LOCATION MAP

EXISTING BUILDING DESCRIPTION
MANN ELEMENTARY SCHOOL WAS BUILT IN 1944.
MANN ELEMENTARY SCHOOL IS AN EXISTING OCCUPIED BUILDING WITH PARTIAL BASEMENT OF APPROXIMATELY 4,700 SQUARE FEET.
THE BUILDING IS UNINSULATED.
CONSTRUCTION TYPE: MASONRY ON STEEL FRAME.
THE EXISTING OCCUPANCY CLASSIFICATION WILL REMAIN UNCHANGED.

DRAWING LIST

PROJECT TEAM:
OWNER:
DETOIT PUBLIC SCHOOLS
COMMUNITY DISTRICT
3011 W. Grand Blvd
Detroit, MI 48202
Contact: Machon Jackson
tel: (313) 873-6232
email: machon.jackson@detroit12.org

CONSTRUCTION MANAGER:
CLARK CONSTRUCTION COMPANY
3635 Noxen River Drive
Lansing, MI 48911
Contact: Bevvy Timberlake
tel: (517) 708-2034
email: BTimberlake@clarkcc.com

CONSTRUCTION MANAGER:
WHITE CONSTRUCTION
1120 W. Baltimore St
Detroit, MI 48202
Contact: Donovan White
tel: (313) 872-4700
dwhite@whitecon.com

OWNER'S REPRESENTATIVE:
PLANTE MORAN CRESA
3000 Town Center Suite 100
Southfield, MI 48073
Contact: Nicole Blocker
tel: (248) 233-5363
email: nicole.blocker@plantemoran.com

ARCHITECT:
Stantec Architecture Inc.
2338 Coolidge Highway
Berkley, MI 48072-1300
Contact: Lindsay Woods
tel: (517) 336-4700
email: lindsay.woods@stantec.com

MECHANICAL ENGINEER:
Stantec Architecture Inc.
2338 Coolidge Highway
Berkley, MI 48072-1300
Contact: Casimir Zalewski
tel: (313) 334-4700
czalewski@stantec.com

ELECTRICAL ENGINEER:
Stantec Architecture Inc.
2338 Coolidge Highway
Berkley, MI 48072-1300
Contact: Bill Chomic
tel: (313) 334-4700
email: bill.chomic@stantec.com

GENERAL FIRE SAFETY
MINIMUM FIRE REGULATIONS

HANDICAP REQUIREMENTS

INITIAL CHECK-OUT

NONCOMBUSTIBLE PARTICULATE SOLIDS

SCHEDULE:

COMMENTS

最 gestures...
GENERAL NOTES:
1. REFER TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR ALL SPECIFICATIONS.
2. MATERIALS RECOMMENDED FOR MECHANICAL AND ELECTRICAL DRAWINGS ARE FROM THE SUPPLIERS LISTED.
3. CONTRACTOR IS TO COPY AND INSERT THE SPECIFICATIONS, NOTES, AND REQUIREMENTS PROVIDED IN THIS DOCUMENT INTO THE COMPLETE INSTALLATION PROCESS FOR SPECIFIED MATERIALS.
4. CONTRACTOR SHALL GIVE PROPER QUALITY CONTROL TO INSURE THAT SPECIFIED MATERIALS ARE USED.
5. PERMIT/SEAL IS REQUIRED TO ENSURE THAT SPECIFIED MATERIALS ARE USED.

STUCTURAL TESTING AND INSPECTIONS
1. GENERAL: STRUCTURAL TESTING AND INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS PROVIDED IN THIS DOCUMENT.
2. DESIGN BASE SHEAR: DESIGN BASE SHEAR SHALL BE OBTAINED FROM THE ENGINEER OF RECORD. THE ENGINEER OF RECORD SHALL PERFORM A COMPLETE STRUCTURAL TEST AND INSPECTION.
3. THERMAL FACTOR (Ct): THERMAL FACTOR (Ct) SHALL BE DETERMINED IN ACCORDANCE WITH THE REQUIREMENTS PROVIDED IN THIS DOCUMENT.
4. SNOW EXPOSURE FACTOR (Ce): SNOW EXPOSURE FACTOR (Ce) SHALL BE DETERMINED IN ACCORDANCE WITH THE REQUIREMENTS PROVIDED IN THIS DOCUMENT.
5. FLAT ROOF SNOW LOAD (Pf): FLAT ROOF SNOW LOAD (Pf) SHALL BE DETERMINED IN ACCORDANCE WITH THE REQUIREMENTS PROVIDED IN THIS DOCUMENT.
6. DESIGN BASE SHEAR: DESIGN BASE SHEAR SHALL BE OBTAINED FROM THE ENGINEER OF RECORD. THE ENGINEER OF RECORD SHALL PERFORM A COMPLETE STRUCTURAL TEST AND INSPECTION.
7. THERMAL FACTOR (Ct): THERMAL FACTOR (Ct) SHALL BE DETERMINED IN ACCORDANCE WITH THE REQUIREMENTS PROVIDED IN THIS DOCUMENT.
8. SNOW EXPOSURE FACTOR (Ce): SNOW EXPOSURE FACTOR (Ce) SHALL BE DETERMINED IN ACCORDANCE WITH THE REQUIREMENTS PROVIDED IN THIS DOCUMENT.
9. FLAT ROOF SNOW LOAD (Pf): FLAT ROOF SNOW LOAD (Pf) SHALL BE DETERMINED IN ACCORDANCE WITH THE REQUIREMENTS PROVIDED IN THIS DOCUMENT.

CODES
- LOCAL: INTERNATIONAL BUILDING CODE 2019
- STRUCTURAL: CONCRETE DESIGN: ACI 318-19 • STEEL DESIGN: AISC 360-16 • REBAR DESIGN: ACI 318-19
- SPECIAL INSPECTIONS: ACI 318-19 • STEEL DESIGN: AISC 360-16 • REBAR DESIGN: ACI 318-19
- GENERAL NOTES: LBS TECHNOLOGY LTD, DURACON ENGINEERING LTD, AND PACIFIC CONSTRUCTION LTD.

DESIGN LIVE LOADS
1. VARIOUS DESIGN LIVE LOADS ARE OBTAINED ACCORDING TO THE LATEST EDITIONS OF THE INTERNATIONAL BUILDING CODE 2019. THIS DESIGN LOADS ARE AS FOLLOWS:
   - ROOF: 20
   - DECK: 20
   - WALLS: 20
   - FLOOR: 20

WIND DESIGN DATA

SEISMIC DESIGN DATA
1. THE FOLLOWING SEISMIC DESIGN DATA WAS OBTAINED FROM THE DESIGN OF THE STRUCTURE:
   - SEISMIC ZONE: ZONE I
   - EARTHQUAKE V I V = 0.50
   - EARTHQUAKE V I V = 0.30
   - SEISMIC HORIZONTAL ACCUMULATION: 1.00
   - SEISMIC VERTICAL ACCUMULATION: 1.00

SNOW DESIGN DATA
1. THE FOLLOWING SNOW DESIGN DATA WAS OBTAINED FROM THE DESIGN OF THE STRUCTURE:
   - HORIZONTAL FACTOR (H): 1.00
   - VERTICAL FACTOR (V): 1.00

STRUCTURAL STEEL
1. STRUCTURAL STEEL: STRUCTURAL STEEL SHALL BE OBTAINED FROM THE ENGINEER OF RECORD. STRUCTURAL STEEL SHALL BE OBTAINED FROM THE ENGINEER OF RECORD. STRUCTURAL STEEL SHALL BE OBTAINED FROM THE ENGINEER OF RECORD. STRUCTURAL STEEL SHALL BE OBTAINED FROM THE ENGINEER OF RECORD. STRUCTURAL STEEL SHALL BE OBTAINED FROM THE ENGINEER OF RECORD. STRUCTURAL STEEL SHALL BE OBTAINED FROM THE ENGINEER OF RECORD.
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EXISTING STRUCTURE AND CONDITIONS
1. CONTRACTOR IS TO PROVIDE DOCUMENTATION OF THE EXISTING STRUCTURAL CONDITIONS, INCLUDING BLUEPRINTS, PLANS, AND DRAWINGS.
2. CONTRACTOR IS TO IDENTIFY ALL EXISTING STRUCTURAL CONDITIONS, INCLUDING BUT NOT LIMITED TO, FOUNDATIONS, BEAMS, AND Columns.
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6. CONTRACTOR IS TO PROVIDE DOCUMENTATION OF THE EXISTING STRUCTURAL CONDITIONS, INCLUDING BUT NOT LIMITED TO, FOUNDATIONS, BEAMS, AND Columns.

TABLES:

1. TABLE 1: STEEL CONSTRUCTION: INSPECTION TASKS DURING TO BOLTING
2. TABLE 2: STEEL CONSTRUCTION: INSPECTION TASKS ASSEMBLING
3. TABLE 3: STEEL CONSTRUCTION: INSPECTION TASKS DRILLING
4. TABLE 4: STEEL CONSTRUCTION: INSPECTION TASKS MACHINING
5. TABLE 5: STEEL CONSTRUCTION: INSPECTION TASKS INSTALLATION

NOTES:
- ALL SPECIAL INSPECTIONS MUST BE OBTAINED FROM THE ENGINEER OF RECORD.
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STANTEC
1. ALL GRILLAGE COLUMNS TO POST ABOVE AN EXISTING COLUMN OR EXISTING CMU WALL AND ATTACH TO TOP OF EXISTING COLUMN OR CMU WALL. GRILLAGE FRAMING, COLUMNS, AND CMU WALL ARE BASED OFF OF ASSUMED EXISTING COLUMN AND CMU WALL LOCATIONS. CONTRACTOR TO VERIFY IF COLUMN OR CMU WALL LOCATIONS ARE DIFFERENT THAN WHAT IS SHOWN ON THE DRAWINGS. NOTIFY ARCHITECT/ENGINEER OF RECORD IF FIELD CONDITIONS DIFFER FROM WHAT IS SHOWN PRIOR TO THE FABRICATION OF ANY STRUCTURAL ELEMENTS.

