# GLADYS SPEERS PS RENOVATIONS

## 2150 SAMWAY RD,

## OAKVILLE, ONTARIO L6L 2P6

Halton District School Board

1. VERIFY ALL DIMENSIONS AND EXISTING SITE CONDITIONS. REPORT ANY DISCREPANCIES TO ARCHITECT BEFORE PROCEEDING WITH THE WORK
2. REPORT TO ARCHITECT AT LEAST THREE WORKING DAYS PRIOR TO CONSTRUCTION ALL DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM BUILDING BY-LAWS, O.B.C., OR GOOD PRACTICE AND POINTS CONSIDERED TO BE OF AMBIGUOUS INTENT, SO THAT THE ARCHITECT MAY, IF NECESSARY, ISSUE INSTRUCTIONS BY ADDENDA. THE ARCHITECT WILL NOT BE RESPONSIBLE FOR ORAL INSTRUCTIONS.
3. DO NOT SCALE DRAWINGS.
4. EXTEND, MAKE GOOD, REPAIR AND CLEAN EXISTING SUBSTRATES, FINISHES, AND COMPONENTS AS REQUIRED TO MATCH EXISTING. PROVIDE ADDITIONAL MATERIALS AND COMPONENTS AS REQUIRED. MAINTAIN CONTINUITY TO EXISTING WORK, FLUSH, PLUMB AND IN ALIGNMENT, AND WITHOUT DETRIMENTS TO VISUAL APPEARANCE. MATCH EXISTING MATERIALS AND METHODS. VARIATIONS WILL BE ACCEPTED BY ARCHITECT'S WRITTEN AUTHORIZATION ONLY, AND WHERE AUTHORIZED MUST MEET OR EXCEED QUALITY AND PERFORMANCE OF EXISTING.
5. PROTECT EXISTING WORK TO REMAIN AS REQUIRED. BE RESPONSIBLE FOR REPAIRS, MAKING GOOD AND CLEANING IN EVENT PROTECTION IS NOT ADEQUATE.
6. PROTECT PUBLIC AND OTHER PRIVATE PROPERTY BEYOND IMMEDIATE WORK AREA. CONTRACTOR TO HOLD OWNER HARMLESS AGAINST ALL CLAIMS ASSOCIATED WITH THIS WORK.
7. MAINTAIN CONTINUITY OF ALL EXISTING FIRE SEPARATIONS, ASSEMBLIES, AND PROTECTIVE CLADDING.
8. ALL WORK IS TO BE PROVIDED AS COMPLETE, OPERATING SYSTEMS EXCEPT AS NOTED.
9. PREPARE ALL EXISTING SUBSTRATES TO RECEIVE NEW FINISHES AS REQUIRED ACCORDING TO RECOMMENDATIONS OF MANUFACTURER OF NEW FINISH MATERIALS.
10. PROVIDE PURPOSE-MADE ALUMINUM REDUCING STRIPS AT ALL DISSIMILAR FLOOR FINISH MATERIALS, INCLUDING JUNCTION OF EXISTING MATERIALS TO NEW MATERIALS. SUBMIT SAMPLES TO ARCHITECT FOR APPROVAL.
11. MOVE MATERIALS AND DEBRIS FROM IMMEDIATE WORK AREA TO EXTERIOR RUBBISH BINS IN CLOSED DUST-TIGHT CONTAINERS. LOCATE BINS TO APPROVAL OF OWNER AND LANDLORD.
12. CO-ORDINATE AND PAY FOR ALL CHARGES AND FEES ASSOCIATED WITH THE WORK TO BE PERFORMED AS LEVIED BY THE AUTHORITIES HAVING JURISDICTION. PROCURE ALL ENCROACHMENT AGREEMENTS AS REQUIRED TO PERMIT WORK TO BE PERFORMED.
13. PROVIDE DUSTTIGHT CONSTRUCTION HOARDING. SUBMIT SHOP DRAWINGS.
14. PERFORM ALL SITE PREPARATIONS AND DEMOLITIONS AS REQUIRED TO PERMIT NEW WORK TO COMMENCE AND BE ACCOMMODATED.
15. THE SCHEDULE AND SEQUENCE OF THE WORK WILL BE SUBJECT TO THE APPROVAL OF THE OWNER. THE OWNER INTENDS TO OCCUPY AND OPERATE IN THE PREMISES DURING CONSTRUCTION.
16. PROVIDE ACCESS TO ALL CONTROL DEVICES AND MAINTAIN ACCESS TO ALL EXISTING CONTROL DEVICES WHICH ARE COVERED BY FINISHES. PROVIDE PRE-MANUFACTURED ACCESS PANELS TO SUIT. SUBMIT SAMPLES TO ARCHITECT FOR APPROVAL.
17. REMOVE ALL EXISTING INACTIVE AND ABANDONED MECHANICAL AND ELECTRICAL SERVICE LINES. MAKE GOOD.
18. CONFORM TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
19. MAINTAIN ACCESS TO EXITS AT ALL TIMES. PROVIDE ALTERNATE EXITS IN CONSULTATION WITH AND AT APPROVAL OF BUILDING OFFICIAL. PROVIDE TEMPORARY EXIT SIGNS AND ADJUST EXISTING EXIT SIGNS AS REQUIRED. AT COMPLETION OF WORK, REMOVE TEMPORARY SIGNS AND RESTORE SIGNAGE. MAKE GOOD.

INFORMATION FOR THIS SITE PLAN TAKEN FROM DOCUMENTS PROVIDED BY THE HALTON DISTRICT SCHOOL BOARD

1 — RENOVATION NOTES

— N.T.S.

Revisions

| Ref. | No. | Description | Date | Initial |
|---|---|---|---|---|
| △ | | CONSULTANTS COORDINATION | 2022/01/31 | |
| △ | | CONSULTANTS COORDINATION | 2022/02/07 | |
| △ | | CLIENTS REVIEW | 2022/02/18 | |
| △ | | CONSULTANTS COORDINATION | 2022/02/24 | |
| △ | | CONSULTANTS COORDINATION | 2022/04/14 | |
| △ | | CONSULTANTS COORDINATION | 2022/04/19 | |
| △ | | PRE-TENDER SUBMISSION | 2022/04/27 | |
| △ | | ISSUED FOR PERMIT AND TENDER | 2022/05/02 | |

Project:

GLADYS SPEERS PS RENOVATIONS
2150 SAMWAY RD, OAKVILLE, ON L6L 2P6

liu lim Architects inc.

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ONTARIO ASSOCIATION OF ARCHITECTS
K. LIM
LICENCE
3660

Consultant:

Title:

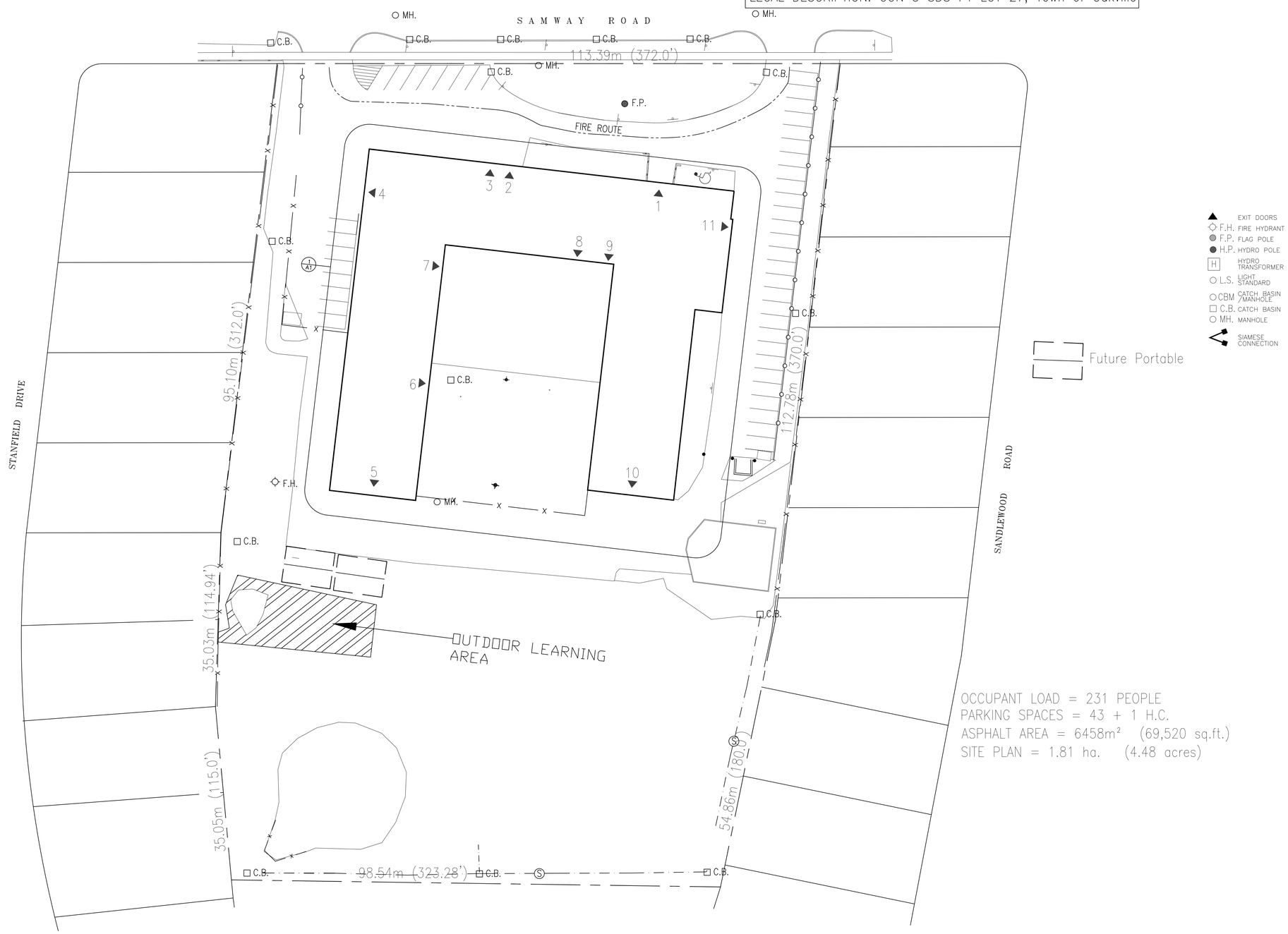
TITLE SHEET

| | |
|---|---|
| Drawn by: M.L. | Date: DECEMBER 2021 |
| Checked by: W.L. | Plotted: |
| Scale: AS SHOWN | Issued: |
| Job No.: 21153 | Drawing No.: A0 |
| Set No.: | of: |

NOTE: PLAN ROTATED

SAWCUT AND MAKE GOOD EXISTING FINISHES–SEE ELECTRICAL

LEGAL DESCRIPTION: CON 3 SDS PT LOT 27, Town of Oakville




OCCUPANT LOAD = 231 PEOPLE
PARKING SPACES = 43 + 1 H.C.
ASPHALT AREA = 6458m² (69,520 sq.ft.)
SITE PLAN = 1.81 ha. (4.48 acres)

1 SITE PLAN

1:400

Revisions

| Ref. | No. | Description | Date | Initial |
|---|---|---|---|---|
| △ | | CONSULTANTS COORDINATION | 2022/01/31 | |
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W.K. LIM
LICENCE
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Consultant:

Title:

SITE PLAN

| Drawn by: | Date: |
|---|---|
| M.L. | DECEMBER 2021 |
| Checked by: W.L. | Plotted: |
| Scale: 1:400 | Issued: |
| Job No.: 21153 | Drawing No.: SP1 |
| Set No.: | of: |

WALL TYPES:

EXISTING TO REMAIN

REMOVE EXISTING WALL, PARTITIONS, PLUMBING FIXTURES AS SHOWN DOTTED. MAKE GOOD.
RELOCATE EXISTING SERVICES AS REQUIRED.
CAP AND MAKE SAFE ALL SERVICE LINES.
SEE MECHANICAL AND ELECTRICAL.

FIRE SEPARATIONS:

SEE REFLECTED CEILING PLAN FOR FIRE RATED SEPARATIONS

TEMPORARY CONSTRUCTION EXITS:

BARRICADE AND PROVIDE DUST TIGHT HOARDING TO EXISTING BUILDING. ESTABLISH ALTERNATE EXITS DURING CONSTRUCTION THROUGH EXISTING DOORS TO EXTERIOR. PROVIDE EXIT SIGNS AS REQUIRED AND REMOVE AND MAKE GOOD AT COMPLETION OF WORK. MASK EXISTING SIGNS AS REQUIRED FOR TEMPORARY EXITS. REVIEW EXITING DURING CONSTRUCTION WITH LOCAL BUILDING DEPARTMENT PRIOR TO COMMENCEMENT OF CONSTRUCTION.

AT EXISTING PARTITIONS TO BE DEMOLISHED:

SAWCUT AND MAKE GOOD AT TERMINATIONS WITH MIN. 200 CAP OF SIMILAR MATERIAL TO MATCH EXISTING
MAKE GOOD EXISTING CEILING, FLOOR AND WALL BASE TO MATCH EXISTING

AT PERPENDICULAR WALL JUNCTIONS, GRIND SMOOTH AS REQUIRED
REMOVE METAL TIES AS REQUIRED AND MAKE GOOD
PAINT ENTIRE AFFECTED WALL PLANES

REMOVE EXISTING WALL MOUNTED EQUIPMENT
RELOCATE AS DIRECTED ON SITE OR TURN OVER TO SCHOOL

LEGEND:

XX — MILLWORK TYPE XX

XXX — DOOR NO. XXX

XXX — ROOM NO. XXX

XX — PARTITION TYPE XXX

ELEV. — ELEVATION A, ELEVATION B, ELEVATION C, ELEVATION D, DETAIL NO. XX, DRAWING NO. YYY

DETAIL — XXX / YYY — DETAIL NO. XXX/REFERENCE DRAWING YYY

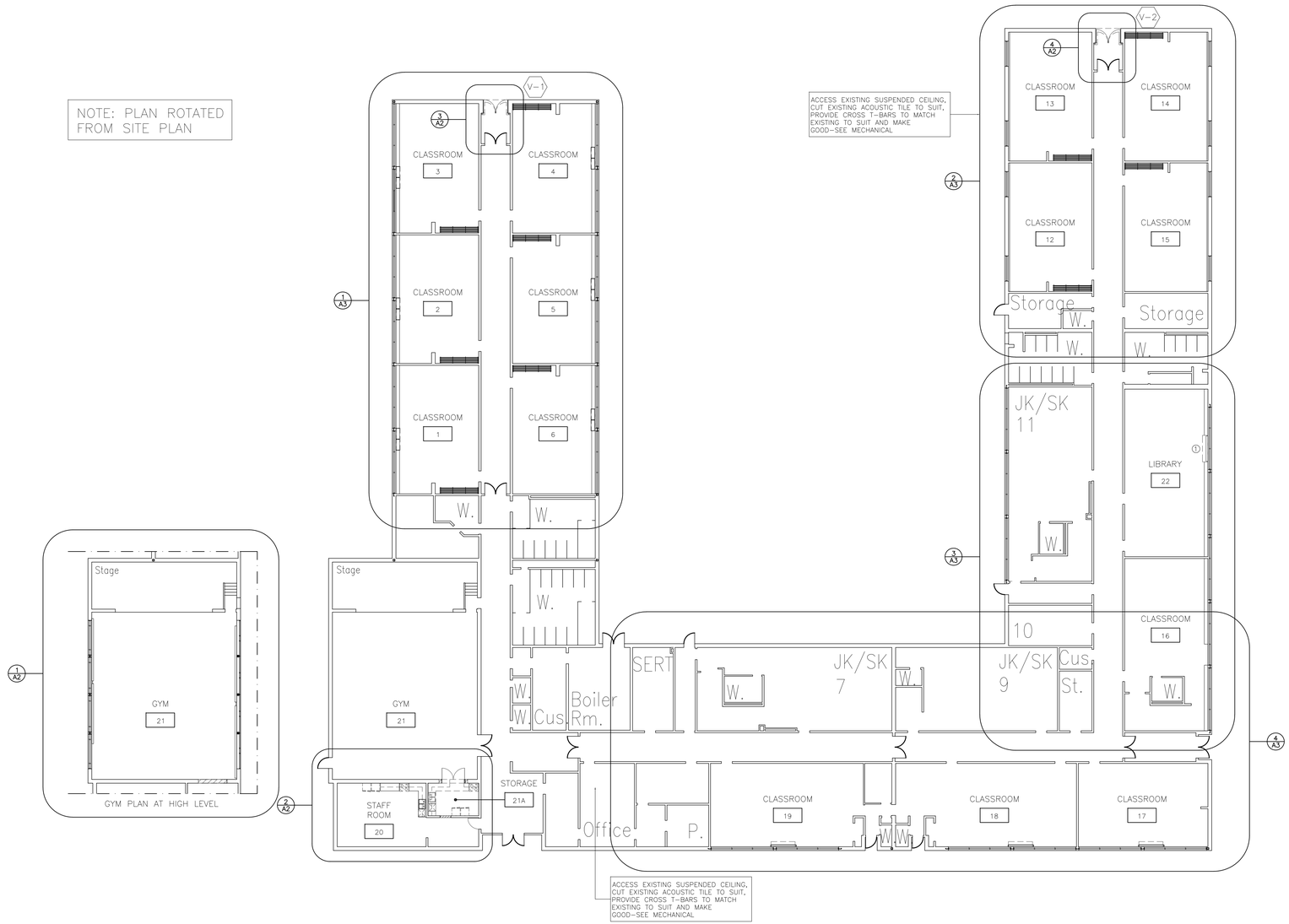
SECTION — XX / YYY — SECTION NO. XX/REFERENCE DRAWING YYY

LIMIT OF FLOOR FINISH
PROVIDE PURPOSE MADE
PRE-FINISHED METAL TRANSITION STRIP
TO PROFILE AS SELECTED BY CONSULTANT
SUBMIT SAMPLES

REMOVE EXISTING FLOORING AND WALL BASE
CLEAN & STRIP SUBSTRATE OF RESIDUAL SEALANT

2 — WALL TYPE LEGEND DETAIL — NTS

NOTE: PLAN ROTATED FROM SITE PLAN




1 — KEY PLAN — 1:200

Revisions

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|---|---|---|---|---|
| 1 | | CONSULTANTS COORDINATION | 2022/01/31 | |
| 2 | | CONSULTANTS COORDINATION | 2022/02/07 | |
| 3 | | CLIENTS REVIEW | 2022/02/18 | |
| 4 | | CONSULTANTS COORDINATION | 2022/02/24 | |
| 5 | | CONSULTANTS COORDINATION | 2022/04/14 | |
| 6 | | CONSULTANTS COORDINATION | 2022/04/19 | |
| 7 | | PRE-TENDER SUBMISSION | 2022/04/27 | |
| 8 | | ISSUED FOR PERMIT AND TENDER | 2022/05/02 | |

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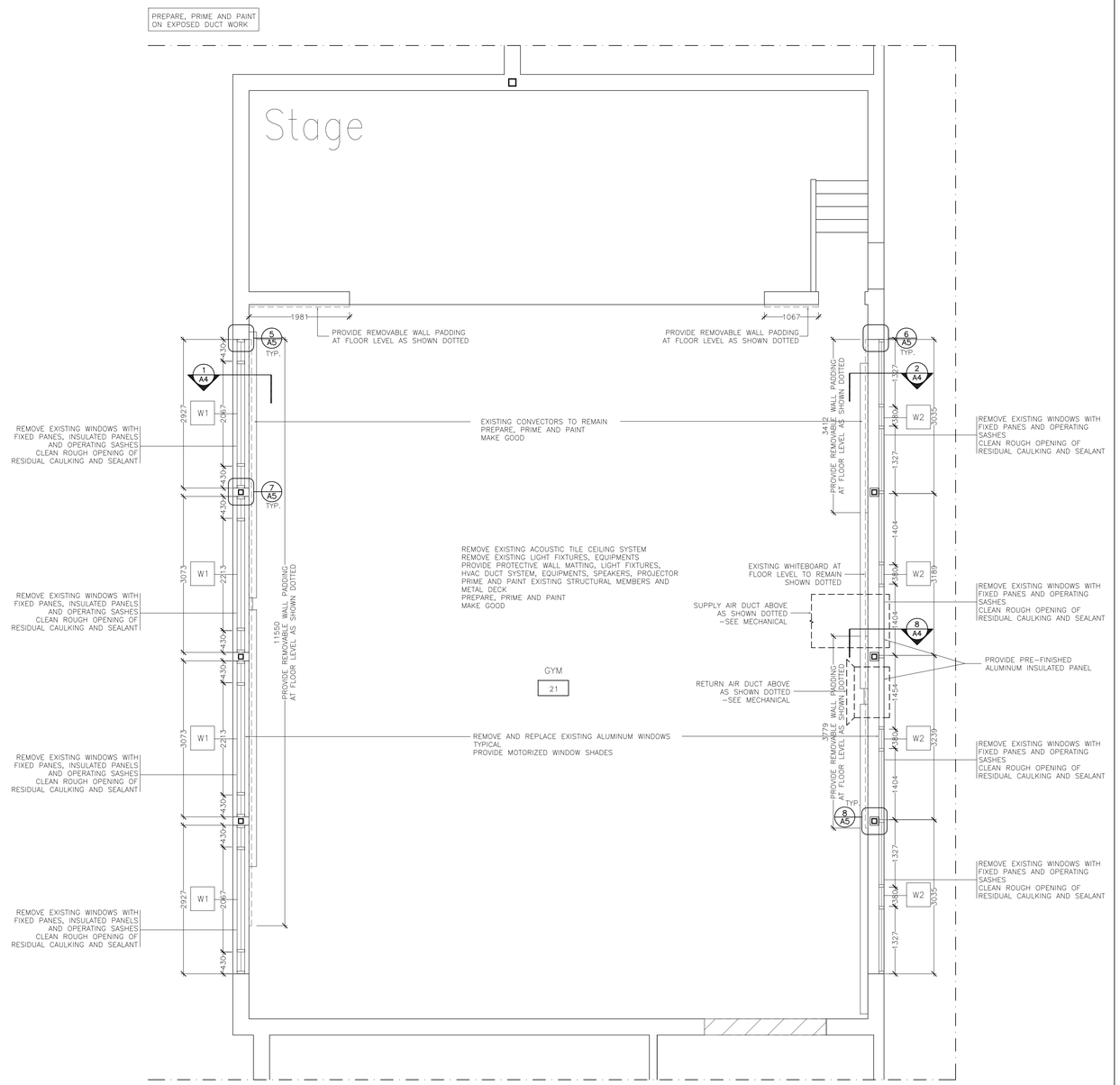
LICENCE 3660

Consultant:

Title:

KEY PLAN, WALL TYPE LEGEND

| | |
|---|---|
| Drawn by: M.L. | Date: DECEMBER 2021 |
| Checked by: W.L. | Plotted: |
| Scale: AS SHOWN | Issued: |
| Job No.: 21153 | Drawing No.: A1 |
| Set No.: | of: |




1 A1 ENLARGED GYM PLAN — 1:50

NOTE (1):

SHORE AND BRACE WALL AS REQUIRED
SAWCUT OPENING 200 WIDER AT EACH JAMB AND ONE BLOCK COURSE ABOVE HEAD – PROVIDE LINTEL REFER TO DRAWING A4 DETAIL 3

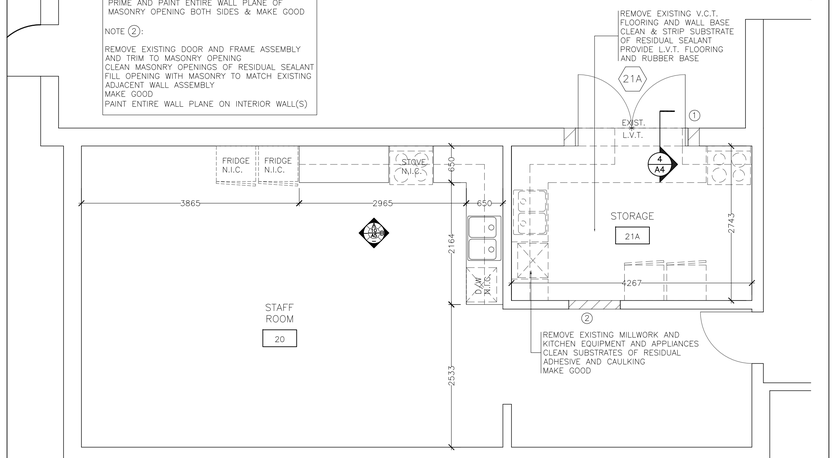
GRIND SUBFLOOR SMOOTH AND FLUSH TO ADJACENT SUBFLOOR
CHIP FOUNDATION 50 BELOW SUBFLOOR
PROVIDE FLUSH CONCRETE TOPPING – FINISH TO MATCH EXISTING SUBSTRATE

REMOVE AS REQUIRED AND EXTEND FINISH FLOORING IN FULL UNITS TO MATCH EXISTING FOR FULL WIDTH OF OPENING
PROVIDE BULLNOSE CONCRETE BLOCK AT JAMBS TO MATCH WIDTH OF EXISTING MASONRY OR PROVIDE METAL FRAME OF THROAT DEPTH TO CAP BLOCK
SET FRAME ANCHORS INTO MASONRY COURSING

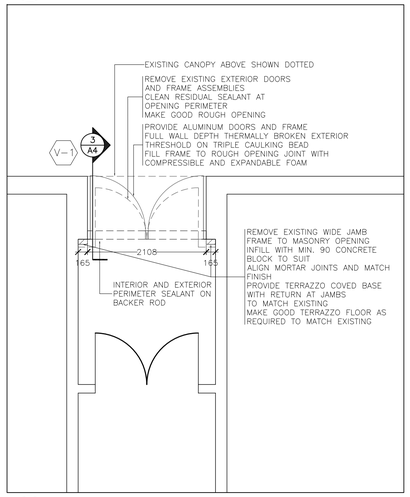
PRIME AND PAINT ENTIRE WALL PLANE OF MASONRY OPENING BOTH SIDES & MAKE GOOD

NOTE (2):

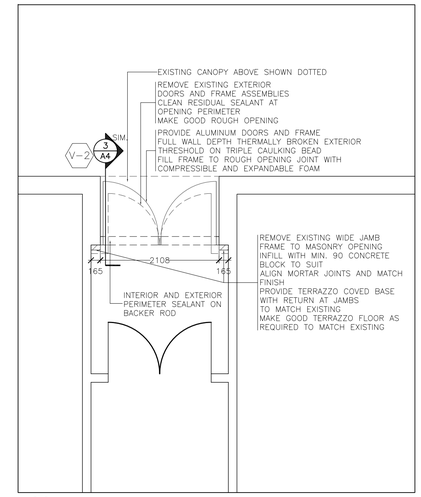
REMOVE EXISTING DOOR AND FRAME ASSEMBLY AND TRIM TO MASONRY OPENING
CLEAN MASONRY OPENINGS OF RESIDUAL SEALANT
FILL OPENING WITH MASONRY TO MATCH EXISTING ADJACENT WALL ASSEMBLY
MAKE GOOD
PAINT ENTIRE WALL PLANE ON INTERIOR WALL(S)




2 A1 ENLARGED STAFF ROOM 20 PLAN — 1:50




3 – ENLARGED DOOR V-1 PLAN — 1:50




4 – ENLARGED DOOR V-2 PLAN — 1:50

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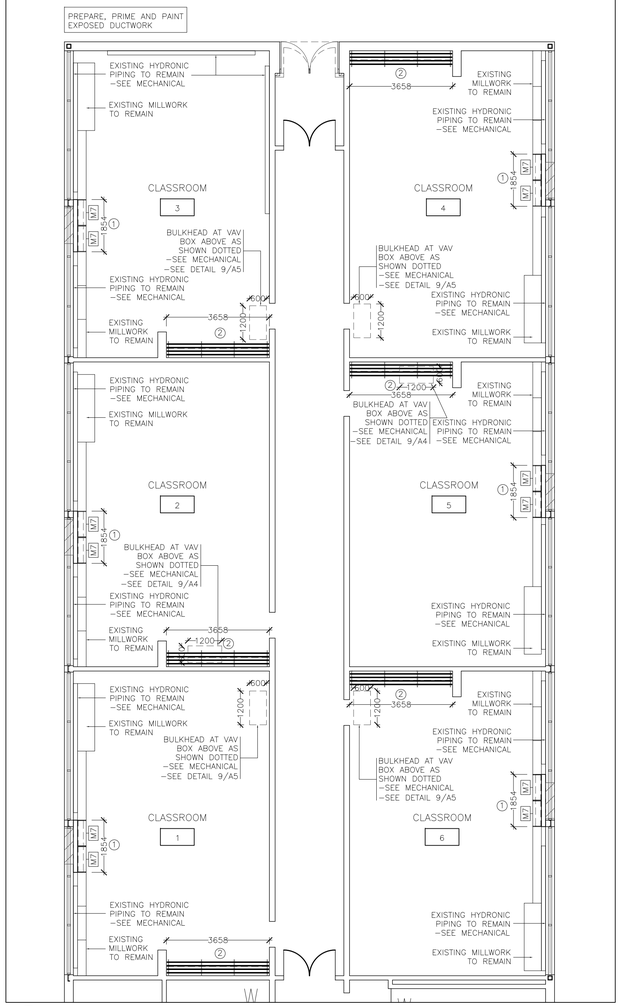
Consultant:

Title:

