ADDENDUM No. 04

1.1 PROJECT INFORMATION

A. Project Name: 2024 CAPITAL PROJECT PHASE 1.

B. Building(s): MAIN BUILDING

C. Owner: AFTON CENTRAL SCHOOL DISTRICT.

D. Architect: HIGHLAND ASSOCIATES.

E. Architect Project Number: 2025-005P.

F. Construction Manager: SCHOOLHOUSE CONSTRUCTION SERVICES.

G. Date of Addendum: DECEMBER 9, 2025.

1.2 NOTICE TO BIDDERS

A. This Addendum is issued to all registered plan holders 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.

1. Bid Date: DECEMBER 15, 2025, at same time and location.

1.3 RFI QUESTIONS / RESPONSES

A. Responses to RFIs are attached herewith and are a part of the contract documents.

1.4 GENERAL INFORMATION:

A. Afton School District Insurance Requirements are issued herewith.

B. Budgets for each contract for bonding/insurance purposes:

1. General: $2,700,000
2. Mechanical: $2,700,000
3. Plumbing: $485,000
4. Electrical: $1,045,000

1.5 ATTACHMENTS

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

1. Specification Section 087100 Hardware, dated 12/09/2025, (new).
2. Specification Section 096536.13 ESD Vinyl Tile Flooring, dated 12/092025, (new).
3. Specification Section 123616 Metal Countertops, dated 12/09/2025, (new).

B. The following specification sections were issued in Addendum No. 03 but were not listed:

1. Specification Section 055213 Pipe and Tube Railings, dated 12/01/2025, (new).
2. Specification Section 088000 Glazing, dated 12/01/2025, (new).

C. This Addendum includes the following attached sheets:

1. Architectural Sheet A-701 Finish Schedule, Legend & Notes, dated 12/09/2025, (re-issued).

1.6 REVISIONS TO SPECIFICATIONS:

A. Specification Section 092600 Drywall, (not reissued).

1. Add Paragraph 2.3 F.

F. Abuse-Resistant Gypsum Board: ASTM C1396/C1396M gypsum board, tested in accordance with ASTM C1629/C1629M.

1. Core: regular type, 5/8 inch, Type X.
2. Surface Abrasion: ASTM C1629/C1629M, meets or exceeds Level 3 requirements.
3. Indentation: ASTM C1629/C1629M, meets or exceeds Level 3 requirements.
4. Soft-Body Impact: ASTM C1629/C1629M, meets or exceeds Level 3 requirements.
5. Long Edges: Tapered.
6. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.

END OF ADDENDUM No. 04

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 12/3/25

Company: Andrew R. Mancini Associates **Name:** Joe Mancini

Phone #: 607.754.7070 **E-mail:** joe@armoggi.com

Contract(s) bidding on: general construction

Drawing Referenced:

Spec Section Referenced:

Other References:

REQUEST:

Is there a sepc for new window replacements?

ANSWER:

085113 Aluminum Windows Specification issued in Addendum No. 3.

Answered By: Cheryl Zondlo, Highland Assoc. **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
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CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 12/3/25

Company: Andrew R. Mancini Associates **Name:** Joe Mancini

Phone #: 607.754.7070 **E-mail:** joe@armoggi.com

Contract(s) bidding on: general construction

Drawing Referenced:

Spec Section Referenced:

Other References:

REQUEST:

On dwg S101, foundation plan noted scale appears to be incorrect. The noted dwg dimensions seem to be 1/4" = 1'-0" and not the noted 1/8" = 1'- 0". Please clarfiy.

ANSWER:

Correct, foundation plan scale is 1/4" = 1'-0".

Answered By: Cheryl Zondlo, Highland Assoc. **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
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(Please Type or Print Neatly)

Date: 12/3/25

Company: Andrew R. Mancini Associates **Name:** Joe Mancini

Phone #: 607.754.7070 **E-mail:** joe@armoggi.com

Contract(s) bidding on: general construction

Drawing Referenced:

Spec Section Referenced:

Other References:

REQUEST:

Section 083113 access doors was not included in addendum #1. Will this section be provided?

ANSWER:

Yes, 083113 Access Doors Specification was issued in Addendum No. 3.

Answered By: Cheryl Zondlo, Highland Assoc. **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
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(Please Type or Print Neatly)

Date: 12/3/25

Company: Andrew R. Mancini Associates **Name:** Joe Mancini

Phone #: 607.754.7070 **E-mail:** joe@armoggi.com

Contract(s) bidding on: general construction

Drawing Referenced: varies

Spec Section Referenced:

Other References:

REQUEST:

Will the owner remove any exist'g stair treads, landings and other floor systems in preparation for new rubber stair treads & landings?

ANSWER:

It is the Contractor's responsibility to demo, furnish, and install all materials indicated to be replaced unless otherwise noted in the Bidding Documents.

Answered By: Cheryl Zondlo, Highland Assoc. **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
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(Please Type or Print Neatly)

Date: 12/3/25

Company: Andrew R. Mancini Associates **Name:** Joe Mancini

Phone #: 607.754.7070 **E-mail:** joe@armoggi.com

Contract(s) bidding on: general construction

Drawing Referenced: varies

Spec Section Referenced:

Other References:

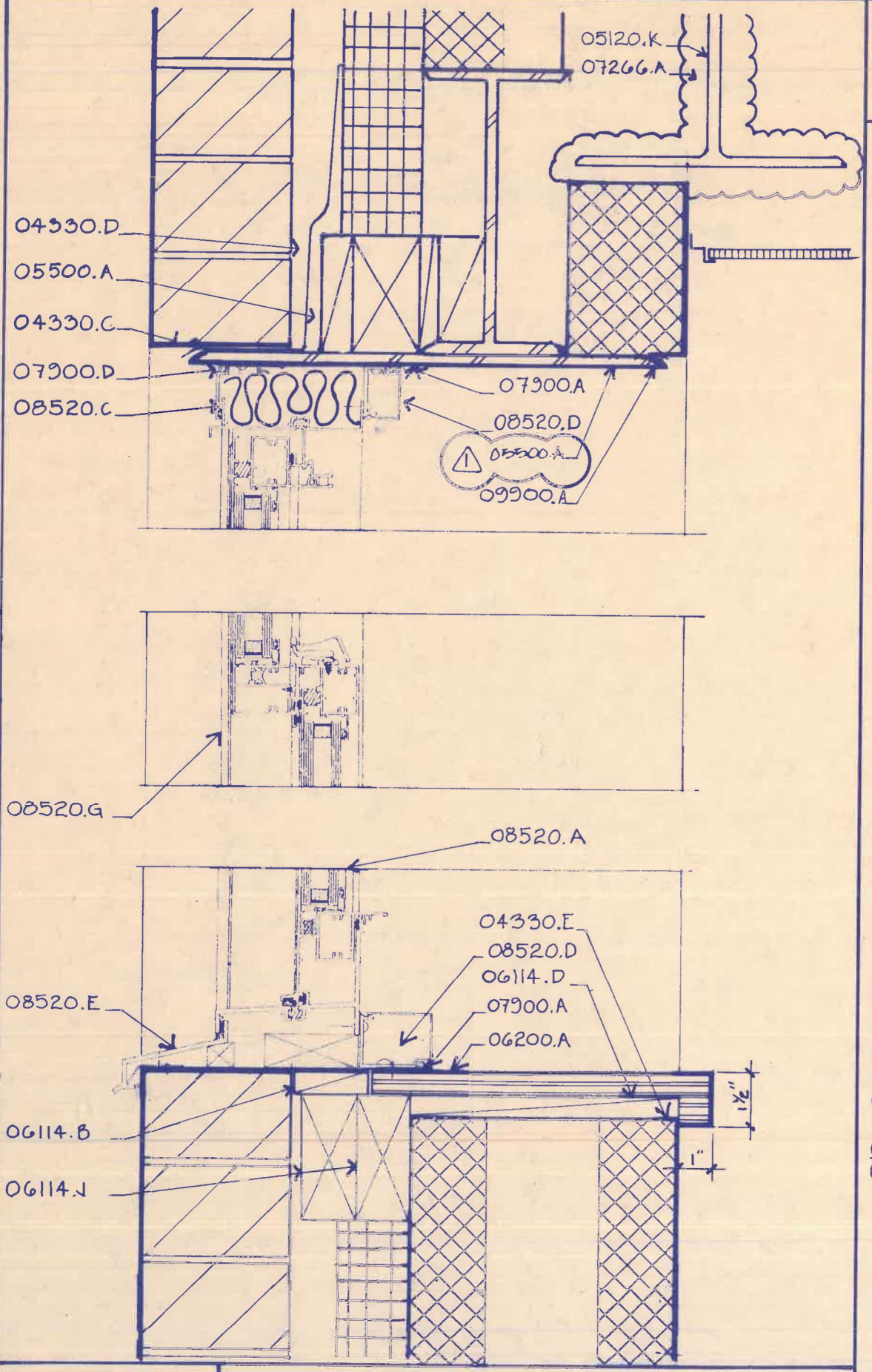
REQUEST:

Can a head, jamb & sill detail be provide for the window replacement work? This will help us see how you want to treat the window condions & patch the openings. Please consider this request.

ANSWER:

Refer to the following attachment of the window head, jamb, and sill from the original construction drawings dated 1993.

Answered By: Cheryl Zondlo, Highland Assoc. **Date:** 12-09-25



L15 HEAD/SILL DETAIL

3"=1'-0"

MA

04330 CAVITY WALL
04330.A FACE BRI
04330.C WEEPHOI
04330.D CONTINU
04330.E 8" CONCR
04330.J 6" CONCR
04330.L CONTROL
04330.M FACE BRI
04330.P 4" SOLID

05120 STRUCTURAL
05120.I STEEL BE
05120.L STEEL CO

05500 MISCELLANEO
05500.A STEEL LI

06114 WOOD BLOCK
06114.B WOOD BL
06114.D 2'-0" WIDE
06114.J 2" X 4" WO

06200 FINISH CARPE
06200.A 3/4" PLYW
06200.P PLASTIC L

06410 CUSTOM CASE
06410.Z 1'-0" WIDE

07900 JOINT SEALER
07900.A CONTINUO
07900.D CONTINUO

08520 ALUMINUM WI
08520.A DOUBLE H
08520.C 1/2" SUBFI
08520.D SNAP TRI
08520.E ALUMINUM
08520.G SCREEN

09900 PAINT
09900.A PAINT

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(Please Type or Print Neatly)

Date: 12/3/25

Company: Andrew R. Mancini Associates **Name:** Joe Mancini

Phone #: 607.754.7070 **E-mail:** joe@armoggi.com

Contract(s) bidding on: general construction

Drawing Referenced: A406

Spec Section Referenced:

Other References:

REQUEST:

What is the exist'g clg system in the lower gym locker rooms?

What is the new clg type going back in at the lower gym locker rooms?

ANSWER:

Existing 2x2 Acoustical Ceiling Tile to be replaced with 2x2 Acoustical ceiling tile. A Lower gym locker room ceiling demo and replacement plan was issued in addendum No. 03.

Answered By: Cheryl Zondlo, Highland Assoc. **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
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Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/24/25

Company: W&D Smith and Sons Construction **Name:** Gavin McMillan

Phone #: 607-692-4204 **E-mail:** gavinm@smithsitedev.com

Contract(s) bidding on: General Construction

Drawing Referenced:

Spec Section Referenced:

Other References:

REQUEST:

1) I did not see a multiple contract summary of work in addendum #1 as noted
2) I did not see the spec section for access doors in addendum #1 as noted
3) Will there be another extension given since there are still several spec sections missing. A 2-day extension doesn't seem appropriate given the amount of information we are still waiting on and the Thanksgiving holiday that follows the anticipated release of Addendum #2.

ANSWER:

1) 011200 Multiple Contract Summary Specification was issued in Addendum #03.
2) 083113 Access Door Specification was issued in Addendum #03
3) Bids were extended in Addendum #03. New bid due date is December 15th, same time, same place.

Answered By: Cheryl Zondlo, Highland **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
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Cheryl Zondlo czondlo@ha-pa.com
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CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/25/25

Company: W&D Smith and Sons Construction **Name:** Gavin McMillan

Phone #: 607-692-4204 **E-mail:** gavinm@smithsitedev.com

Contract(s) bidding on: General Construction

Drawing Referenced:

Spec Section Referenced:

Other References:

REQUEST:

From a window vendor:

1. Door schedule on sheet A-601 calls for door #025A to be a Aluminum door rated 45 minutes.
- aluminum is not a rated material
- aluminum door manufactures do not offer half-lite doors (Type R) nor do they offer fire rated doors; fire rated assembly manufactures do not offer half-lite doors they only offer full height glass doors.
- there is no spec for aluminum doors, or fire rated assemblies, Please provide specifications for what is required
2. Exterior windows shown on sheet A-602 has a note "2" x 4 ½" Aluminum Storefront System(EFCO 403x) with a leader pointing to a operable hung window, not fixed storefront as labeled. Please clarify if windows W-1 thru W-6 are to be storefront or operable windows. Please provide a spec for what is required.
3. Fire Rated Frames type Bl-1 thru Bl-5; there is no specification for fire rated assemblies; please provide specification
4. Please extend the bid date once specs have been issued so that suppliers have time to review and accurately price based on specifications.

ANSWER:

1) See revised drawing on A-601 issued in Addendum No. 3. Door material type corrected
2) Updated note Window Type sheet A-602. 085113 Aluminum Windows Specification issued in Addendum No.3.
3) Borrowed Lites are H.M. frames w/ FRSG. Refer to wall types for fire rating.
4) Bids were extended in Addendum No. 3. New bid due date is December 15th, same time, same place.

Answered By: Cheryl Zondlo, Highland **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
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Cheryl Zondlo czondlo@ha-pa.com
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Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/25/25

Company: W&D Smith and Sons Construction **Name:** Gavin McMillan

Phone #: 607-692-4204 **E-mail:** gavinm@smithsitedev.com

Contract(s) bidding on: General Construction

Drawing Referenced: A-402

Spec Section Referenced:

Other References:

REQUEST:

1) Referencing drawing A-402, the plan view for the new layout has Construction Key Note 5 indicated on it. It reads to provide 2 hour spray fireproofing to the steel beams, floor deck, and columns. This note is shown in 034 – Agriculture Lab, 034C Animal Room, and 034E Welding Room. There is no structural drawing provided identifying the existing structural members to be fireproofed. Please provide this information so beam & columns sizes and lengths are available along with metal deck information. did not see a multiple contract summary of work in addendum #1 as noted

ANSWER:

1) An existing Structural Framing Plan at Ag Lab was added to drawing A-402, issued in Addendum 03.

Answered By: Cheryl Zondlo, Highland **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
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(Please Type or Print Neatly)

Date: 11/25/25

Company: W&D Smith and Sons Construction **Name:** Gavin McMillan

Phone #: 607-692-4204 **E-mail:** gavinm@smithsitedev.com

Contract(s) bidding on: General Construction

Drawing Referenced: A-403

Spec Section Referenced:

Other References:

REQUEST:

1) Reference drawing A-403, E-Sports area. On demo plan 4/A-403, Demo Key Note 4 is shown, indicating to remove ceiling. It is pointed at what appears to be an existing window opening. Is this note mislabeled and is intended to read to remove window and frame? If yes, is there any intention for the ceiling or if applicable soffit to be removed? Note there is no reflected ceiling plan provided for this area, so if a new ceiling is intended to be provided, an RCP is requested (Finish Plan Schedule indicates this room's ceiling is Existing). On new floor plan 5/A-403 a W-4 window is indicated at the opening where Demo Keny Note 4 is shown. Also, in the new floor plan there's cabinetry shown without any elevation references. It's assumed this is moveable furniture to be provided outside of the General Construction scope of work – please confirm.

ANSWER:

1. Refer to Legend and Key Notes to the right of each plan. No replacement of ceiling required at E-Sports area.
Furniture to be provided outside of the General Construction scope of work.

Answered By: Cheryl Zondlo, Highland **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
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Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/25/25

Company: W&D Smith and Sons Construction **Name:** Gavin McMillan

Phone #: 607-692-4204 **E-mail:** gavinm@smithsitedev.com

Contract(s) bidding on: General Construction

Drawing Referenced: S-702

Spec Section Referenced:

Other References:

REQUEST:

1) Reference drawing S-702. Please confirm that we are to replace the railing system at H/S701. Please provide a plot plan showing the new landing and stair layout. Does the new stairs step in like the existing or are they 6' wide. This will affect the layout of the railing. Please provide a spec for the new railing system.
2) Are we to provide embedded nosings? The note says says to refer to the architectural plans, but I don't see anything on the architecturals. Please provide a spec if these are required.

ANSWER:

1) Railing System at H/S701 to be replaced. See plan A-404 new landing and stair layout plan included in Addendum 03. Railing System Specification included in Addendum 03.
2) Embedded nosing detail will be issued in Addendum #05.

Answered By: Cheryl Zondlo, Highland **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and Connor Fitzgerald - connor.fitzgerald@schoolhouse.construction
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
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Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/24/2025

Company: Fahs Construction Group **Name:** Lukas Kresge

Phone #: 607-724-1835 **E-mail:** fahsgcestimating@fahsconstruction.com

Contract(s) bidding on: General Construction

Drawing Referenced: N/A

Spec Section Referenced: 012200 Unit Prices, Addendum 1

Other References: N/A

REQUEST:
Specification 012200 Unit Prices, 3.1, A, 1 & 2 tell us to reference specification 083113 Access Doors And Frames. Addendum 1 notes that this specification was provided in Addendum 1. It was not, please provide. Additionally it was noted at the pre-bid that these doors are to be considered fire rated. Please confirm.

ANSWER:

1) 083113 Access Doors and Frames included in Addendum 03. Doors to be Fire Rated, see wall types for specific fire ratings.

Answered By: Cheryl Zondlo, Highland **Date:** 12-09-25

FAHS #10

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and Connor Fitzgerald - connor.fitzgerald@schoolhouse.construction
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/24/2025

Company: Fahs Construction Group **Name:** Lukas Kresge

Phone #: 607-724-1835 **E-mail:** fahsgcestimating@fahsconstruction.com

Contract(s) bidding on: General Construction

Drawing Referenced: A-701, A-501

Spec Section Referenced: N/A

Other References: N/A

REQUEST:
Drawings A-701 was revised in addendum 1 and removed the section noting SS-1: Stainless Steel Countertop. However this is still shown on multiple elevations (1/A-501, 4, 5, & 9/A-502). Please provide product information and/or specification.

ANSWER:

1) SS-1: Stainless Steel Countertop added back to the Interior Finish Legend on Drawing Sheet A-701, and designations retained on the interior elevation drawings listed above.

2) Providing new specification section "12 36 16 Metal Countertops" with more information.

Answered By: Emily Vail, Highland **Date:** 12/09/2025

FAHS #11

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and Connor Fitzgerald - connor.fitzgerald@schoolhouse.construction
Cheryl Zondlo czondlo@ha-pa.com
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Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/24/2025

Company: Fahs Construction Group **Name:** Lukas Kresge

Phone #: 607-724-1835 **E-mail:** fahsgcestimating@fahsconstruction.com

Contract(s) bidding on: General Construction

Drawing Referenced: 18/A-501

Spec Section Referenced: Addendum 1

Other References: N/A

REQUEST:
Detail 18/A-501 was added via Addendum 1. There is a note that reads"Hatched Area Indicates Extents & Location Designated For Illuminated Dimensional Logo (Logo TBD by Owner)". What is expected here? Is the logo itself by owner? Is the design of the logo by owner and the contractor is responsible for the logo? If the contractor is responsible for the logo please provide further information for us to bid off of.

ANSWER:

The design of the intended logo has yet to be determined by the Owner. The Contractor is responsible for providing and installing the physical logo signage. Please refer to "Illuminated Dimensional Logo" under the Miscellaneous category in the Interior Finish Legend on sheet A-701 for logo signage criteria.

Answered By: Emily Vail, Highland **Date:** 12/09/2025

FAHS #12

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and Connor Fitzgerald - connor.fitzgerald@schoolhouse.construction
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/24/2025

Company: Fahs Construction Group **Name:** Lukas Kresge

Phone #: 607-724-1835 **E-mail:** fahsgcestimating@fahsconstruction.com

Contract(s) bidding on: General Construction

Drawing Referenced: A-504

Spec Section Referenced: Addendum 1

Other References: N/A

REQUEST:
Equipment & Fixture Schedule Notes: Note 9, second bullet states "Wash Fountain At The Technology Lab Shall Receive A Mirror - See Elevations." What Technology Lab is being referenced here? Detail 1/A-501 for STEAM Lab 024 is the only elevation that we could determine to meet this description. Please clarify.

ANSWER:
1) Equipment & Fixture Schedule note 9 revised to "Wash Fountain at STEAM Lab 024 Shall Receive a Mirror - See Elevations."

Answered By: Cheryl Zondlo, Highland **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and Connor Fitzgerald - connor.fitzgerald@schoolhouse.construction
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CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/24/2025

Company: Fahs Construction Group **Name:** Lukas Kresge

Phone #: 607-724-1835 **E-mail:** fahsgcestimating@fahsconstruction.com

Contract(s) bidding on: General Construction

Drawing Referenced: A-601

Spec Section Referenced: Addendum 1

Other References: N/A

REQUEST:
Please reference the Door Schedule that was revised in Addendum 1 on A601.
-Opening C106, the remarks column tells us to replace glass in existing door and HM frame. This opening is noted as door type B. Type B has no glass. Please clarify.

-Opening 138, calls for new FRSG in the door but the frame does not have a fire rating. Please advise.

ANSWER:
1) Door C106 revised to door type E addressed in Addendum No. 04.
2) Door 138 revised to Tempered Safety Glass in Addendum No. 03.

Answered By: Cheryl Zondlo, Highland **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and Connor Fitzgerald - connor.fitzgerald@schoolhouse.construction
Cheryl Zondlo czondlo@ha-pa.com
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Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 12/24/25

Company: Fahs Construction Group **Name:** Brett Cerretani

Phone #: 607-724-1835 **E-mail:** bcerretani@fahsconstruction.com

Contract(s) bidding on: General Construction

Drawing Referenced:

Spec Section Referenced:

Other References:

REQUEST:

No multiple contract summary or matrix was issued with the contract documents or in addendum #1. Please issue.

ANSWER:

011200 Multiple Contract Summary issued in Addendum 03.

Answered By: Cheryl Zondlo, Highland **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and Connor Fitzgerald - connor.fitzgerald@schoolhouse.construction
Cheryl Zondlo czondlo@ha-pa.com
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(Please Type or Print Neatly)

Date: 12/24/25

Company: Fahs Construction Group **Name:** Brett Cerretani

Phone #: 607-724-1835 **E-mail:** bcerretani@fahsconstruction.com

Contract(s) bidding on: General Construction

Drawing Referenced:

Spec Section Referenced:

Other References: Bid Date

REQUEST:

With addendum #2 being issued on Wednesday 11/26 it is very likely given the holiday and holiday weekend that most won't even open it until Monday 12/1. This will only leave 3 days to digest the information and turn around pricing. Can the bid date be moved to the following week?

ANSWER:

Bids were extended in Addendum No. 3. New bid due date is December 15th, same time, same place.

Answered By: Cheryl Zondlo, Highland **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and Connor Fitzgerald - connor.fitzgerald@schoolhouse.construction
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/25/2025

Company: Forno Enterprises, Inc **Name:** Shawn Murphy

Phone #: 607-865-7860 **E-mail:** shawn@teamforno.com

Contract(s) bidding on:

Drawing Referenced: A-601

Spec Section Referenced: No specification provided

Other References:

REQUEST:

Door schedule sheet A-601: Door #025A is listed as an aluminum door type 'R' and rated 45 minutes. Aluminum door suppliers do not offer fire rated doors, and they do not offer half-lite doors. Fire rated assemblies suppliers do not offer half-lite doors (this will likely be a hollow metal door, or a half-lite FRP door if a fire rating is required).
Please provide a specification for what is required.

ANSWER:

See revised drawing on A-601 issued in Addendum No. 3. Door material type corrected.

Answered By: Cheryl Zondlo, Highland **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and Connor Fitzgerald - connor.fitzgerald@schoolhouse.construction
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
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Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/25/2025

Company: Forno Enterprises, Inc **Name:** Shawn Murphy

Phone #: 607-865-7860 **E-mail:** shawn@teamforno.com

Contract(s) bidding on:

Drawing Referenced: A-602

Spec Section Referenced: No specification provided

Other References:

REQUEST:

Sheet A-602:

1) Exterior Windows : there is a note with leader calling for " 2" x 4 1/2" Aluminum Storefront System(EFCO 403X) " but the leader is pointing to a operable hung window, not fixed storefront as noted. Please clarify if elevations W-1 thru W-6 are hung windows or fixed storefront. Please provide a specification for what is required.

2) Borrowed Lites BL-1 thru BL-5 call for fire rated Aluminum Windows, please provide a spec for fire rated windows.

3) Please extend the bid date once specs are issued so that suppliers have time to price accurately.

ANSWER:

1) Updated Window Type sheet A-602 with corrected window types addressed in Addendum No. 3. 085113 Aluminum Window Specification issued in Addendum No. 3.
2) Borrowed Lites are H.M. w/ FRSG. Refer to wall types for fire rating.
4) Bids were extended in Addendum No. 3. New bid due date is December 15th, same time, same place.

Answered By: Cheryl Zondlo, Highland **Date:** 12-09-25

1 RFI #__

BIDDER QUESTION FORM

BIDDER INFORMATION:

Company: Hamburg Overhead Door

Telephone: 716-649-3600

Fax:

Project Name: Afton CSD

Contract: jacob@hamburgdoor.com

Contact Name: Jacob Brown

INFORMATION REQUESTED:

Drawing Reference #:

Specification Section #: Page #:

Is there specifications for overhead coiling doors. doors 034E and 034F (door type O)

ANSWER:
Overhead Coiling Door Specification to be issued in Addendum No. 05.

Cheryl Zondlo, Highland Assoc. 12-09-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/24/25

Company: C&S **Name:** Fred Weber

Phone #: 315-515-7616 **E-mail:** fweber@cscos.com

Contract(s) bidding on: HVAC temperature controls

Drawing Referenced: M301

Spec Section Referenced:

Other References:

REQUEST:

When either EF-2-AG or EF-3-AG are engaged, 1,600 CFM will be redirected from the Agriculture Lab (Room 034). This room is served by AHU-2. When the Return Air of AHU-2 is reduced by that 1,600 CFM, that will need to be made up in order to maintain a consistent supply air flow by either bringing in an additional 1,600 CFM of outdoor air through AHU-2, or modulating the return/exhaust damper on AHU-2 to blend in more return air. Is the existing coil sized to accept an additional 1,600 CFM of outdoor air on a design day?

ANSWER:

Yes, the removal of supply air from AHU-2 shown on the MD drawings provided the necessary capacity to handle the 1600 CFM in question.

Answered By: Manish Patel, Highland **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/24/25

Company: C&S **Name:** Fred Weber

Phone #: 315-515-7616 **E-mail:** fweber@cscos.com

Contract(s) bidding on: HVAC temperature controls

Drawing Referenced: M301

Spec Section Referenced:

Other References:

REQUEST:

Regarding the sequence on AHU-2, should the controls contractor work with the balancer to determine set positions for the outdoor air intake and return air/exhaust dampers on the unit based on room exhaust conditions? Is it acceptable for these settings to be communicated to AHU-2 over the network as long as proper failsafe measures are in place to prevent freeze conditions?

ANSWER:

Yes and Yes

Answered By: Manish Patel, Highland **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
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Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/24/25

Company: C&S **Name:** Fred Weber

Phone #: 315-515-7616 **E-mail:** fweber@cscos.com

Contract(s) bidding on: HVAC temperature controls

Drawing Referenced: M101

Spec Section Referenced:

Other References:

REQUEST:

How is EF4 in the air compressor room to be controlled?

There is a motorized damper shown next to the SN-4 Welding Snorkel, is this intentional? If so, what is this damper serving?

ANSWER: Provide reverse-acting wall-mounted thermostat with adjustable setpoint.

Answered By: Manish Patel, Highland **Date:** 12-8-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/24/25

Company: C&S **Name:** Fred Weber

Phone #: 315-515-7616 **E-mail:** fweber@cscos.com

Contract(s) bidding on: HVAC temperature controls

Drawing Referenced: E200-201, E204, M101

Spec Section Referenced:

Other References:

REQUEST:

There are four ATC panels shown; however, they are labeled ATC 1 through 3. ATC2 is shown twice, one on drawing E-200 outside the AG room and the other in room 144 on E204. Can you please confirm that there will be (4) ATC panels and that they will be assigned to the circuit designations shown on the E drawings? Also there is an additional ATC panel shown in room 172A in drawing M101 but not shown on the E drawings. What circuit feeds this panel?

ANSWER:

There are (4) ATC panels per Drawing M101 and M-102.
- ATC-1 is in Office 144 (for RTU)
- ATC-2 is in Storage 034A (for VAV boxes, etc.)
- ATC-3 is in Janitor Storage 172A (for RTU)
- ATC-4 is in Pool Mech 046 (change tag from ATC-1 to ATC-4) (for VAV boxes, DHU-1, etc.)

Answered By: Manish Patel, Highland **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
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Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/24/25

Company: C&S **Name:** Fred Weber

Phone #: 315-515-7616 **E-mail:** fweber@cscos.com

Contract(s) bidding on: HVAC temperature controls

Drawing Referenced: MD101

Spec Section Referenced:

Other References:

REQUEST:

What trade will be responsible for removal of the dust collector controls (i.e. wiring, conduit, switch) as shown on drawing MD101?

ANSWER:

Mechanical Contractor.

Answered By: Manish Patel, Highland **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/24/25

Company: C&S **Name:** Fred Weber

Phone #: 315-515-7616 **E-mail:** fweber@cscos.com

Contract(s) bidding on: HVAC temperature controls

Drawing Referenced: M200

Spec Section Referenced:

Other References:

REQUEST:

What is the plan for the PDU add alt? PDU-1 and CU-PDU-1 are not shown on the equipment schedule, in the specifications, or control sequences.

ANSWER:

PDU-1 cut sheets (condensed version) are on drawing M-307. PDU-1 shall be controlled by the pool room wall-mounted space temperature and humidity sensor (and space VOC sensor) on drawing M-307. The full version of the PDU-1 and CU-PDU-1 cut sheet is attached, including sequence of operation by the DesertAire controller. BAS shall tie into DesertAire controller for alarms, monitoring, and setpoint adjustment through Bacnet or LonWorks.

Answered By: Manish Patel, Highland **Date:** 12-09-25

SelectAire™ Series Dehumidifiers

Project: Afton K-12 CSD Pool DHU

Location: Afton , New York

Unit Model #: SA35EG7MCH_____

System Tag: PDU-1

Date: 6/26/2025

DESERT AIRE REPRESENTATIVE

Firm: HC Nye

Address: 6405 Flank Dr

City, State Zip Code: Harrisburg, PA, 17112

Phone: 7175612500

Fax: 7175612577

Contact: Robert Julius

E-Mail: Robert.Julius@hcnyeco.com

Section 1 Product Scope & Details

- Product Scope
- Engineering Specialties

SelectAire™ Series Dehumidifiers

PRODUCT SCOPE

Quantity: 1
Model #:
SA35EG7MCH_____
Tag #: PDU-1
Unit Weight: 7600 lbs

Capacities:
- Supply Air: 15100 CFM
- Outside Air: 6270 CFM
- Exhaust Air: 7550 CFM
  Dehumidification
- EAT: 82.0 °F DB / 69.6 °F WB
- Total Cooling Capacity: 429 MBH
- Total Sensible Capacity: 241.51 MBH
- Moisture Removal Capacity: 178.0 lb/hr
- Total Heat of Rejection: 542 MBH

DX Refrigeration System:
- Refrigerant Type: R-454B
- Scroll Compressor(s), Nominal Tons: 35
- Hot Gas Reheat Condenser Coil
- Coil Coating: Coated
- Receiver w/ Flooding Valve
- Hot Gas Bypass Included

Airflow Configuration:
- Supply Discharge Location: Horizontal
- Return Intake Location: Bottom
- Exhaust Disch Location: Horizontal
- Supply ESP: 4.00 in WC
- Supply TSP: 5.46 in WC
- Supply Blower VFD: Included
- Exhaust ESP: 0.60 in WC
- Exhaust TSP: 2.77 in WC
- EC Exhaust Blower Included

Air Filters:
- Supply Filters: Standard

Enclosure:
- Location: Outdoor
- Service Access: Left Side
- Separate Electrical Compartment
- Galvanneal with Powder Coat Finish

Condensate Drain Pan:
- A minimum of 20-Gauge Stainless Steel, Sloped
- 1.5 in. PVC Drain Connection (External P-trap required)

Unit Electrical:
- Main Power (V/Ph/Hz): 208/3/60
- MCA (Amps): 225
- MOPD (Amps): 250
- SCCR (kA): 65
  When protected by Class J, T, or RK1 fuses
- Disconnect: Included, Fused

Controls:
- Model CM3510
- Temp & RH Sensors: Installed in unit by Desert Aire
- Occupancy Timer w/ BMS Override
- Remote Display Terminal: Included
- BMS Compatibility: BACnet MSTP

Water Condenser:
- Circuit A Condenser 1: Pool

Air Cooled Condenser:
- Model #: RC8D029C3S21926
- # of Fans: 4
- Unit Weight: 1537 lbs
- Voltage/Phase/Hz - 208/230-3-60
- MCA (Amps): 28.9
- MOPD (Amps): 35
- SCCR (Amps): 5kA
- Rated Ambient Condition - 100 °F
- Coil - Cu Tubing w/ Al Fins

Auxiliary Heat:
- Hot Water Coil
- Capacity: 400 MBH
- Control Signal: Modulating

Warranties (Parts Only):
- Standard Warranty: 2 years
- Compressor Warranty: 5 Years
- Air Side Coil Warranty: 10 Years

Exhaust / Outside Air Chart

Mode	Outside air CFM	Exhaust air CFM
Unoccupied	0	0
Occupied	3000	3500
Purge	6865	7550
Max outside air	6865	7550

* Occupied mode matches existing unit Outside air / exhaust CFM

MCA/MOPD Calculation

J 0

Project Afton K-12 CSD Pool DHU
Tag PDU-1

Series SA35
Aux Heat Hot Water Coil
Refrigerant R-454B

S/A Airflow	15100	cfm @	4.00	in ESP at Maximum Fl
S/A Blower Motor (ea)	25	HP		
S/A Blower Motor (qty)	1			
E/A Airflow	7550	cfm @	0.60	in ESP at Maximum Fl
E/A Blower Motor (ea)	7.5	HP		
E/A Blower Motor (qty)	1			
Pkgd Cond Motor (ea)	0	HP		
Pkg Cond Motor (qty)	0			
Ext. Source Capture Mtr	0	HP		

Voltage 208/3/60

	FLA
Compressor 1	49.0
Compressor 2	0.0
Compressor 3	33.3
Compressor 4	33.3
S/A Blwr Motor (ea)	66.0
E/A Blwr Motor (ea)	24.9
Pkgd Cond Motor (ea)	0
Ext. Source Capture Mtr	0
Electric Heater (single point)	N/A
Total Transformer (VA)	400

Unit MCA	225	Amps
Unit MOPD	250	Amps

Section 2 Installation Overview

- Contractor's Scope of Work
- External System Wiring
- Unit Connections and Clearances

SelectAire™ Series Dehumidifiers

INSTALLING CONTRACTOR'S SCOPE OF WORK

The following scope of work is provided as an overview of the installing contractor's responsibility for proper installation and operation of the Desert Aire unit being provided. This scope outlines requirements directly related to the Desert Aire unit. It is the contractor's responsibility to review all Installation and Operation manuals, mechanical drawing and or other related documentation provided by others for complete implementation of the Desert Aire unit into the building envelope.

- Personnel certified to service refrigeration equipment per city, state, and federal guidelines effective 1/1/92.
- Furnish and install mounting apparatus for dehumidifier.
- Furnish and install all related ductwork. Including Outside Air Damper if required.
- Furnish and install all necessary water piping and piping specialties; such as, condenser water, condensate drain, P-trap, hot water coil, steam coil, balancing valves, and control valves.
- Furnish and install all electrical wiring and controls per "External System Wiring" sheet included within this section.
- Furnish and install remote mounted exhaust fan or space pressure relief (as required). Wire to unit per "External System Wiring" sheet for unit control of exhaust fan based on occupancy schedule.
- Install outdoor remote condenser. Furnish and install mounting apparatus for remote condenser along with line sets and additional refrigerant charge per Installation and Operation Manual.
    - Caution: Standard SelectAire series dehumidifiers are internally configured for line sets up to 100' and a condenser located up to 10' below the dehumidifier. Please contact the factory for assistance if the field installed line set configuration will exceed either of these values. See unit label for actual field charge required.
- Balance the system's airflow per Desert Aire's Instruction manual.

Complete unit start-up per "Installation and Operation Manual" and complete Start-up Report. Return Start-up Report to Desert Aire Corp. to activate the warranty.

Installation and Operation (I&O) manuals are provided with the unit at time of delivery. If I&O Manuals are required before delivery they can be obtained by:

- Download at Desert Aire Corp. Web site at www.desert-aire.com
- Contacting your local Desert Aire Corp. Representative

SelectAire™ Series Dehumidifiers

EXTERNAL SYSTEM WIRING

This external system-wiring sheet is provided as a summary detailing the external wiring for proper system operation. All listed components are field installed and wired to the unit's terminal block by the installing contractor. Others supply components unless stated otherwise.

HIGH VOLTAGE

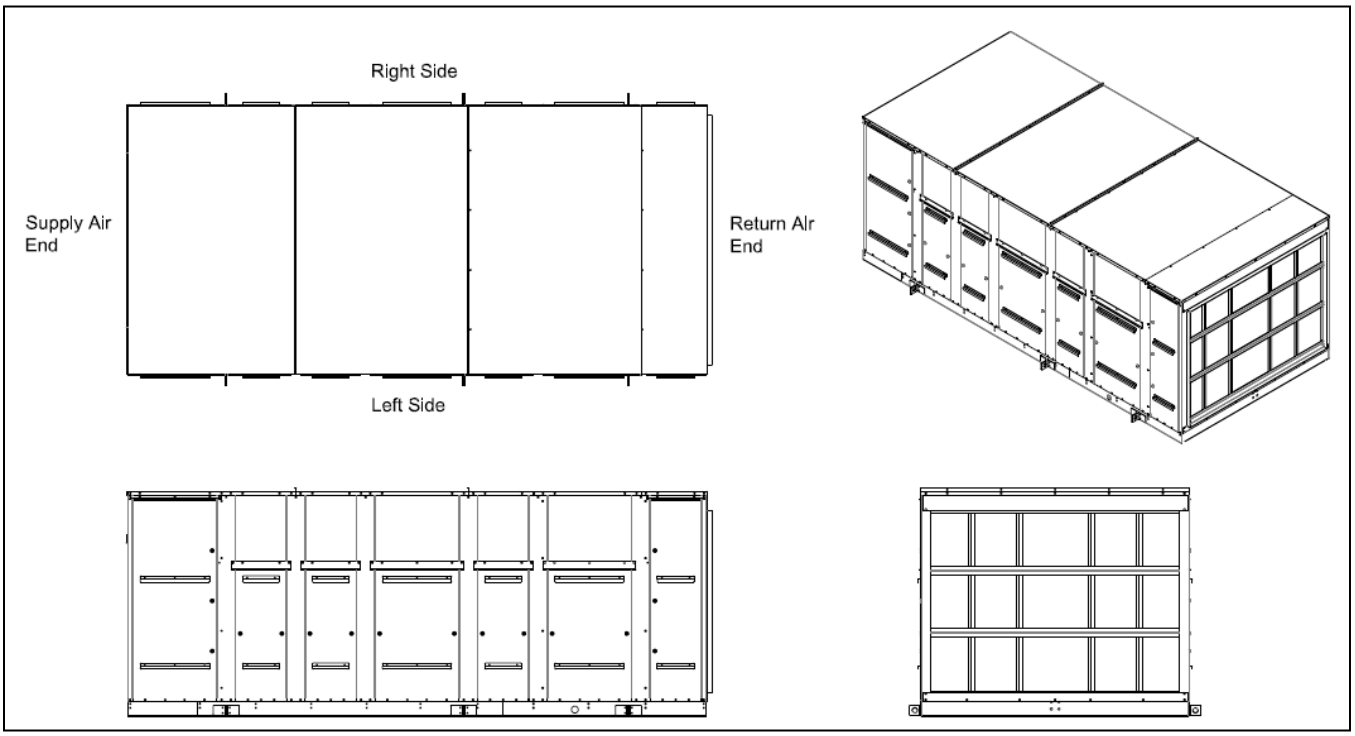
- Dehumidifier Supply Power
- Separate 120/1 power (by others) required for Heat Trace, GFI, Lighting, or other options specified.

