isolation membrane.
 4. Metal edge strips.

2.2 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
1. Provide tile complying with Standard grade requirements unless otherwise indicated.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCNA installation methods specified in tile installation schedules, and other requirements specified.
- C. Factory Blending: For tile exhibiting color variations within ranges, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.

2.3 TILE PRODUCTS

- A. Ceramic Tile Type CT-1: Ceramic wall tile.
1. Manufacturers: Basis of design product indicated in Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Garden State Tile.
 - b. American Olean; a division of Dal-Tile Corporation.
 - c. Daltile.
 - d. Interceramic.
 2. Certification: Tile certified by the Porcelain Tile Certification Agency.
 3. Face Size: 4 by 12 inches.
 4. Thickness: 8 mm.
 5. Face: Plain with square edges.
 6. Dynamic Coefficient of Friction: Not less than 0.42.
 7. Tile Color, Glaze, and Pattern: Match Architect's sample.

8. Grout Color: Match Architect's sample.

B. Ceramic Tile Type CT-2: Ceramic wall tile.

1. Manufacturers: Basis of design product indicated in Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- a. Garden State Tile.
- b. American Olean; a division of Dal-Tile Corporation.
- c. Daltile.
- d. Interceramic.

2. Certification: Tile certified by the Porcelain Tile Certification Agency.

3. Face Size: 4 by 12 inches.

4. Thickness: 8 mm.

5. Face: Plain with square edges.

6. Dynamic Coefficient of Friction: Not less than 0.42.

7. Tile Color, Glaze, and Pattern: Match Architect's sample.

8. Grout Color: Match Architect's sample.

C. Porcelain Floor Tile Type FT-1: Porcelain floor tile.

1. Manufacturers: Basis of design product indicated in Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- a. Garden State Tile.
- b. American Olean; a division of Dal-Tile Corporation.
- c. Daltile.
- d. Interceramic.

2. Certification: Tile certified by the Porcelain Tile Certification Agency.

3. Face Size: 24 by 12 inches.

4. Thickness: 8 mm.

5. Face: Plain with square edges. Rectified

6. Dynamic Coefficient of Friction: Not less than 0.42.

7. Tile Color, Glaze, and Pattern: Match Architect's sample.

8. Grout Color: Match Architect's sample.

D. Porcelain Cove Base Type PB-1: Porcelain cove base.

1. Manufacturers: Basis of design product indicated in Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- a. Garden State Tile.
- b. American Olean; a division of Dal-Tile Corporation.

- c. Daltile.
 - d. Interceramic.
2. Certification: Tile certified by the Porcelain Tile Certification Agency.
 3. Face Size: 6 by 12 inches.
 4. Thickness: 8 mm.
 5. Face: Plain with square edges.
 6. Dynamic Coefficient of Friction: Not less than 0.42.
 7. Tile Color, Glaze, and Pattern: Match Architect's sample.
 8. Grout Color: Match Architect's sample.

2.4 THRESHOLDS

- A. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.
 1. Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to 1/16 inch above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to 1/2 inch or less above adjacent floor surface.
- B. Solid Surface Thresholds: ASTM C 615 with polished finish.
 1. Manufacturers: Basis of design product indicated in Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Corian.
 - b. Siltech.
 2. Description: Uniform, stone without veining.
 3. Description: Match Architect's sample.

2.5 WATERPROOF MEMBRANE

- A. General: Manufacturer's standard product that complies with ANSI A118.10 and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
- B. Polyethylene Sheet: Polyethylene faced on both sides with fleece webbing; 0.008-inch (0.2-mm) nominal thickness.
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Schluter Systems; Schluter-KERDI.

2. Location: Shower 315.

2.6 CRACK ISOLATION MEMBRANE

- A. General: Manufacturer's standard product that complies with ANSI A118.12 for standard performance and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.

2.7 SETTING MATERIALS

- A. Standard Dry-Set Mortar (Thinset): ANSI A118.1.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- a. Bostik, Inc.
- b. LATICRETE SUPERCAP, LLC.
- c. MAPEI Corporation.

2. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.1.

- B. Water-Cleanable, Tile-Setting Epoxy: ANSI A118.3.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- a. Atlas Minerals & Chemicals, Inc.
- b. Bostik, Inc.
- c. MAPEI Corporation.

2. Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to 140 and 212 deg F, respectively, and certified by manufacturer for intended use.

2.8 GROUT MATERIALS

- A. Sand-Portland Cement Grout: ANSI A108.10, consisting of white or gray cement and white or colored aggregate as required to produce color indicated.

- B. Standard Cement Grout: ANSI A118.6.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. ARDEX Americas.
 - b. LATICRETE SUPERCAP, LLC.
 - c. MAPEI Corporation.
- C. Water-Cleanable Epoxy Grout: ANSI A118.3, with a VOC content of 65 g/L or less.
 1. Manufacturers: Basis of design product: Laticrete Spectralock IG 2000. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. ARDEX Americas.
 - b. LATICRETE SUPERCAP, LLC.
 - c. MAPEI Corporation.
 2. Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to 140 and 212 deg F, respectively, and certified by manufacturer for intended use.

2.9 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Metal Edge Strips: Angle or L-shaped, height to match tile and setting-bed thickness, metallic or combination of metal and PVC or neoprene base, designed specifically for flooring applications; stainless-steel, ASTM A 666, 300 Series exposed-edge material.
 1. Manufacturers: Basis of Design product as indicated in Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Blanke Corporation.
 - b. Ceramic Tool Company, Inc.
 - c. Schluter Systems.
- C. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.
- D. Floor Sealer: Manufacturer's standard product for sealing grout joints and that does not change color or appearance of grout.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Bonsal American, an Oldcastle company.
 - b. Custom Building Products.
 - c. Southern Grouts & Mortars, Inc.

2.10 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 1. Verify that substrates for setting tile are firm; dry; clean; free of coatings that are incompatible with tile-setting materials, including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
 2. Verify that concrete substrates for tile floors installed with thinset mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.
 - a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
 - b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.
 3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
 4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with thinset mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Where indicated, prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot toward drains.
- C. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.3 CERAMIC TILE INSTALLATION

- A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
 - 1. For the following installations, follow procedures in the ANSI A108 series of tile installation standards for providing 95 percent mortar coverage:
 - a. Tile floors in wet areas.
 - b. Tile floors consisting of tiles 8 by 8 inches or larger.
 - c. Tile floors consisting of rib-backed tiles.
- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- D. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
 - 1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
 - 2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.

3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.
- E. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
 1. Porcelain Tile: 1/4 inch.
 - F. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.
 - G. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
 1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
 - H. Solid Surface Thresholds: Install solid surface thresholds in same type of setting bed as adjacent floor unless otherwise indicated.
 1. Do not extend waterproof membrane or crack isolation membrane under thresholds set in standard dry-set mortar. Fill joints between such thresholds and adjoining tile set on crack isolation membrane with elastomeric sealant.
 - I. Metal Edge Strips: Install at locations indicated.
 - J. Floor Sealer: Apply floor sealer to grout joints in tile floors according to floor-sealer manufacturer's written instructions. As soon as floor sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.
- 3.4 WATERPROOFING INSTALLATION AT SHOWER
- A. Install waterproofing to comply with ANSI A108.13 and manufacturer's written instructions to produce waterproof membrane of uniform thickness that is bonded securely to substrate.
 - B. Allow waterproofing to cure and verify by testing that it is watertight before installing tile or setting materials over it.
- 3.5 CRACK ISOLATION MEMBRANE INSTALLATION
- A. Install crack isolation membrane to comply with ANSI A108.17 and manufacturer's written instructions to produce membrane of uniform thickness that is bonded securely to substrate.
 - B. Allow crack isolation membrane to cure before installing tile or setting materials over it.

3.6 ADJUSTING AND CLEANING

- A. Remove and replace tile that is damaged or that does not match adjoining tile. Provide new matching units, installed as specified and in a manner to eliminate evidence of replacement.
- B. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
 - 1. Remove grout residue from tile as soon as possible.
 - 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.

3.7 PROTECTION

- A. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.
- B. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
- C. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

3

3.8 INTERIOR CERAMIC TILE INSTALLATION SCHEDULE

- A. Interior Floor Installations, Concrete Subfloor:
 - ~~1. Ceramic Tile Installation (Restrooms and Locker Rooms): TCNA F125 Full; thinset mortar on crack isolation membrane. OMITTED~~
 - 2. Ceramic Tile Installation: TCNA F131; water-cleanable, tile-setting epoxy over waterproof membrane; epoxy grout.
 - a. Ceramic Tile Type: Porcelain tile.
 - b. Grout: Water-cleanable epoxy grout.
- ~~B. Interior Wall Installations, Masonry or Concrete: Shower 315. OMITTED~~
- C. Interior Wall Installations, Wood or Metal Studs or Furring:

3

1. Ceramic Tile Installation (Restrooms and Locker Rooms): TCNA W244C or TCNA W244F; thinset mortar on cementitious backer units or fiber-cement backer board.
 - a. Ceramic Tile Type: Porcelain Tile.
 - b. Thinset Mortar: Standard dry-set mortar.
 - c. Grout: Sand-portland cement grout.

***** [OR] *****

~~2. Ceramic Tile Installation (Restrooms and Locker Rooms): TCNA W245 or TCNA W248; thinset mortar on glass mat, water resistant gypsum backer board.~~
OMITTED

~~D. Shower Wall Installations, Wood or Metal Studs or Furring: Shower 315.~~ OMITTED

END OF SECTION 093013

TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

1. Washroom accessories.
2. Shower room accessories.
3. ~~Warm air dryers. OMITTED~~
4. Underlavatory guards.
5. Custodial accessories.

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- B. Related Requirements:

1. Section 093013 "Ceramic Tiling" for ceramic toilet and bath accessories.

1.3 COORDINATION

- A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.
- B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
2. Include anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
3. Include electrical characteristics.

- B. Samples: Full size, for each exposed product and for each finish specified.
 - 1. Approved full-size Samples will be returned and may be used in the Work.
- C. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.
 - 1. Identify locations using room designations indicated.
 - 2. Identify accessories using designations indicated.

1.5 INFORMATIONAL SUBMITTALS

- A. Sample Warranty: For manufacturer's special warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For accessories to include in maintenance manuals.

1.7 WARRANTY

- A. Manufacturer's Special Warranty for Mirrors: Manufacturer agrees to repair or replace mirrors that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, visible silver spoilage defects.
 - 2. Warranty Period: 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.2 WASHROOM ACCESSORIES

- A. Source Limitations: Obtain from single source from single manufacturer for each type of product listed.
- B. Toilet Tissue (Jumbo-Roll) Dispenser:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Tork
 - b. Bobrick Washroom Equipment, Inc.
 - c. Bradley Corporation.
2. Description: Two-roll unit with sliding panel to expose other roll.
3. Mounting: Surface mounted.
4. Capacity: 10-inch- diameter rolls.
5. Material and Finish: ABS plastic, black or gray.
6. Lockset: Tumbler type.
7. Refill Indicator: Pierced slots at front.

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C. Combo Paper Towel Dispenser and Waste Receptacle:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AJW Architectural Products.
 - b. Bobrick Washroom Equipment, Inc.
 - c. Bradley Corporation.
2. Mounting: Semirecessed.
3. Minimum Receptacle Capacity: 12 gal.
4. Material and Finish: Stainless steel, No. 4 finish (satin).
5. Liner: Reusable vinyl liner.
6. Lockset: Tumbler type for waste receptacle.
7. Reference drawings for Basis of Design

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D. Grab Bar:

1. Manufacturers: Basis of design product provided in the Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AJW Architectural Products.
 - b. Bobrick Washroom Equipment, Inc.
 - c. Bradley Corporation.
2. Mounting: Flanges with concealed fasteners.
3. Material: Stainless steel, 0.05 inch thick.
 - a. Finish: Smooth, No. 4 finish (satin) on ends and slip-resistant texture in grip area.
4. Outside Diameter: 1-1/2 inches.

5. Configuration and Length: As indicated on Drawings.

E. Sanitary-Napkin Disposal Unit:

1. Manufacturers: Basis of design product provided in the Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AJW Architectural Products.
 - b. Bobrick Washroom Equipment, Inc.
 - c. Bradley Corporation.
2. Mounting: Partition mounted, dual access or Surface mounted.
3. Door or Cover: Self-closing, disposal-opening cover and hinged face panel with tumbler lockset.
4. Receptacle: Removable.
5. Material and Finish: Stainless steel, No. 4 finish (satin).

F. Mirror Unit:

1. Manufacturers: Basis of design product provided in the Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AJW Architectural Products.
 - b. Bobrick Washroom Equipment, Inc.
 - c. Bradley Corporation.
2. Frame: Stainless-steel channel.
 - a. Corners: Mitered and mechanically interlocked.
3. Hangers: Produce rigid, tamper- and theft-resistant installation, using method indicated below.
 - a. One-piece, galvanized-steel, wall-hanger device with spring-action locking mechanism to hold mirror unit in position with no exposed screws or bolts.
4. Size: As indicated on Drawings.

G. Coat Hook:

1. Manufacturers: Basis of design product provided in the Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AJW Architectural Products.
 - b. Bobrick Washroom Equipment, Inc.

c. Bradley Corporation.

2. Description: Single-prong unit.

3. Material and Finish: Stainless steel, No. 4 finish (satin).

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H. ~~High Speed Warm Air Dryer~~ - OMITTED

2.3 UNDERLAVATORY GUARDS

A. Under lavatory Guard:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Buckaroos, Inc.

b. Plumberex Specialty Products, Inc.

2. Description: Insulating pipe covering for supply and drain piping assemblies that prevents direct contact with and burns from piping; allow service access without removing coverings.

3. Material and Finish: Antimicrobial, molded plastic, white.

2.4 CUSTODIAL ACCESSORIES

A. Source Limitations: Obtain custodial accessories from single source from single manufacturer.

B. Utility Shelf:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. AJW Architectural Products.

b. Bobrick Washroom Equipment, Inc.

c. Bradley Corporation.

2. Description: With exposed edges turned down not less than 1/2 inch and supported by two triangular brackets welded to shelf underside.

3. Size: 16 inches long by 6 inches deep.

4. Material and Finish: Not less than nominal 0.05-inch-thick stainless steel, No. 4 finish (satin).

C. Mop and Broom Holder:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AJW Architectural Products.
 - b. Bobrick Washroom Equipment, Inc.
 - c. Bradley Corporation.
2. Description: Unit with shelf, hooks, holders, and rod suspended beneath shelf.
3. Length: 36 inches.
4. Mop/Broom Holders: Three, spring-loaded, rubber hat, cam type.
5. Material and Finish: Stainless steel, No. 4 finish (satin).
 - a. Shelf: Not less than nominal 0.05-inch-thick stainless steel.
 - b. Rod: Approximately 1/4-inch-diameter stainless steel.

2.5 MATERIALS

- A. Stainless Steel: ASTM A 666, Type 304, 0.031-inch minimum nominal thickness unless otherwise indicated.
- B. Steel Sheet: ASTM A 1008/A 1008M, Designation CS (cold rolled, commercial steel), 0.036-inch minimum nominal thickness.
- C. Galvanized-Steel Sheet: ASTM A 653/A 653M, with G60 hot-dip zinc coating.
- D. Fasteners: Screws, bolts, and other devices of same material as accessory unit and tamper-and-theft resistant where exposed, and of galvanized steel where concealed.
- E. Chrome Plating: ASTM B 456, Service Condition Number SC 2 (moderate service).
- F. Mirrors: ASTM C 1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.

2.6 FABRICATION

- A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.
- B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
- B. Grab Bars: Install to withstand a downward load of at least 250 lbf, when tested according to ASTM F 446.

3.2 ADJUSTING AND CLEANING

- A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.
- B. Remove temporary labels and protective coatings.
- C. Clean and polish exposed surfaces according to manufacturer's written instructions.