ENLARGED PLANS

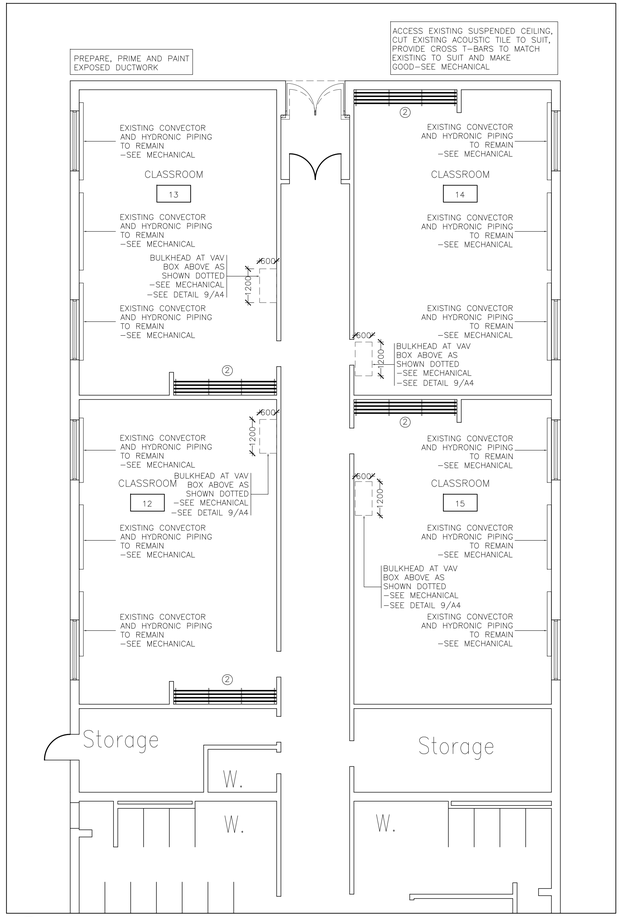
| | |
|---|---|
| Drawn by: M.L. | Date: DECEMBER 2021 |
| Checked by: W.L. | Plotted: |
| Scale: 1:50 | Issued: |
| Job No.: 21153 | Drawing No.: A2 |
| Set No.: | of: |



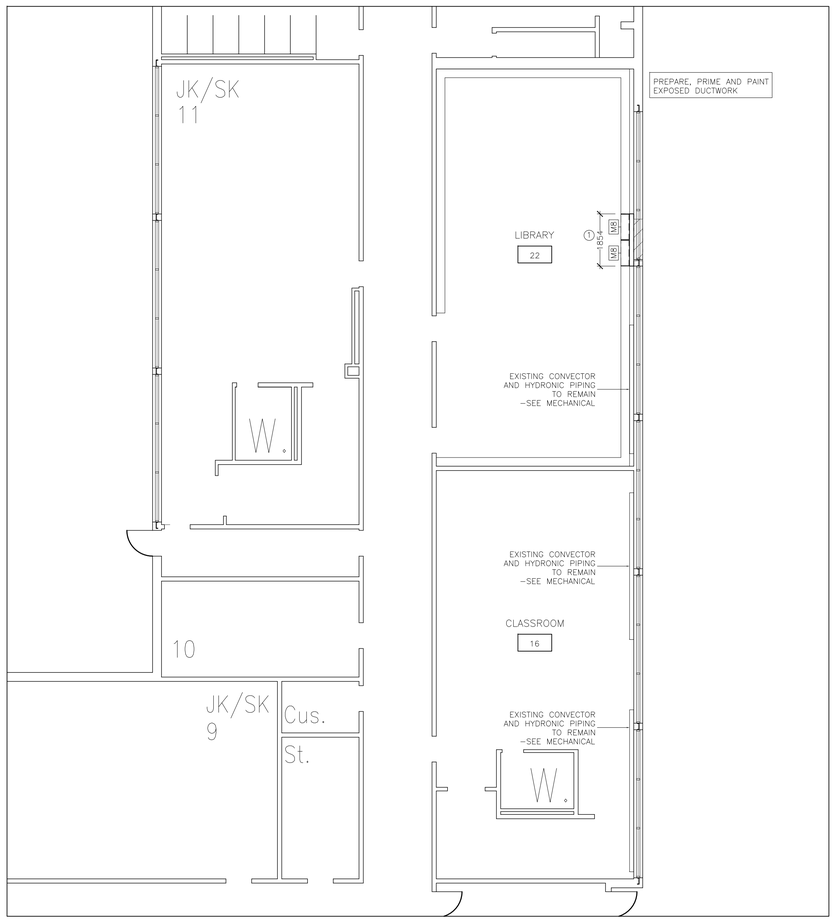

1 A1 ENLARGED CLASSROOM 1–6 PLAN 1:100

NOTE ① :
REMOVE EXISTING UNIT VENTILATOR ASSEMBLY –SEE MECHANICAL
STRIP WALL TO EXISTING CONCRETE BLOCK SUBSTRATE
CLEAN, AND PREPARE SUBSTRATE
PROVIDE BLOCK FILLER
REMOVE EXISTING LOUVRE
INFILL OPENING TO MATCH EXISTING WALL ASSEMBLY
PROVIDE RADIATOR–SEE MECHANICAL
PROVIDE MILLWORK TO SUIT
MAKE GOOD

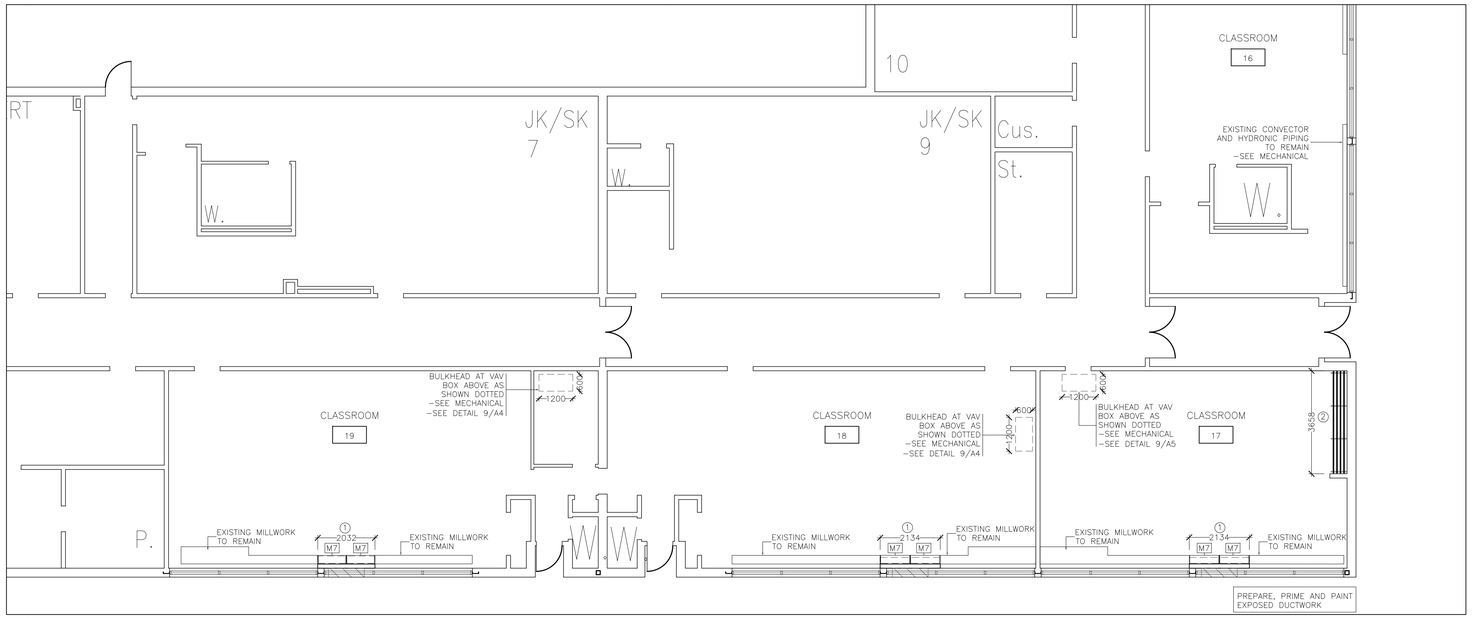
NOTE ② :
REMOVE EXISTING SHELF AND BREAKAWAY HOOKS
PROVIDE COAT RACK SYSTEM WITH BREAKAWAY HOOKS
MATCH EXISTING SHELF LENGTH




2 A1 ENLARGED CLASSROOM 12–15 PLAN 1:100




3 A1 ENLARGED LIBRARY 22 AND CLASSROOM 16 PLAN 1:100




4 A1 ENLARGED CLASSROOM 17–19 PLAN 1:100

Revisions

| Ref. | No. | Description | Date | Initial |
|---|---|---|---|---|
| △ | | CONSULTANTS COORDINATION | 2022/04/19 | |
| △ | | PRE–TENDER SUBMISSION | 2022/04/27 | |
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Project:

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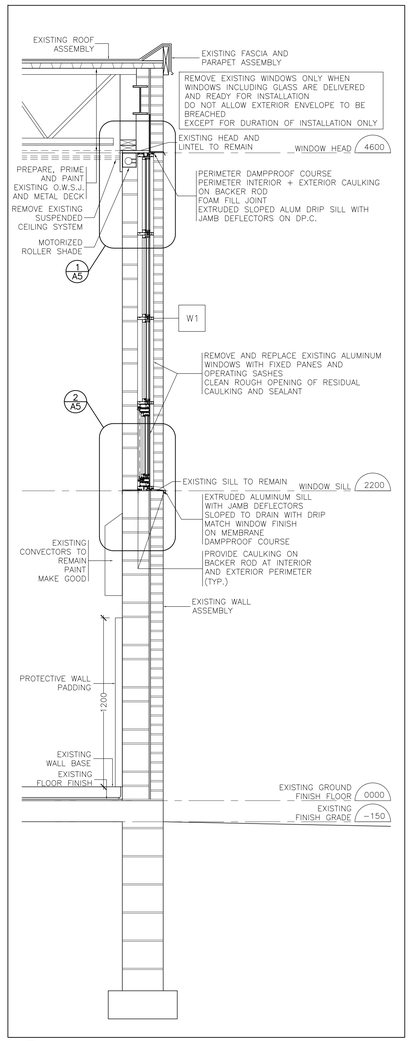
WILLIAM K. LIM
LICENCE 3660

Consultant:

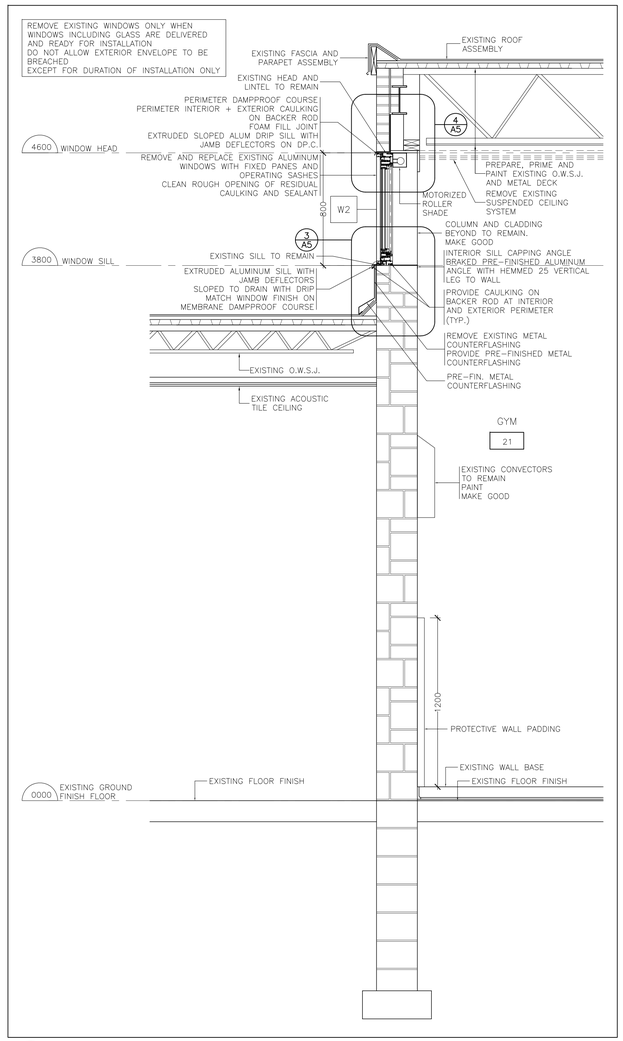
Title:

ENLARGED PLANS

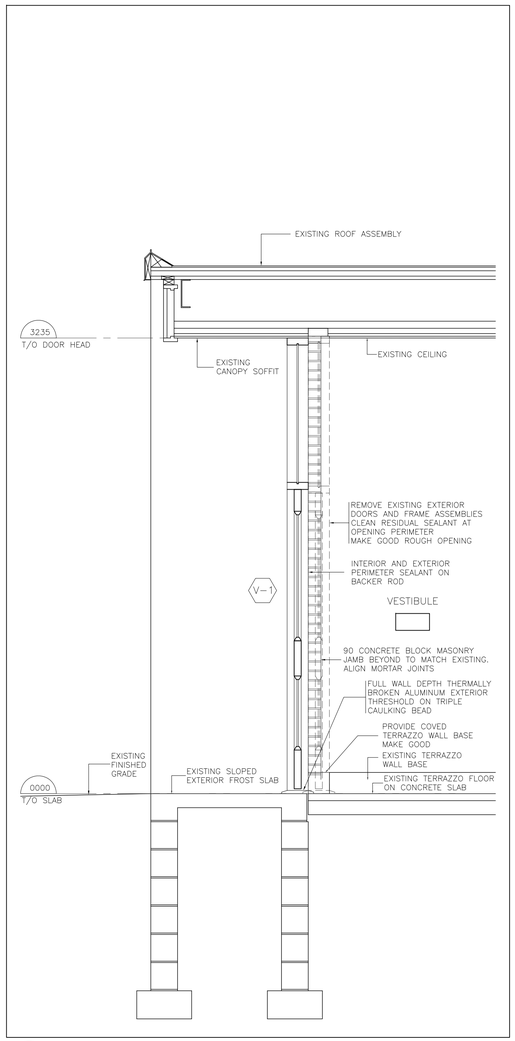
| Drawn by: | Date: |
|---|---|
| M.L. | DECEMBER 2021 |
| Checked by: | Plotted: |
| W.L. | |
| Scale: | Issued: |
| 1:100 | |
| Job No.: | Drawing No.: |
| 21153 | A3 |
| Set No.: | of: |



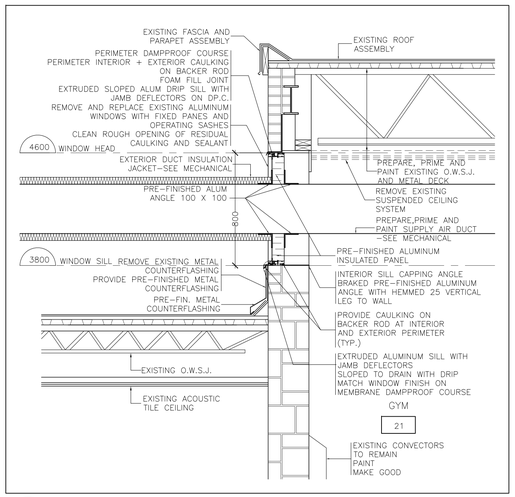

1 A2 TYPICAL WINDOW W1 SECTION 1:20



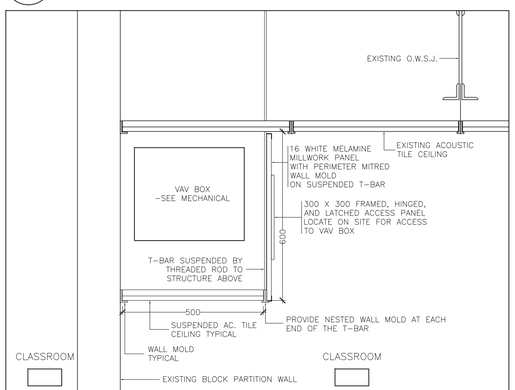

2 A2 TYPICAL WINDOW W2 SECTION 1:20



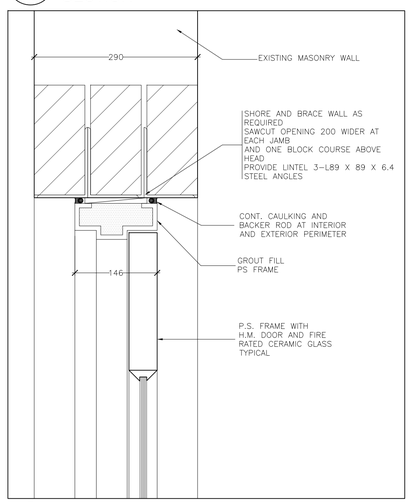

3 A2 DOOR V-1 SECTION 1:20



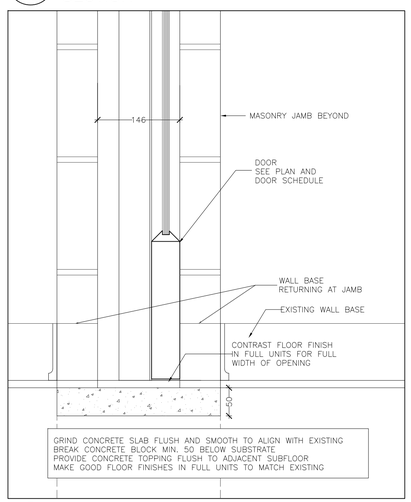

8 A2 SUPPLY AIR DUCT AT GYM HIGH WINDOW SECTION 1:20



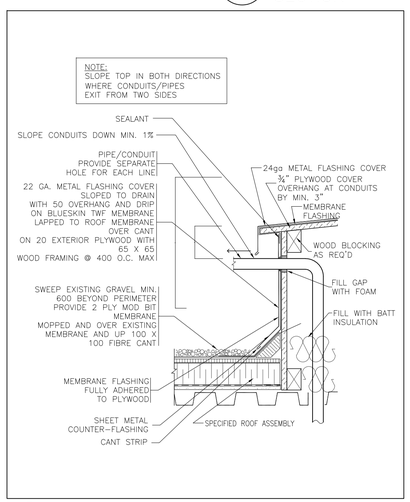

9 A2 BULKHEAD AT VAV BOX BETWEEN CLASSROOMS SECTION 1:10



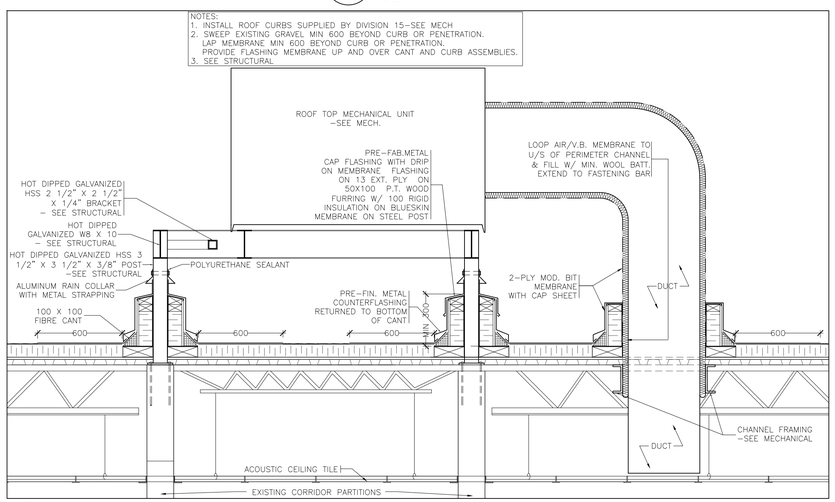

4 – MASONRY OPENING DOOR THRESHOLD SECTION 1:5




5 – MASONRY OPENING DOOR THRESHOLD SECTION 1:5




6 – DOG HOUSE DETAIL 1:10




7 – MECHANICAL UNIT ROOF PENETRATION DETAIL 1:20

Revisions

| Ref. | No. | Description | Date | Initial |
|---|---|---|---|---|
| △ | | CLIENTS REVIEW | 2022/02/18 | |
| △ | | CONSULTANTS COORDINATION | 2022/02/24 | |
| △ | | CONSULTANTS COORDINATION | 2022/04/14 | |
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ONTARIO ASSOCIATION OF ARCHITECTS
MICHAEL K. LIM
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Consultant:

Title:

SECTIONS AND DETAILS

| Drawn by: | Date: |
|---|---|
| M.L. | DECEMBER 2021 |
| Checked by: W.L. | Plotted: |
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| Job No.: 21153 | Drawing No.: A4 |
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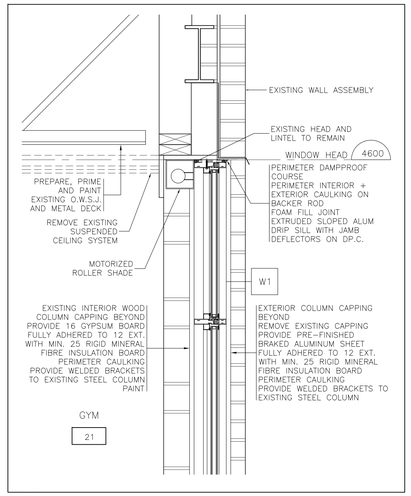
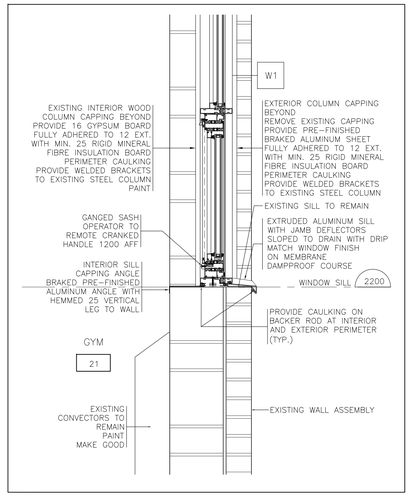
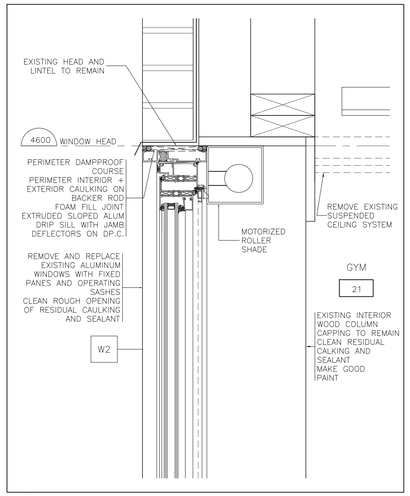


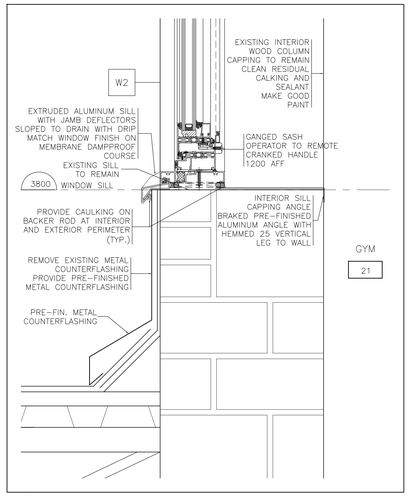

1 / A4 WINDOW HEAD AT TYPICAL WINDOW W1 DETAIL 1:10



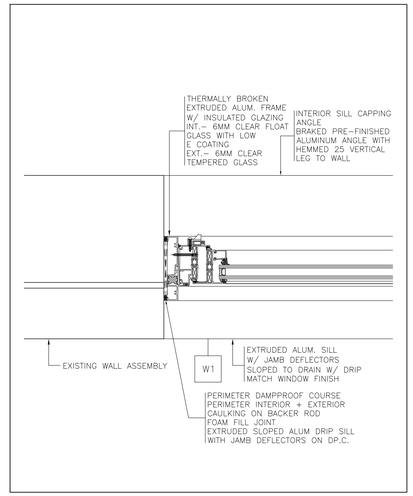

1 / A4 WINDOW SILL AT TYPICAL WINDOW W1 DETAIL 1:10




3 / A4 WINDOW HEAD AT TYPICAL WINDOW W2 DETAIL 1:5




4 / A4 WINDOW SILL AT TYPICAL WINDOW W2 DETAIL 1:5




5 / A2 WINDOW JAMB AT TYPICAL WINDOW W1 PLAN 1:5




6 / A2 WINDOW JAMB AT TYPICAL WINDOW W2 PLAN 1:5




7 / A2 WINDOW W1 JAMB AT EXISTING COLUMN PLAN 1:5




8 / A2 WINDOW W2 JAMB AT EXISTING COLUMN PLAN 1:5




9 / A2 BULKHEAD AT VAV BOX AT CORRIDOR WALL SECTION 1:10

Revisions

| Ref. | No. | Description | Date | Initial |
|---|---|---|---|---|
| △ | | PRE–TENDER SUBMISSION | 2022/04/27 | |
| △ | | ISSUED FOR PERMIT AND TENDER | 2022/05/02 | |

Project:

GLADYS SPEERS PS
RENOVATIONS
2150 SAMWAY RD, OAKVILLE, ON L6L 2P6


liu lim Architects inc.

Unit 100 – 706 Euclid Avenue
Toronto, Ontario, Canada M6G 2T9
Tel:(416)591–6575 Fax:(416)591–1010

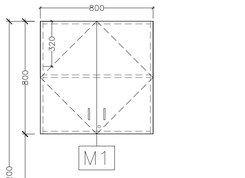

ONTARIO ASSOCIATION OF ARCHITECTS
W.K. LIM
LICENCE
3660

Consultant:

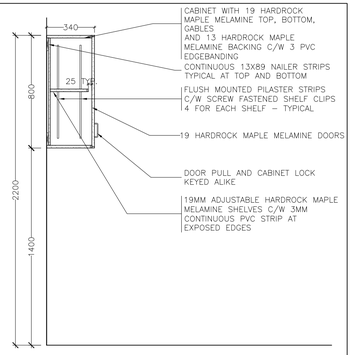
Title:

SECTIONS AND DETAILS

| Drawn by: | Date: |
|---|---|
| M.L. | DECEMBER 2021 |
| Checked by: W.L. | Plotted: |
| Scale: AS SHOWN | Issued: |
| Job No.: 21153 | Drawing No.: A5 |
| Set No.: | of: |

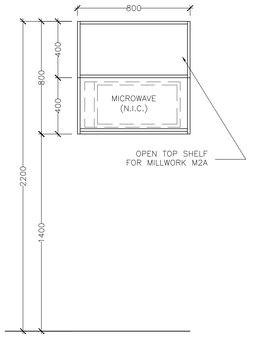



A — MILLWORK M1 ELEVATION 1:20

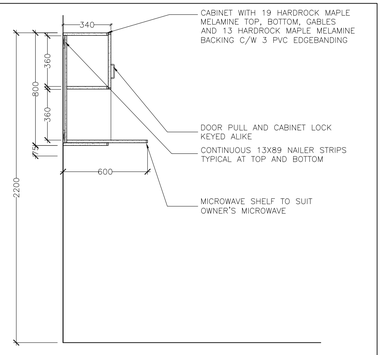



B — MILLWORK M1 SECTION 1:20

1 / A2 MILLWORK M1 DETAILS 1:20

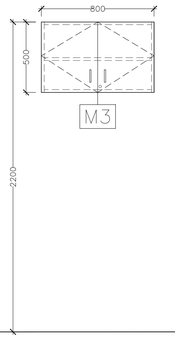



A — MILLWORK M2 ELEVATION 1:20

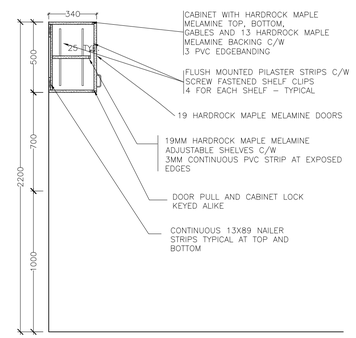



B — MILLWORK M2 SECTION 1:20

2 / A2 MILLWORK M2 DETAILS 1:20

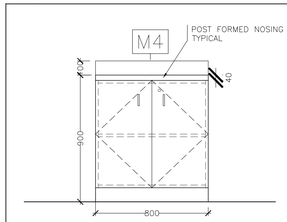



A — MILLWORK M3 ELEVATION 1:20

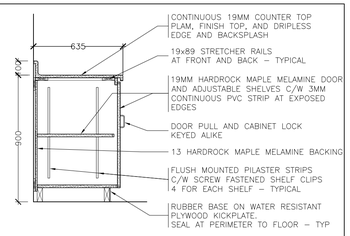



B — MILLWORK M3 SECTION 1:20

3 / A10 MILLWORK M3 DETAILS 1:20

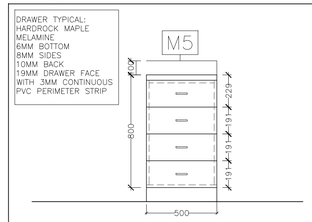



A — MILLWORK M4 ELEVATION 1:20

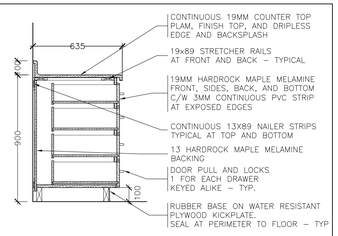



B — MILLWORK M4 SECTION 1:20

4 / A2 MILLWORK M4 DETAILS 1:20

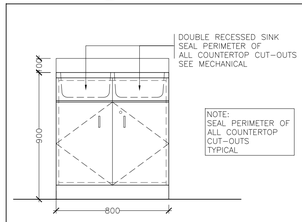



A — MILLWORK M5 ELEVATION 1:20

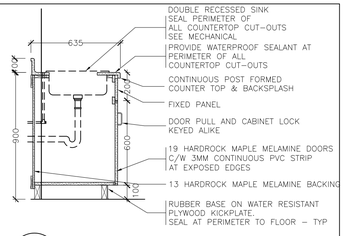



B — MILLWORK M5 SECTION 1:20

5 / A2 MILLWORK M5 DETAILS 1:20

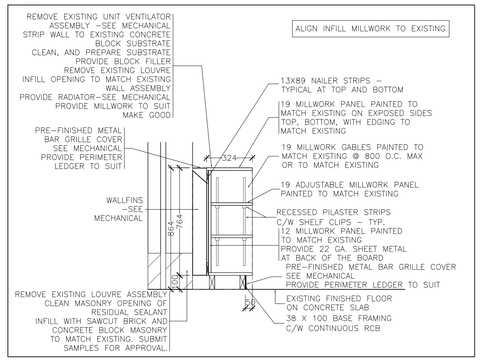



A — MILLWORK M6 ELEVATION 1:20

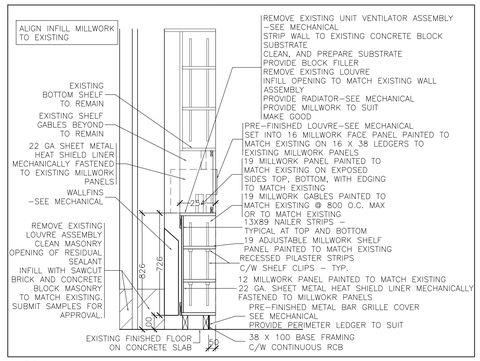



B — MILLWORK M6 SECTION 1:20

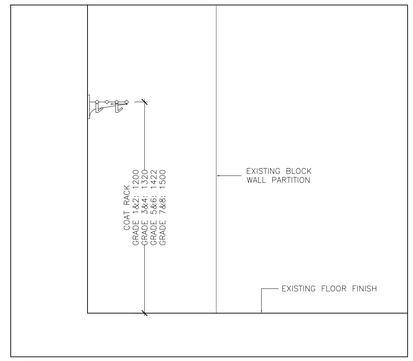
6 / A2 MILLWORK M6 DETAILS 1:20




7 / A2 M7 SHELVES SECTION 1:20

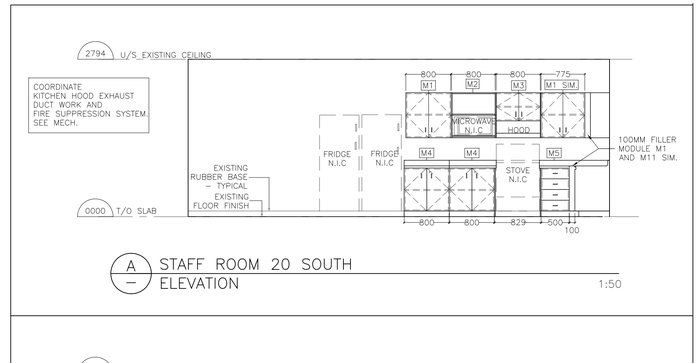



8 / A2 M8 SHELVES SECTION 1:20

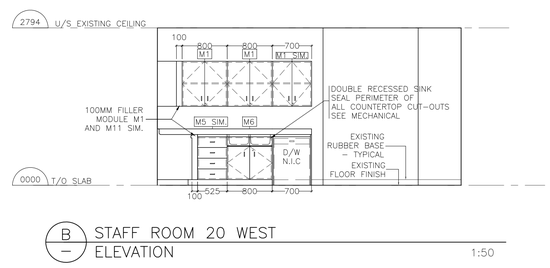



9 / A3 COAT RACK ELEVATION 1:20

NOTE:
CAULK ALL JOINTS OF MILLWORK TO FLOOR.
PROVIDE RUBBER BASE AT ALL MILLWORK KICKS AND GABLES ADJACENT TO FLOOR.