LOW VOLTAGE

- Remote Condenser Supply Power
- CM3510 Optional Remote Interface Panel
  - (Mounts up to 1,500 feet) Controller Provided by Desert Aire
  - Field Installed
- Temperature & Humidity Sensor
  - Installed by Desert Aire
  - Provided by Desert Aire
  - Field Installed
- General Fault Alarm for BMS
  - Optional for contractor to utilize
- VOC Sensor
  - Provided by Desert Aire
  - Field Installed
- Differential Pressure Sensors
  - Provided by Desert Aire
  - Field Installed
- Occupancy
  - Optional input for contractor to utilize with binary contact closure,
  - Start/Stop by BMS, or
  - Occupancy Timed Scheduling on DA controller
- Smoke Detector (by others) if applicable
  - See wiring diagram for proper termination & rating
  - Optional for contractor to utilize
- External Auxiliary Heater
  - Operated by the unit's controller
- External Auxiliary Heater Interlock
  - Operated by the unit's controller

UNIT CONNECTIONS & CLEARANCES

18 to 60 Ton Units:



Utility	Location
Electrical, Filter and Service Access	Left Side
Remote Condenser Refrigerant Lines	Left Side
Water Piping Connection(s)	Left Side
Aux Heat Connection	Left Side
Condensate Drain	Left Side
Supply Air Discharge	Horizontal
Return Air Intake	Bottom
Outdoor Intake	Horizontal
Exhaust Discharge	Horizontal

Notes:

1. Electrical door clearance typically requires 36” clearance on Utility side shown. Refer to local codes. See General Arrangement drawing for specific location of electrical enclosure.
2. 48” clearance at filter rack locations recommended for ease of maintenance.
3. A clearance at one side equivalent to the unit width should be considered for major service such as heat exchanger replacement.

Will need to verify the required connection location, unit orientation

SEQUENCE OF OPERATION

Supply Blower Runs Continuously.

CIRCUIT HEAT SINK CONFIGURATION:
Compressor Starts On a Call for dehumidification and or cooling. The system has two configurable circuits as follows:
Circuit "A" Priority: Hot Gas Reheat / Air Cooled Remote Condenser / Water

Circuit "B" Priority: Hot Gas Reheat / Air Cooled Remote Condenser

Dehumidification
First Stage: Circuit "A" starts and runs in respective order listed in the "Circuit Heat Sink Configuration Section".

Second Stage: Circuit "B" starts and runs in respective order listed in the "Circuit Heat Sink Configuration Section".

Cooling
First Stage: The exhaust damper before the evaporator coils opens. Circuit "A" will start and operate with the air reheat off reject its heat to following condenser(s), in respective order, listed in the "Circuit Heat Sink Configuration Section".

Second Stage: Circuit "B" will start and operate with the air reheat off reject its heat to following condenser(s), in respective order, listed in the "Circuit Heat Sink Configuration Section".

Air Heating
Occupied Times:

First Stage: The cold air exhaust damper (damper after evaporator) will open to maximize heating capacity. Circuit "A" will start and operate in the air reheat mode.

Second Stage: The auxiliary heater is activated by a 0-10VDC control signal from the dehumidifier.

Unoccupied Times:

First Stage: The auxiliary heater is controlled by a 0-10VDC control signal from the dehumidifier

Pool Water Heating

Circuit A

First Stage: If there is a call for pool/spa water heating and when heat recovery is available, the pool water condenser will be activated.

Second Stage: An auxiliary pool/spa heater dry contactor will be closed, to activate the pool heater by others.

Circuit B

First Stage: An auxiliary pool/spa heater dry contactor will be closed, to activate the pool heater by others.

Exhaust and Outside Air

The operation of the SelectAire system's exhaust fan is to maintain the negative pressure of the pool room by controlling the fan's EC motor using inputs from the differential pressure transducer input signal.

The dehumidifier controls the flow rate of the outdoor air in each mode by measuring the pressure differential across the calibration plate in the intake section to vary the outside air damper. This provides a direct measure of outdoor air volume.

The system provides 5 individual settings for outdoor air flow rates that are field programmable:

- Unoccupied - Controlled via time clock
- Occupied - Controlled via time clock
- Event - Controlled via time clock
- Max OA - Controlled via VOC sensor set point activation
- Purge - Controlled via contact closure

EMERGENCY SYSTEM SHUTDOWN

Terminal points are available for a binary contact closure by others to control unit shutdown by smoke detector or other similar device. An open contact in the 24 VAC circuit will deactivate motors, fans and compressors.

SelectAire™ Series Dehumidifiers

DEHUMIDIFIER SPECIFICATIONS

Unit Description

Enclosure: The unit shall be fabricated per the following method: The base rails and supports shall be 12-gauge galvanneal steel channels; corner posts and side posts shall be formed of 16-gauge galvanneal steel; top panels and removable side panels shall be 16-gauge galvanneal steel. Removable panels with insert nut screw sites shall be provided to allow easy access to all internal parts and components. The electrical control box and switch panel shall be enclosed in a separate compartment, complete with a hinged door.

Paint and Finish: Prior to painting, all metal parts shall be pretreated to remove oils and dirt and rinsed with an ionized solution. Painting shall be by a powder coat technique to assure positive adherence with a high impact finish. All sides of panels shall be painted after manufacturing. The paint shall be High Yield Polyester. The paint shall be rated to meet a minimum of 1,000-hour salt spray test (ASTM B117), have a minimum Direct Impact Resistance of 160 in-lbs (ASTM D2794), have a minimum flexibility of ¼" Mandrel (ASTM D522, Method B) and a minimum 1000-hour Humidity Resistance (ASTM D2247). The unit color shall be light gray.

Refrigeration System:

Refrigerant: The system's operating refrigerant shall be R-454B.

Compressors : The compressors shall be a dual circuit, tandem pair, heavy-duty scroll-type. The circuits shall be staged. The compressor shall be equipped with high- and low-pressure safety switches, with internal protection from overheating. The compressor shall be externally vibration isolated.

Receiver: The unit shall include a refrigerant receiver with rotolock service valves. The receiver shall be sized for full-system refrigerant capacity to allow system pump down, and for operating at the highest efficiency over a wide range of load conditions

Evaporator Dehumidifier Coils:

Fins: Fins shall be die-formed, aluminum and shall be damage resistant. Extruded fin collars provide maximum heat transfer. Fin spacing shall be 10 FPI (fins per inch) maximum. The coil shall be a maximum of 38" in height to avoid water carryover to the reheat coil and re-evaporation into the air stream.

Tubes: Coils shall be fabricated from seamless drawn copper. The tubes shall be hydraulically expanded into the fins to form a permanent metal-to-metal bond for maximum heat transfer and stability.

Each coil shall have its own drain pan.

Testing: Coils shall be leak tested with 420 psig nitrogen.

Refrigerant Condenser Coils:

Air-Cooled Condenser (Reheat Coil):

The reheat coil shall be positioned with a minimum of 5” clearance from the DX coil to help prevent water re-evaporation.

Fins: Fins shall be die–formed aluminum and shall be damage resistant. Fin spacing shall be 12 FPI (fins per inch) maximum.

Tubes: Coils shall be fabricated from seamless drawn copper. The tubes shall be hydraulically expanded into the fins to form a permanent metal–to–metal bond for maximum heat transfer and stability. The coil shall be a minimum of two (2) rows deep.

Testing: Coils shall be leak tested with 420 psig nitrogen.

Coil Coating

All air-side refrigerant heat exchangers (coils) shall be coated with a corrosion inhibitor (coating). The coating shall be applied after the coil is assembled and shall cover fins, exposed tubes, headers, and sheet metal casing. The application process shall achieve full penetration of the coil, so the fins are entirely coated, and shall be wear resistant and shall have negligible impact on heat transfer or airflow (no pooling or bridging). Using coated fin stock is not an acceptable alternative, because it leaves bare edges in the airstream, and does not coat tube or sheet metal parts. The following standards shall be met or exceeded:

1) Dry film thickness of 0.6-1.2 mils per ASTM D7091, or heat transfer reduction less than 3%
2) 5B rating for cross-hatch adhesion per ASTM B3359
3) 15,000 hours of salt spray per ASTM B117, or 6,000 hours per ASTM G85 A3
4) Temperature range –40°F to 250°F
5) Warranted to be free of defects in materials and workmanship for five (5) years
6) REACH and RoHS compliant.

Pool Water-Cooled Condenser Circuit A:

The dehumidifier's Circuit A shall be equipped with a water cooled condenser that rejects heat to the pool/spa water loop. The condenser shall be tube-in-tube, cupronickel construction with CPVC stub-outs.

Outdoor units shall have the condenser wrapped in insulation and heat traced. The heat tracing shall be wired back to the control panel for an independent 120V power connection.

Remote Air-Cooled Condenser Circuit A:

The size and capacity shall be in accordance with the unit schedule. The system shall be able to reject all the recovered heat (T.H.R.) from the unit to the outdoor condenser.

The RC8 series units shall be provided with a weatherproof electrical panel with factory mounted door interrupt disconnect switch.

The cabinet shall be constructed of G90 galvanized steel. The sides shall be one-piece construction. The unit shall be provided with lifting eyes located on the fan discharge panel.

The coil shall be constructed of copper tubing in a staggered design. Tubes shall be hydraulically expanded into full-collared, plate-type aluminum fins. Coils shall be factory leak-tested and sealed with caps.

The fan motors shall be heavy-duty PSC or three-phase with permanently lubricated ball bearings and built-in overload protection. All motors shall be factory-wired with leads terminating in a weatherproof junction box located on the outside of the unit cabinet.

The fan diameter shall not exceed 30". All units shall have a dynamically balanced fan with aluminum blades.

The fans shall be cycled based on internal head pressure on multiple fan units.

Fan guards shall be heavy-gauge, closed-mesh steel wire with vinyl coating. Guards shall be contoured for maximum rigidity.

Remote Air-Cooled Condenser Circuit B:

The size and capacity shall be in accordance with the unit schedule. The system shall be able to reject all the recovered heat (T.H.R.) from the unit to the outdoor condenser.

The RC8 series units shall be provided with a weatherproof electrical panel with factory mounted door interrupt disconnect switch.

The cabinet shall be constructed of G90 galvanized steel. The sides shall be one-piece construction. The unit shall be provided with lifting eyes located on the fan discharge panel.

The coil shall be constructed of copper tubing in a staggered design. Tubes shall be hydraulically expanded into full-collared, plate-type aluminum fins. Coils shall be factory leak-tested and sealed with caps.

The fan motors shall be heavy-duty PSC or three-phase with permanently lubricated ball bearings and built-in overload protection. All motors shall be factory-wired with leads terminating in a weatherproof junction box located on the outside of the unit cabinet.

The fan diameter shall not exceed 30". All units shall have a dynamically balanced fan with aluminum blades.

The fans shall be cycled based on internal head pressure on multiple fan units.

Fan guards shall be heavy-gauge, closed-mesh steel wire with vinyl coating. Guards shall be contoured for maximum rigidity.

Remote Air-Cooled Condenser:

Standard Series: The condenser will be provided with a 1100 RPM motor designed fan blade to produce 69dbA or less noise @ 3 meters in accordance with AHRI standard 370-2001.

Auxiliary Heater

Hot Water Coil:

The capacity shall be in accordance with the schedule. The coil shall be integral to the unit.

Fins: Fins shall be die-formed, aluminum and shall be damage resistant. Fin spacing shall be 14 FPI.

Tubes: Coil shall be fabricated from seamless drawn copper. The tubes shall be hydraulically expanded into the fins to form a permanent metal-to-metal bond for maximum heat transfer and stability.

Coils shall be leak tested with 315 psig of nitrogen.

Freeze protection: The system will include a temperature sensor that is located on the top third of the discharge side of the hot water coil. When this sensor reads a temperature of 35°F or below, the unit will de-energize the blower(s), close the outdoor air damper, open the return damper (if applicable) and force the heat output to maximum. The unit will go into alarm mode and will need to manually reset to restart the unit.

The modulating or on/off control valve shall be provided and installed by the mechanical contractor to meet the required flow rate and pressure drop listed in the schedule.

Unit Location:

The unit shall be designed for a rooftop, roof curb application with bottom return air connection and schedule supply air connection.

Ventilation and Exhaust Air:

Extended SelectAire™ with Auto Balancing Control:

The unit will include the SelectAire™ Energy Recovery Ventilation Air and Exhaust Assembly with up to 25% of the supply air volume for ventilation air. Exact amount of ventilation and exhaust air is as listed on the specification schedule.

The integral control system will maintain the correct proportions of return air, supply air, exhaust air and ventilation air. The system will monitor the static pressure differential at three locations; the ventilation air intake, evaporator coil and the zone vs. ambient.

By monitoring the pressure differential across the ventilation air orifice plate, the unit controller will modulate the ventilation air damper to ensure the correct amount of ventilation air during occupied times. The amount of ventilation air can be set through the unit controller.

The system will monitor the pressure differential across the evaporator coil and will modulate the evaporator by-pass damper to ensure the proper amount of evaporator cfm; therefore, optimizing the moisture removal capacity of the system at all times.

The system will monitor the pressure difference between the zone pressure and the ambient pressure once the initial field air balance has been completed and setup values entered into the controller. This will vary the exhaust fan volume via the fan motor VFD to help guarantee the negative pressure within the space.

The exhaust section includes a calibrated balance plate that allows the system to automatically balance the volume of air between the cold and warm exhaust based on the mode of operation.

SelectAire™ Recovery System:

The unit will be supplied with an integral fresh air/exhaust air heat recovery system for the introduction of outside air, to comply with ASHRAE Ventilation Standards 62.1-2010 and local health codes.

The exhaust air can be exhausted either before or after the evaporator coil, providing the ability to extract energy from the return air if heating is required. The control decision will be determined by the thermostat's heating and cooling setpoints.

On a call for heating, it is desirable to extract as much heat as possible from the exhaust air. Energy is recovered from the exhaust air by first passing it through the circuit "A" evaporator coil in a cooling / heat pump operation. The cooled air is exhausted and the "Heat Pump" energy plus the heat of rejection is returned to the air stream or water (as required) as sensible heat. The minimum COP of this operation is 4.4.

On a call for cooling, warm return air from the space is exhausted before the evaporator coil when it is desirable to remove as much heat as possible from the building. The refrigeration system serves to dehumidify and/or air condition the return air from the space.

Exhaust will be provided with plenum fan(s) and motor(s) in direct drive arrangement on a frame independent of the unit base, properly sized for all exhausts modes listed in the unit schedule.

The ventilation air is brought in through the integral plenum, and isolated from the exhaust air. It will include MERV 7, 2" thick, extended surface type filters and a motorized, proportional modulating damper assembly.

The warm exhaust, cold exhaust, and ventilation air dampers each will be a motorized, proportional modulating damper assembly. All dampers will be "fail to close".

In addition, a motorized, proportional modulating damper assembly will be included between the evaporator coils to ensure proper face velocity and system efficiency in all modes of operation (Occupied and Unoccupied).

The controller will automatically adjust these dampers to maintain the specified flow rates (R/A, O/A and E/A) through the use of integral flow measurement devices.

The SelectAire™ heat recovery system will use the "heat pump" principle to recovery energy on a call for heating by operating one of the dual refrigeration circuits in conjunction with exhaust air.

The outdoor air shall be filtered by a 2” MERV 7 pleated filter.

The unit shall be supplied with an outdoor rain hood and bird screen.

Electrical Control Panel:

The electrical control panel will be easily accessible on one side so that service can be performed from the side of the unit. It will be of adequate size so as to house all electrical controls and devices. The unit will be provided with single point power connection to serve controls, fans, electric auxiliary heater (if provided), and compressors, factory wired to the power connection lug set. The electrical controls will include low-voltage transformers to supply 24 VAC control power, clearly labeled high- and low-voltage terminal strips, high- and low-pressure control (with manual reset of the high-pressure cutout and automatic reset of low-pressure cutout), and an anti-short cycling timer to protect against compressor cycling.

Short Circuit Current Rating (SCCR): The complete unit shall be rated in compliance with NEC® 110.10 and UL 1995 at nameplate voltage maximum, when protected by Class J, Class T or Class RK1 fusing. Electrical markings on the unit shall include, but not limited to the MCA (Minimum Circuit Ampacity), the MOPD (Maximum Over-Current Protection Device) and the SCCR.

Disconnect: Provided with a factory mounted and wired disconnect switch.

Control System:

A digital control system using a modern microprocessor will be used to accurately and precisely control the DESERT AIRE dehumidification system and the space environment. The controller will include three (3) levels of password protection.

The controller will provide precise system control and feature an easy-to-read display which indicates actual operating and set points. The display will be remote mountable up to 1,640 feet from the unit. The controller will have a built-in occupancy timer.

Temperature Sensor:

The unit shall include a temperature sensor to be field-installed.

Relative Humidity Sensor:

The unit shall include a relative humidity sensor to be field-installed.

Aquastat:

The dehumidifier shall be provided with one aquastat per pool or spa water condenser. The aquastat shall be installed by the mechanical contractor in the main water loop upstream of the pool heater and dehumidifier, constant water flow required across the aquastat.

BMS Compatibility:

The units controller shall have the following BMS compatibility: BacNet MS/TP communication card.

The following Control Points will be available as read/write through the on board terminal or through the BMS system:

- Zone Air RH Setpoint
- Zone Air RH Deadband
- Zone Air Temperature Setpoint
- Zone Cooling Deadband
- Zone Cooling Stage Deadband
- Zone Heating Deadband
- Energy Recovery Deadband
- Pool 1 Temperature Setpoint (optional)
- Pool 1 Temperature Differential (optional)
- Pool 1 Stage Deadband (optional)
- Pool 2 Temperature Setpoint (optional)
- Pool 2 Temperature Differential (optional)
- Pool 2 Stage Deadband (optional)
- Network Occupancy Command (optional)
- Network Event Command (optional)
- Network Purge Command (optional)
- Network Off Command (optional)
- Remote Reset

The controller will include the following alarms:

- Low Suction Pressure Circuit A
- Low Suction Pressure Circuit B
- High Discharge Pressure Circuit A
- High Discharge Pressure Circuit B
- Supply Air Sensor Failure
- Zone Air Sensor Failure

Supply Fan Overload
Compressor Circuit A Overload
Compressor Circuit B Overload
System Shutdown
Low Supply Air Temperature
Exhaust Fan Overload
Low Voltage (optional)
Low Air Flow
Freeze Stat (optional)

Airflow Switch:

The dehumidifier shall be equipped with an airflow switch to prevent the compressors from starting or operating on loss of airflow.

Water Flow Switch:

The dehumidifier shall be equipped with one water flow switch per water condenser. A water flow switch shall prevent condenser operation in the event of loss of water flow. The unit shall be able to function normally in the dehumidification mode when water flow is not present.

Condensate Drain Pan:

The drain pan will be 20-gauge stainless steel, sloped, and positioned under the dehumidifier coil. The drain pan will be TIG welded and securely attached to the evaporator endplates to avoid shifting. The drain pan will be fitted with a minimum 1" MPT non-corrosive plastic drain connection. The drain pan will meet all the requirements of ASHRAE Standard 62.

Insulation:

The thermal and sound insulation shall be engineered polymer closed-cell foam insulation (EPFI). Indoor units shall have 3/8" thick insulation and outdoor units shall have 3/4" thick insulation. The insulation meets the following requirements.

NFPA 255 Flame Spread – 25
NFPA 255 Smoke Developed – 50
NFPA 255 Fuel Contributed – 0
NFPA 90A (2-2.4.2) and 90B
ASTM C5118 (Thermal Resistance)
ASTM C411 (Hot Surface Performance)
ASTM C423 (Sound Absorption)
ASTM C665 (Fungi Resistance)
ASTM E90 (Airborne Sound Transmission Loss)
ASTM E96 (Water Vapor Transmission)
UL 94HBF (Horizontal Burn)
UL 181 (Air Erosion, Mold Growth, and Humidity)
ASTM C1136 (Mold, Mildew, and Moisture Resistance)

Supply Fan:

Supply fan will either be double inlet forward curve fan or double inlet air foil fan.

Double Inlet Forward Curve Fans: The fan housing shall be made of galvanized steel. The impeller is manufactured in galvanized steel with tab locked blades.

Double Inlet Air Foil Fans: The fan housing shall be made of galvanized steel. The high performance impeller is manufactured in corrosion resistant steel, with backward curved, true airfoil shaped blades, welded into position. All wheels are coated with an anticorrosive primer and a final layer of synthetic paint.

All bearings are selected for a minimum of a L50 Lifetime of 200,000 hours.

All fans shall be dynamically and statically balanced.

Blower Discharge: The unit's air discharge will be as shown on the drawing.

Blower Pulley Assembly: The driver pulley and the blower pulley will be made of cast iron. The motor sheave will be a variable pitch type to allow for field adjustment of CFM and external static.

Exhaust Fan:

The unit shall be provided with plenum fan(s) and motor(s) in direct drive arrangement on a frame independent of the unit base.

The exhaust fan motor shall be variable speed via electronically commutated (EC) design for highest overall system efficiency. Motor to be permanent magnet brushless DC design with integral rectifier and electronics. Integral under/over voltage protection, motor protection, and status indication is required. Motor electronics to be encapsulated for shock, moisture and corrosion resistance. Fixed speed motors or AC motors with variable speed drives are not acceptable. Motors shall utilize permanently lubricated ball bearings with L10 life of 40,000 hours minimum.

The venturi shall be constructed of heavy weight galvanized steel and have provisions for static pressure measurement via transducer at the inlet plenum and specific position at the venture throat. Qualified values of the venture static pressure coefficients to calculate airflow must be type tested in the application and programmed into the unit controller for display of flow rates.

The fan impeller is to be constructed of a high strength, low mass, corrosion-free composite material in a single shot injection molding process. The impeller blades are to be backwards-curved airflow type. Forward-curved or flat backwards-incline blades are not acceptable. The impeller shall be balanced with hub with admissible vibration severity less than 0.11 in/s.

The exhaust fan frame assembly shall be constructed of heavy gauge galvanized and shall support the fan and motor. When more than one fan is provided, each must be mounted on its own independent frame.

Return Air Filters:

The system shall be provided with MERV 8 disposable filters consisting of 4” pleated filter.

Roof Curb

The roof curb will be of heavy-gauge galvanized steel construction, of box section design with integral base plate, and will have continuously welded corner seams. The curb will be internally insulated with three-pound density rigid fiberglass board insulation not less than 1-1/2" thick. The curb will be of a design with integral cants and will be designed to be roofed over. The curb will include a factory-installed wood nailer strip around the top perimeter. The roof curb will be sized to fit the equipment to be supported.

Approvals/Listings:

The unit shall be labeled and listed by ETL or UL.

Unit Manufacturer:

The unit shall be manufactured by DESERT AIRE CORPORATION, Germantown, WI, USA. The manufacturer must be an active member of the ARI Dehumidification group.

Execution:

Preparation:

Installing contractor to provide all labor, refrigerant, and material required for a complete installation. Minimum 3 feet clearance on all sides. Work to be performed shall be in accord with local codes, regulations, and OSHA standards.

Delivery, Storage, and Handling:

Customer to provide a suitable space for the equipment with proper access and entries. Unit to be stored in a clean, dry space and protected from the outdoor environment. Handle with care to avoid damage.

Installation:

Unit shall be installed per plans and manufacturer’s installation recommendations.

Field Quality Control:

Installing contractor to clean, check, and perform all preliminary start-up procedures before final operation of the unit, per manufacturer’s recommendations.

Operation/Maintenance Manuals (in English):

Manuals will include electrical and control drawings and refrigeration piping drawings. Manufacturer’s representative shall instruct owners/operators of the unit regarding its functions and sequence of operation.

SYSTEM WARRANTY

Dehumidification Equipment
Standard Limited Warranty

Desert Aire warrants the dehumidifying unit to be free from defects in materials and workmanship subject to the terms, conditions and limitations stated herein.

TERMS

Desert Aire warrants all components (except as noted) for a period of two (2) years from the date of shipment. This warranty shall be limited to the supply of new or rebuilt parts for the part which has failed because of defects in workmanship or material, and does not include the cost for labor, transportation or other costs not herein provided for. Replaced parts are warranted only for the remaining portion of the original warranty period.

CONDITIONS

The warranty is subject to the following conditions:

1. The unit must be properly installed and maintained in accordance with the Desert Aire "Installation and Operation Manual" provided with each unit and/or other documentation provided.
2. The Start-Up Report must be completed and returned to Desert Aire within 30 days of the start-up.
3. This warranty shall not apply to any part that has been tampered with, or has been subject to misuse, negligence or accident. A warranty can be obtained for altered equipment but only with written consent from Desert Aire.
4. The following parts and components are excluded from the warranty: belts, filters, driers, fuses and refrigerant.
5. Refrigerant coils or other components that corrode due to improperly balanced pool chemistry or corrosive air quality will not be warranted.
6. All replacements or repairs will be FOB Germantown, WI.
7. This warranty shall be null and void if defects or damages result from unauthorized opening of the refrigerant circuit, tampering with factory set controls, or operating outside the original design conditions.
8. Desert Aire shall not be liable for labor costs incurred in diagnosing the problem, or the removal or replacement of the part or parts being repaired.
9. Desert Aire must preauthorize all warranty coverage described herein.

Extended Warranty:
Your Desert Aire unit may have extended warrantees beyond this Standard Limited Warranty document. Extended warrantees are only available at the time of the purchase of the original equipment. These extended warrantees are covered under a separate document and their terms and conditions are separate from this document. It is mentioned in this document for informational purposes only.

Any and all incidental or consequential damages are expressly excluded from this warranty. Some states do not allow the exclusion of incidental or consequential damages for personal injury, so the above limitations may not apply to you for certain damages. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state. No person or representative is authorized to make any warranty or assume any liability not strictly in accordance with the aforementioned.

Inquiries regarding warranty matters should be addressed to:

Desert Aire Corp. ,c/o Service Manager
N120 W18485 Freistadt Road
Germantown, WI 53022

PH: (262) 946-7400
FAX: (262) 946-7401
E-MAIL: service@desert-aire.com

SelectAire™ Series Dehumidifiers

Dehumidification Components
Optional Extended Warranty

Desert Aire warrants the following components to be free from defects in materials and workmanship subject to the terms, conditions and limitations stated on the standard warranty form. *(Provided if Displayed)*

COMPRESSOR THREE (3)-YEAR EXTENDED WARRANTY TERMS
For an additional fee (contact your local representative for cost), Desert Aire offers an extended three (3)-year warranty for compressors. This extended warranty begins after the system's standard two (2)-year warranty ends. This warranty will be limited to the supply of new or rebuilt parts for the part which has failed because of defects in workmanship or material, and does not include the cost for labor, transportation or other costs not herein provided for. Replaced parts are warranted only for the remaining portion of the original warranty period.

COIL THREE (3)-YEAR EXTENDED WARRANTY TERMS
For an additional fee (contact your local representative for cost), Desert Aire offers an extended three (3)-year warranty for coils. This extended warranty is only available for coated coils and begins after the system's standard two (2)-year warranty ends. This warranty will be limited to the supply of new or rebuilt parts for the part which has failed because of defects in workmanship or material, and does not include the cost for labor, transportation or other costs not herein provided for. Replaced parts are warranted only for the remaining portion of the original warranty period. Extended warranties do not apply to remote condenser coils.

COIL EIGHT (8)-YEAR EXTENDED WARRANTY TERMS
For an additional fee (contact your local representative for cost), Desert Aire offers an extended eight (8)-year warranty for coils. This extended warranty is only available for coated coils and begins after the system's standard two (2)-year warranty ends. This warranty will be limited to the supply of new or rebuilt parts for the part which has failed because of defects in workmanship or material, and does not include the cost for labor, transportation or other costs not herein provided for. Replaced parts are warranted only for the remaining portion of the original warranty period. Extended warranties do not apply to remote condenser coils.

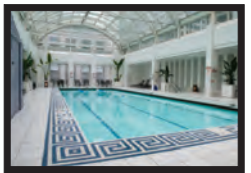
GAS HEAT EXCHANGER TEN (10)-YEAR PRORATED WARRANTY TERMS
Desert Aire offers an extended prorated eight (8)-year warranty for gas heat exchangers. All other heater components are covered under the initial two (2)-year warranty.

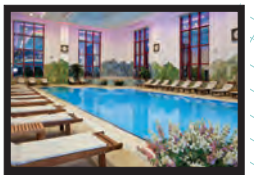
2 Years Parts Only from date of shipment.
Prorated from years 3-9 as follows:
Year 3: Desert Aire warrants 70% of replacement price
Year 4: Desert Aire warrants 60% of replacement price
Year 5: Desert Aire warrants 50% of replacement price
Year 6: Desert Aire warrants 40% of replacement price
Year 7: Desert Aire warrants 30% of replacement price
Year 8: Desert Aire warrants 20% of replacement price
Year 9: Desert Aire warrants 10% of replacement price

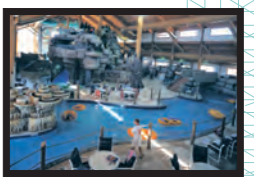
SELECT AIRE™ by Desert Aire

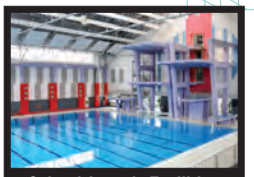
LARGE CAPACITY DEHUMIDIFICATION SYSTEMS

Dehumidifiers for Large Capacity Applications


Natatoriums


Hotel / Motel Poolrooms


Water Parks


School Aquatic Facilities


Warehousing

DESERT AIRE's SA Series dehumidifiers offer you complete humidity control solutions for large indoor pool applications, water parks, warehouse, and other large moisture removal applications. Our many options allow you to control temperature and humidity while conserving energy for significant operational savings. Rely on Desert Aire for expert solutions to large capacity humidity problems.

OPTIMIZING SOLUTIONS THROUGH SUPERIOR DEHUMIDIFICATION TECHOLOGY

DESERT AIRE
POOL DEHUMIDIFICATION
DEDICATED OUTDOOR AIR SYSTEMS

Dehumidification Options

Large Selection

DESERT AIRE has a complete line of large commercial and industrial dehumidification systems designed to solve the toughest humidity and moisture problems. These systems remove between 55 and 340 Lb/Hr (25 to 155 Kg/Hr) of moisture.

Dual Circuit Design

The SelectAire™ Series is a dual refrigerant circuit, packaged dehumidification system that is carefully designed and manufactured for commercial natatoriums, such as: high school and university indoor pools, YMCA/YWCA, JCC and municipal natatoriums. The SA Series can also be used for other applications requiring large amounts of moisture removal.

SelectAire™ (SA) Series equipment features an exclusive exhaust air heat recovery system and patented air flow balancing. The SA system effectively addresses exhaust air energy loss in a natatorium and recovers it more efficiently than any other heat recovery method including economizer systems.

This dehumidification system features a unique dual refrigerant circuit design which allows staging to minimize energy consumption and optimize energy recovery by using different condensing elements, for the appropriate heat sinks.

At the heart of each circuit is a scroll compressor providing high performance and long life. The dehumidification section features an 8-row evaporator coil for high moisture removal capacity. The energy recovery section can have a combination of air reheat coils, water (pool or domestic) condensers or remote condensers. Auxiliary heat and a fresh air module can also be incorporated to complete a total system design.

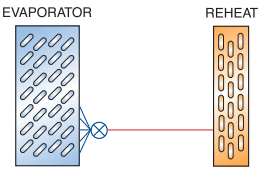
All metal frame and panels use a special corrosion resistant galvaneal metal with a powder coat finish, a tough coating that resists rusting. This process meets a corrosion resistance specification of 1,000 hours of salt spray.

SelectAire™ dehumidifiers can be installed either indoors or outdoors. Units intended for outdoor installation are factory equipped with additional insulation, heavy duty weather sealing and special rainhoods mounted on the ventilation air intake. They can also be installed on roof curbs (supplied by others) which permit bottom return and supply air to meet HVAC design specifications when required.

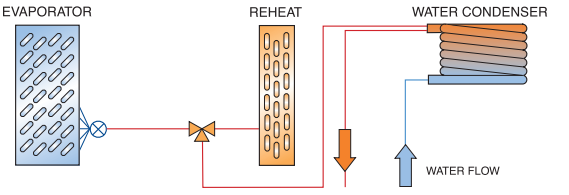
Features

DESERT AIRE's commercial dehumidifier systems are flexible in their design options. This modular concept allows each system to be customized for specific dehumidification applications. Each module type is described below.

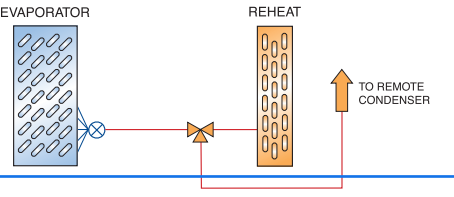
REHEAT ONLY ... This is the basic option which removes moisture from the air at the evaporator coil and reheats it before returning to the space as dehumidified air.



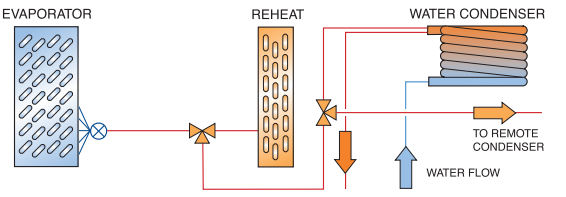
REHEAT & WATER... In addition to the reheat coil, a water condensing coil is added to the circuit. Either circuit can become the primary heat sink allowing the circuit's latent and sensible heat to be directed to a water source or returned to the air.



REHEAT & AIR REMOTE CONDENSER READY... This optionoffers a reheat coil and an air cooled remote condenser connection.



REHEAT & WATER & AIR COOLED REMOTE CONDENSER READY... This is the combination of all heat sink options. It is used when only a partial water heat sink is available but full capacity dehumidification is required continuously, regardless of season.



Circuit A to be provided with full capacity pool water condenser

Controls

Each circuit is controlled by the integral microprocessor-based controller. This system includes an easy-to-read user interface. A Remote Display Terminal (RDT) may be ordered separately for remote mounting.

The use of the basic control and staging sequences provides great flexibility in optimizing dehumidification and energy recovery capacity.

The system features control of all of the dehumidification functions including auxiliary heating, occupancy schedules and ventilation air. It also provides diagnostic readouts and alarms.

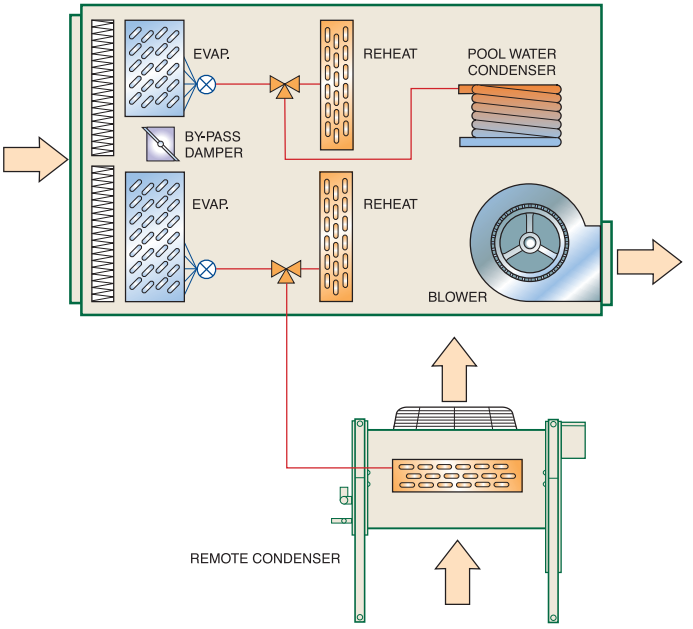
Optional communication cards are offered that allow the system controller to be connected to building automation system. Communication cards are offered for BACnet MS/TP. BACnet Ethernet, Lonworks, and Modbus.

Lowest Operational Costs

There are several methods of reducing operating costs of a natatorium dehumidifier. In standard A/C applications, the use of an economizer cycle is implemented to lower operating costs. However this method does not actually achieve its objectives because it raises the initial capital costs and has hidden operational costs of the 2 fan system that is required to achieve its objectives.

Desert Aire's energy recovery system achieves the highest energy recovery of any pool dehumidifier. It uses a heat pump concept to maximize both the sensible and latent recovery. In addition it does not waste conditioned air in the cooling mode like the economizer method does. Please refer to *Desert Aire Application Note # 7* for additional details of the energy savings.

SelectAire™ System with Multiple Circuits



Typical Circuit Arrangement

A typical arrangement for an Olympic-size natatorium pool is illustrated in the figure above.

One circuit either recovers the energy to the air or water. Only one circuit is generally required to replace the heat loss of the pool water.

The second circuit allows the system to recover energy and return it to the space in the winter but reject the heat for cooling in the summer.

EXAMPLE

Through the use of dual circuiting, DESERT AIRE can better control the recovery of energy and optimize compressor run time. The dual circuit design also allows simultaneous rejection of heat to water and air to provide zero reheat. It also allows full heat recovery through its respective and dedicated condensers that are "independent." In other words, DESERT AIRE's exclusive dual refrigeration circuits offer you the best of both worlds – simultaneous or independent heat rejection capability for unsurpassed versatility for any operational sequence. Other circuiting options are used to obtain different results.

Standard SA Series Features

REFRIGERATION DESIGN

- dual, independent refrigeration circuits operate independently or simultaneously
- heavy-duty scroll compressors
- maximum of 38" coil height maximizes moisture removal
- sloped, stainless steel drain pan for each circuit
- minimum of 8" separation between evaporator and condenser coils prevents re-evaporation
- coils are designed for maximized latent removal
- R-410A refrigerant

CABINET AND CONSTRUCTION

- base rails and supports constructed of 12-gauge steel channels
- cabinet made of 16-gauge Galvanneal steel with powder-coat paint
- removable side panels made of 16 gauge
- rated for 1000-hour salt spray
- thermal and sound insulation made of engineered polymer cell foam (EPFI)

BLOWER

- galvanized steel mounted on pillow block bearings with grease fittings
- ODP motors

FILTERS

- Return Air: 4" MERV 8, pleated filters
- Outdoor Air:
  - *SA18-30: 2" MERV 8
  - *SA35-60: 4" MERV 8

ELECTRICAL SERVICE

- hinged electrical panel on single side access of unit
- single point power connection for all units

CONTROLS

- duct or wall mount temperature and humidity sensors
- Integrated Display with an optional remote display terminal
- BAS communication options
- built in time clock for standalone operation

WARRANTY

- 2 Year parts warranty
- Electrofin Coated coils include (5) year parts warranty

SA Series Options

COATINGS

- Coil Electrofin E-Coat to resist chemicals and corrosion

AUXILIARY HEAT

- hot water coil supplied downstream from hot gas reheat coil
- steam coil supplied downstream from hot gas reheat coil
- electric SCR heat supplied downstream from hot gas reheat coil
- control outputs for field supplied auxiliary heating devices

INSTALLATION LOCATION

- indoor
- outdoor
- rooftop (for downflow applications)

CONDENSER (CHOOSE PER CIRCUIT)

- air-cooled remote condenser rejects excess heat to the outdoors (full THR - Total Heat of Rejection)
- water condenser for chiller or fluid cooler

POOL WATER HEAT

- coaxial heat exchanger for recovery of heat to pool water

N120 W18485 Freistadt Road, Germantown, WI 53022 sales@desert-aire.com

Ph: (262) 946-7400 - www.desert-aire.com

DESERT AIRE
POOL DEHUMIDIFICATION
DEDICATED OUTDOOR AIR SYSTEMS

430 2014/01

Advanced SA Microprocessor Controller

CM3510 Controller Used on ND/SA Dehumidifier

Wall Mount Temperature & Humidity Sensor

FEATURES

- *Backlit LCD User Interface*
- *Custom programming for complex dehumidification, temperature and humidity control.*
- *Multiple communication options*
- *Alarm history retention*

Duct Mount Temperature & Humidity Sensor

Optional CM3510 Series Remote Display Terminal (RDT)

DESCRIPTION

The CM3510 controllers are uniquely programmed for each Desert Aire application providing energy efficient moisture removal and precise temperature & humidity control.