2. CONTRACTOR SHALL PROVIDE EXISTING FRAMING MEMBER SIZES AND DIMENSIONS FOR CONFIRMATION IN SHOP DRAWINGS.

3. MINIMUM CONNECTION REACTION NOT IDENTIFIED IS 6 KIP.

4. MINIMUM MOMENT CONNECTION NOT IDENTIFIED IS 15 K-FT OR 50% OF BEAM CAPACITY, WHICHEVER IS GREATER.

5. ►─── INDICATES MOMENT CONNECTION.

1. REFER TO ARCHITECTURE AND MECHANICAL FOR LOCATIONS AND SIZES OF ALL ROOF OPENINGS.

ROOF PLAN NOTES
GENERAL DEMOLITION PLAN NOTES

1. The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay.

2. The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.

3. Permit/Seal

4. Drawings & Actual Conditions / Dimensions

5. Mann Elementary

6. Detroit, MI 48228

7. 1/8" = 1'-0"
GENERAL CEILING PLAN NOTES

1. REFER TO FLOOR PLANS & INTERIOR ELEVATIONS FOR WALL MOUNTED FIXTURES & DEVICES, ETC.

2. REFER TO MECHANICAL, ELECTRICAL & TECHNOLOGY DRAWINGS FOR QUANTITY & TYPE OF CEILING MOUNTED FIXTURE, DEVICES, ETC.

3. CENTER ALL LIGHTS, DIFFUSERS, ETC. IN CEILING TILES UNLESS NOTED OTHERWISE

4. ALL SHADES ARE MANUAL UNLESS NOTED OTHERWISE

CEILING LEGEND

GYP: NEW GYPSUM SOFFIT
ACT: NEW 2' x 2' LAY-IN EDGE PROFILE: BEVELED TEGULAR 15/16"
FINISH: WHITE
GRID: 15/16"
GRID FINISH: WHITE

NOT IN SCOPE OF WORK

Stantec Architecture Inc.
2338 Coolidge Highway
Berkley, MI  48072-1500
Tel: (248) 336-4700 • www.stantec.com
KEYNOTES:

1. MORTAR SEPARATION
2. REPLACE STEEL LINTEL & BRICK MASONRY
3. REPAIR SILL
4. REMOVE EXISTING DOORS, FRAMES AND SPANDREL PANELS. PROVIDE THERMALLY BROKEN, KYNAR COATED ALUMINUM STOREFRONT FRAMING WITH FRP DOORS. SPANDREL AREAS TO BE INSULATED METAL PANEL GLAZED INTO STOREFRONT. PROVIDE NEW THRESHOLD.

5. REMOVE EXISTING WINDOWS. REPLACE WITH THERMALLY BROKEN, KYNAR COATED ALUMINUM WINDOWS WITH 1" LOW-E INSULATING GLASS.

6. REMOVE EXISTING DOORS, FRAMES AND SPANDREL PANELS. PROVIDE THERMALLY BROKEN, KYNAR COATED ALUMINUM STOREFRONT FRAMING WITH FRP DOORS. SPANDREL AREAS TO BE INSULATED METAL PANEL GLAZED INTO STOREFRONT. PROVIDE NEW THRESHOLD.

As indicated
GENERAL FINISH NOTES

UNLESS NOTED OTHERWISE, PAINT UNDESIGNATED ELEMENTS AS FOLLOWS:

1. NEW GYPSUM BOARD WALLS:
   MANF: SHERWIN WILLIAMS
   COLOR: PURE WHITE SW 7005
   FINISH: EGGSHELL

2. NEW GYPSUM BOARD SOFFITS & BULKHEADS
   MANF: SHERWIN WILLIAMS
   COLOR: CEILING BRIGHT WHITE SW 7007
   FINISH: FLAT

3. EXPOSED STEEL (OVERHEAD DUCTWORK)
   MANF: SHERWIN WILLIAMS
   COLOR: CEILING BRIGHT WHITE SW 7007
   FINISH: FLAT
### Door Schedule & Details

#### Door Schedule

<table>
<thead>
<tr>
<th>No.</th>
<th>Door Type</th>
<th>Panel Type</th>
<th>Panel Width</th>
<th>Panel Height</th>
<th>Panel Material</th>
<th>Frame Material</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Type A</td>
<td>1</td>
<td>3'</td>
<td>7'-0&quot;</td>
<td>1/2&quot; FRP</td>
<td>3/4&quot; AL</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>Type B</td>
<td>2</td>
<td>3'-0&quot;</td>
<td>7'-0&quot;</td>
<td>1&quot; FRP</td>
<td>1 1/2&quot; AL</td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>Type C</td>
<td>3</td>
<td>3'-0&quot;</td>
<td>7'-0&quot;</td>
<td>1 1/2&quot; FRP</td>
<td>1 1/2&quot; AL</td>
<td></td>
</tr>
</tbody>
</table>

#### General Door Notes
- Each door to receive a room identification sign.
- Refer to Specifications for detailed glazing information.
- All HM frames in masonry walls to be grouted.
- Types to have sound attenuation insulation.
- All exterior Alum doors to be insulated.

#### Glazing Notes
- Performance criteria, (Re: Spec Section 08 80 00).
- Heat treated required to meet or exceed code & thicknesses & in strength (annealed, tempered or various size openings, but not less than thickness designations indicated above for glass locations. Provide glass lites / units in the analyzing project loads, in minimums & are for detailing only. Glazing trade glass thickness designations indicated are -1: reinforced plastic, 2: IGU, 3: E Insulating glass (tempered), 4: E Insulating glass (annealed, tempered)).

#### Glazing Schedule

<table>
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</tr>
<tr>
<td>C</td>
<td>3'-0&quot;</td>
<td>7'-0&quot;</td>
<td>1 1/2&quot; FRP</td>
<td>1 1/2&quot; AL</td>
<td></td>
</tr>
</tbody>
</table>

#### Glazing Legends
- MG: Mullion Glazing
- IGU: Insulated Glass Unit
- ALL TOILET ROOM EXTERIOR GLAZING IS IGU
- ALL EXTERIOR DOOR GLAZING IS IGU
- ALL EXTERIOR GLAZING IS IGU
- PERIMETER: (RE: SPEC SECTION 08 80 00).

#### General Notes
- As indicated - Refer to Specifications for fire rating comments.
- Each panel to contain a minimum of 1 aluminum jamb on each side.
- All jams must be a minimum of 1 1/2" aluminum and included in the door schedule.
- If more than one jamb is required, note this in the door schedule.

### Additional Information
- The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay.
- The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.
MECHANICAL GENERAL DEMOLITION NOTES

1. MECHANICAL DEMOLITION... SCHEDULED TO START ON THE DATE OF ISSUE OF THESE DRAWINGS.
2. CONTRACTOR SHALL REMOVE ALL EXISTING SERVICES PRIOR TO START OF DEMOLITION.
3. CONTRACTOR SHALL REMOVE ALL MECHANICAL SYSTEMS TO BE REMOVED COMPLETE WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, CONTROLS, ETC CAP ALL OPEN PIPES AND DUCTS. PATCH AND SEAL ALL OPENINGS AS A RESULT OF DEMOLITION SHALL BE AS REQUIRED BY THE NEW WORK AND REMOVAL OF DEMOLITION IN RATED WALLS TO MAINTAIN EXISTING WALL'S FIRE OR SMOKE RATING.
4. MD02 REMOVE EXISTING CONVECTOR OR FIN TUBE COVER, CLEAN AND A TIME APPROVED IN ADVANCE BY THE OWNER'S REPRESENTATIVE SO AS NOT TO START OF DEMOLITION.
5. CONTRACTOR SHALL REMOVE REMAINING ITEMS FROM SITE.
6. PRIOR TO START OF DEMOLITION TO DETERMINE WHICH ITEMS ARE TO BE SALVAGED.
7. UNLESS POSSESSION RIGHTS ARE WAIVED. CONTRACTOR SHALL MEET WITH OWNER AND TO MATCH EXISTING ADJACENT SURFACES.
8. ALL ITEMS AND EQUIPMENT REMOVED SHALL REMAIN PROPERTY OF THE OWNER.
9. PERMIT / BID SET SAR CJZ 2022.06.21
10. DRAWING - ANY ERRORS OR OMISSIONS SHALL BE REPORTED TO STANTEC WITHOUT DELAY.
11. THE COPYRIGHTS TO ALL DESIGNS AND DRAWINGS ARE THE PROPERTY OF STANTEC. REPRODUCTION OR USE FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED BY STANTEC IS FORBIDDEN.

MECHANICAL DEMOLITION KEYNOTES

MD02 REMOVE EXISTING CONVECTOR OR FIN TUBE COVER, CLEAN AND A TIME APPROVED IN ADVANCE BY THE OWNER'S REPRESENTATIVE SO AS NOT TO START OF DEMOLITION.
MECHANICAL GENERAL DEMOLITION NOTES

1. ALL MECHANICAL SYSTEMS TO BE REMOVED SHALL BE REMOVED COMPLETE WITH MATERIALS/COMPONENTS NOT REQUIRED FOR THE NEW AND RENOVATED SYSTEMS. DEMOLITION SHALL BE AS REQUIRED BY THE NEW WORK AND REMOVAL OF INTERFERE WITH THE BUILDING OPERATION.

2. THESE DRAWINGS INDICATE THE GENERAL EXTENT OF WORK. THE EXTENT OF MECHANICAL GENERAL DEMOLITION NOTES

3. ALL ITEMS AND EQUIPMENT REMOVED SHALL REMAIN PROPERTY OF THE OWNER AND TO MATCH EXISTING ADJACENT SURFACES.

4. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SERVICES PRIOR TO START OF DEMOLITION.