A — STAFF ROOM 20 SOUTH ELEVATION 1:50




B — STAFF ROOM 20 WEST ELEVATION 1:50

10 / A2 STAFF ROOM 20 INTERIOR ELEVATIONS 1:50

Revisions

| Ref. | No. | Description | Date | Initial |
|---|---|---|---|---|
| △ | | CLIENTS REVIEW | 2022/02/18 | |
| △ | | CONSULTANTS COORDINATION | 2022/02/24 | |
| △ | | CONSULTANTS COORDINATION | 2022/04/14 | |
| △ | | CONSULTANTS COORDINATION | 2022/04/19 | |
| △ | | PRE–TENDER SUBMISSION | 2022/04/27 | |
| △ | | ISSUED FOR PERMIT AND TENDER | 2022/05/02 | |

Project:

GLADYS SPEERS PS RENOVATIONS
2150 SAMWAY RD, OAKVILLE, ON L6L 2P6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ONTARIO ASSOCIATION OF ARCHITECTS
LICENCE 3660
W.K. LIM


Consultant:

Title:

MILLWORK DETAILS AND INTERIOR ELEVATIONS

| Drawn by: | Date: |
|---|---|
| M.L. | DECEMBER 2021 |
| Checked by: W.L. | Plotted: |
| Scale: AS SHOWN | Issued: |
| Job No.: 21153 | Drawing No.: A6 |
| Set No.: | of: |

**GENERAL NOTES**

1. THE NEW RTU SUPPORT FRAMING AND EXISTING ROOF FRAMING HAS BEEN DESIGNED AND REVIEWED IN ACCORDANCE WITH THE ONTARIO BUILDING CODE 2012. AMENDED BY RESOLUTION 88/19, EFFECTIVE JANUARY 1, 2020.
2. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS WITH THE SITE CONDITIONS AND THE LATEST ISSUE OF ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS. REPORT ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
3. READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.
4. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION OF OPENINGS, EQUIPMENT BASES, SUMP PITS, AND TRENCHES NOT INDICATED ON STRUCTURAL DRAWINGS.
5. SEE DRAWINGS FOR DESIGN LOADS. DO NOT EXCEED DURING CONSTRUCTION.
6. ALL REFERENCES TO CODES & STANDARDS ARE TO THE LATEST ISSUE.

**SITE INSPECTION REPORTS & TESTING**

1. THE ONTARIO BUILDING CODE 2012 SPECIFIES THAT GENERAL FIELD REVIEWS OF THE BUILDING BE CARRIED OUT DURING THE COURSE OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE START OF CONSTRUCTION TO FACILITATE SUCH REVIEWS BY THE STRUCTURAL ENGINEER.

**SHOP DRAWINGS**

1. THE CONTRACTOR SHALL FURNISH SHOP DRAWINGS TO THE STRUCTURAL ENGINEER, A MINIMUM OF ONE REPRODUCIBLE AND TWO PRINTS STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO.
   A) STRUCTURAL STEEL ERECTION DRAWINGS.
   B) STEEL MOMENT CONNECTIONS.

**STRUCTURAL METAL**

1. CONFORM TO CSA STANDARD CAN/CSA S16 LIMIT STATES DESIGN OF STEEL STRUCTURES.
2. CONFORM TO CSA STANDARD W55.3, RESISTANCE WELDING QUALIFICATIONS CODE FOR FABRICATORS OF STRUCTURAL MEMBERS USED IN BUILDINGS.
3. CONFORM TO CSA STANDARD W59, WELDED STEEL CONSTRUCTION (METAL ARC WELDING).
4. WELDING ELECTRODES – CSA STANDARD W48, FILLER METALS AND ALLIED MATERIALS FOR METAL ARC WELDING.
5. STRUCTURAL STEEL – CSA STANDARD G40.20/G40.21, GENERAL REQUIREMENTS FOR ROLLED OR WELDED STRUCTURAL QUALITY STEEL/STRUCTURAL QUALITY STEELS. GRADE 350W FOR GENERAL PURPOSE STRUCTURAL STEEL SHAPES, 300W FOR ANGLES, CHANNELS, RODS AND PLATES. HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO CSA STANDARD G40.20 GRADE 350W, HOT FORM WELDED OR HOLLOW STRUCTURAL SECTION, CLASS H.
6. HIGH STRENGTH BOLTS, NUTS AND WASHERS A.S.T.M. STANDARD A325, STANDARD SPECIFICATION FOR STRUCTURAL BOLTS, STEEL, HEAT TREATED 120/105 ksi MINIMUM TENSILE STRENGTH OR A325M, STANDARD SPECIFICATION FOR HIGH STRENGTH BOLTS FOR STRUCTURAL STEEL JOINTS (METRIC).
7. ANCHOR RODS – A.S.T.M. F1554 GRADE 36
8. PRIMER:
   A) HOT DIPPED GALVANIZED AS PER CAN/CSA–G164 HOT DIP GALVANIZING OF IRREGULARLY SHAPED ARTICLES.

**DESIGN LOADS**

BUILDING IMPORTANCE: HIGH

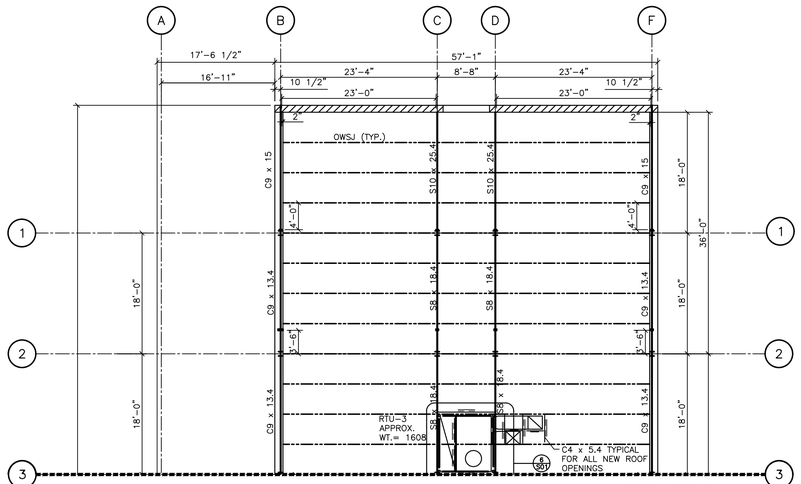
**ROOF**

SNOW LOAD: 30.71 PSF

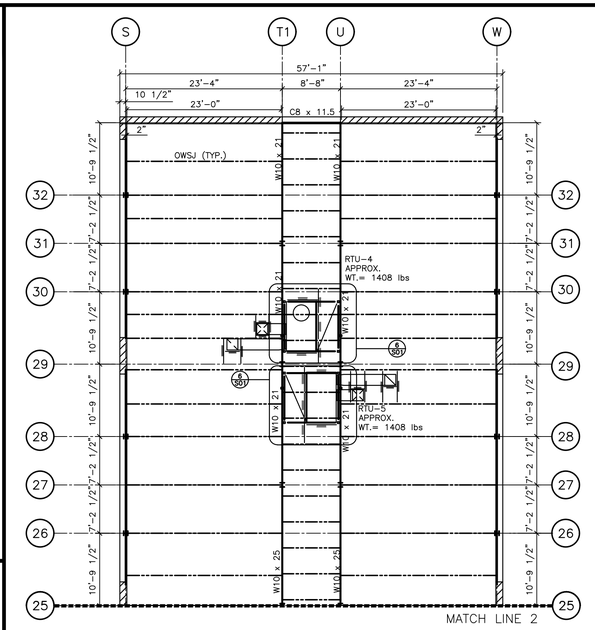
DEAD LOAD: 22.0 PSF

**WIND LOAD**

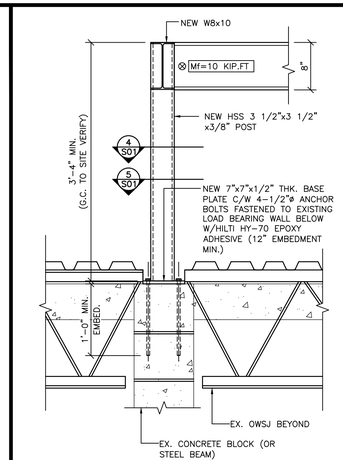
q 1/50= 9.82 PSF



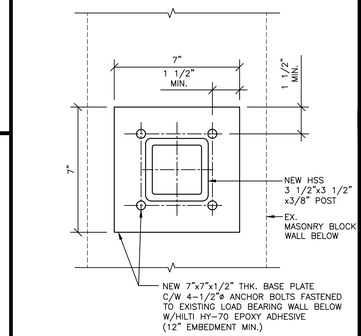

1 S01 MAIN ROOF FRAMING PLAN
SCALE 3/32" = 1'–0"



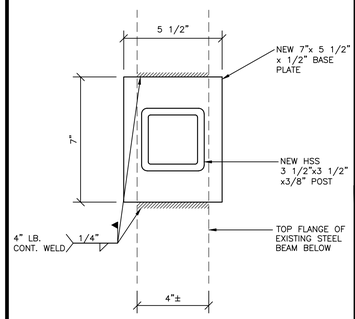

2 S01 MAIN ROOF FRAMING PLAN
SCALE 3/32" = 1'–0"



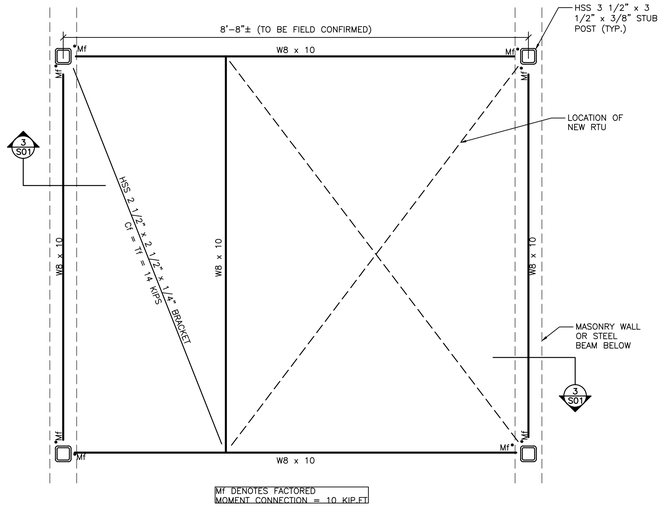

3 S01 TYPICAL CONNECTION DETAIL NEW POST TO EX. MASONRY BLOCK WALL (OR STEEL BEAM) CONNECTION
SCALE 1" = 1'–0"




4 S01 TYPICAL BASE PLATE DETAIL (AT MASONRY BLOCK WALL)
SCALE 3" = 1'–0"




5 S01 TYPICAL BASE PLATE DETAIL (AT EXISTING STEEL BEAM LOCATIONS)
SCALE 3" = 1'–0"




6 S01 TYPICAL NEW RTU SUPPORT FRAMING PLAN
SCALE 3/4" = 1'–0"

**Revisions**

| NO. | DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**Issue Table**

| ISSUE DESCRIPTION | DATE |
|---|---|
| ISSUED FOR CLIENT REVIEW | 04/18/22 |
| ISSUED FOR TENDER | 04/26/22 |
| | |
| | |
| | |
| | |

CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE COMMENCING WORK.

DRAWINGS ARE NOT TO BE SCALED.



SEAL:

**IRC Building Sciences Group**
*A Rimkus Company*
2121 ARGENTIA ROAD, 4TH FLOOR
MISSISSAUGA, ONTARIO, L5N 2X4
TEL:905.607.7244, FAX:905.607.7288
1.888.607.5245 WWW.IRCGROUP.COM

PROJECT:

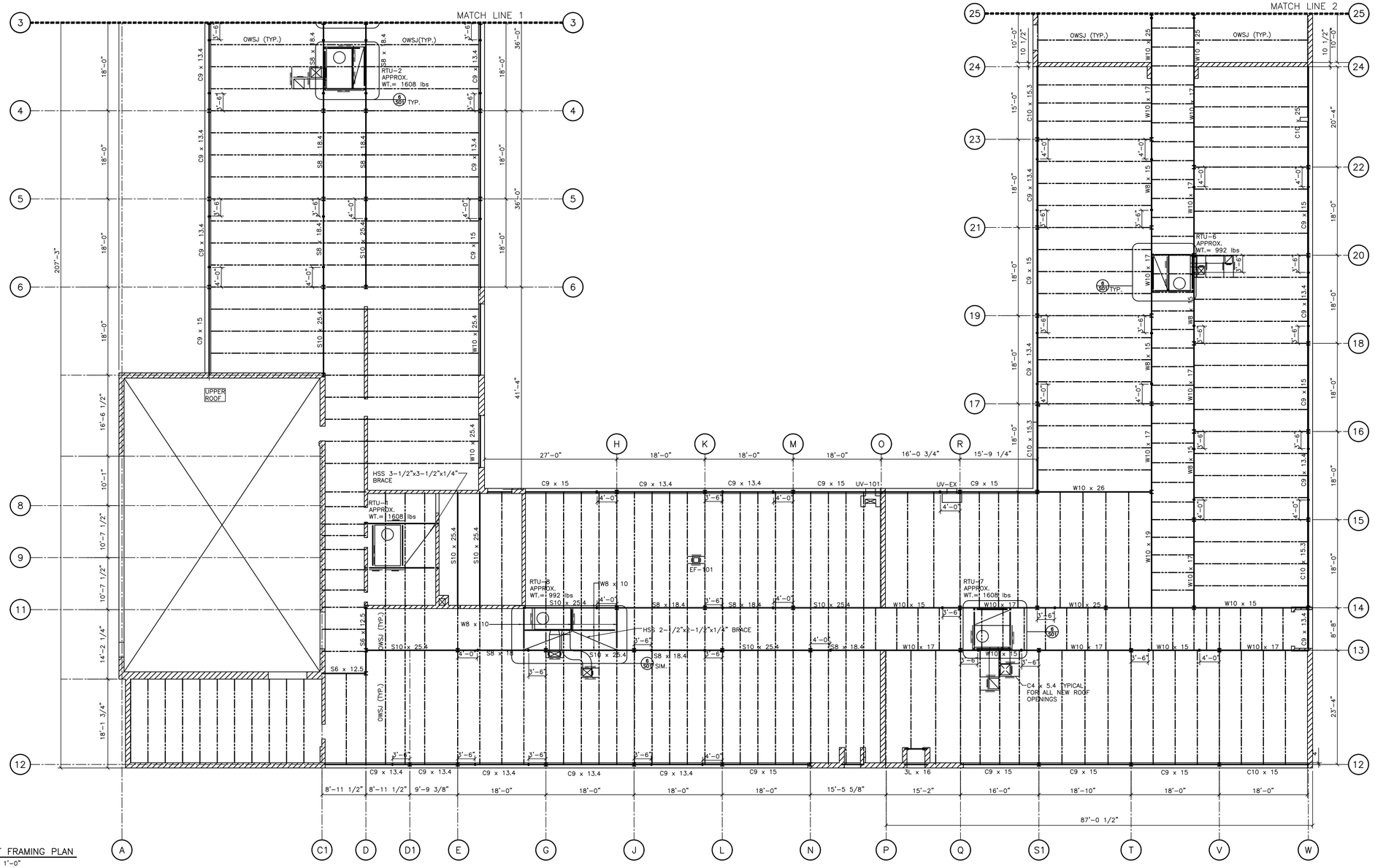
GLADYS SPEERS PUBLIC SCHOOL HVAC UPGRADES

2150 SAMWAY ROAD
OAKVILLE, ON

DESCRIPTION:

NOTES, PARTIAL PLAN, SECTIONS AND DETAILS

| | | | |
|---|---|---|---|
| WORK NO.: | 100156847 | CADD NO.: | DS001 |
| DESIGNED BY: | G.T. | DRAWN BY: | A.T. |
| SCALE: | AS NOTED | DRAWING NO.: | S01 |
| DATE: | 04/18/22 | | |




1 S02 MAIN ROOF FRAMING PLAN
SCALE 3/32" = 1'-0"

## Revisions

| NO. | DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

## Issue Table

| ISSUE DESCRIPTION | DATE |
|---|---|
| ISSUED FOR CLIENT REVIEW | 04/18/22 |
| ISSUED FOR TENDER | 04/26/22 |
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1.888.607.5245 WWW.IRCGROUP.COM

PROJECT:

GLADYS SPEERS PUBLIC SCHOOL HVAC UPGRADES

2150 SAMWAY ROAD
OAKVILLE, ON

DESCRIPTION:

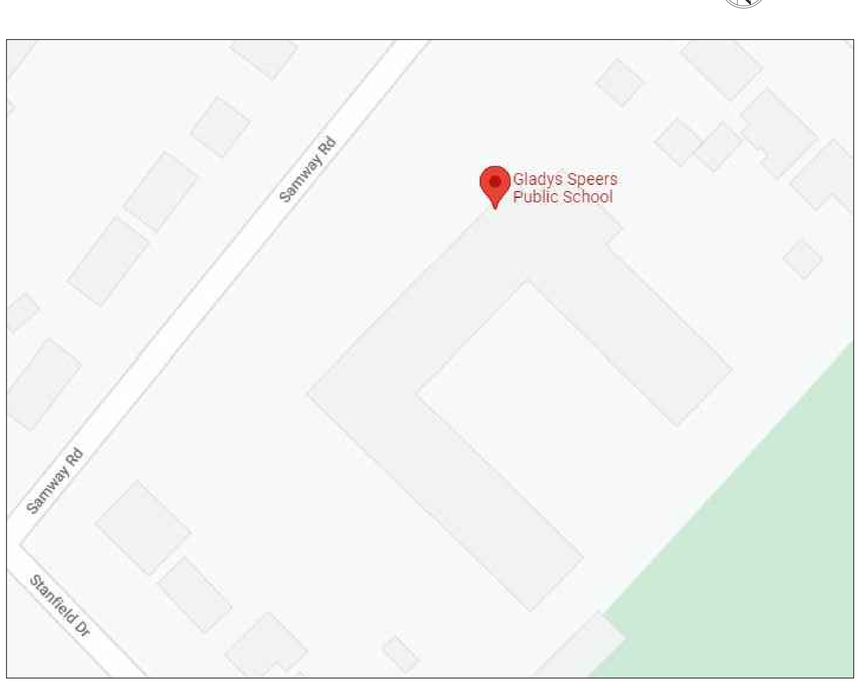
MAIN ROOF FRAMING PLAN

| | | | |
|---|---|---|---|
| WORK NO.: | 100156847 | CADD NO.: | DS002 |
| DESIGNED BY: | G.T. | DRAWN BY: | A.T. |
| SCALE: | AS NOTED | DRAWING NO.: | S02 |
| DATE: | 04/18/22 | | |

# HDSB
# GLADYS SPEERS PUBLIC SCHOOL
## RENOVATIONS

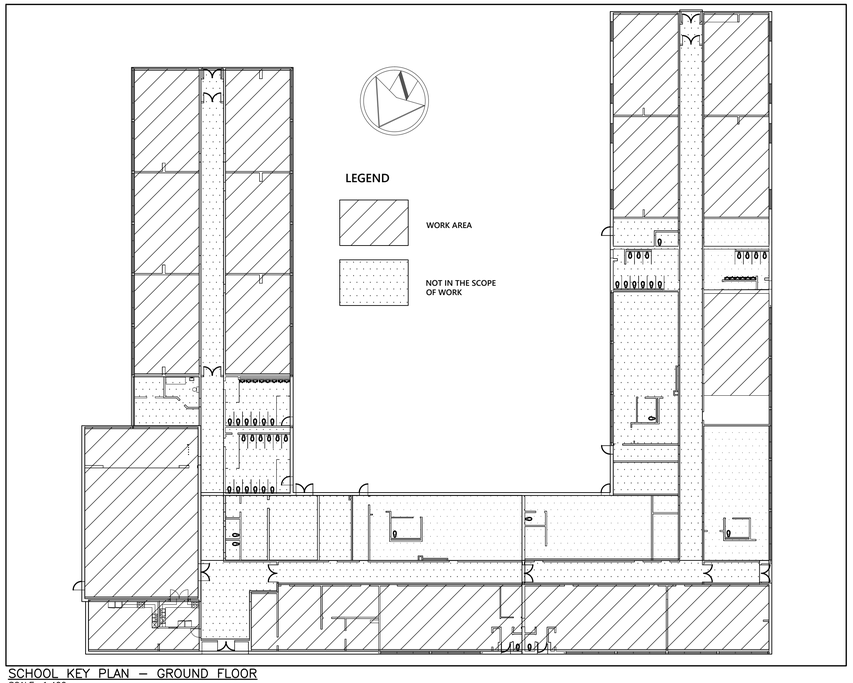
2150 SAMWAY RD.
OAKVILLE ON. L6L 2P6

ISSUED FOR TENDER
APRIL 2022

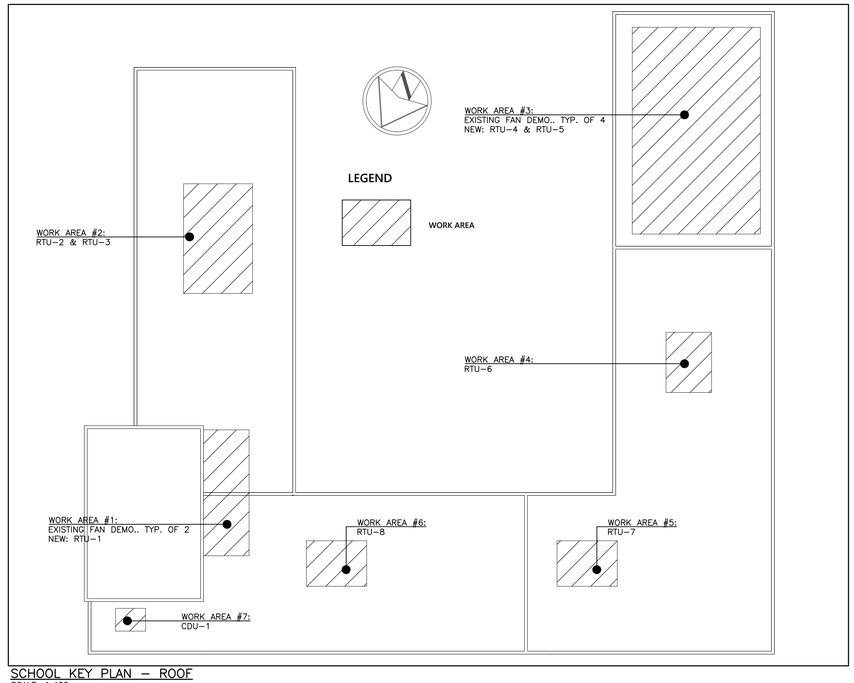



| NO. | DRAWING LIST |
|---|---|
| M–1.1 | SYMBOL LIST, EQUIPMENT SCHEDULES, KEY PLANS & NOTES – MECHANICAL |
| M–1.2 | PLUMBING FIXTURE SERVICES SCHEDULE & DETAILS – MECHANICAL |
| M–2.1 | PART OF GROUND FLOOR (NORTH) – EXISTING & DEMOLITION WORK – MECHANICAL |
| M–2.2 | PART OF GROUND FLOOR (SOUTH) – EXISTING & DEMOLITION WORK – MECHANICAL |
| M–2.3 | ROOF – EQUIPMENT & GAS PIPING LAYOUT – EXISTING & DEMOLITION WORK – MECHANICAL |
| M–3.1 | PART OF GROUND FLOOR (NORTH) – EXISTING & NEW WORK – MECHANICAL |
| M–3.2 | PART OF GROUND FLOOR (SOUTH) – EXISTING & NEW WORK – MECHANICAL |
| M–3.3 | ROOF – EQUIPMENT, DUCTWORK & GAS PIPING LAYOUT – EXISTING & NEW WORK – MECHANICAL |
| M–4.1 | CONTROL SCHEMATICS – MECHANICAL |
| M–4.2 | GAS PIPING SCHEMATIC – EXISTING, DEMOLITION & NEW WORK – MECHANICAL |
| E–1.1 | KEY PLANS, SYMBOL LIST, NOTES & EQUIPMENT WIRING – ELECTRICAL |
| E–2.1 | GROUND FLOOR – EQUIPMENT & LIGHTING LAYOUT – EXISTING & DEMOLITION WORK – ELECTRICAL |
| E–2.2 | ROOF – EQUIPMENT LAYOUT – EXISTING & DEMOLITION WORK – ELECTRICAL |
| E–3.1 | GROUND FLOOR – EQUIPMENT & LIGHTING LAYOUT – NEW WORK – ELELCTRICAL |
| E–3.2 | ROOF – EQUIPMENT LAYOUT – NEW WORK – ELELCTRICAL |
| E–200 | ELECTRICAL SERVICES SITE PLAN – ELECTRICAL |
| E–201 | ELECTRICAL SERVICES DETAILS – ELECTRICAL |
| E–300 | ELECTRICAL SERVICES FLOOR PLAN & SINGLE LINE DIAGRAM – ELECTRICAL |

SAB ENGINEERING Inc.