The CM3510 controllers offer greater compatibility with building management systems (BMS) through the use of an options plug in communication module. Optional communication modules for the CM3510 include: LonWorks®, BACnet™ Ethernet™, BACnet™ MS/TP or Modbus®. The CM3510 has a built in time clock for occupied scheduling should a BMS not be present on your project.

A user interface to the CM3510 is supplied on each unit. This backlit LCD display provides easy to navigate screens for setpoint adjustment and unit monitoring. All Inputs and Outputs along with alarm history can be viewed from the user interface to aid in unit or system diagnostics. The interface is either supplied as a built-in display on the face of the controller or as a separate remote display terminal that is connected to the controller.

ORDER OPTIONS

Controller and Sensor without RDT

- ☐ CA3510ND-DUCT Duct Mount Temp & RH Sensor
- ☐ CA3510ND-WALL Wall Mount Temp & RH Sensor

Controller and Sensor with RDT

- ☐ CA3510WD-DUCT Duct Mount Temp & RH Sensor
- ☐ CA3510WD-WALL Wall Mount Temp & RH Sensor

RDT = remote display terminal with 20ft. cord

Communication Configuration

- ☐ Standard - No BMS Communication
- ☐ LONWORKS® Module
- ☐ BACnet™ Ethernet™ Module
- ☐ BACnet™ MS/TP Module
- ☐ Modbus® RTU Module (RS-485)

SYSTEM DISPLAY OPTIONS

The CM3510 controller is matched for the SelectAire (SA) series product based on the number of inputs and outputs and by taking into account the accessibility of the controller and its user interface.

The SA series uses the CM3510 controller with an integral display. The controller and local display is installed in the electrical enclosure. An optional remote display terminal is shipped as a separate device. When the Remote Display Terminal is connected to a controller with an integrated display both display devices are fully functional.

BMS COMMUNICATION MODULES

LonWorks®- Echelon's LonWorks® is a dominant solution of control in industry, offices, homes and transport. Electric standard supported is FTT10.

Modbus®- One of the most widely used protocols. Supports Modbus Slave, RTU mode; communications standard RS485.

BacNet™ MS/TP and BACnet™ Ethernet - Based on EIA-485 and Ethernet™ standards. Connection is possible through the following networks:

- SNMP v1, v2, v3 networks
- BACnet™, Ethernet™, BACnet™/IP networks, BACnet™ MS/TP
- LAN or Internet

BMS COMMUNICATION DETAILS

BACnet™ MS/TP
If the system was purchased with the BACnet MS/TP option, the BACnet Device Instance and Station Address will need to be set before connection to the control network. This is because the Station Address is set to 0 as a default, and will conflict with the device on the control network already set to 0.

Defining the station address prior to unit shipment will allow Desert Aire to correctly set the address. If the value is not known prior to the goods shipping, then the contractor must alter these default settings during unit commissioning. A software utility program will need to be used, allowing access to these settings. For more information, refer to the PCO1000BAO cut sheet shipped with the dehumidifier. Download the system BACnet Point List from the Desert Aire website (www.desert-aire.com).

BACnet™ Ethernet
If the system was purchased with the BACnet Ethernet option, it is strongly recommended that the network administrator be contacted, as the incorrect configuration of the Ethernet card may temporarily shut down the entire network. For the correct operation of the Ethernet card, a number of basic parameters need to be set, such as the IP address and Netmask. Each device connected to an Ethernet network must have a unique IP address.

The Ethernet card is supplied with the DHCP function already active. Therefore, in a network served by a DHCP server, the Ethernet card will automatically acquire the necessary parameters without requiring configuration. In the case of a network without DHCP, these parameters need to be configured manually. For more information, refer to the PCO1000W*O cut sheet shipped with the dehumidifier. Download the SYSTEM BACnet Ethernet Point List from the Desert Aire website (www.desert-aire.com).

LonWorks®
If the system was purchased with the LonWorks option, the connection to the control network can be done without controller modification. For more information, refer to the PCO1000OFO cut sheet shipped with the dehumidifier. The system XIF file for system configuration, as well as the SYSTEM LON point list, is available from the Desert Aire website (www.desert-aire.com).

Modbus® RTU (RS-485)
If the system was purchased with the Modbus option, the controller network address and baud rate need to be set in the controller for proper communication operation. The default settings as shipped are 9600 for the baud rate and the address is 0.

Refer to the system controller manual for address and baud rate setting instructions. For more information, refer to the PCOS004850 cut sheet shipped with the dehumidifier. Download the Modbus Point List from the Desert Aire website (www.desert-aire.com).

AireGuard™
In order to utilize AireGuard™ on these units you must purchase the AireGuard™ Hardware Box and AireGuard™ subscription service. The AireGuard™ platform allows for remote monitoring, alarming, and data trending of connected Desert Aire equipment through a secure cloud based database. The owner must provide an Ethernet internet connection to the AireGuard™ Hardware Box to enable the data transmission to the cloud server. The connection communicates without opening additional ports in the systems firewall or requiring a virtual private network. Contact your local Desert Aire sales representative if you are interested in this service.

For those users with more than one dehumidifier, this system can act as their local building management system where all of the units are available with the same login credential. All that is required is an Ethernet cable to be connected to the AireGuard interface box. The connection communicates without opening additional ports in the systems firewall or requiring a virtual private network.

Please refer to the AireGuard brochure for additional details.

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Outdoor Air System with Purge

OUTDOOR ENERGY RECOVERY

Extended Outdoor Air System with Energy Recovery

Every commercial pool requires the introduction of outdoor ventilation air during occupied times. The rate of introduction is dependent on the pool size, deck space, and occupancy. The introduction of this ventilation air helps to maintain air quality in the space. Refer to DESERT AIRE Technical Bulletin #5 for a detailed summary of the requirements in current standards.

DESERT AIRE offers its SelectAire™ with Extended Outdoor Air system option to integrate ventilation air into the dehumidification package when there is the need for higher airflow or purge capability. The return air is brought back to the dehumidifier where the air is exhausted to meet the design intent of the facility. The dehumidifier blower will act as the ventilation fan and supply air blower to provide all of the required ventilation air for the pool room. The integral exhaust air blower is balanced to establish and maintain a negative pressure in the space. It is important that the return air duct system be designed to meet the design supply air volume.

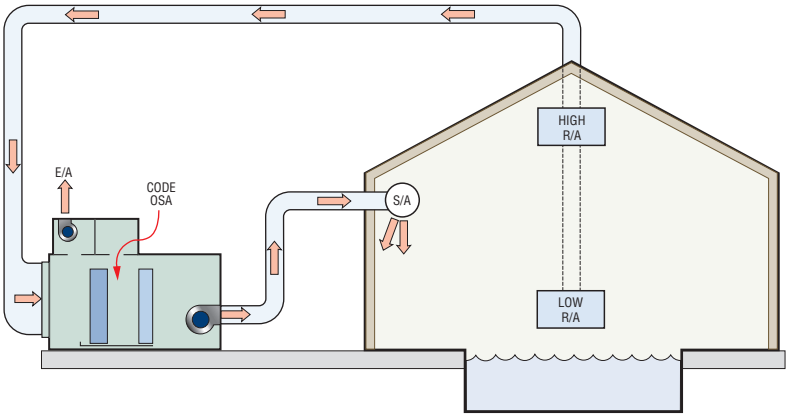

Figure 1 - Extended Outdoor Air System Conceptual Airflow Diagram

The SelectAire™ control system simplifies air balancing while maintaining the correct proportions of return air, supply air, exhaust air and outdoor air. The system works by monitoring and controlling the static pressure difference at three areas: the outdoor air intake, evaporator coil, and the zone/ambient. The pressure difference at the specially designed oriface in the outdoor air flow path controls the outdoor airflow. Monitoring the pressure drop through the evaporator and controlling the evaporator bypass damper maintains the flow rate through the evaporator and optimizing the moisture removal. Monitoring the difference between the zone pressure and ambient pressure controls the exhaust fan and helps to guarantee the negative static pressure within the space so critical to the building envelope. The control system then modulates the respective damper in response to the pressure readings to achieve the desired airflow.

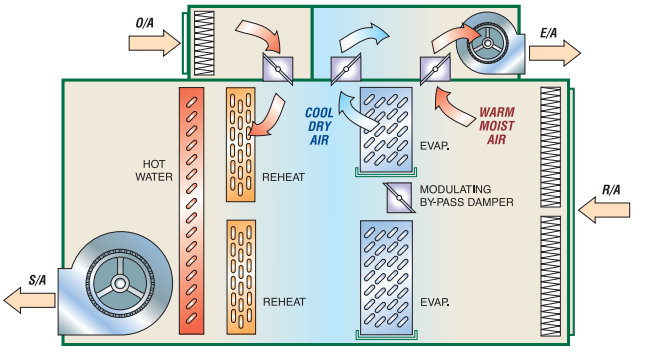

Figure 2 - Schematic for Outdoor Air

OUTSIDE AIR INTRODUCTION CONTROL

The DESERT AIRE SelectAire™ dehumidifier includes a modulating damper to divert a specific flow rate of air through the evaporator coil. This automatically provides a constant airflow and load for the evaporator coil and optimizes the moisture removal efficiency of the system. Similarly, even if outdoor air is preheated, it should always be introduced downstream of the evaporator coil. Cold and dry air introduced before the evaporator coil will lower the unit's dehumidification capacity.

In the SelectAire™ system outdoor air is filtered and a modulating motorized damper controls the introduction of outdoor air as follows:

Unoccupied Mode
OSA damper is closed. Unit will be in recirculation mode. The exhaust air fan will be adjusted to maintain a small negative air balance in the pool room.

Occupied Mode
Outdoor air volume is established in the field during startup. The OA volume will be established between 0 and 50% of the supply air volume. Outdoor air is preheated as required to provide mixed air temperature at or above the space dewpoint. The preheater uses a feedback modulating control algorithm. The space auxiliary heater is controlled based on zone sensors. Compressors are activated as required by the SelectAire™ standard sequence.

Event Mode
The event mode outside air volume is established in the field between 0 to 50% of supply air volume. This is a higher rate than the Occupied Mode setting. The auxiliary heater is controlled based on zone sensors. Compressors are activated as required by the SelectAire™ standard sequence.

Purge Mode
A purge air is established at 50% of supply air volume. The auxiliary heater in this mode is controlled based on a leaving air temperature sensor located in the blower section, not on the zone sensors. Compressors are deactivated during purge mode and will remain off during the Purge Mode. Supply air temperature is heated as required to maintain a minimum temperature above the space dewpoint. This helps to prevent condensation on ducts and interior surfaces.

Heating Mode
For all integral heating elements the controller shall use a zone reset of supply air temperature sequence instead of an on/off method. The proportional plus integral loop will calculate a supply air temperature that maintains the pool air temperature in all modes defined above. The auxiliary heat must be sized for the maximum purge air volume at the local winter design condition.

Energy Recovery
SelectAire™ systems have two exhaust air dampers. One is upstream of the evaporator coil and one is downstream. This special design of the Select Aire option allows the system to take advantage of basic thermodynamic principles while not impacting the unit's sensible cooling capacity.

- When the space requires heating, air is exhausted after the evaporator coil which recovers the energy contained in the exhaust air prior to its discharge.
  Principle # 1: Exhaust air at its coldest point.

- In the cooling mode, air is exhausted before the evaporator coil which is warm and humid.
  Principle # 2: Exhaust air at its warmest point.

The SelectAire™ system uses the principle of a heat pump to recover energy in the heating mode by operating one of the two circuits in conjunction with exhaust air. Exhaust air consists of two energy components: sensible and latent. The cold evaporator coil absorbs both of these components. In addition to this energy the energy required to operate the compressors is returned in the form of heat. This option provides high COP efficiency to the exhaust air recovery cycle.

DESIGN FEATURES

The SelectAire™ is the most efficient method to recover the total energy of the exhaust air. Since the airflows and loads are maintained through the special airflow control sequence the amount of recovery can be optimized. Other systems that use passive heat exchangers cannot recover latent energy during the majority of the operation and the amount of sensible recovery is dependent on the outdoor temperature. In addition, their actual recovery effectiveness is variable as it changes based on the temperature differential. Passive heat exchangers require additional fan energy and cannot take full advantage of free outdoor air cooling unless bypass dampers and controls are installed. The Select Aire has a constant rate of energy recovery when activated and is always controlled automatically based on the zone condition.

The following table is an example of how the airflow ranges can be maintained in the extended outdoor options.

Dehumidification/Clg

	% of Supply Air			
	OSA	**Cool Exh.**	**Warm Exh.**	**Compressor**
Unoccupied	0%	0%	VFD	Enabled as required
Occupied	0 to 50%	0%	maintaines a	Enabled as required
Event	0 to 50%	0%	Neg. Pres.	Enabled as required
Purge	50%	0%	In all modes	Locked out

Energy Recovery / Heat Mode

	% of Supply Air			
	OSA	**Cool Exh.**	**Warm Exh.**	**Compressor**
Unoccupied	0%	0%	VFD	Enabled as required
Occupied	20% to 50%	20%	maintaines a	Enabled as required
Event	20% to 50%	20%	Neg. Pres.	Enabled as required
Purge	50%	0%	In all modes	Locked out

Additional design features of the SelectAire™ System with Extended Outdoor Air are:

- VFD for exhaust air
  A room pressurization scheme maintains a negative pressure in the space. A unit mounted pressure transducer is provided by Desert Aire. 1/8" pressure tubing is run to the space and to the outdoor air by the installing contractor. Suitable terminations are provided by Desert Aire.

- Outdoor Air Balance Plate
  Calibrated by Desert Aire to control outdoor air damper.

- Exhaust Air Balance Plate
  Calibrated by Desert Aire, installed between the cold air and warm air dampers to maintain the proper ratio of exhaust air from these two locations to ensure a building negative pressure.

- Return air static pressures up to 1.5 inch WC and supply air static can be up to 2.0 inch WC

For a more detailed analysis, please refer to DESERT AIRE Technical Bulletin 6 - SelectAire™ Heat Recovery System.

Covered by Desert Aire United States Patent # 5,682,754

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DESERT AIRE
POOL DEHUMIDIFICATION
DEDICATED OUTDOOR AIR SYSTEMS

Remote Condensers

REMOTE CONDENSERS

Desert Aire's remote condensers are designed with a commitment to excellence that will provide you with years of reliable service.

All Desert Aire equipment is consistently manufactured to high performance standards for efficient, reliable service and they are easy to install.

HIGH PERFORMANCE, DURABILITY AND EFFICIENCY

COILS - Round tube coils with enhanced tubing, advanced sinusoidal fin design for optimal performance. Extensive use of 5/16" and 3/8" diameter tubing keeps refrigerant charge to a minimum.

Our optional coil coating provides a uniform, flexible coating over the entire coil with negligible impact on thermal conductivity. 100% coverage is assured by the application process, even in the hard to reach center portions of the coil, without bridging between the fins. We recommend the application anytime a remote condenser is located near a salt water coast or a potential source of corrosive airborne particles.

EASY INSTALLATION

After uncrating, the condenser legs pivot from their transport to installation position and the condenser easily lifts into place with the use of eye bolts or brackets located on top of the unit. At ground level, the condenser can rest on a solid surface such as a concrete slab. On roofs, the unit should be placed on channels or an I-beam frame.

Desert Aire has a remote condenser for every application. Our complete line of direct-drive condensers complements the wide range of our dehumidification offerings.

ELEVATION CORRECTION FACTORS

Elevation above sea level has an effect on the performance of air-cooled condensers. The unit capacities shown in the Performance Table must be multiplied by the correction factors in Table 1 to correct for various elevations.

ELEVATION (FEET)	1,000	2,000	3,000	4,000	5,000	6,000	7,000
CORRECTION FACTOR	0.98	0.96	0.93	0.91	0.89	0.87	0.85

Table 1

Est. 1978 DESERT AIRE

NOTES: All data contained in this document is subject to change without notice. Please consult factory for most current data. For longer refrigerant line lengths or greater elevation difference, please consult factory.

RC8 SERIES™ by Desert Aire

Desert Aire's RC8 range of condensers is sized up to 34.8 MBH/°F of heat rejection. Swept fan blades are designed as part of the direct drive motor. The RC8 series has fully enclosed motor lead raceways to protect wiring. Control panels are rated for 10kA SCCR when power is supplied with class J fuses.

STANDARD FEATURES

- Galvanized G90 cabinet
- All venturi fan panels for energy efficiency and low sound
- Door interrupt disconnect

OPTIONAL FEATURES

- Painted cabinet
- E-coat on coil
- Vertical orientation with horizontal airflow

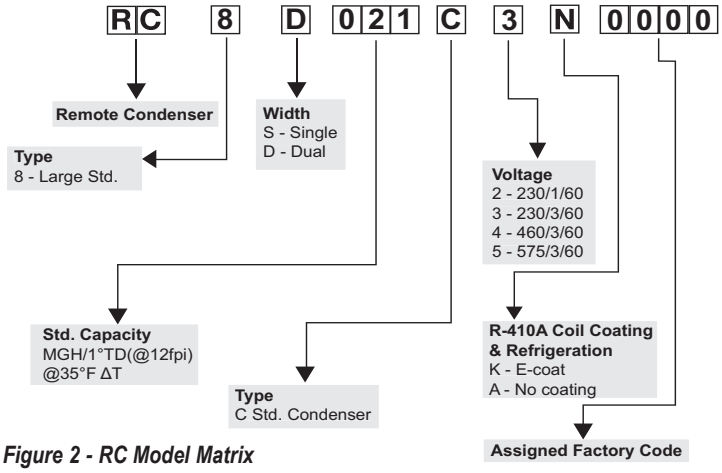
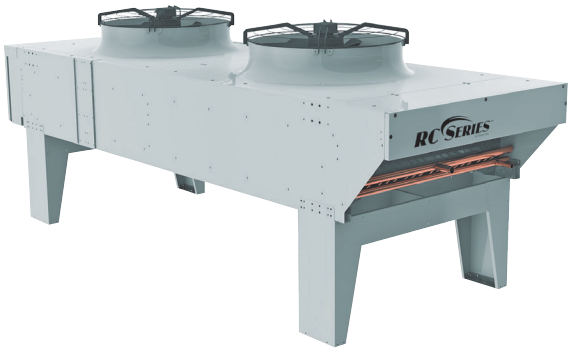


Figure 2 - RC Model Matrix

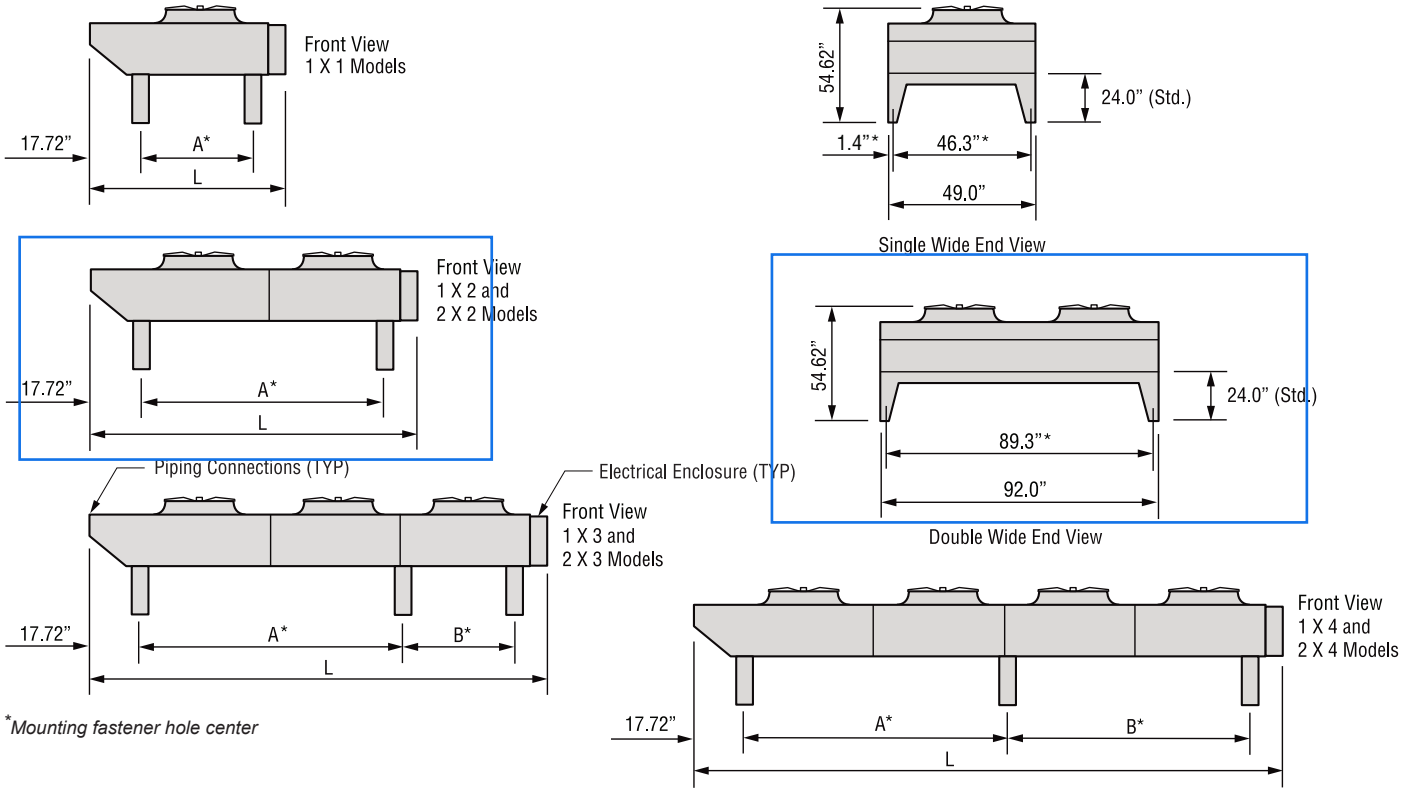


ELECTRICAL DATA

	Model	208-230/3/60			460/3/60			575/3/60			Unit kW
		FLA	MCA	MOPD[1]	FLA	MCA	MOPD[1]	FLA	MCA	MOPD[1]	
SINGLE WIDTH	RC8S007C	6.8	8.5	15.0	3.6	4.5	15.0	3.4	4.3	15.0	1.4
	RC8S009C	6.8	8.5	15.0	3.6	4.5	15.0	3.4	4.3	15.0	1.4
	RC8S011C	13.6	15.3	20.0	7.2	8.1	15.0	6.8	7.7	15.0	2.7
	RC8S015	13.6	15.3	20.0	7.2	8.1	15.0	6.8	7.7	15.0	2.8
	RC8S018C	13.6	15.3	20.0	7.2	8.1	15.0	6.8	7.7	15.0	2.9
	RC8S022C	20.4	22.1	25.0	10.8	11.7	15.0	10.2	11.1	15.0	4.2
	RC8S026C	20.4	22.1	25.0	10.8	11.7	15.0	10.2	11.1	15.0	4.4
	RC8S030C	27.2	28.9	35.0	14.4	15.3	20.0	13.6	14.5	15.0	5.6
	RC8S035C	27.2	28.9	35.0	14.4	15.3	20.0	13.6	14.5	15.0	5.8
DUAL WIDTH	RC8D022C	27.2	28.9	35	14.4	15.3	20.0	13.6	14.5	15.0	5.5
	RC8D029C	27.2	28.9	35	14.4	15.3	20.0	13.6	14.5	15.0	5.7
	RC8D035C	27.2	28.9	35	14.4	15.3	20.0	13.6	14.5	15.0	5.9
	RC8D044C	40.8	42.5	45.0	21.6	22.5	25.0	20.4	21.3	25.0	8.4
	RC8D052C	40.8	42.5	45.0	21.6	22.5	25.0	20.4	21.3	25.0	8.7
	RC8D060C	54.4	56.1	60.0	28.8	29.7	30.0	27.2	28.1	30.0	11.2
	RC8D070C	54.4	56.1	60.0	28.8	29.7	30.0	27.2	28.1	30.0	11.6
	RC8D081C	68.0	69.7	75.0	36.0	36.9	40.0	34.0	34.9	35.0	14.7
	RC8D091C	68.0	69.7	75.0	36.0	36.9	40.0	34.0	34.9	35.0	15.3
	RC8D107C	81.6	83.3	90.0	43.2	44.1	45.0	40.8	41.7	45.0	18.4

[1] *MOPD - Maximum Overcurrent Protection Device*

PERFORMANCE AND DIMENSIONAL DATA RC8 SERIES



*Mounting fastener hole center

Model	Std. Capacity	Single Circ. RC. Conn (in)[1]		Dual Circ. RC. Conn (in)[1]		Fan Layout	Overall Length (L) (in)	Mounting Dimensions (in)		Approx. Net Wt. (lbs)	dBA[2]
	MBH/1°F	Disch. Line	Liq. Line	Disch. Line	Liq. Line			A	B		
RC8S007C	8.1	1-1/8	7/8	1-1/8	5/8	1 x 1	80.9	48.1	-	529	62.5
RC8S009C	9.3	1-1/8	7/8	1-1/8	3/4	1 x 1	80.9	48.1	-	551	62.5
RC8S011C	12.0	1-3/8	1-1/8	1-3/8	3/4	1 x 2	139.1	106.2	-	710	65.5
RC8S015	15.6	1-3/8	1-1/8	1-3/8	7/8	1 x 2	139.1	106.2	-	829	65.5
RC8S018C	18.0	1-5/8	1-1/8	1-3/8	7/8	1 x 2	139.1	106.2	-	869	65.5
RC8S022C	24.7	1-5/8	1-3/8	1-5/8	1-1/8	1 x 3	197.1	111.1	53.1	1186	67.3
RC8S026C	28.2	1-5/8	1-3/8	1-5/8	1-1/8	1 x 3	197.1	111.1	53.1	1246	67.3
RC8S030C	33.5	1-5/8	1-3/8	1-5/8	1-1/8	1 x 4	255.1	111.1	111.1	1497	68.5
RC8S035C	37.7	1-5/8	1-3/8	1-5/8	1-1/8	1 x 4	255.1	111.1	111.1	1574	68.5
RC8D022C	23.2	1-5/8	1-3/8	1-5/8	1-1/8	2 x 2	139.1	106.2	-	1301	68.5
RC8D029C	30.2	1-5/8	1-3/8	1-5/8	1-1/8	2 x 2	139.1	106.2	-	1537	68.5
RC8D035C	34.8	1-5/8	1-3/8	1-5/8	1-1/8	2 x 2	139.1	106.2	-	1614	68.5
RC8D044C	47.81	1-5/8	1-5/8	1-5/8	1-3/8	2 x 3	197.1	111.1	53.1	2086	70.3
RC8D052C	54.12	1-5/8	1-5/8	1-5/8	1-3/8	2 x 3	197.1	111.1	53.1	2196	70.3
RC8D060C	65.44	-	-	1-5/8	1-3/8	2 x 4	255.1	111.1	111.1	2845	71.5
RC8D070C	73.51	-	-	1-5/8	1-3/8	2 x 4	255.1	111.1	111.1	2999	71.5
RC8D081C	84.53	-	-	1-5/8	1-5/8	2 x 5	313.2	169.2	111.1	3603	72.5
RC8D091C	91.98	-	-	1-5/8	1-5/8	2 x 5	313.2	169.2	111.1	3801	72.5
RC8D107C	110.62	-	-	1-5/8	1-5/8	2 x 6	371.2	116.1	111.1	5040	73.3

[1] *Line sizes are based on 50ft. line set / max. 10ft. elevation difference at 35°F ΔT. Line connections may vary with different application ratings. Consult IO Manual.*
[2] *Listed DBA values are sound ratings for the maximum number of fans in operation per RC at 3m in accordance with AHRI standard 370-2001.*

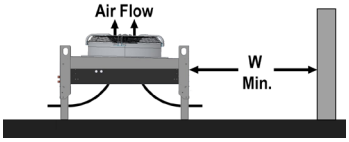
Location of Remote Condenser System

The equipment is designed for outdoor installation and may be mounted on a roof or concrete slab. The units should be mounted level on roofs, slabs and/or structural supports that are sufficiently strong to support the total equipment operating weight. Consult a professional engineer to determine safe mounting loads.

Sufficient space for uninhibited airflow should be provided when near: overhangs; walls; pits; fences; other equipment; and building air intakes, vents or exhaust fans. Locate the remote condenser far enough away from obstructions to provide adequate clearance for ambient air inlet and discharge to prevent 1) reducing the airflow through the condenser coil; and 2) causing air recirculation which heats the air entering the coil above ambient. See Figure 3 for recommendations. Do not attach ductwork to the coil inlet or outlet. Be sure to allow ample space for maintenance work.

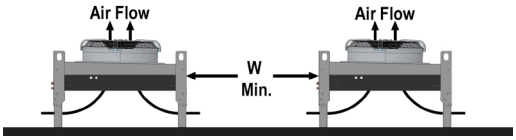
Locate equipment away from occupied spaces to reduce the transmission of objectionable sound and/or vibration. Use refrigerant piping flexible to prevent transmission of noise and vibration into the building. Use isolation hangers to support refrigerant lines. The unit must be secured in its final location. Holes are provided in the mounting legs for this purpose.

A



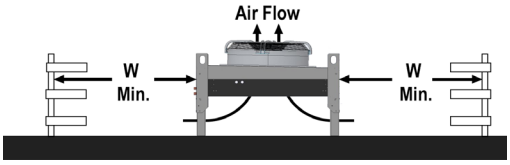
Walls or Obstructions: All sides of the unit should be a minimum of one overall unit width “W” away from any wall or barrier.

B



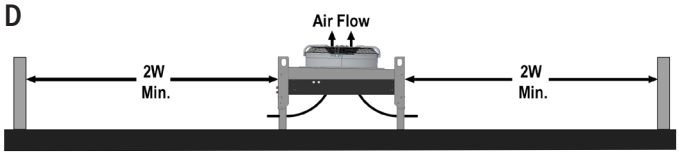
Multiple Units: For units placed side by side, the minimum distance between the units is the overall width “W” of largest unit.

C



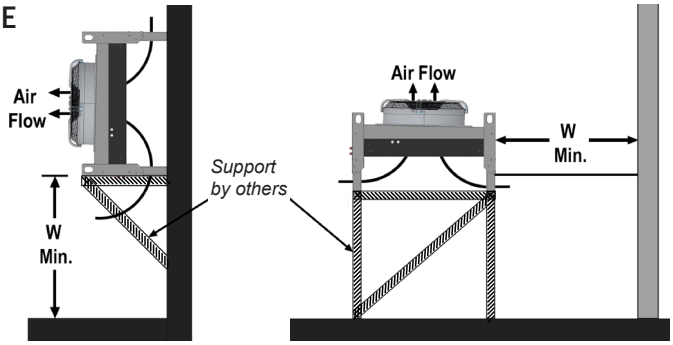
Decorative Fences: Fences must have 50% free area, with 1 foot of bottom clearance, and must not extend higher than the top of the unit. Units should be a minimum of one overall width “W” away from fence.

D



Units in Pits: The top of the unit must be level with, or higher than, the top of the pit. All sides of the unit should be a minimum of two overall unit widths “2W” away from any wall of the pit.

E



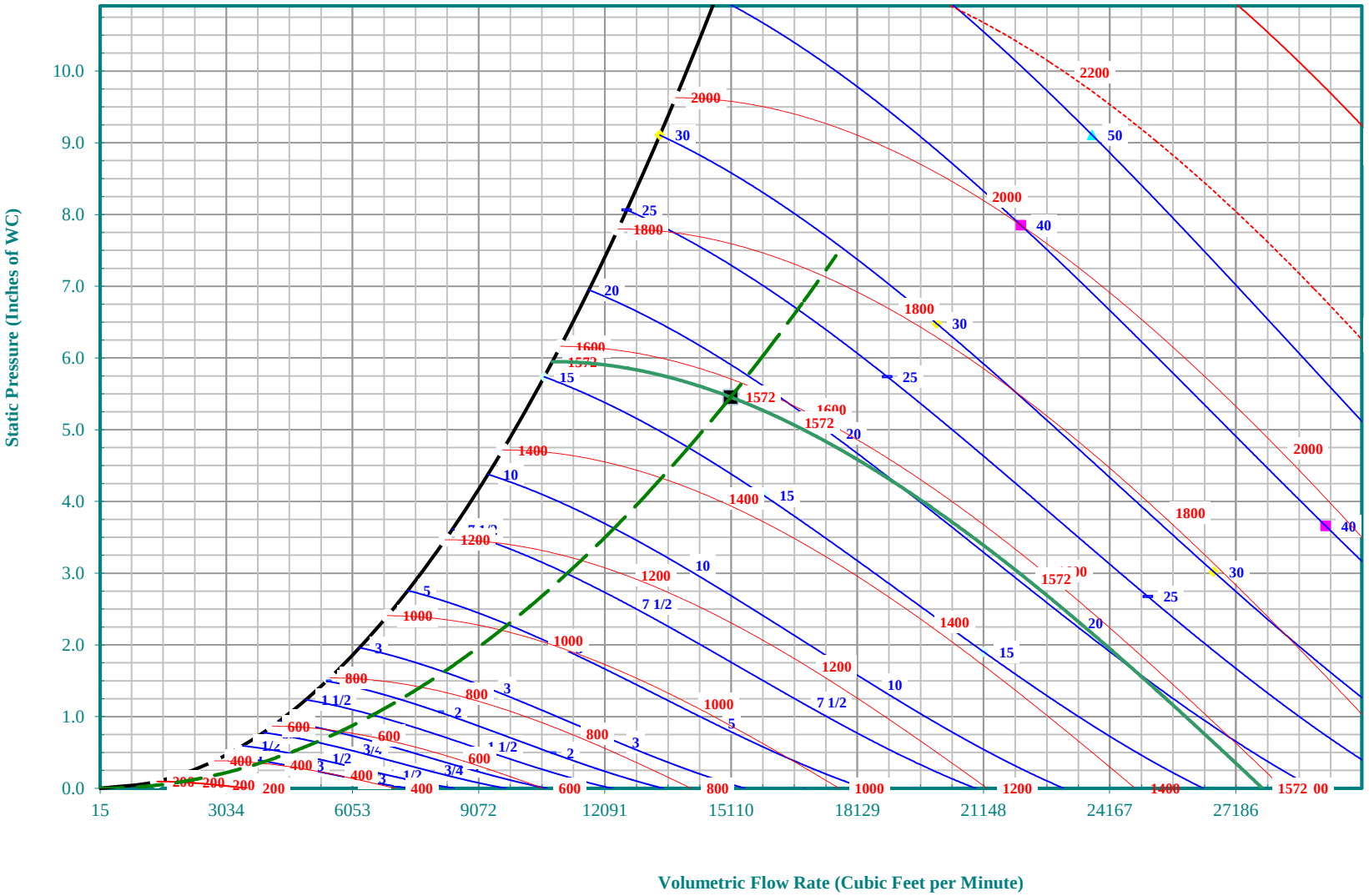
Horizontal Airflow Mount or Raised Platform Mount: The unit sides should be a minimum of one overall unit width “W” away from ground (Horizontal Airflow Mount) or wall (Raised Platform Mount). The support is provided by others and must allow airflow to access the coil.

Figure 3 - Space and Location Requirements

5.2.5 SA35w/ Energy Rec.

PDU-1 @ 1631 Alt.

Supply Blower Performance Curve



BLOWER INFORMATION

710-131, ATZAF 25-25 T2, Comefri

TOTAL [CFM, TSP]

15100, 5.45

BHP (w/o Belt Loss, w/ Belt Loss)

17.43, 18.75

MOTOR P/N, HP, FLA TOTAL

720-224, 25.00HP, 59.6A

STATIC EFFICIENCY, RPM

74%, 1572

VFD INFORMATION

Max (Hz):65 (default) Min (Hz):60

BELT INFORMATION

BX

QTY 2

DRIVER INFORMATION

750-108 2MVP80B94Q

Q2 750-100

3 Turns Open

DRIVEN INFORMATION

750-311 2B5V94 x 2

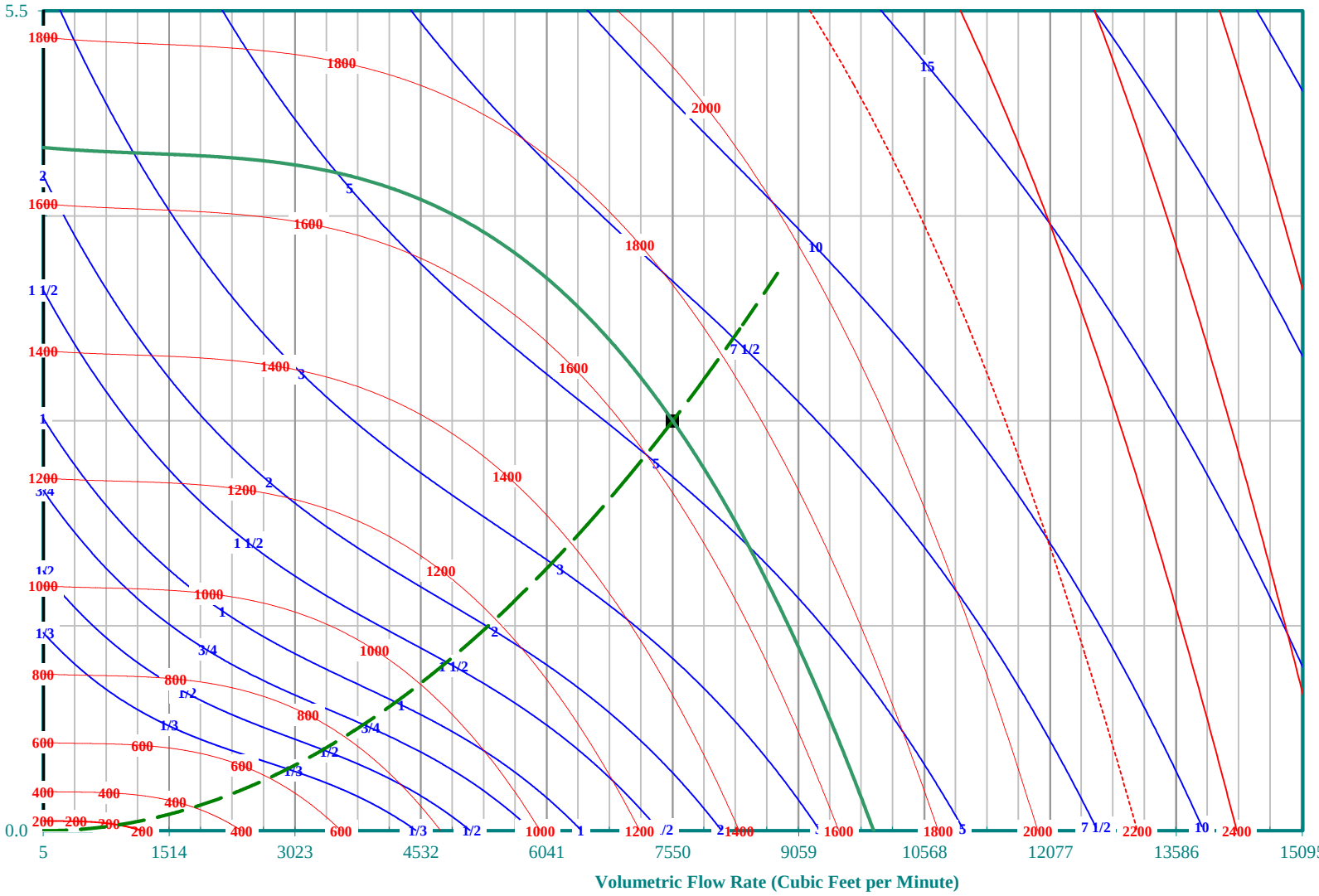
750-231 B

Driven RPM: 1638

5.2.5 SA35w/ Energy Rec.

PDU-1 @ 1631 Alt.