END OF SECTION 102800

HEAVY-DUTY VEHICLE LIFTS

1. GENERAL

1.1 SECTION INCLUDES

- A. Heavy Duty Vehicle lifts including safety equipment, controls and accessories of the following types:

1. ~~Modular in-ground axle engaging lifts 3 post MOD30 series.~~ Omitted
2. ~~75,000 lb parallelogram drive on flush mounted lifts.~~ Omitted
3. Heavy Duty Twin Post Vehicle Lift

1.2 RELATED SECTIONS

- A. Section 033000 – Cast-in-Place Concrete

1.3 REFERENCES

- A. ALI: Automotive Lift Institute.
- B. ANSI/ALI ALCTV: Safety Requirements for the Construction, Testing, and Validation of Automotive Lifts.
- C. International Standards Organization (ISO): ISO 9001 Quality management systems - Requirements.
- D. Underwriters Laboratories Inc. (UL): UL201 - These requirements cover garage equipment, rated not more than 600 volts, for use in accordance with the National Electrical Code, NFPA 70.

1.4 SUBMITTALS

- A. Submit under provisions of Section 013000 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
 2. Storage and handling requirements and recommendations.
 3. Installation manual.
 4. Operations manual.
 5. Maintenance manual.
 6. Safety manual.
- C. Shop Drawings: Template drawings and load reactions for lift application.
- D. BIM Models: Manufacturer's Building Information Model for lifts.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Factory trained authorized company, company insured for

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completed operations of installing lift.

- B. In addition to the other requirements outlined herein, the lift or lifts, shall comply with all applicable requirements of ANSI/ALI ALCTV standards. "Safety Requirements for the Construction," Care and Use of Automotive Lifts" and "Automatic Lift Standards for vehicle lifts" as published by the American national Standards Institute. The lift company Quality Management System shall be ISO9001 certified.
- C. Lift and all components shall be new. Used or refurbished lift and components not acceptable.
- D. Equipment being offered must be a model that has been in production for a minimum of 5 years.

1.6 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 recommended limits.

1.7 WARRANTY

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- A. Manufacturer's Warranty: Provide manufacturer's standard warranty (25 Years) for failures due to defective materials and workmanship. Manufacturer will not assume responsibility, or compensation, for unauthorized repairs or labor.
- B. Standard warranty on all structural components (legs, carriages, swing arm and sliders)
- C. Warranty on mechanical components (roller bearings and safeties) is a full 10 years
- D. Warranty on all power unit components (motor, pump and reservoir) is a full 2 years
- E. Hydraulic cylinders are covered by an initial 5 year warranty then an extended cylinder seal warranty thereafter.

2. PRODUCTS

2.1 MANUFACTURERS

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- A. Basis-of-design Manufacturer: Mohawk, which is located at: P.O Box 110 65 Vrooman Ave. Amsterdam, NY 12010 21666; Toll Free Tel: 800-833-2006; Tel: 518-842-1431; Web: <https://www.mohawklifts.com>
- B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Rotary Lift.
 - 2. Hoffman Services.
 - 3. Steril Koni.
 - 4. Mohawk Lifts.

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2.2 ~~MODULAR INGROUND AXLE ENGAGING LIFTS, 3 POST - OMITTED~~

2.3 ~~75,000 LB PARALLELOGRAM DRIVE ON FLUSH MOUNTED LIFT - OMITTED~~

2.4 30,000 LB HEAVY DUTY TWIN POST VEHICLE LIFT

A. Lift Characteristics:

1. Assembly shall consist of an electro-hydraulic lift unit, a control console and accessories. The control console shall be connected by required lengths of stainless steel hydraulic pipe or steel reinforced hydraulic hose, nylon compressed air line and electrical cable approved for use by the code authority of jurisdiction.

a. Each platform shall be constructed of steel plate supported by steel tubes.

2. Paint:

a. Marine grade paint zinc primer and epoxy top-coats on baseplates. The control panel, lift legs and runways are epoxy coated only.

b. Marine grade paint for the entire lift and on the control panel.

3. Hydraulic System:

a. The lift shall incorporate a master / slave hydraulic system which synchronizes elevations during both raising and lowering operations with the most adverse rated load placed on the lift. the lift shall come equipped with a fully automatic leveling control and manual over-ride as a backup. chains or cable equalized lifts are not acceptable

b. Internal hydraulic safeties on both cylinders shall detect main side or off side pressure of less than 200 lbs. should the pressure change or an imbalance occur for any reason, the lift will hydraulically lock on both sides.

c. Hydraulic cylinders will be made of 2-5/8" chrome rod. the oversized chrome rod will be packed in a 5" outer diameter x 6' long barrel, minimum.

d. full load working pressure will be a maximum of 2800 psi. higher pressure systems will not be accepted due to higher pressures causing seal leakage, premature power unit failure and cylinder wear.

e. cylinder packing consists of the following parker brand seals:

1) dynamic piston t – seals

2) 2 back-up rings

3) 2 static o-rings

4) rod wiper

5) rod t - seals

f. Lift will be equipped with external hydraulic safeties consisting of velocity fuses mounted on each cylinder which hydraulically lock in the event of a leak, plus a factory set pressure compensated flow control valve to limit descent speed.

g. seamless stainless steel hydraulic tubing with a burst rating of 14,000 psi, minimum.

h. All hydraulic fittings will be standard jic or o-ring boss fittings. Self flaring or compression fittings are not acceptable.

i. hydraulic fluid will be dexron iii, atf.

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4. Safety Locks:
 - a. Steel safety locks with a safety factor of not less than 3:1 shall be mounted one set to each lifting cylinder and shall allow the lift to be locked at a minimum of 8 different levels that employs a spring-applied air cylinder released CAM and latching rack.
 - b. Locks Shall Start locking at a minimum of (4) inches off the floor. The mechanical locks in each column will engage every (6) inches thereafter to a full lifting height.
 - c. Each lock body will be made of a minimum of 1 -1/2" thick, A-36 Grade Steel Measuring 7-1/4"X9-1/2"
 - d. Each individual locking device shall be capable of supporting the entire rated load of the lifting leg.
 - e. The locking mechanism shall be mechanically operated and shall normally be engaged in a locking position.

5. Power Unit:
 - a. Power unit can be mounted on either driver side or passenger side column upon installation. the power unit will consist of:
 - 1) electric motor
 - 2) hydraulic pump
 - 3) steel oil reservoir (plastic reservoir not acceptable)
 - 4) suction strainer
 - 5) hydraulic manifold valving
 - 6) NEMA 12 electrical enclosure with control transformer, motor starter and motor overload protection.
 - b. Electric motor is u.s. made 5 h.p. 208v / 230v 3 phase 60 hz minimum. the motor will have maximum full amp loads of 16.7 amps @ 208v, 15.2 amps @ 230v, and 7.6 amps @ 440v.
 - c. Hydraulic pump is a pressure balanced gear pump with fixed displacement, external tooth, and all steel gears. the pump must be extremely tolerant of fluid contaminants and resistant to galling caused by low viscosity start-up. hardcoat processed internal pump surfaces for extended service life.
 - d. The controls shall be a hand pendant wired from the power unit with the following functions: push button up switch, push button down, and push button lock release.

6. Lifting Column:
 - a. Each column will be constructed of 7-1/4"x 2-5/8" heavy duty forklift channel and be rigidly supported and joined together with 1-inch steel plate using 3 point fillet welds. formed, tubular, or bent columns are not acceptable.
 - b. Each column will be a minimum of 27-1/2" wide x 12" deep. these larger heavy duty columns give better, safer support when lifting heavier, uneven loads. smaller, lighter duty columns will not be accepted.
 - c. Each column will have a base plate made from 1" thick grade a-36 steel plates, minimum. the base plate will be 47-1/2" x 31-1/2", minimum. this base plate is designed to have less than 50 psi of pressure on the concrete floor with a full load.

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7. Carriage Assembly:
 - a. Each column will have a carriage constructed of 1" inch steel plate joined to a ½"-inch backing plate by 3 point fillet welds, minimum.
 - b. Carriage assembly will roll up and down smoothly in the forklift mast columns on eight (8) 5 inch double sealed self-lubricating steel ball bearing rollers. plastic or nylon type slide blocks and bushing type rollers are not acceptable.
 - c. The carriage assembly shall not require any monthly cleaning with solvents or any lubrication. all wear surfaces shall be completely sealed and self lubricating with no grease requirements.
 - d. Each carriage will also include four (4) 4 inch double sealed self lubricating steel ball bearing rollers acting as side load bearings to eliminate the stress of unevenly distributed loads. plastic or nylon type bearings or slide blocks are not acceptable.
 - e. The carriage will be lifted by means of a direct drive lifting system. the carriage will be connected directly to the top of the cylinder by (2) 1-1/2" diameter astm a-311 class b hardened steel rods. cable, chain, and mechanical screw type designs are not acceptable.
 - f. Carriage will be lifted by means of a direct drive lifting system. the carriage will be connected directly to the top of the cylinder by (2) 1-1/2" diameter astm a-311 class b hardened steel rods. cable, chain, and mechanical screw type designs are not acceptable.

8. Lifting Arms:
 - a. Lifting arms will be constructed of three pieces of grade a-500-b structural tubing. this tubing must have a minimum tensile strength of 75,000 psi and minimum yield strength of 60,000 psi.
 - b. The first piece called "swing arm" will be made of 6" x 8" x 5/16" wall thickness. the second piece called "slider" will be made from 5" x 7" x 1/4" thick wall. slider ends shall be cap welded closed on both ends for added strength.
 - c. Lifting arms will accommodate cars through medium sized trucks weighing up to 30,000 lbs.
 - d. Closed reach of 47-3/4" and an open reach of 66-7/8". all four lifting arms will be equal in length to safely support front wheel drive vehicles as well as heavy ended vehicles with dual rear wheels, lift gates, dump body and utility bodies. asymmetrical arms or rotated columns are not acceptable.
 - e. Swing arm restraints will be made from 1-1/2" diameter heat treated rockwell hardness 50/55 grade 8 steel pins that slide through the carriage and are forced downward by a compression spring. the compression spring forces the pin to wedge against the swing arm securing it in place. the swing arms automatically secure themselves when the lift is raised and release automatically when the lift is fully lowered.
 - f. Arm restraints will be of an infinite position design causing arms to be held in place at every point in their rotation. geared teeth type arm restraints are not acceptable due to finite position restraint locations and tendency to chip gears found on this design which when "chipped" cause arms to not hold position.
 - g. Lifting pads will be made from 4-1/2" x 6" steel plate with steel corrugated

- surface for positive gripping on flat surfaces or lifting by unibody pinch welds. rubber or plastic lifting pads are not acceptable due to wear and decrease coefficient of friction as rubber pads get oily. while not recommended, when insisted by customer rubber topped pads are also available as an option and shall be ali certified.
- h. Lift pads must have a 4-1/2" x 6" lifting surface at all times including when truck adapters are in use. smaller lifting surfaces such as flip-up pads are not acceptable.
9. Lift Dimensions:
- a. Column height 10' 1 1/2" maximum
 - b. Maximum structural protrusion from the lift column shall be 13' 6". measured from the floor to the top of the cylinder at full lifting height.
 - c. Width between columns will be twelve (12) foot standard, minimum
 - d. Width between lifting arms will be 117" minimum.
 - e. pad height 7" maximum at lowest position when the lift is fully lowered.
 - f. lifting height 79" at the top of the pad at full lifting height.
 - g. lifting height with 5" truck adaptors 84" at full lifting height
 - h. lifting height with 7-1/2" truck adaptors 86-1/2" at full lifting height.
 - i. lifting height with 10" truck adaptors 89" at full lifting height.
 - j. lifting height maximum height with stacking 10" and 7-1/2" adaptors is 94-7/8"
10. Standard Equipment
- a. Truck adaptors (4 each) of 5", 7-1/2", and 10". flip type and screw type pads are not acceptable due to longer set up time, higher arm pad heights or smaller lift pad contact surface.
 - b. Male and female electrical Hubbell plugs, male plug prewired on lift with female plug in parts box.
 - c. (18) 1" x 10" Wej-it brand anchor bolts.
 - d. Dexron iii ATF for hydraulic pump and reservoir.
 - e. Shims to level the columns for proper installation.
 - f. safety and operations manual.
 - g. ANSI/ALI OIM booklet (ALI standard # aloim-2008 (r2013))
 - h. ANSI/ALI lifting it right booklet (ALI standard # sm01-2)
 - i. ANSI/ALI lifting point guide booklet (ALI standard # ALI/LP-guide)
 - j. ANSI/ALI safety decals affixed to lift.
- B. Capacity:
- 1. Models TP-30: 30,000 lbs. (34019 kg).
- C. Minimum Floor Thickness:
- 1. Model TP-30: 12 inch (see structural drawings for additional info).
- D. Equipment Foundation Requirements:
- 1. Consult factory for drawings.
- E. Finishes:
- 1. As selected by Architect from manufacturers full range of standard colors.

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- F. Lift shall be 3rd party certified by ETL testing laboratory and labeled with the ETL/Automotive Lift Institute (ALI) label that affirms the lifts meet conformance to all applicable provisions of American National Standard ANSI/ALI ALCTV and in compliance with International Building Code chapter 30 section 3001.2.

3.EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until supporting structures have been properly prepared.
- B. If supporting structure preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

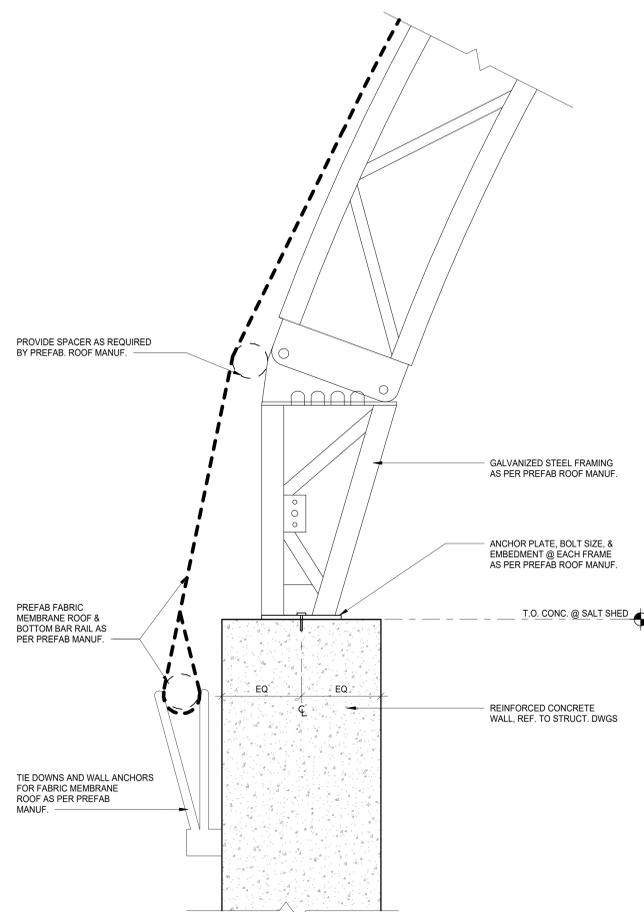
3.2 INSTALLATION

- A. Coordinate all in-ground penetrations in the slab on grade.
- B. Install in strict accordance with manufacturer instructions and in proper relationship with adjacent construction. Test for proper operation and retest if necessary, until satisfactory results are achieved.