SCHOOL KEY PLAN – GROUND FLOOR
SCALE: 1:400




SCHOOL KEY PLAN – ROOF
SCALE: 1:400

## SYMBOLS LIST

| SYMBOL | DESCRIPTION |
|---|---|
| 300x150 | SHEET METAL DUCT – FIRST FIGURE INDICATES DIMENSION SHOWN |
| | SHEET METAL RISER UP – SUPPLY |
| | SHEET METAL RISER UP – RETURN AND EXHAUST |
| | SHEET METAL RISER DOWN – SUPPLY |
| | SHEET METAL RISER DOWN – RETURN AND EXHAUST |
| F/D | FUSIBLE LINK FIRE DAMPER WITH ACCESS DOOR IN DUCT |
| MD | MOTORIZED DAMPER |
| VD | VOLUME DAMPER |
| | SUPPLY AIR GRILLE |
| | EXHAUST OR RECIRC. GRILLE |
| | FLEXIBLE CONNECTION |
| O.E.D. | OPEN ENDED DUCT WITH BALANCING DAMPER AND BELLMOUTH INLET |
| A.D. | ACCESS DOOR |
| UH | UNIT HEATER |
| T | ROOM THERMOSTAT |
| | UNION |
| AV | MANUAL AIR VENT |
| | AUTOMATIC CONTROL VALVE – TWO WAY |
| | MIXING OR DIVERTER VALVE (3–WAY) |
| | VALVE |
| | BALANCING VALVE |
| | CHECK VALVE |
| | STRAINER – OVER 50mm PROVIDE WITH VALVED FLUSHING DRAIN |
| | PIPE TURNING DOWN |
| | PIPE TURNING UP |
| | PIPE REDUCER |
| | PLUMBING TRAP |
| TG | THERMOMETER |
| PG | PRESSURE GUAGE |
| S | SMOKE SENSOR |
| FD | FLOOR DRAIN |
| FFD | FUNNEL FLOOR DRAIN |
| RD | ROOF DRAIN |
| RWL | RAIN WATER LEADER |
| HB | HOSE BIBB |
| VTR | VENT THROUGH ROOF |
| HWS | HEATING WATER SUPPLY |
| HWR | HEATING WATER RETURN |
| | DOMESTIC COLD WATER PIPE |
| | DOMESTIC HOT WATER PIPE |
| CTE | CONNECT TO EXISTING |
| CUT | CUT POINT OF EXISTING SERVICE |
| C/W | COMPLETE WITH |
| EF | EXHAUST FAN |
| EX | EXISTING TO REMAIN |
| RL | TO BE RELOCATED |
| VFD | VARIABLE FREQUENCY DRIVE |
| | PERIMETER CONVECTOR |
| RAD–1 \| 2,200 2,000 W | PERIMETER CONVECTOR TYPE CV–1, FINNED ELEMENT LENGTH 2,200 MM, HEATING OUTPUT 2,000 W. |
| S/A, R/A O/A, E/A | DENOTES: SUPPLY AIR, RETURN AIR, OUTSIDE AIR, EXHAUST AIR |

## SCHEDULE OF ROOFTOP UNIT

| TAG | SUPPLY AIR FLOW CFM | SUPPLY E.S.P. Pa [in. wg] | SUPPLY FAN HP | HEATING CAPACITY INPUT kW [MBH] | HEATING CAPACITY OUTPUT kW [MBH] | MIN. OUTDOOR AIR (CFM) | DX COOLING PERFORMANCE TOTAL CAP. kW [MBH] | DX COOLING PERFORMANCE SENS. CAP. kW [MBH] | DX COOLING PERFORMANCE TEMP °C [°F] EDBT/EWBT | DX COOLING PERFORMANCE TEMP °C [°F] LDBT/LWBT | UNIT POWER VOLTAGE | UNIT POWER AMPS (MCA) | UNIT POWER MOCP (A) | UNIT WEIGHT KG [LBS] | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RTU–1 | 4,000 | 249 [1.0] | 2.75 | 73.3 [250] | 58.6 [200] | 1,500 | 33.4 [114] | 27.5 [94] | 26.7/19.4 [80/67] | 14.5/14.2 [58.2/57.6] | 208/3/60 | 48 | 60 | 730 [1,608] | |
| RTU–2 | 4,000 | 375 [1.5] | 2.75 | 73.3 [250] | 58.6 [200] | 1,500 | 33.4 [114] | 27.5 [94] | 26.7/19.4 [80/67] | 14.5/14.2 [58.2/57.6] | 208/3/60 | 48 | 60 | 730 [1,608] | |
| RTU–3 | 4,000 | 375 [1.5] | 2.75 | 73.3 [250] | 58.6 [200] | 1,500 | 33.4 [114] | 27.5 [94] | 26.7/19.4 [80/67] | 14.5/14.2 [58.2/57.6] | 208/3/60 | 48 | 60 | 730 [1,608] | |
| RTU–4 | 2,400 | 375 [1.5] | 2.75 | 44.0 [150] | 35.6 [122] | 1,000 | 21.6 [74] | 17.2 [59] | 26.7/19.4 [80/67] | 14.1/14.1 [57.3/57.1] | 208/3/60 | 37 | 50 | 639 [1,408] | |
| RTU–5 | 2,400 | 375 [1.5] | 2.75 | 44.0 [150] | 35.6 [122] | 1,000 | 21.6 [74] | 17.2 [59] | 26.7/19.4 [80/67] | 14.1/14.1 [57.3/57.1] | 208/3/60 | 37 | 50 | 639 [1,408] | |
| RTU–6 | 2,000 | 125 [0.5] | 1.00 | 38.1 [130] | 30.5 [104] | 550 | 17.8 [61] | 13.5 [46] | 26.7/19.4 [80/67] | 14.5/14.2 [58.2/57.6] | 208/3/60 | 30.0 | 45 | 450 [992] | |
| RTU–7 | 4,000 | 375 [1.5] | 2.75 | 73.3 [250] | 58.6 [200] | 1,500 | 33.4 [114] | 27.5 [94] | 26.7/19.4 [80/67] | 14.5/14.2 [58.2/57.6] | 208/3/60 | 48 | 60 | 730 [1,608] | |
| RTU–8 | 2,000 | 125 [0.5] | 1.00 | 38.1 [130] | 30.5 [104] | 150 | 17.8 [61] | 13.5 [46] | 26.7/19.4 [80/67] | 14.5/14.2 [58.2/57.6] | 208/3/60 | 30.0 | 45 | 450 [992] | |

NOTE: CLG: AIR EDBT/EWBT 78°F/66°F, LDBT/LWBT 55.9/55.2°F;

## SCHEDULE OF VAV COILS

| TAG | SERVING | MAX. AIR FLOW L/S (CFM) | MIN. AIR FLOW L/S (CFM) | MIN. PRES. DIFFERENT. (PA) | INLET SIZE DIA. (MM) | OUTLET SIZE (MM) | DIMENSIONS LxHxD MM[IN] | REMARKS |
|---|---|---|---|---|---|---|---|---|
| VAV–2–1 | CLASSROOM 01 | 567 (1,200) | 400 (850) | 2.5 | 250 | 350x300 | 390x340x305 [15.5x13.5x12] | C/W MINIMUM 900MM SOUND ATTENUATOR |
| VAV–2–2 | CLASSROOM 02 | 567 (1,200) | 400 (850) | 2.5 | 250 | 350x300 | 390x340x305 [15.5x13.5x12] | C/W MINIMUM 900MM SOUND ATTENUATOR |
| VAV–2–3 | CLASSROOM 03 | 755 (1,600) | 520 (1100) | 2.5 | 300 | 425x350 | 470x390x330 [18.5x15.5x13] | C/W MINIMUM 900MM SOUND ATTENUATOR |
| VAV–3–1 | CLASSROOM 04 | 755 (1,600) | 520 (1100) | 2.5 | 300 | 425x350 | 470x390x330 [18.5x15.5x13] | C/W MINIMUM 900MM SOUND ATTENUATOR |
| VAV–3–2 | CLASSROOM 05 | 567 (1,200) | 400 (850) | 2.5 | 250 | 350x300 | 390x340x305 [15.5x13.5x12] | C/W MINIMUM 900MM SOUND ATTENUATOR |
| VAV–3–3 | CLASSROOM 06 | 567 (1,200) | 400 (850) | 2.5 | 250 | 350x300 | 390x340x305 [15.5x13.5x12] | C/W MINIMUM 900MM SOUND ATTENUATOR |
| VAV–4–1 | CLASSROOM 13 | 567 (1,200) | 400 (850) | 2.5 | 250 | 350x300 | 390x340x305 [15.5x13.5x12] | C/W MINIMUM 900MM SOUND ATTENUATOR |
| VAV–4–2 | CLASSROOM 12 | 567 (1,200) | 400 (850) | 2.5 | 250 | 350x300 | 390x340x305 [15.5x13.5x12] | C/W MINIMUM 900MM SOUND ATTENUATOR |
| VAV–5–1 | CLASSROOM 14 | 567 (1,200) | 400 (850) | 2.5 | 250 | 350x300 | 390x340x305 [15.5x13.5x12] | C/W MINIMUM 900MM SOUND ATTENUATOR |
| VAV–5–2 | CLASSROOM 15 | 567 (1,200) | 400 (850) | 2.5 | 250 | 350x300 | 390x340x305 [15.5x13.5x12] | C/W MINIMUM 900MM SOUND ATTENUATOR |
| VAV–7–1 | CLASSROOM 17 | 567 (1,200) | 400 (850) | 2.5 | 250 | 350x300 | 390x340x305 [15.5x13.5x12] | C/W MINIMUM 900MM SOUND ATTENUATOR |
| VAV–7–2 | CLASSROOM 18 | 661 (1,400) | 450 (950) | 2.5 | 250 | 350x300 | 390x340x305 [15.5x13.5x12] | C/W MINIMUM 900MM SOUND ATTENUATOR |
| VAV–7–3 | CLASSROOM 19 | 661 (1,400) | 450 (950) | 2.5 | 250 | 350x300 | 390x340x305 [15.5x13.5x12] | C/W MINIMUM 900MM SOUND ATTENUATOR |

## SCHEDULE OF OUTDOOR CONDENSERS

| TAG | MANUFACTURER | MODEL | COOLING CAP. TONS [MBH] | REFRIGERANT | CONNECTION SIZES RL (MM/IN) | CONNECTION SIZES RG (MM/IN) | EQUIPMENT SIZE (HxLxW, MM) | POWER SUPPLY (V/PH/MCA) | MOCP | WEIGHT KG [LB] | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CU–1 | MITSUBISHI | MUY–GE24NA | 2.0 [24] | R410A | 9.5 [⅜] | 18/[⅝] | 875x840x330 | 230/1/60 | 20 | 54 [119] | C/W ECOFOOT SNOW STAND |
| NOTE: | | | | | | | | | | | |

## SCHEDULE OF INDOOR A/C UNITS

| TAG | TYPE | MANUFACTURER | MODEL | CLG. CAP. (TONS/KW) | AIR FLOW (CFM) | POWER SUPPLY (V/PH/Hz) | MCA (A) | MOCP (A) | WEIGHT KG [LB] | EQUIPMENT SIZE (HxLxW, MM) | REFRIG. PIPE (MM) LIQUID | REFRIG. PIPE (MM) GAS | DRAIN (MM) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AC–1 | WALL MOUNTED | MITSUBISHI | MSY–GE24NA | 2.0/7.3 | 388–738 | 230/1ø/60 | 1.0 | 20 | 16.8 [37] | 330x1,115x240 | 9.5 | 18 | 32 | COOLING ONLY; C/W CONDENSATE PUMP |
| NOTE: COMPLETE WITH WIRED MA REMOTE CONTROLLERS, AND BACNET ADAPTER OR CENTRAL CONTROLLER FOR BACNET INTERFACE WITH EXISTING BUILDING AUTOMATION SYSTEM | | | | | | | | | | | | | | |

## SCHEDULE OF GRILLES & DIFFUSERS

| TYPE | SERVICE | MANUFACTURER | MODEL | VOLUME CONTROL | FINISH | REMARKS |
|---|---|---|---|---|---|---|
| A | SUPPLY | E.H. PRICE | SDG | YES | B12 | SPIRAL DUCT GRILLES |
| B | RETURN | E.H. PRICE | 80ECRG | NO | B12 | EGG CRATE RETURN GRILLE |
| C | SUPPLY | E.H. PRICE | SCD | YES | B12 | SQUARE CONE DIFFUSER |
| D | SUPPLY | E.H. PRICE | RCD | NO | B12 | ROUND CONE DIFFUSER |
| E | RETURN | E.H. PRICE | 95 | NO | B12 | LOUVERED RETURN GRILLE |

## SCHEDULE OF CONVECTOR

| TAG | MANUFACTURER | MODEL | HEATING OUTPUT (BTU/FT) | HEATING AGENT SUPPLY (°F) | HEATING AGENT RETURN (°F) | TUBE DIAM (IN) | FIN SIZE (IN) | FIN SPACING (FINS/FT) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| RAD–1 | ENGINEERED AIR | 3 ROWS (12" CENTERS) | 3,010 | 82 [180] | 71 [160] | 1 ¼" | 4" x 4" | 50/FT | WALL MOUNTED/WITHOUT ENCLOSURE |
| RAD–2 | ENGINEERED AIR | 3 ROWS (12" CENTERS) | 3,010 | 82 [180] | 71 [160] | 1 ¼" | 4" x 4" | 50/FT | WALL MOUNTED/WITHOUT ENCLOSURE |
| RAD–3 | ENGINEERED AIR | 3 ROWS (12" CENTERS) | 3,010 | 82 [180] | 71 [160] | 1 ¼" | 4" x 4" | 50/FT | WALL MOUNTED/WITHOUT ENCLOSURE |
| RAD–4 | ENGINEERED AIR | 3 ROWS (12" CENTERS) | 3,010 | 82 [180] | 71 [160] | 1 ¼" | 4" x 4" | 50/FT | WALL MOUNTED/WITHOUT ENCLOSURE |
| RAD–5 | ENGINEERED AIR | 3 ROWS (12" CENTERS) | 3,010 | 82 [180] | 71 [160] | 1 ¼" | 4" x 4" | 50/FT | WALL MOUNTED/WITHOUT ENCLOSURE |
| RAD–6 | ENGINEERED AIR | 3 ROWS (12" CENTERS) | 3,010 | 82 [180] | 71 [160] | 1 ¼" | 4" x 4" | 50/FT | WALL MOUNTED/WITHOUT ENCLOSURE |
| RAD–16A | ENGINEERED AIR | 3 ROWS (12" CENTERS) | 3,010 | 82 [180] | 71 [160] | 1 ¼" | 4" x 4" | 50/FT | WALL MOUNTED/WITHOUT ENCLOSURE |
| RAD–17 | ENGINEERED AIR | 1 ROW | 1,060 | 82 [180] | 71 [160] | 1 ¼" | 4" x 4" | 50/FT | WALL MOUNTED/WITHOUT ENCLOSURE |
| RAD–18 | ENGINEERED AIR | 1 ROW | 1,060 | 82 [180] | 71 [160] | 1 ¼" | 4" x 4" | 50/FT | WALL MOUNTED/WITHOUT ENCLOSURE |
| RAD–19 | ENGINEERED AIR | 3 ROWS (12" CENTERS) | 3,010 | 82 [180] | 71 [160] | 1 ¼" | 4" x 4" | 50/FT | WALL MOUNTED/WITHOUT ENCLOSURE |

## Revisions

| Ref. | No. | Description | Date | Initial |
|---|---|---|---|---|
| | 1 | 50% REVIEW 0 | 2022/02/17 | |
| | 2 | 75% REVIEW | 2022/03/09 | |
| | 3 | 100% REVIEW | 2022/03/31 | |
| | 4 | ISSUED FOR TENDER | 2022/04/26 | |

**Project:**

GLADYS SPEERS PS RENOVATIONS
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LICENSED PROFESSIONAL ENGINEER
APRIL 2022
G. STRASHUN
PROVINCE OF ONTARIO

**Consultant:**


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**Title:**

SYMBOL LIST, EQUIPMENT SCHEDULE, KEY PLANS & NOTES – MECHANICAL

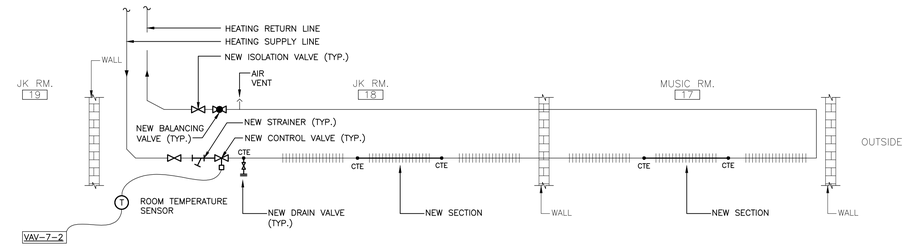
| | |
|---|---|
| Drawn by: P.C. | Date: DECEMBER 2021 |
| Checked by: O.S. | Plotted: |
| Scale: AS SHOWN | Issued: |
| Job No.: 2022–01 | Drawing No.: M-1.1 |
| Set No.: | of: 10 |

## PLUMBING FIXTURE SERVICES SCHEDULE

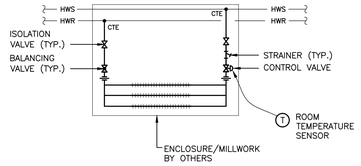
| | FIXTURE NAME | TYPE | LOCATION | HOT | COLD | DRAIN | VENT |
|---|---|---|---|---|---|---|---|
| S-1 | KITCHEN SINK | COUNTER MOUNTED, DOUBLE COMPARTMENT, STAINLESS STEEL SINK | STAFF ROOM | 15 | 15 | 40 | 40 |

## SCHEDULE OF KITCHEN HOOD

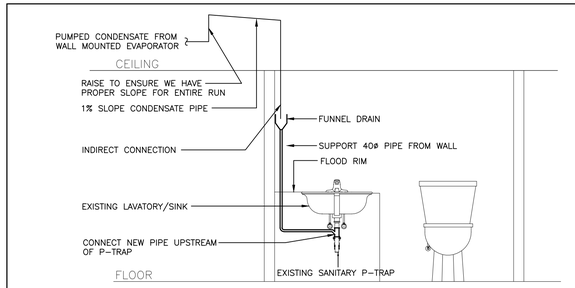
| TAG | MANUFACTURER | MODEL | VOLTS | AMPS | REMARKS |
|---|---|---|---|---|---|
| H-1 | ANCONA | SLIM-D | 120 | 0.83 | 750MM (30IN) WIDE, STAINLESS STEEL, MIN 300 CFM |



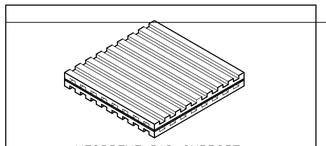

PERIMETER FINNED TUBE RADIATION CONNECTION FOR JK. ROOM-18 & MUSIC ROOM-17
N.T.S.



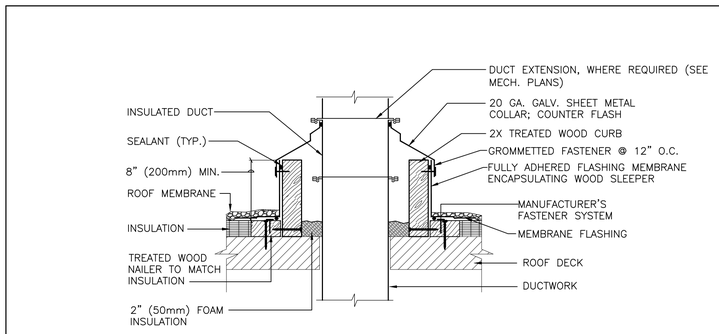

TYPICAL RADIATIOR CONNECTION (3-ROW)
N.T.S.



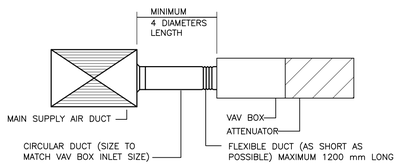

TYPICAL CONDENSATE DRAIN CONNECTION
N.T.S.



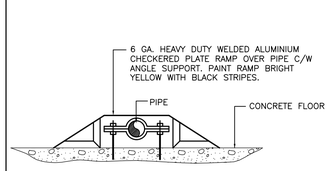
NEOPRENE PAD SUPPORT
N.T.S.



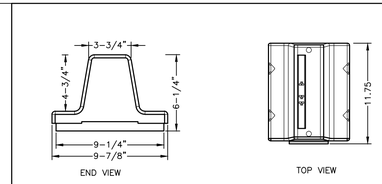

DUCT PENETRATION DETAIL
N.T.S.




TYPICAL VARIABLE AIR VOLUME (VAV) BOX DETAIL
N.T.S.

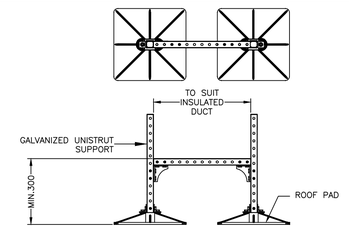



PIPE RAMP DETAIL
N.T.S.




NOTES:
1. ROLLER EXTENSION KITS AVAILABLE FOR PIPE EXPANSION/CONTRACTION.
2. STRUT EXTENSION KITS AVAILABLE FOR ADJUSTABLE HEIGHT CONDUIT INSTALLATION.
3. CUSTOM SUPPORT SOLUTIONS AVAILABLE.
4. PROVIDE UNITSATRUT BASE OF THE PIPES SUPPORTED AND ASSOCIATED BRACKETS. AVOID DIRECT CONTACT BETWEEN DISSIMILAR METALS.

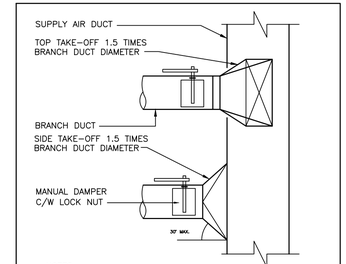
TYPICAL PIPE SUPPORT ON THE ROOF
N.T.S.




SUPPORT DUCTWORK ON ROOF WITH AN ENGINEERED PREFABRICATED DUCT SYSTEM DESIGNED FOR INSTALLATION WITHOUT ROOF PENETRATIONS, FLASHING OR DAMAGE TO THE ROOFING MATERIAL. THE SYSTEM SHALL CONSIST OF BASES, MADE OF HIGH DENSITY POLYPROPYLENE PLASTICS WITH UV PROTECTION, AND A HDG STRUCTURAL STEEL FRAME. NUTS, THREADED RODS AND WASHERS SHALL BE HDG, SPRING NUTS AND BOLTS FOR SPRING NUTS WILL BE ELECTRO-PLATED. SYSTEM SHALL BE CUSTOM DESIGNED TO FIT THE LOAD REQUIREMENTS THAT WILL BE REQUIRED. PROTECT DUCT INSULATION AS SPECIFIED AT POINTS OF SUPPORT.

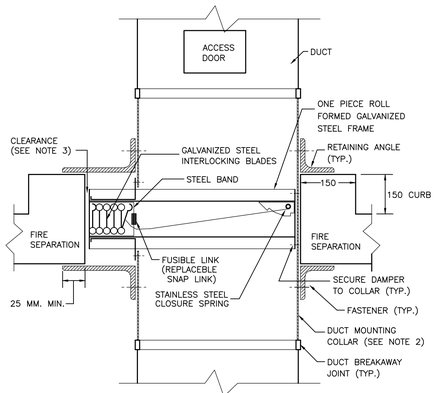
STANDARD OF ACCEPTANCE: PPH, MIRO INDUSTRIES OR EQUAL.

DUCT SUPPORT ON THE ROOF
N.T.S.

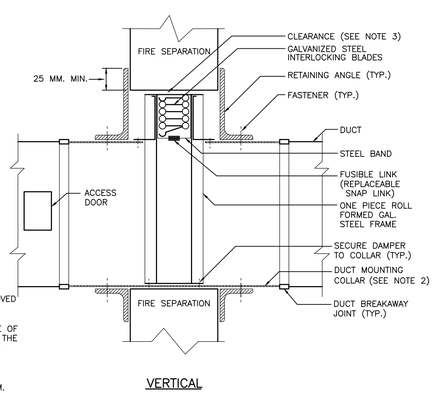



NOTES
1) REFER TO FLOOR PLANS FOR BRANCH DUCT ARRANGEMENT.
2) THIS DETAIL ONLY APPLIED TO RECTANGLE TO ROUND DUCTS
3) BOTTOM TAKE-OFF IS SIMILAR TO TOP TAKE-OFF

DETAILS OF BRANCHE DUCT TAKE-OFF
N.T.S.




HORIZONTAL




VERTICAL

NOTES:
1. ASSEMBLY SHALL BE U.L.C. APPROVED AND SHALL BE TYPE 'B'.
2. DUCT MOUNTING COLLAR SHALL BE OF THE SAME GAUGE OR HEAVIER AS THE DUCT BUT SHALL NOT BE LIGHTER THAN 20 GAUGE.
3. CLEARANCE SHALL BE 9 MM PER METER ON HEIGHT AND WIDTH OF DAMPER TO A MAXIMUM OF 12 MM.

TYPICAL FIRE DAMPER DETAIL
N.T.S.

**Revisions**

| Ref. | No. | Description | Date | Initial |
|---|---|---|---|---|
| △ | 1 | 50% REVIEW 0 | 2022/02/17 | |
| △ | 2 | 75% REVIEW | 2022/03/09 | |
| △ | 3 | 100% REVIEW | 2022/03/31 | |
| △ | 4 | ISSUED FOR TENDER | 2022/04/26 | |

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LICENSED PROFESSIONAL ENGINEER PROVINCE OF ONTARIO APRIL 2022 G. STRASHUN

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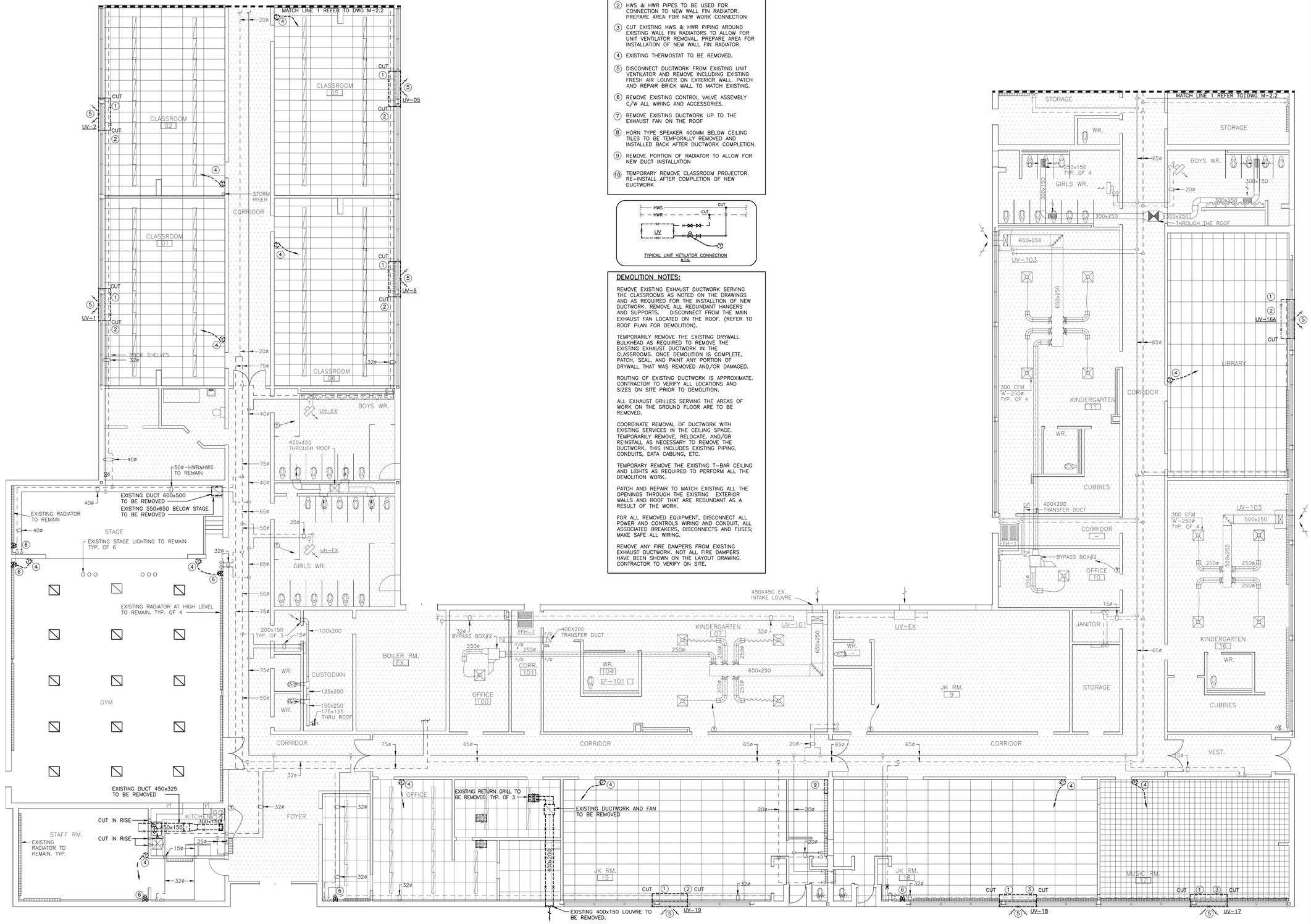
**Title:**

PLUMBING FIXTURE SERVICES SCHEDULE & DETAILS – MECHANICAL

| | |
|---|---|
| Drawn by: P.C. | Date: DECEMBER 2021 |
| Checked by: O.S. | Plotted: |
| Scale: AS SHOWN | Issued: |
| Job No.: 2022-01 | Drawing No.: M-1.2 |
| Set No.: | of: 10 |

NOT IN THE SCOPE OF WORK







KEY NOTES

1. REMOVE EXISTING UNIT VENTILATOR. CUT LOCALLY AND DISCONNECT FROM EXISTING HWS & HWR PIPING C/W ALL ACCESSORIES. DISCONNECT FROM POWER AND CONTROLS AND REMOVE ALL REDUNDANT WIRING.
2. HWS & HWR PIPES TO BE USED FOR CONNECTION TO NEW WALL FIN RADIATOR. PREPARE AREA FOR NEW WORK CONNECTION
3. CUT EXISTING HWS & HWR PIPING AROUND EXISTING WALL FIN RADIATORS TO ALLOW FOR UNIT VENTILATOR REMOVAL. PREPARE AREA FOR INSTALLATION OF NEW WALL FIN RADIATOR.
4. EXISTING THERMOSTAT TO BE REMOVED.
5. DISCONNECT DUCTWORK FROM EXISTING UNIT VENTILATOR AND REMOVE INCLUDING EXISTING FRESH AIR LOUVER ON EXTERIOR WALL. PATCH AND REPAIR BRICK WALL TO MATCH EXISTING.
6. REMOVE EXISTING CONTROL VALVE ASSEMBLY C/W ALL WIRING AND ACCESSORIES.
7. REMOVE EXISTING DUCTWORK UP TO THE EXHAUST FAN ON THE ROOF
8. HORN TYPE SPEAKER 400MM BELOW CEILING TILES TO BE TEMPORALLY REMOVED AND INSTALLED BACK AFTER DUCTWORK COMPLETION.
9. REMOVE PORTION OF RADIATOR TO ALLOW FOR NEW DUCT INSTALLATION
10. TEMPORARY REMOVE CLASSROOM PROJECTOR. RE-INSTALL AFTER COMPLETION OF NEW DUCTWORK




TYPICAL UNIT VETILATOR CONNECTION
N.T.S.

DEMOLITION NOTES:

REMOVE EXISTING EXHAUST DUCTWORK SERVING THE CLASSROOMS AS NOTED ON THE DRAWINGS AND AS REQUIRED FOR THE INSTALLTION OF NEW DUCTWORK. REMOVE ALL REDUNDANT HANGERS AND SUPPORTS. DISCONNECT FROM THE MAIN EXHAUST FAN LOCATED ON THE ROOF. (REFER TO ROOF PLAN FOR DEMOLITION).

TEMPORARILY REMOVE THE EXISTING DRYWALL BULKHEAD AS REQUIRED TO REMOVE THE EXISTING EXHAUST DUCTWORK IN THE CLASSROOMS. ONCE DEMOLITION IS COMPLETE, PATCH, SEAL, AND PAINT ANY PORTION OF DRYWALL THAT WAS REMOVED AND/OR DAMAGED.

ROUTING OF EXISTING DUCTWORK IS APPROXIMATE. CONTRACTOR TO VERIFY ALL LOCATIONS AND SIZES ON SITE PRIOR TO DEMOLITION.

ALL EXHAUST GRILLES SERVING THE AREAS OF WORK ON THE GROUND FLOOR ARE TO BE REMOVED.

COORDINATE REMOVAL OF DUCTWORK WITH EXISTING SERVICES IN THE CEILING SPACE. TEMPORARILY REMOVE, RELOCATE, AND/OR REINSTALL AS NECESSARY TO REMOVE THE DUCTWORK. THIS INCLUDES EXISTING PIPING, CONDUITS, DATA CABLING, ETC.

TEMPORARY REMOVE THE EXISTING T-BAR CEILING AND LIGHTS AS REQUIRED TO PERFORM ALL THE DEMOLITION WORK.

PATCH AND REPAIR TO MATCH EXISTING ALL THE OPENINGS THROUGH THE EXISTING EXTERIOR WALLS AND ROOF THAT ARE REDUNDANT AS A RESULT OF THE WORK.