5. ANY INTERRUPTIONS OF EXISTING SERVICES OR EQUIPMENT SHALL BE PERFORMED AND CONDENSATE TRAP SERVING HEATING EQUIPMENT. REMOVE EXISTING PNEUMATIC CONTROLS TUBING COMPLETE. SEE NEW WORK PLANS FOR NEW COMPONENTS.

The Contractor shall verify and be responsible for all dimensions. DO NOT SCALE THE DRAWING - ANY ERRORS OR OMISSIONS SHALL BE REPORTED TO STANTEC WITHOUT DELAY. THE COPYRIGHTS TO ALL DESIGNS AND DRAWINGS ARE THE PROPERTY OF STANTEC. REPRODUCTION OR USE FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED BY STANTEC IS FORBIDDEN.
MECHANICAL GENERAL NOTES
1. COORDINATE NEW DUCTWORK WITH SITE CONDITIONS EQUIPMENT
   ABOVE SUSPENDED CEILINGS FOR ACCESS.
   WITH ARCHITECTURAL AND ELECTRIC REFLECTED CEILING PLANS.
   GRILLE, REGISTER & DIFFUSER SCHEDULE.

2. MECHANICAL KEYNOTES
   MAKE SURE ALL AIR AND DUCT SIZES ARE ACCURATE TO DESIGN
   CONDITIONS TO AVOID INTERFERENCES.
   NEW PERIMETER STEAM CONTROL VALVES SERVING THIS SPACE.
   NEW PERIMETER HEAT EQUIPMENT TO REPLACE MEZZANINE AND OPENINGS TO THIS ROOM.
   MANUFACTURER AND ALL OTHER TRADES TO AVOID INTERFERENCES.
   ANUFACTURER AND ALL OTHER TRADES TO AVOID.
   COORDINATE WITH ALL TRADES TO AVOID INTERFERENCES WITH CEILING.

The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay. The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.

First Level Mechanical Plan
1/8" = 1'-0"
MECHANICAL GENERAL NOTES

1. PREPARE DRAWINGS COVERING ALL NEW EQUIPMENT TO BE FURNISHED.
2. COORDINATE ALL DUCTWORK WITH SITE CONDITIONS, EQUIPMENT, TOILET FITTINGS, ELECTRICAL, AND ARCHITECT.
3. PROJECT SUPPORTS CONSIDERATION OF ALL DIFFERENT MECHANICAL, ELECTRICAL, AND ARCHITECTUAL REQUIREMENTS.
4. MECHANICAL CONSIDERATION OF ALL DIFFERENT MECHANICAL, ELECTRICAL, AND CONTRACTOR REQUIREMENTS.
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7. MECHANICAL CONSIDERATION OF ALL DIFFERENT MECHANICAL, ELECTRICAL, AND CONTRACTOR REQUIREMENTS.
8. ALL DUCTWORK TO BE CONCEALED IN WALLS AND/OR CEILING SPACE, UNLESS OTHERWISE NOTED.
9. DUCT SIZES TO DIFFUSERS SHALL MATCH NECK SIZE OF EACH. REFER TO GRILLE SIZE INDICATED. FIELD VERIFY ACTUAL SIZE.
10. BALANCE ALL AIR SYSTEMS TO INDICATED AIR FLOW RATES.
11. COORDINATE EXACT LOCATIONS OF ALL DIFFUSERS AND RETURN GRILLES.
12. COORDINATE ALL TEMPERATURE SENSOR LOCATIONS WITH FURNITURE.
13. COORDINATE ALL LOCATIONS OF VAV BOXES AND VALVES SHALL BE LOCATED NO MORE THAN 24 INCHES ABOVE SUSPENDED CEILINGS FOR ACCESS.
14. FIELD VERIFY ACTUAL SIZE OF ALL DIFFERENT MECHANICAL, ELECTRICAL, AND CONTRACTOR REQUIREMENTS.
15. CONSIDERATION OF ALL DIFFERENT MECHANICAL, ELECTRICAL, AND CONTRACTOR REQUIREMENTS.

MECHANICAL KEYNOTES

1. SHALL BE LOCATED OUTSIDE THE LIMITS OF THE MECHANICAL SUPPORT.
2. SHALL BE LOCATED OUTSIDE THE LIMITS OF THE MECHANICAL SUPPORT.
3. SHALL BE LOCATED OUTSIDE THE LIMITS OF THE MECHANICAL SUPPORT.
4. SHALL BE LOCATED OUTSIDE THE LIMITS OF THE MECHANICAL SUPPORT.
5. SHALL BE LOCATED OUTSIDE THE LIMITS OF THE MECHANICAL SUPPORT.

SECOND LEVEL MECHANICAL PLAN
MECHANICAL GENERAL NOTES

1. COORDINATE new ductwork with site conditions, equipment manufacturer, and all other trades to avoid interferences.
2. PROVIDE access around all new equipment per manufacturer's recommendations.
3. ALL coring through floors shall be by mechanical contractor.
4. ALL ductwork shall be routed as high as possible, unless otherwise noted. Coordinate routing with other trades to avoid interferences.
5. Balance all air systems to indicated air flow rates.
6. Duct sizes to diffusers shall match neck size of each. Refer to grille, register & diffuser schedule.
7. Refer to mechanical specification for ductwork insulation requirements.
8. ALL ductwork shall be concealed in walls and/or ceiling space, unless otherwise noted.
9. Seal all penetrations through walls per details and specifications.
10. Coordinate exact locations of all diffusers and return grilles with architectural and electric reflected ceiling plans.
11. Coordinate all temperature sensor locations with furniture and architectural.
12. VAV boxes and valves shall be located no more than 24 inches above suspended ceilings for access.
The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay. The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.
MECHANICAL GENERAL DEMOLITION NOTES

1. All mechanical trade drawings shall be verified by the mechanical contractor. The owner, architect, and engineer shall verify and be responsible for all dimensions. DO NOT SCALE THE DRAWING - ANY ERRORS OR OMISSIONS SHALL BE REPORTED TO STANTEC WITHOUT DELAY. 

2. The mechanical trade drawings and specifications shall be verified as constructed. Any discrepancies between the drawings and specifications shall be reported to Stantec without delay. 

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8. The mechanical trade drawings and specifications shall be verified as constructed. Any discrepancies between the drawings and specifications shall be reported to Stantec without delay.
EQUIPMENT PRESSURE (IN W.C.) LOAD (CFH)

NEW BOILER (B-1)  4 - 14  3,150
EXISTING BOILER (B-2)  7 - 14  4,800
(E)DWH  7 - 14  200
RTU-1A  5 - 14  200
RTU-1B  5 - 14  200
RTU-1C  5 - 14  200
RTU-2  5 - 14  300
RTU-3  5 - 14  300
KITCHEN EQUIPMENT  5 - 7  800

TOTAL @ 11" W.C. 10,150 CFH
BUILDING SOUTHWEST VRF SYSTEM DIAGRAM

BUILDING SOUTH CENTER VRF SYSTEM DIAGRAM

BUILDING EAST CENTER VRF SYSTEM DIAGRAM

BUILDING NORTHEAST VRF SYSTEM DIAGRAM
RETURN OR EXHAUST DUCT

ALTERNATE METHOD OF LAP SEAL

COMPLETELY ENCAPSULATE HANGER ROD AND ANGLE. SEAL TOP PENETRATION.

- VAPOR

HANGER EMBEDDED IN INSULATION. ENCAPSULATE EXPOSED END OF ANGLE. SEAL LONGITUDINAL JOINT LAPPED AND FOLDED, THEN HANGER ON EXTERIOR OF INSULATION. ENCAPSULATE EXPOSED END OF ANGLE. SEAL

A. FURNISH THIS TYPE CONNECTION FOR BRANCHES WITH MORE THAN 25% OF THE TOTAL AIR FLOW.

THE RATIO OF THE RELATIVE AIR QUANTITIES HANDLED.

1. USE THREADED ROD FOR ALL DUCTS LARGER THAN 60"Ø WIDE

2. ALL ATTACHMENT TO CONCRETE JOISTS AND BEAMS MUST BE IN THE CENTER OF THE SIDE OF JOIST. NO BOTTOM CONNECTIONS ARE ALLOWED.

3. PROVIDE CLEARANCE EXPANSION JACKET TO KEEP AIR TIGHT CONDITION.

4. FACTORY LAP ALL SEALS (SEALED WITH ADHESIVE AND/OR RETARDER TAPE). STAPLES OR VAPOR RETARDER JACKET.

5. NEVER APPLIED VAPOR RETARDER TAPE OVER TEARS AND PENETRATIONS OF THE VAPOR JACKET.

6. ROUND DUCT BRANCH TAKE-OFF DETAIL

7. BLANKET FIBERGLASS INSULATION DETAIL

8. ROUND SUPPLY DUCT \( T \) LABLE "FIRE RATING & STAMP"

9. BLANKET FIBERGLASS INSULATION DETAIL

A. USE MATERIAL TO BE COMPATIBLE WITH CONSTRUCTION AND UL LISTED FOR THE WALL OR PARTITION."
COLD COIL AND ENERGY RECOVERY SECTION

EXTERIOR DUCT SEALING DETAIL

DUCT SUPPORT ON ROOF DETAIL

RTU GAS PIPING DETAIL

OUTDOOR DUCT INSULATION DETAIL

TYPICAL PIPE SUPPORT DETAIL

SPIN-IN AND CEILING DIFFUSER DETAIL

TYPICAL AIR TERMINAL DEVICE DETAIL AND RELATED SUPPLY AIR DUCTWORK
**Pipe Penetration Through Wall Detail**

- **Water Stop and Anchor Collar** welded to sleeve (typ).
- **Mechanically Expandable Elastomeric Mechanical Seal** for pipe size, refer to floor plans.