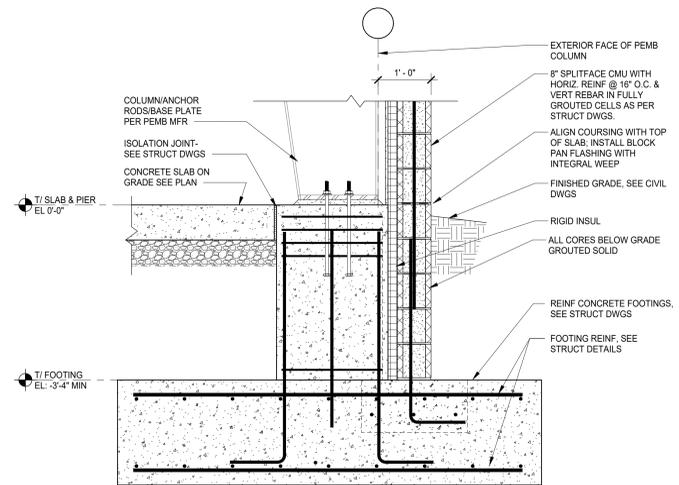
3.3 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

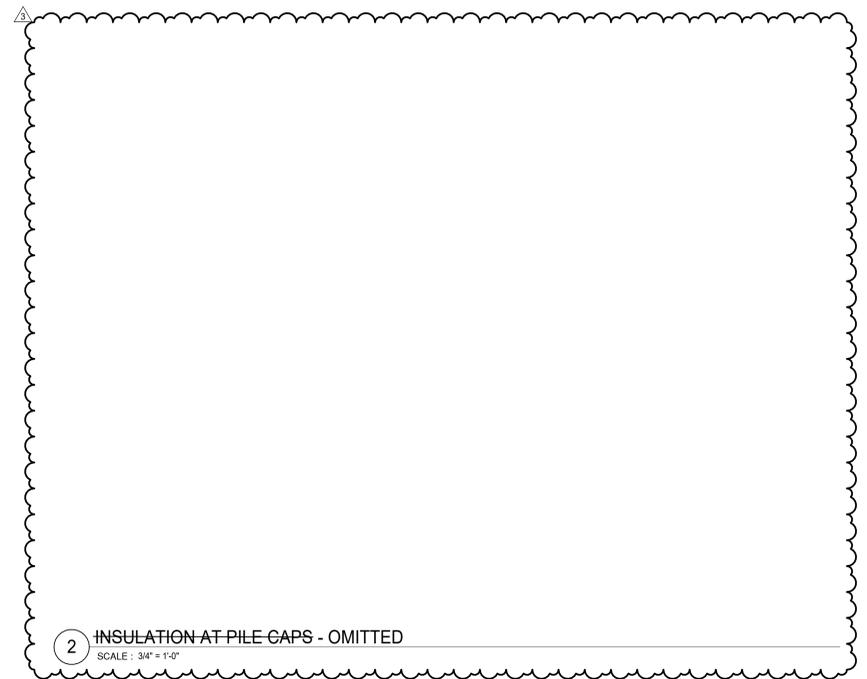
END OF SECTION 144500



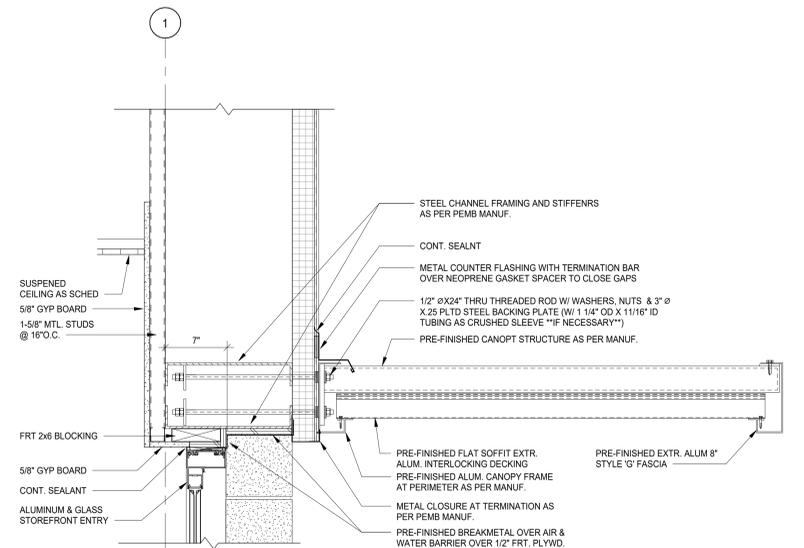
4 SALT SHED - CONNECTION SECTION
SCALE: 1 1/2" = 1'-0"



1 SECTION
SCALE: 3/4" = 1'-0"



2 INSULATION AT PILE CAPS - OMITTED
SCALE: 3/4" = 1'-0"



3 CANOPY
SCALE: 1 1/2" = 1'-0"

ISSUED FOR BID/PERMIT SET - INTENDED FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	04/28/2025	ISS
2	05/12/2025	ESB
3		ADDENDUM NO. 1

Professional Certification: I certify that these documents were prepared or approved by me, and that I am a duly licensed _____ under the laws of the (state, commonwealth or district) of _____ License No. _____ Expiration Date: _____

PUBLIC WORKS FACILITY

PENNELL ST. & W 2ND ST.
CHESTER, PA 19013

PHILADELPHIA
2 Penn Center, Suite 700
Philadelphia, PA 19102
Phone: 215.861.9001

SCALE: AS SHOWN DATE: 04/28/2025 DRAWN BY: KRJ/MSB CHECKED BY: ESB
PROJECT NUMBER: C00C0004A DRAWING NAME: REVIEWED BY: ESB

EXTERIOR DETAILS

SHEET NUMBER: A503



PART 1 - GENERAL

1.1.1 ADDENDUM

A. Addendum No. 01

1.1.2 PROJECT INFORMATION

- A. Project Name: **Public Works Garage and Salt Shed**
- B. Owner: **City of Chester**
- C. Owner Project Number: **2025-010**
- D. Architect: **CED Architecture, Inc.**
- E. Architect Project Number:
- F. Date of Addendum: **05/27/2025**

1.1.3 NOTICE TO BIDDERS

- A. This Addendum is issued **to all Penn Bid registered vendors** pursuant to the [**Instructions to Bidders and Conditions of the Contract**]. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.
- B. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.
- C. The date for receipt of bids is **unchanged by this Addendum** at same time and location.
 - 1. Bid Date: 06/26/2025.

1.1.4 ATTACHMENTS

- A. This Addendum includes the following attached Documents and Specification Sections:
 - 1. Document: Addendum No1 letter, dated May 27, 2025 as issued electronically on PennBid.

2. Specifications: None at this time

B. This Addendum includes the following attached sheets:

1. General Sheet: N/A
2. Civil: N/A
3. Structural Sheet: N/A
4. Architectural: N/A
5. Fire-Protection Sheet: N/A
6. Plumbing Sheet: N/A
7. Mechanical Sheet: N/A
8. Electrical Sheet: N/A

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1.2.1 ADDENDUM

A. Addendum No. 02

1.2.2 PROJECT INFORMATION

- A. Project Name: **Public Works Garage and Salt Shed**
- B. Owner: **City of Chester**
- C. Owner Project Number: **2025-010**
- D. Architect: **CED Architecture, Inc.**
- E. Architect Project Number:
- F. Date of Addendum: **06/02/2025**

1.2.3 NOTICE TO BIDDERS

- A. This Addendum is issued **to all Penn Bid registered vendors** pursuant to the **[Instructions to Bidders and Conditions of the Contract]**. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.
- B. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.
- C. The date for receipt of bids is **unchanged by this Addendum** at same time and location.
 1. Bid Date: 06/26/2025.

1.2.4 ATTACHMENTS

A. This Addendum includes the following attached Documents and Specification Sections:

1. Documents: N/A
2. Specifications:
 - a. Section 000110 Table of Contents, dated 06/02/2025, (Reissued).
 - b. Section 000115 List of Drawings Sheets, dated 06/02/2025, (Reissued).
 - c. Section 011000 Summary, dated 06/02/2025, (Reissued).
 - d. Section 012300 Alternates & Units Prices, dated 06/02/2025, (Reissued).
 - e. Section 015100 Temporary Utilities, dated 06/02/2025, (Reissued).
 - f. Section 084523 Fiberglass Sandwich-Panel Assemblies dated 06/02/25, (Reissued).
 - g. Section 105129 Phenolic Lockers dated 06/02/2025, (New).
 - h. Section 107300 Cantilevered Carports dated 06/02/2025, (New).
 - i. Section 133133 Framed Fabric Structures dated 06/02/2025, (New).
 - j. Section 263213.13 Diesel Emergency Engine Generators, dated 06/02/2025, (Reissued).
 - k. Section 263600 Transfer Switches, dated 06/02/2025, (Reissued).

B. This Addendum includes the following attached sheets:

1. General Sheet: N/A
2. Civil Highway Occupancy Permit Plans:
 - a. Sheet 1of6 Cover Sheet, dated 3/21/25, (New).
 - b. Sheet 2of6 General Notes, dated 3/21/25, (New).
 - c. Sheet 3of6 General Notes, dated 3/21/25, (New).
 - d. Sheet 4of6 Maintenance & Protection of Traffic, dated 3/21/25, (New).
 - e. Sheet 5of6 Maintenance & Protection of Traffic, dated 3/21/25, (New).
 - f. Sheet 6of6 Construction Plans, dated 3/21/25, (New).
3. Structural Sheet: N/A
4. Architectural:
 - a. Sheet A304 – Wall Sections - Garage, dated 06/02/2025, (Reissued).
 - b. Sheet A401 – Restroom/Locker Plans, Elevations & Details, dated 06/02/2025, (Reissued).
5. Fire-Protection Sheet: N/A
6. Plumbing Sheet:
 - a. Sheet P000 – Plumbing Symbols, Abbreviations, Legends & General Notes dated 06/02/2025, (Reissued).
 - b. Sheet P100 – Underground Plumbing plan dated 06/02/2025, (Reissued).
 - c. Sheet P101 – Plumbing Floor Plan dated 06/02/2025, (Reissued).
 - d. Sheet P102 – Natural Gas Piping Floor Plan dated 06/02/2025, (Reissued).
 - e. Sheet P103 – Salt Shed Plumbing Plan dated 06/02/2025, (Reissued).

- f. Sheet P401 – Enlarged Plumbing Plans dated 06/02/2025, (Reissued).
- g. Sheet P501 – Plumbing Details dated 06/02/2025, (Reissued).
- h. Sheet P600 – Plumbing Schedules dated 06/02/2025, (Reissued).
- i. Sheet P901 – Sanitary Waste & Vent Pipping Riser Diagrams dated 06/02/2025 (Reissued)
- j. Sheet P902 – Domestic Water Pipping & Natural Gas Pipping Riser Diagrams dated 06/02/2025 (Reissued)

7. Mechanical Sheet: N/A

8. Electrical Sheet:

- a. Sheet E101 Power Plan, Dated 06/02/2025, (Reissued)
- b. Sheet E601 Diagrams, Dated 06/02/2025, (Reissued)
- c. Sheet E801 Schedules, Dated 06/02/2025, (Reissued)

1.2.5 REVISIONS TO DIVISION 00 PROCUREMENT REQUIREMENTS AND CONTRACTING REQUIREMENTS

A. Specification Section **000110 Table of Contents, (Reissued)**

1. Sections have been added to and omitted from the table of contents.

- a. Section 009113 Addenda has been added
- b. Section 105113 Metal Lockers has been omitted.
- c. Section 105129 Phenolic Lockers has been added
- d. Section 107300 Cantilevered Carports has been added

B. Specification Section **000115 List of Drawing Sheets, (Reissued)**

1. Section 02a Civil Highway Occupancy Plans have been added.

1.2.6 REVISIONS TO DIVISION 01 GENERAL REQUIREMENTS

A. Specification Section **011000 Summary, (Reissued).**

1. The below revisions correlate with Addendum No1.

- a. Paragraph 1.1 Project Information: Item E has been updated to remove the Construction Manager (CM) from Contract 1. The CM shall be awarded under a separate contract.
- b. Since the General Prime contractor is no longer the acting CM, the answer for PennBid RFI #13 shall be revised to the following: “ Thank you for your inquiry. The Construction Manager shall be responsible to work with each prime contractor and the Owner to determine a Logistics Plan that works for everyone.”

2. Paragraph 1.1 Project Information: Item D has been updated to revise a typo in the

Architect's Project number.

3. The below revisions correlate with PennBid RFI response #15
 - a. Paragraph 1.3 Work By Owner: Item B Generator & Automatic Transfer Switch has been updated to reference Alternate#8.
4. The below revisions correlate with PennBid RFI response #25
 - a. Paragraph 1.3 Work By Owner: Item L Commercial Grade Electrical Vehicle Charging Stations has been added to indicate equipment procurement by owner and installation by contractor.

B. Specification Section 012300 Alternates and Unit Prices, (Reissued).

1. The below revisions correlate with PennBid RFI response #25
 - a. Paragraph 3.1 Schedule of Alternates: Alternate #3 has been revised to indicate new work scope for the EV charging Stations which will be procured by the owner and installed by the Electrical Prime Contractor.
2. The below revisions correlate with PennBid RFI response #15
 - a. Paragraph 3.1 Schedule of Alternates: Alternate #8 has been added for procurement options for the Generator and Automatic Transfer switch.

C. Specification Section 015100 Temporary Utilities, (Reissued).

1. The below revisions correlate with PennBid RFI response #23
 - a. Paragraph 1.6 Temporary Electricity: Note A has been revised to indicate the appropriate utility company.

1.2.7 REVISIONS TO DIVISION 08 OPENINGS

A. Specification Section 084523 Fiberglass Sandwich-Panel Assemblies, (Reissued).

1. The below revisions correlate with PennBid RFI response #10
 - a. Paragraph 1.5 Performance requirements: Items A & B have been revised to indicate wind load and deflection limit parameters.

1.2.8 REVISIONS TO DIVISION 10 SPECIALTIES

A. Specification Section 105113 Metal Lockers, (Omitted)

1. The below revisions correlate with PennBid RFI response #9.

- a. Entire section has been omitted and replaced with section 105129 Phenolic Lockers

B. Specification Section **105129 Phenolic Lockers, (New)**

1. The below revisions correlate with PennBid RFI response #9.
 - a. Entire section was not included in the original bid package and has been added in lieu of section 105113 Metal Lockers.

C. Specification Section **107300 Cantilevered Carports, (New).**

1. Entire section was not included in the original bid package and has been added for clarifications

1.2.9 REVISIONS TO DIVISION 13 SPECIAL CONSTRUCTION

A. Specification Section **133133 Framed Fabric Structures, (New).**

1. This revisions aligns with PennBid RFI responses #4, #8, #31.
 - a. Entire section was not included in the original bid package and has been added for clarifications

1.2.10 REVISIONS TO DIVISIONS 26 SPECIFICATION SECTIONS

A. Specification Section **263213.13 Diesel Emergency Engine Generators, (Reissued).**

1. Paragraph 2.1 Manufacture: The service load size has been revised to reference one line diagram.
2. Paragraph 2.3 Engine Generator Assembly Description: The service load size has been revised to reference one line diagram.

B. Specification Section **263600 Transfer Switches, dated 06/02/2025, (Reissued).**

1. Paragraph 2.1 Manufacture: The service load size has been revised to reference one line diagram.

1.2.11 REVISIONS TO DRAWING SHEETS

A. Sheet **A304 Wall Sections - Garage (Reissued).**

1. The below revisions correlate with PennBid RFI response #19
 - a. **Drawing #1/A304:** Wall Section has been revised to indicate additional support for the Horizontal wall panels.

B. Sheet **A401 Restroom/Locker Plans, Elevations & Details (Reissued).**

1. The below revisions correlate with PennBid RFI response #7.
 - a. **Drawings #2/A401, #4/A401, #6/A401, #7/A401, #8/A401, #9/A401, #10/A401, #12/A401:** Interior elevations have been revised to indicate floor mounted toilet partitions in lieu of ceiling mounted toilet partitions.
 - b. **General notes:** Notes have been revised for construction clarifications.