FOR ALL REMOVED EQUIPMENT, DISCONNECT ALL POWER AND CONTROLS WIRING AND CONDUIT, ALL ASSOCIATED BREAKERS, DISCONNECTS AND FUSES; MAKE SAFE ALL WIRING.

REMOVE ANY FIRE DAMPERS FROM EXISTING EXHAUST DUCTWORK. NOT ALL FIRE DAMPERS HAVE BEEN SHOWN ON THE LAYOUT DRAWING. CONTRACTOR TO VERIFY ON SITE.

PART OF GROUND FLOOR (NORTH) – EQUIPMENT, DUCTWORK & PIPING LAYOUT – EXISTING & DEMOLITION WORK – MECHANICAL
SCALE: 1:100

Revisions

| Ref. | No. | Description | Date | Initial |
|---|---|---|---|---|
| △ | 1 | 50% REVIEW 0 | 2022/02/17 | |
| △ | 2 | 75% REVIEW | 2022/03/09 | |
| △ | 3 | 100% REVIEW | 2022/03/31 | |
| △ | 4 | ISSUED FOR TENDER | 2022/04/26 | |

Project:

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APRIL 2022
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Title:

PART OF GROUND FLOOR (NORTH)
– EXISTING & DEMOLITION WORK
– MECHANICAL

| Drawn by: | Date: |
|---|---|
| P.C. | DECEMBER 2021 |
| Checked by: | Plotted: |
| O.S. | |
| Scale: | Issued: |
| AS SHOWN | |
| Job No.: | Drawing No.: |
| 2022-01 | M-2.1 |
| Set No.: | of: 10 |

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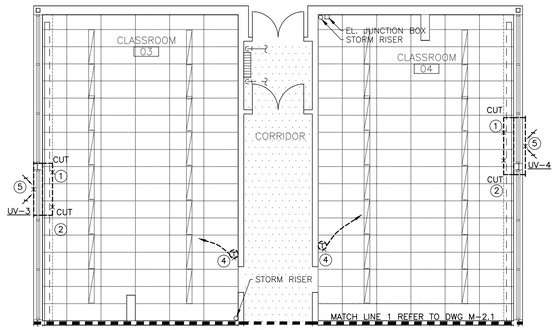
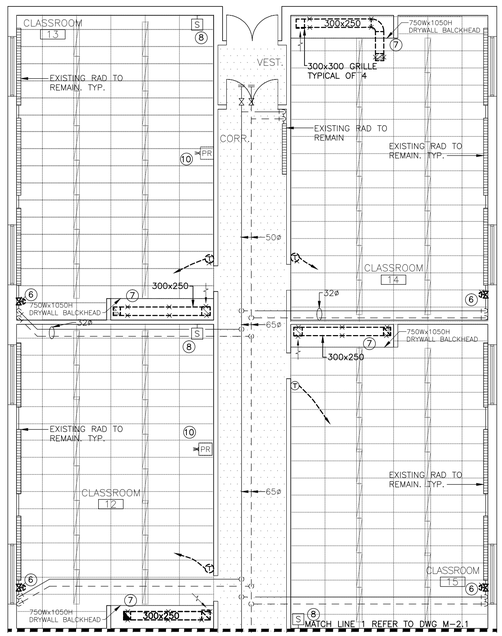


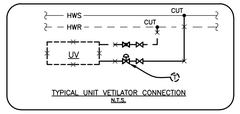

PART OF GROUND FLOOR PLAN (SOUTH-EAST) – EQUIPMENT LAYOUT – EXISTING & DEMOLITION WORK – MECHANICAL
SCALE: 1:100




PART OF GROUND FLOOR PLAN (SOUTH-WEST) – EQUIPMENT LAYOUT – EXISTING & DEMOLITION WORK – MECHANICAL
SCALE: 1:100

KEY NOTES

1. REMOVE EXISTING UNIT VENTILATOR. CUT LOCALLY AND DISCONNECT FROM EXISTING HWS & HWR PIPING C/W ALL ACCESSORIES. DISCONNECT FROM POWER AND CONTROLS AND REMOVE ALL REDUNDANT WIRING.
2. HWS & HWR PIPES TO BE USED FOR CONNECTION TO NEW WALL FIN RADIATOR. PREPARE AREA FOR NEW WORK CONNECTION
3. CUT EXISTING HWS & HWR PIPING AROUND EXISTING WALL FIN RADIATORS TO ALLOW FOR UNIT VENTILATOR REMOVAL. PREPARE AREA FOR INSTALLATION OF NEW WALL FIN RADIATOR.
4. EXISTING THERMOSTAT TO BE REMOVED.
5. DISCONNECT DUCTWORK FROM EXISTING UNIT VENTILATOR AND REMOVE INCLUDING EXISTING FRESH AIR LOUVER ON EXTERIOR WALL. PATCH AND REPAIR BRICK WALL TO MATCH EXISTING.
6. REMOVE EXISTING CONTROL VALVE ASSEMBLY C/W ALL WIRING AND ACCESSORIES.
7. REMOVE EXISTING DUCTWORK UP TO THE EXHAUST FAN ON THE ROOF
8. HORN TYPE SPEAKER 400MM BELOW CEILING TILES TO BE TEMPORALLY REMOVED AND INSTALLED BACK AFTER DUCTWORK COMPLETION.
9. REMOVE PORTION OF RADIATOR TO ALLOW FOR NEW DUCT INSTALLATION
10. TEMPORARY REMOVE CLASSROOM PROJECTOR. RE-INSTALL AFTER COMPLETION OF NEW DUCTWORK




TYPICAL UNIT VETILATOR CONNECTION
N.T.S.

DEMOLITION NOTES:

REMOVE EXISTING EXHAUST DUCTWORK SERVING THE CLASSROOMS AS NOTED ON THE DRAWINGS AND AS REQUIRED FOR THE INSTALLTION OF NEW DUCTWORK. REMOVE ALL REDUNDANT HANGERS AND SUPPORTS. DISCONNECT FROM THE MAIN EXHAUST FAN LOCATED ON THE ROOF. (REFER TO ROOF PLAN FOR DEMOLITION).

TEMPORARILY REMOVE THE EXISTING DRYWALL BULKHEAD AS REQUIRED TO REMOVE THE EXISTING EXHAUST DUCTWORK IN THE CLASSROOMS. ONCE DEMOLITION IS COMPLETE, PATCH, SEAL, AND PAINT ANY PORTION OF DRYWALL THAT WAS REMOVED AND/OR DAMAGED.

ROUTING OF EXISTING DUCTWORK IS APPROXIMATE. CONTRACTOR TO VERIFY ALL LOCATIONS AND SIZES ON SITE PRIOR TO DEMOLITION.

ALL EXHAUST GRILLES SERVING THE AREAS OF WORK ON THE GROUND FLOOR ARE TO BE REMOVED.

COORDINATE REMOVAL OF DUCTWORK WITH EXISTING SERVICES IN THE CEILING SPACE. TEMPORARILY REMOVE, RELOCATE, AND/OR REINSTALL AS NECESSARY TO REMOVE THE DUCTWORK. THIS INCLUDES EXISTING PIPING, CONDUITS, DATA CABLING, ETC.

TEMPORARY REMOVE THE EXISTING T-BAR CEILING AND LIGHTS AS REQUIRED TO PERFORM ALL THE DEMOLITION WORK.

PATCH AND REPAIR TO MATCH EXISTING ALL THE OPENINGS THROUGH THE EXISTING EXTERIOR WALLS AND ROOF THAT ARE REDUNDANT AS A RESULT OF THE WORK.

FOR ALL REMOVED EQUIPMENT, DISCONNECT ALL POWER AND CONTROLS WIRING AND CONDUIT, ALL ASSOCIATED BREAKERS, DISCONNECTS AND FUSES; MAKE SAFE ALL WIRING.

REMOVE ANY FIRE DAMPERS FROM EXISTING EXHAUST DUCTWORK. NOT ALL FIRE DAMPERS HAVE BEEN SHOWN ON THE LAYOUT DRAWING. CONTRACTOR TO VERIFY ON SITE.

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APRIL, 2022
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Title:

PART OF GROUND FLOOR (SOUTH)
– EXISTING & DEMOLITION WORK
– MECHANICAL

| Drawn by: | Date: |
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| P.C. | DECEMBER 2021 |
| Checked by: O.S. | Plotted: |
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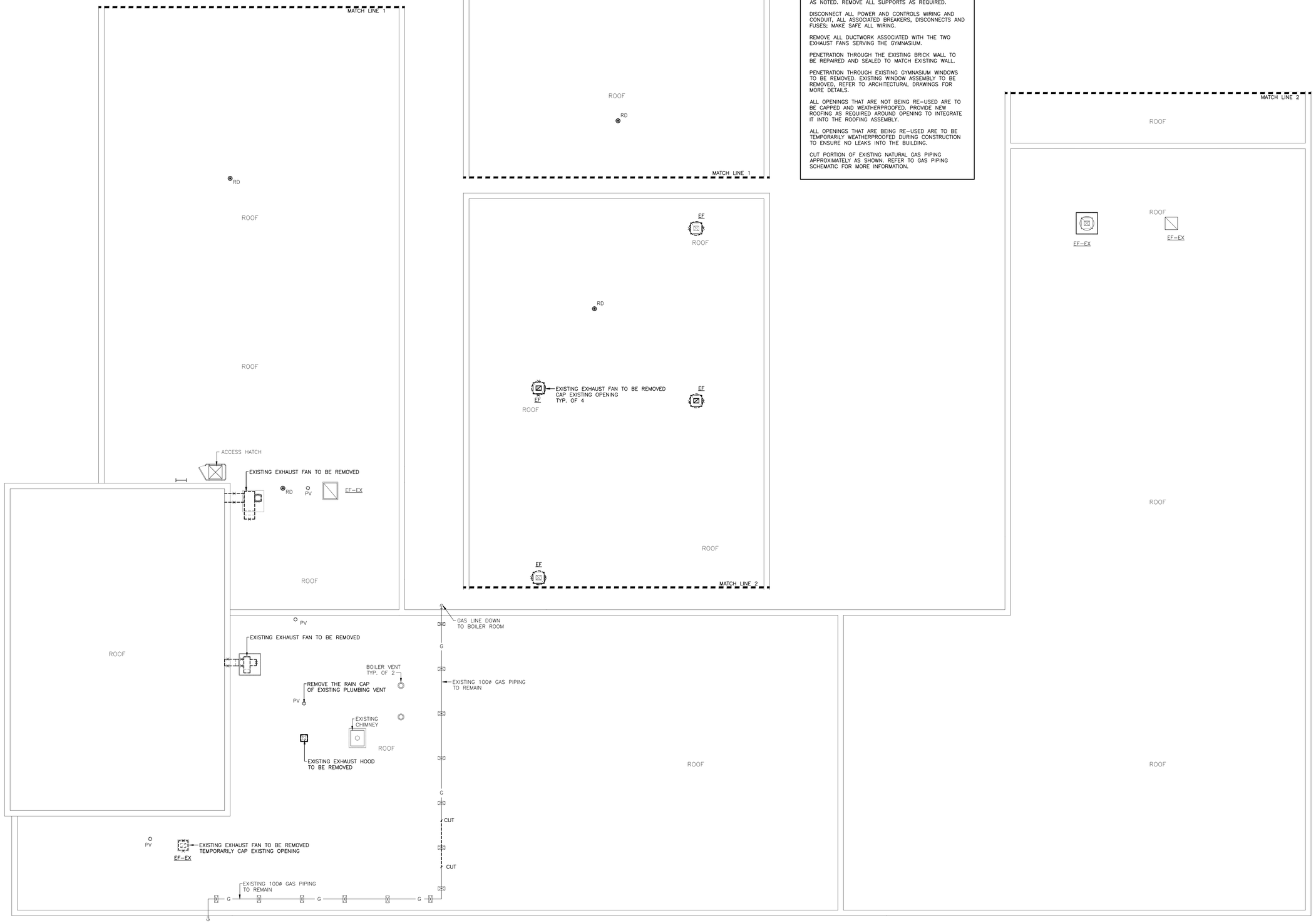
| Set No.: | of: 10 |




ROOF PLAN – EQUIPMENT LAYOUT – EXISTING & DEMOLITION WORK – MECHANICAL
SCALE: 1:100

**DEMOLITION NOTES:**

REMOVE ALL ROOF MOUNTED EXISTING EXHAUST FANS AS NOTED. REMOVE ALL SUPPORTS AS REQUIRED.

DISCONNECT ALL POWER AND CONTROLS WIRING AND CONDUIT, ALL ASSOCIATED BREAKERS, DISCONNECTS AND FUSES; MAKE SAFE ALL WIRING.

REMOVE ALL DUCTWORK ASSOCIATED WITH THE TWO EXHAUST FANS SERVING THE GYMNASIUM.

PENETRATION THROUGH THE EXISTING BRICK WALL TO BE REPAIRED AND SEALED TO MATCH EXISTING WALL.

PENETRATION THROUGH EXISTING GYMNASIUM WINDOWS TO BE REMOVED. EXISTING WINDOW ASSEMBLY TO BE REMOVED, REFER TO ARCHITECTURAL DRAWINGS FOR MORE DETAILS.

ALL OPENINGS THAT ARE NOT BEING RE-USED ARE TO BE CAPPED AND WEATHERPROOFED. PROVIDE NEW ROOFING AS REQUIRED AROUND OPENING TO INTEGRATE IT INTO THE ROOFING ASSEMBLY.

ALL OPENINGS THAT ARE BEING RE-USED ARE TO BE TEMPORARILY WEATHERPROOFED DURING CONSTRUCTION TO ENSURE NO LEAKS INTO THE BUILDING.

CUT PORTION OF EXISTING NATURAL GAS PIPING APPROXIMATELY AS SHOWN. REFER TO GAS PIPING SCHEMATIC FOR MORE INFORMATION.

**Revisions**

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**Title:**

ROOF – EQUIPMENT & GAS PIPING LAYOUT – EXISTING & DEMOLITION WORK – MECHANICAL

| Drawn by: | Date: |
|---|---|
| P.C. | DECEMBER 2021 |
| **Checked by:** | **Plotted:** |
| O.S. | |
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| AS SHOWN | |
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| 2022-01 | M-2.3 |
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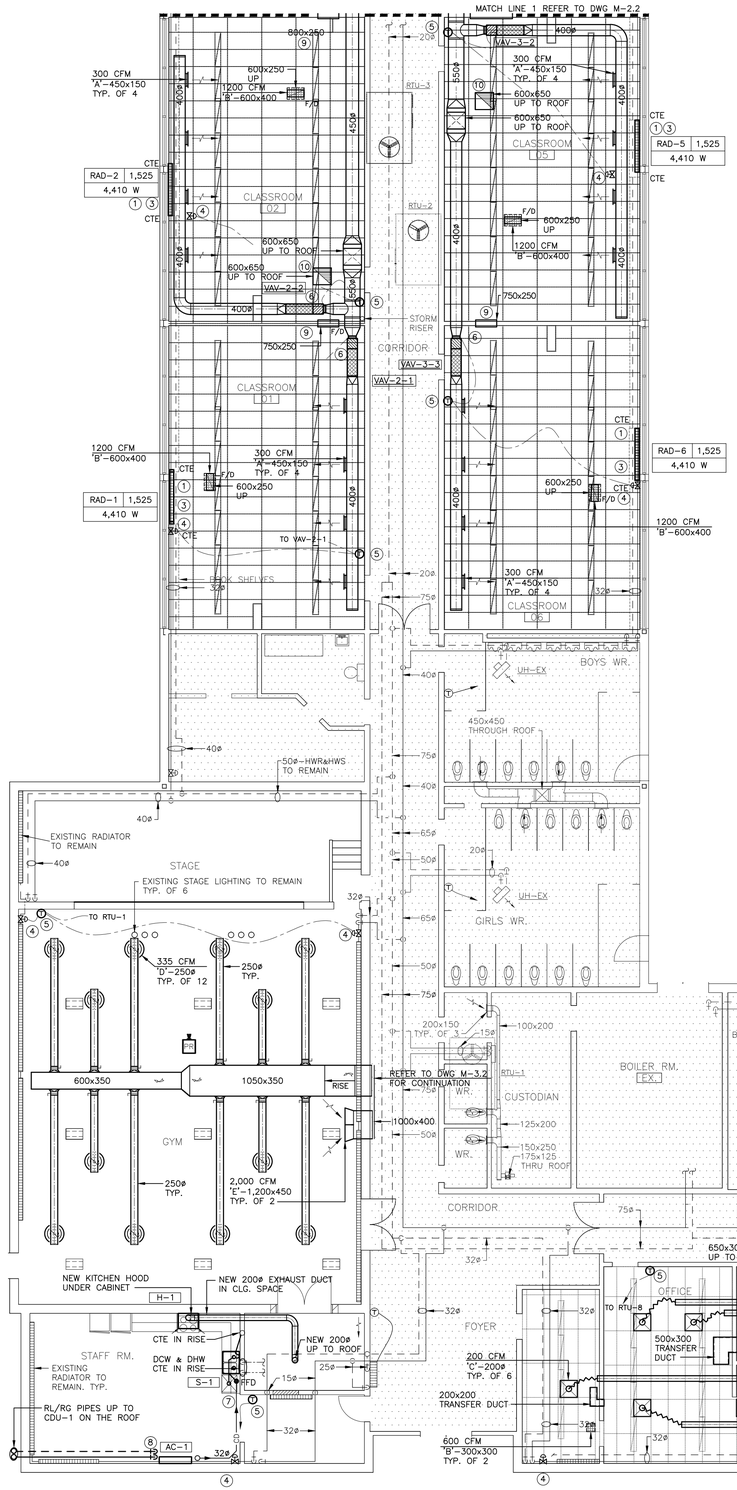



KEY NOTES

1. INSTALL NEW 3-ROW BARE ELEMENT WALL FIN RADIATOR AS PER THE MECHANICAL EQUIPMENT SCHEDULE. CONNECT NEW WALLFIN TO EXISTING HWS & HWR MAINS RUNNING ALONG EXTERIOR WALL. REFER TO DETAIL ON M-1 FOR PIPING CONNECTION DETAIL.
2. INSTALL NEW 1-ROW BARE ELEMENT WALL FIN RADIATOR AS PER THE MECHANICAL EQUIPMENT SCHEDULE. CONNECT TO EXISTING TUBING FROM THE EXISTING WALL FIN RADIATORS IN THE SAME SPACE. REFER TO M-1 FOR PIPING CONNECTION DETAIL.
3. PROVIDE AND INSTALL NEW PENCIL-PROOF LINEAR BAR GRILLE FOR NEW WALL FIN RADIATORS (E.H. PRICE MODEL LBP ¼" BLADE SPACING). EXACT LENGTH TO BE CONFIRMED ON SITE, WIDTH TO MATCH EXISTING. COORDINATE INSTALLATION WITH NEW MILLWORK, REFER TO ARCHITECTURAL DRAWINGS FOR MORE DETAILS.
4. INSTALL NEW CONTROL VALVE APPROXIMATELY AS SHOWN. PROVIDE ALL NEW CONTROL WIRING AND CONNECT TO THE ASSOCIATED NEW THEMOSTAT.
5. INSTALL NEW THEMOSTAT ON THE WALL APPROXIMATELY AS SHOWN.
6. INSTALL NEW VAV BOX. PROVIDE ALL NEW CONTROL WIRING AND CONNECT TO THE ASSOCIATED NEW THERMOSTAT.
7. CONNECT NEW 32ø CONDENSATE DRAIN TO EXISTING SINK. REFER TO DETAIL ON M-1.
8. INSTALL NEW WALL-MOUNTED AC EVAPORATOR IN THE STAFF ROOM. FINAL LOCATION TO BE DETERMINED ON SITE. PROVIDE ADEQUATE SUPPORT. RUN NEW REFRIGERANT PIPING ABOVE T-BAR AND UP ALONG EXTERIOR WALL.
9. PROVIDE WALL OPENING ABOVE THE CEILING.
10. TERMINATED OPEN ENDED IN CEILING SPACE

## NEW WORK NOTES:

PROVIDE FIRE DAMPERS AT ALL PENETRATIONS THROUGH FIRE-RATED WALLS, C/W ACCESS DOOR. NOT ALL REQUIRED FIRE DAMPERS MAY BE SHOWN ON THE LAYOUT DRAWING.

PROVIDE ALL HANGERS AND SUPPORTS FOR THE NEW EQUIPMENT, DUCTWORK AND PIPING.

PROVIDE NEW SUPPLY AND RETURN DUCTWORK THROUGHOUT THE SCHOOL APPROXIMATELY AS SHOWN. COORDINATE INSTALLATION OF ALL DUCTWORK WITH THE STRUCTURAL ELEMENTS

ALL NEW SUPPLY AIR DUCTWORK IS TO BE INSTALLED EXPOSED BELOW THE T-BAR CEILING, EXCEPT FOR TAKE-OFF BRANCHES IN ROOMS 12, 13, 14, & 15. INSTALL ALL DUCTWORK AS HIGH AS POSSIBLE. INSTALL DUCTS BETWEEN AND THROUGH OWSJ TO CONSERVE HEADROOM, WHERE POSSIBLE.

DUCTWORK ROUTING IS APPROXIMATE. CONTRACTOR TO MODIFY ROUTING BASED ON EXISTING CONDITIONS AS REQUIRED TO COMPLETE THE INSTALLATION. ALLOW FOR ADDITIONAL OFFSETS, ELBOWS, TRANSITIONS, AS REQUIRED TO COMPLETE THE INSTALLATION.

COORDINATE INSTALLATION OF THE DUCTWORK IN THE SCHOOL WITH EXISTING PIPING AND ELECTRICAL CONDUITS, LIGHTS HANGERS AND OTHER SERVICES. CONTRACTOR TO ALLOW FOR RELOCATION OF EXISTING ELECTRICAL CONDUITS IN ORDER TO COMPLETE THE INSTALLATION.

COORDINATE LOCATION OF GRILLES AND DIFFUSERS WITH THE EXISTING CEILING, LIGHTS AND STRUCTURAL ELEMENTS. MODIFY T-BAR CEILING AS REQUIRED TO INSTALL NEW GRILLES.

PROVIDE NEW VAV BOXES IN THE CLASSROOMS AS SHOWN ON THE DRAWINGS AND AS NOTED IN THE MECHANICAL EQUIPMENT SCHEDULE. PROVIDE ADEQUATE SUPPORT FOR ALL NEW VAV BOXES. INSTALL NEW SOUND ATTENUATOR DOWNSTREAM OF EACH NEW BOX. CONNECT EACH NEW VAV BOX TO SUPPLY AIR DUCTWORK AS SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR VAV BOX ENCLOSURE.

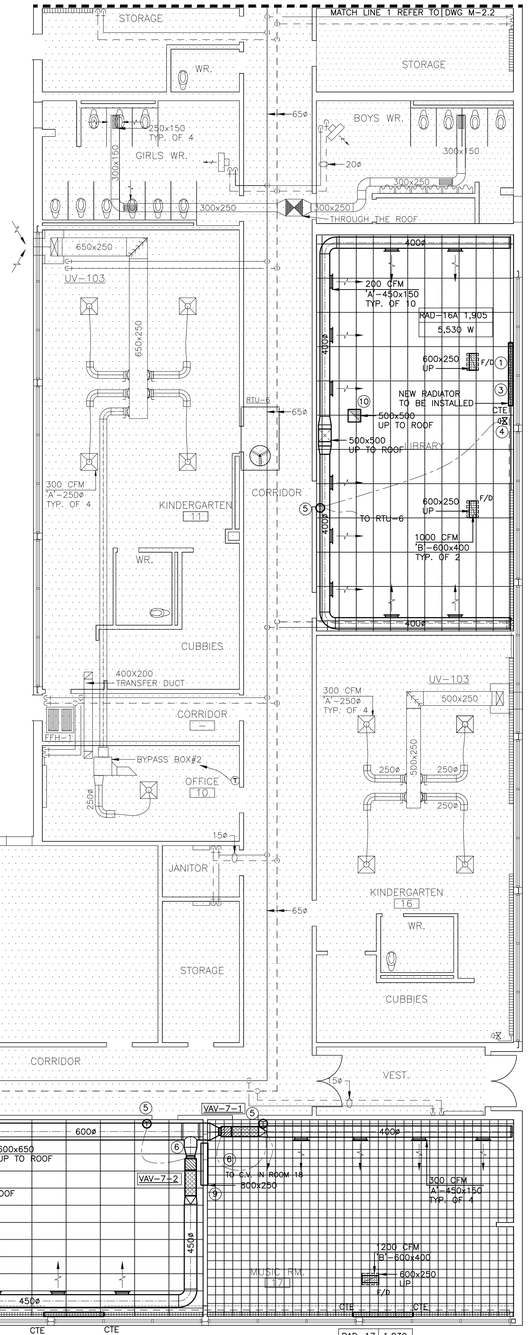
BALANCE AIR FLOWS FOR ALL SUPPLY AND RETURN DUCTWORK, VAV BOXES, GRILLES, AND DIFFUSERS. ADDITIONALLY, USE BALANCING DAMPERS TO ACHIEVE SPECIFIED AIR FLOWS AS SHOWN ON DRAWINGS.

CONTRACTOR TO ALLOW FOR THE COMPLETE REMOVAL OF THE T-BAR CEILING THROUGHOUT THE AREAS OF WORK. THIS INCLUDES THE REMOVAL OF EXISTING SERVICES INSTALLED IN THE T-BAR INCLUDING BUT NOT LIMITED TO: LIGHTS, SMOKE SENSORS, DATA DEVICES, ETC.

RE-INSTALL T-BAR CEILING AT THE COMPLETION OF THE NEW WORK INSTALLATION. REPLACE ALL DAMAGED CEILING TILES. RE-INSTALL ALL EXISTING SERVICES THAT WERE REMOVED AS PART OF THE T-BAR REMOVAL. RE-VERIFY ANY FIRE ALARM DEVICES THAT ARE RE-INSTALLED.

CONNECT ALL NEW ROOFTOP UNITS TO THE BUILDING'S EXISTING FIRE ALARM AND BAS.

IN AREAS OF STRUCTURAL REINFORCEMENT (REFER TO STRUCTURAL DRAWINGS), REMOVE CEILING, LIGHTS, ALL DEVICES ASSOCIATED WITH THE CEILING; TEMPORARY REMOVE ALL CONDUITS, WIRING AND OTHER SERVICES AS REQUIRED TO PERFORM THE STRUCTURAL WORK.




PART OF GROUND FLOOR (NORTH) - EQUIPMENT LAYOUT - NEW WORK - MECHANICAL
SCALE: 1:100

**Revisions**

| Ref. | No. | Description | Date | Initial |
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**Title:**

PART OF GROUND FLOOR (NORTH)
- EXISTING & NEW WORK
- MECHANICAL

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| Drawn by: P.C. | Date: DECEMBER 2021 |
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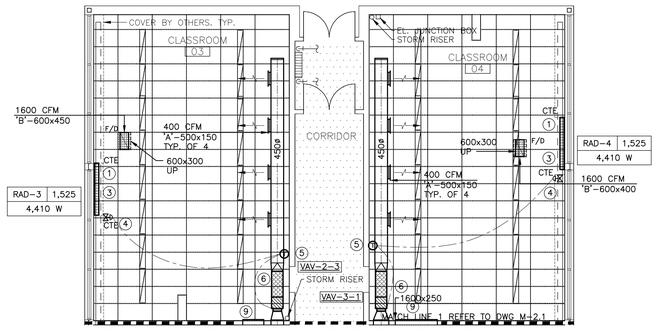
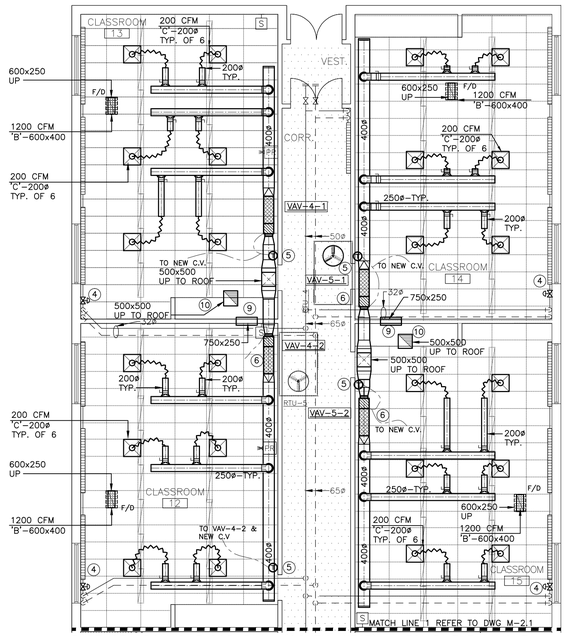



PART OF GROUND FLOOR PLAN (SOUTH-EAST) – EQUIPMENT LAYOUT – EXISTING & NEW WORK – MECHANICAL

SCALE: 1:100

KEY NOTES

1. INSTALL NEW 3-ROW BARE ELEMENT WALL FIN RADIATOR AS PER THE MECHANICAL EQUIPMENT SCHEDULE. CONNECT NEW WALLFIN TO EXISTING HWS & HWR MAINS RUNNING ALONG EXTERIOR WALL. REFER TO DETAIL ON M-1 FOR PIPING CONNECTION DETAIL.
2. INSTALL NEW 1-ROW BARE ELEMENT WALL FIN RADIATOR AS PER THE MECHANICAL EQUIPMENT SCHEDULE. CONNECT TO EXISTING TUBING FROM THE EXISTING WALL FIN RADIATORS IN THE SAME SPACE. REFER TO M-1 FOR PIPING CONNECTION DETAIL.
3. PROVIDE AND INSTALL NEW PENCIL-PROOF LINEAR BAR GRILLE FOR NEW WALL FIN RADIATORS (E.H. PRICE MODEL LBP ¼" BLADE SPACING). EXACT LENGTH TO BE CONFIRMED ON SITE, WIDTH TO MATCH EXISTING. COORDINATE INSTALLATION WITH NEW MILLWORK, REFER TO ARCHITECTURAL DRAWINGS FOR MORE DETAILS.
4. INSTALL NEW CONTROL VALVE APPROXIMATELY AS SHOWN. PROVIDE ALL NEW CONTROL WIRING AND CONNECT TO THE ASSOCIATED NEW THEMOSTAT.
5. INSTALL NEW THEMOSTAT ON THE WALL APPROXIMATELY AS SHOWN.
6. INSTALL NEW VAV BOX. PROVIDE ALL NEW CONTROL WIRING AND CONNECT TO THE ASSOCIATED NEW THERMOSTAT.
7. CONNECT NEW 32ø CONDENSATE DRAIN TO EXISTING SINK. REFER TO DETAIL ON M-1.
8. INSTALL NEW WALL-MOUNTED AC EVAPORATOR IN THE STAFF ROOM. FINAL LOCATION TO BE DETERMINED ON SITE. PROVIDE ADEQUATE SUPPORT. RUN NEW REFRIGERANT PIPING ABOVE T-BAR AND UP ALONG EXTERIOR WALL.
9. PROVIDE WALL OPENING ABOVE THE CEILING.
10. TERMINATED OPEN ENDED IN CEILING SPACE




PART OF GROUND FLOOR PLAN (SOUTH-WEST) – EQUIPMENT LAYOUT – EXISTING & NEW WORK – MECHANICAL

SCALE: 1:100

NEW WORK NOTES:

PROVIDE FIRE DAMPERS AT ALL PENETRATIONS THROUGH FIRE-RATED WALLS, C/W ACCESS DOOR. NOT ALL REQUIRED FIRE DAMPERS MAY BE SHOWN ON THE LAYOUT DRAWING.