Exhaust Blower Performance Curve



BLOWER INFORMATION

710-254-002 (1), GR56C-ZID.GL.CR, Ziehl-Abegg

TOTAL [CFM, TSP]

7550, 2.77

BHP (w/o Belt Loss, w/ Belt Loss)

5.40, N/A

MOTOR P/N, HP, FLA TOTAL

EC Motor (N/A), 07.50HP, 24.9A

STATIC EFFICIENCY, RPM

61%, 1670

VFD INFORMATION

Not Applicable, EC Fan

BELT INFORMATION

Not Applicable, Direct Drive

DRIVER INFORMATION

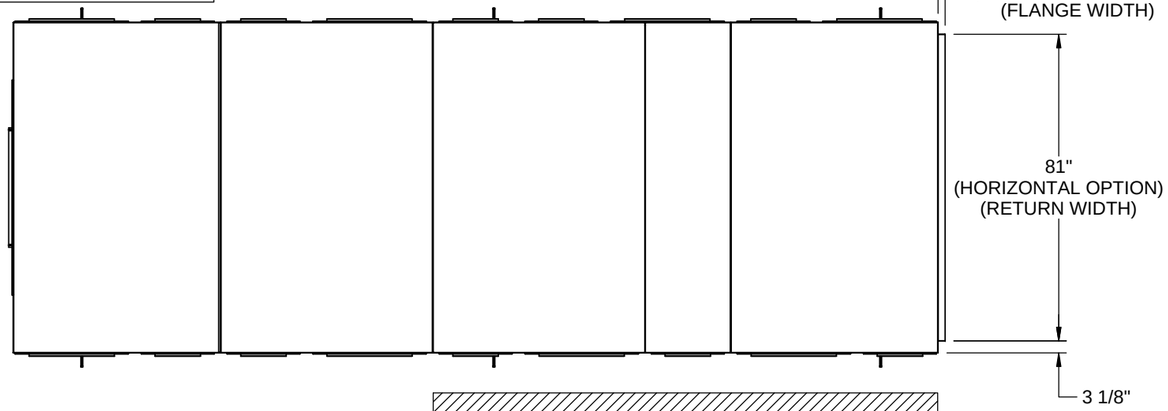
Not Applicable, Direct Drive

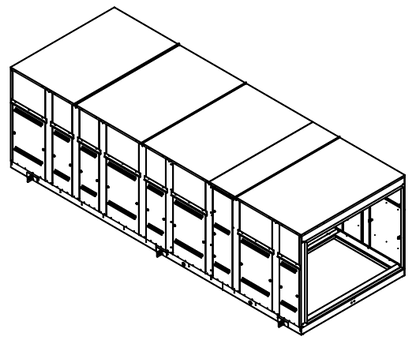
DRIVEN INFORMATION

Not Applicable, Direct Drive

G900-011

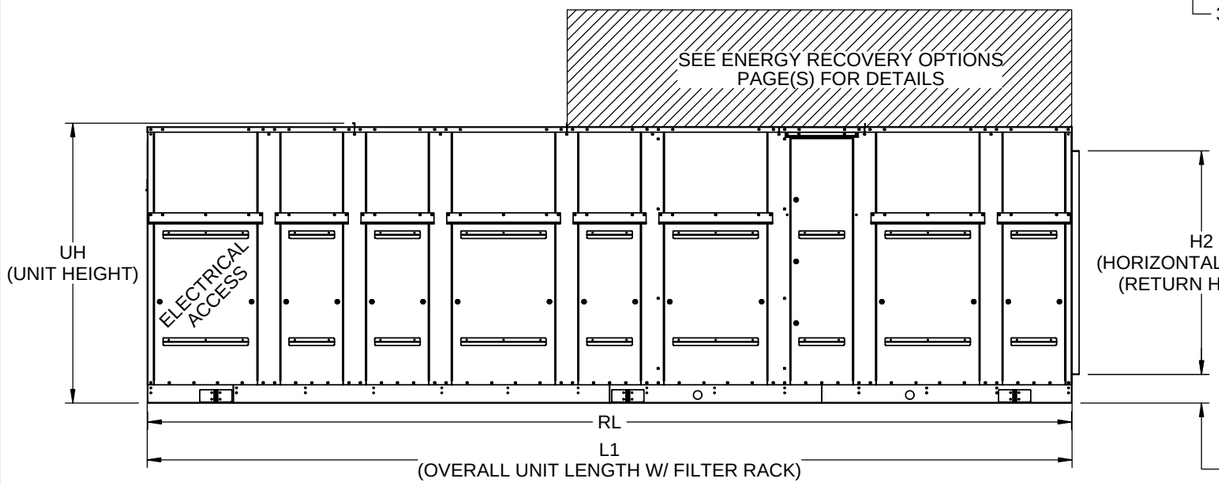
NON-VENTILATION UNIT SHOWN



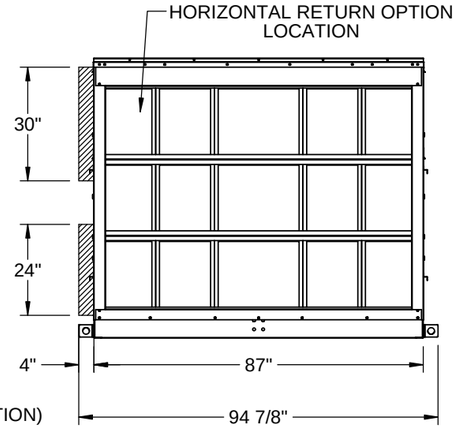


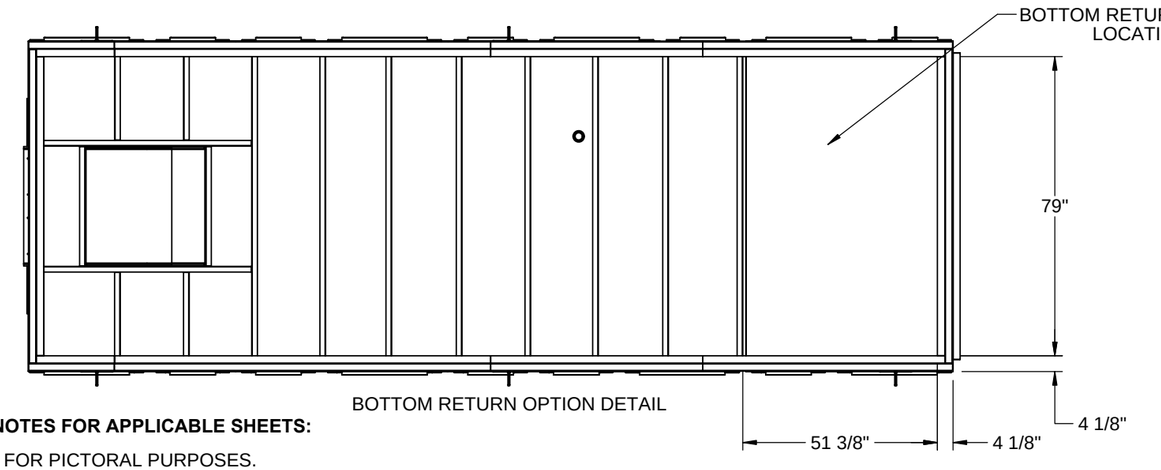
UNIT TYPE	MODEL SIZE	RL	L1	UH	H2	H3
WITHOUT ENERGY RECOVERY	35	243 7/8	244	73 7/8	59	7 5/8
	40	243 7/8	244	73 7/8	59	7 5/8
	45	243 7/8	244	88 7/8	74	7 5/8
	50	243 7/8	244	88 7/8	74	7 5/8
WITH ENERGY RECOVERY	35	243 7/8	244	73 7/8	59	7 5/8
	40	243 7/8	244	73 7/8	59	7 5/8
	45	243 7/8	244	88 7/8	74	7 5/8
	50	243 7/8	244	88 7/8	74	7 5/8

FILTER OPTION	MODEL SIZE	PART NUMBER	QTY	NOM WIDTH	NOM HEIGHT	NOM DEPTH
DISPOSABLE	35	870-028	12	16	20	4
		870-041	3	24		
	40	870-028	12	16	20	4
		870-041	3	24		
	45	870-035	9	25	29	4
	50	870-035	9	25	29	4



OPTIONAL OUTDOOR HOODS OMITTED FOR CLARITY
SEE OA BOX OPTION PAGES FOR DETAILED INFORMATION





BOTTOM RETURN OPTION DETAIL

GENERAL NOTES FOR APPLICABLE SHEETS:

VIEWS ARE FOR PICTORAL PURPOSES.

REFER TO SUBMITTAL FOR CUSTOMER CONNECTION LOCATIONS.

DIMENSIONS ARE TO ACCESS SIDE OF UNIT.

LH ACCESS SHOWN FOR DISPLAY PURPOSES. ACCESS DOOR CONFIGURATION MAY CHANGE DEPENDING ON UNIT SIZE OR TYPE
REFER TO SHEET 4,5,6 FOR INTAKE AND DISCHARGE CONNECTION DIMENSIONS.

ALL DIMENSIONS ARE IN INCHES
FRACTIONAL TOLERANCE ± 1/8"

All Dimensions in Inches
All Angles 90°
All outside corners 0.125" fillet
Unless Otherwise Specified

Third Angle Projection

Part weight

Tolerance Unless Otherwise Specifed
X.X ±.125
X.XX ±.060
X.XXX ±.030
Angles ±1°

DESERT AIRE
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Drawn	Date Released	Description
ASV	12/5/2014	SA35-50 EXT RETURN w/AUX HEAT

Sheet	Page Title
1/8	GENERAL INFORMATION

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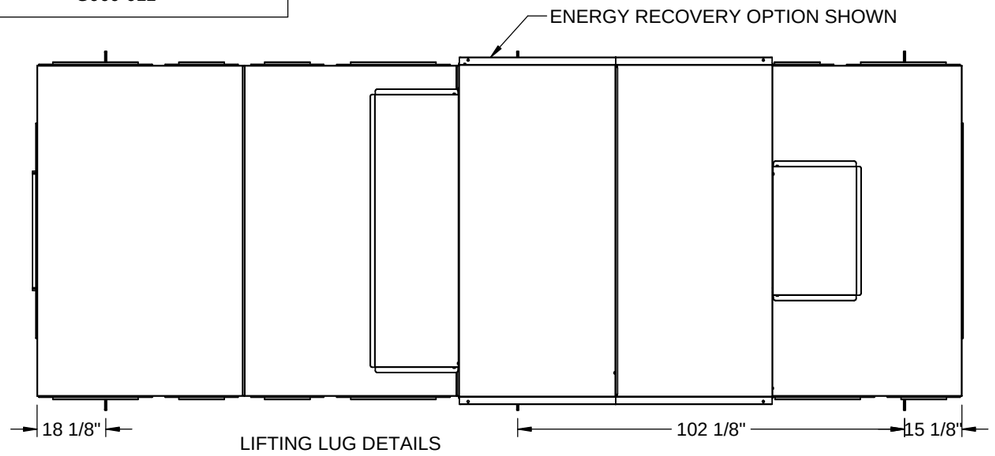
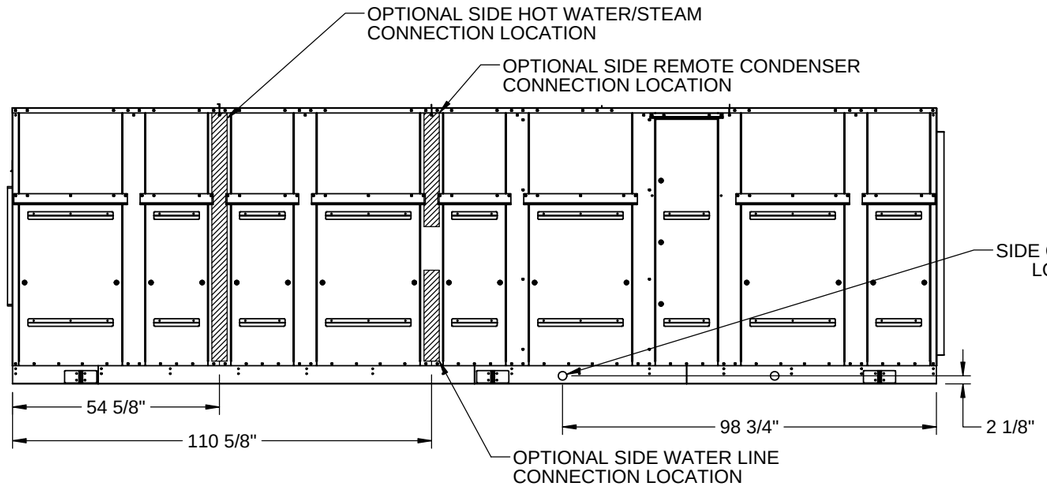
G900-011

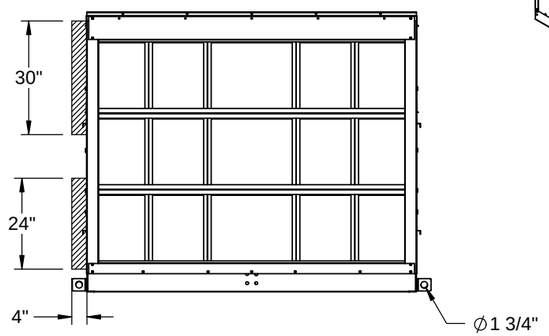


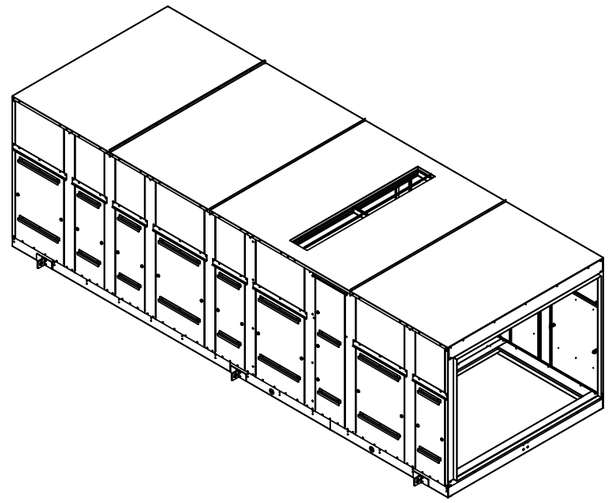
LIFTING LUG DETAILS

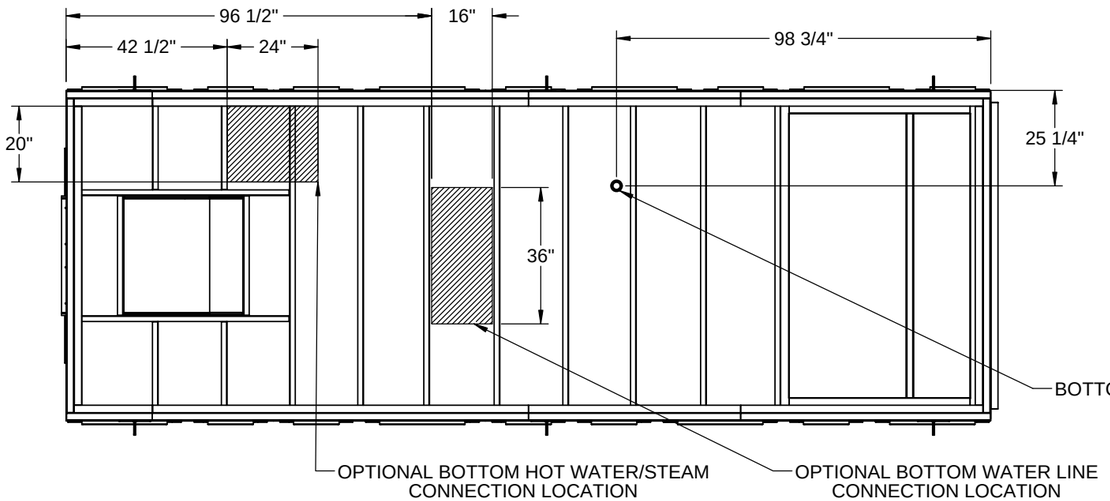
UNIT TYPE	MODEL SIZE	POOL WATER		CIRCUIT A		CIRCUIT B	
		CIRCUIT A	CIRCUIT B	DISCH DIA	LIQUID DIA	DISCH DIA	LIQUID DIA
WITHOUT ENERGY RECOVERY	35	1 1/2	2	1 1/8	3/4	1 3/8	3/4
	40	1 1/2	2	1 1/8	3/4	1 3/8	1 1/8
	45	2	2	1 3/8	7/8	1 3/8	7/8
	50	2	2	1 3/8	7/8	1 5/8	1 1/8
WITH ENERGY RECOVERY	35	1 1/2	2	1 1/8	3/4	1 3/8	3/4
	40	1 1/2	2	1 1/8	3/4	1 3/8	1 1/8
	45	2	2	1 3/8	7/8	1 3/8	7/8
	50	2	2	1 3/8	7/8	1 5/8	1 1/8



DUCT CONNECTION w/DAMPER OPTION SHOWN







LEFT HAND CONNECTION OPTIONS SHOWN
RIGHT HAND CONNECTION OPTIONS LOCATED WITH SAME DIMENSIONS OPPOSITE SIDE WHEN SPECIFIED

ALL DIMENSIONS ARE IN INCHES
FRACTIONAL TOLERANCE ± 1/8"

All Dimensions in Inches
All Angles 90°
All outside corners 0.125" fillet
Unless Otherwise Specified

Third Angle Projection

Part weight

Tolerance Unless Otherwise Specifed
X.X ±.125
X.XX ±.060
X.XXX ±.030
Angles ±1°

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Drawn	Date Released	Description
ASV	12/5/2014	SA35-50 EXT RETURN w/AUX HEAT
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2/8		CUSTOMER CONNECTIONS
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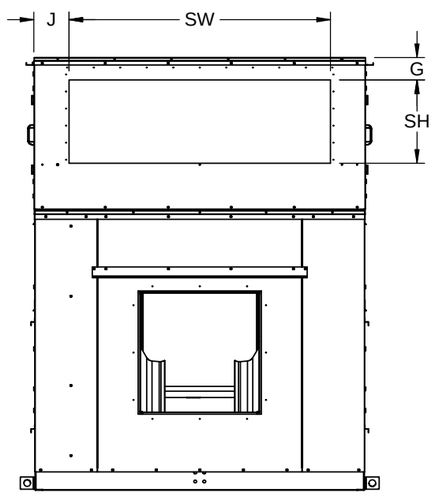
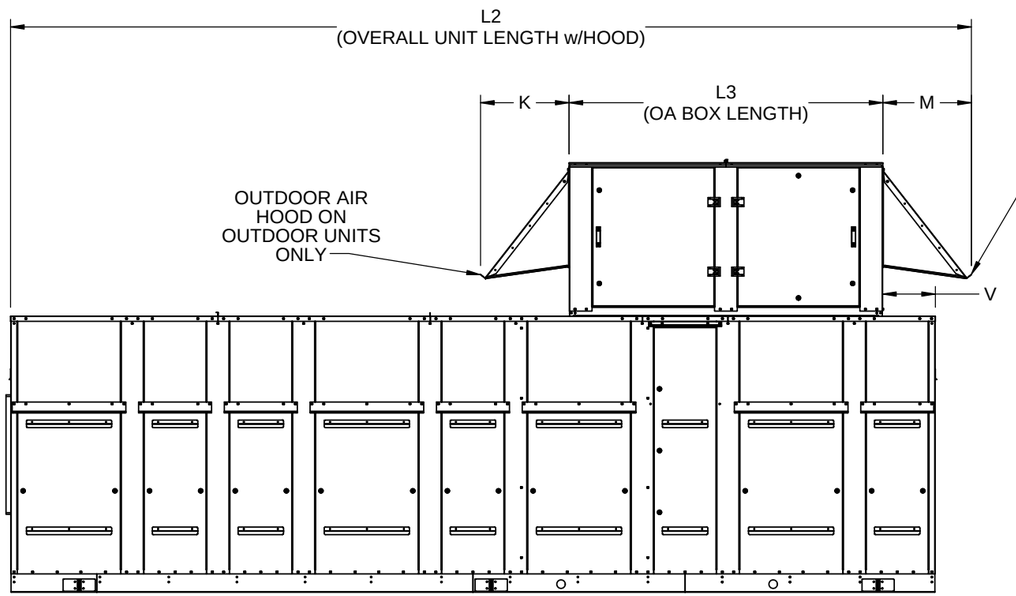
1. HOODS NOT PROVIDED ON INDOOR UNITS. NOTE: SOME OUTDOOR CONFIGURATIONS WILL NOT OVERHANG CABINET.

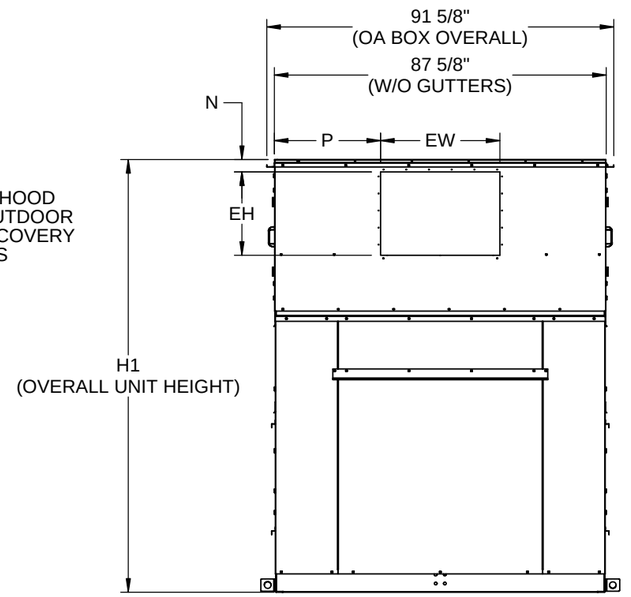
UNIT TYPE	MODEL SIZE	H1	1 L2		V	OA BOX									
						HOOD(S)		L3	OA INTAKE OPENING				EXHAUST DISCHARGE OPENING		
			INDOOR	OUTDOOR		K	M		SH	SW	G	J	EH	EW	N	P
ENERGY RECOVERY STANDARD	35	114	244	244	50	23 3/8	23 3/8	82 3/4	19 1/2	66 1/2	7 1/8	18	20	30	4 1/4	36 1/4
	40	114	244	244	50	23 3/8	23 3/8	82 3/4	19 1/2	66 1/2	7 1/8	18	20	30	4 1/4	36 1/4
	45	129	244	244	50	23 3/8	23 3/8	82 3/4	19 1/2	66 1/2	7 1/8	18	20	30	4 1/4	36 1/4
	50	129	244	244	50	23 3/8	23 3/8	82 3/4	19 1/2	66 1/2	7 1/8	18	20	30	4 1/4	36 1/4
ENERGY RECOVERY EXPANDED BOX	35	114	244	267 3/4	0	13 7/8	23 3/8	157 3/8	33	84	4 1/4	1 5/8	20	80	4 1/4	3 5/8
	40	114	244	267 3/4	0	13 7/8	23 3/8	157 3/8	33	84	4 1/4	1 5/8	20	80	4 1/4	3 5/8
	45	129	244	267 3/4	0	13 7/8	23 3/8	157 3/8	33	84	4 1/4	1 5/8	20	80	4 1/4	3 5/8
	50	129	244	267 3/4	0	13 7/8	23 3/8	157 3/8	33	84	4 1/4	1 5/8	20	80	4 1/4	3 5/8



HOODS OMITTED FOR CLARITY



DRAWING IS REPRESENTATIVE
REFER TO TABLES FOR DIMENSIONS OF ACTUAL UNIT SELECTION



HOODS OMITTED FOR CLARITY

STANDARD OA FILTERS	MODEL SIZE	PART NUMBER	QTY	NOM WIDTH	NOM HEIGHT	NOM DEPTH
DISPOSABLE	35	872-012	2	24	24	4
		870-041	2	20		
	40	872-012	2	24	24	4
		870-041	2	20		
	45	872-012	2	24	24	4
		870-041	2	20		
	50	872-012	2	24	24	4
		870-041	2	20		

EXPANDED OA FILTERS	MODEL SIZE	PART NUMBER	QTY	NOM WIDTH	NOM HEIGHT	NOM DEPTH
DISPOSABLE	35	870-010	2	20	20	4
		870-041	4	20	24	4
		870-012	2	24	24	4
	40	870-010	2	20	20	4
		870-041	4	20	24	4
		870-012	2	24	24	4
	45	870-010	2	20	20	4
		870-041	4	20	24	4
		870-012	2	24	24	4
	50	870-010	2	20	20	4
		870-041	4	20	24	4
		870-012	2	24	24	4

ALL DIMENSIONS ARE IN INCHES
FRACTIONAL TOLERANCE ± 1/8"

All Dimensions in Inches
All Angles 90°
All outside corners 0.125" fillet
Unless Otherwise Specified

Third Angle Projection

Part weight

Tolerance Unless Otherwise Specifed
X.X ±.125
X.XX ±.060
X.XXX ±.030
Angles ±1°

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ASV	12/5/2014	SA35-50 EXT RETURN w/AUX HEAT

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4/8	W/ ENERGY RECOVERY

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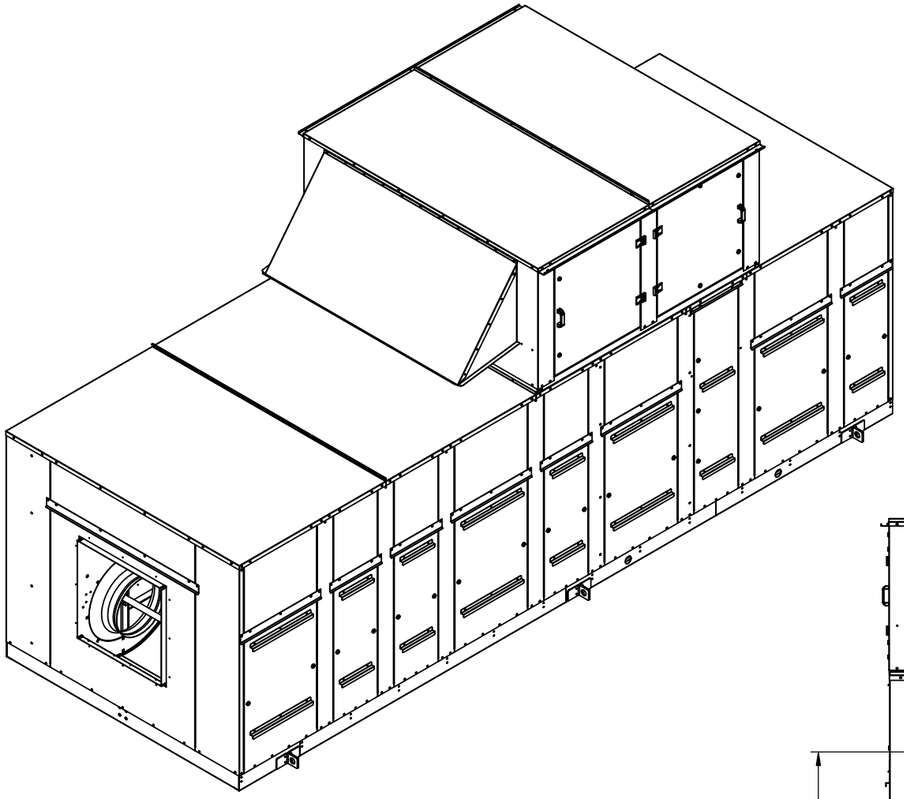
	35 TON				40 TON					45 TON					50 TON				
BLOWER	**DH1**	**DW1**	**R1**	**Q1**	**BLOWER**	**DH1**	**DW1**	**R1**	**Q1**	**BLOWER**	**DH1**	**DW1**	**R1**	**Q1**	**BLOWER**	**DH1**	**DW1**	**R1**	**Q1**
ATLI 18-18	18 7/8	22 1/8	17 3/8	32 5/8	ATLI 18-18	18 7/8	22 1/8	17 3/8	32 5/8	ATLI 18-18	18 7/8	22 1/8	17 3/8	32 5/8	ATLI 22-22	28 1/4	28 1/4	18 7/8	29 5/8
ATLI 20-15	25 1/4	20 1/4	17 3/8	33 5/8	ATLI 20-15	25 1/4	20 1/4	17 3/8	33 5/8	ATLI 20-15	25 1/4	20 1/4	17 3/8	33 5/8	ATLI 25-25	31 3/4	31 3/4	20 3/8	27 7/8
ATZAF 22-22	28 1/4	28 1/4	18 7/8	29 5/8	ATZAF 22-22	28 1/4	28 1/4	18 7/8	29 5/8	ATZAF 25-25	31 3/4	31 3/4	20 3/8	27 7/8	ATZAF 25-25	31 3/4	31 3/4	20 3/8	27 7/8
ATZAF 25-25	31 3/4	31 3/4	20 3/8	27 7/8	ATZAF 25-25	31 3/4	31 3/4	20 3/8	27 7/8	ATZAF 28-28	35 1/2	35 1/2	22 3/8	26	ATZAF 28-28	35 1/2	35 1/2	22 3/8	26
ATZAF 28-28	35 1/2	35 1/2	22 3/8	26	ATZAF 28-28	35 1/2	35 1/2	22 3/8	26										



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ALL DIMENSIONS ARE IN INCHES
FRACTIONAL TOLERANCE ± 1/8"

All Dimensions in Inches
All Angles 90°
All outside corners 0.125" fillet
Unless Otherwise Specified

Third Angle Projection

Part weight

Tolerance Unless Otherwise Specifed
X.X ±.125
X.XX ±.060
X.XXX ±.030
Angles ±1°

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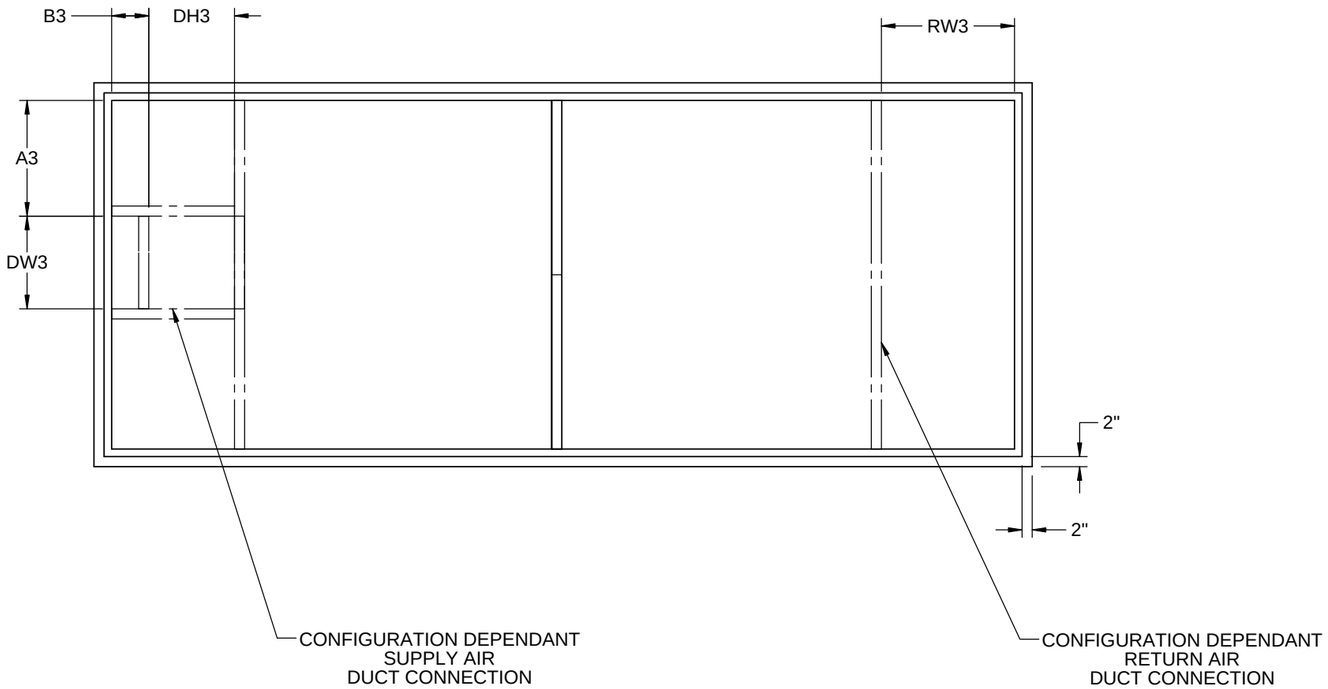
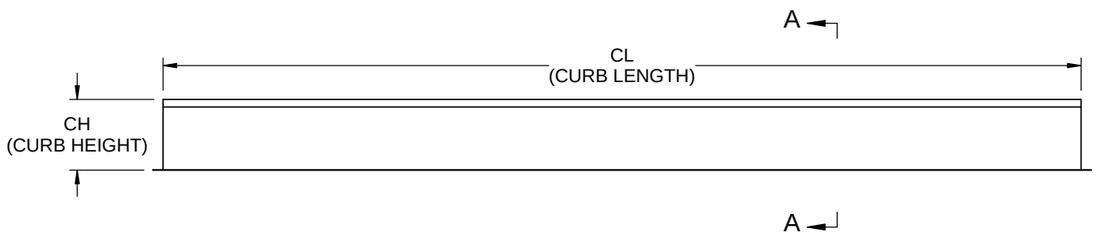
Drawn	Date Released	Description
ASV	12/5/2014	SA35-50 EXT RETURN w/AUX HEAT
Sheet: 5/8		Page Title: END SUPPLY
Scale: NTS	Rev.: 0	Drawing Number: G900-011

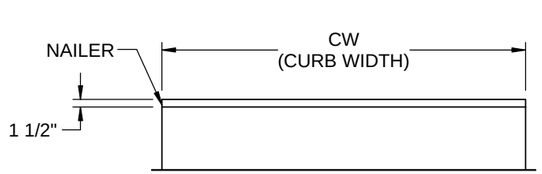
G900-011

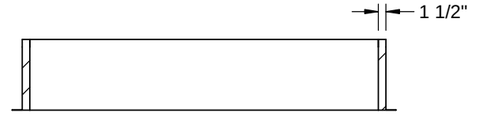


CURB PN	CURB		DOWN SUPPLY AND / OR DOWN RETURN				
	LENGTH	WIDTH	RW3	DW3	A3	DH3	B3
CB-MNGC-XX	238 7/8	82	51 3/8	22 1/8	28 1/2	18 7/8	7 7/8
CB-MNGD-XX	238 7/8	82	51 3/8	20 1/4	29 3/8	25 1/4	7 7/8
CB-MNGE-XX	238 7/8	82	51 3/8	28 1/4	25 3/8	28 1/4	9 3/8
CB-MNGF-XX	238 7/8	82	51 3/8	31 3/4	23 5/8	31 3/4	10 7/8
CB-MNGJ-XX	238 7/8	82	51 3/8	28 1/4	25 3/8	28 1/4	9 3/8
CB-MNGK-XX	238 7/8	82	51 3/8	31 3/4	23 5/8	31 3/4	10 7/8
CB-MNGM-XX	238 7/8	82	51 3/8	35 1/2	21 3/4	35 1/2	12 7/8
CB-MNGZ-XX	238 7/8	82	51 3/8	NO SUPPLY/RETURN DUCT CONNECITON			

CURB HEIGHT IN INCHES DESIGNATED BY XX IN THE CURB PART NUMBER







SECTION A-A

DUCT CONNECTIONS FOR DOWN SUPPLY AND/OR DOWN RETURN

NOTES:
REFER TO SHEET 1 FOR GENERAL NOTES

CURBS 115" IN LENGTH AND LESS ARE SHIPPED AS COMPLETE CURBS, GREATER THAN 115" ARE SHIPPED KNOCKED DOWN.

NUMBER AND LOCATION OF CROSS SUPPORT(S) IS DEPENDANT UPON THE GAUGE OF MATERIAL USED TO CONSTRUCT THE CURB, DUCT SUPPORT CONFIGURATION, LENGTH OF CURB, AND WIDTH OF CURB. INSTALLATION INSTRUCTIONS INCLUDED WITH CURB SHIPMENT INDICATE THE REQUIRED POSITION FOR FIELD ASSEMBLED CURBS.