C. Sheet **P000 Plumbing Symbols, Abbreviations, Legends & General Notes (Reissued).**

1. The below revisions correlate with PennBid RFI response #56.
 - a. The entire drawing has been updated for clarity purposes

D. Sheet **P100 Underground Plumbing Plan (Reissued).**

1. The below revisions correlate with PennBid RFI response #56.
 - a. **Title Block, General Notes and Keynotes:** Drawing has been updated for clarity purposes

E. Sheet **P101 Plumbing Floor Plan (Reissued).**

1. **Plan #1/P101:** Revised domestic water supply connections to GWH-1
2. The below revisions correlate with PennBid RFI response #56.
 - a. **Title Block, General Notes and Keynotes:** Drawing has been updated for clarity purposes

F. Sheet **P102 Natural Gas Piping Floor Plan (Reissued).**

1. **Plan #1/P102:** Revised natural gas supply connections to GWH-1
2. The below revisions correlate with PennBid RFI response #56.
 - a. **Title Block, General Notes and Keynotes:** Drawing has been updated for clarity purposes

G. Sheet **P103 Salt Shed Plumbing Floor Plan (Reissued).**

1. The below revisions correlate with PennBid RFI response #56.
 - a. **Title Block, General Notes and Keynotes:** Drawing has been updated for clarity purposes

H. Sheet **P401 Enlarged Plumbing Plan (Reissued).**

1. The below revisions correlate with PennBid RFI response #56.

- a. **Title Block, General Notes and Keynotes:** Drawing has been updated for clarity purposes
- I. **Sheet P501 Plumbing Details (Reissued).**
 - 1. The below revisions correlate with PennBid RFI response #56.
 - a. The entire drawing has been updated for clarity purposes
- J. **Sheet P600 Plumbing Schedules (Reissued).**
 - 1. The below revisions correlate with PennBid RFI response #56.
 - a. **Schedules, Title Block, General Notes and Keynotes:** Drawing has been updated for clarity purposes
- K. **Sheet P901 Sanitary Waste & Vent Pipping Riser Diagrams (Reissued).**
 - 1. The below revisions correlate with PennBid RFI response #56.
 - a. **Title Block, General Notes:** Drawing has been updated for clarity purposes
- L. **Sheet P902 Domestic Water Pipping & Natural Gas Pipping Riser Diagrams (Reissued).**
 - 1. **Plan #1/P501:** Revised domestic water supply and Natural gas supply connections to GWH-1
 - 2. The below revisions correlate with PennBid RFI response #56.
 - a. **Title Block, General Notes:** Drawing has been updated for clarity purposes
- M. **Sheet E101 Power Plan (Reissued).**
 - 1. The below revisions correlate with PennBid RFI response #34.
 - a. **Drawing #1/E101:** Power placeholder added for owner provided signage.
 - b. **Power Keynotes:** Keynote #22 added to identify signage power work scope.
- N. **Sheet E601 Diagrams (Reissued).**
 - 1. The below revisions correlate with PennBid RFI response #47
 - a. **Drawing #1/E601:** One line Diagram revised to indicate conduit and cable line sets to/from ATS-E.
- O. **Sheet E801 Schedules (Reissued).**
 - 1. The below revisions correlate with PennBid RFI response #34
 - a. **Branch Panel RP4:** Power requirements added for owner provided signage.

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1.3.1 ADDENDUM

A. Addendum No. 03

1.3.2 PROJECT INFORMATION

- A. Project Name: **Public Works Garage and Salt Shed**
- B. Owner: **City of Chester**
- C. Owner Project Number: **2025-010**
- D. Architect: **CED Architecture, Inc.**
- E. Architect Project Number:
- F. Date of Addendum: **06/03/2025**

1.3.3 NOTICE TO BIDDERS

- A. This Addendum is issued **to all Penn Bid registered vendors** pursuant to the [**Instructions to Bidders and Conditions of the Contract**]. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.
- B. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.
- C. The date for receipt of bids is **unchanged by this Addendum** at same time and location.
 - 1. Bid Date: 06/26/2025.

1.3.4 ATTACHMENTS

- A. This Addendum includes the following attached Documents and Specification Sections:
 - 1. Document: Addendum No.3 letter with links for Pre-Bid meeting video/audio prepared by Greg Shaffer Officer of Procurement, dated June 3, 2025 as issued electronically on PennBid.
 - 2. Specifications: None at this time

B. This Addendum includes the following attached sheets:

1. General Sheet: N/A
2. Civil: N/A
3. Structural Sheet: N/A
4. Architectural: N/A
5. Fire-Protection Sheet: N/A
6. Plumbing Sheet: N/A
7. Mechanical Sheet: N/A
8. Electrical Sheet: N/A

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1.4.1 ADDENDUM

A. Addendum No. 04

1.4.2 PROJECT INFORMATION

- A. Project Name: **Public Works Garage and Salt Shed**
- B. Owner: **City of Chester**
- C. Owner Project Number: **2025-010**
- D. Architect: **CED Architecture, Inc.**
- E. Architect Project Number:
- F. Date of Addendum: **06/05/2025**

1.4.3 NOTICE TO BIDDERS

- A. This Addendum is issued **to all Penn Bid registered vendors** pursuant to the **[Instructions to Bidders and Conditions of the Contract]**. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.
- B. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.
- C. The date for receipt of bids is **unchanged by this Addendum** at same time and location.
 1. Bid Date: 06/26/2025.

1.4.4 ATTACHMENTS

A. This Addendum includes the following attached Documents and Specification Sections:

1. Documents: Phase II Environmental Site Assessment, as prepared by Colliers Engineering and Design, inc. Dated April, 2025
2. Specifications:
 - b. Section 230923 Direct Digital Control (DDC) System for HVAC, dated 06/05/2025, (Reissued).

A. This Addendum includes the following attached sheets:

1. General Sheet: **N/A**
2. Civil:
 - a. Sheet 3.0 Site Plan, dated 6/05/25, (Reissued).
 - b. Sheet 4.0 Grading Plan, dated 6/05/25, (Reissued).
 - c. Sheet 5.0 Utilities Plan, dated 6/05/25, (Reissued).
 - d. Sheet 5.1 Profiles, dated 6/05/25, (Reissued).
 - e. Sheet 6.0 Soil Erosion & Sediment Control Plan, dated 6/05/25, (Reissued).
 - f. Sheet 6.1 Soil Erosion & Sediment Control Details, dated 6/05/25, (Reissued).
 - g. Sheet 6.2 Soil Erosion & Sediment Control Details, dated 6/05/25, (Reissued).
 - h. Sheet 8.1 Landscape Details, dated 6/05/25, (Reissued).
 - i. Sheet 10.3 Fence Construction Details, dated 6/05/25, (Reissued).
 - j. Sheet 11.0 PCSM Plan, dated 6/05/25, (Reissued).
 - k. Sheet 15.0 PCSM Notes, dated 6/05/25, (Reissued).
3. Structural Sheet: **N/A**
4. Architectural: **N/A**
5. Fire-Protection Sheet: **N/A**
6. Plumbing Sheet: **N/A**
7. Mechanical Sheet: **N/A**
8. Electrical Sheet: **N/A**

1.4.5 REVISIONS TO DIVISION 00 PROCUREMENT REQUIREMENTS AND CONTRACTING REQUIREMENTS

B. Specification Section **009113 Addenda, (Reissued)**

1. Sections have been revised to include Addendum No.03 & Addendum No.04

1.4.6 REVISIONS TO DIVISIONS 23 SPECIFICATION SECTIONS

C. Specification Section **230923 Direct Digital Control (DDC) System for HVAC, (Reissued).**

1. The below revisions correlate with PennBid RFI response #60
 - a. Paragraph 1.3 Approved Control Systems: Item A has been revised to include Scheider Electrical Controls as an approved vendor.
 - b. Paragraph 2.2 Communication: Item A has been revised to indicate new work scope criteria.

1.2.7 REVISIONS TO DRAWING SHEETS

A. Sheet **3.0 Site Plan (Reissued)**.

1. The below revisions correlate with PennBid RFI response #52
 - a. **Drawing #1/3.0:** Fence enclosure height revised.
2. The below revisions correlate with PennBid RFI response #65 & #66
 - a. **PA Act 2 Remediation Notes:** Paragraphs have been added ahead of numerical notes to indicate Pre-Acquisition Due Diligence, SPLP Value for Manganese and Remediation Measures.
 - b. **PA Act 2 Remediation Notes:** Numerical notes have been revised to comply with DEP comments.
3. The below revisions correlate with PennBid RFI response #51
 - a. **Notes:** Note added to indicate pedestrian gate work scope

B. Sheet **4.0 Grading Plan (Reissued)**.

1. The below revisions correlate with PennBid RFI response #65 & #66
 - a. **PA Act 2 Remediation Notes:** Paragraphs have been added ahead of numerical notes to indicate Pre-Acquisition Due Diligence, SPLP Value for Manganese and Remediation Measures.
 - b. **PA Act 2 Remediation Notes:** Numerical notes have been revised to comply with DEP comments.

C. Sheet **5.0 Utilities Plan (Reissued)**.

1. **Plan #1/5.0:** Note added to comply with DEP comments regarding work scope with the Sewer Authority.
2. **Act 2 Remediation Notes:** Notes have been revised to comply with DEP comments.

D. Sheet **5.1 Profiles (Reissued)**.

1. The below revisions correlate with PennBid RFI response #40

- a. **Profile Drawing S1-UGB #1:** HDPE pipe size has been revised to 6”.
- b. **Profile Drawing S12-UGB #1:** HDPE pipe size has been revised to 6”.

E. Sheet **6.0 Soil Erosion & Sediment Control Plan (Reissued).**

1. **Act 2 Remediation Notes:** Notes added to sheet to comply with DEP comments.

F. Sheet **6.1 Soil Erosion & Sediment Control Details (Reissued).**

1. **Standard Construction Detail #3-16 (ABACT) Pumped Water Filter Bag:** Note has been revised to add scope to comply with DEP comments.

G. Sheet **6.2 Soil Erosion & Sediment Control Details (Reissued).**

1. **Standard Construction Detail #4-17 (ABACT) Stone and Concrete Block Inlet Protection – Type C inlet:** Note has been revised to add scope to comply with DEP comments.
2. **Standard Construction Detail #4-18 (ABACT) Stone and Concrete Block Inlet Protection – Type M inlet:** Note has been revised to add scope to comply with DEP comments.
3. **Storm Sewer flow to surface waters map:** Map added to comply with DEP comments.
4. **Sheet Landscape Specification Notes:** Copy revised notes from Sheet 11.0 to comply with DEP comments. Reference Section notes 1.2.7(K)(2)(a-i) in this addend for additional information.

H. Sheet **8.1 Landscape Details (Reissued).**

1. **Evergreen Tree Planting Detail:** Notes have been added to identify additional scope to comply with DEP comments.
2. **Ground Cover/Perennial Planting Detail:** Notes have been added to identify additional scope to comply with DEP comments.
3. **Ornamental Grass Planting Detail:** Notes have been added to identify additional scope to comply with DEP comments.
4. **Multi-Leader Tree Planting Detail:** Notes have been added to identify additional scope to comply with DEP comments.
5. **Deciduous Tree Planting Detail:** Notes have been added to identify additional scope to comply with DEP comments.

I. Sheet **10.3 Fence Construction Details (Reissued).**

1. The below revisions correlate with PennBid RFI response #2 & #52
 - a. **6’ High Ornamental Aluminum Fence:**
 - 1) Detail title has been renamed to 6ft in lieu of 9ft
 - 2) Standard Height has been revised to 6ft high in lieu of 9ft high.
 - b. **6’ High Ornamental Aluminum Man Gate:**

- 1) Detail title has been renamed to 6ft in lieu of 9ft
 - 2) Standard Height has been revised to 6ft high in lieu of 9ft high.
2. The below revisions correlate with PennBid RFI responses #45, #51, #63 & #64
- a. **Galvanized Steel Chain Link Fence (Security) Detail:** Note #1 has been revised to indicate the correct mesh size, wire gauge thickness and finish
 - b. **Chain Link Fence Single Gate Detail:** Note #1 has been revised to indicate the correct mesh size, wire gauge thickness and finish
 - c. **8' Chain Link Fence Rolling Gate:**
 - 1) Title has been revised to 8ft high in lieu of 9ft high
 - 2) Note has been revised to indicate the correct mesh size, wire gauge thickness and finish
- J. Sheet **11.0 PCSM Plans (Reissued).**
1. **Act 2 Remediation Notes:** Notes added to sheet to comply with DEP comments.
- K. Sheet **15.0 PCSM Notes (Reissued).**
1. **Storm Sewer flow to surface waters map:** Map added to comply with DEP comments.
 2. **Sheet Landscape Specification Notes:** Revise and add notes for landscape work scope to comply with DEP Comments
 - a. **Material Notes:** Scope notes added to comply with DEP comments
 - b. **Sequence Notes:** Scope notes added to comply with DEP comments
 - c. **Stabilization Notes:** Scope notes added to comply with DEP comments
 - d. **Recommended Mulching Specifications:** Scope notes added to comply with DEP comments
 - e. **NPDES Permit Notes:** Scope notes added to comply with DEP comments
 - f. **Permanent seed Mixture:** Add notes A & B
 - g. **Environmental Due Diligence:** Scope notes added to comply with DEP comments
 - h. **E&S Planning and Design – Section 102.4(B)(4):** Scope notes added to comply with DEP comments
 - i. **Measures Provided to Minimize Thermal Impacts:** Scope notes added to comply with DEP comments.

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1.5.1 ADDENDUM

A. Addendum No. 05

1.5.2 PROJECT INFORMATION

- A. Project Name: **Public Works Garage and Salt Shed**
- B. Owner: **City of Chester**
- C. Owner Project Number: **2025-010**
- D. Architect: **CED Architecture, Inc.**
- E. Architect Project Number:
- F. Date of Addendum: **06/12/2025**

1.5.3 NOTICE TO BIDDERS

- A. This Addendum is issued **to all Penn Bid registered vendors** pursuant to the **[Instructions to Bidders and Conditions of the Contract]**. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.
- B. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.
- C. The date for receipt of bids is **unchanged by this Addendum** at same time and location.
 - 1. Bid Date: 06/26/2025.

1.5.4 ATTACHMENTS

- A. This Addendum includes the following attached Documents and Specification Sections:
 - 1. Documents: N/A
 - 2. Specifications:
 - a. Section 000110 Table of Contents, dated 06/12/2025, (Reissued).
 - b. Section 009113 Addenda, dated 06/12/2025. (Reissued)
 - c. Section 026000 Contaminated Site Material Removal & Soil Capping, dated 06/12/2025, (Reissued).
 - d. Section 034800 Precast Concrete Wall Caps, dated 06/12/2025, (New)
 - e. Section 089119 Fixed Louvers, dated 06/12/2025, (New).
 - f. Section 093013 Ceramic Tile, Dated 06/12/2025, (Reissued).
 - g. Section 102800 Toilet, Bath and Laundry Accessories, (Reissued).
 - h. Section 144500 Heavy Duty Vehicle Lifts, Dated 06/12/2025, (Reissued).