PROVIDE ALL HANGERS AND SUPPORTS FOR THE NEW EQUIPMENT, DUCTWORK AND PIPING.

PROVIDE NEW SUPPLY AND RETURN DUCTWORK THROUGHOUT THE SCHOOL APPROXIMATELY AS SHOWN. COORDINATE INSTALLATION OF ALL DUCTWORK WITH THE STRUCTURAL ELEMENTS

ALL NEW SUPPLY AIR DUCTWORK IS TO BE INSTALLED EXPOSED BELOW THE T-BAR CEILING, EXCEPT FOR TAKE-OFF BRANCHES IN ROOMS 12, 13, 14, & 15. INSTALL ALL DUCTWORK AS HIGH AS POSSIBLE. INSTALL DUCTS BETWEEN AND THROUGH OWSJ TO CONSERVE HEADROOM, WHERE POSSIBLE.

DUCTWORK ROUTING IS APPROXIMATE. CONTRACTOR TO MODIFY ROUTING BASED ON EXISTING CONDITIONS AS REQUIRED TO COMPLETE THE INSTALLATION. ALLOW FOR ADDITIONAL OFFSETS, ELBOWS, TRANSITIONS, AS REQUIRED TO COMPLETE THE INSTALLATION.

COORDINATE INSTALLATION OF THE DUCTWORK IN THE SCHOOL WITH EXISTING PIPING AND ELECTRICAL CONDUITS, LIGHTS HANGERS AND OTHER SERVICES. CONTRACTOR TO ALLOW FOR RELOCATION OF EXISTING ELECTRICAL CONDUITS IN ORDER TO COMPLETE THE INSTALLATION.

COORDINATE LOCATION OF GRILLES AND DIFFUSERS WITH THE EXISTING CEILING, LIGHTS AND STRUCTURAL ELEMENTS. MODIFY T-BAR CEILING AS REQUIRED TO INSTALL NEW GRILLES.

PROVIDE NEW VAV BOXES IN THE CLASSROOMS AS SHOWN ON THE DRAWINGS AND AS NOTED IN THE MECHANICAL EQUIPMENT SCHEDULE. PROVIDE ADEQUATE SUPPORT FOR ALL NEW VAV BOXES. INSTALL NEW SOUND ATTENUATOR DOWNSTREAM OF EACH NEW BOX. CONNECT EACH NEW VAV BOX TO SUPPLY AIR DUCTWORK AS SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR VAV BOX ENCLOSURE.

BALANCE AIR FLOWS FOR ALL SUPPLY AND RETURN DUCTWORK, VAV BOXES, GRILLES, AND DIFFUSERS. ADDITIONALLY, USE BALANCING DAMPERS TO ACHIEVE SPECIFIED AIR FLOWS AS SHOWN ON DRAWINGS.

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RE-INSTALL T-BAR CEILING AT THE COMPLETION OF THE NEW WORK INSTALLATION. REPLACE ALL DAMAGED CEILING TILES. RE-INSTALL ALL EXISTING SERVICES THAT WERE REMOVED AS PART OF THE T-BAR REMOVAL. RE-VERIFY ANY FIRE ALARM DEVICES THAT ARE RE-INSTALLED.

CONNECT ALL NEW ROOFTOP UNITS TO THE BUILDING'S EXISTING FIRE ALARM AND BAS.

IN AREAS OF STRUCTURAL REINFORCEMENT (REFER TO STRUCTURAL DRAWINGS), REMOVE CEILING, LIGHTS, ALL DEVICES ASSOCIATED WITH THE CEILING; TEMPORARY REMOVE ALL CONDUITS, WIRING AND OTHER SERVICES AS REQUIRED TO PERFORM THE STRUCTURAL WORK.

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SAB ENGINEERING Inc.
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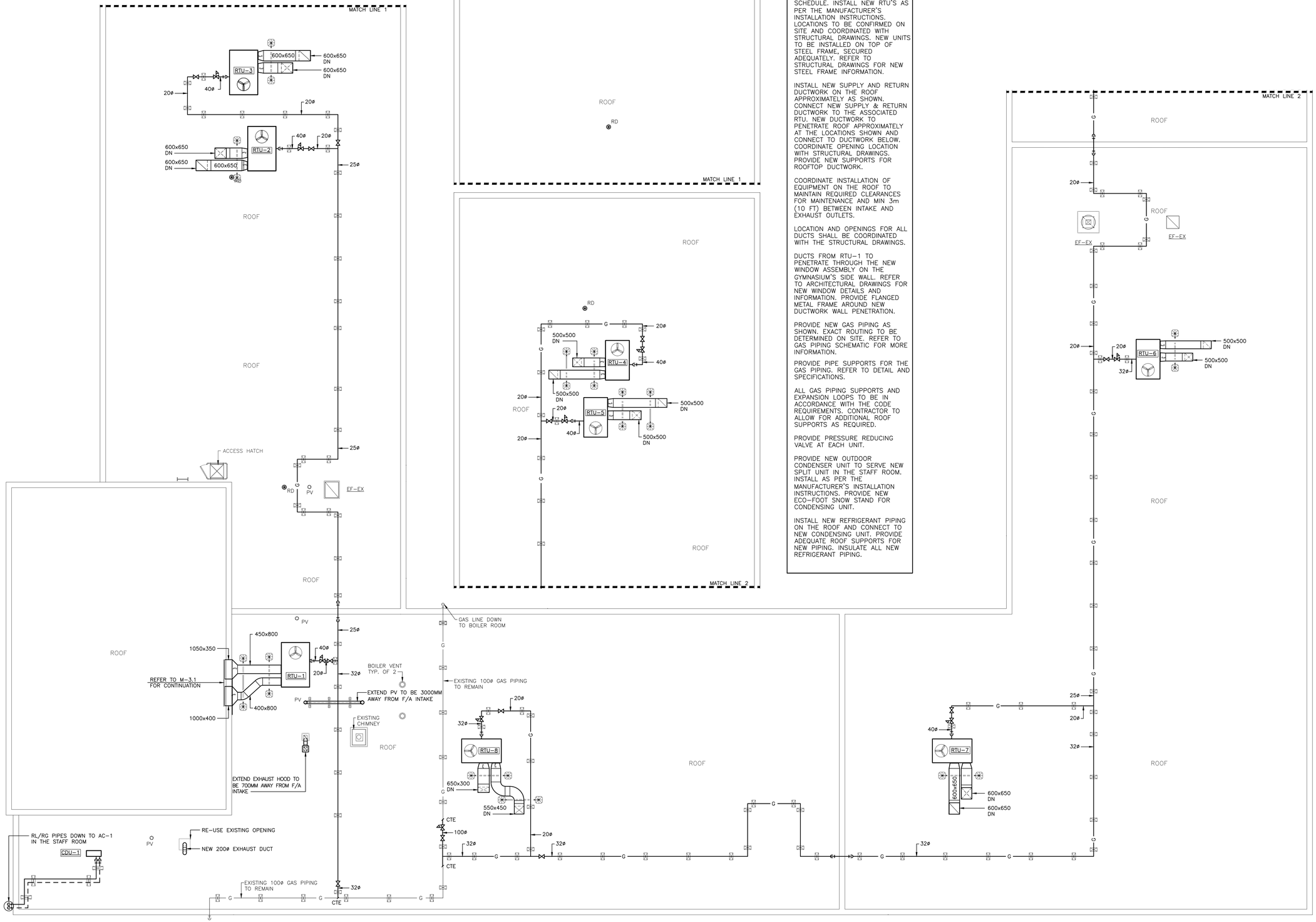
TEL. (905)-787 8885 FAX (905)-787 8771


**Title:**

PART OF GROUND FLOOR (SOUTH)
– EXISTING & NEW WORK
– MECHANICAL

| Drawn by: | Date: |
|---|---|
| P.C. | DECEMBER 2021 |
| **Checked by:** O.S. | **Plotted:** |
| **Scale:** AS SHOWN | **Issued:** |
| **Job No.:** 2022-01 | **Drawing No.:** M-3.2 |
| **Set No.:** | of: 10 |




## NEW WORK NOTES:

PROVIDE NEW ROOFTOP UNITS AS PER THE MECHANICAL EQUIPMENT SCHEDULE. INSTALL NEW RTU'S AS PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. LOCATIONS TO BE CONFIRMED ON SITE AND COORDINATED WITH STRUCTURAL DRAWINGS. NEW UNITS TO BE INSTALLED ON TOP OF STEEL FRAME, SECURED ADEQUATELY. REFER TO STRUCTURAL DRAWINGS FOR NEW STEEL FRAME INFORMATION.

INSTALL NEW SUPPLY AND RETURN DUCTWORK ON THE ROOF APPROXIMATELY AS SHOWN. CONNECT NEW SUPPLY & RETURN DUCTWORK TO THE ASSOCIATED RTU. NEW DUCTWORK TO PENETRATE ROOF APPROXIMATELY AT THE LOCATIONS SHOWN AND CONNECT TO DUCTWORK BELOW. COORDINATE OPENING LOCATION WITH STRUCTURAL DRAWINGS. PROVIDE NEW SUPPORTS FOR ROOFTOP DUCTWORK.

COORDINATE INSTALLATION OF EQUIPMENT ON THE ROOF TO MAINTAIN REQUIRED CLEARANCES FOR MAINTENANCE AND MIN 3m (10 FT) BETWEEN INTAKE AND EXHAUST OUTLETS.

LOCATION AND OPENINGS FOR ALL DUCTS SHALL BE COORDINATED WITH THE STRUCTURAL DRAWINGS.

DUCTS FROM RTU-1 TO PENETRATE THROUGH THE NEW WINDOW ASSEMBLY ON THE GYMNASIUM'S SIDE WALL. REFER TO ARCHITECTURAL DRAWINGS FOR NEW WINDOW DETAILS AND INFORMATION. PROVIDE FLANGED METAL FRAME AROUND NEW DUCTWORK WALL PENETRATION.

PROVIDE NEW GAS PIPING AS SHOWN. EXACT ROUTING TO BE DETERMINED ON SITE. REFER TO GAS PIPING SCHEMATIC FOR MORE INFORMATION.

PROVIDE PIPE SUPPORTS FOR THE GAS PIPING. REFER TO DETAIL AND SPECIFICATIONS.

ALL GAS PIPING SUPPORTS AND EXPANSION LOOPS TO BE IN ACCORDANCE WITH THE CODE REQUIREMENTS. CONTRACTOR TO ALLOW FOR ADDITIONAL ROOF SUPPORTS AS REQUIRED.

PROVIDE PRESSURE REDUCING VALVE AT EACH UNIT.

PROVIDE NEW OUTDOOR CONDENSER UNIT TO SERVE NEW SPLIT UNIT IN THE STAFF ROOM. INSTALL AS PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE NEW ECO-FOOT SNOW STAND FOR CONDENSING UNIT.

INSTALL NEW REFRIGERANT PIPING ON THE ROOF AND CONNECT TO NEW CONDENSING UNIT. PROVIDE ADEQUATE ROOF SUPPORTS FOR NEW PIPING. INSULATE ALL NEW REFRIGERANT PIPING.

ROOF PLAN – EQUIPMENT LAYOUT – NEW WORK – MECHANICAL
SCALE: 1:100

**Revisions**

| Ref. | No. | Description | Date | Initial |
|---|---|---|---|---|
| △ | 1 | 50% REVIEW 0 | 2022/02/17 | |
| △ | 2 | 75% REVIEW | 2022/03/09 | |
| △ | 3 | 100% REVIEW | 2022/03/31 | |
| △ | 4 | ISSUED FOR TENDER | 2022/04/26 | |

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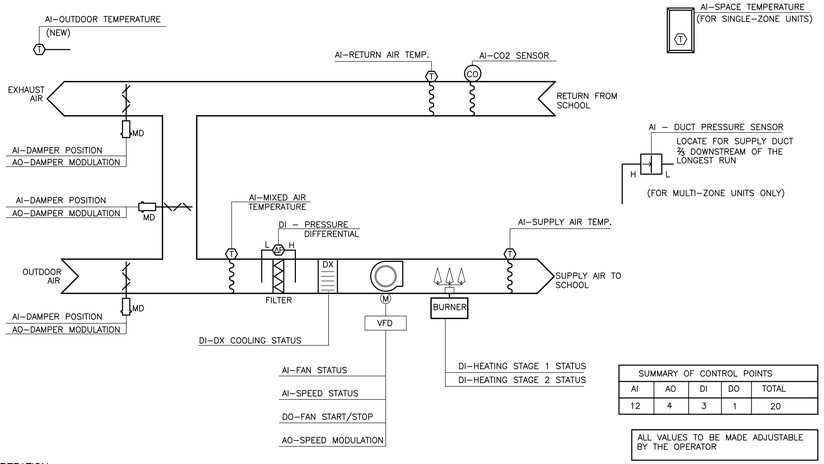
**Title:**

ROOF – EQUIPMENT LAYOUT – EXISTING & NEW WORK – MECHANICAL

| | |
|---|---|
| Drawn by: P.C. | Date: DECEMBER 2021 |
| Checked by: O.S. | Plotted: |
| Scale: AS SHOWN | Issued: |
| Job No.: 2022-01 | Drawing No.: M-3.3 |
| Set No.: | of: 10 |




| SUMMARY OF CONTROL POINTS | | | | |
|---|---|---|---|---|
| AI | AO | DI | DO | TOTAL |
| 12 | 4 | 3 | 1 | 20 |

ALL VALUES TO BE MADE ADJUSTABLE BY THE OPERATOR

## SEQUENCE OF OPERATION

SOME ROOFTOP UNITS ARE SINGLE–ZONE, SOME ARE MULTI–ZONE UNITS WITH VAV BOXES. REFER TO EQUPIMENT SCHEDULE ON M–1 FOR MORE DETAILS.

HEATING AND COOLING MODES
THE ROOFTOP UNIT SHALL BE ENABLED/ DISABLED BY THE BAS IN ACCORDANCE WITH THE BOARD STRATEGY.

HEATING/COOLING MODES: THE ROOFTOP UNIT SHALL BE IN HEATING MODE WHEN THE SCHOOL'S HEATING PLANT IS ENERGIZED. THE ROOFTOP UNIT SHALL BE IN COOLING MODE AT ALL OTHER TIMES. HEATING/COOLING MODE TO BE DICTATED BY BAS.

UNIT SHALL BE CAPABLE OF PERFORMING MORNING WARM–UPS DURING HEATING SEASON AND MORNING COOLING DOWN DURING COOLING PERIOD.

EQUIPMENT ON/OFF

THE ROOFTOP UNIT SHALL BE ENABLED/DISABLED ON A SCHEDULE DETERMINED BY THE OWNER. WHEN DISABLED, THE SUPPLY FAN WILL STOP, THE FRESH AIR AND EXHAUST DAMPERS SHALL BE FULLY CLOSED, THE RETURN DAMPER SHALL BE FULLY OPEN.

EQUIPMENT ON, HEATING MODE, OCCUPIED HOURS

THE SUPPLY FAN SHALL RUN CONTINUOUSLY DURING ALL OCCUPIED HOURS.

SINGLE ZONE UNITS: THE SUPPLY FAN VFD SHALL BE USED FOR BALANCING PURPOSES ONLY. ONCE THE BALANCED FLOW IS REACHED, THE VFD SHALL BE LOCKED AT THIS VALUE DURING OCCUPIED HOURS. IT IS RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THIS BALANCED VALUE BETWEEN THE AIR BALANCER AND THE CONTROLS CONTRACTOR.

MULTI–ZONE UNITS: THE SUPPLY FAN VFD SHALL MODULATE AS REQUIRED TO MAINTAIN THE STATIC PRESSURE IN THE DISCHARGE DUCTWORK AT 375 PA (ADJUSTABLE AFTER BALANCING). THE CORRELATION BETWEEN THE VARIABLE AIR FLOW AND RPM FOR EACH FAN SHALL BE DERIVED FROM THE FAN LAWS AND FAN CURVES.

NOTE: AT THE BEGINNING OF EACH OCCUPIED PERIOD THE SUPPLY FAN SHALL START AT 20% OF NOMINAL RPM. AFTER THE BAS CONFIRMED THAT THE FAN IS RUNNING, THE FANS SHALL RAMP UP TO THEIR REQUIRED RPM OVER A PERIOD OF NO LESS THAN 2 MINUTES.

THE FRESH AIR DAMPER SHALL OPEN TO THE MINIMUM POSITION (MINIMUM POSITION SHALL BE SET DURING AIR BALANCING IN ORDER TO ACHIEVE MINIMUM OUTSIDE AIR FLOW AS SHOWN ON ROOF–TOP UNIT SCHEDULE ON M–1). ONCE BAS CONFIRMS THAT THE FRESH AIR DAMPER HAS OPENED TO THE MINIMUM POSITION, THE DAMPERS ARE TO COME UNDER THE CONTROL OF THE CO2 SENSOR. DAMPERS SHALL BE MODULATED BY THE BAS IN ORDER TO MAINTAIN THE CO2 CONCENTRATION SETPOINT IN RETURN AIR STREAM AT 800 PPM (ADJUSTABLE). THE OPENING OF THE FRESH AIR DAMPER SHALL BE LIMITED BY A MINIMUM MIXED AIR TEMPERATURE OF 5°C. IF MIXED AIR TEMPERATURE DROPS BELOW 5°C, THE FRESH AIR DAMPER SHALL RETURN TO ITS MINIMUM POSITION UNTIL THE MIXED AIR TEMPERATURE RISES BACK TO 10°C.

THE GAS FIRED HEAT EXCHANGER SHALL BE STAGED BY THE UNIT'S CONTROLLER AS REQUIRED TO MAINTAIN THE DISCHARGED AIR TEMPERATURE AT 28°C (ADJUSTABLE). EACH STAGE SHALL RUN FOR A MINIMUM OF 5 MIN. (ADJUSTABLE) AS TO AVOID CYCLING. THE SUPPLY AIR TEMPERATURE SET–POINT SHALL BE RESET BETWEEN 23°C AND 33°C BASED ON THE OUTDOOR AIR TEMPERATURE AS FOLLOWS:

IF THE OAT TEMPERATURE IS –14°C OR BELOW, THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET TO 33°C.
IF THE OAT TEMPERATURE IS 10°C OR ABOVE, THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET TO 23°C.
IF THE OAT TEMPERATURE IS BETWEEN –14°C AND 10°C, THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE VARY LINEARLY BETWEEN 33°C AND 23°C.

EQUIPMENT ON, HEATING MODE, UNOCCUPIED HOURS

AT THE BEGINNING OF THE UNOCCUPIED PERIOD, THE ROOFTOP UNIT BE DISABLED (FAN OFF, FRESH AIR AND EXHAUST DAMPERS CLOSED, RETURN DAMPER OPEN). THE GAS FIRED HEAT EXCHANGER SHALL BE OFF.

IF THE TEMPERATURE IN ANY OF THE SPACES SERVED BY THE UNIT DROPS 2°C BELOW THE UNOCCUPIED SETPOINT, THE SUPPLY FAN SHALL START AND RAMP UP UNDER VFD CONTROL. THE FAN SHALL RUN CONTINUOUSLY AND THE UNITS CONTROLLER SHALL STAGE THE GAS BURNER AS REQUIRED UNTIL ALL SPACES ARE SATISFIED; THE FRESH AIR AND EXHAUST DAMPERS SHALL REMAIN CLOSED, THE RETURN DAMPER SHALL STAY FULLY OPEN. THE RUN–TIME OF THE FANS SHALL NOT BE LESS THAN 10 MINUTES. ONCE ALL SPACES ARE SATISFIED, THE UNIT SHALL AGAIN BE DISABLED.

NOTE: ON A CALL TO RUN THE FANS THE SUPPLY FAN SHALL START AT 20% OF NOMINAL RPM. AFTER THE BAS CONFIRMED THAT THE FAN IS RUNNING, THE FAN SHALL RAMP UP TO THEIR REQUIRED RMP OVER A PERIOD OF NO LESS THAN 2 MINUTES.

EQUIPMENT ON, COOLING MODE, OCCUPIED HOURS,

THE SUPPLY FAN SHALL RUN CONTINUOUSLY.

SINGLE ZONE UNITS: THE SUPPLY FAN VFD SHALL BE USED FOR BALANCING PURPOSES ONLY. ONCE THE BALANCED FLOW IS REACHED, THE VFD SHALL BE LOCKED AT THIS VALUE DURING OCCUPIED HOURS. IT IS RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THIS BALANCED VALUE BETWEEN THE AIR BALANCER AND THE CONTROLS CONTRACTOR.

MULTI–ZONE UNITS: THE SUPPLY FAN VFD SHALL MODULATE AS REQUIRED TO MAINTAIN THE STATIC PRESSURE IN THE DISCHARGE DUCTWORK AT 375 PA (ADJUSTABLE AFTER BALANCING). THE CORRELATION BETWEEN THE VARIABLE AIR FLOW AND RPM FOR EACH FAN SHALL BE DERIVED FROM THE FAN LAWS AND FAN CURVES.

NOTE: AT THE BEGINNING OF EACH OCCUPIED PERIOD THE SUPPLY FAN SHALL START AT 20% OF NOMINAL RPM. AFTER THE BAS CONFIRMED THAT THE FAN IS RUNNING, THE FAN SHALL RAMP UP TO THEIR REQUIRED RPM OVER A PERIOD OF NO LESS THAN 2 MINUTES.

THE FRESH AIR DAMPER SHALL OPEN TO THE MINIMUM POSITION (MINIMUM POSITION SHALL BE SET DURING AIR BALANCING IN ORDER TO ACHIEVE MINIMUM OUTSIDE AIR FLOW AS SHOWN ON ROOF–TOP UNIT SCHEDULE ON M–1). ONCE BAS CONFIRMS THAT THE FRESH AIR DAMPER HAS OPENED TO THE MINIMUM POSITION, THE DAMPERS ARE TO COME UNDER THE CONTROL OF THE CO2 SENSOR. DAMPERS SHALL BE MODULATED BY THE BAS IN ORDER TO MAINTAIN THE CO2 CONCENTRATION SETPOINT IN RETURN AIR STREAM AT 800 PPM (ADJUSTABLE).

THE DX COOLING SECTION SHALL BE MODULATED BY UNIT CONTROLLER AS REQUIRED TO MAINTAIN THE DISCHARGED AIR TEMPERATURE AT 12°C (ADJUSTABLE). THE DX COOLING SECTION SHALL HAVE A MINIMUM RUN TIME OF 5 MINUTES (ADJUSTABLE).

DISCHARGE AIR TEMPERATURE SHALL BE RE–SET BY THE BAS IN ORDER TO MAINTAIN SPACE TEMPERATURE SETPOINT AT 24°C (ADJUSTABLE)

FREE COOLING SHALL BE PROVIDED BY THE UNIT'S ECONOMIZER BASED ON COMPARATIVE ENTHALPY CONTROL.

EQUIPMENT ON, COOLING MODE, UNOCCUPIED HOURS

DURING THE COOLING MODE UNOCCUPIED PERIODS, THE ROOFTOP UNIT SHALL BE DISABLED (FAN OFF, FRESH AIR AND EXHAUST DAMPERS CLOSED, RETURN DAMPER OPEN).

MORNING WARM UP/COOLDOWN

DURING HEATING MODE, AN OPTIMUM MORNING WARM–UP PROGRAM SHALL ENABLE THE ROOFTOP UNIT PRIOR TO THE SCHEDULED START OF THE OCCUPIED MODE. THE FRESH AIR AND EXHAUST AIR DAMPERS SHALL BE CLOSED. THE SUPPLY FAN SHALL START AND RAMP UP UNDER VFD CONTROL. THE FAN SHALL RUN CONTINUOUSLY AND THE UNITS CONTROLLER SHALL STAGE THE GAS BURNER AS REQUIRED TO BRING THE SPACE TEMPERATURES TO THE DESIRED OCCUPIED SETPOINT. THE START TIME FOR THE MORNING WARM UP SHALL BE A MAXIMUM OF 2 HOURS PRIOR TO NORMAL OCCUPANCY.

DURING COOLING MODE, AAN OPTIMUM MORNING COOL–DOWN PROGRAM SHALL ENABLE THE ROOFTOP UNIT PRIOR TO THE SCHEDULED START OF THE OCCUPIED MODE. THE FRESH AIR AND EXHAUST AIR DAMPERS SHALL BE CLOSED. THE SUPPLY FAN SHALL START AND RAMP UP UNDER VFD CONTROL. THE FAN SHALL RUN CONTINUOUSLY AND THE UNITS CONTROLLER SHALL STAGE THE DX SECTION AS REQUIRED TO BRING THE SPACE TEMPERATURES TO THE DESIRED OCCUPIED SETPOINT. THE START TIME FOR THE MORNING COOL DOWN SHALL BE A MAXIMUM OF 2 HOURS PRIOR TO NORMAL OCCUPANCY.

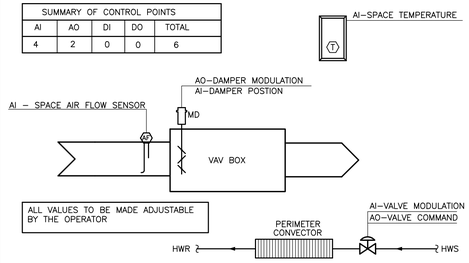
ALARMS

THE BAS SHALL GENERATE ALARMS IN CASE OF:

ANY FAN FAILURE;
ANY VFD FAILURE;
ANY DAMPER FAILURE;
DISCHARGE AIR PRESSURE RISES ABOVE 400 PA;
DISCHARGED AIR VARIANCE OF ±3°C FROM THE SETPOINT;
MIXED AIR TEMPERATURE LOWER THAN 4°C (IN ADDITION TO ALARM, THE FRESH AIR DAMPERS SHALL CLOSE);
DISCHARGED AIR LOWER THAN 8°C (IN ADDITION TO ALARM, THE FRESH AIR DAMPER SHALL CLOSE);
DISCHARGED AIR LOWER THAN 5°C (IN ADDITION TO ALARM, THE ENTIRE AIR HANDLER SHALL SHUT DOWN AND WILL REQUIRE MANUAL RE–START);
PRESSURE DIFFERENTIAL ACROSS THE FILTERS HIGHER THAN 254 PA.

CONTROL DIAGRAM FOR RTUs
N.T.S.

| SUMMARY OF CONTROL POINTS | | | | |
|---|---|---|---|---|
| AI | AO | DI | DO | TOTAL |
| 4 | 2 | 0 | 0 | 6 |




## SEQUENCE OF OPERATION

THE BAS CONTRACTOR SHALL PROVIDE A DEDICATED DDC CONTROLLER WITH INTEGRAL DAMPER ACTUATOR.

HEATING/COOLING MODES

THE VAV BOXES SHALL SELECT HEATING/COOLING MODE BASED ON THE HEATING/COOLING MODE OF ITS ASSOCIATED ROOFTOP UNIT.

HEATING MODE – OCCUPIED PERIODS

AT THE BEGINNING OF EACH OCCUPIED PERIOD, THE VAV BOXES SHALL OPEN TO ALLOW A MINIMUM OF THEIR AIR FLOW.

THE SPACE TEMPERATURE SENSOR SHALL MODULATE THE PERIMETER HEATING CONTROL VALVE AS REQUIRED TO MAINTAIN THE HEATING SPACE OCCUPIED SETPOINT.

IF THE PERIMETER HEATING VALVE IS OPEN 100% FOR MORE THAN 2 MINUTES, THE VAV BOXES SHALL INCREASE THE AIR SUPPLY BEYOND THE MINIMUM AS REQUIRED TO MAINTAIN THE OCCUPIED HEATING SETPOINT IN THE SPACE (21°C – ADJUSTABLE).

HEATING MODE – UNOCCUPIED PERIODS

THE VAV BOXES SHALL CLOSE TO MINIMUM AIR FLOW POSITION.

COOLING MODE – OCCUPIED PERIODS.

AT THE BEGINNING OF EACH OCCUPIED PERIOD, THE VAV BOXES SHALL OPEN TO ALLOW A MINIMUM OF THEIR AIR FLOW.

THE VAV BOXES SHALL INCREASE THE AIR SUPPLY BEYOND THE MINIMUM AS REQUIRED TO MAINTAIN THE OCCUPIED COOLING SETPOINT IN THE SPACE (24°C – ADJUSTABLE).

COOLING MODE – UNOCCUPIED PERIODS.

THE VAV BOXES SHALL CLOSE TO MINIMUM AIR FLOW POSITION

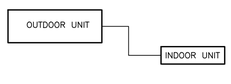
ALARMS

THE BAS SHALL GENERATE ALARMS IN CASE OF:

ANY SPACE TEMPERATURE VARIANCE OF ±3°C FROM THE SETPOINT;
ANY VAV BOX FAILURE.

NOTE: EXACT NUMBER OF VAVS TO BE DETERMINED BASED ON THE LAYOUT DRAWINGS.