ALL DIMENSIONS ARE IN INCHES
TOLERANCE ± 1/8"

All Dimensions in Inches
All Angles 90°
All outside corners 0.125" fillet
Unless Otherwise Specified

Third Angle Projection

Part weight

Tolerance Unless Otherwise Specifed
X.X ±.125
X.XX ±.060
X.XXX ±.030
Angles ±1°

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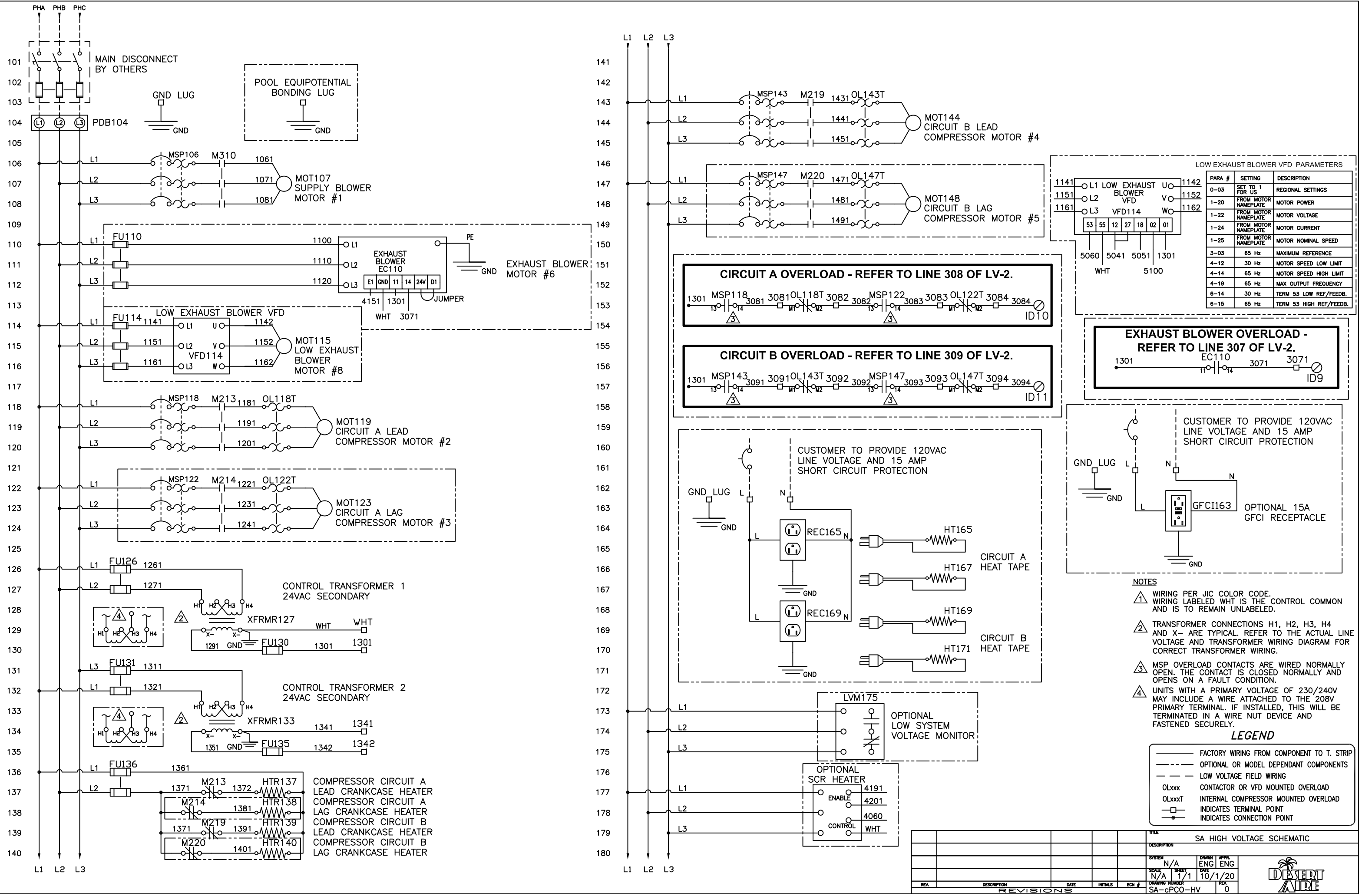
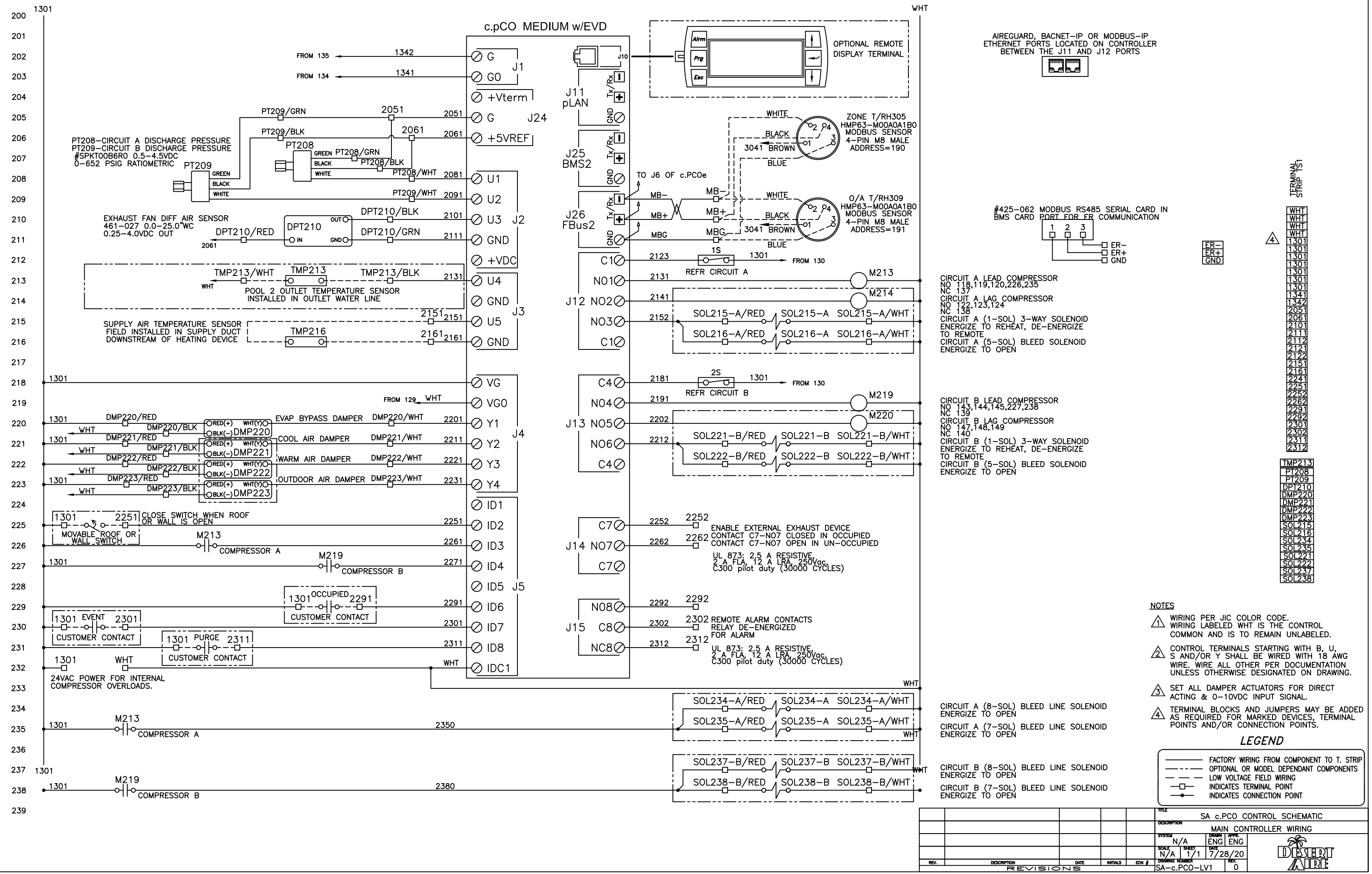
Drawn	Date Released	Description
ASV	12/5/2014	SA35-50 EXT RETURN w/AUX HEAT

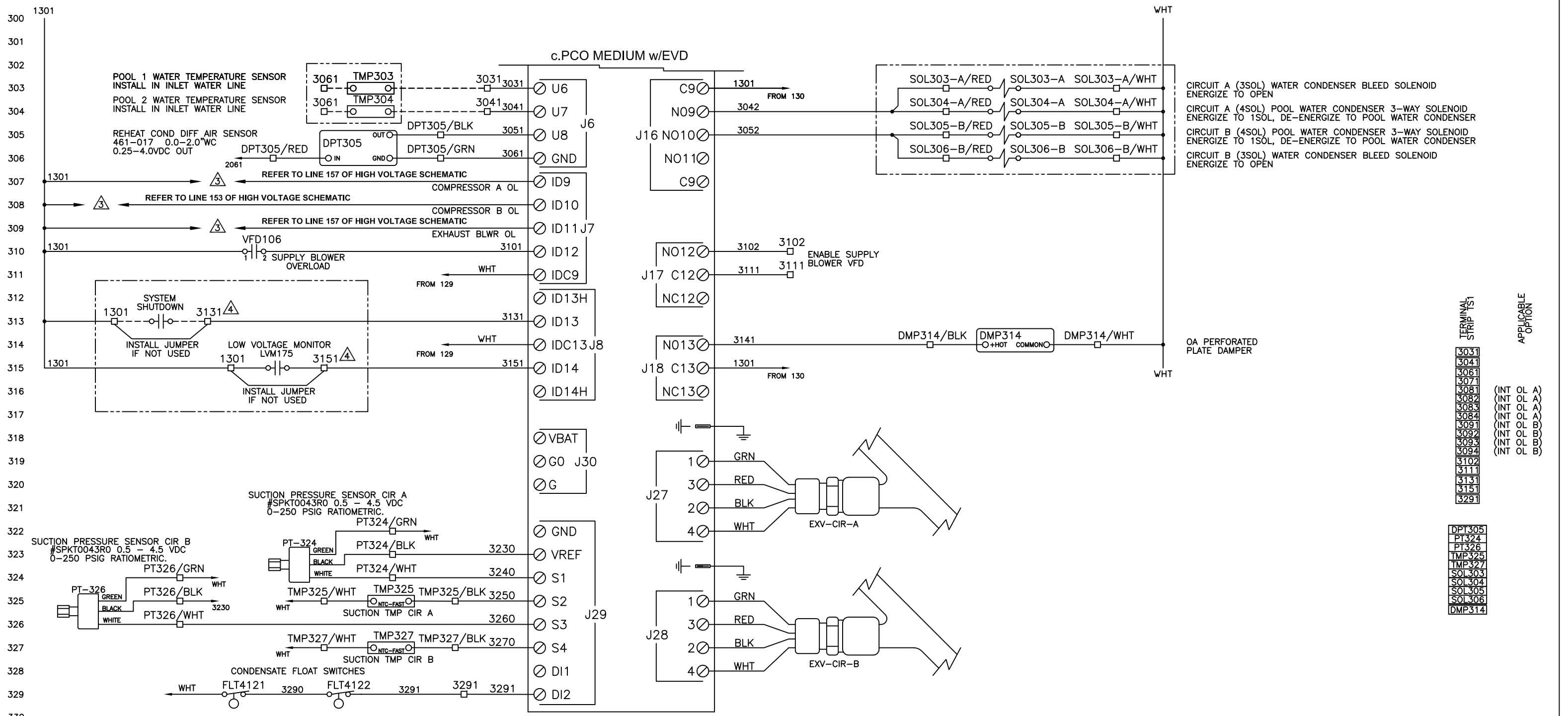
Sheet	Page Title
8/8	CURB DETAILS

Scale	Rev.	Drawing Number
NTS	0	G900-011





Submittal 38756 u75253 [20250626] [11.25].pdf



TERMINAL STRIP TS1	APPLICABLE OPTION
3031	
3041	
3061	
3071	
3081	(INT OL A)
3082	(INT OL A)
3083	(INT OL A)
3084	(INT OL A)
3091	(INT OL B)
3092	(INT OL B)
3093	(INT OL B)
3094	(INT OL B)
3102	
3111	
3131	
3151	
3291	

DPT305
PT324
PT326
TMP325
TMP327
SOL303
SOL304
SOL305
SOL306
DMP314

NOTES

1. WIRING PER JIC COLOR CODE. WIRING LABELED WHT IS THE CONTROL COMMON AND IS TO REMAIN UNLABELED.
2. MSP OVERLOAD CONTACTS ARE WIRED NORMALLY OPEN. THE CONTACT IS CLOSED NORMALLY AND OPENS ON A FAULT CONDITION.
3. DIGITAL INPUTS 9, 10 AND 11 ON LINES 307, 308 AND 309 ARE USED FOR THE MULTIPLE OVERLOAD CUTOUTS. REFER TO LINES 153 AND 157 OF THE HIGH VOLTAGE DRAWING FOR THE SPECIFIC WIRING DETAILS OF THE DEVICES PROVIDED.
4. REMOVE JUMPER AND CONNECT NORMALLY CLOSED (NC) CONTACT FOR SYSTEM SHUTDOWN (SMOKE DETECTOR, REFRIGERANT LEAK SENSOR, ETC.) OR LOW VOLTAGE MONITOR.
5. CONTROL TERMINALS STARTING WITH B, U, S AND/OR Y SHALL BE WIRED WITH 18 AWG WIRE. WIRE ALL OTHER PER DOCUMENTATION UNLESS OTHERWISE DESIGNATED ON DRAWING.

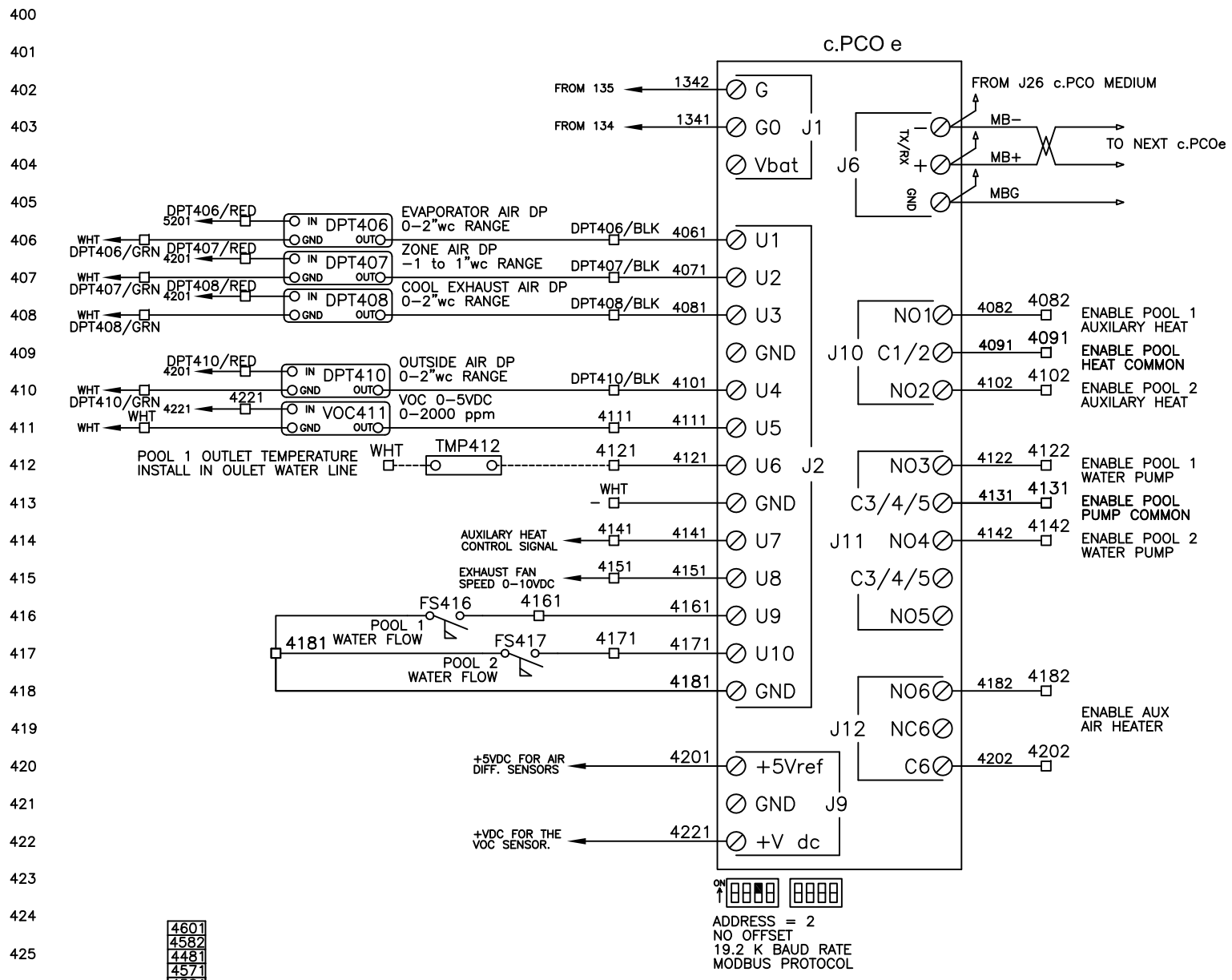
LEGEND

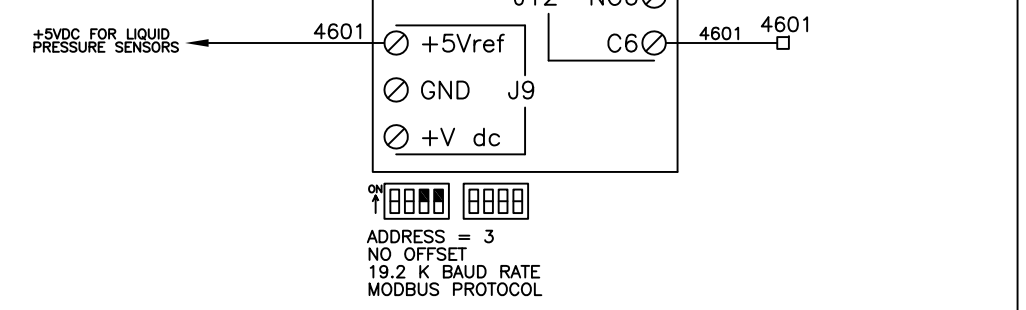
- FACTORY WIRING FROM COMPONENT TO T. STRIP
- OPTIONAL OR MODEL DEPENDANT COMPONENTS
- LOW VOLTAGE FIELD WIRING
- INDICATES TERMINAL POINT
- INDICATES CONNECTION POINT

REV.	DESCRIPTION	DATE	INITIALS	ECN #
REVISIONS				

TITLE: SA c.PCO CONTROL SCHEMATIC
DESCRIPTION:
SYSTEM: N/A | DRAWN: ENG | APPR.: ENG
SCALE: N/A | SHEET: 1/1 | DATE: 7/28/20
DRAWING NUMBER: SA-c.PCO-LV2 | REV.: 0

DESERT AIRE





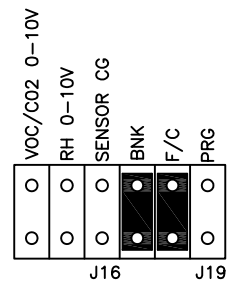
TERMINAL STRIP TS1

4601
4582
4481
4571
4581
4561
4541
4531
4521
4491
4482
4471
4461
4202
4201
4182
4171
4181
4161
4151
4141
4142
4131
4122
4221
4111
4101
4102
4091
4082

MULTI–TIERED TERMINAL STRIP

PT454
PT455
DPT410
DPT408
DPT407
DPT406
TMP412
TMP450
TMP451
TMP452

VOC SENSOR JUMPER CONFIGURATION



NOTES

1. WIRING PER JIC COLOR CODE. WIRING LABELED WHT IS THE CONTROL COMMON AND IS TO REMAIN UNLABELED.
2. CONTROL TERMINALS STARTING WITH B, U, S AND/OR Y SHALL BE WIRED WITH 18 AWG WIRE. WIRE ALL OTHER PER DOCUMENTATION UNLESS OTHERWISE DESIGNATED ON DRAWING.

LEGEND

- FACTORY WIRING FROM COMPONENT TO T. STRIP
- OPTIONAL OR MODEL DEPENDANT COMPONENTS
- LOW VOLTAGE FIELD WIRING
- INDICATES TERMINAL POINT
- INDICATES CONNECTION POINT

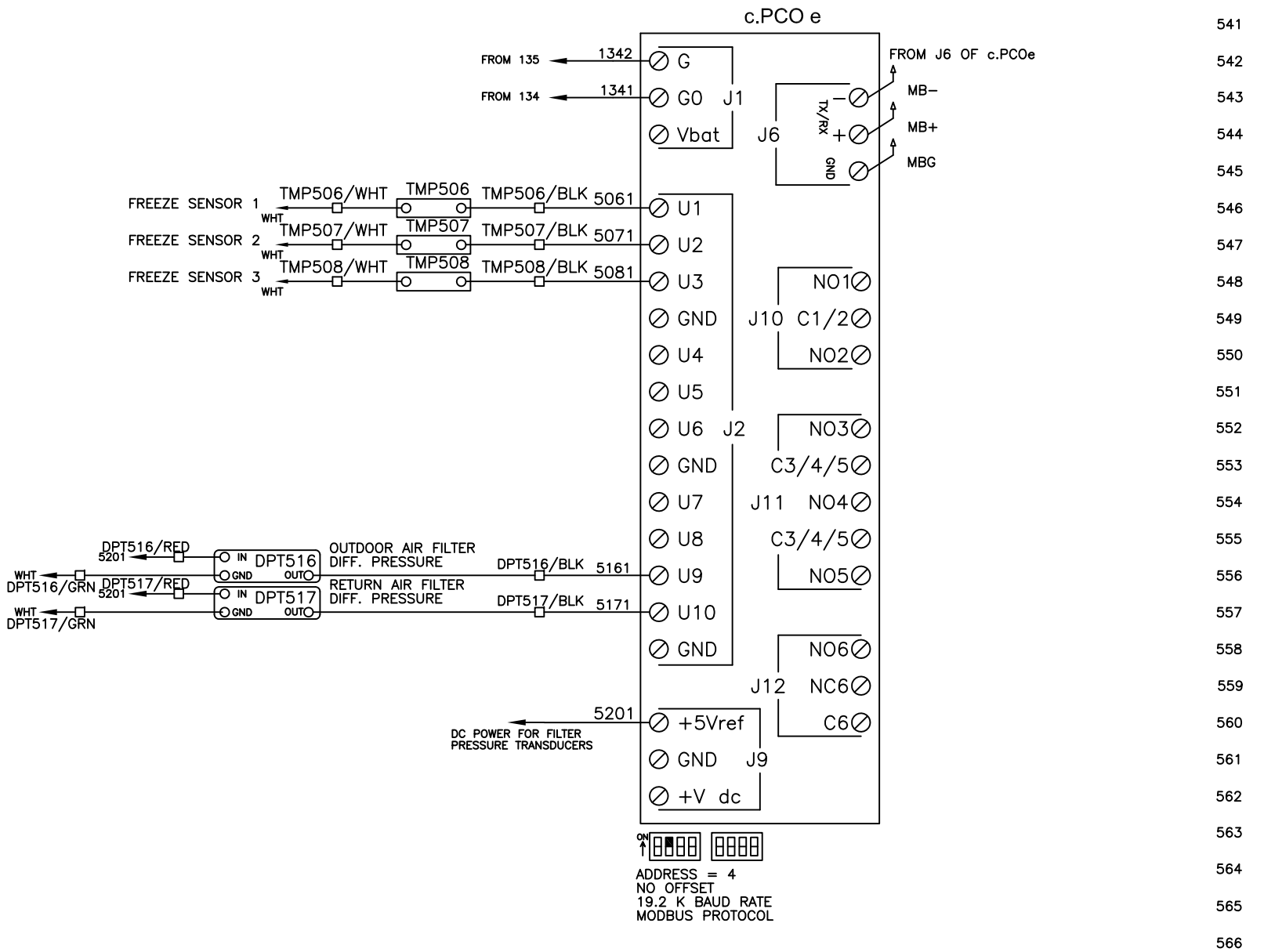
REV.	DESCRIPTION	DATE	INITIALS	ECN #

REVISIONS

TITLE: SA c.PCO CONTROL SCHEMATIC
DESCRIPTION: EXPANSION BOARD WIRING
SYSTEM: N/A
DRAWN: ENG
APPR.: ENG
SCALE: N/A
SHEET: 1/1
DATE: 7/28/20
DRAWING NUMBER: SA–c.PCO–LV3
REV.: 0

DESERT AIRE

EXPANSION BOARD REQUIRED WATER COIL FREEZE PROTECTION USING MULTIPLE TEMPERATURE SENSORS OR FILTER PRESSURE TRANSDUCERS.



MULTI-TIERED TERMINAL STRIP

TMP506
TMP507
TMP508
DPT516
DPT517

NOTES

1. WIRING PER JIC COLOR CODE. WIRING LABELED WHT IS THE CONTROL COMMON AND IS TO REMAIN UNLABELED.
2. CONTROL TERMINALS STARTING WITH B, U, S AND/OR Y SHALL BE WIRED WITH 18 AWG WIRE. WIRE ALL OTHER PER DOCUMENTATION UNLESS OTHERWISE DESIGNATED ON DRAWING.

LEGEND

- FACTORY WIRING FROM COMPONENT TO T. STRIP
- OPTIONAL OR MODEL DEPENDANT COMPONENTS
- LOW VOLTAGE FIELD WIRING
- INDICATES TERMINAL POINT
- INDICATES CONNECTION POINT

REV.	DESCRIPTION	DATE	INITIALS	ECN #
	REVISIONS			

TITLE: SA c.PCO CONTROL SCHEMATIC
DESCRIPTION: EXPANSION BOARD WIRING
SYSTEM: N/A | DRAWN: ENG | APPR.: ENG
SCALE: N/A | SHEET: 1/1 | DATE: 7/28/20
DRAWING NUMBER: SA-c.PCO-LV4 | REV.: 0

DESERT AIRE

SA Pool Dehumidifier

UNIT TAG	PDU-1
UNIT MANUFACTURE	DESERT AIRE
MODEL NO	SA35
LOCATION	Outdoor
UNIT WEIGHT	7600 lbs.
FAN DATA	
SUPPLY AIR FLOW - CFM	15,100
S/A ESP AT MAXIMUM FLOW (in. W.C.)	4.00
S/A FAN TSP (in. W.C)	5.46
S/A FAN HP	25
OUTSIDE AIR FLOW - CFM	6,270
EXHAUST AIR FLOW - CFM	7,550
E/A ESP AT MAXIMUM FLOW (in. W.C.)	0.60
E/A FAN TSP (in. W.C)	2.77
E/A FAN HP	7.5
PERFORMANCE	
EAT DB | WB (°F)	82.0 | 69.6
MOISTURE REMOVAL CAPACITY - LB/HR	178.0
TOTAL COOLING CAP BTUH	429,442
TOTAL SENSIBLE CAP BTUH	241,509
THR BTUH	541,559
COMPRESSOR Circuit A	15
COMPRESSOR Circuit B	20
UNIT ELECTRICAL	
VOLTAGE	208/3/60
MOPD	250
MCA	225
SHORT CIRCUIT CURRENT RATING (SCCR)	65
AUXILIARY HEATING	
TYPE	Hot Water Coil
MBH	400
EAT / EWT	70 / 180
GPM / LWT	35 / 155

POOL WATER HEAT RECOVERY	
CIRCUIT A - CONDENSER 1	**Pool (Full)**
CAPACITY @ 82 F DB/60% RH (MBH)	240
WATER INLET/OUTLET SIZE CPVC SCH 80 (INCHES)	1.5
WATER FLOW (GPM)	30
PRESSURE DROP (FT W.C.)	12.7
REMOTE CONDENSER DATA	
MODEL NUMBER	RC8D029C3S21926
AMBIENT TEMPERATURE (°F)	100.0
NO. OF FANS	4
WEIGHT	1537
VOLTAGE	208-230/3/60
MCA	28.9
MOPD	35
SHORT CIRCUIT CURRENT RATING (SCCR)	5kA

DESERT AIRE, LLC.
TERMS AND CONDITIONS OF SALE

These Terms and Conditions of Sale shall govern all purchase orders placed by buyer ("Buyer") for products ("Products") from Desert Aire, LLC, a Delaware corporation, and its affiliates (collectively, "Seller").

1. Acceptance; Contrary Terms; Entire Agreement. All orders for Products are subject to acceptance by Seller at its offices in Germantown, Wisconsin. BUYER'S ORDER IS ACCEPTED ONLY ON THE TERMS AND CONDITIONS CONTAINED HEREIN AND THE PROVISIONS OF ANY PURCHASE ORDER OR OTHER WRITING WHICH ARE INCONSISTENT HEREWITH SHALL NOT CONSTITUTE PART OF THESE TERMS AND CONDITIONS OF SALE AND SHALL BE DEEMED A MATERIAL ALTERATION HEREOF. SELLER'S ACCEPTANCE OF BUYER'S ORDER IS SUBJECT TO AND CONDITIONED ON BUYER'S ASSENT TO THESE TERMS AND CONDITIONS OF SALE. ANY CONDUCT OR ACTION BY BUYER RECOGNIZING OR EVIDENCING THE EXISTENCE OF AN AGREEMENT SHALL BE DEEMED TO BE AN ACCEPTANCE BY BUYER WITHOUT EXCEPTION OF THESE TERMS AND CONDITIONS OF SALE. Seller's written proposal or price quotation ("Seller's Written Proposal") and these Terms and Conditions of Sale are intended by the parties to be the complete and exclusive agreement of the parties with respect to the subject matter hereof and supersede all prior understandings, representations, warranties or agreements between the parties, whether written or oral. Without limiting the generality of the foregoing, no course of prior dealings, course of performance, course of conduct, community standards, industry standards, customary practices or interpretation, or usage of trade shall be relevant to supplement or explain any terms in these Terms and Conditions of Sale. No modification of these Terms and Conditions of Sale, whether in whole or in part, will be valid or binding upon Seller unless expressly agreed to by Seller in a signed writing.

2. Changes and Cancellation. All orders for Products accepted by Seller shall be firm and no changes or cancellation shall be allowed without the written consent of Seller. Buyer acknowledges and agrees that in the event any cancellations are approved by Seller, Buyer will pay to Seller, as liquidated damages and not as a penalty, an amount equal to (i) the costs incurred by Seller up to the date of cancellation determined using Seller's standard pricing, plus (ii) up to a 15% of the purchase price for the Products.

3. Prices; Payment Terms. The prices and the payment terms for the Products shall be those set forth in Seller's Written Proposal and shall be exclusive of all sales, use, excise and other similar taxes, all of which are the sole responsibility of Buyer. Buyer shall pay interest on all late payments at the lesser of the rate of 1.5% per month or the highest rate permissible under applicable law, calculated daily and compounded monthly, and shall reimburse Seller for all costs incurred in collecting any late payments, including, without limitation, attorney's fees, in addition to all other remedies available under these Terms and Conditions of Sale. Payment for the Products specified herein shall constitute acceptance by Buyer.

4. Taxes. Unless otherwise specified, all prices shown do not include applicable excise sales, use or other tax imposed upon the sale and/or delivery of these products. Any such taxes, when applicable, will be charged and listed as separate items on the invoice, or in lieu thereof the purchaser shall provide the company with a tax-exemption certification acceptable to the taxing authorities.

5. Delivery. All shipping terms shall be FOB (Incoterms 2010) Seller's Plant, Germantown, WI. All freight, storage, insurance or other fees or charges (including, without limitation, any sales, use or value-added taxes and import duties on the Products, if any) shall be paid by Buyer and if advanced by Seller, shall be added to Seller's invoice and payable together with payment for the Products purchased. Unless otherwise specified in Seller's Written Proposal or otherwise agreed-to by Seller, Seller will package the Products in a commercially reasonable manner acceptable to commercial carriers and will furnish special packaging, at Buyer's sole expense, only if specifically requested by Buyer and expressly agreed to in writing by Seller. Due to the nature of Seller's custom work, shipping dates in Seller's Written Proposal or Buyer's purchase order are estimates only and any delay in shipment shall not relieve Buyer of its obligation to pay for Products or accept subsequent deliveries.

6. Title; Risk of Loss. Title and risk of loss shall pass to Buyer upon delivery of the Products to a carrier at Seller's plant and as collateral security for the payment of the purchase price of the Products, Buyer hereby grants to Seller a lien on and security interest in and to all of the right, title and interest of Buyer in, to and under the Products, wherever located, and whether now existing or hereafter arising or acquired from time to time, and in all accessions thereto and replacements or modifications thereof, as well as all proceeds (including insurance proceeds) of the foregoing. Buyer authorizes Seller to file any uniform commercial code financial statements necessary to perfect Seller's security interest in the Products.

7. Shipping Damage. It is Buyer's immediate responsibility to report to the trucking company any exterior shipping damage and to file a claim with the trucking company. The Seller shall not be responsible for the cost to repair damage.

8. Inspection and Rejection of Nonconforming Products. Buyer shall inspect the Products within fifteen (15) days of receipt and shall be deemed to have accepted the Products unless it notifies Seller in writing during such inspection period of any Products that (a) fail to conform to the specifications set forth in Buyer's order or (b) materially exceed the quantity of Products ordered by Buyer (collectively, "Nonconforming Products"). If Buyer timely notifies Seller of any Nonconforming Products, Seller shall, in its sole discretion, either (i) replace or repair such Nonconforming Products, or (ii) credit or refund the price paid by Buyer for such Nonconforming Products, together with any reasonable shipping and handling expenses incurred by Buyer in connection therewith. THE REMEDIES SET FORTH IN THIS SECTION 7 SHALL BE BUYER'S SOLE AND EXCLUSIVE REMEDIES AND SELLER'S ENTIRE LIABILITY FOR THE DELIVERY OF NONCONFORMING PRODUCTS. All returns must be authorized by seller and no credit will be allowed for returned items that are damaged in transit, incomplete, or received in an unsatisfactory condition. All items which are not eligible for credit will be returned to the purchaser, transportation collect.

9. Exclusive Warranty. Subject to the terms and limitations of the exclusive warranty and remedies described herein, Seller warrants the Products sold pursuant to Seller's Written Proposal to be free from all latent defects in material and workmanship for a period as defined by the warranty statement as part of this proposal. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SELLER NEITHER ASSUMES (NOR HAS AUTHORIZED ANY PERSON TO ASSUME) ANY OTHER WARRANTY OR LIABILITY IN CONNECTION WITH THE PRODUCTS. SELLER MAKES NO WARRANTIES WITH RESPECT TO BUYER'S USE OF THE PRODUCTS OR CLAIMS BY BUYER'S PERSONNEL ARISING FROM BUYER'S USE OF THE PRODUCTS, OR ANY OTHER VARIABLE OVER WHICH THE SELLER HAS NO CONTROL. IF BUYER'S ORDER IS FOR PRODUCTS WHICH CONTAIN COMPONENTS MANUFACTURED BY A PARTY OTHER THAN SELLER, BUYER ACKNOWLEDGES THAT SELLER IS NOT THE MANUFACTURER OF SUCH COMPONENTS AND AGREES THAT ALL SUCH COMPONENTS ARE WARRANTED ONLY TO THE EXTENT OF THE MANUFACTURER'S EXPRESS WARRANTIES TO SELLER, WHICH SELLER SHALL PROVIDE TO BUYER AT BUYER'S REQUEST. NOTWITHSTANDING THE FOREGOING, SELLER SHALL NOT BE LIABLE FOR A BREACH OF THE WARRANTY SET FORTH IN THIS SECTION 9 IF BUYER ALTERS, MODIFIES OR REPAIRS THE PRODUCTS IN ANY WAY WITHOUT THE PRIOR WRITTEN CONSENT OF SELLER.

10. Warranty Remedies. Buyer shall provide Seller written notice of any defect in breach of the warranty set forth in Section 9, above, promptly after Buyer discovers such defect, and shall give Seller a reasonable opportunity after such notice to examine such Products to verify Buyer's claim that the Products are defective. If it is found that the goods contained defects at the time furnished by seller, seller will either repair or replace the defective part or parts at seller's option. This warranty to repair or replace is the exclusive remedy and is expressly limited to the materials furnished by seller. All replacements or repairs shall be F.O.B. Germantown, WI. The Seller shall not be liable for labor cost incurred in diagnosing the problem, in removal or replacement of the part so repaired or replaced. Accordingly, Seller shall not be liable for any consequential damages, whether to person or property, caused by defects in goods. This warranty does not apply to any goods which may have been repaired or altered in any way outside of our factory, so as to affect its stability in our judgement, nor does this warranty apply to any goods which have been subjected to misuse, negligence or accident. This warranty is in lieu of all other warranties, expressed or implied, including any implied warranty of merchantability, and extends only to the original purchaser.

11. Indemnification. Buyer shall indemnify and hold Seller and each of its officers, directors, employees, shareholders, affiliates, agents, representatives, successors and assigns harmless from and against any and all claims, actions, demands, legal proceedings, judgments, settlements, sums, costs, liabilities, losses, obligations, damages, penalties, fines, costs and other expenses (including, but not limited to, reasonable attorneys' fees) relating to, arising out of or resulting from (i) Buyer's use of the Products (except to the extent caused by the gross negligence or willful misconduct of Seller), or (ii) if the specifications or designs for the Products are provided by Buyer, any claim that the Products infringe upon the intellectual property, proprietary or other rights of any third party.

12. Limitation of Liability. IN NO EVENT SHALL SELLER BE LIABLE TO BUYER OR ANY THIRD PARTY FOR ANY LOSS OF USE, REVENUE OR PROFIT OR DIMINUTION IN VALUE, OR FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR PUNITIVE DAMAGES WHETHER ARISING OUT OF BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE) OR OTHERWISE, REGARDLESS OF WHETHER SUCH DAMAGES WERE FORESEEABLE AND WHETHER OR NOT SELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, AND NOTWITHSTANDING THE FAILURE OF ANY AGREED OR OTHER REMEDY OF ITS ESSENTIAL PURPOSE. IN NO EVENT SHALL SELLER'S AGGREGATE LIABILITY ARISING OUT OF OR RELATED TO BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE) OR OTHERWISE, EXCEED THE TOTAL OF THE AMOUNTS PAID TO SELLER FOR THE PRODUCTS.

13. Seller Specifications, Designs and Drawings. BUYER ACKNOWLEDGES AND AGREES THAT ANY SPECIFICATIONS, DESIGNS AND DRAWINGS FOR THE PRODUCTS PROVIDED BY SELLER ARE ONLY APPROXIMATIONS AND SELLER EXPRESSLY DISCLAIMS ANY WARRANTY WITH RESPECT TO ANY SUCH SPECIFICATIONS, DESIGNS, SOFTWARE CALCULATIONS AND DRAWINGS. Seller shall retain ownership of all specifications, designs and drawings provided by Seller and Buyer shall not provide such specifications, designs and drawings to any other party without the written consent of Seller.

14. Excuse from Performance. Seller shall have no liability for any failure or delay in shipment or other nonperformance if shipment or performance is rendered impossible, impracticable or unreasonably burdensome by any event, whether or not foreseen or foreseeable, brought about by any cause other than the willful misconduct of Seller, including, without limitation, accidents, breakdowns, riots, war, terrorism, interruptions in or failures of sources or subcontractors to supply materials or equipment, failures in manufacturing processes or equipment, strikes, labor or transportation problems, fires, explosions or other acts of God, or orders, contracts, priorities, directives, requisitions or requests of the federal or state governments, whether or not voluntarily assumed.

15. Notices. Any notice relating to these Terms and Conditions of Sale must be in writing and will be considered given at the earlier of the date when actually delivered to an officer of a party at the address provided in writing to the other party or when deposited in the United States mail, certified or registered mail, postage prepaid, return receipt requested, to such address.

16. Assignment. Buyer may not assign any of its rights, duties or obligations under these Terms and Conditions of Sale without Seller's prior written consent. Any attempted assignment without Seller's written consent, even if by operation of law, shall be null and void.

17. Controlling Law. All matters arising out of relating to these Terms and Conditions of Sale shall be governed by the internal laws of the State of Wisconsin, without regard to any choice or conflicts of law provisions. Any legal suit, action or proceeding arising out of or relating to this Agreement shall be instituted in the federal courts of the United States of America or the courts of the State of Wisconsin in each case located in Milwaukee County, Wisconsin, and each party irrevocably submits to the exclusive jurisdiction of such courts in any such suit, action or proceeding. The United Nations Convention on Contracts for the International Sale of Products (CISG) does not apply to any transaction between Seller and Buyer.

18. Invalidity or Unenforceability. In the event that any provision of these Terms and Conditions of Sale is found invalid or unenforceable, whether in whole or in part, for any reason, such provision shall be changed and interpreted so as to best accomplish the objectives of such provision within the limits of applicable law or applicable court decisions. The invalidity or unenforceability of any such provision or part of such provision will not affect the validity or enforceability of the remaining terms and conditions hereof.

19. Waiver. The failure of Seller or Buyer, at any time, to require the performance of any obligation or to assert a right contained herein will not affect either party's right to require such performance or assert such right at any time thereafter; nor shall the waiver of any right or obligation be construed in any way as a waiver of any succeeding breach.

20. Product Installation and Documentation. The products are intended for use in industrial and commercial applications to be used only by trained professionals and not operated by consumers. Unless otherwise specified by both the buyer and seller in writing, the products will be delivered with instructions, markings, warnings, and human machine interfaces (HMIs) in English language only. It is the Buyers responsibility to ensure that the product is installed in an area not accessible to the general public.

21. Survival. The provisions of, and respective obligations of, Seller and Buyer under Sections 7 through 14 of these Terms and Conditions of Sale, inclusive, shall survive any termination of any of the parties' other obligations hereunder or other termination of their agreement with respect to Products sold hereunder.

Approval Form

The submittal for this project has been reviewed and the order is approved for production as indicated below. Release to begin manufacturing (and purchasing of components) will only begin upon return of this form.

Limitation of Liability

Capacity and efficiency values indicated are calculated based on specified input data and are estimates of nominal performance for the specific design. Due to the nature of mechanical equipment, variations in production components and configuration may result in variances from estimated data for a particular production unit.

Application variables in the system which the unit is attached will affect unit performance. Unit performance estimates shown are based on calculations and laboratory testing in controlled conditions. Installation conditions in the particular application may impact performance.

Desert Aire has comprehensive development process and quality control processes that help to assure the best possible correlation in the calculated values indicated, however, capacity and efficiency at the conditions specified are not guaranteed. Due to Desert Aire initiatives for continuous improvement and necessary component adjustments, software and/or unit design may be changed without notice.

Any indication of certified performance point or certification programs are indicators that samples of the production unit design that have been submitted and/or tested based on the stated certification test procedures and certification program rules. This is not a certification of a particular unit performance and does not constitute a warranty or guarantee of performance for any particular production unit at any condition.

Performance software and its output, including, without limitation, the capacity and efficiency values, are provided “as is” and Desert Aire makes no representation or warranty of any kind, express or implied, including, but not limited to, manufacturer’s defects, merchantability, fitness for a particular purpose, or any other matter with respect to the performance software and its output. The undersigned Engineer and Contractor are solely responsible for determining whether the unit(s) sold hereunder are suitable and adequate for the end consumers intended use. Engineer and Contractor are in the position to know and make this determination because of their technical knowledge regarding the end consumer’s intended use and business needs. In no event shall Desert Aire be liable for any direct, indirect, incidental, special, exemplary, punitive, or consequential damages (including, but not limited to, procurement of substitute goods or services; loss of use, data, or profits; or business interruption) however caused and on any theory of liability, whether in contract, strict liability, or tort (including negligence or otherwise) arising in any way out of the use of the performance software and its output.