**Notes:**
1. Similar for concrete wall except omit framing, drill concrete neatly to accept sleeve.
2. Install 3M Firestop CP25 caulk or equal on both sides of wall.

**For Gyp Board Construction:** System W4001 rated up to 2 hrs. for uninsulated pipe for concrete construction: System CBJ1003 rated up to 1-1/2 hrs., System CBJ1005 rated up to 3 hrs.

**Horizontal Pipe Anchor Detail**

- Anchor bolts, 2 at each plate.
- Min. size 5/8" (18mm).
- Pipe & insulation.
- 3/8" base plate weld pipe & insulation.
- 1/2" U-bolt.
- 3/8" (10mm) plate cut to suit pipe dia. and insulation thickness.

**Typical DX Coil Piping Diagram**
### Roof Top Unit Schedule - Part A

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Model</th>
<th>Type</th>
<th>Location</th>
<th>ASHRAE Service</th>
<th>Btu's</th>
<th>Cfm</th>
<th>Cfm/sq ft</th>
<th>Cfm/sf</th>
<th>Cfm/sf Range</th>
<th>Eer</th>
<th>Eer/sq ft</th>
<th>Eer/sf</th>
<th>Eer/sf Range</th>
<th>H.P.</th>
<th>H.P. Range</th>
<th>R</th>
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### Variable Refrigerant Flow Unit Schedule

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<th>Cfm/sf</th>
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<th>Eer</th>
<th>Eer/sq ft</th>
<th>Eer/sf</th>
<th>Eer/sf Range</th>
<th>H.P.</th>
<th>H.P. Range</th>
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<th>Y</th>
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### Variable Frequency Drive Schedule

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<th>Cfm/sf</th>
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<th>Eer</th>
<th>Eer/sq ft</th>
<th>Eer/sf</th>
<th>Eer/sf Range</th>
<th>H.P.</th>
<th>H.P. Range</th>
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### Variable Condensing Unit Schedule

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<th>Btu's</th>
<th>Cfm</th>
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<th>Cfm/sf</th>
<th>Cfm/sf Range</th>
<th>Eer</th>
<th>Eer/sq ft</th>
<th>Eer/sf</th>
<th>Eer/sf Range</th>
<th>H.P.</th>
<th>H.P. Range</th>
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### Variable Mode Chiller Unit Schedule

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<th>Eer/sq ft</th>
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<th>Eer/sf Range</th>
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<th>Y</th>
<th>Y Range</th>
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</table>
### FLEXIBLE DUCTWORK

- Flexible ductwork shall be the same size as the diffuser neck or an equivalent round duct.
- Flexible ductwork shall be supported to prevent kinks or bends.

### REFLECTED CEILING PLANS

- Exact location:
- Provide all frames and accessories as required for proper installation.

### SUPPLY AIR SYSTEM APPLICATIONS LOCATION

<table>
<thead>
<tr>
<th>General</th>
<th>Exhaust</th>
<th>All</th>
<th>All</th>
<th>1,500</th>
<th>0.10</th>
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<th>A</th>
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<th>X</th>
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<td>SHAFTS</td>
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<td>A</td>
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### EXHAUST SYSTEM APPLICATIONS LOCATION

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<th>General</th>
<th>All</th>
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### NOTES:
- Outside air: All | All | 1,500 | 0.10 | 6 | A | 6 | X | X | 2 | 2.25 | X |
- Supply air: System | Application | Location | General | Exhaust | All | All | 1,500 | 0.10 | 6 | A | 6 | X | X | X | 2 | 2.25 | X | MECHANICAL ROOM | 1,200 | 0.10 | 6 | A | 6 | X | X | X | 1 | 2.25 | X | SHAFTS | 1,200 | 0.10 | 6 | A | 6 | X | X | X | 1.5 | 1 | X |

### DESIGN CRITERIA

- Constructions: Product | Material | Liner | Insulation | Factory | Jacket | Field | Jacket | Notes |
- Max. velocity (FPM) | Outlet | Box information | Maximum discharge | Sound power levels (dB) | Maximum radiated sound power levels (dB) | Dimensions (IN) |
- Max. friction (IN-WG/100') | Min. working pressure (PSI) | Operating pressure (IN-WG) | Pressure (IN-WG) | Min. work pressure (PSI) | Tension durability (HRS) | Double wall solid | Double wall prefabricated | Single wall | Notes |
- Pressure (PSI) | Min. working pressure (PSI) | Tension durability (HRS) | Double wall solid | Double wall prefabricated | Single wall | Notes |
- Pressure (PSI) | Min. working pressure (PSI) | Tension durability (HRS) | Double wall solid | Double wall prefabricated | Single wall | Notes |
- Pressure (PSI) | Min. working pressure (PSI) | Tension durability (HRS) | Double wall solid | Double wall prefabricated | Single wall | Notes |
### Fuel Fired Steam Boilers

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<th>RETURN</th>
<th>STEAM</th>
<th>WATER</th>
<th>NOTES</th>
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### Boiler Feedwater System

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### Condensate Return Unit Schedule

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### Steam Unit Heater Schedule

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### Steam & Hot Water Schedule

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OUTSIDE AIR TEMPERATURE AND HUMIDITY MONITORING

TYPICAL HEAT TRACE MONITORING

GENERAL TEMPERATURE CONTROL REQUIREMENTS

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<tr>
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<tr>
<td>INTERCOM</td>
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<tr>
<td>CIRCUIT BREAKER</td>
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CONTROLS

- VFD's
- AIR
- TERMINAL
- CONTROLLER
- CPU
- INTERCOM
- CIRCUIT BREAKER

GENERAL TEMPERATURE CONTROL

- UTILITIES
- AIR HANDLING SYSTEMS
- LIFE SAFETY
- FIRE ALARM
- TRAPS
- VIBRATION
- HAND OFF AUTO
- TEMPERATURE
- HANDLED INTERLOCKED CONTACT OR RELAY

CONTROLS LEGEND

- VFD
- AIR
- TERMINAL
- CONTROLLER
- CPU
- INTERCOM
- CIRCUIT BREAKER

GENERAL TEMPERATURE CONTROL

- UTILITIES
- AIR HANDLING SYSTEMS
- LIFE SAFETY
- FIRE ALARM
- TRAPS
- VIBRATION
- HAND OFF AUTO
- TEMPERATURE
- HANDLED INTERLOCKED CONTACT OR RELAY
GENERAL

STEAM SYSTEM CONTROL SEQUENCE OF OPERATION

WITH SUN SHIELD

TEMP SENSOR

OUTDOOR AIR

TO DDC

ALL FIELD DEVICES SHALL BE PROVIDED AND INSTALLED FOR A COMPLETE AND OPERATIONAL SYSTEM

EFFICIENT METHOD.

CONTROL THE FIRING RATE OF ALL BOILERS TO MAINTAIN THE STEAM PRESSURE SET POINT IN THE MOST

THE BOILER MANAGEMENT SYSTEM SHALL ENERGIZE THE QUANTITY OF BOILERS AND COMPONENTS AND SHALL

FEEDWATER SYSTEM TO MAINTAIN A SYSTEM SET POINT OF 5 PSI (ADJ).

BOILER MANAGEMENT SYSTEM, THE BOILER MANAGEMENT SYSTEM SHALL OPERATE THE BOILERS AND BOILER

WHEN THE BOILER SYSTEM IS ENABLED THROUGH THE FACILITY'S DDC SYSTEM OR MANUALLY THROUGH THE

THE BOILER MANAGEMENT SYSTEM SHALL COMMUNICATE WITH THE FACILITY'S DDC SYSTEM AS DESCRIBED

CONDUIT.

TO THE FACILITY DDC SYSTEM.

CONTROL. UPON A FAILURE OF THE PRIMARY BOILER MANAGEMENT CONTROLLER, AN ALARM WILL BE ISSUED

SEPARATE PANEL THAT COMMUNICATES WITH EACH BOILER'S CONTROLLER. IN THE EVENT OF A FAILURE OR

WILL BE PROVIDED EITHER INTEGRAL TO EACH BOILER'S FACTORY CONTROLLER OR WILL BE PROVIDED AS A

THE BOILERS WILL BE PROVIDED WITH A BOILER MANAGEMENT SYSTEM. THE BOILER MANAGEMENT SYSTEM

TS

COMMUNICATION

SEQUENCING

MASTER

CONTROLLER

L1

BOILER

*-PACKAGE.

DEVICES INDICATED PART

COMMUNICATION LAN

DO

DOOR

EPO

PB PB

-1

1

1

BOILER EMERGENCY SHUTDOWN ALARM

POWER OK

CHEMICAL MIXER

START /

STOP

BOLIER WATER CLOSE

OPEN /

FEED

BLOW

START /

STOP

CHEMICAL

START /

STOP

BOLIER

OPEN /

FEED

DO

DOOR

EPO

OFF

NO

INTERLOCK - 2

SWITCH

FLOAT

FEED

CR2

CR1

BOILER EMERGENCY SHUTDOWN ALARM

POWER OK

CHEMICAL MIXER

START /

STOP

BOLIER WATER CLOSE

OPEN /

FEED

BLOW

START /

STOP

CHEMICAL

START /

STOP

BOLIER

OPEN /

FEED

DO

DOOR

EPO

OFF

NO

INTERLOCK - 2

SWITCH

FLOAT

FEED
THE UNIT WILL BE PROVIDED WITH PACKAGED DDC CONTROLS PROGRAMMED TO THE SEQUENCE OF OPERATION DESCRIBED WITHIN THE CONTRACT.

WHEN ACTIVE THE UNIT WILL OPERATE AS OCCUPIED MODE WITH REDUCED TEMPERATURE SET POINTS TO PROVIDE SPACE PURGE.