B. This Addendum includes the following attached sheets:

1. General Sheet: N/A
2. Civil: N/A
3. Structural Sheet: N/A
4. Architectural:
 - a. Drawing A503: Exterior Details
5. Fire-Protection Sheet: N/A
6. Plumbing Sheet: N/A
7. Mechanical Sheet: N/A
8. Electrical Sheet: N/A

1.5.5 REVISIONS TO DIVISION 00 PROCUREMENT REQUIREMENTS AND CONTRACTING REQUIREMENTS

A. Specification Section **000110 Table of Contents, (Reissued)**

1. The below revisions correlate with PennBid RFI response #79.
 - a. Section 089119 Fixed Louvers has been added to provide the required work scope for procuring and installing fixed louvers.
2. The below revisions correlate with PennBid RFI response #82
 - a. Section 034800 Precast Concrete Wall Caps has been added to provide the required work scope for procuring and installing the caps at the trash enclosure
3. Section 080671 has been revised to provide the correct spelling for “Door”
4. Section 312500 & Section 312513 have been revised to provide the correct spelling for “Erosion”

B. Specification Section **009113 Addenda, (Reissued)**

1. Paragraphs 1.5.1 through 1.5.12 have been added to include Addendum No.05
2. Paragraph 1.2.5(A)(1), Items (a,b,c&d) have been added for clarification

1.5.6 REVISIONS TO DIVISION 02 EXISTING CONDITIONS

A. Specification Section **026000 Contaminated Site Material Removal & Soil Capping, (Reissued)**

1. The “Draft” watermark has been removed from the document. No other revisions have been made to this specification section.

1.5.7 REVISIONS TO DIVISION 03 CONCRETE

A. Specification Section **034800 Precast Concrete Wall Caps, (New)**

1. The below revisions correlate with PennBid RFI response #82
 - a. Section 034800 Precast Concrete Wall Caps has been added to provide the required work scope for procuring and installing wall caps at the trash enclosure.

1.5.8 REVISIONS TO DIVISION 08 OPENINGS

A. Specification Section **089119 Fixed Louvers, (New)**

1. The below revisions correlate with PennBid RFI response #79
 - a. Section 089119 Fixed Louvers has been added to provide the required work scope for procuring and installing fixed louvers.

1.5.9 REVISIONS TO DIVISION 09 FINISHES

A. Specification Section **093013 Ceramic Tile, (Reissued)**

1. The below revisions correlate with PennBid RFI response #70
 - a. Paragraph 3.8 Interior Ceramic Tile Schedule, Item A(1) has been Omitted.
 - b. Paragraph 3.8 Interior Ceramic Tile Schedule, Item A(2) has been revised to remove the reference to “Shower 315.”
 - c. Paragraph 3.8 Interior Ceramic Tile Schedule, Item B has been Omitted in its entirety.
 - d. Paragraph 3.8 Interior Ceramic Tile Schedule, Item B has been Omitted in its entirety.
 - e. Paragraph 3.8 Interior Ceramic Tile Schedule, Item C(2) has been Omitted.
 - f. Paragraph 3.8 Interior Ceramic Tile Schedule, Item D has been Omitted in its entirety.

1.5.10 REVISIONS TO DIVISION 10 SPECILATIES

A. Specification Section **102800 Toilet, Bath and Laundry Accessories, (Reissued)**

1. The below revisions correlate with PennBid RFI response #75
 - a. Paragraph 1.2 Summary, Item A(3) has been Omitted.
 - b. Paragraph 2.2 Washroom Accessories, Item C has been revised to coordinate with drawings for a “Combo Paper Towel Dispenser and Waste Receptacle.”
 - c. Paragraph 2.2 Washroom Accessories, Item C(7) has been added to reference the

- basis of design on the drawings.
- d. Paragraph 2.2 Washroom Accessories, Item H “High Speed Warm Air Dryer” has been Omitted

1.5.11 REVISIONS TO DIVISION 14 CONVEYING EQUIPMENT

A. Specification Section **144500 Heavy Duty Vehicle Lifts, (Reissued)**

1. The below revisions correlate with PennBid RFI response #58 & #73
 - a. Paragraph 1.1 Section Includes, Item A(1) & A(2) have been omitted
 - b. Paragraph 1.1 Section Includes, Item A(3) has been added to indicate the Heavy Duty Twin Post Vehicle Lift for this project.
 - c. Paragraph 1.5 References, Item B has been revised to include ANSI/ALI ALCTV Standards for vehicle lifts.
 - d. Paragraph 1.5 References, Item D has been added to indicate that any substitutions offered must be a model that has been in production for a minimum of 5 years
 - e. Paragraph 1.7 Warranty, Item A has been revised to indicate the basis of design warranty duration of 25 years.
 - f. Paragraph 1.7 Warranty, Items B, C, D & E have been added to reflect the Basis of design warranty parameters per component
 - g. Paragraph 2.1 Manufacturers, Item A has been revised to indicate Mohawk Lifts, Model TP-30 and manufacturers contact info for the Basis of Design.
 - h. Paragraph 2.2 MODULAR INGROUND AXLE ENGAGING LIFTS, 3 POST has been omitted in its entirety.
 - i. Paragraph 2.3 75,000 LB PARALLELOGRAM DRIVE ON FLUSH MOUNTED LIFT has been omitted in its entirety.
 - j. Paragraph 2.4 30,000LB HEAVY DUTY TWIN POST VEHICLE LIFT has been added in its entirety.

1.5.12 REVISIONS TO DRAWING SHEETS

A. Sheet **A503 Exterior Details (Reissued).**

1. The below revision correlates with PennBid RFI response #74
 - a. **Drawing #2/A503:** “INSULATION AT PILE CAPS” has been Omitted.

B. Sheet **A506 Interior Details (Omitted).**

1. The below revision correlates with PennBid RFI response #78
 - a. **Drawing A506:** “INTERIOR DETAILS” has been Omitted.

PART 2 - PRODUCTS (Not Used)
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END OF DOCUMENT 009113

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END OF SECTION 000110

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CONTAMINATED SITE MATERIAL REMOVAL & SOIL CAPPING

PART 1 GENERAL

02 60 00.01 **GENERAL CONDITIONS:** All of the Project “General Documents” apply to work specified in this Section; consult them in detail for applicable instructions.

PART 2 PRODUCTS

02 60 00.02 **WORK INCLUDED:** Provide all labor, materials, plant, tools, equipment and management services necessary for proper soil capping of pervious area (approximately 26,164 square feet) located at the proposed City of Chester Department of Public Works (DPW) facility as described on the following documents which are part of “Preliminary/Final Land Development Plan for City of Chester – Project Type: Public Works Facilities – Location: 2nd St. & Pennell St., City of Chester, PA 19013” prepared by Colliers Engineering & Design, Inc. (CED) dated April 28, 2025 (included in bid package):

- a. Sheet Title: Site Plan – Sheet Number: 3.0
- b. Sheet Title: Grading Plan – Sheet Number: 4.0
- c. Sheet Title: Utilities Plan – Sheet Number: 5.0
- d. Sheet Title: Landscape Details – Sheet Number: 8.1

PART 3 EXECUTION

02 60 00.03 **CODES AND STANDARDS:** The Contractor shall abide by all rules, regulations, codes, and industry standards for the remediation of soil in Pennsylvania.

02 60 00.04 **SCOPE OF WORK:** The Contractor’s scope of work shall be as follows:

- a. The Contractor shall have all underground utilities and piping in the vicinity of the soil capping area located.
- b. The Contractor shall verify the location of soil capping area prior to capping.
- c. The Contractor shall prepare a Health and Safety Plan (HASP).
- d. The Contractor shall select an off-site soil recycling/disposal facility per the CED Cut/Fill Plan and obtain approval of the CED Environmental Consultant.
- e. The Contractor shall complete removal of the impacted soil in the soil capping area to a depth of two (2) feet below surface grade and then install an orange geotextile

demarcation fabric barrier per Pennsylvania Department of Environmental Protection (PADEP) “Land Recycling Program Technical Guidance Manual (Document No. 261-0300-101 dated March 27, 2021) Section II “Act 2 Remediation Process” Appendix II-A “The Use of Caps as Activity and Use Limitations”. The Contractor shall observe soils (stockpiled, excavation floor and excavation sidewalls) for environmental impact. If environmental impact is discovered, the Contractor shall contact the CED Environmental Consultant immediately. The Contractor shall abide by the handling and storage procedures in PADEP Appendix II-A described above.

- f. The contractor shall stockpile soils removed from the excavation, and cover with a tarp top and bottom.
- g. Upon approval by the CED Environmental Consultant, Contractor shall:
 - Place an orange geotextile demarcation fabric barrier (Mirafi 140NL/O Orange Delineation Geotextile Fabric <https://www.paramountmaterials.com/products/mirafi-140nl-o-orange-geotextile-fabric-15-x-360-roll-tencate> or equivalent) over the entire bottom of the pervious area excavation
 - Prior to backfill, perform a survey by a PA-Licensed Land Surveyor of the pervious area including the orange geotextile demarcation fabric barrier
 - Backfill excavation with material meeting the definitions of “clean fill” and “clean fill concentration limits (CFCLs)” per PADEP “Management of Fill Policy” (Document No. 258-2182-773 dated January 16, 2021); Contractor shall provide a copy of a completed PADEP Form FP-001 “Certification of Clean Fill” (including electronic acknowledgements from PADEP for signatures by the donor site and by the City of Chester DPW facility construction site) to the CED Environmental Consultant prior to import of clean fill material to City of Chester DPW facility construction site
- h. Contractor shall restore the area per Site Plan.
- i. Contractor shall collect waste classification (soil) samples as required by the approved off-site recycling/disposal facility.
- j. Upon approval from the off-site recycling/disposal facility and CED Environmental Consultant, Contractor shall load and transport impacted soil to the off-site recycling/disposal facility.

The Contractor is required to obtain all permits to perform the work, including but not limited to, a PADEP Act 90 Residual Waste Transporter license.

02 60 00.05 **SUBMITTALS:**

- a. Health and Safety Plan (HASP) per 29 CFR 1910.120
- b. Recycling/Disposal Facility: Submit name and location of off-site recycling/disposal facility for impacted soil for approval by the CED Environmental Consultant prior to export from the site
- c. Material Source: Submit name and location of imported materials source for clean fill material for pervious area excavation via completed PADEP Form FP-001 "Certification of Clean Fill" (including electronic acknowledgements from PADEP for signatures by the donor site and by the City of Chester DPW facility construction site) per PADEP "Management of Fill Policy" (Document No. 258-2182-773 dated January 16, 2021)
- d. Disposal documentation for the impacted soils removed shall be provided per PADEP "Land Recycling Program Technical Guidance Manual (Document No. 261-0300-101 dated March 27, 2021) Section II "Act 2 Remediation Process"

02 60 00.06 **WORK BY CED ENVIRONMENTAL CONSULTANT:** The CED Environmental Consultant shall be responsible for the following during the course of the above work:

- a. Observe excavation and removal operations in the field
- b. Review and approval of clean fill materials proposed for import
- c. Review and approval of off-site soil recycling/disposal facility
- d. Perform the required site assessment of supervising same if the Owner retains others for such purposes
- e. Prepare reports documenting the excavation, removal and clean fill backfill of the pervious area

END OF SECTION 026000

3 PRECAST CONCRETE WALL CAPS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Concrete wall and pier caps

1.2 REFERENCES

- A. American Society of Testing and Materials (ASTM International)

ASTM C33	Concrete Aggregates
ASTM C39	Concrete Compressive Strength
ASTM C144	Aggregate for Masonry Mortar
ASTM C150	Portland cement
ASTM C595	Standard Specification for Blended Hydraulic Cements
ASTM C642	Water Absorption, Density, Voids in Hardened Conc
ASTM C666	Rapid Freeze/Thaw Resistance of Conc
ASTM C979	Pigments for Integrally Colored Concrete

1.3 SUBMITTALS

- A. Samples: Submit two full-sized samples of each type of precast concrete unit to show the full range of color and texture of unit for selection and approval. If sealer is to be applied to precast concrete slab, apply sealer on one sample.
- B. Product Data: Submit product data for specified products.
- C. Warranty: Provide certified copies of manufacturer's product warranties.
- D. Shop Drawings (Optional)
1. Indicate layout, corners, terminals, radius sizes, junctions with dissimilar materials, accessories and setting details.

1.4 SUBSTITUTIONS

- A. Refer to Section 013000 "Administrative Requirements" for procedures.

1.5 QUALITY ASSURANCE

- A. Compliance with Regulations: Comply with requirements of state and local building codes and with rules and regulations relating to building accessibility. Regulatory Requirements and Approvals: [Specify applicable requirements of regulatory agencies].
 - 1. [Code agency name].
 - a. [Report or approval number].

Specifier Note: Retain paragraph below for erected assemblies (either onsite or offsite) required for review of construction, coordination of work of several sections, testing or observation of operation. Mock-ups, when accepted or approved, establish standards by which work will be judged. Coordinate below with Division 01

- B. Qualifications of Manufacturer: Company specializing in manufacture of precast concrete wall cap units with a minimum of 10 continuous years of documented experience.
- C. Qualifications of Subcontractor: Subcontractor shall submit evidence of skill and not less than 5 years of experience in this product type.
- D. Pre-installation Conference: As directed by the Architect
- E. Precast concrete units shall have a compressive strength of 5,000 PSI minimum.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials to the installation site in the manufacturer's original packaging. Packaging shall contain manufacturer's name, customer name, order, identification number, and other related information.
- B. Handle and store precast concrete units in accordance with manufacturer's recommendations.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Install mortar, set caps and grout when surface temperature is a minimum of 50 degrees F (10 degrees C) and rising but no greater than 90 degrees F (32 degrees C).
- B. Do not install mortar, set caps or grout when inclement weather conditions are expected within 48 hours of completion.

1.8 EXTRA MATERIALS

- A. Extra materials: Provide _ pcs of each size, color and accessories specified.

1.9 WARRANTY

- A. Provide warranty covering precast concrete wall cap units against defects in material and workmanship for a period of 5 years. Unusual abuse and neglect are excepted.
- B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

PART 2 - PRODUCTS

2.1 MANUFACTURER

Stepstone, LLC (Or Equal)
17025 South Main Street
Gardena, CA 90248
(310) 327-7474
(800) 572-9029
FAX (310) 217-1424
www.stepstoneprecast.com

2.2 MATERIALS

- A. Precast concrete wall cap units shall be precast concrete, consisting of Portland cement, aggregate, and color admixtures.
1. Portland cement: ASTM C 150, Type III, high early strength.
 2. Aggregate: ASTM C 33.
 3. Color Admixture: By Davis Colors, or equal, as required to achieve color as selected.
 4. Aggregate for exposed aggregate surface: As selected.
 5. Portland Cement Mortar that meets or exceeds ANSI A118.4 requirements when mixed with water or a latex admixture, and is designed for installation of large format tile – Pedestrian Installation.
 6. Grout that meets or exceeds ANSI A118.7 when mixed with water or a latex admixture.

B. Precast concrete wall cap unit style

1. Square Modular Wall Cap

2.3 COLORS AND FINISHES

A. Colors: Davis Colors (or equal), integral color admixture. Integral color shall be throughout entire product. Finish color shall not be added as a face mix.

<u>With Slag</u>		<u>Without Slag</u>		<u>Slate-Finish (Sonorastone)</u>	
1401	Granada White	1801	Granada White	1501	Granada White
1404	French Gray	1804	French Gray	1504	French Gray
1405	Iceberg Green	1805	Iceberg Green	1506	Almond
1406	Almond	1806	Almond	1507	Cafe Brown
1407	Cafe Brown	1807	Cafe Brown	1510	Caramel
1410	Caramel	1810	Caramel	1512	Agave
1412	Agave	1812	Agave	1513	Porcelain
1413	Porcelain	1813	Porcelain	1516	Brick Red
1416	Brick Red	1816	Brick Red	1521	Kona
1421	Kona	1821	Kona	1524	Pebble
1421	Pebble	1824	Pebble	1525	Adobe
1425	Adobe	1825	Adobe		

B. Finishes: Walking surfaces of precast concrete units shall have minimum coefficient of friction of 0.60, wet and dry.

1. Smooth

C. Field Application of Sealer:

1. In geographic regions exposed to freeze-thaw conditions field-applied sealing the entire area, including joints, after installation is mandatory.
2. Conform to sealer manufacturer's recommendations for application and maintenance of sealer.
3. Install (2) coats of Prosoco Concrete Silane WB20 or equal

2.4 PHYSICAL PROPERTIES:

- A. Compressive strength: Minimum 5,000 PSI
- B. Size and Finish Schedule:

1. Square Modular Wall Cap

Size	Smooth	Sandblast	Slate
7-1/4" x 24" x 2-1/2"			
9-1/4" x 24" x 2-1/2"	X		
13-1/4" x 24" x 3-3/8"			
20-1/4" x 24" x 3-3/8"			

2. Square Modular wall cap Corners: 9-1/4"x12"x12"x2-1/2" Smooth

- C. All wall cap styles have straight, end and corner pieces. Select wall cap styles have coordinating standard radius pieces.
- D. Unit size: Within 1/8" of designated length, width and thickness.
- E. Weight: 133 lbs/ft³
- F. Water absorption: Not more than 6.0 % average, not more than 7.0 % for any individual unit for standard colors.
- G. Wall Cap units will contain on average 6% entrained air, with no individual piece under 5%.
- H. Resistance to Freeze-Thaw: Wall cap units will resist 300 freeze thaw cycles in accordance with ASTM C666 Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.