Desert Aire shall not be liable for, and Engineer and Contractor each assumes liability for and jointly and severally shall indemnify, defend, and hold harmless Desert Aire from, any claims, suits, actions, expensed, costs (including attorneys’ fees), damages, and liabilities resulting from or connected with (i) the capacity and efficiency values provided by Desert Aire and the performance of a particular production unit in accordance with such values; (ii) the handling, transportation, possession, processing, further manufacture, other use or resale of the goods including personal injury and property damage irrespective of whether the goods are used

alone or in combination with any other substance or material; (iii) Engineer's and Contractor's willful misconduct, negligence, or violation of law; (iv) Engineer's and Contractor's breach of any terms, covenants, conditions, or agreements contained in this Submittal; and (v) any claims brought by the end consumer related to the capacity and efficiency values provided by Desert Aire and the performance of a particular production unit in accordance with such values. If Desert Aire furnishes technical or other advice to Engineer or Contractor, whether or not at their request, with respect to capacity and efficiency values, processing, further manufacture, or other use of a production unit, Desert Aire shall not be liable for, and Engineer and Contractor each assumes all risk of such advice and the result thereof. Engineer and Contractor are responsible for any representations and warranties made to the end consumer by either the Engineer or Contractor and such representations and warranties shall not expand Desert Aire's limited warranties as set forth herein or any other obligations of Desert Aire hereunder.

Submitted For Record Only (Applies Only if Check Marked). Unit has been released in to production based on this submittal information. Notify factory if any changes required before unit ships from factory.

☐ Approved as Submitted

☐ Approved as Noted (marked up set enclosed)

ENGINEER:

Company: _____

By: _____

Name:_____

Its: _____

CONTRACTOR:

Company: _____

By: _____

Name:_____

Its: _____

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/24/25

Company: C&S **Name:** Fred Weber

Phone #: 315-515-7616 **E-mail:** fweber@cscos.com

Contract(s) bidding on: HVAC temperature controls

Drawing Referenced: A401 - A403

Spec Section Referenced:

Other References:

REQUEST:

Can you please provide the Reflected Ceiling Plan for the Locker Rooms (area below the new ERUs) and RM 128?

ANSWER:

Please see attached A707 drawing from 01-12-01.

Answered By: Manish Patel, Highland **Date:** 12-09-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 12/02/2025

Company: Louis N Picciano and Son Inc. **Name:** Justin Crocker

Phone #: 607-729-1111 ext 140 **E-mail:** jcrocker@lnpsi.com

Contract(s) bidding on: Plumbing and Mechanical

Drawing Referenced: N/A

Spec Section Referenced: 230000

Other References: N/A

REQUEST: The duct specs call for EF-1 to be blue duct no acceptions. There are two EF-1's Neither EF-1 duct system appears to be underground, please clarify which system requires the blue duct.

ANSWER: Blue duct does not apply to this project.

Answered By: Cheryl Zondlo (MP), Highland Associates **Date:** 12-02-2025

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/20/25

Company: J&K Plumbing & Heating **Name:** Chris Hughston

Phone #: 607-772-1666 **E-mail:** chris.hughston@jandkplumbing.net

Contract(s) bidding on: HVAC

Drawing Referenced: M-101 & M-106

Spec Section Referenced: 233113

Other References:

REQUEST: Please clarify the material (galvanized, aluminum, stainless) and Construction (welded, non-welded) for the following systems

- EF-2AG Welding Snorkel Exhaust
- EF-3AG Plasma Cutter Hood
- Kitchen Aid Hood H1 & H2

ANSWER:

1. EF-2-AG: G-90 GALVANIZED, NON-WELDED, HIGH TEMPERATURE SEALANT, ROUND DUCTS FROM SNORKELS TO RISER DUCT SHALL BE NORDFAB WELDING DUCTING

2. EF-3-AG: G-90 GALVANIZED, NON-WELDED, HIGH TEMPERATURE SEALANT, ROUND DUCTS FROM HOOD TO RISER DUCT SHALL BE NORDFAB WELDING DUCTING

3. KITCHEN AIR HOOD H-1 AND H-2: G-90 GALVANIZED, NON-WELDED

Answered By: Manish Patel, Highland **Date:** 12-8-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/24/2025

Company: Louis N Picciano and Son Inc. **Name:** Justin Crocker

Phone #: 607-729-1111 ext 140 **E-mail:** jcrocker@lnpsi.com

Contract(s) bidding on: Plumbing and Mechanical

Drawing Referenced: M-107

Spec Section Referenced: 230000

Other References: N/A

REQUEST: Drawing M-107 has 2- 2-1/2" branches coming off the 3" risers in the chase and going right back into the chase. I don't see where these branches feed, please advise whether these branches are needed or not.

ANSWER: The 2-1/2" HWS & R piping that appears to be going back into the chase is actually feed up to RTU-1 on the roof on Drawing M-106. The heating hot water piping fluid is 40% propylene glycol for freeze protection. Provide new roof piping penetration curb. Do not void the roof warranty.

Answered By: Manish Patel, Highland **Date:** 12-8-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/25/2025

Company: Louis N Picciano and Son Inc. **Name:** Justin Crocker

Phone #: 607-729-1111 ext 140 **E-mail:** jcrocker@lnpsi.com

Contract(s) bidding on: Plumbing and Mechanical

Drawing Referenced: N/A

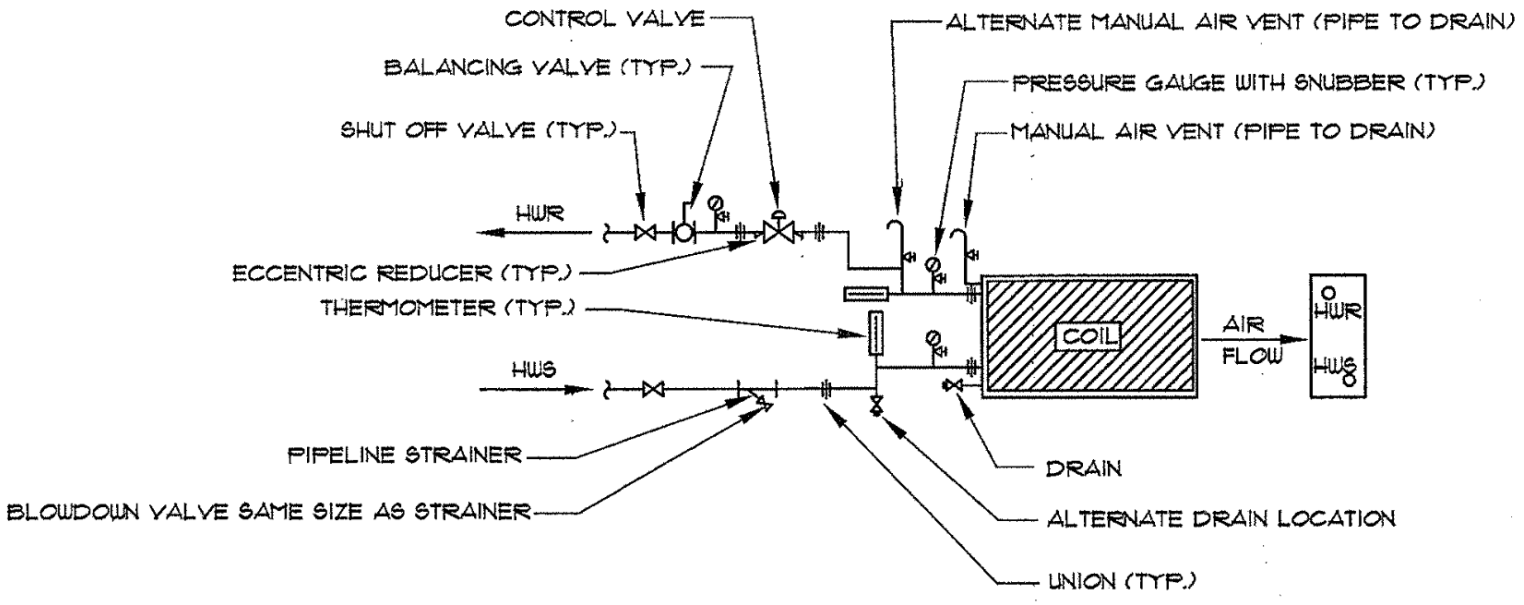
Spec Section Referenced: 230000

Other References: N/A

REQUEST: Please provide piping details for equipment piping.

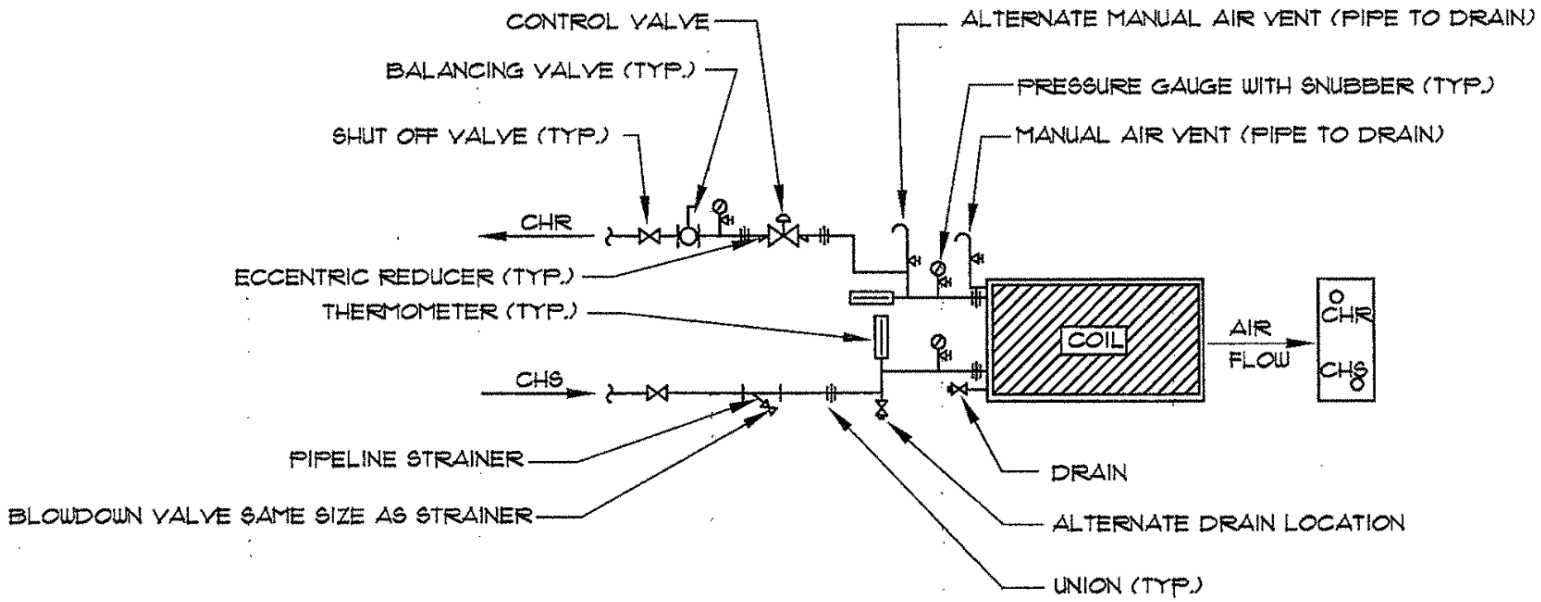
ANSWER: See attached.

Answered By: Manish Patel, Highland **Date:** 12-8-25



9 HOT WATER COIL CONNECTION

NO SCALE



10 CHILLED WATER COIL CONNECTION

NO SCALE

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 11/25/2025

Company: Louis N Picciano and Son Inc. **Name:** Justin Crocker

Phone #: 607-729-1111 ext 140 **E-mail:** jcrocker@lnpsi.com

Contract(s) bidding on: Plumbing and Mechanical

Drawing Referenced: Various

Spec Section Referenced: 230000

Other References:

REQUEST: RTU-2 Duct work is called out as aluminum, this unit serves the computer/steam area. Does this duct have to be aluminum?
Do the transfer ducts have to be lined?
What material is the welding area fume exhaust need to be and what connections are to be used?

ANSWER:

1. RTU-2 DUCTWORK SHALL BE G-90 GALVANIZED (NOT ALUMINUM).

2. PROVIDE 1" ACOUSTICAL LINING ON ALL TRANSFER DUCTS.

3. EF-2-AG: G-90 GALVANIZED, NON-WELDED, HIGH TEMPERATURE SEALANT, ROUND DUCTS FROM SNORKELS TO RISER DUCT SHALL BE NORDFAB WELDING DUCTING

   EF-3-AG: G-90 GALVANIZED, NON-WELDED, HIGH TEMPERATURE SEALANT, ROUND DUCTS FROM HOOD TO RISER DUCT SHALL BE NORDFAB WELDING DUCTING

   KITCHEN AIR HOOD H-1 AND H-2: G-90 GALVANIZED, NON-WELDED

Answered By: Manish Patel, Highland **Date:** 12-8-25

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 12/2/2025

Company: Matco Electric Corporation **Name:** Alex Freije

Phone #: 607-429-4921 **E-mail:** afreije@matcoelectric.com

Contract(s) bidding on: Electrical

Drawing Referenced:

Spec Section Referenced:

Other References:

REQUEST:

Who is the existing Fire Alarm vendor?

ANSWER: Labeling on the main fire alarm control panel indicates the following:
The system is a Simplex 4100ES Alert Alarms and Security
607-771-0598 PW Afton Acct #AG580146

Answered By: Cheryl Zondlo (TH), Highland Assoc. **Date:** 12/02/2025

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 12/2/2025

Company: Matco Electric Corporation **Name:** Alex Freije

Phone #: 607-429-4921 **E-mail:** afreije@matcoelectric.com

Contract(s) bidding on: Electrical

Drawing Referenced:

Spec Section Referenced:

Other References:

REQUEST:

Who is the existing Lockdown system vendor?

ANSWER: Day Automation

Answered By: Cheryl Zondlo, Highland Assoc. **Date:** 12/02/2025

Pre-Bid RFIs shall be submitted to:
Melisa Secord melisa.secord@schoolhouse.construction and
Cheryl Zondlo czondlo@ha-pa.com
Subject line of email to include: Afton CSD Capital Project Pre-Bid RFI
Cut off for submitting Pre-Bid RFIs is {DATE} at {TIME}

Highland Associates / Schoolhouse Construction Services

CONTRACTOR PRE-BID RFI FORM

(Please Type or Print Neatly)

Date: 12/8/2025

Company: NELCORP Electrical Contracting Corp **Name:** Phil Kasper

Phone #: 607-754-8428 **E-mail:** pkasper@nelcorpelectrical.com

Contract(s) bidding on: Electrical

Drawing Referenced:

Spec Section Referenced:

Other References: Spec for Data Work

REQUEST:

I do not find a spec for data work.

ANSWER:

The drawings indicate that the E.C. provides the CAT 6E cables, jacks and plates with required cable quantities per location. Extend new cables to the nearest data rack and leave 15' of slack cable coiled up for final termination by the Districts IT Group.

Answered By: **T. Hokrein** **Date:** **12/9/25**

SAMPLE INSURANCE REQUIREMENTS – CAPITAL CONSTRUCTION

1. Notwithstanding any terms, conditions or provisions, in any other writing between the parties, the contractor hereby agrees to effectuate the naming of the District/BOCES as an Additional Insured on the contractor's insurance policies, except for workers' compensation and N.Y. State Disability insurance.

2. The policy naming the District as an Additional Insured shall:

   a. Be an insurance policy from an A.M. Best A- rated or better insurer, **licensed and admitted** to conduct business in New York State. A New York licensed and admitted insurer is **required.**

   b. State that the organization's coverage shall be primary and non-contributory coverage for the District/BOCES, its Board, employees and volunteers including a waiver of subrogation in favor of the District/BOCES for all coverages including Workers Compensation.

   c. Additional insured status for General Liability coverage shall be provided by standard or other endorsements that extend coverage to the District/BOCES for on-going operations (CG 20 38 or equivalent) and products and completed operations (CG 20 37 or equivalent). The decision to accept an endorsement rests solely with the District/BOCES. A completed copy of the endorsements must be attached to the Certificate of Insurance to include General Liability, Auto Liability and Umbrella/Excess coverages. A copy of the Acord 855 Form is required to be sent for review.

3. a. The certificate of insurance must describe **all services** provided by the contractor (e.g., roofing, carpentry or plumbing) that are covered by the liability policies.

   b. At the District's/BOCES' request, the contractor shall provide a copy of the declaration page of the liability and umbrella/excess policies with a list of endorsements and forms. If requested, the contractor will provide a copy of the policy endorsements and forms.

   c. There will be no coverage restrictions and/or exclusions involving New York State Labor Law statutes or gravity related injuries.

   d. No policies containing escape clauses or exclusions contrary to the Owner's interests will be accepted.

e. A fully completed New York Construction Certificate of Liability Insurance Addendum (ACORD 855 2014/15) must be included with the certificates of insurance. For any "Yes" answers on Items G through L on this Form– additional details must be provided in writing. Policy exclusions may not be accepted.

4. The contractor agrees to indemnify the District/BOCES for applicable deductibles and self-insured retentions.

5. Minimum Required Insurance:

a. **Commercial General Liability Insurance**
$1,000,000 per Occurrence/$2,000,000 Aggregate
$2,000,000 Products and Completed Operations
$1,000,000 Personal and Advertising Injury
$100,000 Fire Damage
$10,000 Medical Expense
The general aggregate shall apply on a per-project basis. Products and completed operations coverage must remain in effect for **three years** after project completion and acceptance of the work performed.

b. **Owners Contractors Protective (OCP) Insurance**
For projects less than or equal to $1,000,000 and/or work on 1 story (10 feet) only. $1,000,000 per occurrence, $2,000,000 aggregate with the District/BOCES as the Named Insured. There will be no Additional Insureds on any OCP Policies.

For projects greater than $1,000,000 and/or work over 1 story (10 feet); $2,000,000 per occurrence, $4,000,000 aggregate with the District/BOCES as the Named Insured. There will be no Additional Insureds on any OCP Policies.

The OCP Policy must be with a NYS licensed and admitted carrier.

c. **Automobile Liability**
$1,000,000 combined single limit for owned, hired, borrowed and non-owned motor vehicles.

d. **Workers' Compensation and NYS Disability Insurance**
Statutory Workers' Compensation (C-105.2 or U-26.3); and NYS Disability Insurance (DB-120.1) for all employees [per NYS WC and Disability Laws]. Proof of coverage must be on the approved specific form, as required by the New York State Workers' Compensation Board. ACORD certificates are not acceptable.

A person seeking an exemption must file a CE-200 Form with the state. The form can be completed and submitted directly to the WC Board online.

e. **Cyber**
The contractor must carry coverage applicable to first- and third-party claims, arising from a cyber incident that could impact the district's data the contractor may have in their possession. Limits shall be the greater of those carried by the Contractor or $250,000 per incident and $250,000 in the aggregate. If coverage is on a claims-made basis, coverage must have a retroactive date no later than the date of agreement with the district/BOCES and provide coverage for two years following the date of Final Completion of the Project. **The Cyber policy must be with a NYS licensed carrier.**

f. **Builder's Risk**
Must be purchased and maintained by the Owner of the property. The limit must reflect the total completed value (all material and labor costs) and provide coverage for fire, lightning, explosion, extended coverage, vandalism, malicious mischief, windstorm, hail and/or flood. Coverage will remain in effect until the project is completed and/or the property occupied and put to its intended use.

g. **Umbrella/Excess Insurance**
$5,000,000 each Occurrence and Aggregate for general construction and no work at elevation (1 story or 10 feet) and project values less than or equal to $1,000,000.

$10,000,000 each Occurrence and Aggregate for high-risk construction, work at elevation (>1 story or 10 feet) and project values greater than $1,000,000.

Umbrella/Excess coverage shall be on a follow-form basis or provide broader coverage over the General Liability and Auto Liability coverages.

6. **Subcontractors are subject to the same terms and conditions as stated above and must submit same to the District/BOCES for approval prior to the start of any work.**

7. Contractor acknowledges that failure to obtain such insurance on behalf of the District/BOCES constitutes a material breach of contract and subjects it to liability for damages, indemnification and all other legal remedies available to the District/BOCES. The contractor is to provide the District/BOCES with a certificate of insurance, evidencing the above requirements have been met, prior to the commencement of work. The failure of

the District/BOCES to object to the contents of the certificate or the absence of same shall not be deemed a waiver of any rights held by the District/BOCES.

8. In the event the General Contractor fails to obtain the required certificates of insurance from the Subcontractor and a claim is made or suffered, the General Contractor shall indemnify, defend, and hold harmless the District/BOCES, its Board, employees and volunteers from any and all claims for which the required insurance would have provided coverage**. This indemnity obligation is in addition to any other indemnity obligation provided in the Contract.**

ADDITIONAL REQUIREMENTS ASBESTOS, LEAD ABATEMENT AND/OR HAZARDOUS MATERIALS

Asbestos/Lead Abatement/Pollution Liability Insurance
$2,000,000 per occurrence/$2,000,000 aggregate, including products and completed operations. Such insurance shall include coverage for the Contractor's operations including, but not limited to, removal, replacement, enclosure, encapsulation and/or disposal of asbestos, or any other hazardous material, along with any related pollution events, including coverage for third-party liability claims for bodily injury, property damage and clean-up costs. If a retroactive date is used, it shall pre-date the inception of the Contract.

If the Contractor is using motor vehicles for transporting hazardous materials, the Contractor shall maintain pollution liability broadened coverage (ISO Endorsement CA 9948 or CA 01 12), as well as proof of MCS 90. Coverage shall fulfill all requirements of these specifications and shall extend for a period of three (3) years following acceptance by the District/BOCES of the Certificate of Completion.

Testing Company Errors and Omission Insurance
$1,000,000 per occurrence/$2,000,000 aggregate for the testing and other professional acts of the Contractor performed under the Contract with the District/BOCES.

SECTION 08 71 00 – DOOR HARDWARE

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. Mechanical and electrified door hardware for:

a. Swinging doors.

2. Electronic access control system components, including:

a. Electronic access control locksets and exit device trim.

B. Related Sections:

1. Division 07 Section “Joint Sealants” for sealant requirements applicable to threshold installation specified in this section.
2. Division 09 sections for touchup finishing or refinishing of existing openings modified by this section.
3. Division 26 sections for connections to electrical power system and for low-voltage wiring.

1.3 REFERENCES

A. Fire/Life Safety

1. NFPA - National Fire Protection Association

a. NFPA 70 – National Electric Code
b. NFPA 80 - Standard for Fire Doors and Fire Windows
c. NFPA 101 - Life Safety Code
d. NFPA 105 - Smoke and Draft Control Door Assemblies

2. State Fire Safety Code.

B. UL - Underwriters Laboratories

1. UL 10B - Fire Test of Door Assemblies
2. UL 10C - Positive Pressure Test of Fire Door Assemblies

3. UL 1784 - Air Leakage Tests of Door Assemblies
4. UL 305 - Panic Hardware

C. Accessibility

1. ADA - Americans with Disabilities Act.
2. ANSI A117.1 - Accessible and Usable Buildings and Facilities.

D. DHI - Door and Hardware Institute

1. Sequence and Format for the Hardware Schedule
2. Recommended Locations for Builders Hardware
3. Key Systems and Nomenclature

E. ANSI - American National Standards Institute

1. ANSI/BHMA A156.1 - A156.29, and ANSI A156.31 - Standards for Hardware and Specialties

1.4 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 requirements.
2. Highlight, encircle, or otherwise specifically identify on submittals deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.
3. Prior to forwarding submittal, comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, “EXAMINATION” article, herein.

B. Action Submittals:

1. Product Data: Product data including manufacturers’ technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.

2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:

a. Wiring Diagrams: For power, signal, and control wiring and including:

1) Details of interface of electrified door hardware and building safety and security systems.
2) Schematic diagram of systems that interface with electrified door hardware.
3) Point-to-point wiring.
4) Risers.

3. Samples for Verification: If requested by Architect, submit production sample or sample installations of each type of exposed hardware unit in finish indicated, and tagged with full description for coordination with schedule.

    a. Samples will be returned to supplier in like-new condition. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.

4. Door Hardware Schedule: Submit schedule with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule as published by the Door and Hardware Institute. Indicate complete designations of each item required for each door or opening, include:

    a. Door Index; include door number, heading number, and Architects hardware set number.
    b. Opening Lock Function Spreadsheet: List locking device and function for each opening.
    c. Type, style, function, size, and finish of each hardware item.
    d. Name and manufacturer of each item.
    e. Fastenings and other pertinent information.
    f. Location of each hardware set cross-referenced to indications on Drawings.
    g. Explanation of all abbreviations, symbols, and codes contained in schedule.
    h. Mounting locations for hardware.
    i. Door and frame sizes and materials.
    j. Name and phone number for local manufacturer's representative for each product.
    k. Operational Description of openings with any electrified hardware (locks, exits, electromagnetic locks, electric strikes, automatic operators, door position switches, magnetic holders or closer/holder units, and access control components). Operational description should include how door will operate on egress, ingress, and fire and smoke alarm connection.

        1) Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work that is critical in Project construction schedule.

5. Key Schedule:

    a. After Keying Conference, provide keying schedule listing levels of keying as well as explanation of key system's function, key symbols used and door numbers controlled.
    b. Use ANSI A156.28 “Recommended Practices for Keying Systems” as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
    c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
    d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
    e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion.

1) Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.

f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

6. Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory prepared for door hardware installation.

C. Informational Submittals:

1. Qualification Data: For Supplier, Installer and Architectural Hardware Consultant.
2. Product Certificates for electrified door hardware, signed by manufacturer:

a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.

3. Certificates of Compliance:

a. Certificates of compliance for fire-rated hardware and installation instructions if requested by Architect or Authority Having Jurisdiction.
b. Installer Training Meeting Certification: Letter of compliance, signed by Contractor, attesting to completion of installer training meeting specified in "QUALITY ASSURANCE" article, herein.
c. Electrified Hardware Coordination Conference Certification: Letter of compliance, signed by Contractor, attesting to completion of electrified hardware coordination conference, specified in "QUALITY ASSURANCE" article, herein.

4. Product Test Reports: For compliance with accessibility requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by qualified testing agency, for door hardware on doors located in accessible routes.

5. Warranty: Special warranty specified in this Section.

D. Closeout Submittals:

1. Operations and Maintenance Data : Provide in accordance with Division 01 and include:

a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
b. Catalog pages for each product.
c. Name, address, and phone number of local representative for each manufacturer.
d. Parts list for each product.
e. Final approved hardware schedule, edited to reflect conditions as-installed.
f. Final keying schedule
g. Copies of floor plans with keying nomenclature
h. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.
i. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

1.5 QUALITY ASSURANCE

A. Product Substitutions: Comply with product requirements stated in Division 01 and as specified herein.

1. Where specific manufacturer's product is named and accompanied by "No Substitute," including make or model number or other designation, provide product specified. (Note: Certain products have been selected for their unique characteristics and particular project suitability.)

a. Where no additional products or manufacturers are listed in product category, requirements for "No Substitute" govern product selection.

2. Where products indicate "acceptable substitute" or "acceptable manufacturer", provide product from specified manufacturers, subject to compliance with specified requirements and "Single Source Responsibility" requirements stated herein.

B. Supplier Qualifications and Responsibilities: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural Hardware Consultant (AHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.

1. Warehousing Facilities: In Project's vicinity.
2. Scheduling Responsibility: Preparation of door hardware and keying schedules.
3. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

4. Coordination Responsibility: Coordinate installation of electronic security hardware with Architect and electrical engineers and provide installation and technical data to Architect and other related subcontractors.
   a. Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.

C. Installer Qualifications: Qualified tradesmen, skilled in application of commercial grade hardware with record of successful in-service performance for installing door hardware similar in quantity, type, and quality to that indicated for this Project.

D. Architectural Hardware Consultant Qualifications: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:

1. For door hardware, DHI-certified, Architectural Hardware Consultant (AHC).
2. Can provide installation and technical data to Architect and other related subcontractors.
3. Can inspect and verify components are in working order upon completion of installation.
4. Capable of producing wiring diagrams.
5. Capable of coordinating installation of electrified hardware with Architect and electrical engineers.

E. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

1. Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated.
2. Manufacturers that perform electrical modifications and that are listed by testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

F. Fire-Rated Door Openings: Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed and are identical to products tested by Underwriters Laboratories, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.

G. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.

1. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.

H. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.

I. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release latch. Locks do not require use of key, tool, or special knowledge for operation.

J. Accessibility Requirements: For door hardware on doors in an accessible route, comply with governing accessibility regulations cited in “REFERENCES” article, herein.

1. Provide operating devices that do not require tight grasping, pinching, or twisting of wrist and that operate with force of not more than 5 lbf (22.2 N).
2. Maximum opening-force requirements:

    a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
    b. Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch.
    c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

3. Bevel raised thresholds with slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
4. Adjust door closer sweep periods so that, from open position of 70 degrees, door will take at least 3 seconds to move to 3 inches (75 mm) from latch, measured to leading edge of door.

K. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01.

1. Attendees: Owner, Contractor, Architect, Installer, and Supplier’s Architectural Hardware Consultant.
2. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:

a. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
b. Preliminary key system schematic diagram.
c. Requirements for key control system.
d. Requirements for access control.
e. Address for delivery of keys.

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

1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
2. Inspect and discuss preparatory work performed by other trades.
3. Inspect and discuss electrical roughing-in for electrified door hardware.
4. Review sequence of operation for each type of electrified door hardware.
5. Review required testing, inspecting, and certifying procedures.

M. Coordination Conferences:

1. Installation Coordination Conference: Prior to hardware installation, schedule and hold meeting to review questions or concerns related to proper installation and adjustment of door hardware.

a. Attendees: Door hardware supplier, door hardware installer, Contractor.
b. After meeting, provide letter of compliance to Architect, indicating when meeting was held and who was in attendance.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site.

B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.

1. Deliver each article of hardware in manufacturer’s original packaging.

C. Project Conditions:

1. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
2. Provide secure lock-up for door hardware delivered to Project, but not yet installed. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.

D. Protection and Damage:

1. Promptly replace products damaged during shipping.
2. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work.

3. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

E. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

F. Deliver keys and permanent cores to Owner by registered mail or overnight package service.

1.7 COORDINATION

A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete. Concrete, reinforcement, and formwork requirements are specified in Division 03.

B. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

E. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

F. Direct shipments not permitted, unless approved by Contractor.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Years from date of Substantial Completion, for durations indicated.

a. Closers:

1) Mechanical: 10 years.
2) Electrified: 2 years.

b. Exit Devices:

1) Mechanical: 3 years.
2) Electrified: 1 year.

c. Locksets:

1) Mechanical: 3 years.
2) Electrified: 1 year.

d. Continuous Hinges: Lifetime warranty.

e. Key Blanks: Lifetime

2. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.

1.9 MAINTENANCE

A. Maintenance Tools: Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Approval of manufacturers other than those listed shall be in accordance with QUALITY ASSURANCE article, herein.

B. Approval of products from manufacturers indicated as "Acceptable Manufacturer" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.

Item	Scheduled Manufacturer	Acceptable Manufacturer
Hinges	Ives (IVE)	Hager, McKinney, Stanley
Continuous Hinges	Ives (IVE)	Markar, Stanley
Electric Power Transfer	Von Duprin (VON)	ABH, Falcon
Flush Bolts & Coordinators	Ives (IVE)	Burns, Rockwood
Locksets & Deadlocks	Schlage (SCH)	Best Lock Co., Sargent
Exit Devices & Mullions	Von Duprin (VON)	
Electronic Access Control – Hardwired	Schlage – Electronic (SCE)	
Electric Strikes	Von Duprin (VON)	HES, Folger Adam
Power Supplies	Schlage Electronics (SCE)	Sargent, Falcon
Cylinders & Keying	Best Lock Co. (BES)	Match Existing
Door Closers	LCN (LCN)	Sargent 281 Series Less PRV, Corbin Russwin DC8000 Series
Protection Plates	Ives (IVE)	Burns, Rockwood
Overhead Stops	Glynn-Johnson (GLY)	Rixson, Sargent
Stops & Holders	Ives (IVE)	Burns, Rockwood
Thresholds & Weatherstrip	Reese (REE)	Pemko, Zero

Silencers	Ives (IVE)	Burns, Rockwood
Door Position Switches	Schlage Electronics (SCE)	GE, Sargent
Key Cabinets	Telkee (TEL)	HPC, Lund
Key Management Software	Schlage (SCH)	Best Lock, Sargent

C. Hand of Door: Drawings show direction of slide, swing, or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.

D. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.2 MATERIALS

A. Fasteners

1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
2. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
3. Provide concealed fasteners for hardware units exposed when door is closed except when no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless thru-bolts are required to fasten hardware securely. Review door specification and advise Architect if thru-bolts are required.
4. Install hardware with fasteners provided by hardware manufacturer.

B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.

1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

2.3 CONTINUOUS HINGES

A. Aluminum Geared

1. Manufacturers:

a. Scheduled Manufacturer: Ives.
b. Acceptable Manufacturers: Markar, Stanley.

2. Requirements:

a. Provide aluminum geared continuous hinges conforming to ANSI A156.25, Grade 2.

b. Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum, with 0.25-inch (6 mm) diameter Teflon coated stainless steel hinge pin.
c. Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
d. Provide hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.
e. On fire-rated doors, provide aluminum geared continuous hinges that are classified for use on rated doors by testing agency acceptable to authority having jurisdiction.
f. Provide aluminum geared continuous hinges with electrified option where specified. Provide with sufficient number and gage of concealed wires to accommodate electric function of specified hardware.
g. Install hinges with fasteners supplied by manufacturer.
h. Provide hinges with symmetrical hole pattern.

2.4 CYLINDRICAL LOCKS – GRADE 1

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Schlage ND Series
2. Acceptable Manufacturers and Products: Sargent 10-Line, Best Lock Co. 93K Series.

B. Requirements:

1. Provide cylindrical locks conforming to ANSI A156.2 Series 4000, Grade 1. Cylinders: Refer to “KEYING” article, herein.
2. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with 1/2 inch latch throw. Provide proper latch throw for UL listing at pairs.
3. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
4. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
5. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
6. Provide electrical options as scheduled.
7. Lever Trim: Solid cast levers without plastic inserts and wrought roses on both sides.

    a. Lever Design: Schlage Rhodes.
    b. Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide on levers on exterior (secure side) of doors serving rooms considered to be hazardous.

2.5 EXIT DEVICES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Von Duprin 99/33 series
2. Acceptable Manufacturers and Products: Must Be Compatible With Electronic Access Control Trim And Approved By Architect

B. Requirements:

1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1, and UL listed for Panic Exit or Fire Exit Hardware. Cylinders: Refer to "KEYING" article, herein.
2. Provide touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
3. Touchpad: Extend minimum of one half of door width. Match exit device finish, stainless steel for US26, US26D, US28, US32, and US32D finishes; and for all other finishes, provide compatible finish to exit device. Provide compression springs in devices, latches, and outside trims or controls; tension springs also acceptable.
4. Provide exit devices with dead latching feature for security and for future addition of alarm kits and/or other electrical requirements.
5. Provide exit devices with manufacturer's approved strikes.
6. Provide exit devices cut to door width and height. Locate exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
7. Mount mechanism case flush on face of doors or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
8. Provide cylinder dogging at non-fire-rated exit devices, unless specified less dogging.
9. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion that is removed by use of a keyed cylinder, which is self-locking when re-installed.
10. Where lever handles are specified as outside trim for exit devices, provide heavy-duty lever trims with forged or cast escutcheon plates. Provide vandal-resistant levers that will travel to 90-degree down position when more than 35 pounds of torque are applied, and which can easily be re-set.

    a. Lever Style: Match lever style of locksets.
    b. Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide on levers on exterior (secure side) of doors serving rooms considered to be hazardous.

11. Provide UL labeled fire exit hardware for fire rated openings.
12. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
13. Provide electrical options as scheduled.

2.6 CYLINDERS

A. Manufacturers:

1. Scheduled Manufacturer: Best Lock Co. – No Substitutions – Match Existing

B. Requirements: Provide cylinders/cores complying with the following requirements.

1. Furnished by same manufacturer as locks.
2. Cylinders/cores compliant with ANSI/BHMA A156.5; latest revision, Section 12, Grade 1; permanent cylinders; cylinder face finished to match lockset, manufacturer's series as indicated.

C. Full-sized cylinders in the below-listed configuration(s), distributed throughout the Project as indicated.

1. Conventional: cylinder with interchangeable core with patented, restricted keyway.

D. Patent Protection: Cylinders/cores requiring use of restricted, patented keys, patent-protected.

E. Nickel silver bottom pins.

1. Identification:

F. Mark permanent cylinders/cores and keys with applicable blind code per DHI publication "Keying Systems and Nomenclature" for identification. Blind code marks shall not include actual key cuts.

G. Identification stamping provisions must be approved by the Architect and Owner.

H. Failure to comply with stamping requirements shall be cause for replacement of cylinders/cores involved at no additional cost to Owner.

1. Forward cores to Owner, separately from keys, by means as directed by Owner.

I. Project Core Distribution: Provide cores complying with the following requirements in Project locations as indicated.

J. Replaceable Construction Cores.

1. Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.

K. 12 construction change (day) keys.

1. Owner or Owner's Representative will replace temporary construction cores with permanent cores.

2.7 KEYING

A. Keying System: Factory registered, Best Lock Co. existing "Peaks" system.

B. Keying Requirements – General

1. Permanent cylinders/cores keyed by the manufacturer according to the following key system.

C. Keying system as directed by the Owner.

D. Great-Grand Master Key System: Cylinders/cores operated by change (day) keys, master key, grand master key and great-grand master key.

1. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements shall be cause for replacement of cylinders/cores involved at no additional cost to Owner.

E. Keys

1. Material: Nickel silver; minimum thickness of .092-inch (2.3mm)
2. Identification:

F. Coordinate with cylinder/core and key identification requirements above.

G. Stamp keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.

H. Failure to comply with stamping requirements shall be cause for replacement of keys involved at no additional cost to Owner.

1. Quantity: Furnish in the following quantities.

I. Change (Day) Keys: 3 per cylinder/core.

J. Permanent Control Keys: 3.

K. Master Keys: 6.

L. Unused balance of key blanks shall be furnished to Owner with the cut keys.

2.8 KEY CONTROL SYSTEM

A. Key Control System Manufacturers:

1. Scheduled Manufacturer: Telkee
2. Acceptable Manufacturers: HPC, Lund

B. Requirements:

1. Provide key control system, including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of number of locks required for Project.

a. Provide complete cross index system set up by hardware supplier, and place keys on markers and hooks in cabinet as determined by final key schedule.
b. Provide hinged-panel type cabinet for wall mounting.

C. Key Management Software Manufacturers and Products:

1. Scheduled Manufacturer and Product: Schlage SITEMASTER 200
2. Acceptable Manufacturers and Products: Best Keystone 600N, Sargent KeyWizard.

D. Key Management Software Requirements:

1. Software: Provide tracking, issuing, collecting and transferring information regarding keys. Provide customized query, reporting, searching capability, comprehensive location hardware listings, display key holder photos and signature for verification, and provide automatic reminders for maintenance, back-ups and overdue keys.
2. Provide training for Owner's personnel on proper operation and application of key management software.

2.9 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: LCN 4010/4110 series
2. Acceptable Manufacturers and Products: Sargent 281/281P10 series factory assembled (without PRV), Corbin-Russwin DC8000 Series.

B. Requirements:

1. Provide door closers certified to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
3. Cylinder Body: 1-1/2 inch (38 mm) diameter, with 11/16 inch (17 mm) diameter double heat-treated pinion journal.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and provideing reduced opening force as required by accessibility codes and standards.
6. Hydraulic Regulation: By tamper-proof, non-critical valves with separate adjustment for latch speed, general speed, and backcheck.
7. Provide closers with a solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
8. Pressure Relief Valve (PRV) Technology: Not permitted.
9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.10 DOOR TRIM

A. Manufacturers:

1. Scheduled Manufacturer: Ives.
2. Acceptable Manufacturers: Burns, Rockwood.

B. Requirements:

1. Provide push plates 4 inches (102 mm) wide by 16 inches (406 mm) high by 0.050 inch (1 mm) thick and beveled 4 edges. Where width of door stile prevents use of 4 inches (102 mm) wide plate, adjust width to fit.
2. Provide push bars of solid bar stock, diameter and length as scheduled. Provide push bars of sufficient length to span from center to center of each stile. Where required, mount back to back with pull.
3. Provide offset pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
4. Provide flush pulls as specified. Where required, provide back-to-back mounted model.
5. Provide pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
6. Provide pull plates 4 inches (102 mm) wide by 16 inches (406 mm) high by 0.050 inch (1 mm) thick, beveled 4 edges, and prepped for pull. Where width of door stile prevents use of 4 inches (102 mm) wide plate, adjust width to fit.
7. Provide wire pulls of solid bar stock, diameter and length as scheduled.