IF SMOKE IS DETECTED IN THE AIRSTREAM BY A DUCT SMOKE DETECTOR OR THE FIRE ALARM ZONE MODULE INDICATES A ZONE ALARM, THE UNIT WILL BE SHUTDOWN. REFER TO SHUTDOWN MODE.

THE PRE OCCUPANCY VENTILATION MODE WILL INITIALLY BE SET TO 1 HOURS (ADJ) AND THE POST OCCUPANCY VENTILATION MODE WILL BE SET TO 3 HOURS (ADJ). THE FUNCTIONALITY OF PRE AND POST OCCUPANCY VENTILATION MODES SHALL BE ABLE TO BE DEACTIVATED THROUGH THE USER GRAPHICAL INTERFACE. THE STATUS OF THE PRE AND POST OCCUPANCY VENTILATION MODE WILL BE VISIBLE ON THE GRAPHICS.

UPON A COMMAND TO START, DDC MODULATES THE EXHAUST FAN'S VFD TO THE EXHAUST FAN'S MINIMUM SPEED OVER 30 SECONDS (ADJ). THE VFD MONITORS AND DISPLAYS THE AIR FILTER PRESSURE DROPS AND ISSUE A DIRTY FILTER ALARM WHEN THE DIFFERENTIAL PRESSURE REACHES 75% OF THE ASSIGNED MINIMUM FILTER PRESSURE. THE SUPPLY FAN SHALL BE CONTROLLED TO MAINTAIN A DUCT STATIC SET POINT. THIS MEASUREMENT IS TAKEN FROM THE SYSTEM STATIC PRESSURE AT THE CEILING AIR OUTLET AND IS MEASURED AT 4" LESS THAN THE AIR OUTLET DIA. ALL POINTS IDENTIFIED IN THE CONSTRUCTION DOCUMENTS WILL BE DISPLAYED ON THE USER'S GRAPHIC INTERFACE. ALARMS AND OTHER SYSTEM ERRORS ARE TO BE ARCHIVED FOR USE FOR SYSTEM DIAGNOSTICS AND MEASUREMENT TRENDS ARE TO BE MAINTAINED FOR ONE WEEK INTERVALS AND THEN ARE TO BE ARCHIVED FOR USE FOR SYSTEM DIAGNOSTICS AND MEASUREMENT.

THE AIR HANDLING UNIT RUNS CONTINUOUSLY DURING THE OCCUPIED MODE UNLESS DEACTIVATED FOR MAINTENANCE, SCHEDULED SHUTDOWNS, OR ANY OCCUPANCY VACATION. THE AIR HANDLING UNIT SHALL HAVE SCHEDULING FUNCTIONALITY THROUGH THE DDC SYSTEM. OCCUPIED AND UNOCCUPIED SCHEDULE TO BE PROGRAMMED DURING SYSTEM COMMISSIONING OR OWNER TRAINING. CONTRACTOR TO SET UP SCHEDULES WITH OWNER PERSONNEL. CONTRACTOR SHALL COORDINATE AND PROVIDE ALL ADDITIONAL COMPONENTS OR LABOR FOR A COMPLETE AND OPERATIONAL SYSTEM INCLUDING, BUT NOT LIMITED TO, DDC HARDWARE INTERLOCK WITH VFD SAFETY CONTROL, HARDWIRE ENABLE/DISABLE CONTROLLER INTERLOCK WITH VFD SAFETY CONTROL, REFLEET FAN CONTROL, GENERAL SHELTER, LEAK DETECTION, FIRE ALARM DWH HARDWIRE, AIR HANDLING UNIT INTERLOCK, VFD SAFETY CONTROL, AND FIELD WIRING.

THE SUPPLIED SYSTEM HANLDING UNIT IS AN INTEGRATED PACKAGED SYSTEM SUBMITTED FOR CODE COMPLIANCE WITH THE OPERATING INTENT OF THE DOCUMENTS. PROVIDE AND INSTALL ALL NECESSARY COMPONENTS AND ACCESSORIES FOR A COMPLETE AND OPERATIONAL SYSTEM INCLUDING, BUT NOT LIMITED TO, DDC HARDWARE, VFD SAFETY CONTROL, HARDWIRE ENABLE/DISABLE CONTROLLER INTERLOCK WITH VFD SAFETY CONTROL, REFLEET FAN CONTROL, GENERAL SHELTER, LEAK DETECTION, FIRE ALARM DWH HARDWIRE, AIR HANDLING UNIT INTERLOCK, VFD SAFETY CONTROL, AND FIELD WIRING.

THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE AND INSTALL THE MINIMUM AND MAXIMUM QUANTITIES OF RESTARTS AS SPECIFIED IN THE SPECIFICATION FOR QUANTITIES REFER TO SCHEDULES AND VERIFICATION OF SYSTEMS.

THE SUPPLIED SYSTEM HANDLING UNIT IS AN INTEGRATED PACKAGED SYSTEM SUBMITTED FOR CODE COMPLIANCE WITH THE OPERATING INTENT OF THE DOCUMENTS. PROVIDE AND INSTALL ALL NECESSARY COMPONENTS AND ACCESSORIES FOR A COMPLETE AND OPERATIONAL SYSTEM INCLUDING, BUT NOT LIMITED TO, DDC HARDWARE, VFD SAFETY CONTROL, HARDWIRE ENABLE/DISABLE CONTROLLER INTERLOCK WITH VFD SAFETY CONTROL, REFLEET FAN CONTROL, GENERAL SHELTER, LEAK DETECTION, FIRE ALARM DWH HARDWIRE, AIR HANDLING UNIT INTERLOCK, VFD SAFETY CONTROL, AND FIELD WIRING.
Upon reaching minimum speed, the DDC system energizes the exhaust fan. The control system has functionality to remove zones from the reset pre-occupation ventilation mode will initially be set to 1 hour (adj) and dehumidification discharge dewpoint set point.

Unoccupied heating space temperature set point

Upon a command to start, DDC modulates the supply fans' VFD's to the supply. The control system trends zone positions and identifies critical zones that the exhaust fan does not run during unoccupied periods, unless any of the initial duct static set point.

Instantaneous energy usage (kw)

After a 5 minute delay (adj), the isolation dampers close. When active the unit will operate as occupied mode with reduced air 62.

When the exhaust fan is commanded to stop, and after a delay of 120 minutes (adj), the wheel shall run continuously whenever the exhaust fan is. The unit will be commanded to start prior to scheduled occupancy to meet the air economizer is not active, the face and bypass dampers will be driven and reset control.

When the exhaust fan is commanded to run, and after a delay of 120 seconds (adj) to reach space dewpoint, the system balancer shall verify the initial set point based on the balancing measurement is taken from the system static pressure sensor located in the building. Alarms and other system notifications will be de-activated through the user graphical interface.

Control schedules for individual NC refer to scheduling sequences.

The post-occupation ventilation mode will be set to 3 hours (adj) and be deactivated through the user's graphical interface. The status of the occupied heating or cooling set points by scheduled occupancy. Control shall be used to prevent short cycling situations. Dead bands, and time delay intervals described in sequence shall be determined in system balancing.

The exhaust/condenser fan array component panel operation (where applicable) will be provided with packaged DDC controls programmed to the installation and operation manual for the minimum and existing kitchen cooking hood.
The unit will be commanded to start prior to scheduled occupancy to meet the required temperature set points. Provide trends to support commissioning activities as defined by commissioning protocols.

The unit will enter its unoccupied start-up mode and then sequence either its heating or cooling systems. If a freeze set point of 35 degrees (F) is reached, the unit shall enter the unoccupied heating discharge air mode.

DDC shall communicate with the variable frequency drive to prove the control system's operation. Upon a call to start, the unit shall open its supply and exhaust smoke dampers. When toggle is enabled (full ventilation), the unit shall enter the occupied heating or cooling mode.

Weekly energy usage (kWh) shall be recorded and archived for use for system diagnostics and measurement and verification of energy consumption.

If either the supply or exhaust fan or the associated VFD fails, the unit shall be automatically shut down. The unit heating discharge air temperature set point for warm-up may reset up to 35% of the maximum temperature set point. The control system monitors and displays the air filter pressure and dew point set points.

Whenever energy recovery is active, the control system shall modulate the exhaust fan's VFD to the exhaust air temperature set point. When system is in pre and post occupancy ventilation mode, the optimum start sequence of operation described shall be enabled and shall control per their respective control sequences.

The cooling system shall cycle off. When system is in pre and post occupancy ventilation mode, the start-up sequence described shall be enabled and shall control per their respective control sequences. The unit heating discharge air temperature set point for warm-up may reset up to 35% of the maximum temperature set point. DDC monitors and displays the air filter pressure and dew point set points.

When system is in post occupancy ventilation mode, the control system shall detect and reset airflow towards the designated ventilation mode. Each zone's space flow rates shall be monitored. Upon a command to start, DDC modulates the exhaust fan's VFD to the exhaust air temperature set point.

When system is in pre and post occupancy ventilation mode, the optimal start sequence described shall be enabled and shall control per their respective control sequences.

The control system enables the gas heating system when the outside air temperature is below the heating system enable set point. If smoke is detected in the airstream by a duct smoke sensor, the unit shall be automatically shut down. Upon a shutdown command from the DDC system or a safety control device, the unit shall be automatically shut down.

The control system monitors and displays the air filter pressure and dew point set points. When system is in post occupancy ventilation mode, the start-up sequence described shall be enabled and shall control per their respective control sequences. The unit heating discharge air temperature set point for warm-up may reset up to 35% of the maximum temperature set point. DDC monitors and displays the air filter pressure and dew point set points.

Whenever energy recovery is active, the control system shall modulate the exhaust fan's VFD to the exhaust air temperature set point. When system is in post occupancy ventilation mode, the start-up sequence described shall be enabled and shall control per their respective control sequences. The unit heating discharge air temperature set point for warm-up may reset up to 35% of the maximum temperature set point. DDC monitors and displays the air filter pressure and dew point set points.