2.5 FABRICATION

- A. Wall Cap units shall be hand-made, wet-cast of cement conforming to ASTM C 150, Type III, aggregates conforming to ASTM C 33, and pigments for integrally colored concrete conforming to ASTM C979.

2.6 SOURCE QUALITY CONTROL

- A. Concrete for Wall Cap units shall be tested frequently to assure that mixes provide units having not less than 5,000 psi compressive strength at 28 days (average test strength not less than 4,500 psi).
- B. Minor chips, hairline cracks, air voids and slight variations in color and finish are normal in precast concrete. When viewed in typical daylight illumination from a distance of 20 feet, minor chips, hairline cracks and air voids that cannot be seen with the naked eye are not grounds for rejection.

3.1 EXAMINATION

- A. Examine all surfaces.
- B. Verify all dimensions of in-place and subsequent construction.
- C. Notify the Contractor in writing of conditions detrimental to the proper and

timely completion of the work.

- D. Do not proceed with the work until unsatisfactory conditions have been corrected.
- E. Installation of precast concrete wall caps, and associated construction, constitutes acceptance of the adjacent and underlying construction.

3.2 PREPARATION

- A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
 - 1. Ensure all substrates are clean and free of contaminants and have a roughened surface to encourage bonding.

3.3 CLEANING

- A. Clean exposed surfaces of precast concrete units. Use cleaners appropriate for precast concrete finishes and colors. Acid based cleaners will permanently alter finish and color.

3.4 SEALING

- A. Field-applied sealer for the prevention of freeze-thaw is optional in mild climates. If precast concrete units are factory sealed, test for compatibility before applying additional sealer.
- B. In geographic regions exposed to freeze-thaw conditions field-applied sealing the entire area, including joints, after installation is mandatory in order to maintain Stepstone's warranty. Follow sealer manufacturer's instructions for application and maintenance of the sealer.

3.5 COMPLETION

- A. Protect precast concrete units from damage due to subsequent building operations.
- B. After installation and before completion, inspect precast concrete units for construction damage and obtain new precast concrete units if required.
- C. Immediately prior to final acceptance of project, clean precast concrete units.

END OF SECTION 034800



PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes fixed extruded-aluminum louvers.
- B. Related Requirements:
 - 1. Section 081113 "Hollow Metal Doors and Frames" for louvers in hollow-metal doors.
 - 2. Section 084523 "Fiberglass Sandwich Panel Assemblies" for louvers in transparent window framed systems.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. For louvers specified to bear AMCA seal, include printed catalog pages showing specified models with appropriate AMCA Certified Ratings Seals.
- B. Shop Drawings: For louvers and accessories. Include plans, elevations, sections, details, and attachments to other work. Show frame profiles and blade profiles, angles, and spacing.
- C. Color Samples: For each type of metal finish required.

1.3 WARRANTY

- A. Special Finish Warranty: Manufacturer agrees to repair or replace components on which finishes fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Louvers shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of louver components, noise or metal fatigue caused by louver-blade rattle or flutter, or permanent damage to fasteners and anchors. Wind pressures shall be considered to act normal to the face of the building.

1. Wind Loads: Determine loads based on a uniform pressure of 30 lbf/sq. ft., acting inward or outward.
- B. Seismic Performance: Louvers, including attachments to other construction, shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
- C. Louver Performance Ratings: Provide louvers complying with requirements specified, as demonstrated by testing manufacturer's stock units identical to those provided, except for length and width according to AMCA 500-L.

2.2 FIXED EXTRUDED-ALUMINUM LOUVERS

A. Horizontal Drainable-Blade Louver:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Airline Louvers; a division of Mestek, Inc.
 - b. Greenheck.
 - c. Ruskin.
2. See "Louver Schedule" on mechanical drawings for Basis of Design.
3. Louver Depth: 4 inches.
4. Frame and Blade Nominal Thickness: Not less than 0.080 inch.
5. Frame options: Flange Framed.
6. Mullion Type: Exposed.
7. Louver Performance Ratings:
 - a. Free Area: Not less 54%.
 - b. Point of Beginning Water Penetration: Not less than 989 fpm.
 - c. Air Performance: Not more than 0.10-inch wg static pressure drop at 700-fpm free-area intake velocity.
 - d. Air Performance: Not more than 0.15-inch wg static pressure drop at 950-fpm free-area exhaust intake velocity.
8. AMCA Seal: Mark units with AMCA Certified Ratings Seal.

2.3 LOUVER SCREENS

A. General: Provide screen at each exterior louver.

1. Screen Location for Fixed Louvers: Interior face.
2. Screening Type: Insect screening.

B. Louver Screen Frames: Same type and form of metal as indicated for louver to which screens are attached.

C. Louver Screening for Aluminum Louvers:

1. Insect Screening: Flattened, expanded aluminum, as per manufacturer.

2.4 MATERIALS

- A. Aluminum Extrusions: ASTM B221, Alloy 6063-T5, T-52, or T6.
- B. Aluminum Sheet: ASTM B209, Alloy 3003 or 5005, with temper as required for forming, or as otherwise recommended by metal producer for required finish.
- C. Fasteners: Use types and sizes to suit unit installation conditions.
 1. Use Phillips flat-head tamper-resistant screws for exposed fasteners unless otherwise indicated.
 2. For fastening aluminum, use aluminum or 300 series stainless-steel fasteners.
 3. For color-finished louvers, use fasteners with heads that match color of louvers.
- D. Post-installed Fasteners for Concrete and Masonry: Torque-controlled expansion anchors, fabricated from stainless-steel components, with allowable load or strength design capacities calculated according to ICC-ES AC193 and ACI 318 greater than or equal to the design load, as determined by testing according to ASTM E488/E488M conducted by a qualified testing agency.
- E. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.

2.5 ALUMINUM FINISHES

- A. Color Anodic Finish: AAMA 611, AA-M12C22A32/A34, Class II, 0.010 mm or thicker.
 1. Color: As selected by Architect.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Locate and place louvers level, plumb, and at indicated alignment with adjacent work.
- B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.
- C. Provide perimeter reveals and openings of uniform width for sealants and joint fillers.
- D. Protect unpainted galvanized- and nonferrous-metal surfaces that are in contact with concrete, masonry, or dissimilar metals from corrosion and galvanic action by applying a heavy coating of bituminous paint or by separating surfaces with waterproof gaskets or nonmetallic flashing.

3.2 ADJUSTING

- A. Restore louvers damaged during installation and construction, so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by Architect, remove damaged units and replace with new units.

END OF SECTION 089119

CERAMIC TILING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Solid surface thresholds.
 - 2. Waterproof membrane for thinset application at shower.
 - 3. Crack isolation membrane.
 - 4. Metal edge strips.
- B. Related Requirements:
 - 1. Section 079200 "Joint Sealants" for sealing of expansion, contraction, control, and isolation joints in tile surfaces.
 - 2. Section 092900 "Gypsum Board" for cementitious backer units and glass-mat, water-resistant backer board.

1.3 DEFINITIONS

- A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1 apply to Work of this Section unless otherwise specified.
- B. ANSI A108 Series: ANSI A108.01, ANSI A108.02, ANSI A108.1A, ANSI A108.1B, ANSI A108.1C, ANSI A108.4, ANSI A108.5, ANSI A108.6, ANSI A108.8, ANSI A108.9, ANSI A108.10, ANSI A108.11, ANSI A108.12, ANSI A108.13, ANSI A108.14, ANSI A108.15, ANSI A108.16, and ANSI A108.17, which are contained in its "Specifications for Installation of Ceramic Tile."
- C. Module Size: Actual tile size plus joint width indicated.
- D. Face Size: Actual tile size, excluding spacer lugs.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review requirements in ANSI A108.01 for substrates and for preparation by other trades.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
- C. Samples for Verification:
 - 1. Full-size units of each type and composition of tile and for each color and finish required.
 - 2. Assembled samples mounted on a rigid panel, with grouted joints, for each type and composition of tile and for each color and finish required. Make samples at least 12 inches square, but not fewer than four tiles. Use grout of type and in color or colors approved for completed Work.
 - 3. Full-size units of each type of trim and accessory for each color and finish required.
 - 4. Stone thresholds in 6-inch lengths.
 - 5. Metal edge strips in 6-inch lengths.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Master Grade Certificates: For each shipment, type, and composition of tile, signed by tile manufacturer and Installer.
- C. Product Certificates: For each type of product.
- D. Product Test Reports: For tile-setting and -grouting products and certified porcelain tile.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Tile: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.
 - 2. Grout: Furnish quantity of grout equal to 3 percent of amount installed for each type, composition, and color indicated.

1.8 QUALITY ASSURANCE

A. Installer Qualifications:

1. Installer is a five-star member of the National Tile Contractors Association or a Trowel of Excellence member of the Tile Contractors' Association of America.
2. Installer's supervisor for Project holds the International Masonry Institute's Foreman Certification.
3. Installer employs Ceramic Tile Education Foundation Certified Installers.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.
- D. Store liquid materials in unopened containers and protected from freezing.

1.10 FIELD CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations for Tile: Obtain tile of each type and color or finish from single source or producer.
 1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.
- B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from single manufacturer and each aggregate from single source or producer.
 1. Obtain setting and grouting materials, except for unmodified Portland cement and aggregate, from single manufacturer.

2. Obtain waterproof membrane and crack isolation membrane, except for sheet products, from manufacturer of setting and grouting materials.
- C. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer:
1. Stone thresholds.
 2. Waterproof membrane.
 3. Crack isolation membrane.
 4. Metal edge strips.

2.2 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
1. Provide tile complying with Standard grade requirements unless otherwise indicated.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCNA installation methods specified in tile installation schedules, and other requirements specified.
- C. Factory Blending: For tile exhibiting color variations within ranges, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.

2.3 TILE PRODUCTS

- A. Ceramic Tile Type CT-1: Ceramic wall tile.
1. Manufacturers: Basis of design product indicated in Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Garden State Tile.
 - b. American Olean; a division of Dal-Tile Corporation.
 - c. Daltile.
 - d. Interceramic.
 2. Certification: Tile certified by the Porcelain Tile Certification Agency.
 3. Face Size: 4 by 12 inches.
 4. Thickness: 8 mm.
 5. Face: Plain with square edges.
 6. Dynamic Coefficient of Friction: Not less than 0.42.
 7. Tile Color, Glaze, and Pattern: Match Architect's sample.

8. Grout Color: Match Architect's sample.

B. Ceramic Tile Type CT-2: Ceramic wall tile.

1. Manufacturers: Basis of design product indicated in Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- a. Garden State Tile.
- b. American Olean; a division of Dal-Tile Corporation.
- c. Daltile.
- d. Interceramic.

2. Certification: Tile certified by the Porcelain Tile Certification Agency.

3. Face Size: 4 by 12 inches.

4. Thickness: 8 mm.

5. Face: Plain with square edges.

6. Dynamic Coefficient of Friction: Not less than 0.42.

7. Tile Color, Glaze, and Pattern: Match Architect's sample.

8. Grout Color: Match Architect's sample.

C. Porcelain Floor Tile Type FT-1: Porcelain floor tile.

1. Manufacturers: Basis of design product indicated in Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- a. Garden State Tile.
- b. American Olean; a division of Dal-Tile Corporation.
- c. Daltile.
- d. Interceramic.

2. Certification: Tile certified by the Porcelain Tile Certification Agency.

3. Face Size: 24 by 12 inches.

4. Thickness: 8 mm.

5. Face: Plain with square edges. Rectified

6. Dynamic Coefficient of Friction: Not less than 0.42.

7. Tile Color, Glaze, and Pattern: Match Architect's sample.

8. Grout Color: Match Architect's sample.

D. Porcelain Cove Base Type PB-1: Porcelain cove base.

1. Manufacturers: Basis of design product indicated in Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- a. Garden State Tile.
- b. American Olean; a division of Dal-Tile Corporation.

- c. Daltile.
 - d. Interceramic.
2. Certification: Tile certified by the Porcelain Tile Certification Agency.
 3. Face Size: 6 by 12 inches.
 4. Thickness: 8 mm.
 5. Face: Plain with square edges.
 6. Dynamic Coefficient of Friction: Not less than 0.42.
 7. Tile Color, Glaze, and Pattern: Match Architect's sample.
 8. Grout Color: Match Architect's sample.

2.4 THRESHOLDS

- A. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.
 1. Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to 1/16 inch above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to 1/2 inch or less above adjacent floor surface.
- B. Solid Surface Thresholds: ASTM C 615 with polished finish.
 1. Manufacturers: Basis of design product indicated in Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Corian.
 - b. Siltech.
 2. Description: Uniform, stone without veining.
 3. Description: Match Architect's sample.

2.5 WATERPROOF MEMBRANE

- A. General: Manufacturer's standard product that complies with ANSI A118.10 and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
- B. Polyethylene Sheet: Polyethylene faced on both sides with fleece webbing; 0.008-inch (0.2-mm) nominal thickness.
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Schluter Systems; Schluter-KERDI.

2. Location: Shower 315.

2.6 CRACK ISOLATION MEMBRANE

- A. General: Manufacturer's standard product that complies with ANSI A118.12 for standard performance and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.

2.7 SETTING MATERIALS

- A. Standard Dry-Set Mortar (Thinset): ANSI A118.1.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- a. Bostik, Inc.
- b. LATICRETE SUPERCAP, LLC.
- c. MAPEI Corporation.

2. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.1.

- B. Water-Cleanable, Tile-Setting Epoxy: ANSI A118.3.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- a. Atlas Minerals & Chemicals, Inc.
- b. Bostik, Inc.
- c. MAPEI Corporation.

2. Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to 140 and 212 deg F, respectively, and certified by manufacturer for intended use.

2.8 GROUT MATERIALS

- A. Sand-Portland Cement Grout: ANSI A108.10, consisting of white or gray cement and white or colored aggregate as required to produce color indicated.

- B. Standard Cement Grout: ANSI A118.6.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. ARDEX Americas.
 - b. LATICRETE SUPERCAP, LLC.
 - c. MAPEI Corporation.
- C. Water-Cleanable Epoxy Grout: ANSI A118.3, with a VOC content of 65 g/L or less.
 1. Manufacturers: Basis of design product: Laticrete Spectralock IG 2000. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. ARDEX Americas.
 - b. LATICRETE SUPERCAP, LLC.
 - c. MAPEI Corporation.
 2. Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to 140 and 212 deg F, respectively, and certified by manufacturer for intended use.

2.9 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Metal Edge Strips: Angle or L-shaped, height to match tile and setting-bed thickness, metallic or combination of metal and PVC or neoprene base, designed specifically for flooring applications; stainless-steel, ASTM A 666, 300 Series exposed-edge material.
 1. Manufacturers: Basis of Design product as indicated in Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Blanke Corporation.
 - b. Ceramic Tool Company, Inc.
 - c. Schluter Systems.
- C. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.
- D. Floor Sealer: Manufacturer's standard product for sealing grout joints and that does not change color or appearance of grout.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Bonsal American, an Oldcastle company.
 - b. Custom Building Products.
 - c. Southern Grouts & Mortars, Inc.