2.11 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer: Ives.
2. Acceptable Manufacturers: Burns, Rockwood.

B. Requirements:

1. Provide kick plates, mop plates, and armor plates minimum of 0.050 inch (1 mm) thick as scheduled. Furnish with sheet metal or wood screws, finished to match plates.

2. Sizes of plates:

a. Kick Plates: 10 inches (254 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
b. Mop Plates: 4 inches (102 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
c. Armor Plates: 36 inches (914 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs

2.12 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. Manufacturers:

1. Scheduled Manufacturers: Glynn-Johnson
2. Acceptable Manufacturers: Rixson, Sargent

B. Requirements:

1. Provide heavy duty concealed mounted overhead stop or holder as specified for exterior and interior vestibule single acting doors.
2. Provide heavy duty concealed mounted overhead stop or holder as specified for double acting doors.
3. Provide heavy or medium duty and concealed or surface mounted overhead stop or holder for interior doors as specified. Provide medium duty surface mounted overhead stop for interior doors and at any door that swings more than 140 degrees before striking wall, open against equipment, casework, sidelights, and where conditions do not allow wall stop or floor stop presents tripping hazard.
4. Where overhead holders are specified provide friction type at doors without closer and positive type at doors with closer.

2.13 DOOR STOPS AND HOLDERS

A. Manufacturers:

1. Scheduled Manufacturer: Ives.
2. Acceptable Manufacturers: Burns, Rockwood.

B. Provide door stops at each door leaf:

1. Provide wall stops wherever possible. Provide convex type where mortise type locks are used and concave type where cylindrical type locks are used.
2. Where a wall stop cannot be used, provide universal floor stops for low or high rise options.
3. Where wall or floor stop cannot be used, provide medium duty surface mounted overhead stop.

2.14 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:

1. Scheduled Manufacturer: Reese.
2. Acceptable Manufacturers: Pemko, Zero.

B. Requirements:

1. Provide thresholds, weatherstripping (including door sweeps, seals, astragals) and gasketing systems (including smoke, sound, and light) as specified and per architectural details. Match finish of other items.

2. Size of thresholds::

a. Saddle Thresholds: 1/2 inch (13 mm) high by jamb width by door width
b. Bumper Seal Thresholds: 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width

3. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.

2.15 SILENCERS

A. Manufacturers:

1. Scheduled Manufacturer: Ives.
2. Acceptable Manufacturers: Burns, Rockwood.

B. Requirements:

1. Provide "push-in" type silencers for hollow metal or wood frames.
2. Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
3. Omit where gasketing is specified.

2.16 DOOR POSITION SWITCHES

A. Manufacturers:

1. Scheduled Manufacturer: Schlage Electronics.
2. Acceptable Manufacturers: GE-Interlogix, Sargent.

B. Requirements:

1. Provide recessed or surface mounted type door position switches as specified.

2. Coordinate door and frame preparations with door and frame suppliers. If switches are being used with magnetic locking device, provide minimum of 4 inches (102 mm) between switch and magnetic locking device.

2.17 FINISHES

A. Finish: BHMA 626/652 (US26D); except:

1. Hinges at Exterior Doors: BHMA 630 (US32D)
2. Continuous Hinges: BHMA 630 (US32D)
3. Push Plates, Pulls, and Push Bars: BHMA 630 (US32D)
4. Protection Plates: BHMA 630 (US32D)
5. Overhead Stops and Holders: BHMA 630 (US32D)
6. Door Closers: Powder Coat to Match
7. Wall Stops: BHMA 630 (US32D)
8. Latch Protectors: BHMA 630 (US32D)
9. Weatherstripping: Clear Anodized Aluminum
10. Thresholds: Mill Finish Aluminum

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Existing Door and Frame Compatibility: Field verify existing doors and frames receiving new hardware and existing conditions receiving new openings. Verify that new hardware is compatible with existing door and frame preparation and existing conditions.

C. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Where on-site modification of doors and frames is required:

1. Remove existing hardware being replaced, tag, and store according to contract documents.
2. Field modify and prepare existing door and frame for new hardware being installed.
3. When modifications are exposed to view, use concealed fasteners, when possible.
4. Prepare hardware locations in accordance with:

a. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
b. Wood Doors: DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."
c. Doors in rated assemblies: NFPA 80 for restrictions on on-site door hardware preparation.

3.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
2. Custom Steel Doors and Frames: HMMA 831.
3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

B. Install each hardware item in compliance with manufacturer’s instructions and recommendations, using only fasteners provided by manufacturer.

C. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.

D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

F. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.

G. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

H. Lock Cylinders: Install construction cores to secure building and areas during construction period.

1. Replace construction cores with permanent cores as indicated in keying section.

I. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

J. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Closers shall not be visible in corridors, lobbies and other public spaces unless approved by Architect.

K. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."

L. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.

M. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

N. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

O. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.4 FIELD QUALITY CONTROL

A. Architectural Hardware Consultant: Engage qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.

1. Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

B. Occupancy Adjustment: Approximately three months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.6 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.7 DEMONSTRATION

A. Provide training for Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes. Refer to Division 01 Section "Demonstration and Training."

PART 4 - DOOR HARDWARE SCHEDULE

4.1 Hardware Sets:

A. Locksets, exit devices, and other hardware items are referenced in the following hardware sets for series, type and function. Refer to the above-specifications for special features, options, cylinders/keying, and other requirements.

B. Continued:

Hardware Group No. 01: DOORS 024A, 034C

1	EA	CONT. HINGE	224HD		628	IVE
1	EA	ELEC CLASSROOM LOCK	AD-400-CY-70-MT-RHO-B	✓	626	SCE
1	EA	PERMANENT CORE	SFIC PERMANENT CORMAX CORE			BES
1	EA	SURFACE CLOSER	4011		689	LCN
1	EA	KICK PLATE	8400 10" X 1 1/2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CVX		630	IVE
1	EA	GASKETING	488SBK PSA		BK	ZER
1			PROVIDE FACTORY POINT TO POINT WIRING DIAGRAMS			
1			PROVIDE RISER DIAGRAMS			

AD LOCK FURNISHED BY SECTION 28. DOOR SUPPLIER TO PREP NEW DOOR FOR AD LOCK AS REQUIRED.

Hardware Group No. 02: DOORS 024B, 024C, 138

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070HD 06A	626	SCH
1	EA	PERMANENT CORE	SFIC PERMANENT CORMAX CORE		BES
1	EA	SURFACE CLOSER	4011	689	LCN
1	EA	KICK PLATE	8400 10" X 1 1/2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	EA	GASKETING	488SBK PSA	BK	ZER

Hardware Group No. 03 (DOOR 025A, 034B)

2	EA	CONT. HINGE	224HD EPT		628	IVE
2	EA	POWER TRANSFER	EPT10	↗	689	VON
1	EA	DUMMY TRIM	AD-993DT-RHO-B-EE 12/24 VDC		626	SCE
2	EA	ELEC FIRE EXIT HARDWARE	RX-LC-9927-EO-F-LBRAFL-499F	↗	626	VON
1	EA	ELEC EXIT DEVICE TRIM	AD-400-993S-70-MT-RHO-B	↗	626	SCE
2	EA	SFIC MORTISE CYL.	80-132		626	SCH
1	EA	SFIC RIM CYLINDER	80-159		626	SCH
3	EA	PERMANENT CORE	SFIC PERMANENT CORMAX CORE			BES
2	EA	SURFACE CLOSER	4111 EDA		689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS		630	IVE
2	EA	WALL STOP	WS406/407CVX		630	IVE
2	EA	GASKETING	488SBK PSA		BK	ZER
2	EA	MEETING STILE	155AA		AA	ZER
2	EA	DOOR BOTTOM	350AA		AA	ZER
2	EA	NOTE	DOOR CONTACTS BY DIVISION 28			
1			PROVIDE FACTORY POINT TO POINT WIRING DIAGRAMS			
1			PROVIDE RISER DIAGRAMS			

MOUNT CLOSER ON PUSH SIDE OF DOOR.
AD LOCK FURNISHED BY SECTION 28. DOOR SUPPLIER TO PREP NEW DOOR FOR AD LOCK AS REQUIRED.

Hardware Group No. 04 (034E, 034F)

1	EA	CYLINDER	80-159	626	SCH

Hardware Group No. 05: DOORS 034G

3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	CLASSROOM LOCK	L9070HD 06A		626	SCH
1	EA	PERMANENT CORE	SFIC PERMANENT CORMAX CORE			BES
1	EA	SURFACE CLOSER	4011		689	LCN
1	EA	KICK PLATE	8400 10" X 1 1/2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CVX		630	IVE
1	EA	GASKETING	488SBK PSA		BK	ZER
1	EA	CONT. HINGE	112HD EPT		628	IVE
1	EA	POWER TRANSFER	EPT10	↯	689	VON
1	EA	ELEC PANIC HARDWARE	LXRX-LC-EL-33A-NL-OP-388 24 VDC	↯	626	VON
1	EA	SFIC RIM CYLINDER	80-159		626	SCH
1	EA	PERMANENT CORE	BEST PERMANENT CORE AS REQUIRED		626	BES
1	EA	90 DEG OFFSET PULL	8190EZHD 10" STD		626	IVE
1	EA	OH STOP	100S		630	GLY
1	EA	SURFACE CLOSER	4111 EDA		689	LCN
1	EA	MOUNTING PLATE	4110-18 SRT		689	LCN
1	EA	BLADE STOP SPACER	4110-61 SRT		689	LCN
1	EA	DOOR SWEEP	39A		A	ZER
1	EA	THRESHOLD	655A-223		A	ZER
1	EA	DOOR CONTACT	679-05HM	↯	BLK	SCE
1	EA	POWER SUPPLY	PS914 900-2RS 900-BBK 120/240 VAC	↯		VON
1	EA		PROVIDE FACTORY POINT TO POINT WIRING DIAGRAMS			
1			CARD READER - WORK OF DIVISION 28			
1			PROVIDE RISER DIAGRAMS			
1			SEALS BY DOOR/FRAME SUPPLIER			

ALL WIRING AND CONNECTIONS BY DIVISION 26.

OPERATIONAL DESCRIPTION:
DOORS TO BE NORMALLY CLOSED AND LOCKED. ACCESS BY KEY OR CARD READER. PRESENTATION OF VALID CREDENTIAL WILL RETRACT LATCHBOLT. DOOR CONTACT CONNECTED TO BUILDING'S SECURITY SYSTEM. FREE EGRESS AT ALL TIMES.

SECTION 09 65 36.13 - ESD VINYL TILE FLOORING

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:

1. Vinyl Tile Flooring
2. Substrate Preparation

B. Related Work: The following items are not included in this Section and are specified under the designated Sections:

1. Section 03 30 00 CAST-IN-PLACE CONCRETE for concrete substrate; slab surface tolerances
2. Section 06 10 00 ROUGH CARPENTRY for plywood substrate and surface tolerances

C. References (Industry Standards):

1. ASTM International (ASTM):

a. ASTM F1700, Standard Specification for Solid Vinyl Tile Floor Covering
b. ASTM E648 (NFPA 253), Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
c. ASTM E662 (NFPA 258), Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
d. ASTM F970, Standard Test Method for Static Load Limit
e. ASTM F970 (Modified), Test Method for Maximum Load Limit
f. ASTM F925, Standard Test Method for Resistance to Chemicals of Resilient Flooring
g. ASTM D2047, Standard Test Method for Static Coefficient of Friction as Measured by the James Machine
h. ASTM F150, Standard Test Method for Electrical Resistance; 0.25 MΩ - 1 MΩ (Conductive) & 1 MΩ - 1000 MΩ (Dissipative)
i. ANSI/ESD S7.0, Standard Test Method for Static Protective Flooring Materials
j. ANSI/ESD S20.20, Electrostatic Discharge Control Program Standard
k. AATCC-134, Static Generation Propensity (Conductive)
l. AATCC-134, Static Generation Propensity (Dissipative)

1.3 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures.

B. Product Data: Submit manufacturer's technical data sheet, care & maintenance document, submittal and/or warranty for each material and accessory proposed for use.

C. Samples: Submit representative samples of each product specified for verification, in manufacturer’s standard size samples of each resilient product color, texture and patter required.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Provide resilient flooring materials manufactured in the United States of America by a firm with a minimum of 10 years’ experience with resilient flooring materials of type equivalent to those specified.

1. Provide resilient flooring products, including wall base, accessories and subfloor preparation products from one manufacturer to ensure color matching and compatibility.
2. Manufacturer shall be capable of providing technical training and technical field service representation.

B. Installer Qualifications: Installer must be professional, licensed, insured and familiar with the resilient flooring material to be installed. Project Managers or Field Supervisors must be INSTALL (International Standards & Training Alliance) certified CFI (Certified Floorcovering Installers) Certified and/or an FCICA (The Flooring Contractors Association) CIM (Certified Installation Manager) for the requirements of the project.

C. Sustainable Design Requirements:

1. ESD Vinyl Tile that contains or comes complete with conductive material.
2. ESD Vinyl Tile that is resistant to Fungi.
3. ESD Vinyl Tile that has proven good chemical resistant qualities.
4. ESD Vinyl Tile has proven slip resistance qualities.
5. ESD Vinyl Tile that contributes to credits in a LEED Project.
6. ESD Vinyl Tile that is 100% Recyclable.
7. ESD Vinyl Tile and accessories that are easily cleaned and do not require coatings and stripping, or use chemicals that may be hazardous to human health.
8. ESD Vinyl Tile that is SCS FloorScore® Certified and meets California Specifications Section 01350.
9. ESD Vinyl Tile is manufactured in a Facility that is ISO 14001 Certified.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in labeled packages. Store and handle in strict compliance with manufacturer's recommendations. Protect from damage due to weather, excessive temperatures, and construction operations.

B. Deliver materials sufficiently in advance of installation to condition materials to the required temperature for 48-hours prior to installation.

1.6 PROJECT CONDITIONS

A. Install ESD Vinyl Tile after other finishing operations, including painting, have been completed.

B. Maintain temperature at service levels and/or the ambient temperature must remain steady (± 10° F) between 65° F and 85° F for at least 48-hours prior to, during and until substantial completion.

C. Maintain relative humidity at service levels, or between 40% and 65% RH.

D. Avoid conditions in which dew point causes condensation on the installation surface.

1.7 WARRANTY

A. Provide manufacturer's standard limited commercial warranty to cover manufacturing defects.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

1. Roppe Corporation (Basis-of-Design)

a. 1602 N Union St. | Fostoria, OH 44830 | P: 800-537-9527

2. Armstrong Flooring

a. PO Box 556 | Mountville, PA 17554 | P: 1-866-243-2726

3. American Biltrite

a. 200 Bank Street | Sherbrooke, Quebec J1H 4K3 | P: 1-855-567-2794

2.2 PRODUCTS

A. Roppe ESD Viny Tile Flooring

1. Color: As noted in Finish Legend in the Construction Documents.
2. Tile Dimensions: As noted in Finish Legend in the Construction Documents.
   Finish: Smooth (standard)
3. Specify Type: **Static Dissipative Vinyl Tile (1×10^6 - 1×10^9)**
4. ASTM F1700, Solid Vinyl Tile Floor Covering: **Class I, Type A**

5. ASTM E648 (NFPA 253), Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source: **Class I, > 0.45 W/cm2**
6. ASTM E662 (NFPA 258), Specific Optical Density of Smoke Generated by Solid Materials: **Passes < 450**
7. ASTM F970, Static Load Limit: **Passes, 250 PSI**
8. ASTM F970 (Modified), Maximum Load Limit: **2500 PSI**
9. ASTM F925, Resistance to Chemicals: **Passes** (see list)
10. ASTM D2047, Static Coefficient of Friction: **> 0.6**
    ASTM F150, Electrical Resistance, 1 MΩ - 1000 MΩ (Dissipative): **1 x 10^6 - 1 x 10^9**
11. AATCC-134, Static Generation Propensity (Dissipative): **< 20 v with ESD Shoes**
12. Roppe offers our IMPACT Program for returning jobsite scrap.
13. Roppe ESD Vinyl Tile comes complete with conductive material.
14. Roppe ESD Vinyl Tile is resistant to Fungi.
15. Roppe ESD Vinyl Tile is proven to have excellent chemical resistant qualities.
16. Roppe ESD Vinyl Tile is proven to have excellent slip resistance qualities.
17. Roppe ESD Vinyl Tile qualifies as a contributor to credits in LEED Projects.
18. Roppe ESD Vinyl Tile is Recyclable.
19. Roppe ESD Vinyl Tile and accessories are easily cleaned and do not require coatings and stripping, or use of chemicals that may be hazardous to human health.
20. Roppe ESD Vinyl Tile is SCS FloorScore® Certified and meets California Specifications Section 01350.
21. Roppe ESD Vinyl Tile is manufactured in a Facility that is ISO 14001 Certified.
22. Roppe ESD Vinyl Tile is NSF 332 Gold certified.
23. Roppe ESD Vinyl Tile has an HPD (Health Product Declaration).
24. Roppe ESD Vinyl Tile is free of materials known to be teratogenic, mutagenic or carcinogenic including halogens, asbestos and chlorines.

B. Roppe ESD APPROVED ADHESIVES

1. Excelsior ASD-800 Acrylic Wet-Set ESD Adhesive provided by Roppe
2. Excelsior USD-810 Two Part Urethane Wet-Set ESD Adhesive provided by Roppe

C. Roppe ESD ACCESSORIES

1. Roppe COPPER GROUNDING STRAPS
   Roppe ESD Vinyl Tile orders must include **1" x 0.004" Copper Grounding Straps**.
2. Roppe ESD Vinyl Tile may be heat-welded with available VINYL WELDING BEADS to ensure proper fit, finish and appearance. Vinyl Welding Beads should be used in areas that require ongoing and comprehensive wet cleaning such as operating rooms or laboratories, and clean rooms where particulate entrapment may occur.

2.3 INSTALLATION AND MAINTENANCE MATERIALS

A. Moisture Mitigation: Moisture testing is required for all ESD Vinyl Tile installations. Mitigation should be performed if results indicate high levels of moisture. Recommended Moisture Mitigation Product:

1. Excelsior MM-100, Moisture Mitigation provided by Roppe

   a. Unit Size: 2.5 Gallons

b. Coverage: 1000 square feet per unit with one coat
c. MM-100 is a water, solvent and VOC free, polyurethane-based moisture mitigation product used to treat concrete slabs with excessive moisture levels beyond what flooring adhesives allow.
d. MM-100 can block moisture up to 20 lbs. MVER or 99% RH.
e. MM-100 is a single component product, eliminating extensive mix times and concerns regarding pot life.
f. MM-100 does not require aggressive concrete preparation, such as shotblasting or diamond grinding.
g. MM-100 is a two coat system that is incredibly easy to apply and does not require any specialized equipment, its excellent coverage rates also make it incredibly cost effective.
h. MM-100 is not recommended as a moisture mitigation system over a non-porous substrate. The substrate should be porous as per ASTM F3191 with 90% of the original substrate exposed.
i. Despite being a two coat system, MM-100 is incredibly fast drying.
j. Flooring or subsequent coatings can be installed in less than two hours.
k. Backed by a 10 year material and labor warranty, MM-100 is a fast and easy solution for the moisture issues that commonly plague flooring installations.

B. Substrate Preparation Products: Substrates should be prepared to properly receive the resilient flooring products being specified. Trowelable leveling and patching compounds that are latex-modified, Portland cement based or blended hydraulic cement based formulation. Recommended Substrate Preparation Products:

1. Excelsior NP-230, Non-Porous Substrate Primer provided by Roppe

   a. Unit Size: 2.5 Gallons
   b. Coverage: 1000 Square Feet per unit with one coat
   c. Used over MM-100 to promote adhesion of cementitious materials
   d. Single component and fast drying to allow for quick and easy installation
   e. Contains an aggregate to provide mechanical bond for cementitious materials

2. Excelsior CP-300, Cementitious Patch provided by Roppe

   a. Unit Size: 10 lb. Pail
   b. Coverage: 33 Square Feet per unit @ 1/8”
   c. Doesn’t require primer over porous substrates
   d. Install flooring in as little as 30 minutes

3. Excelsior SU-310, Self-Leveling Underlayment provided by Roppe

   a. Unit Size: 50 lb. Bag
   b. 5500 PSI Compressive Strength after 28 days
   c. Install flooring within 12 hours
   d. Pumpable

4. Excelsior Fibermat, Fiber Reinforcement Mat provided by Roppe

   a. Unit Size: 41.3” x 249’ Roll
   b. Coverage: 857 Square Feet per unit

c. Increases flexural strength of underlayments
d. Increases tensile strength of underlayments
e. For wood substrates only

C. Adhesives: Adhesives should be selected based on the site conditions and use of the space being installed. Recommended Adhesive Products:

1. Excelsior ASD-800, Acrylic Wet-Set ESD Adhesive provided by Roppe

a. Unit Size: 1 Gallon
b. Coverage: 160 Square Feet per Gallon
c. Standard installations over porous substrates only
d. FloorScore Certified
e. Solvent Free
f. Improves Conductivity of ESD Flooring
g. Freeze-Thaw Stable
h. Extremely Low VOC
i. Installation Limits

1) 90% RH, ASTM F2170
2) 6 lbs. MVER, ASTM F1869
3) 7-10 pH

2. Excelsior USD-810, Two Part Urethane Wet-Set ESD Adhesive provided by Roppe

a. Unit Size: 1 Gallon
b. Coverage: 135 Square Feet per Unit on 'Brushed & Rough Porous' substrates
150 Square Feet per Unit on 'Smooth Porous' & 'Non-Porous' substrates
c. Improves Conductivity of ESD Flooring
d. Ideal for Installations Under Heavy Equipment
e. Standard installations over porous and non-porous substrates
f. Superior Bond Strength
g. Excellent Sheer Strength
h. Can be Installed Directly Over the Excelsior MM-100
i. Installation Limits

1) 90% RH, ASTM F2170
2) 6 lbs. MVER, ASTM F1869
3) 7-10 pH

D. Maintenance Materials: Proper maintenance of the installation is critical to the long term performance of the flooring products being specified. Using the appropriate chemicals to maintain the product according to the environment in which it is specified is critical. Recommend maintenance products:

1. Excelsior NC-900, All-Purpose Neutral pH Cleaner provided by Roppe

a. For initial maintenance
b. For daily and routine maintenance

2. Excelsior FR-920, Finish Remover provided by Roppe

3. **DO NOT APPLY AN 'ON-SITE' FINISH TO ESD VINYL TILE FLOORING**

PART 3 - EXECUTION

3.1 GENERAL

A. General Contractor Responsibilities:

1. Supply a safe, climate controlled building and subfloor as detailed in Roppe Technical Data Sheets.
2. Ensure substrate meets the requirements of ASTM F710, Roppe Technical Data Sheets and Excelsior Technical Data Sheets.
3. Provide a secure storage area that is maintained permanently or temporarily at normal operating temperature and humidity conditions between 65° F and 85° F and between 40% and 65% relative humidity, for at least 48-hours prior to and during the application of the flooring, so the flooring contractor can acclimate the flooring materials per manufacturer's instructions.
4. Provide an installation area that is weather tight and maintained either permanently or temporarily at ambient service temperature and humidity. Normal operating temperature and humidity conditions are between 65° F and 85° F and between 40% and 65% relative humidity, for at least 48-hours prior to, during and 48 hours after the application of the flooring per the manufacturer's instructions.
5. Ensure areas with direct prolonged exposure to sunlight are protected with protective UVA/UVB restrictive coatings or films.
6. Areas of the flooring that are subject to direct sunlight through doors or windows should have them covered using blinds, curtains, cardboard or similar for the time of the installation and 48-hours after the installation to allow the adhesive to cure. Note: These areas should be installed using wet adhesives only.
7. Conduct initial maintenance prior to final usage per the Roppe Care & Maintenance Documents. Do not conduct initial maintenance until adhesive has cured per the adhesive technical data.

B. Flooring Contractor Responsibilities:

1. Provide trained installers that are professional, licensed, insured and familiar with the resilient flooring material to be installed. Ensure installers or installation teams meet one of the following requirements:
2. Have completed INSTALL (International Standards & Training Alliance) or CFI (Certified Floorcovering Installers) training programs and/or are certified by INSTALL or CFI.
3. Are being supervised by Project Managers or Field Supervisors that are INSTALL (International Standards & Training Alliance) certified, CFI (Certified Floorcovering Installers) Certified and/or an FCICA (The Flooring Contractors Association) CIM (Certified Installation Manager).
4. Follow all requirements in the appropriate Roppe and/or Excelsior Technical Data Sheets, Care & Maintenance Documents, Warranties and other technical documents or instructions.

3.2 EXAMINATION

A. General: Follow guidelines laid out in Division 01, Section 01 71 00 – Examination and Preparation, as well as Section 01 43 00 – Quality Assurance.

B. Verification of Conditions: Inspect all substrates to ensure they are clean, smooth, permanently dry, flat, and structurally sound. Confirm all areas are properly sealed and acclimated per manufacturer's requirements.

C. Verification of Products: In accordance with manufacturer's installation requirements, visually inspect material for size, color or visual defects prior to installing. Any material that is incorrect or visually defective shall not be installed.

D. Product Limitations: Do not install over LVT, cushioned vinyl, hardwood flooring, cork, rubber, or asphaltic materials. Do not install ESD Vinyl Tile in outdoor areas, residences, in or around commercial kitchens or areas that may be exposed to animal or vegetable fats and oils, grease and petroleum-based hydrocarbons. Do not install in areas that may be exposed to sharp, pointy objects, such as stiletto heels, cleats or spikes.

3.3 SUBSTRATE PREPARATION

A. General: Follow guidelines laid out in Division 01, Section 01 71 00 – Examination and preparation. All work required ensuring substrate or subfloor meets manufacturers' guidelines are the responsibility of the general contractor.

B. Preparation: Ensure substrate meets the requirements of ASTM F710 for concrete substrates and ASTM F1482 for wood substrates and/or Roppe Technical Data Sheets and Excelsior Technical Data Sheets.

1. Substrates must be free of visible water or moisture, dust, sealers, paint, sweeping compounds, curing compounds, residual adhesives and adhesive removers, concrete hardeners or densifiers, solvents, wax, oil, grease, asphalt, visible alkaline salts or excessive efflorescence, mold, mildew and any other extraneous coating, film, material or foreign matter.
2. It is recommended that all substrates have a floor flatness of FF32 and/or flatness tolerance of 1/8" in 6' or 3/16" in 10'.
3. Acclimate all products to be used during the installation in the installation environment prior to installation according to the manufacturers written instructions.

C. Concrete Substrates:

1. Moisture Testing: Perform moisture testing per the manufacturer's recommendations to determine conditions, it is recommended to treat new and existing slabs a little bit different to ensure adequate conditions exist for installation.

    a. New Slabs on all grade levels: it is recommended to perform ASTM F2170 Relative Humidity testing no more than a week prior to installation too determine the levels present and when to proceed with the installation.

b. Existing Slabs on all grade levels: in addition to ASTM F2170 testing, existing slabs that have previously had floor covering installed, must be tested to ASTM F1869 Calcium Chloride test kits to determine the MVER of the concrete.

2. Mechanically remove contamination on the substrate that may cause damage to the flooring material, this includes paint, permanent and non-permanent markers, pens, crayons, etc. Leaving these on the substrate or marking with them on the back of the material could cause bleed through and damage the flooring.
3. Fill cracks, holes, depressions and irregularities in the substrate to prevent transferring through to the surface of the resilient flooring. Use a high-quality Portland cement based product such as Excelsior installation products provided by Roppe.
4. Do not install material over expansion joints.

D. Wood Substrates: wood substrates must have a minimum 18” (45.7 cm) of cross ventilated space beneath the joist.

1. Wood substrates must be a minimum 1” thick with a double layer construction.
2. Wood substrates must be rigid and free of movement.
3. Wood substrates must not be OSB (Oriented Strand Board), particle board, chipboard, lauan or composite type underlayments.
4. Wood substrates that are Single Wood or Tongue & Groove subfloors must be covered with the appropriate APA approved underlayment plywood:

a. Boards with a face width of 3” (7.62 cm) or less and is tongue-and-groove and with a smooth surface, use minimum 1/4” (6.4 mm) underlayment panels
b. Boards with a face width greater than 3” (7.62 cm) or not tongue-and-groove, or with a rough surface, use minimum 1/2” (12.7 mm) underlayment panels

3.4 INSTALLATION

A. General: Follow all relevant guidelines detailed in Division 01, as well as flooring and adhesive manufacturer’s technical data sheets.

B. Resilient ESD Vinyl Tile: Install material in accordance with manufacturer’s recommendations:

1. Select the appropriate adhesive for the application and job site conditions.
2. Confirm material installation pattern and direction per design specifications or work order.
3. Dry-lay several pieces of material in order to determine ideal room layout.
4. Prior to installation, consult project electrician or electrical engineer regarding the placement of copper straps in order to synchronize copper strap placement with electrical grounding system location.
5. Prior to installing flooring materials, install copper straps directly into fresh adhesive and trowel adhesive over strap to fully embed strap in adhesive. Copper strap must be at least 18” in length, with at least 9” embedded into adhesive.
6. Copper grounding straps must be placed every 2000 sq. ft., at least one per room.
7. Flash Cove Installation: Recommend tiles layout so seams are not half way up vertical surfaces. Full tiles shall be installed a minimum of 4” on the floor until contact with the cove cap.

8. Fit flooring into the appropriate Roppe Cove Cap for flash coving on site.
9. Roppe fillet strip must be used to transition flooring material from floor to wall.
10. Cut all difficult fill pieces prior to spreading adhesive.
11. Hand roll Cove material onto wall and floor surface and remove excess adhesive.
12. Finish all seams of Cove according to floor covering manufacturer's recommendations.
13. Heat Weld seams if required by the area in which the material is being installed.

    a. Heat Welding (Seamless Floors): Material shall be grooved to accept Roppe vinyl weld bead. Roppe vinyl weld bead shall be installed according to manufacturer's recommended installation documents.
    b. Do not heat weld for 24 hours to allow adhesive to fully cure.

C. Interface with Other Work: If caulking or sealing is required after installation, please contact the manufacturer for a suitable, color matching caulk.

3.5 CLEANING & MAINTENANCE

A. General: Clean up installation area and sweep, dust or wipe material to remove any dirt, dust or debris.

B. Initial Maintenance: Conduct initial maintenance per the manufacturer's recommended procedures stated in the Maintenance Documents. All documentation is available upon request or from the Roppe website. Excelsior Cleaning products are the recommended products for use. All can be found linked to the product on the Roppe website www.roppe.com or at www.excelsiorproducts.net.

C. Regular Maintenance: Conduct maintenance on regular intervals as needed. Insufficient cleaning will reduce the wear life of the flooring and alter the dissipative properties of the tiles. The amount of maintenance depends directly upon the amount of dirt and particulates the floor is subjected to.

D. ESD vinyl flooring products DO NOT require a protective wax or floor finish.

E. In areas where rolling chairs will be used, a resilient flooring chair pad must be installed over the finished floor to protect floor covering.

F. Always use untreated, new or thoroughly cleaned mops and pads when conducting daily or routine maintenance.

G. Do not use Kerosene, Gasoline, Naphtha and/or other solvents to clean vinyl tile.

3.6 CLOSEOUT ACTIVITIES

A. General: Follow all federal, state and local requirements and Division 01 Section 01 76 00 – Protecting Installed Construction and Section 01 78 00 – Closeout Submittal requirements for these activities.

B. Protection: Protect newly installed material with construction grade paper or protective boards, such as Masonite or Ram Board, to protect material from damage by other trades. Be sure all construction debris is swept up and removed prior to the protective material being installed and does not get trapped underneath. Limit usage and foot traffic according to the adhesive's requirements. When moving appliances or heavy furniture, protect flooring and wall base from scuffing and tearing using temporary floor protection as well.

END OF SECTION 09 65 36.13

SECTION 12 36 16 - METAL COUNTERTOPS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Stainless-steel countertops.
2. Stainless-steel sinks.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For metal fabrications.

1. Include plans, sections, details, and attachments to other work. Detail fabrication and installation, including field joints.
2. For countertops, show locations and sizes of cutouts and holes for items installed in metal countertops.

PART 2 - PRODUCTS

2.1 STAINLESS-STEEL FABRICATIONS

A. Countertops: Fabricate from 0.062-inch thick, stainless-steel sheet. Provide smooth, clean exposed tops and edges in uniform plane, free of defects. Provide front and end overhang of 1 inch over the base cabinets.

1. Joints: Fabricate countertops without field-made joints.
2. Weld shop-made joints.
3. Sound deaden the undersurface with heavy-build mastic coating.
4. Extend the top down to provide a 1-inch thick edge with a 1/2-inch return flange.
5. Form the backsplash coved to and integral with top surface, with a 1/2-inch thick top edge and 1/2-inch return flange, locations as indicated on Drawings.
6. Provide raised (marine) edge around perimeter of tops containing sinks; pitch tops containing sinks two ways to provide drainage without channeling or grooving.

B. Stainless-Steel Sinks: Fabricate from stainless-steel sheet, not less than 0.050-inch nominal thickness. Fabricate with corners rounded and coved to at least 5/8-inch radius. Slope the sink bottoms to outlet without channeling or grooving. Provide continuous butt-welded joints.

1. Provide sizes indicated or manufacturer's closest standard size of equal or greater volume, as approved by Architect.
2. Factory punch holes for fittings.

3. Provide sinks with stainless-steel strainers and tailpieces.
4. Factory weld sinks to stainless-steel countertops to provide one, integral unit.
5. Apply 1/8-inch thick coating of heat-resistant, sound-deadening mastic to undersink surfaces.

2.2 MATERIALS

A. Stainless-Steel Sheet: ASTM A240/A240M, Type 304.

B. Sealant for Countertops: Manufacturer's standard sealant that complies with applicable requirements in Section 079200 "Joint Sealants" and the following:

1. Mildew-Resistant Joint Sealant: Mildew resistant, single component, nonsag, neutral curing, silicone.
2. Color: Clear.

2.3 STAINLESS-STEEL FINISH

A. Grind and polish surfaces to produce uniform, directional satin finish matching No. 4 finish, with no evidence of welds and free of cross scratches. Run grain with long dimension of each piece. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces clean.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install metal countertops level, plumb, and true; shim as required, using concealed shims.

B. Field Jointing: Where possible, make field jointing in the same manner as shop jointing; use fasteners recommended by manufacturer. Prepare edges to be joined in shop so Project-site processing of top and edge surfaces is not required. Locate field joints where shown on Shop Drawings.

C. Secure countertops to cabinets with Z- or L-type fasteners or equivalent; use two or more fasteners at each front, end, and back.

D. Abut top and edge surfaces in one true plane, with internal supports placed to prevent deflection.

E. Seal junctures of countertops, splashes, and walls with sealant for countertops.

F. Protection: Provide 6-mil plastic or other suitable water-resistant covering over countertop surfaces. Tape to underside of countertop at a minimum of 48 inches o.c. Remove protection at Substantial Completion.

END OF SECTION 12 36 16

ROOM FINISH SCHEDULE

FLOOR LEVEL	SPACE NO.	SPACE NAME	FLOOR	BASE	WALLS N	WALLS E	WALLS S	WALLS W	CEILING FIN.	CEILING HGT.	DOORS	FRAMES	NOTES
GROUND FLOOR	C006A	TICKETS	-	-	-	-	-	-	-	-	-	-	SEE NOTES: 1, 7, 12
GROUND FLOOR	024	STEAM LAB	F-4 / COLOR 1	B-1	P-1	P-1	WC-1	WC-1	C-2 / P-3	10'-0"	D-1	FR-1	SEE NOTES: 1, 4, 6, 9, 12, 18, 20, 24, 25
GROUND FLOOR	024A	ENGRAVING ROOM	F-4 / COLOR 1	B-1	P-5	P-5	P-5	P-5	C-1	10'-0"	D-1	FR-1	SEE NOTES: 1, 4, 6, 12, 20
GROUND FLOOR	024B	COMPUTER / 3D PRINTING LAB	F-4 / COLOR 1	B-1	P-4	P-4	P-4	P-4	C-4	10'-0"	D-1	FR-1	SEE NOTES: 1, 4, 6, 12, 20
GROUND FLOOR	025	LIBRARY / MEDIA CENTER	F-1	B-1	P-1 / P-5	P-1	P-1 / P-5	P-1 / P-5	C-3	10'-0"	D-1	FR-1	SEE NOTES: 1, 2, 6, 12, 13, 20, 23
GROUND FLOOR	025A	ROOM NOT USED	-	-	-	-	-	-	-	-	-	-	-
GROUND FLOOR	025B	SERVER	-	B-EX	P-EX	P-EX	P-EX	P-EX	C-1	10'-0"	EXIST'G	FR-1	SEE NOTES: 1, 12
GROUND FLOOR	034	AGRICULTURE LAB	F-4 / COLOR 2	B-1	P-5	P-1	P-1	P-1 / P-5	EXP. / P-1 C-5 / C-6	14'-2"	EXIST'G	FR-1	SEE NOTES: 1, 4, 6, 12, 14, 15, 16, 28
GROUND FLOOR	034A	STORAGE	EXISTING	-	P-1	-	-	-	EXIST.	14'-2"	-	FR-1	SEE NOTES: 1, 12
GROUND FLOOR	034B	WELDING ROOM	SEE NOTE #5	B-1	P-4	P-4	P-4	P-4	EXPOSED P-1 / C-6	14'-2"	D-1	FR-1	SEE NOTES: 1, 5, 6, 12, 14, 16, 20, 28
GROUND FLOOR	034C	ANIMAL ROOM	F-4 / COLOR 2	B-1	P-4	P-4	P-4	P-4	C-1	10'-0"	D-1	FR-1	SEE NOTES: 1, 4, 6, 12, 20
FIRST FLOOR	128	eSPORTS ROOM	F-2	B-1	WC-1	P-4	P-4	P-4	EXIST'G	-	EXIST'G	FR-1	SEE NOTES: 1, 6, 10, 12
FIRST FLOOR	138	I.T. CENTER	F-3	B-1	P-1 / P-5 - SEE FINISH NOTE #8				C-1	9'-0"	D-1	FR-1	SEE NOTES: 1, 3, 6, 8, 12, 19, 20, 26
FIRST FLOOR	138A	I.T. CLOSET	EXIST'G	EXIST'G	-	-	-	-	EXIST'G	-	EXIST'G	FR-1	SEE NOTES: 1, 12
FIRST FLOOR	138B	I.T. STORAGE	EXIST'G	EXIST'G	-	-	-	-	EXIST'G	-	EXIST'G	FR-1	SEE NOTES: 1, 12

WALLS NOTE: FOR PURPOSES OF THE FINISH SCHEDULE "NORTH" SHALL BE CONSIDERED TO BE THE TOP OF THE SHEET.

ATTIC STOCK:

CONTRACTOR SHALL PROVIDE MATERIAL FOR ATTIC STOCK AS LISTED BELOW.

NOTE: PROVIDE ALL ATTIC STOCK MATERIALS IN ORIGINAL CARTONS. ALSO WRAP AND LABEL ANY FULL SIZE TILES AND USABLE CUTS FROM OPEN CARTONS REMAINING FROM INSTALLATION, AND PLACE IN STORAGE AS DIRECTED BY THE OWNER.

FLOOR FINISHES:
- PRODUCT F-1: (1) FULL CARTON OF ALL STYLES, REMAINING FULL SIZE TILES FROM INSTALLATION & USABLE CUTS FROM INSTALLATION OF ALL STYLES.
- PRODUCT F-2: REMAINING FULL SIZE TILES FROM INSTALLATION.
- PRODUCT F-3: REMAINING FULL SIZE TILES FROM INSTALLATION.
- PRODUCT F-4: NO ATTIC STOCK.