Whenever energy recovery is active, the control system shall modulate the exhaust fan's VFD to the exhaust air temperature set point. When system is in post occupancy ventilation mode, the start-up sequence described shall be enabled and shall control per their respective control sequences. The unit heating discharge air temperature set point for warm-up may reset up to 35% of the maximum temperature set point. DDC monitors and displays the air filter pressure and dew point set points.

Whenever energy recovery is active, the control system shall modulate the exhaust fan's VFD to the exhaust air temperature set point. When system is in post occupancy ventilation mode, the start-up sequence described shall be enabled and shall control per their respective control sequences. The unit heating discharge air temperature set point for warm-up may reset up to 35% of the maximum temperature set point. DDC monitors and displays the air filter pressure and dew point set points.
THE VRF PACKAGE CONTROL SYSTEM OPERATES THE CENTRAL CONDENSING UNIT AND HEAT RECOVERY BOXES TO MAINTAIN THE PACKAGED CONTROLLER MONITORS AND DISPLAYS THE AIR FILTER PRESSURE DROPS AND ISSUE A DIRTY FILTER WARNING.

THE AIR TERMINAL UNIT SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM SET POINTS TO MAINTAIN THE CO2 LEVEL, SPACE TEMPERATURE, RELATIVE HUMIDITY, AND INSIDE AIR QUALITY.

55% RH

CONDENSER OPERATION

EXPANSION VALVE

THE UNIT SHALL HAVE SCHEDULING FUNCTIONALITY THROUGH THE BUILDING AUTOMATION SYSTEM.

INDOOR/ROOM TEMPERATURE

THE REFRIGERATION SYSTEM WILL MODULATE TO MAINTAIN ROOM TEMPERATURE SET POINT BASED ON HEATING OR COOLING MODE.

70

1000 PPM CO2

THE AVAILABLE VRF CONDENSER POINTS FOR BAS BACNET MONITORING SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

COMPRESSOR INVERTER

OUTSIDE TEMPERATURE

COOLING TEMPERATURE UPPER LIMIT

SUCTION PIPE TEMP

HEATING SET POINT

THE PACKAGED CONTROLLER MODULATES FAN SPEED BASED ON HEATING OR COOLING MODE AND THE DIFFERENTIAL FROM CO2 LEVEL, SPACE TEMPERATURE, RELATIVE HUMIDITY, AND INSIDE AIR QUALITY.

THE FAN IS TO BE DEACTIVATED DURING A DEFROST MODE TO LIMIT SPACE TEMPERATURE IMPACTS.

COMPRESSOR HOT GAS TEMP,

COMPRESSOR SUCTION TEMP

COMPRESSOR STATUS

HUMIDITY SET POINT

THE PACKAGED CONTROLLER SHALL MONITOR THE HIGH WATER FLOAT OF THE CONDENSATE PUMP AND THE MOISTURE CONTENT OF THE AIR inside the space. THE CONTRACTION SHALL PROVIDE ALL DEVICES AND CIRCUITS FOR SOURCE OF POWER AND COMMUNICATION WIRING TO EACH ATU CONTROLLER. TC CONTRACTOR SHALL PROVIDE ALL DEVICES AND CIRCUITS FOR SOURCE OF POWER AND COMMUNICATION WIRING TO EACH ATU CONTROLLER.
ELECTRICAL DEMOLITION GENERAL NOTES

1. REFER TO DRAWING E001 AND E002 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

2. ALL LIGHTS AND LIGHTING DEVICES SHOWN CROSS HATCHED SHALL BE REMOVED. REMOVE ALL ASSOCIATED WIRING, SWITCHES AND CONTROLS BACK TO SOURCE.

3. ALL ELECTRICAL ITEMS BEING REMOVED SHALL BE LEGALLY DISPOSED OF OFF-SITE UNLESS DIRECTED OTHERWISE BY OWNER.

4. ALL ELECTRICAL OUTLETS, DEVICES, CONDUIT AND WIRING, ETC., SHOWN CROSS HATCHED SHALL BE REMOVED BACK TO SOURCE OR UPSTREAM JUNCTION BOX.

5. CONTRACTOR SHALL NOT ABANDON EXISTING WIRING WITHIN EXISTING WALLS OR CEILINGS TO REMAIN. ALL SUCH ELECTRICAL ITEMS SHALL BE REMOVED.

6. MAINTAIN OPERATION OF ALL EXISTING SYSTEMS DURING CONSTRUCTION. ANY REQUIRED SHUTDOWNS SHALL BE COORDINATED WITH THE OWNER.

7. 'R' INDICATES EXISTING EQUIPMENT TO BE RELOCATED. CAREFULLY DISCONNECT AND STORE IN A SAFE PLACE UNTIL REINSTALLATION.

8. WHERE SAWCUTTING IS NOTED, ELECTRICAL CONTRACTOR SHALL PROVIDE COST TO PROVIDE XRAY/GPR TO LOCATE CONDUITS IN SLAB.

9. EXISTING CIRCUIT NUMBERS INDICATED ARE FOR INFORMATION WHICH SHOULD BE VERIFIED PRIOR TO WORK.
1. REFER TO DRAWING E001 AND E002 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

2. ALL LIGHTS AND LIGHTING DEVICES SHOWN CROSS HATCHED SHALL BE REMOVED. REMOVE ALL ASSOCIATED WIRING, SWITCHES AND CONTROLS BACK TO SOURCE.

3. ALL ELECTRICAL ITEMS BEING REMOVED SHALL BE LEGALLY DISPOSED OF OFF-SITE UNLESS DIRECTED OTHERWISE BY OWNER.

4. ALL ELECTRICAL OUTLETS, DEVICES, CONDUIT AND WIRING, ETC., SHOWN CROSS HATCHED SHALL BE REMOVED BACK TO SOURCE OR UPSTREAM JUNCTION BOX.

5. CONTRACTOR SHALL NOT ABANDON EXISTING WIRING WITHIN EXISTING WALLS OR CEILINGS TO REMAIN. ALL SUCH ELECTRICAL ITEMS SHALL BE REMOVED.

6. MAINTAIN OPERATION OF ALL EXISTING SYSTEMS DURING CONSTRUCTION. ANY REQUIRED SHUTDOWNS SHALL BE COORDINATED WITH THE OWNER.

7. 'R' INDICATES EXISTING EQUIPMENT TO BE RELOCATED. CAREFULLY DISCONNECT AND STORE IN A SAFE PLACE UNTIL REINSTALLATION.

8. WHERE SAWCUTTING IS NOTED, ELECTRICAL CONTRACTOR SHALL PROVIDE COST TO PROVIDE XRAY/GPR TO LOCATE CONDUITS IN SLAB.

9. EXISTING CIRCUIT NUMBERS INDICATED ARE FOR INFORMATION WHICH SHOULD BE VERIFIED PRIOR TO WORK.
LIGHTING GENERAL NOTES
1. REFER TO DRAWING E001 AND E002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. REFER TO DRAWING E601 FOR LIGHTING FIXTURE SCHEDULE AND CONTROLS INFORMATION.
3. THE CONTRACTOR SHALL PROVIDE A 'HOT' WIRE TIED AHEAD OF LOCAL SWITCHING AND THE LIGHTING CONTROL PANEL RELAYS FOR THE LEADS TO ALL NIGHT LIGHTS, EXIT LIGHTS, EMERGENCY BATTERY PACKS AND EMERGENCY UL924 RELAYS AND EXIT LIGHTS.
4. THE CONTRACTOR SHALL SUBMIT A FULL SET OF OCCUPANCY CONTROL LOCATION DRAWING SUBMITTALS TO THE A/E PRIOR TO PURCHASE OR INSTALLATION. OCCUPANCY CONTROL LOCATIONS AND QUANTITIES SHALL BE BASED ON THE MANUFACTURER'S RECOMMENDATIONS. THE LIGHTING PLANS SHOW DESIGN INTENT ONLY AND DO NOT REFLECT EVERY MANUFACTURER'S PERMUTATIONS.
5. OCCUPANCY CONTROLS SHALL BE WIRED SUCH THAT ALL GENERAL ROOM LIGHTING IS CONTROLLED.
6. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT.
7. IN GENERAL, DEVICES AT LOWER HEIGHTS SHALL BE STACKED DIRECTLY BELOW DEVICES AT HIGHER ELEVATIONS. PROVIDE CONDUIT OFFSET AS NECESSARY.
1. Refer to Drawing E001 and E002 for electrical legend, abbreviations and general notes.
2. Refer to Drawing E601 for lighting fixture schedule and controls information.
3. The contractor shall provide a 'hot' wire tied ahead of local switching and the lighting control panel relays for the leads to all night lights, exit lights, emergency battery packs and emergency UL924 relays and exit lights.
4. The contractor shall submit a full set of occupancy control location drawing submittals to the A/E prior to purchase or installation. Occupancy control locations and quantities shall be based on the manufacturer's recommendations. The lighting plans show design intent only and do not reflect every manufacturer permutation.
5. Occupancy controls shall be wired such that all general room lighting is controlled.
6. Provide a dedicated neutral conductor for each branch circuit.
7. In general, devices at lower heights shall be stacked directly below devices at higher elevations. Provide conduit offset as necessary.
POWER & AUXILIARY GENERAL NOTES