2.10 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 1. Verify that substrates for setting tile are firm; dry; clean; free of coatings that are incompatible with tile-setting materials, including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
 2. Verify that concrete substrates for tile floors installed with thinset mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.
 - a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
 - b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.
 3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
 4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with thinset mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Where indicated, prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot toward drains.
- C. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.3 CERAMIC TILE INSTALLATION

- A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
 - 1. For the following installations, follow procedures in the ANSI A108 series of tile installation standards for providing 95 percent mortar coverage:
 - a. Tile floors in wet areas.
 - b. Tile floors consisting of tiles 8 by 8 inches or larger.
 - c. Tile floors consisting of rib-backed tiles.
- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- D. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
 - 1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
 - 2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.

3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.
- E. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
 1. Porcelain Tile: 1/4 inch.
 - F. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.
 - G. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
 1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
 - H. Solid Surface Thresholds: Install solid surface thresholds in same type of setting bed as adjacent floor unless otherwise indicated.
 1. Do not extend waterproof membrane or crack isolation membrane under thresholds set in standard dry-set mortar. Fill joints between such thresholds and adjoining tile set on crack isolation membrane with elastomeric sealant.
 - I. Metal Edge Strips: Install at locations indicated.
 - J. Floor Sealer: Apply floor sealer to grout joints in tile floors according to floor-sealer manufacturer's written instructions. As soon as floor sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.
- 3.4 WATERPROOFING INSTALLATION AT SHOWER
- A. Install waterproofing to comply with ANSI A108.13 and manufacturer's written instructions to produce waterproof membrane of uniform thickness that is bonded securely to substrate.
 - B. Allow waterproofing to cure and verify by testing that it is watertight before installing tile or setting materials over it.
- 3.5 CRACK ISOLATION MEMBRANE INSTALLATION
- A. Install crack isolation membrane to comply with ANSI A108.17 and manufacturer's written instructions to produce membrane of uniform thickness that is bonded securely to substrate.
 - B. Allow crack isolation membrane to cure before installing tile or setting materials over it.

3.6 ADJUSTING AND CLEANING

- A. Remove and replace tile that is damaged or that does not match adjoining tile. Provide new matching units, installed as specified and in a manner to eliminate evidence of replacement.
- B. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
 - 1. Remove grout residue from tile as soon as possible.
 - 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.

3.7 PROTECTION

- A. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.
- B. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
- C. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

3

3.8 INTERIOR CERAMIC TILE INSTALLATION SCHEDULE

- A. Interior Floor Installations, Concrete Subfloor:
 - ~~1. Ceramic Tile Installation (Restrooms and Locker Rooms): TCNA F125 Full; thinset mortar on crack isolation membrane. OMITTED~~
 - 2. Ceramic Tile Installation: TCNA F131; water-cleanable, tile-setting epoxy over waterproof membrane; epoxy grout.
 - a. Ceramic Tile Type: Porcelain tile.
 - b. Grout: Water-cleanable epoxy grout.
- ~~B. Interior Wall Installations, Masonry or Concrete: Shower 315. OMITTED~~
- C. Interior Wall Installations, Wood or Metal Studs or Furring:

3

1. Ceramic Tile Installation (Restrooms and Locker Rooms): TCNA W244C or TCNA W244F; thinset mortar on cementitious backer units or fiber-cement backer board.
 - a. Ceramic Tile Type: Porcelain Tile.
 - b. Thinset Mortar: Standard dry-set mortar.
 - c. Grout: Sand-portland cement grout.

***** [OR] *****

~~2. Ceramic Tile Installation (Restrooms and Locker Rooms): TCNA W245 or TCNA W248; thinset mortar on glass mat, water resistant gypsum backer board.~~
OMITTED

~~D. Shower Wall Installations, Wood or Metal Studs or Furring: Shower 315.~~ OMITTED

END OF SECTION 093013

TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

1. Washroom accessories.
2. Shower room accessories.
3. ~~Warm air dryers. OMITTED~~
4. Underlavatory guards.
5. Custodial accessories.

3

- B. Related Requirements:

1. Section 093013 "Ceramic Tiling" for ceramic toilet and bath accessories.

1.3 COORDINATION

- A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.
- B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
2. Include anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
3. Include electrical characteristics.

- B. Samples: Full size, for each exposed product and for each finish specified.
 - 1. Approved full-size Samples will be returned and may be used in the Work.
- C. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.
 - 1. Identify locations using room designations indicated.
 - 2. Identify accessories using designations indicated.

1.5 INFORMATIONAL SUBMITTALS

- A. Sample Warranty: For manufacturer's special warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For accessories to include in maintenance manuals.

1.7 WARRANTY

- A. Manufacturer's Special Warranty for Mirrors: Manufacturer agrees to repair or replace mirrors that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, visible silver spoilage defects.
 - 2. Warranty Period: 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.2 WASHROOM ACCESSORIES

- A. Source Limitations: Obtain from single source from single manufacturer for each type of product listed.
- B. Toilet Tissue (Jumbo-Roll) Dispenser:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Tork
 - b. Bobrick Washroom Equipment, Inc.
 - c. Bradley Corporation.
2. Description: Two-roll unit with sliding panel to expose other roll.
3. Mounting: Surface mounted.
4. Capacity: 10-inch- diameter rolls.
5. Material and Finish: ABS plastic, black or gray.
6. Lockset: Tumbler type.
7. Refill Indicator: Pierced slots at front.

3

C. Combo Paper Towel Dispenser and Waste Receptacle:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AJW Architectural Products.
 - b. Bobrick Washroom Equipment, Inc.
 - c. Bradley Corporation.
2. Mounting: Semirecessed.
3. Minimum Receptacle Capacity: 12 gal.
4. Material and Finish: Stainless steel, No. 4 finish (satin).
5. Liner: Reusable vinyl liner.
6. Lockset: Tumbler type for waste receptacle.
7. Reference drawings for Basis of Design

3

D. Grab Bar:

1. Manufacturers: Basis of design product provided in the Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AJW Architectural Products.
 - b. Bobrick Washroom Equipment, Inc.
 - c. Bradley Corporation.
2. Mounting: Flanges with concealed fasteners.
3. Material: Stainless steel, 0.05 inch thick.
 - a. Finish: Smooth, No. 4 finish (satin) on ends and slip-resistant texture in grip area.
4. Outside Diameter: 1-1/2 inches.

5. Configuration and Length: As indicated on Drawings.

E. Sanitary-Napkin Disposal Unit:

1. Manufacturers: Basis of design product provided in the Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AJW Architectural Products.
 - b. Bobrick Washroom Equipment, Inc.
 - c. Bradley Corporation.
2. Mounting: Partition mounted, dual access or Surface mounted.
3. Door or Cover: Self-closing, disposal-opening cover and hinged face panel with tumbler lockset.
4. Receptacle: Removable.
5. Material and Finish: Stainless steel, No. 4 finish (satin).

F. Mirror Unit:

1. Manufacturers: Basis of design product provided in the Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AJW Architectural Products.
 - b. Bobrick Washroom Equipment, Inc.
 - c. Bradley Corporation.
2. Frame: Stainless-steel channel.
 - a. Corners: Mitered and mechanically interlocked.
3. Hangers: Produce rigid, tamper- and theft-resistant installation, using method indicated below.
 - a. One-piece, galvanized-steel, wall-hanger device with spring-action locking mechanism to hold mirror unit in position with no exposed screws or bolts.
4. Size: As indicated on Drawings.

G. Coat Hook:

1. Manufacturers: Basis of design product provided in the Drawings. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AJW Architectural Products.
 - b. Bobrick Washroom Equipment, Inc.

c. Bradley Corporation.

2. Description: Single-prong unit.

3. Material and Finish: Stainless steel, No. 4 finish (satin).

3

H. ~~High Speed Warm Air Dryer~~ - OMITTED

2.3 UNDERLAVATORY GUARDS

A. Under lavatory Guard:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Buckaroos, Inc.

b. Plumberex Specialty Products, Inc.

2. Description: Insulating pipe covering for supply and drain piping assemblies that prevents direct contact with and burns from piping; allow service access without removing coverings.

3. Material and Finish: Antimicrobial, molded plastic, white.

2.4 CUSTODIAL ACCESSORIES

A. Source Limitations: Obtain custodial accessories from single source from single manufacturer.

B. Utility Shelf:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. AJW Architectural Products.

b. Bobrick Washroom Equipment, Inc.

c. Bradley Corporation.

2. Description: With exposed edges turned down not less than 1/2 inch and supported by two triangular brackets welded to shelf underside.

3. Size: 16 inches long by 6 inches deep.

4. Material and Finish: Not less than nominal 0.05-inch-thick stainless steel, No. 4 finish (satin).

C. Mop and Broom Holder:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AJW Architectural Products.
 - b. Bobrick Washroom Equipment, Inc.
 - c. Bradley Corporation.
2. Description: Unit with shelf, hooks, holders, and rod suspended beneath shelf.
3. Length: 36 inches.
4. Mop/Broom Holders: Three, spring-loaded, rubber hat, cam type.
5. Material and Finish: Stainless steel, No. 4 finish (satin).
 - a. Shelf: Not less than nominal 0.05-inch-thick stainless steel.
 - b. Rod: Approximately 1/4-inch-diameter stainless steel.

2.5 MATERIALS

- A. Stainless Steel: ASTM A 666, Type 304, 0.031-inch minimum nominal thickness unless otherwise indicated.
- B. Steel Sheet: ASTM A 1008/A 1008M, Designation CS (cold rolled, commercial steel), 0.036-inch minimum nominal thickness.
- C. Galvanized-Steel Sheet: ASTM A 653/A 653M, with G60 hot-dip zinc coating.
- D. Fasteners: Screws, bolts, and other devices of same material as accessory unit and tamper-and-theft resistant where exposed, and of galvanized steel where concealed.
- E. Chrome Plating: ASTM B 456, Service Condition Number SC 2 (moderate service).
- F. Mirrors: ASTM C 1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.

2.6 FABRICATION

- A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.
- B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
- B. Grab Bars: Install to withstand a downward load of at least 250 lbf, when tested according to ASTM F 446.

3.2 ADJUSTING AND CLEANING

- A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.
- B. Remove temporary labels and protective coatings.
- C. Clean and polish exposed surfaces according to manufacturer's written instructions.

END OF SECTION 102800

HEAVY-DUTY VEHICLE LIFTS

1. GENERAL

1.1 SECTION INCLUDES

- A. Heavy Duty Vehicle lifts including safety equipment, controls and accessories of the following types:

1. ~~Modular in-ground axle engaging lifts 3 post MOD30 series.~~ Omitted
2. ~~75,000 lb parallelogram drive on flush mounted lifts.~~ Omitted
3. Heavy Duty Twin Post Vehicle Lift

1.2 RELATED SECTIONS

- A. Section 033000 – Cast-in-Place Concrete

1.3 REFERENCES

- A. ALI: Automotive Lift Institute.
- B. ANSI/ALI ALCTV: Safety Requirements for the Construction, Testing, and Validation of Automotive Lifts.
- C. International Standards Organization (ISO): ISO 9001 Quality management systems - Requirements.
- D. Underwriters Laboratories Inc. (UL): UL201 - These requirements cover garage equipment, rated not more than 600 volts, for use in accordance with the National Electrical Code, NFPA 70.

1.4 SUBMITTALS

- A. Submit under provisions of Section 013000 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
 2. Storage and handling requirements and recommendations.
 3. Installation manual.
 4. Operations manual.
 5. Maintenance manual.
 6. Safety manual.
- C. Shop Drawings: Template drawings and load reactions for lift application.
- D. BIM Models: Manufacturer's Building Information Model for lifts.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Factory trained authorized company, company insured for

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completed operations of installing lift.

- B. In addition to the other requirements outlined herein, the lift or lifts, shall comply with all applicable requirements of ANSI/ALI ALCTV standards. "Safety Requirements for the Construction," Care and Use of Automotive Lifts" and "Automatic Lift Standards for vehicle lifts" as published by the American national Standards Institute. The lift company Quality Management System shall be ISO9001 certified.
- C. Lift and all components shall be new. Used or refurbished lift and components not acceptable.
- D. Equipment being offered must be a model that has been in production for a minimum of 5 years.

1.6 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 recommended limits.

1.7 WARRANTY

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- A. Manufacturer's Warranty: Provide manufacturer's standard warranty (25 Years) for failures due to defective materials and workmanship. Manufacturer will not assume responsibility, or compensation, for unauthorized repairs or labor.
- B. Standard warranty on all structural components (legs, carriages, swing arm and sliders)
- C. Warranty on mechanical components (roller bearings and safeties) is a full 10 years
- D. Warranty on all power unit components (motor, pump and reservoir) is a full 2 years
- E. Hydraulic cylinders are covered by an initial 5 year warranty then an extended cylinder seal warranty thereafter.

2. PRODUCTS

2.1 MANUFACTURERS

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- A. Basis-of-design Manufacturer: Mohawk, which is located at: P.O Box 110 65 Vrooman Ave. Amsterdam, NY 12010 21666; Toll Free Tel: 800-833-2006; Tel: 518-842-1431; Web: <https://www.mohawklifts.com>
- B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Rotary Lift.
 - 2. Hoffman Services.
 - 3. Steril Koni.
 - 4. Mohawk Lifts.

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2.2 ~~MODULAR INGROUND AXLE ENGAGING LIFTS, 3 POST - OMITTED~~

2.3 ~~75,000 LB PARALLELOGRAM DRIVE ON FLUSH MOUNTED LIFT - OMITTED~~

2.4 30,000 LB HEAVY DUTY TWIN POST VEHICLE LIFT

A. Lift Characteristics:

1. Assembly shall consist of an electro-hydraulic lift unit, a control console and accessories. The control console shall be connected by required lengths of stainless steel hydraulic pipe or steel reinforced hydraulic hose, nylon compressed air line and electrical cable approved for use by the code authority of jurisdiction.

a. Each platform shall be constructed of steel plate supported by steel tubes.

2. Paint:

a. Marine grade paint zinc primer and epoxy top-coats on baseplates. The control panel, lift legs and runways are epoxy coated only.

b. Marine grade paint for the entire lift and on the control panel.

3. Hydraulic System:

a. The lift shall incorporate a master / slave hydraulic system which synchronizes elevations during both raising and lowering operations with the most adverse rated load placed on the lift. the lift shall come equipped with a fully automatic leveling control and manual over-ride as a backup. chains or cable equalized lifts are not acceptable

b. Internal hydraulic safeties on both cylinders shall detect main side or off side pressure of less than 200 lbs. should the pressure change or an imbalance occur for any reason, the lift will hydraulically lock on both sides.

c. Hydraulic cylinders will be made of 2-5/8" chrome rod. the oversized chrome rod will be packed in a 5" outer diameter x 6' long barrel, minimum.

d. full load working pressure will be a maximum of 2800 psi. higher pressure systems will not be accepted due to higher pressures causing seal leakage, premature power unit failure and cylinder wear.

e. cylinder packing consists of the following parker brand seals:

1) dynamic piston t – seals

2) 2 back-up rings

3) 2 static o-rings

4) rod wiper

5) rod t - seals

f. Lift will be equipped with external hydraulic safeties consisting of velocity fuses mounted on each cylinder which hydraulically lock in the event of a leak, plus a factory set pressure compensated flow control valve to limit descent speed.

g. seamless stainless steel hydraulic tubing with a burst rating of 14,000 psi, minimum.

h. All hydraulic fittings will be standard jic or o-ring boss fittings. Self flaring or compression fittings are not acceptable.

i. hydraulic fluid will be dexron iii, atf.