TYPICAL VAV BOX – CONTROL DIAGRAM
N.T.S.




| SUMMARY OF CONTROL POINTS | | | | |
|---|---|---|---|---|
| AI | AO | DI | DO | TOTAL |
| 1 | 0 | 0 | 0 | 1 |

ALL VALUES TO BE MADE ADJUSTABLE BY THE OPERATOR

## SEQUENCE OF OPERATION

SPLIT AIR CONDITIONING SYSTEMS

THE SPLIT AIR CONDITIONING SYSTEMS SHALL BE ENERGIZED DURING THE COOLING OCCUPIED PERIODS ONLY.
WHEN THE SYSTEMS ARE ENERGIZED, THE INDOOR EVAPORATOR FANS SHALL RUN AS REQUIRED TO MAINTAIN THE COOLING/OCCUPIED SPACE SETPOINT (DEFAULT: 25°C, ADJUSTABLE.).

THE OUTDOOR CONDENSING UNIT SHALL OPERATE AS REQUIRED TO REJECT THE HEAT FROM THE BUILDING AND COLLECTED BY THE EVAPORATORS.
DURING UNOCCUPIED PERIODS, THE SPLIT AIR CONDITIONING SYSTEMS SHALL SHUT DOWN.

BAS TO ENSURE THAT HEATING AND COOLING SHALL NOT OPERATE AT THE SAME TIME.

BAS ALARMS

THE BAS SHALL GENERATE ALARMS IN ADDITION TO THOSE INCLUDED IN SECTION 23 09 23 AS FOLLOWS:

- SPACE TEMPERATURE IN ANY CONTROLLED AREA VARIES ±5°C FROM SETPOINT FOR MORE THAN 15 MINUTES.
- ANY SPLIT CONDENSING UNIT FAILURE

REFER TO SPECIFICATIONS SECTION FOR THE CONTROL OF THE A/C SYSTEM.

CONTROLS SUB–CONTRACTOR TO CONNECT TO THE AC SYSTEM VIA BACNET AND PROVIDE MINIMUM REQUIRED POINTS. PROVIDE ALL REQUIRED WIRING AND CONDUITS BETWEEN INDOOR AND OUTDOOR UNIT AND CONTROLLERS. COORDINATE WITH THE AC SYSTEM MANUFACTURER.

FOR EACH INDOOR UNIT PROVIDE AT LEAST:

- ROOM TEMPERATURE SETTING
- ROOM TEMPERATURE RESETTING
- ROOM TEMPERATURE
- INDOOR UNIT START/STOP
- OPERATING MODE
- INDOOR UNIT STATUS

FOR OUTDOOR UNIT PROVIDE:

- OUTDOOR UNIT START/STOP
- OUTDOOR UNIT STATUS

WALL MOUNTED CASSETTE – CONTROL DIAGRAM
N.T.S.

NOTES:

ALL VALUES TO BE MADE ADJUSTABLE BY THE OPERATOR.

ALL SENSORS AND DEVICES TO BE NEW.

PROVIDE NEW WIRING IN CONDUIT AS REQUIRED.

PROVIDE NEW DUCT–MOUNTED SMOKE SENSORS FOR EACH RTU. CONNECT THE SF TO FIRE ALARM SYSTEM. UNIT SHALL SHUT–DOWN IN CASE OF FIRE.

LOCATE PRESSURE DIFFERENTIAL SENSOR FOR SUPPLY DUCT ⅔ DOWNSTREAM OF THE LONGEST RUN.

Revisions

| Ref. | No. | Description | Date | Initial |
|---|---|---|---|---|
| △ | 1 | 50% REVIEW 0 | 2022/02/17 | |
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Title:

CONTROL SCHEMATICS – MECHANICAL

| Drawn by: | Date: |
|---|---|
| P.C. | DECEMBER 2021 |
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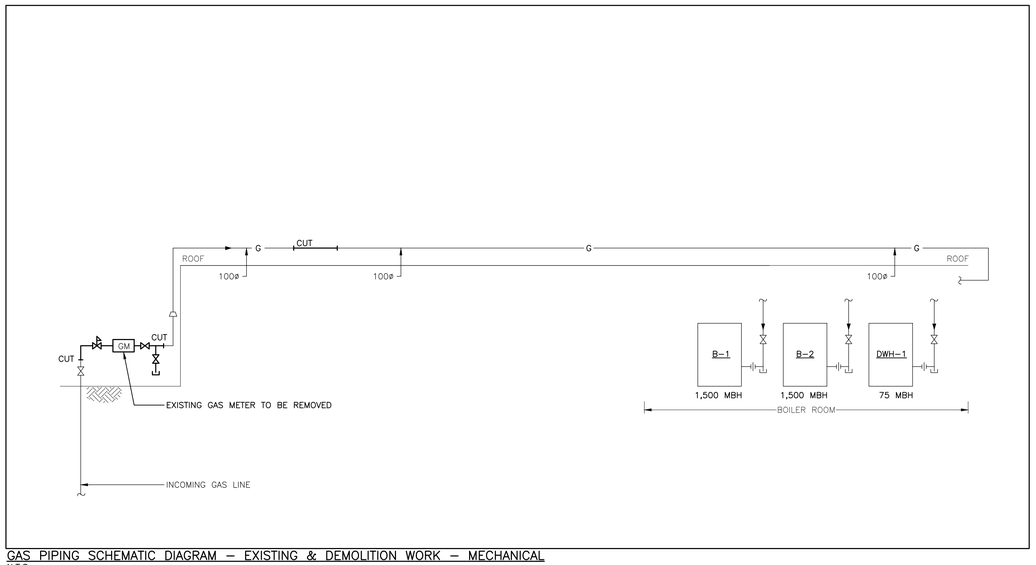
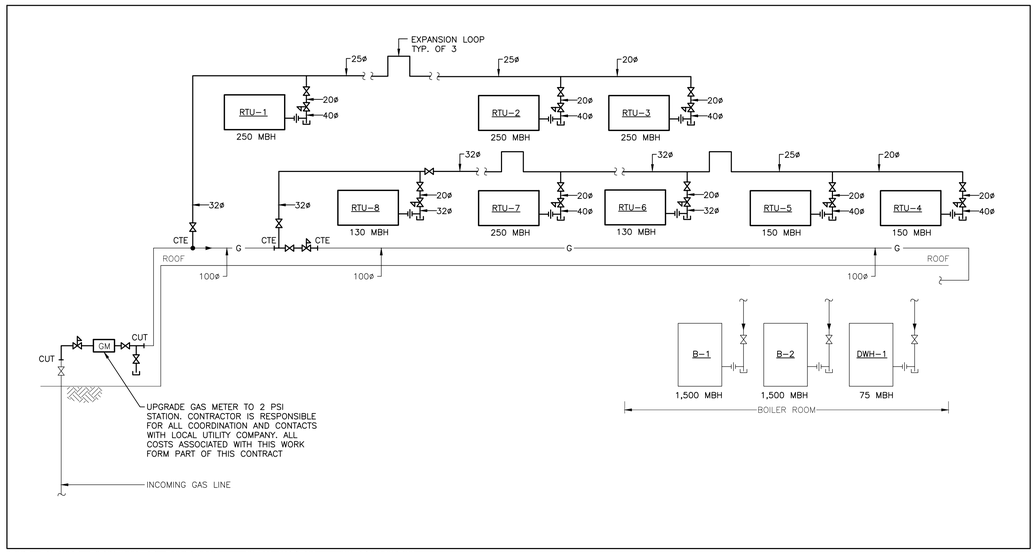



GAS PIPING SCHEMATIC DIAGRAM – EXISTING & DEMOLITION WORK – MECHANICAL
N.T.S.




GAS PIPING SCHEMATIC DIAGRAM – NEW WORK – MECHANICAL
N.T.S.

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**Title:**

GAS PIPING SCHEMATIC – EXISTING, DEMOLITION & NEW WORK – MECHANICAL

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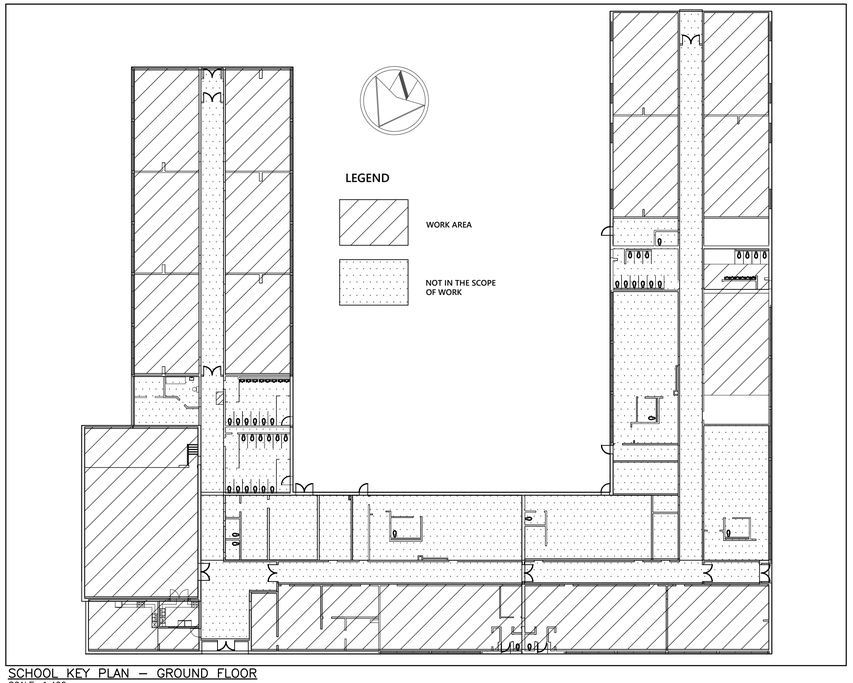
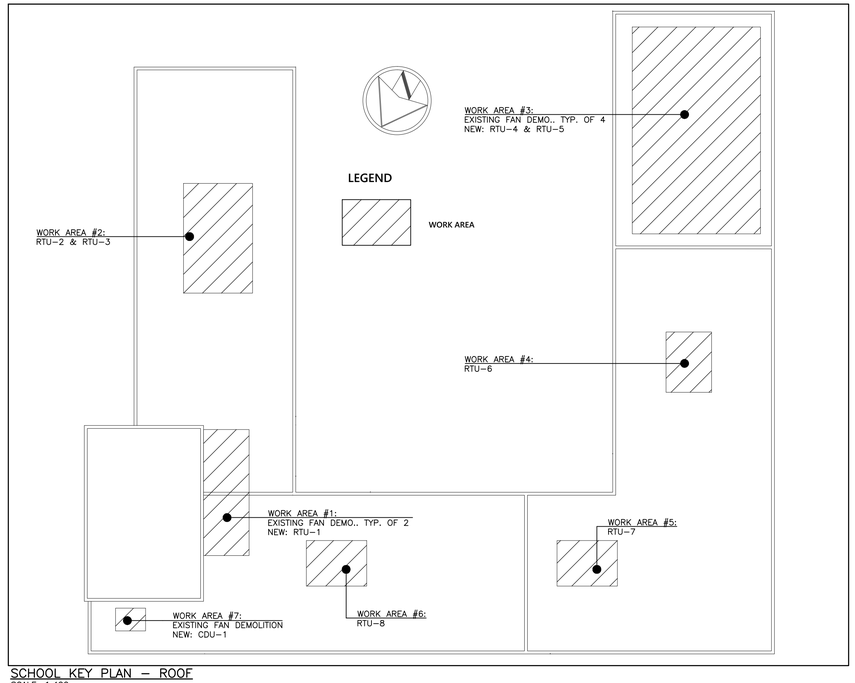



SCHOOL KEY PLAN – GROUND FLOOR
SCALE: 1:400




SCHOOL KEY PLAN – ROOF
SCALE: 1:400

## ELECTRICAL LEGEND

| | |
|---|---|
| | DIRECT POWER OUTLET FOR USE AS NOTED INCLUDING FINAL CONNECTION |
| | NON-FUSED DISCONNECT SWITCH |
| | FUSED DISCONNECT SWITCH |
| GFI | 20A, 120V U-GROUND DUPLEX RECEPTACLE. GROUND FAULT INTERRUPTER |
| WP | WEATHERPROOF |
| EX | DENOTES: EXISTING TO REMAIN |
| R | DENOTES: EXISTING TO BE REMOVED |
| N | DENOTES: NEW |
| RE | DENOTES: EXISTING TO BE RELOCATED |
| | SINGLE POLE TOGGLE SWITCH WITH SINGLE GANG |
| | SINGLE POLE TOGGLE SWITCH WITH THREE GANG |
| | ELECTRICAL PANEL, SURFACE OR FLUSH RESPECTIVELY |
| | 15A, 120V U-GROUND DUPLEX RECEPTACLE MOUNTED AT HIGH LEVEL |
| GFI | 15A, 120V U-GROUND GROUND FAULT INTERRUPTER TYPE DUPLEX RECEPTACLE |
| | DATA OUTLET C/W 3/4"C WITH 90° BEND AT TOP AND PVC END BUSHING TO ACCESSIBLE CEILING SPACE. |

## MECHANICAL EQUIPMENT WIRING SCHEDULE

| EQUIPMENT DESCRIPTION | POWER SOURCE | STARTER TYPE | MCA/BHP/ KW/AMP | VOLTS/PH./ FREQUENCY | BREAKER SIZE OR FUSE SIZE | FEEDER SIZE | REMARKS |
|---|---|---|---|---|---|---|---|
| RTU-1 | BOILER RM DISTRIBUTION PANEL 'DP-1' | INTEGRAL | 48.0 MCA | 208/3/60 | 60A | 3#AWG6+G IN 35mmC | PROVIDE NEW FUSED DISCONNECT AND CONNECT TO NEW DISTRIBUTION PANEL 'DP-1'. PROVIDE ALL WIRING BETWEEN THE PANEL 'DP-1', DISCONNECT, WEATHERPROOF DISCONNECT AND EQUIPMENT. ALL WIRING TO BE IN RIGID METAL CONDUIT. LAST 900 MM SHALL BE LIQUID-TIGHT FLEXIBLE FEEDERS. |
| RTU-2 | | | 48.0 MCA | | 60A | 3#AWG6+G IN 35mmC | |
| RTU-3 | | | 48.0 MCA | | 60A | 3#AWG6+G IN 35mmC | |
| RTU-4 | | | 37.0 MCA | | 50A | 3#AWG2+G IN 41mmC | |
| RTU-5 | | | 37.0 MCA | | 50A | 3#AWG2+G IN 41mmC | |
| RTU-6 | | | 30.0 MCA | | 45A | 3#AWG4+G IN 35mmC | |
| RTU-7 | | | 48.0 MCA | | 60A | 3#AWG6+G IN 35mmC | |
| RTU-8 | | | 30.0 MCA | | 45A | 3#AWG8+G IN 27mmC | |
| CDU-1 | | | 17.1 MCA | 208/1/60 | 20A | 3#AWG12+G IN 21mmC | PROVIDE NEW FUSED DISCONNECT AND CONNECT ON NEW DISTRIBUTION PANEL 'DP-1'. PROVIDE ALL WIRING BETWEEN THE PANEL 'DP-1', DISCONNECT, WEATHERPROOF DISCONNECT AND EQUIPMENT. ALL WIRING TO BE IN RIGID METAL CONDUIT. LAST 900 MM SHALL BE LIQUID-TIGHT FLEXIBLE FEEDERS. |
| AC-1 | | | 1.0 MCA | 208/1/60 | 20A | 3#AWG12+G IN 21mmC | PROVIDE NEW FUSED DISCONNECT AND CONNECT ON NEW DISTRIBUTION PANEL 'DP-1'. PROVIDE ALL WIRING BETWEEN THE PANEL 'DP-1', DISCONNECT AND EQUIPMENT. ALL IN DOOR WIRING TO BE IN EMT CONDUIT, PROVIDE LOCAL DISCONNECT SWITCH. |
| BL-1 | CORRIDOR PANEL 'A' | | N/A | 120/1/60 | 15A | 3#AWG12+G IN 21mmC | PROVIDE NEW FUSED DISCONNECT AND CONNECT ON EXISTING DISTRIBUTION PANEL 'A'. PROVIDE ALL WIRING BETWEEN THE PANEL 'A', DISCONNECT AND MOTORIZED BLINDS. ALL IN DOOR WIRING TO BE IN EMT CONDUIT. PROVIDE LOCAL DISCONNECT SWITCH. |
| H-1 | CORRIDOR PANEL 'A' | | 1.0 MCA | 120/1/60 | 15A | 3#AWG12+G IN 21mmC | PROVIDE NEW FUSED DISCONNECT AND CONNECT ON EXISTING DISTRIBUTION PANEL 'A'. PROVIDE ALL WIRING BETWEEN THE PANEL 'A', DISCONNECT AND MOTORIZED BLINDS. ALL IN DOOR WIRING TO BE IN EMT CONDUIT. PROVIDE LOCAL DISCONNECT SWITCH. |

NOTES:

PROVIDE CONNECTION TO MECHANICAL EQUIPMENT TO ENSURE THAT FULL OPERATIONAL SYSTEMS ARE DELIVERED TO THE OWNER.

PROVIDE POWER CONNECTION TO ALL EQUIPMENT LISTED IN THE SCHEDULE. REFER ROOF LAYOUT FOR EXACT LOCATION OF EQUIPMENT.

PROVIDE SEPARATE DISCONNECTS FOR INDIVIDUAL MECHANICAL EQUIPMENT. SIZE AS INDICATED IN THE SCHEDULE.

DISCONNECTS LOCATIONS SHALL BE VERIFIED AND CO-COORDINATED ON SITE.

CONNECT NEW UNITS TO EXISTING FIRE ALARM SYSTEM. INCLUDE ALL REQUIRED WIRING AND DEVICES. PROVIDE VERIFICATION OF THE FIRE ALARM SYSTEM.

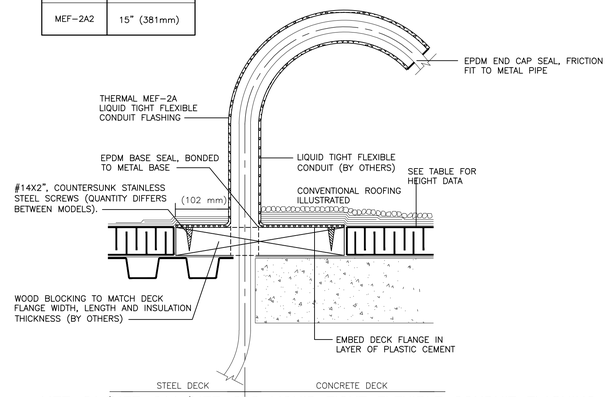
CONNECT NEW UNITS TO EXISTING BAS. INCLUDE ALL REQUIRED WIRING AND DEVICES. PROVIDE VERIFICATION OF THE BAS.

## NEW LIGHTING FIXTURE SCHEDULE

| TYPE | MANUFACTURER | CATALOGUE | DESCRIPTION |
|---|---|---|---|
| A | ORION | HHSL1-E1-120V-FD-840-06W | HARRIS LED HIGH BAY STAR LINE, GEN1, 120-277V, C/W WIREGUARD |

TABLE

| MODEL | HEIGHT |
|---|---|
| MEF-2A | 12" (305mm) |
| MEF-2A1 | 12" (305mm) |
| MEF-2A2 | 15" (381mm) |




MEF-2A/MEF-2A1/MEF-2A2 LIQUID TIGHT FLEXIBLE CONDUIT FLASHING
N.T.S.

## GENERAL ELECTRICAL NOTES

1. IT IS MANDATORY FOR THE ELECTRICAL CONTRACTOR TO VISIT SITE AND REVIEW EXISTING CONDITIONS AND DEMOLITION SCOPE OF WORK TO SUIT EXISTING ARCHITECTURAL AND STRUCTURAL CONDITIONS AND MECHANICAL DRAWINGS.
2. CAREFULLY EXAMINE OTHER EXISTING UTILITY LINES SUCH AS GAS, WATER ETC. PRIOR TO START THE ELECTRICAL CONSTRICTION WORKS AND COORDINATE WITH OTHER TRADES AND REPORT OF ANY DISCREPANCY PRIOR TO PROCEEDING.
3. REFER TO ELECTRICAL AND MECHANICAL LAYOUTS FOR EXACT LOCATION OF ALL EQUIPMENT.
4. LOCATIONS OF ALL NEW DISCONNECT SWITCHES, VFDS AND STARTERS SHALL BE CONFIRMED WITH DIVISION 15 PRIOR TO INSTALLATION.

**Revisions**

| Ref. | No. | Description | Date | Initial |
|---|---|---|---|---|
| △ | 1 | 50% REVIEW 0 | 2022/02/17 | |
| △ | 2 | 75% REVIEW | 2022/03/09 | |
| △ | 3 | 100% REVIEW | 2022/03/31 | |
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**Title:**

KEY PLANS, SYMBOL LIST, NOTES, EQUIPMENT WIRING DIAGRAM – ELELCTRICAL

| | |
|---|---|
| Drawn by: P.C. | Date: DECEMBER 2021 |
| Checked by: O.S. | Plotted: |
| Scale: AS SHOWN | Issued: |
| Job No.: 2022-01 | Drawing No.: E-1.1 |
| Set No.: | of: 5 |

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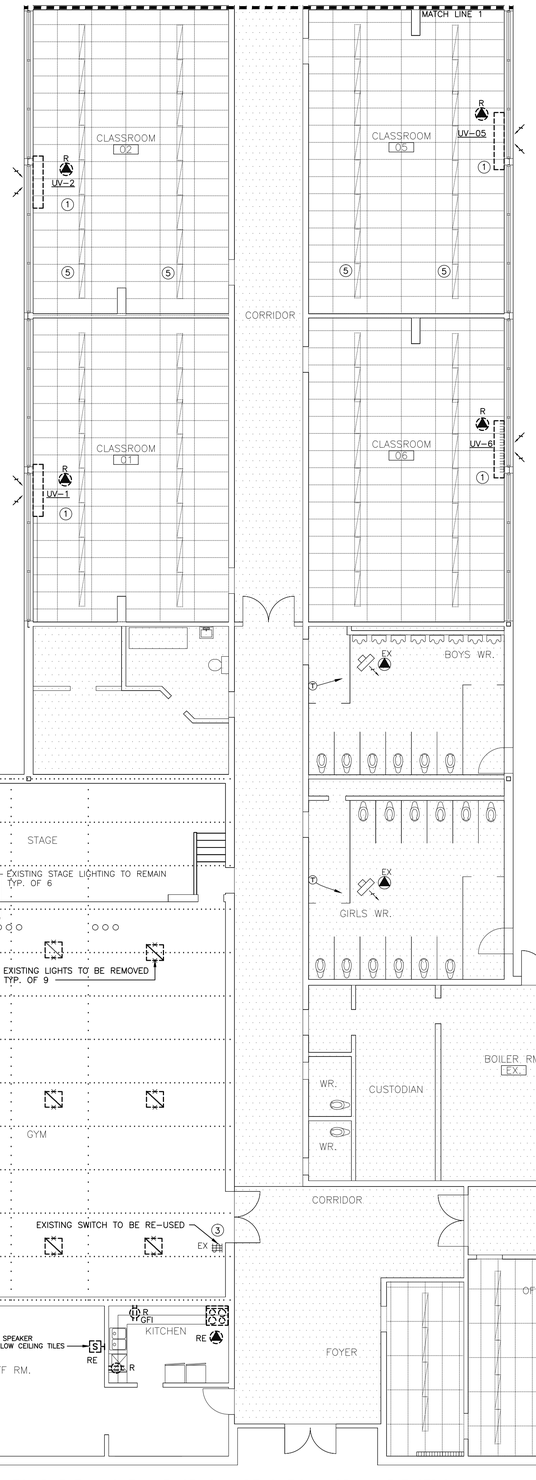


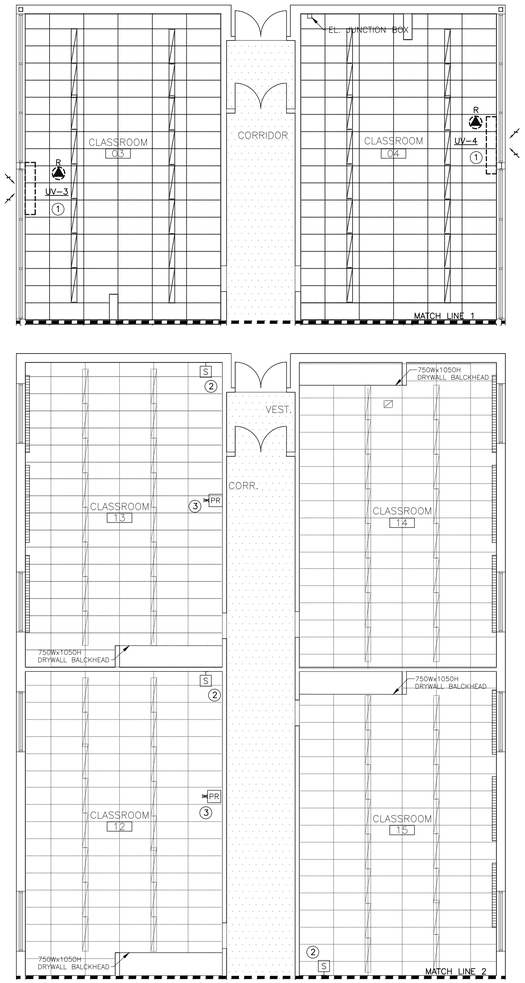


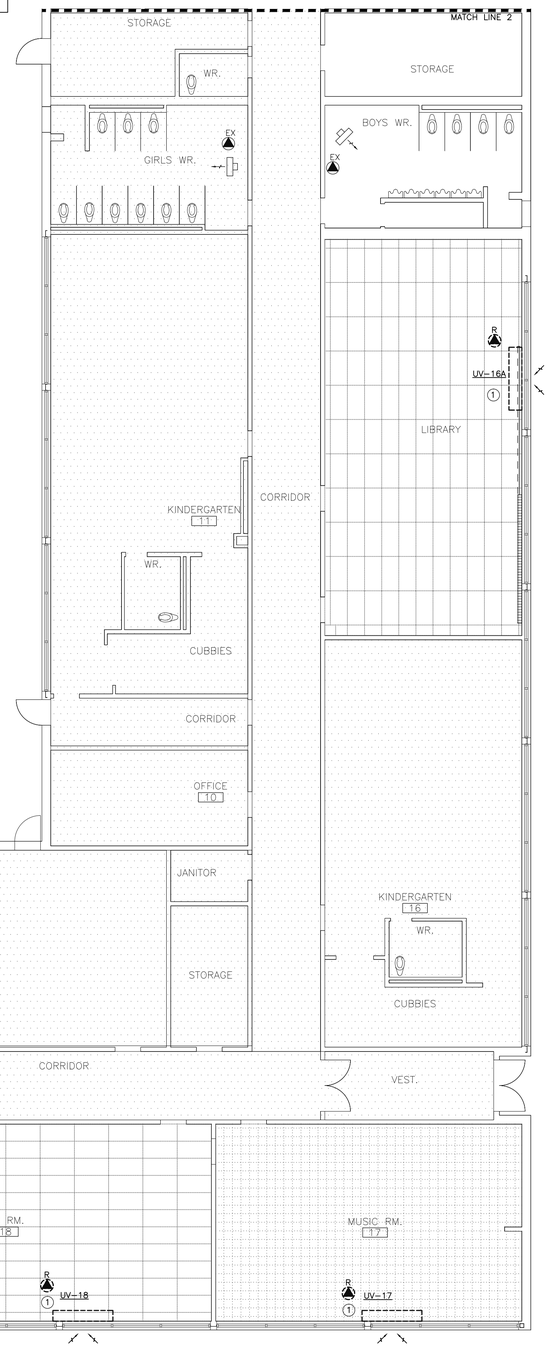


KEY NOTES

1. REMOVE EXISTING UNIT VENTILATOR. CUT LOCALLY AND DISCONNECT FROM EXISTING CONTROLS AND POWER SUPPLY. REMOVE ALL REDUNDANT WIRING.
2. HORN TYPE SPEAKER 400MM BELOW CEILING TILES TO BE TEMPORALLY REMOVED AND INSTALLED BACK AFTER DUCTWORK COMPLETION.
3. REMOVE EXISTING WIRING FROM LIGHTS TO CONTROL PANEL. RE-USE EXISTING SWITCHES. REMOVE ALL REDUNDANT WIRING.
4. CLASSROOM PROJECTOR 600MM BELOW CEILING TILES TO BE TEMPORALLY REMOVED AND INSTALLED BACK AFTER DUCTWORK COMPLETION.
5. LOWER THE LIGHT FIXTURE AS REQUIRED IN ORDER TO ACCOMMODATE DUCTWORK.