1. REFER TO DRAWING E001 AND E002 FOR ELECTRICAL LEGEND AND ABBREVIATIONS.
2. REFER TO DRAWING E401 FOR ELECTRICAL SINGLE LINE DIAGRAMS.
3. EACH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL CONNECTED BACK TO THE PANEL.
4. PROVIDE 120V CIRCUIT TO FIRE ALARM EXTENDER PANELS.
5. COORDINATE ALL DEVICE MOUNTING LOCATIONS, HEIGHTS, AND SPACINGS WITH ARCHITECTURAL FLOOR PLANS AND ELEVATIONS.
6. PROVIDE CONDUIT OFFSET AS NECESSARY.
7. COORDINATE MOUNTING HEIGHT OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
8. COORDINATE FINAL MOUNTING HEIGHT OF ELECTRICAL DEVICES FOR UNIT APPLIANCES WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO ROUGH-IN.
9. SWITCHES AND RECEPTACLES INSTALLED ABOVE COUNTERTOPS SHALL BE THE SAME HEIGHT.
10. FURNISH AND INSTALL DUCT SMOKE DETECTORS ASSOCIATED WITH AIR HANDLING EQUIPMENT AND LIFE SAFETY DAMPERS, FIRE ALARM COMMUNICATION MODULES, POWER, AND ALL NECESSARY WIRING.
11. REFER TO FIRE PROTECTION DRAWINGS AND DETAILS FOR LOCATIONS OF FLOW AND TAMPER SWITCHES. PROVIDE CONNECTION TO FIRE ALARM SYSTEM TO EACH.
12. ELECTRICAL CONTRACTOR SHALL REFER TO TECHNOLOGY DRAWINGS FOR DATA DEVICES, SECURITY DEVICES, DOOR ACCESS DEVICES, ETC. FOR LOCATIONS AND QUANTITIES. ELECTRICAL CONTRACTOR SHALL PROVIDE PATHWAYS AND ROUGH-INS AS INDICATED ON TECHNOLOGY DRAWINGS.
13. CIRCUIT ELECTRONIC TRAP PRIMERS TO NEARBY 120V RECEPTACLE CIRCUIT. REFER TO PLUMBING DRAWINGS FOR TRAP PRIMER LOCATIONS.
14. REFER TO STRUCTURAL DRAWINGS FOR PENETRATION REQUIREMENTS THROUGH EXISTING STRUCTURAL ELEMENTS.

As indicated
POWER & AUXILIARY GENERAL NOTES

1. REFER TO DRAWING E001 AND E002 FOR ELECTRICAL LEGEND AND ABBREVIATIONS.

2. REFER TO DRAWING E401 FOR ELECTRICAL SINGLE LINE DIAGRAMS.

3. EACH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL CONNECTED BACK TO THE PANEL.

4. PROVIDE 120V CIRCUIT TO FIRE ALARM EXTENDER PANELS.

5. COORDINATE ALL DEVICE MOUNTING LOCATIONS, HEIGHTS, AND SPACINGS WITH ARCHITECTURAL FLOOR PLANS AND ELEVATIONS. BIDDERS SHALL EXAMINE ARCHITECTURAL DRAWINGS TO INCLUDE ANY NECESSARY COSTS WITH HIS BID.

6. IN GENERAL, DEVICES AT LOWER HEIGHTS SHALL BE STACKED DIRECTLY BELOW DEVICES AT HIGHER ELEVATIONS. PROVIDE CONDUIT OFFSET AS NECESSARY.

7. COORDINATE MOUNTING HEIGHT OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.

8. COORDINATE FINAL MOUNTING HEIGHT OF ELECTRICAL DEVICES FOR UNIT APPLIANCES WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO ROUGH-IN.

9. SWITCHES AND RECEPTACLES INSTALLED ABOVE COUNTERTOPS SHALL BE THE SAME HEIGHT.

10. FURNISH AND INSTALL DUCT SMOKE DETECTORS ASSOCIATED WITH AIR HANDLING EQUIPMENT AND LIFE SAFETY DAMPERS, FIRE ALARM COMMUNICATION MODULES, POWER, AND ALL NECESSARY WIRING. REFER TO MECHANICAL FLOOR PLANS AND TEMPERATURE CONTROL DRAWINGS FOR LIFE SAFETY DAMPERS LOCATIONS AND DUCT DETECTORS ASSOCIATED WITH AIR HANDLING UNITS. PROVIDE THE QUANTITY OF DUCT DETECTORS RECOMMENDED BY THE MANUFACTURER FOR THE INSTALLED DUCT CONFIGURATION.

11. REFER TO FIRE PROTECTION DRAWINGS AND DETAILS FOR LOCATIONS OF FLOW AND TAMPER SWITCHES. PROVIDE CONNECTION TO FIRE ALARM SYSTEM TO EACH.

12. ELECTRICAL CONTRACTOR SHALL REFER TO TECHNOLOGY DRAWINGS FOR DATA DEVICES, SECURITY DEVICES, DOOR ACCESS DEVICES, ETC. FOR LOCATIONS AND QUANTITIES. ELECTRICAL CONTRACTOR SHALL PROVIDE PATHWAYS AND ROUGH-INS AS INDICATED ON TECHNOLOGY DRAWINGS.

13. CIRCUIT ELECTRONIC TRAP PRIMERS TO NEARBY 120V RECEPTACLE CIRCUIT. REFER TO PLUMBING DRAWINGS FOR TRAP PRIMER LOCATIONS.

14. REFER TO STRUCTURAL DRAWINGS FOR PENETRATION REQUIREMENTS THROUGH EXISTING STRUCTURAL ELEMENTS.
POWER & AUXILIARY GENERAL NOTES

1. REFER TO DRAWING E001 AND E002 FOR ELECTRICAL LEGEND AND ABBREVIATIONS.
2. REFER TO DRAWING E401 FOR ELECTRICAL SINGLE LINE DIAGRAMS.
3. EACH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL CONNECTED BACK TO THE PANEL.
4. PROVIDE 120V CIRCUIT TO FIRE ALARM EXTENDER PANELS.
5. COORDINATE ALL DEVICE MOUNTING LOCATIONS, HEIGHTS, AND SPACINGS WITH ARCHITECTURAL FLOOR PLANS AND ELEVATIONS.
6. BIDDERS SHALL EXAMINE ARCHITECTURAL DRAWINGS TO INCLUDE ANY NECESSARY COSTS WITH HIS BID.
7. IN GENERAL, DEVICES AT LOWER HEIGHTS SHALL BE STACKED DIRECTLY BELOW DEVICES AT HIGHER ELEVATIONS. PROVIDE CONDUIT OFFSET AS NECESSARY.
8. COORDINATE MOUNTING HEIGHT OF DEVICES ABOVE MILL WORK WITH ARCHITECTURAL PLANS.
9. COORDINATE FINAL MOUNTING HEIGHT OF ELECTRICAL DEVICES FOR UNIT APPLIANCES WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO ROUGH-INS.
10. SWITCHES AND RECEPTACLES INSTALLED ABOVE COUNTERTOPS SHALL BE THE SAME HEIGHT.
11. FURNISH AND INSTALL DUCT SMOKE DETECTORS ASSOCIATED WITH AIR HANDLING EQUIPMENT AND LIFE SAFETY DAMPERS, FIRE ALARM COMMUNICATION MODULES, POWER, AND ALL NECESSARY WIRING.
12. REFER TO MECHANICAL FLOOR PLANS AND TEMPERATURE CONTROL DRAWINGS FOR LIFE SAFETY DAMPER LOCATIONS AND DUCT DETECTORS ASSOCIATED WITH AIR HANDLING UNITS. PROVIDE THE QUANTITY OF DUCT DETECTORS RECOMMENDED BY THE MANUFACTURER FOR THE INSTALLED DUCT CONFIGURATION.
13. REFER TO FIRE PROTECTION DRAWINGS AND DETAILS FOR LOCATIONS OF FLOW AND TAMPER SWITCHES. PROVIDE CONNECTION TO FIRE ALARM SYSTEM TO EACH.
14. ELECTRICAL CONTRACTOR SHALL REFER TO TECHNOLOGY DRAWINGS FOR DATA DEVICES, SECURITY DEVICES, DOOR ACCESS DEVICES, ETC. FOR LOCATIONS AND QUANTITIES. ELECTRICAL CONTRACTOR SHALL PROVIDE PATHWAYS AND ROUGH-INS AS INDICATED ON TECHNOLOGY DRAWINGS.
15. CIRCUIT ELECTRONIC TRAP PRIMERS TO NEARBY 120V RECEPTACLE CIRCUIT. REFER TO PLUMBING DRAWINGS FOR TRAP PRIMER LOCATIONS.
16. REFER TO STRUCTURAL DRAWINGS FOR PENETRATION REQUIREMENTS THROUGH EXISTING STRUCTURAL ELEMENTS.

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ORIGINAL SHEET - ARCH E1
Revision
By Appd YYYY.MM.DD
Issued
By Appd YYYY.MM.DD
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Author Checker Designer 02/03/21
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19625 Elmira Street Detroit, MI 48228
E213
ROOF LEVEL POWER & AUXILIARY PLAN
1/8" = 1'-0" E213
1
ROOF LEVEL POWER & AUXILIARY PLAN
POWER & AUXILIARY KEYNOTES
# KEY NOTES

POWER & AUXILIARY KEYNOTES
# KEY NOTES

POWER & AUXILIARY KEYNOTES
# KEY NOTES
POWER & AUXILIARY GENERAL NOTES

1. REFER TO DRAWING E001 AND E002 FOR ELECTRICAL LEGEND AND ABBREVIATIONS.

2. REFER TO DRAWING E401 FOR ELECTRICAL SINGLE LINE DIAGRAMS.

3. EACH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL CONNECTED BACK TO THE PANEL.

4. PROVIDE 120V CIRCUIT TO FIRE ALARM EXTENDER PANELS.

5. COORDINATE ALL DEVICE MOUNTING LOCATIONS, HEIGHTS, AND SPACINGS WITH ARCHITECTURAL FLOOR PLANS AND ELEVATIONS. BIDDERS SHALL EXAMINE ARCHITECTURAL DRAWINGS TO INCLUDE ANY NECESSARY COSTS WITH HIS BID.