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4. Safety Locks:
 - a. Steel safety locks with a safety factor of not less than 3:1 shall be mounted one set to each lifting cylinder and shall allow the lift to be locked at a minimum of 8 different levels that employs a spring-applied air cylinder released CAM and latching rack.
 - b. Locks Shall Start locking at a minimum of (4) inches off the floor. The mechanical locks in each column will engage every (6) inches thereafter to a full lifting height.
 - c. Each lock body will be made of a minimum of 1 -1/2" thick, A-36 Grade Steel Measuring 7-1/4"X9-1/2"
 - d. Each individual locking device shall be capable of supporting the entire rated load of the lifting leg.
 - e. The locking mechanism shall be mechanically operated and shall normally be engaged in a locking position.

5. Power Unit:
 - a. Power unit can be mounted on either driver side or passenger side column upon installation. the power unit will consist of:
 - 1) electric motor
 - 2) hydraulic pump
 - 3) steel oil reservoir (plastic reservoir not acceptable)
 - 4) suction strainer
 - 5) hydraulic manifold valving
 - 6) NEMA 12 electrical enclosure with control transformer, motor starter and motor overload protection.
 - b. Electric motor is u.s. made 5 h.p. 208v / 230v 3 phase 60 hz minimum. the motor will have maximum full amp loads of 16.7 amps @ 208v, 15.2 amps @ 230v, and 7.6 amps @ 440v.
 - c. Hydraulic pump is a pressure balanced gear pump with fixed displacement, external tooth, and all steel gears. the pump must be extremely tolerant of fluid contaminants and resistant to galling caused by low viscosity start-up. hardcoat processed internal pump surfaces for extended service life.
 - d. The controls shall be a hand pendant wired from the power unit with the following functions: push button up switch, push button down, and push button lock release.

6. Lifting Column:
 - a. Each column will be constructed of 7-1/4"x 2-5/8" heavy duty forklift channel and be rigidly supported and joined together with 1-inch steel plate using 3 point fillet welds. formed, tubular, or bent columns are not acceptable.
 - b. Each column will be a minimum of 27-1/2" wide x 12" deep. these larger heavy duty columns give better, safer support when lifting heavier, uneven loads. smaller, lighter duty columns will not be accepted.
 - c. Each column will have a base plate made from 1" thick grade a-36 steel plates, minimum. the base plate will be 47-1/2" x 31-1/2", minimum. this base plate is designed to have less than 50 psi of pressure on the concrete floor with a full load.

7. Carriage Assembly:
 - a. Each column will have a carriage constructed of 1" inch steel plate joined to a ½"-inch backing plate by 3 point fillet welds, minimum.
 - b. Carriage assembly will roll up and down smoothly in the forklift mast columns on eight (8) 5 inch double sealed self-lubricating steel ball bearing rollers. plastic or nylon type slide blocks and bushing type rollers are not acceptable.
 - c. The carriage assembly shall not require any monthly cleaning with solvents or any lubrication. all wear surfaces shall be completely sealed and self lubricating with no grease requirements.
 - d. Each carriage will also include four (4) 4 inch double sealed self lubricating steel ball bearing rollers acting as side load bearings to eliminate the stress of unevenly distributed loads. plastic or nylon type bearings or slide blocks are not acceptable.
 - e. The carriage will be lifted by means of a direct drive lifting system. the carriage will be connected directly to the top of the cylinder by (2) 1-1/2" diameter astm a-311 class b hardened steel rods. cable, chain, and mechanical screw type designs are not acceptable.
 - f. Carriage will be lifted by means of a direct drive lifting system. the carriage will be connected directly to the top of the cylinder by (2) 1-1/2" diameter astm a-311 class b hardened steel rods. cable, chain, and mechanical screw type designs are not acceptable.

8. Lifting Arms:
 - a. Lifting arms will be constructed of three pieces of grade a-500-b structural tubing. this tubing must have a minimum tensile strength of 75,000 psi and minimum yield strength of 60,000 psi.
 - b. The first piece called "swing arm" will be made of 6" x 8" x 5/16" wall thickness. the second piece called "slider" will be made from 5" x 7" x 1/4" thick wall. slider ends shall be cap welded closed on both ends for added strength.
 - c. Lifting arms will accommodate cars through medium sized trucks weighing up to 30,000 lbs.
 - d. Closed reach of 47-3/4" and an open reach of 66-7/8". all four lifting arms will be equal in length to safely support front wheel drive vehicles as well as heavy ended vehicles with dual rear wheels, lift gates, dump body and utility bodies. asymmetrical arms or rotated columns are not acceptable.
 - e. Swing arm restraints will be made from 1-1/2" diameter heat treated rockwell hardness 50/55 grade 8 steel pins that slide through the carriage and are forced downward by a compression spring. the compression spring forces the pin to wedge against the swing arm securing it in place. the swing arms automatically secure themselves when the lift is raised and release automatically when the lift is fully lowered.
 - f. Arm restraints will be of an infinite position design causing arms to be held in place at every point in their rotation. geared teeth type arm restraints are not acceptable due to finite position restraint locations and tendency to chip gears found on this design which when "chipped" cause arms to not hold position.
 - g. Lifting pads will be made from 4-1/2" x 6" steel plate with steel corrugated

- surface for positive gripping on flat surfaces or lifting by unibody pinch welds. rubber or plastic lifting pads are not acceptable due to wear and decrease coefficient of friction as rubber pads get oily. while not recommended, when insisted by customer rubber topped pads are also available as an option and shall be ali certified.
- h. Lift pads must have a 4-1/2" x 6" lifting surface at all times including when truck adapters are in use. smaller lifting surfaces such as flip-up pads are not acceptable.
9. Lift Dimensions:
- a. Column height 10' 1 1/2" maximum
 - b. Maximum structural protrusion from the lift column shall be 13' 6". measured from the floor to the top of the cylinder at full lifting height.
 - c. Width between columns will be twelve (12) foot standard, minimum
 - d. Width between lifting arms will be 117" minimum.
 - e. pad height 7" maximum at lowest position when the lift is fully lowered.
 - f. lifting height 79" at the top of the pad at full lifting height.
 - g. lifting height with 5" truck adaptors 84" at full lifting height
 - h. lifting height with 7-1/2" truck adaptors 86-1/2" at full lifting height.
 - i. lifting height with 10" truck adaptors 89" at full lifting height.
 - j. lifting height maximum height with stacking 10" and 7-1/2" adaptors is 94-7/8"
10. Standard Equipment
- a. Truck adaptors (4 each) of 5", 7-1/2", and 10". flip type and screw type pads are not acceptable due to longer set up time, higher arm pad heights or smaller lift pad contact surface.
 - b. Male and female electrical Hubbell plugs, male plug prewired on lift with female plug in parts box.
 - c. (18) 1" x 10" Wej-it brand anchor bolts.
 - d. Dexron iii ATF for hydraulic pump and reservoir.
 - e. Shims to level the columns for proper installation.
 - f. safety and operations manual.
 - g. ANSI/ALI OIM booklet (ALI standard # aloim-2008 (r2013))
 - h. ANSI/ALI lifting it right booklet (ALI standard # sm01-2)
 - i. ANSI/ALI lifting point guide booklet (ALI standard # ALI/LP-guide)
 - j. ANSI/ALI safety decals affixed to lift.
- B. Capacity:
- 1. Models TP-30: 30,000 lbs. (34019 kg).
- C. Minimum Floor Thickness:
- 1. Model TP-30: 12 inch (see structural drawings for additional info).
- D. Equipment Foundation Requirements:
- 1. Consult factory for drawings.
- E. Finishes:
- 1. As selected by Architect from manufacturers full range of standard colors.

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- F. Lift shall be 3rd party certified by ETL testing laboratory and labeled with the ETL/Automotive Lift Institute (ALI) label that affirms the lifts meet conformance to all applicable provisions of American National Standard ANSI/ALI ALCTV and in compliance with International Building Code chapter 30 section 3001.2.

3.EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until supporting structures have been properly prepared.
- B. If supporting structure preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

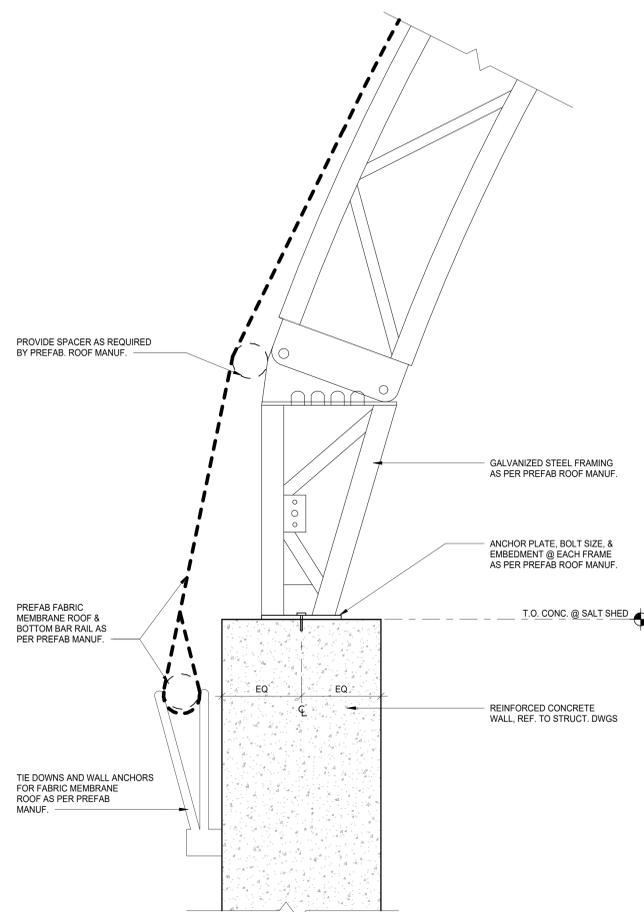
3.2 INSTALLATION

- A. Coordinate all in-ground penetrations in the slab on grade.
- B. Install in strict accordance with manufacturer instructions and in proper relationship with adjacent construction. Test for proper operation and retest if necessary, until satisfactory results are achieved.

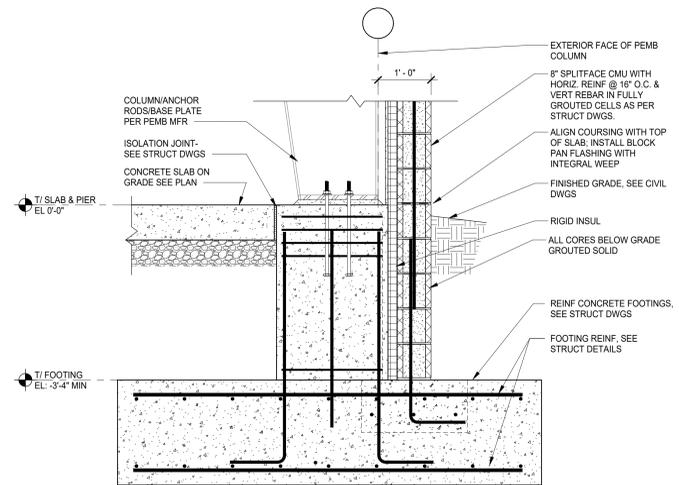
3.3 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

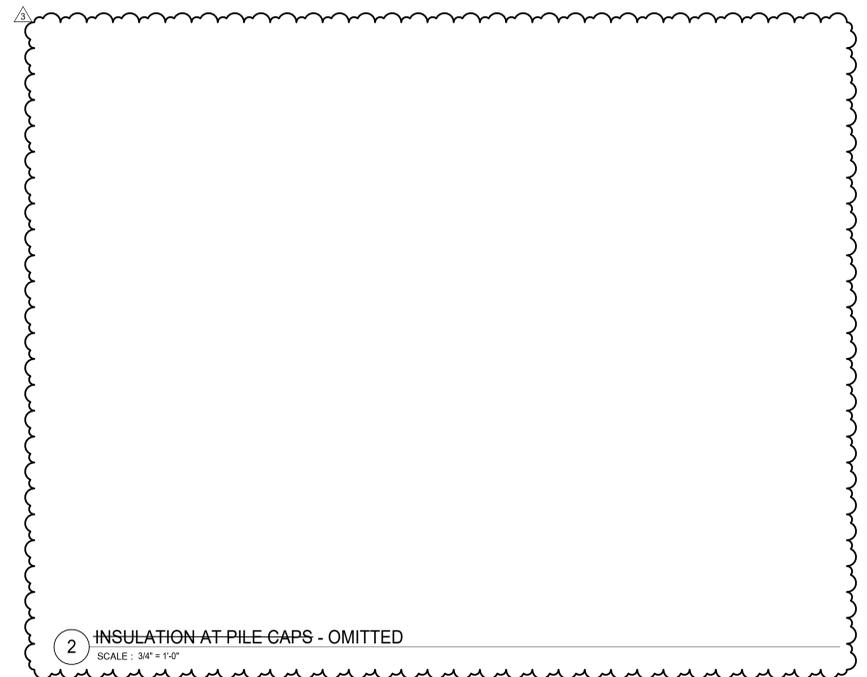
END OF SECTION 144500



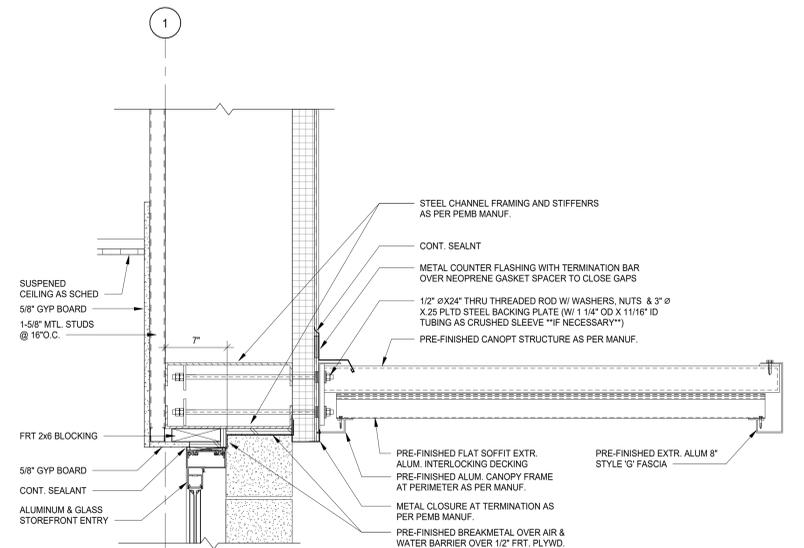
4 SALT SHED - CONNECTION SECTION
SCALE: 1 1/2" = 1'-0"



1 SECTION
SCALE: 3/4" = 1'-0"



2 INSULATION AT PILE CAPS - OMITTED
SCALE: 3/4" = 1'-0"



3 CANOPY
SCALE: 1 1/2" = 1'-0"

ISSUED FOR BID/PERMIT SET - INTENDED FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	04/28/2025	ISS
2	05/12/2025	ESB
3		ADDENDUM NO. 1

Professional Certification: I certify that these documents were prepared or approved by me, and that I am a duly licensed _____ under the laws of the (state, commonwealth or district) of _____
License No. _____
Expiration Date: _____

PUBLIC WORKS FACILITY

PENNELL ST. & W 2ND ST.
CHESTER, PA 19013

PHILADELPHIA
2 Penn Center, Suite 700
Philadelphia, PA 19102
Phone: 215.861.9001

Colliers Engineering & Design
CED Architecture, Inc. fka Bergmann Architectural Associates, Inc.

SCALE: AS SHOWN	DATE: 04/28/2025	DRAWN BY: KRJ/MSB	CHECKED BY: ESB
PROJECT NUMBER: C00C0004A	DRAWING NAME:	REVIEWED BY:	ESB

SHEET TITLE: EXTERIOR DETAILS

SHEET NUMBER: A503