CEILING FINISHES:

C-1:	ULTIMA HIGH-NRC #2081:	2' X 2' x 1"	2 CARTONS (48 S.F. per CARTON)
C-2:	VAPOR "CLUSTER" DENSE:	2' X 4' x 1-1/2"	TBD BY OWNER
C-3:	CALLA SHAPES for DESIGNFLEX:		
	#100109: 60° TRAPEZOID, 48" BASE	2' X 4' X 1"	1 CARTON (8 PCS per CARTON)
	#100101: 60° TRIANGLE, 24" BASE	2' X 2' X 1"	1 CARTON (12 PCS per CARTON)
C-4:	CALLA TEGUAL #2822BK:	2' X 2' X 1"	1 CARTON (40 S.F. per CARTON)
C-5:	AXIS SOFTZONE INFILL PANELS:	4' SEG X 1"	2 SEGMENTS OF EACH COLOR LISTED IN FINISH LEGEND
C-6:	TECTUM DIRECT-ATTACH:	2' X 4' X 1"	TBD BY OWNER

WALL PROTECTION:
CG-1: SERIES 90° SURFACE MOUNTED CORNER GUARD: PROVIDE A QUANTITY OF (2) FOR ATTIC STOCK.

ADDITIONAL FINISHES SCOPE:

1. REFERENCE ALL ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND ABATEMENT DRAWINGS FOR FULL EXTENT OF SPACES THAT ARE AFFECTED BY DEMOLITION AND/ OR RENOVATIONS. PATCH AND REPAIR EXISTING FINISHES IN KIND WHICH ARE DISTURBED BY DEMOLITION AND/OR RENOVATION AT ALL AREAS WITHIN THE SCOPE OF WORK WHICH ARE NOT OTHERWISE ADDRESSED ON A ROOM BY ROOM BASIS IN THE FINISH SCHEDULE AT THIS SHEET, AS WELL AS SPACES WITHIN THE FINISH SCHEDULE WHICH ARE DESIGNATED w/ EXISTING FINISHES TO REMAIN.
   - ANTICIPATE SURFACE PREP & REPAIRS RELATED TO DEMOLITION AS WELL AS SURFACE PREP AND REPAIRS WHICH MAY BE REQUIRED FOR INSTALLATION OF NEW & PATCHING OF EXIST'G FINISHES.
   - INSTALLATION OF NEW DOORS AND/OR FRAMES WHICH OCCUR IN SPACES WHICH ARE NOT DESIGNATED TO RECEIVE NEW FINISHES WITHIN THE SCHEDULE ABOVE SHALL REQUIRE PATCH AND REPAIR OF EXIST'G FINISHES TO REMAIN. PROVIDE WALL FINISH, FLOOR FINISH & BASE MATERIAL PATCHES AND REPAIRS AT EACH LOCATION.
   - WALL PAINTS WHICH CANNOT BE MATCHED FOR COLOR AND/OR SHEEN SHALL BE RE-PAINTED IN THEIR ENTIRETY.
   - ALL EXISTING HM DOORS AND/ OR HM FRAMES OCCURRING WITHIN WALLS PAINTED IN THEIR ENTIRETY WHETHER DESIGNATED IN THE FINISH SCHEDULE OR PAINTED DUE TO PATCH AND REPAIR SHALL ALSO BE PAINTED IN THEIR ENTIRETY.
   - ANTICIPATE PATCH AND REPAIR OF FLOORINGS & BASE AS WELL AS PAINTS AT WALLS FOR UNDER FLOOR DEMOLITION AND /OR INSTALLATIONS REQUIRED FOR MEP SCOPE OF WORK.
   - ANTICIPATE PATCH AND REPAIR OF CEILINGS AS WELL AS PAINTS AT WALLS AND SOFFITS FOR ABOVE CEILING DEMOLITION AND/OR INSTALLATIONS REQUIRED FOR MEP SCOPE OF WORK.

GENERAL NOTES for INTERIOR FINISHES:

1. FOR PURPOSES OF THE FINISH SCHEDULE, NORTH SHALL BE CONSIDERED TO BE THE TOP OF THE SHEET MS - PLEASE NOTE - THIS IS NOT CONSISTENT WITH "TRUE NORTH" AS INDICATED ON THE FLOOR PLANS.
2. PAINTED FINISHES SHALL BE AS FOLLOWS:
   - UNLESS OTHERWISE NOTED, PAINTED GYPSUM WALLS, CEILINGS, AND SOFFITS SHALL BE SATIN FINISH - SHERWIN WILLIAMS PROMAR 200 ZERO VOC INTERIOR LATEX SERIES.
     - •• ADJUST SHEEN PER MFGR. RECOMMENDATIONS FOR DARKER COLORS TO AVOID BURNISHING.
   - UNLESS OTHERWISE NOTED, PAINTED H.M. AND WOOD DOORS, FRAMES AND TRIMS SHALL BE SEMI-GLOSS FINISH - SHERWIN WILLIAMS ACRYLIC SERIES.
   - UNLESS OTHERWISE NOTED, PAINTED WOOD TRIMS & CHAIR RAILS SHALL BE SEMI-GLOSS FINISH - SHERWIN WILLIAMS PRO INDUSTRIAL ACRYLIC SERIES.
3. INSTALL VAPOR EMISSIONS CONTROL PRODUCT AT ALL (CONCRETE) FLOOR AREAS DESIGNATED TO RECEIVE RESILIENT VINYL TILE, MODULAR CARPETING, OR OTHER RESINOUS OR ADHERED FLOORING MATERIALS. PRODUCT SHALL BE KOESTER VAP I 2000 SYSTEM AS MANUFACTURED BY KOESTER AMERICAN CORPORATION OR EQUAL SYSTEM. REFERENCE ARCHITECTURAL SPECIFICATIONS AND MANUFACTURER'S PRODUCT LITERATURE FOR SYSTEM REQUIREMENTS (TYPICAL).
4. ALL WOOD TRIMS, CASINGS, BASE AND MISC. EDGE BANDS, VENEERS OR TRIMS TO BE STAINED SHALL BE STAINED AND FINISHED TO MATCH ONE ANOTHER USING THE ARCHITECT'S SAMPLE (OR ADJACENT FINISH AS INDICATED IN THE FINISH NOTES) AS THE CONTROL SAMPLE. FIELD FINISHED MATERIALS SHALL BE PREPARED AND TREATED SO AS TO ACHIEVE A FURNITURE GRADE "SATIN" FINISH. SUBMIT ACTUAL SAMPLES ON ACTUAL WOOD MATERIAL(S) FOR APPROVAL BY ARCHITECT PRIOR TO FINISHING OF ANY PROJECT MATERIALS.
5. FACES AND DOORS OF ELEC. PANELS, ACCESS PANELS, HATCHES, ETC. WHICH FULLY OCCUR AT WALLS TO RECEIVE WALLCOVERING OR FINISHED WALL PANELS SHALL ALSO BE COVERED W/ WALLCOVERING OR FINISHED PANEL - MATCH ANY PATTERNS IN HORIZONTAL AND VERTICAL DIRECTIONS. PANELS, HATCHES, ETC. WHICH OCCUR AT PAINTED WALLS (OR CEILINGS) OR WHICH SPAN A TRANSITION BETWEEN PAINT AND WALLCOVERING SHALL BE PAINTED TO MATCH THE WALL/ CEILING AT WHICH IT OCCURS (INCLUDING NEW ITEMS THAT HAVE AN UNMATCHED FACTORY ENAMEL FINISH - THE EXCEPTION SHALL BE ITEMS WHICH HAVE A BRASS, STAINLESS STEEL, ANOD. ALUM., OR BRONZE FACTORY FINISH. POWDER COATED OR FACTORY PAINTED "WHITE" ENAMEL HATCHES WHICH OCCUR AT "WHITE" PAINTED CEILINGS MAY ALSO BE EXCLUDED.
6. PROVIDE AND INSTALL REDUCERS, ADAPTERS, TRANSITIONS, AND THRESHOLDS (INCLUDING AT DOORWAYS) AS REQUIRED AT TRANSITIONS AND/OR TERMINATIONS OF FLOORINGS. COLOR OF RESILIENT REDUCERS SHALL BE AS INDICATED IN THE FINISH LEGEND.
7. AS PER REGULATIONS DO NOT PAINT SPRINKLER HEADS, COVERS, OR TRIM.
8. SEE NOTES @ THIS SHEET FOR ATTIC STOCK REQUIREMENTS.
9. ALL FURNITURE SHOWN AT PLAN ARE N.I.C., TYP. U.O.N.
10. ALL PRODUCTS UTILIZED FOR WHICH SPECIFICATION SELECTIONS HAVE NOT BEEN ISSUED SHALL BE CONSIDERED THE BASIS OF DESIGN AND SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. SUBMITTAL INFORMATION IS TO BE PROVIDED AS DESCRIBED IN DIVISION 01 OF THE SPECIFICATIONS FOR ALL PRODUCTS.

INTERIOR FINISHES NOTES:

1. REFERENCE PARTIAL FLOOR FINISH PLANS @ SHEET A-702 FOR EXTENTS, LAYOUT & PATTERNING OF FLOOR FINISHES.
2. INSTALL MODULAR CARPET TILE (F-1 / ALL STYLES) AT MEDIA CENTER & SERVER. PROVIDE FOR AN ADA-COMPLIANT FLOOR TRANSITIONS BETWEEN DIFFERING FLOOR FINISHES AT THRESHOLDS (ONLY).
3. INSTALL ELECTRO-STATIC DISSIPATIVE VINYL TILE (F-3) AT I.T. CENTER AND ADJACENT SPACES AS LISTED IN THE ROOM FINISH SCHEDULE. FLOOR TILE SHALL BE INSTALLED W/ SPECIALTY ADHESIVE AND COOPER GROUNDING STRIPS PER MANUFACTURER'S RECOMMENDED INSTALLATION METHODS. COORDINATE GROUNDING W/ ELECTRICAL DRAWINGS.
4. INSTALL DECORATIVE FLAKE BROADCAST FLOOR SYSTEM (F-4 / COLOR 1) AT STEAM LAB, ENGRAVING ROOM, & 3D PRINTING ROOM, AND INSTALL (F-4 / COLOR 2) AT AG LAB & ANIMAL ROOM. PLEASE NOTE THAT THE DESIRED APPEARANCE SHALL BE "FULL COVERAGE" - THE PIGMENTED BASE COAT SHALL BE COVERED IN ITS ENTIRETY UPON INSTALLATION OF THE BROADCAST FLAKES. PROVIDE FOR A SLIP-RESISTANT TOP COAT FINISH. REFERENCE FINISH LEGEND FOR STANDARD & CUSTOM BLEND COLORS.
5. PROVIDE & INSTALL CONCRETE SEALER AT EXISTING CONCRETE SLAB AT WELDING ROOM 034B. FINISH SHALL BE SATIN W/ SLIP-RESISTANT ADDITIVE. LEVEL OF SLIP-RESISTANT FINISH SHALL BE CONFIRMED WITH ARCHITECT & OWNER PRIOR TO ORDERING MATERIAL & INSTALLATION - SEE ARCH. SPECIFICATION.
6. INSTALL INSTALL RUBBER BASE (B-1) AT ALL AREAS INDICATED AT FINISH SCHEDULE. RUBBER BASE STYLES MAY DIFFER BASED ON THE FLOOR FINISH TYPE AT WHICH IT OCCURS. HEIGHT = 4"H (TYPICAL).
7. ALL FINISHES WITHIN TICKETS C006A SHALL BE EXISTING TO REMAIN.
8. PAINT ALL EXISTING WALL CONSTRUCTION WITHIN I.T. CENTER: P-1 "PURE WHITE". PAINT ALL NEW GYPSUM WALL SURFACES (EXCLUDING SOFFITS) WITHIN I.T. CENTER: P-5 "WESTCHESTER GRAY". TERMINATE PAINT COLORS AT THE NEAREST INSIDE OR OUTSIDE CORNER (ONLY).
9. PROVIDE & INSTALL SUPER GRAPHIC WALL COVERING (WC-1) AT ENTIRETY OF "SOUTH" & "WEST" WALLS WITHIN STEAM LAB. ALL OTHER WALLS WITHIN SPACE SHALL BE PAINTED P-1 "PURE WHITE".
10. PROVIDE & INSTALL SUPER GRAPHIC WALL COVERING (WC-1), AT ENTIRETY OF "NORTH" WALL AT ESPORTS ROOM. ALL OTHER WALLS WITHIN SPACE SHALL BE PAINTED P-4 "ZIRCON".
11. EXISTING FINISHES SHALL REMAIN AT CORRIDORS C0004 & C0006. PATCH & MATCH WALL BASE (B-EX), AND PATCH & MATCH PAINT (P-EX) TO MATCH EXISTING WALL PAINT PATTERN. TRANSITION PAINT AT AN INSIDE OR OUTSIDE CORNER (ONLY).
12. REFERENCE REFLECTED CEILING PLANS FOR HEIGHTS, EXTENTS, & LAYOUTS / CONFIGURATIONS OF CEILING FINISHES.
13. INSTALL NEW PERFORATED METAL CEILING TILE & GRID (C-2) @ STEAM LAB. EXPOSED CEILING ABOVE METAL PERFORATED TILES SHALL BE VISIBLE, THEREFORE, PAINT ENTIRETY OF EXPOSED CEILING ABOVE CEILING (C-2): P-3 "SHOW STOPPER", INCLUDING STRUCTURAL STEEL, EXPOSED DUCTWORK, CONDUIT, PIPING, MISCELLANEOUS METALS, HANGERS AND SUPPORTS. ALSO NOTE THE FOLLOWING:
    - CEILING PANELS HAVE A (4) TILE PATTERN CONFIGURATION (A, B, C, D). SEE RCP FOR LAYOUT SEQUENCE.
    - CEILING TILES HAVE A THICKNESS THAT PROJECT DOWN FROM CEILING GRID - CEILING SHALL BE AT 10'-0" A.F.F. TO THE BOTTOM FACE OF THE CEILING TILE (NOT THE GRID).
    - PAINT SHALL BE DRY FALL, UNLESS OTHERWISE NOTED - SEE GENERAL NOTES.
    - COORDINATE W/ ELECTRICAL DRAWINGS FOR INTEGRAL "IN-LINE" LIGHT FIXTURE LAYOUT.

13. INSTALL NEW DECORATIVE ACOUSTICAL CEILING TILE & GRID (C-3) @ MEDIA CENTER. PATTERN CONSISTS OF "TRAPEZOID" AND "TRIANGLE" SHAPED CEILING TILES - REFERENCE REFLECTED CEILING PLAN FOR CONFIGURATION & PATTERN REPEAT, AND ALSO NOTE THE FOLLOWING:
    - "TRAPEZOID" AND "TRIANGLE" SHAPED LIGHT FIXTURES & DIFFUSERS SHALL BE INSTALLED WITH THIS CEILING TYPE (ONLY) - REFERENCE MECHANICAL & ELECTRICAL DRAWINGS.
14. PAINT ENTIRE EXPOSED CEILING ABOVE AG LAB & WELDING ROOM: P-1 "PURE WHITE", INCLUDING STRUCTURAL STEEL, EXPOSED DUCTWORK, CONDUIT, PIPING, MISCELLANEOUS METALS, HANGERS AND SUPPORTS.
15. INSTALL NEW ACOUSTICAL INFILL PANELS (C-5) WITHIN HEXAGON LIGHT FIXTURES AT AG LAB, AND NOTE THE FOLLOWING:
    - ACOUSTICAL INFILL PANELS ARE 48" SEGMENTS - EACH HEXAGON LIGHT FIXTURE SHALL RECEIVE (6) INFILL PANELS OF THE SAME COLOR TO CREATE THE APPEARANCE OF SOLID PANELS - REFERENCE MANUFACTURER'S RECOMMENDED INSTALLATION METHOD FOR HANGING ACOUSTICAL INFILL PANELS.
    - REFERENCE REFLECTED CEILING PLAN FOR ACOUSTICAL INFILL PANEL COLOR DESIGNATIONS AND PATTERN LAYOUT.
    - NEW CORD REELS ARE SUSPENDED FROM THE EXISTING EXPOSED CEILING AND ARE INTENDED TO HANG BETWEEN THE HEXAGON LIGHT FIXTURES - COORDINATE LAYOUT W/ ELECTRICAL DRAWINGS.
16. INSTALL NEW DIRECT-ATTACHED CEILING PANELS (C-6) AT AVAILABLE DECK SPACE OF EXPOSED CEILING @ AG LAB AND WELDING ROOM, AND NOTE THE FOLLOWING:
    - NEW PANELS TO COVER AT LEAST 75% OF THE EXPOSED CEILING SURFACE.
    - PANELS SHALL BE AFFIXED TO THE EXISTING CEILING DECK WITH 1" MINIMUM CLEARANCE BETWEEN THE CEILING AND BACK-SIDE OF THE PANEL TO ACHIEVE AN ACOUSTICAL RATING OF 0.80 NRC - SEE MANUFACTURER'S RECOMMENDING MOUNTING METHODS FOR ADDITIONAL INSTALLATION REQUIREMENTS.
    - PANELS SHALL BE COORDINATED WITH LIGHTING, DUCTWORK, CONDUIT, PIPING, ETC. LOCATED IN THE CEILING. DIMENSIONS TO BE V.I.F. WITH EXISTING FRAMING.
    - INSTALL PANELS UPON COMPLETION OF PAINTING EXPOSED CEILING.
    - PANELS SHALL BE POSITIONED BETWEEN EXISTING FRAMING, CENTERED, WITH SHORT ENDS OF THE PANELS ABUTTING ONE ANOTHER.
17. PAINT ALL FACES OF NEW GYPSUM SOFFITS AND BULKHEADS: P-1 "PURE WHITE". PAINT ALL FACES OF EXISTING GYPSUM SOFFITS AND BULKHEADS: P-EX (TO MATCH EXISTING), TYPICAL UNLESS OTHERWISE NOTED.
18. PAINT VERTICAL FACE AND UNDERSIDE OF NEW GYPSUM SOFFIT AT "EAST" WALL AT STEAM LAB (SCHEDULED TO RECEIVE MOTORIZED WINDOW SHADE POCKET): P-3 "SHOW STOPPER".
19. PAINT VERTICAL FACE AND UNDERSIDE OF NEW GYPSUM SOFFIT AT "SOUTH" WALL AT I.T. CENTER: P-3 "SHOW STOPPER". PAINT VERTICAL FACE AND UNDERSIDE OF NEW GYPSUM SOFFIT ABOVE NEW WALL CABINETS: P-5 "WESTCHESTER GRAY".
20. NEW PRE-FINISHED WOOD DOOR (D-1) SPECIES & STAIN COLOR ARE INTENDED TO MATCH EXISTING WOOD DOORS. ARCHITECT SHALL VERIFY SPECIES AND STAIN COLOR DURING SHOP DRAWING REVIEW.
21. HM DOOR FRAMES WITHIN RENOVATION AREA SHALL BE PAINTED IN THEIR ENTIRETY INCLUDING NEW HM FRAMES, EXISTING HM FRAMES RECEIVING NEW DOORS AND EXISTING HM FRAMES OCCURRING AT WALLS RECEIVING NEW FINISHES. REMAINING FRAMES (OCCURRING IN WALLS WITH EXISTING FINISHES TO REMAIN) MAY ALSO BE "EXIST'G TO REMAIN", HOWEVER TOUCH UP OF EXISTING COLOR MAY BE REQUIRED. FRAME COLOR FOR FULLY PAINTED FRAMES SHALL BE AS NOTED AT THE FINISH SCHEDULE. EXISTING TO REMAIN SHALL BE P-EX TO MATCH EXISTING.
22. PAINT NEW HM DOOR FRAMES: FR-1 "TRICORN BLACK", UNLESS OTHERWISE NOTED.
23. PATCH & MATCH SHALL BE REQUIRED @ FLOOR, BASE & WALL FINISHES AT EXISTING CORRIDOR WHERE NEW DOOR IS BEING ADDED FOR MEDIA CENTER. REFERENCE DEMO PLANS & FLOOR PLANS TO REVIEW CONDITIONS.
24. PROVIDE & INSTALL NEW SOLID SURFACE WALL CAP (SOL-1) AT TOP OF LOW WALLS AT STEAM LAB. ALL EXPOSED EDGES SHALL BE EASED AND POLISHED. CAULKED SEAMS/EDGES SHALL BE COLOR-MATCHED TO SOLID SURFACE MATERIAL.
25. PROVIDE & INSTALL SOLID SURFACE SURROUND (SOL-2) AT NEW DISPLAY CASE AT EXISTING CORRIDOR. REFERENCE PLAN AND SECTION DETAILS @ SHEETS A-501 & A-503. ALL EXPOSED EDGES SHALL BE EASED AND POLISHED. CAULKED SEAMS/EDGES SHALL BE COLOR-MATCHED TO SOLID SURFACE MATERIAL. FINAL FINISH SHALL BE A "MATTE" SHEEN (TYPICAL).
26. PROVIDE & INSTALL NEW SOLID SURFACE WALL CAP & APRON (SOL-2) AT TOP OF LOW WALLS AT I.T. CENTER. ALL EXPOSED EDGES SHALL BE EASED AND POLISHED. CAULKED SEAMS/EDGES SHALL BE COLOR-MATCHED TO SOLID SURFACE MATERIAL. FINISH SHALL BE "MATTE" PER MANUFACTURER'S RECOMMENDED FINISH.
27. NEW ELECTRICAL / DATA DEVICES, RECEPTACLES & ASSOCIATED COVERS SHALL BE THE FOLLOWING COLORS:
    - DEVICES WHICH OCCUR AT RED OR DARK-COLORED WALL FINISHES / SURFACES = BLACK.
    - DEVICES WHICH OCCUR AT WHITE, GRAY, OR LIGHT-COLORED WALL FINISHES / SURFACES = WHITE.
      - •• COLORS AND FINISHES SHALL BE CONFIRMED DURING SHOP DRAWING REVIEW.
28. INSTALL STAINLESS STEEL CORNER GUARDS AT OUTSIDE CORNERS OF NEW WALLS AT CLOSET WITHIN WELDING ROOM & STORAGE AREA WITHIN AG LAB. INSTALL FROM TOP EDGE OF WALL BASE TO APPROXIMATELY 52" A.F.F. REFERENCE FLOOR PLAN AT SHEET A-402 FOR LOCATIONS.
29. PROVIDE & INSTALL NEW MANUAL SOLAR SHADES WS-1, INTERIOR SIDE ONLY, WITHIN SPACES RECEIVING NEW EXTERIOR WINDOWS, TYPICAL UNLESS OTHERWISE NOTED. NEW WINDOW DESIGNATIONS ARE NOTED AT FLOOR PLANS AT DRAWING SHEETS. NOTE RESCUE WINDOW REQUIREMENTS FOR WINDOWS & SHADES AT DRAWING SHEET A-602.

ROOM FINISH LEGEND:

FLOORINGS

F-1: MODULAR CARPET
THE FOLLOWING STYLES ARE USED TO CREATE FLOOR FINISH PATTERN(S):
MFGR: MOHAWK GROUP
STYLE(S):
- #1: SHARED PATH BT429 — COLOR: #989 "CHARCOAL"; SIZE: 12" x 36"
- #2: COLOR BALANCE GT405 — COLOR: #373 "ATOMIC"; SIZE: 12" x 36"
- #3: SIDE STRIPE GT419 — COLOR: #963 "HERITAGE"; SIZE: 24" x 24"

INSTALLATION: HALF-LAP & QUARTER TURN, SEE FLOOR FINISH PLAN
CONTACT: CONNIE HASARA
PH: 570-977-4072

F-2: MODULAR CARPET
MFGR: INTERFACE
COLLECTION: STREAMING
STYLE: # 161680AK00 - BITRATE
COLOR: # 106298 - "DARK RED"
SIZE: 25cm X 1m
INSTALLATION: ASHLAR, SEE FLOOR FINISH PLAN
CONTACT: ERICA GROH
PH: 717-617-7844

F-3: STATIC DISSIPATIVE TILE
MFGR: ROPPE
STYLE: ESD VINYL STATIC CONTROL TILE
COLOR: #756 - "THUNDER BLACK"
SIZE: 24" x 24" (SQUARE EDGE)
INSTALLATION: MONOLITHIC, SEE FLOOR FINISH PLAN - COORDINATE W/ ELECT. DWGS.
CONTACT: MARILYN SAENZ
PH: 215-932-2291

F-4: DECORATIVE FLAKE BROADCAST FLOOR SYSTEM
MFGR: TORGINOL
DISTR'B: SHERWIN WILLIAMS
SERIES: POLYMER FLAKE SYSTEM
(1) PRIMER / SEALER COAT
(1) PIGMENTED EPOXY BASECOAT
BROADCASTED FLAKES
(2) TOP COATS
COLOR(S): #1: "FREDDIE" #FB-256
- #F9902 - 55% (1/4" FLAKE SIZE)
- #F1050 - 20% (1/4" FLAKE SIZE)
- #F9995 - 10% (1/4" FLAKE SIZE)
- #F1820 - 08% (1/4" FLAKE SIZE)
- #F2240 - 04% (1/4" FLAKE SIZE)
- #F9959 - 03% (1/4" FLAKE SIZE)

#2: "CUSTOM BLEND" of the following colors:
- #F1820 - 50% (1/4" FLAKE SIZE)
- #F9959 - 30% (1/4" FLAKE SIZE)
- #F2200 - 10% (1/4" FLAKE SIZE)
- #F9907 - 10% (1/4" FLAKE SIZE)

COVERAGE: FULL COVERAGE
THICKNESS: 1/8" THICK (TOTAL SYSTEM)
CONTACT: JOEL STILWELL
PH: 412-389-5635

BASE MATERIALS:

B-EX: WALL BASE (TO MATCH EXISTING)
MFGR: TO MATCH EXISTING
MATERIAL: TO MATCH EXISTING
SIZE: TO MATCH EXISTING
COLOR: TO MATCH EXISTING

B-1: 4" RUBBER BASE & TRANSITIONS
MFGR: ROPPE
STYLE: PINNACLE
PROFILE: 4"H
COLOR: #100 "BLACK"

RESILIENT TRANSITIONS:
PROVIDE ROPPE REDUCERS/ADAPTERS & TRANSITIONS:
- AS REQUIRED AT EDGES OF DIFFERENT HEIGHT FLOORINGS.
- AT EDGES OF SAME OR VERY SIMILAR HEIGHT FLOORINGS.

COLOR: #100 "BLACK"
CONTACT: MARILYN SAENZ
PH: 215-932-2291

WALL FINISHES / PAINTS:

P-EX: PAINT (TO MATCH EXISTING)
VARIOUS EXISTING PAINT COLORS EXIST WITHIN THE SCHOOL AT WALLS, CEILINGS, DOORS AND FRAMES. COLOR INFORMATION MAY BE AVAILABLE FROM THE DISTRICT, HOWEVER, COLOR MATCHING MAY ALSO BE REQUIRED. FIELD VERIFY COLOR AND SHEEN AT AREAS OF PATCH AND REPAIR WORK.

P-1: PAINT
MFGR: SHERWIN WILLIAMS
COLOR: # SW 7005 "PURE WHITE"

P-2: PAINT
MFGR: SHERWIN WILLIAMS
COLOR: # SW 6258 "TRICORN BLACK"

P-3: PAINT
MFGR: SHERWIN WILLIAMS
COLOR: # SW 7588 "SHOW STOPPER"

P-4: PAINT
MFGR: SHERWIN WILLIAMS
COLOR: # SW 7667 "ZIRCON"

P-5: PAINT
MFGR: SHERWIN WILLIAMS
COLOR: # SW 2849 "WESTCHESTER GRAY"

P-6: PAINT (NOT USED)

P-7: PAINT (NOT USED)

WALL FINISHES / PANELS:

WC-1: VINYL SUPER-GRAPHIC WALLCOVERING
MFGR: TAKEFORM
STYLE: AMPLIFY / SELF-ADHESIVE
PRODUCT #: SA-105 "TRAFFIC"
THICKNESS: 4 MIL
ROLL WIDTH: 54"W
FLAMMABILITY: ASTM E84 CLASS A/1
NOTE: Graphic To Be Confirmed by Architect in Shop Drawing Review
CONTACT: PH: 800-528-1398

WALL PROTECTION PRODUCTS:

WPP-1: METAL SHEET
MFGR: ACROVYN
DISTR'B: CONSTRUCTION SPECIALTIES
MATERIAL: TYPE 304 STAINLESS STEEL
SIZE: 4' x 8' SHEET
FINISH: "DIAMOND PLATE"
NOTE: MECHANICALLY FASTENED
CONTACT: WADE BROWN
PH: 570-220-6017

CG-1: STAINLESS STEEL CORNER GUARDS
MFGR: IN-PRO CORP.
STYLE: 90° SURFACE MOUNTED
SIZE: 48"H x 2" WING, TYPE 304 /16 GAUGE
FINISH: NO. 4 SATIN
MOUNT: MECHANICALLY FASTEN
CONTACT: ABBEY RICE
PH: 800-222-5556 x5094

CEILINGS:

C-1: HIGH-NRC ACOUSTICAL CEILING TILE
MFGR: ARMSTRONG
PRODUCT: ULTIMA HIGH NRC (0.85 NRC / 35 CAC / 170 AC)
ITEM #: # 2081
SIZE: 24" X 24" X 1"
COLOR: WHITE (WH)
EDGE: BEVELED TEGULAR
GRID: 15/16" PRELUDE / COLOR: WHITE
CONTACT: BENJAMIN HINKLE
PH: 717-719-3764

C-2: METAL PERFORATED CEILING TILE
MFGR: ARKTURA
DISTR'B: NOLAN BRANDS
STYLE: VAPOR
PATTERN: "CLUSTER" - DENSE
SIZE: 24" x 48" x 1-1/2" TOTAL THICKNESS
MATERIAL: POWDER COATED ALUMINUM
COLOR: "T-GRID WHITE"
GRID: MFGR: ARMSTRONG; STYLE: 15/16" FLAT T-GRID; COLOR: WHITE (WH)
NOTE: COORDINATE W/ ELECTRICAL DWGS FOR INTEGRAL LIGHT FIXTURE LAYOUT.
CONTACT: RYAN GRAVER
PH: 609-668-5954

C-3: DECORATIVE ACT
MFGR: ARMSTRONG
PRODUCT: CALLA SHAPES FOR DESIGNFLEX
PATTERN: STYLE # SH 32
ACOUSTICS: (0.80 NRC / 35 CAC)
SIZE(S): SHAPES USED IN THIS PATTERN:
#100109: 60° TRAPEZOID, 48" BASE
#100101: 60° TRIANGLE, 24" BASE
COLOR: WHITE (WH)
EDGE: SQUARE TEGULAR
GRID: 9/16" SUPRAFINE XM for SHAPES, 2' MAIN BEAM SPACING / COLOR: WHITE
NOTE: AXIS GEOMETRIX LIGHTING & PRICE INDUSTRIES SHAPED DIFFUSERS SHALL BE INSTALLED WITH THIS CEILING TYPE. REFERENCE RCP, MECH. & ELECT. DRAWINGS.
CONTACT: BENJAMIN HINKLE
PH: 717-719-3764

C-4: ACOUSTICAL CEILING TILE
MANUF: ARMSTRONG
STYLE: CALLA - TEGULAR
ITEM: #2822BK
COLOR: "BLACK"
SIZE: 24" x 24" x 1" THICK
ACOUSTICS: 0.85 NRC / 35 CAC / 170 AC
GRID: PRELUDE XL 15/16" / COLOR: BLACK
CONTACT: BENJAMIN HINKLE
PH: 717-719-3764

C-5: ACOUSTICAL CANOPY W/ INTEGRATED LIGHTING
MFGR: AXIS
DISTR'B: LIGHTING SOLUTIONS
PRODUCT: STENCIL SOFTZONE
STYLE: 6-PANEL SEGMENTED HEXAGON
SIZE: 48" SECTION LENGTHS x 1" THICK
INFILL COLOR(S): #1: CARBON (CAR); #2: CONCRETE (CON); #3: PEBBLE (PEB); #4: LEMON (LEM)
NOTE: REFERENCE RCP & ELECTRICAL DRAWINGS. Some Colors are Special Order - Allow for Extended Lead Time.
CONTACT: TRENT GATES
PH: 610-597-0190

C-6: DIRECT-ATTACH ACT - (.60 NRC)
MFGR: ARMSTRONG
PRODUCT: TECTUM DIRECT-ATTACH HIGH NRC
ITEM #: 5338W2L04T10TWH
SIZE: 24" X 48" X 1"
EDGE: LONG EDGES BEVELED / SHORT EDGES SQUARE
MOUNTING: C-20
COLOR: "WHITE" (TWH)
CONTACT: BENJAMIN HINKLE
PH: 717-719-3764

NOTE: CEILING PAINTS ARE REFERENCED FROM THE LIST OF WALL PAINTS AT LEFT.

DOORS:

D-1: PRE-FINISHED WOOD
MFGR: VT INDUSTRIES (or EQUAL)
SPECIES: NATURAL BIRCH
STAIN: # AL18 - "ALPINE"
NOTE: FINAL SPECIES & STAIN COLOR TO BE CONFIRMED BY ARCHITECT DURING SHOP DRAWING REVIEW
CONTACT: DOUG BACHAND
Cell: 919-452-3716

D-2: ALUMINUM GLAZED
STYLE: PER ARCH. SPECIFICATION
COLOR: TO BE SELECTED FR. MANF. STANDARD COLORS
NOTE: NO FIELD-FINISHING REQUIRED.

FRAMES:

FR-1: PAINTED H.M.
MFGR: SHERWIN WILLIAMS
COLOR: # SW 6258 "TRICORN BLACK"

FR-2: ALUMINUM
STYLE: PER ARCH. SPECIFICATION
COLOR: TO BE SELECTED FR. MANF. STANDARD COLORS
NOTE: NO FIELD-FINISHING REQUIRED.

NOTE: UTILIZE INDUSTRIAL PAINT SYSTEM SUITABLE FOR BOTH NEW AND PREVIOUSLY PAINTED HM FRAMES

MILLWORK:

PL-1: PLASTIC LAMINATE
MFGR: WILSONART
COLOR: #5013K - "MUSHROOM"
FINISH: #19 - LENO WEAVE w/ AEON SCRATCH-RESISTANCE TECH.

PL-2: PLASTIC LAMINATE
MFGR: WILSONART
COLOR: #5024K - "BLACKBIRD"
FINISH: #19 - LENO WEAVE w/ AEON SCRATCH-RESISTANCE TECH.

PL-3: PLASTIC LAMINATE
MFGR: FORMICA
COLOR: #M3091 - "CRYSTAL WHITE MAGNETIC MARKERBOARD"
FINISH: #90 - GLOSS

PL-4: PLASTIC LAMINATE
MFGR: WILSONART
COLOR: #5014K - "BATTLESHIP"
FINISH: #19 - LENO WEAVE w/ AEON SCRATCH-RESISTANCE TECH.

PL-5: PLASTIC LAMINATE
MFGR: WILSONART
COLOR: #8269K - "MAPLE PB NATURAL"
FINISH: #05 - TIMBERGRAIN w/ AEON SCRATCH-RESISTANCE TECH.

SOL-1: SOLID SURFACE
MFGR: MEGANITE
SERIES: STONE
COLOR: # 519SA - "RAIN CLOUD"
FINISH: SEMI-GLOSS

SOL-2: SOLID SURFACE
MFGR: MEGANITE
SERIES: VIVID
COLOR: # 088A - "FIRE"
FINISH: MATTE

SOL-3: SOLID SURFACE
MFGR: HANEX
COLOR: # P-002 - "METAL GREY"

BBK-1: BUTCHER BLOCK COUNTERTOP
SPECIES: MAPLE
STAIN: CLEAR / NATURAL
FINISH: SATIN / ANTIMICROBIAL
THICKNESS: 2" (NOMINAL)

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SS-1: STAINLESS STEEL COUNTERTOP
STYLE: PER ARCH. SPECIFICATION

MISCELLANEOUS:

WS-1: MANUAL SOLAR SHADE
MFGR: MECHO SHADE
SYSTEM: TBD
MOUNT: TBD
STYLE: THERMOVEIL 1500 SERIES
OPENNESS: 3%
COLOR: #1520 "SHADOW GREY"
CONTACT: DOUGLAS MCCOY
PH: 267-889-3948

WS-2: AUTOMATED PRIVACY SHADE
MFGR: MECHO SHADE
SYSTEM: TBD
MOUNT: TBD
STYLE: TBD
OPENNESS: 0% BLACKOUT
COLOR: #- "COLOR TBD"
NOTE: SHADE SYSTEM SHALL BE TIED INTO LOCK-DOWN SYSTEM - COORD. W/ ELEC. DWGS.
CONTACT: DOUGLAS MCCOY
PH: 267-889-3948

TACK-1: TACK PANEL FABRIC
MFGR: DUVALTEX
COLLECT.: GUILFORD OF MAINE
STYLE: FR701 2100
COLOR: #298 "MEDIUM GREY"

ILLUMINATED DIMENSIONAL LOGO:
MFGR: TAKEFORM
STYLE: ETHOS
MATERIAL: PAINTED ACRYLIC
COLOR(S): #1: COLOR TBD; #2: COLOR TBD; #3: COLOR TBD
MOUNTING: STUD MOUNT / CONCEALED FASTENERS
NOTE: **RBG HALO LIGHTING** TO BE INCLD. SEE ELEV. & ELECT. DWGS.
CONTACT: PH: 800-528-1398

PVC EDGE SCHEDULE

LAMINATE DESIGNATIONS	SURTECO WOODTAPE PVC COLOR
PL-1	#30537EL
PL-2	#60207EL
PL-3	# N/A
PL-4	#30538EL
PL-5	#31690EVM

NOTES:
1. ALL DOORS, DRAWERS, AND COUNTERTOPS & ADJUSTABLE SHELVES THAT RECEIVE PL. LAM. FINISH SHALL RECEIVE 3mm PVC EDGES.
2. ALL CABINETS FRAMES THAT RECEIVE PL. LAM. FINISH SHALL RECEIVE 3mm PVC EDGES.
3. EDGEBANDING LISTED IN SCHEDULE ABOVE ARE **NOT** TYPICALLY STOCKED - ALLOW FOR LONGER LEAD TIME.

HIGHLAND ASSOCIATES
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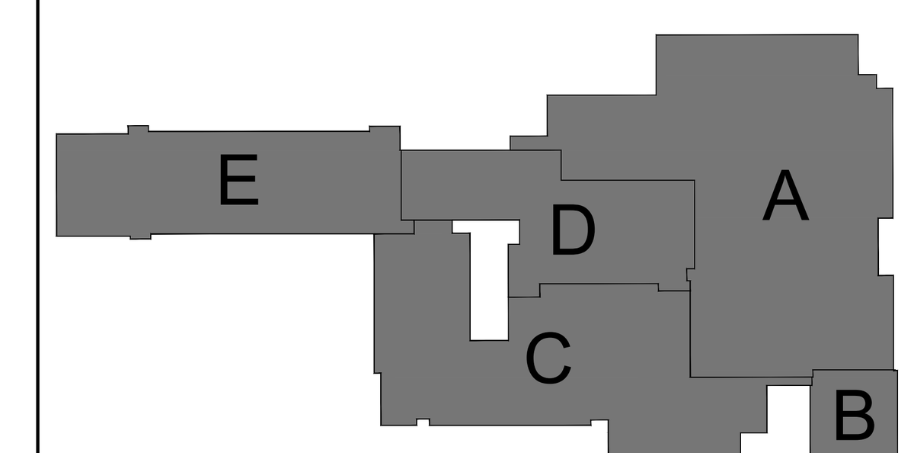
REVISION NO:

1	ADDENDUM #1	11/21/2025

- UPDATED ROOM FINISH SCHEDULE IN ITS ENTIRETY.
- UPDATED ATTIC STOCK NOTES.
- UPDATED INTERIOR FINISH LEGEND IN ITS ENTIRETY.
- UPDATED INTERIOR FINISH NOTES IN THEIR ENTIRETY.
- ADDED INTERIOR FINISH NOTES AT ROOM FINISH SCHEDULE.

4	ADDENDUM #4	12/09/2025

- ADDED SS-1 STAINLESS STEEL COUNTERTOP TO FINISH LEGEND.



NORTH

KEY PLAN

BID DOCUMENTS
SED # 08-01-01-04-0-001-019

PROJECT TITLE:

AFTON
CRIMSON KNIGHTS

Afton Central School District
29 Academy St, Afton, NY 13730

2024 Capital Project
Phase 1

SEALS:

DRAWING TITLE:
FINISH SCHEDULE, LEGEND & NOTES

DRAWN BY:	CHECKED BY:
E.V.	D.G.
DATE:	PROJECT NO:
11/10/2025	2025-005

DRAWING NO:
A-701

CAD FILE: 5005-A-701.DWG PLOT DATE: 12/9/2025