6. IN GENERAL, DEVICES AT LOWER HEIGHTS SHALL BE STACKED DIRECTLY BELOW DEVICES AT HIGHER ELEVATIONS. PROVIDE CONDUIT OFFSET AS NECESSARY.

7. COORDINATE MOUNTING HEIGHT OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.

8. COORDINATE FINAL MOUNTING HEIGHT OF ELECTRICAL DEVICES FOR UNIT APPLIANCES WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO ROUGH-INS.

9. SWITCHES AND RECEPTACLES INSTALLED ABOVE COUNTERTOPS SHALL BE THE SAME HEIGHT.

10. FURNISH AND INSTALL DUCT SMOKE DETECTORS ASSOCIATED WITH AIR HANDLING EQUIPMENT AND LIFE SAFETY DAMPERS, FIRE ALARM COMMUNICATION MODULES, POWER, AND ALL NECESSARY WIRING. REFER TO MECHANICAL FLOOR PLANS AND TEMPERATURE CONTROL DRAWINGS FOR LIFE SAFETY DAMPERS LOCATIONS AND DUCT DETECTORS ASSOCIATED WITH AIR HANDLING UNITS. PROVIDE THE QUANTITY OF DUCT DETECTORS RECOMMENDED BY THE MANUFACTURER FOR THE INSTALLED DUCT CONFIGURATION.

11. REFER TO FIRE PROTECTION DRAWINGS AND DETAILS FOR LOCATIONS OF FLOW AND TAMPER SWITCHES. PROVIDE CONNECTION TO FIRE ALARM SYSTEM TO EACH.

12. ELECTRICAL CONTRACTOR SHALL REFER TO TECHNOLOGY DRAWINGS FOR DATA DEVICES, SECURITY DEVICES, DOOR ACCESS DEVICES, ETC. FOR LOCATIONS AND QUANTITIES. ELECTRICAL CONTRACTOR SHALL PROVIDE PATHWAYS AND ROUGH-INS AS INDICATED ON TECHNOLOGY DRAWINGS.

13. CIRCUIT ELECTRONIC TRAP PRIMERS TO NEARBY 120V RECEPTACLE CIRCUIT. REFER TO PLUMBING DRAWINGS FOR TRAP PRIMER LOCATIONS.

14. REFER TO STRUCTURAL DRAWINGS FOR PENETRATION REQUIREMENTS THROUGH EXISTING STRUCTURAL ELEMENTS.

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ELECTRICAL SINGLE LINE DIAGRAM

MANN ELEMENTARY SCHOOL 120/240V, 1PH, 3W 1,200 44,900 72 335

13 VRF-10 15 A 2 988 988 2 15 A VRF-11 14
23 -- -- -- -- 354 988 -- -- -- -- 24

11 SPARE 20 A 1 -- 0 0 -- 1 20 A SPARE 12
21 VRF-04 15 A 2 354 988 2 15 A VRF-15 22

37 SPD (80KA) 40 A 3 -- 0 -- -- 1 -- SPACE 38
33 SPARE 20 A 1 -- 0 -- -- 1 -- SPACE 34

Total Load: 9.48 kVA 8.23 kVA 6.32 kVA

Receptacle 900 VA 100.00% 900 VA

23 SPARE 20 A 1 -- 0 0 -- 1 20 A SPARE 24
21 SPARE 20 A 1 -- 0 0 -- 1 20 A SPARE 22
31 SPARE 20 A 1 -- 0 -- -- 1 -- SPACE 32
39 -- -- -- -- 0 -- -- 1 -- SPACE 40

39 VRF-00 15 A 2354 354 2 15 A VRF-17 30
5 VRF-16 15 A 2302 354 2 15 A VRF-01 6
9 VRF-08 15 A 2 354 302 2 15 A VRF-14 10

Total Est. Demand: 18013 VA

5 -- -- -- -- 1261 4744 -- -- -- -- 6

ELECTRICAL SINGLE LINE DIAGRAM

File Name: N/A YYYY.MM.DD Dsgn. Chkd. Dwn.

G = GFCI  S = Shunt Trip  D = Switching Duty  A = AFCI  H = HID Rated  C = HACR Rated  † = Existing Circuit  ‡ = Revised Circuit

1. REFER TO DRAWING E001 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. ALL HOUSEKEEPING PADS FOR ELECTRICAL EQUIPMENT SHALL BE MAINTAINED PERMANENTLY FOR LATER USE. FLOOR SPACE IS PROVIDED FOR ELECTRICAL USE AND/OR TELEPHONE SHUT-DOWN.
3. 3-PHASE MOTOR STARTERS SHALL BE NEMA SIZE 1 MINIMUM AND HAVE A SCCR OF 10,000A MINIMUM.
4. PROVIDE LOCATIONS FOR DISCONNECT SWITCH.
5. PROVIDE MINIMUM ELECTRICAL OUTLETS AND SOURCES AT LOCATION OF PRIMARY ACCESSORIES.

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PAID TO: 208/120V 3Ø, 4W, 1600A   65,000AIC (SWITCHGEAR ROOM)

VFD

MAIN SWITCHBOARD

100% RATED

1600AF

208/120V 3Ø, 4W, 1600A   65,000AIC (SWITCHGEAR ROOM)

100A

1600A

50A

100A

3 Ø, 4 W

1000 VA

1000 VA

75.9 MCA

96.6 MCA

NEW CU

NEW RTU

NEW RTU

VFD

NEW MAIN SWITCHBOARD

MAIN ELEMENTARY SCHOOL

120/240V, 1PH, 3W

1,200

44,900

72

335

900 VA

100.00%

900 VA

23 SPARE 20 A 1 -- 0 0 -- 1 20 A SPARE 24
21 SPARE 20 A 1 -- 0 0 -- 1 20 A SPARE 22
31 SPARE 20 A 1 -- 0 -- -- 1 -- SPACE 32
39 -- -- -- -- 0 -- -- 1 -- SPACE 40

29 VRF-00 15 A 2354 354 2 15 A VRF-17 30
5 VRF-16 15 A 2302 354 2 15 A VRF-01 6
9 VRF-08 15 A 2 354 302 2 15 A VRF-14 10

Total Conn. Load: 18013 VA

5 -- -- -- -- 1261 4744 -- -- -- -- 6

1 B-1   BOILER ROOM 120 20 A 3 1261 4744 3 50 A SKID   BOILER ROOM 120 2

27 -- -- -- -- 988 988 -- -- -- -- 28

25 SPARE 20 A 1 -- 0 0-- 1 20 A SPARE 26
21 VRF-04 15 A 2 354 988 2 15 A VRF-15 22
### Lighting Fixture Schedule

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Qty.</th>
<th>Circuit</th>
<th>Dimensions</th>
<th>Model</th>
<th>Code</th>
<th>Color</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Light Fixtures</td>
<td>3</td>
<td>0-10V</td>
<td>2 feet</td>
<td>L1</td>
<td>60W</td>
<td>White</td>
<td>WIRING (TYP.)</td>
</tr>
<tr>
<td>2</td>
<td>Light Fixtures</td>
<td>4</td>
<td>0-10V</td>
<td>4 feet</td>
<td>L2</td>
<td>60W</td>
<td>White</td>
<td>WIRING (TYP.)</td>
</tr>
<tr>
<td>3</td>
<td>Light Fixtures</td>
<td>5</td>
<td>0-10V</td>
<td>6 feet</td>
<td>L3</td>
<td>60W</td>
<td>White</td>
<td>WIRING (TYP.)</td>
</tr>
<tr>
<td>4</td>
<td>Light Fixtures</td>
<td>6</td>
<td>0-10V</td>
<td>8 feet</td>
<td>L4</td>
<td>60W</td>
<td>White</td>
<td>WIRING (TYP.)</td>
</tr>
<tr>
<td>5</td>
<td>Light Fixtures</td>
<td>7</td>
<td>0-10V</td>
<td>10 feet</td>
<td>L5</td>
<td>60W</td>
<td>White</td>
<td>WIRING (TYP.)</td>
</tr>
<tr>
<td>6</td>
<td>Light Fixtures</td>
<td>8</td>
<td>0-10V</td>
<td>12 feet</td>
<td>L6</td>
<td>60W</td>
<td>White</td>
<td>WIRING (TYP.)</td>
</tr>
<tr>
<td>7</td>
<td>Light Fixtures</td>
<td>9</td>
<td>0-10V</td>
<td>14 feet</td>
<td>L7</td>
<td>60W</td>
<td>White</td>
<td>WIRING (TYP.)</td>
</tr>
<tr>
<td>8</td>
<td>Light Fixtures</td>
<td>10</td>
<td>0-10V</td>
<td>16 feet</td>
<td>L8</td>
<td>60W</td>
<td>White</td>
<td>WIRING (TYP.)</td>
</tr>
<tr>
<td>9</td>
<td>Light Fixtures</td>
<td>11</td>
<td>0-10V</td>
<td>18 feet</td>
<td>L9</td>
<td>60W</td>
<td>White</td>
<td>WIRING (TYP.)</td>
</tr>
<tr>
<td>10</td>
<td>Light Fixtures</td>
<td>12</td>
<td>0-10V</td>
<td>20 feet</td>
<td>L10</td>
<td>60W</td>
<td>White</td>
<td>WIRING (TYP.)</td>
</tr>
</tbody>
</table>

### LOW VOLTAGE CONTROL STATION

**Switch Designation**

- **P**: Power/Switch
- **L**: Light
- **C**: Control
- **R**: Relay

#### Notes:
- The LOW VOLTAGE CONTROL STATION is a junction box for connecting various control devices.
- It includes power switches, light controls, and relay modules.
- Each module is labeled with the corresponding functions.

### SINGLE ZONE ROOM DIGITAL CONTROLS WIRING DIAGRAM

**Figure View**

- Switch (S)
- Digital Control (DC)
- Power Switch (PS)
- Relay Switch (RS)
- Light (L)

*Please check the required number of actuators and functions for each zone.*