GROUND FLOOR – EQUIPMENT LAYOUT – EXISTING & DEMOLITION WORK – ELELCTRICAL
SCALE: 1:100

**Revisions**

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**Title:**

GROUND FLOOR – EQUIPMENT & LIGHTING LAYOUT – EXISTING & DEMOLITION WORK – ELELCTRICAL

| Drawn by: | Date: |
|---|---|
| P.C. | DECEMBER 2021 |
| **Checked by:** | **Plotted:** |
| O.S. | |
| **Scale:** | **Issued:** |
| AS SHOWN | |
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| 2022-01 | E-2.1 |
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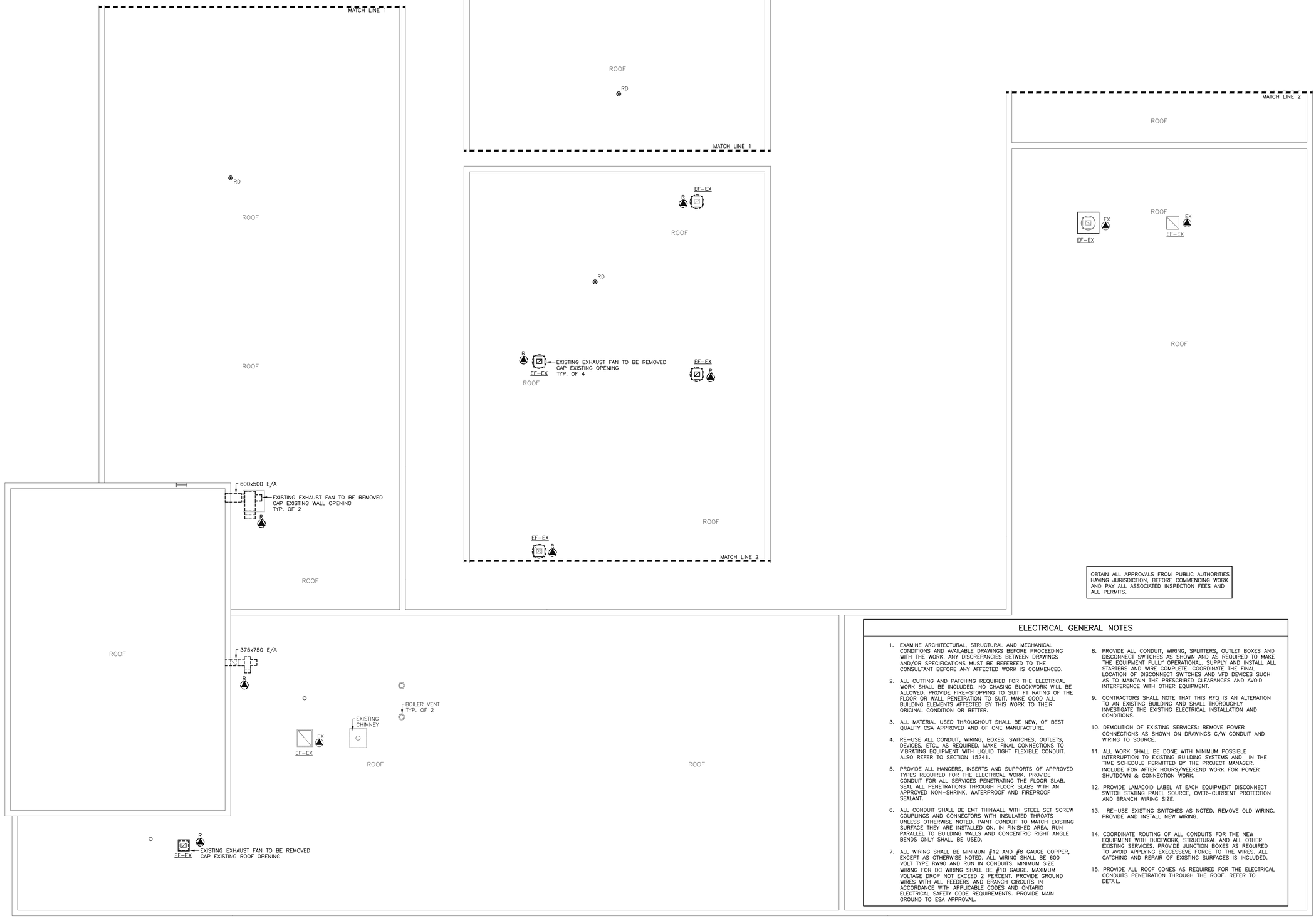


ROOF PLAN – EQUIPMENT LAYOUT – EXISTING & DEMOLITION WORK – ELELCTRICAL
SCALE: 1:100

OBTAIN ALL APPROVALS FROM PUBLIC AUTHORITIES HAVING JURISDICTION, BEFORE COMMENCING WORK AND PAY ALL ASSOCIATED INSPECTION FEES AND ALL PERMITS.

## ELECTRICAL GENERAL NOTES

1. EXAMINE ARCHITECTURAL, STRUCTURAL AND MECHANICAL CONDITIONS AND AVAILABLE DRAWINGS BEFORE PROCEEDING WITH THE WORK. ANY DISCREPANCIES BETWEEN DRAWINGS AND/OR SPECIFICATIONS MUST BE REFEREED TO THE CONSULTANT BEFORE ANY AFFECTED WORK IS COMMENCED.
2. ALL CUTTING AND PATCHING REQUIRED FOR THE ELECTRICAL WORK SHALL BE INCLUDED. NO CHASING BLOCKWORK WILL BE ALLOWED. PROVIDE FIRE-STOPPING TO SUIT FT RATING OF THE FLOOR OR WALL PENETRATION TO SUIT. MAKE GOOD ALL BUILDING ELEMENTS AFFECTED BY THIS WORK TO THEIR ORIGINAL CONDITION OR BETTER.
3. ALL MATERIAL USED THROUGHOUT SHALL BE NEW, OF BEST QUALITY CSA APPROVED AND OF ONE MANUFACTURE.
4. RE-USE ALL CONDUIT, WIRING, BOXES, SWITCHES, OUTLETS, DEVICES, ETC., AS REQUIRED. MAKE FINAL CONECTIONS TO VIBRATING EQUIPMENT WITH LIQUID TIGHT FLEXIBLE CONDUIT. ALSO REFER TO SECTION 15241.
5. PROVIDE ALL HANGERS, INSERTS AND SUPPORTS OF APPROVED TYPES REQUIRED FOR THE ELECTRICAL WORK. PROVIDE CONDUIT FOR ALL SERVICES PENETRATING THE FLOOR SLAB. SEAL ALL PENETRATIONS THROUGH FLOOR SLABS WITH AN APPROVED NON-SHRINK, WATERPROOF AND FIREPROOF SEALANT.
6. ALL CONDUIT SHALL BE EMT THINWALL WITH STEEL SET SCREW COUPLINGS AND CONNECTORS WITH INSULATED THROATS UNLESS OTHERWISE NOTED. PAINT CONDUIT TO MATCH EXISTING SURFACE THEY ARE INSTALLED ON. IN FINISHED AREA, RUN PARALLEL TO BUILDING WALLS AND CONCENTRIC RIGHT ANGLE BENDS ONLY SHALL BE USED.
7. ALL WIRING SHALL BE MINIMUM #12 AND #8 GAUGE COPPER, EXCEPT AS OTHERWISE NOTED. ALL WIRING SHALL BE 600 VOLT TYPE RW90 AND RUN IN CONDUITS. MINIMUM SIZE WIRING FOR DC WIRING SHALL BE #10 GAUGE. MAXIMUM VOLTAGE DROP NOT EXCEED 2 PERCENT. PROVIDE GROUND WIRES WITH ALL FEEDERS AND BRANCH CIRCUITS IN ACCORDANCE WITH APPLICABLE CODES AND ONTARIO ELECTRICAL SAFETY CODE REQUIREMENTS. PROVIDE MAIN GROUND TO ESA APPROVAL.
8. PROVIDE ALL CONDUIT, WIRING, SPLITTERS, OUTLET BOXES AND DISCONNECT SWITCHES AS SHOWN AND AS REQUIRED TO MAKE THE EQUIPMENT FULLY OPERATIONAL. SUPPLY AND INSTALL ALL STARTERS AND WIRE COMPLETE. COORDINATE THE FINAL LOCATION OF DISCONNECT SWITCHES AND VFD DEVICES SUCH AS TO MAINTAIN THE PRESCRIBED CLEARANCES AND AVOID INTERFERENCE WITH OTHER EQUIPMENT.
9. CONTRACTORS SHALL NOTE THAT THIS RFQ IS AN ALTERATION TO AN EXISTING BUILDING AND SHALL THOROUGHLY INVESTIGATE THE EXISTING ELECTRICAL INSTALLATION AND CONDITIONS.
10. DEMOLITION OF EXISTING SERVICES: REMOVE POWER CONNECTIONS AS SHOWN ON DRAWINGS C/W CONDUIT AND WIRING TO SOURCE.
11. ALL WORK SHALL BE DONE WITH MINIMUM POSSIBLE INTERRUPTION TO EXISTING BUILDING SYSTEMS AND IN THE TIME SCHEDULE PERMITTED BY THE PROJECT MANAGER. INCLUDE FOR AFTER HOURS/WEEKEND WORK FOR POWER SHUTDOWN & CONNECTION WORK.
12. PROVIDE LAMACOID LABEL AT EACH EQUIPMENT DISCONNECT SWITCH STATING PANEL SOURCE, OVER-CURRENT PROTECTION AND BRANCH WIRING SIZE.
13. RE-USE EXISTING SWITCHES AS NOTED. REMOVE OLD WIRING. PROVIDE AND INSTALL NEW WIRING.
14. COORDINATE ROUTING OF ALL CONDUITS FOR THE NEW EQUIPMENT WITH DUCTWORK, STRUCTURAL AND ALL OTHER EXISTING SERVICES. PROVIDE JUNCTION BOXES AS REQUIRED TO AVOID APPLYING EXCECSSEVE FORCE TO THE WIRES. ALL CATCHING AND REPAIR OF EXISTING SURFACES IS INCLUDED.
15. PROVIDE ALL ROOF CONES AS REQUIRED FOR THE ELECTRICAL CONDUITS PENETRATION THROUGH THE ROOF. REFER TO DETAIL.

**Revisions**

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APRIL, 2022
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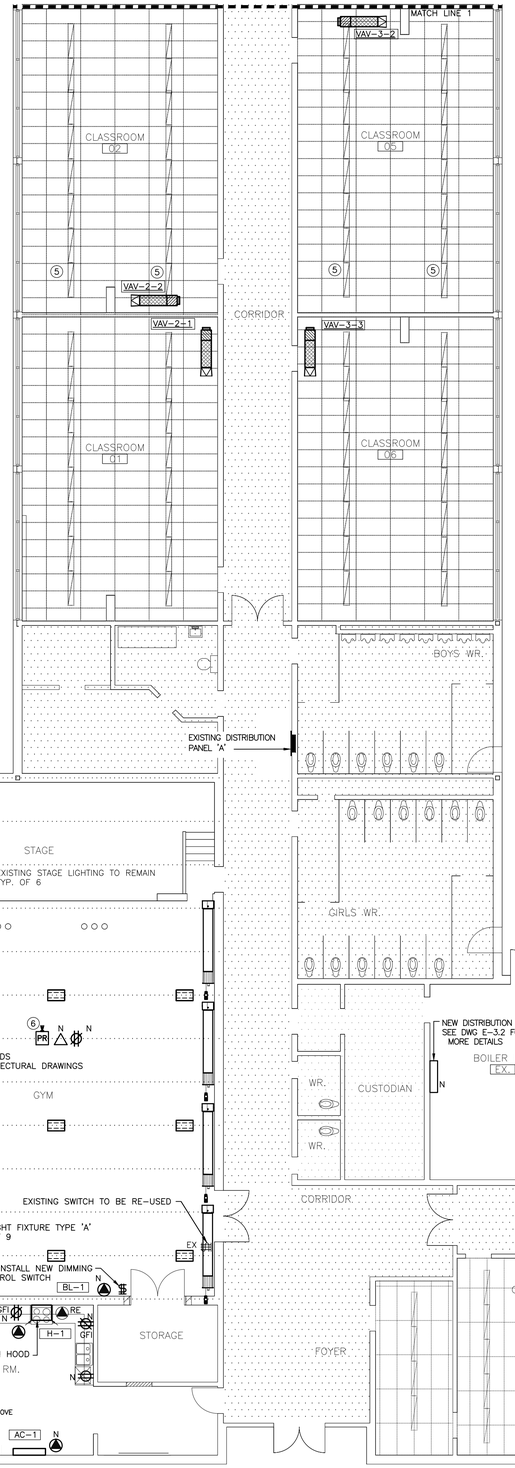
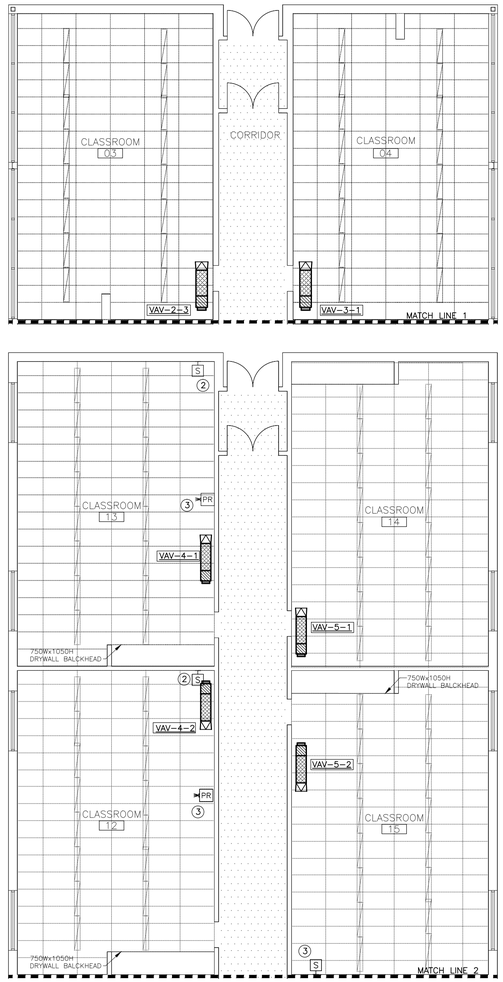
**Title:**

ROOF – EQUIPMENT LAYOUT
– EXISTING & DEMOLITION WORK
– ELECTRICAL

| | |
|---|---|
| Drawn by: P.C. | Date: DECEMBER 2021 |
| Checked by: O.S. | Plotted: |
| Scale: AS SHOWN | Issued: |
| Job No.: 2022-01 | Drawing No.: E-2.2 |
| Set No.: | of: 8 |

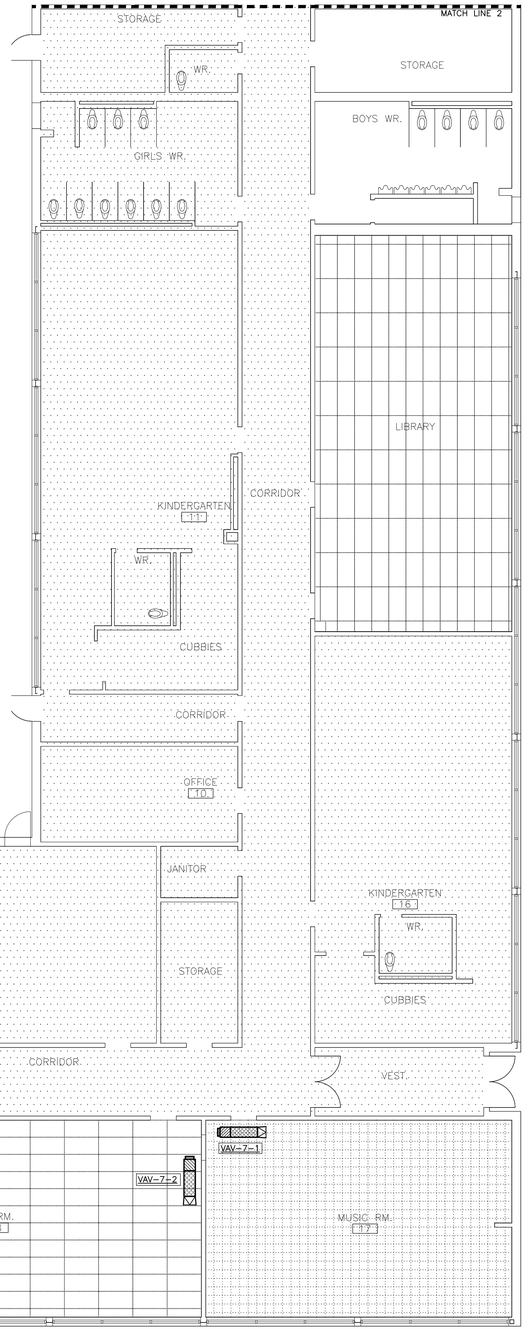
NOT IN THE SCOPE OF WORK


MATCH LINE 1
CLASSROOM 02
CLASSROOM 05
CLASSROOM 01
CLASSROOM 06
CORRIDOR
VAV-3-2
VAV-2-2
VAV-2-1
VAV-3-3
BOYS WR.
GIRLS WR.
EXISTING DISTRIBUTION PANEL 'A'
STAGE
EXISTING STAGE LIGHTING TO REMAIN TYP. OF 6
NEW POWER BLINDS REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS
GYM
EXISTING SWITCH TO BE RE-USED
NEW LIGHT FIXTURE TYPE 'A' TYP. OF 9
PROVIDE & INSTALL NEW DIMMING SHADE CONTROL SWITCH
BL-1
H-1
NEW KITCHEN HOOD
STAFF RM.
STORAGE
LOCAL DISCONNECT ABOVE CEILING FOR AC-1
AC-1
NEW DISTRIBUTION PANEL 'DP-1' SEE DWG E-3.2 FOR MORE DETAILS
BOILER RM. EX.
CUSTODIAN
WR.
FOYER
OFFICE
CORRIDOR
KINDERGARTEN 07
CORR. 101
WR. 104
OFFICE 100
JK. RM. 9
JANITOR
STORAGE
KINDERGARTEN 16
CUBBIES
VEST.
JK. RM. 19
JK. RM. 18
MUSIC RM. 17
VAV-7-3
VAV-7-2
VAV-7-1


CLASSROOM 03
CORRIDOR
CLASSROOM 04
VAV-2-3
VAV-3-1
MATCH LINE 1
CLASSROOM 13
CLASSROOM 14
CLASSROOM 12
CLASSROOM 15
VAV-4-1
VAV-4-2
VAV-5-1
VAV-5-2
750Wx105DH DRYWALL BALCKHEAD
MATCH LINE 2

KEY NOTES

1. REMOVE EXISTING UNIT VENTILATOR. CUT LOCALLY AND DISCONNECT FROM EXISTING CONTROLS AND POWER SUPPLY. REMOVE ALL REDUNDANT WIRING.
2. HORN TYPE SPEAKER 400MM BELOW CEILING TILES TO BE TEMPORALLY REMOVED AND INSTALLED BACK AFTER DUCTWORK COMPLETION.
3. REMOVE EXISTING WIRING FROM LIGHTS TO CONTROL PANEL. RE-USE EXISTING SWITCHES. REMOVE ALL REDUNDANT WIRING.
4. CLASSROOM PROJECTOR 600MM BELOW CEILING TILES TO BE TEMPORALLY REMOVED AND INSTALLED BACK AFTER DUCTWORK COMPLETION.
5. LOWER THE LIGHT FIXTURE AS REQUIRED IN ORDER TO ACCOMMODATE DUCTWORK.
6. INSTALL NEW PROJECTOR IN THE GYMNASIUM AT HIGH LEVEL. FINAL LOCATION OF PROJECTOR TO BE DETERMINED ONCE PROJECTOR TYPE IS SELECTED. CONNECT NEW PROJECTOR TO DATA AND POWER CONNECTIONS AS SHOWN. COORDINATE INSTALLATION OF NEW PROJECTOR WITH NEW DUCTWORK AT HIGH LEVEL. PROVIDE ADEQUATE SUPPORTS. CONNECT NEW RECEPTACLE FOR PROJECTOR FROM THE NEAREST POWER SOURCE. ALL ROUGH-IN AND INSTALLATION COST FOR THE PROJECTOR SHALL BE INCLUDED IN THE BASE BID.




GROUND FLOOR – EQUIPMENT LAYOUT – NEW WORK – ELECTRICAL
SCALE: 1:100

**Revisions**

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GROUND FLOOR – EQUIPMENT & LIGHTING LAYOUT – NEW WORK – ELECTRICAL

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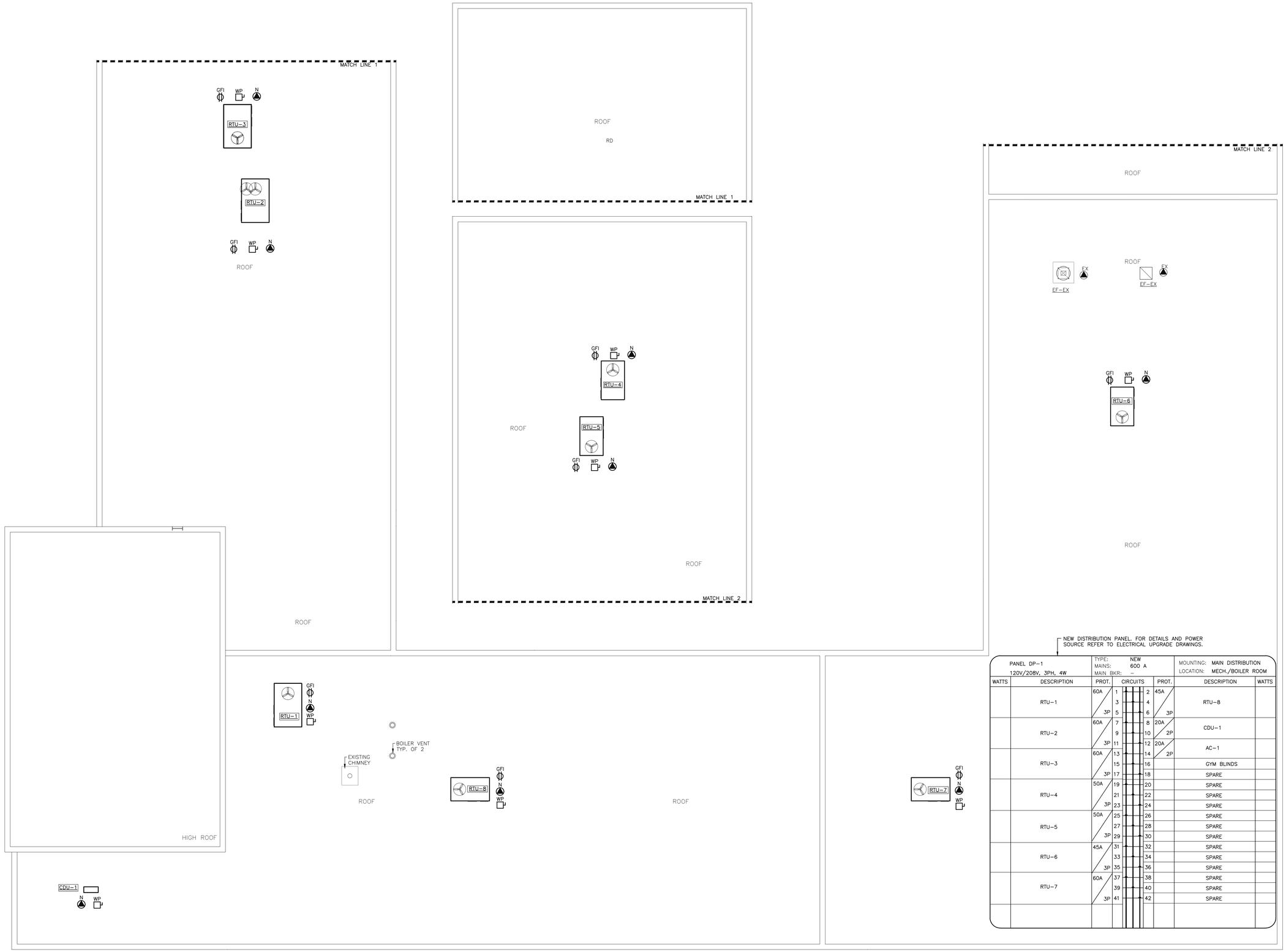


NEW DISTRIBUTION PANEL. FOR DETAILS AND POWER SOURCE REFER TO ELECTRICAL UPGRADE DRAWINGS.

PANEL DP-1
120V/208V, 3PH, 4W

TYPE: NEW
MAINS: 600 A
MAIN BKR: --

MOUNTING: MAIN DISTRIBUTION
LOCATION: MECH./BOILER ROOM

| WATTS | DESCRIPTION | PROT. | CIRCUITS | | PROT. | DESCRIPTION | WATTS |
|---|---|---|---|---|---|---|---|
| | RTU-1 | 60A 3P | 1 | 2 | 45A 3P | RTU-8 | |
| | | | 3 | 4 | | | |
| | | | 5 | 6 | | | |
| | RTU-2 | 60A 3P | 7 | 8 | 20A 2P | CDU-1 | |
| | | | 9 | 10 | | | |
| | | | 11 | 12 | 20A 2P | AC-1 | |
| | RTU-3 | 60A 3P | 13 | 14 | | | |
| | | | 15 | 16 | | GYM BLINDS | |
| | | | 17 | 18 | | SPARE | |
| | RTU-4 | 50A 3P | 19 | 20 | | SPARE | |
| | | | 21 | 22 | | SPARE | |
| | | | 23 | 24 | | SPARE | |
| | RTU-5 | 50A 3P | 25 | 26 | | SPARE | |
| | | | 27 | 28 | | SPARE | |
| | | | 29 | 30 | | SPARE | |
| | RTU-6 | 45A 3P | 31 | 32 | | SPARE | |
| | | | 33 | 34 | | SPARE | |
| | | | 35 | 36 | | SPARE | |
| | RTU-7 | 60A 3P | 37 | 38 | | SPARE | |
| | | | 39 | 40 | | SPARE | |
| | | | 41 | 42 | | SPARE | |

ROOF PLAN – EQUIPMENT LAYOUT – NEW WORK – ELELCTRICAL
SCALE: 1:100

Revisions

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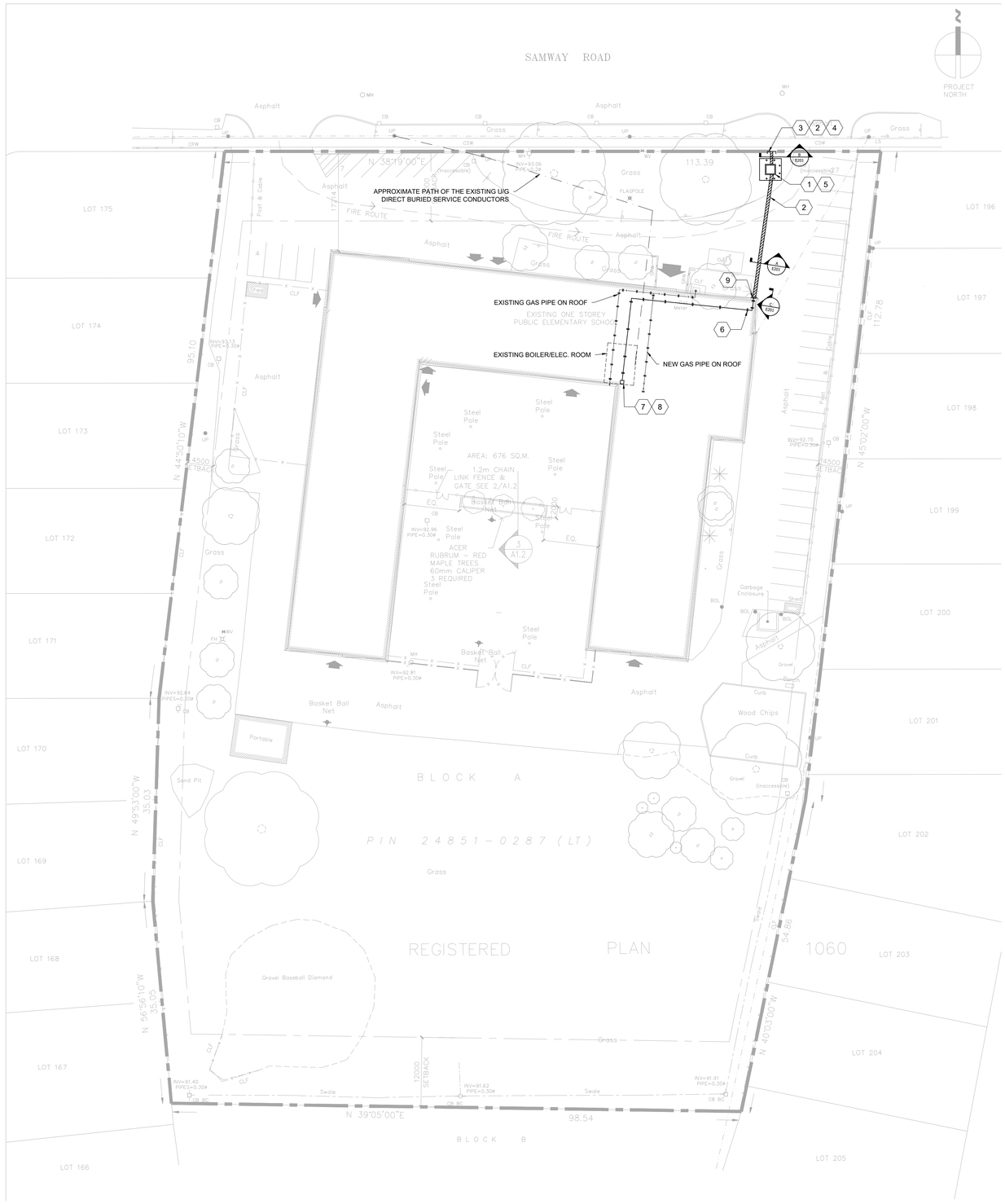


## GENERAL NOTES

1.1. PROVIDE ALL MATERIAL, EQUIPMENT AND LABOR REQUIRED TO CONSTRUCT, INSTALL, TEST AND COMPLETE A FULLY FUNCTIONING ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS / SPECIFICATIONS. INCLUDE ALL ITEMS NECESSARY TO COMPLY WITH CODES AND AUTHORITIES HAVING JURISDICTION.

1.2. VISIT AND EXAMINE THE SITE CONDITIONS WHERE THE WORK IS TO BE DONE. REVIEW OTHER TRADES DRAWINGS AND SPECIFICATIONS AND INCLUDE THE COST ASSOCIATED WITH RELOCATING OR REROUTING OF THE ELECTRICAL EQUIPMENT. THERE WILL BE NO CONSIDERATION FOR EXTRAS FOR FAILURE TO COMPLY WITH THIS ITEM.

1.3. DEFINITIONS:
1.3.1. "PROVIDE": SUPPLY, INSTALL AND CONNECT
1.3.2. "INSTALL": INSTALL AND CONNECT

1.4. ALL WORK MUST BE PERFORMED IN ACCORDANCE WITH THE LATEST APPLICABLE ONTARIO BUILDING CODE AND CSA STANDARD C22.1—21 ONTARIO ELECTRICAL CODE, AND AHJ'S ADDITIONAL REQUIREMENTS OR INSTRUCTIONS.

1.5. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL PERMITS AND INSPECTIONS IN CONNECTION WITH THE WORK PRIOR TO STARTING THE WORK.

1.6. CARRY COSTS WITHIN BID FOR ALL BUILDING SHUTDOWNS TO BE DURING PREMIUM TIME. CONFIRM THE NORMAL OPERATION OF THE BUILDING AND OTHER EXISTING TENANTS WITH THE BUILDING OWNER. SHUTDOWN TIME AND DURATION SHALL BE CONFIRMED BY OWNER.

1.7. ALL CHANGE REQUESTS SHALL BE WITH ITEMIZED LABOUR AND MATERIAL BREAKDOWN.

1.8. ENSURE THAT ALL FLOOR PENETRATIONS AND SAW CUTTING IS APPROVED BY THE ARCHITECT, BUILDING OWNER AND STRUCTURAL ENGINEER PRIOR TO ANY CUTTING. PATCHING SHALL BY DONE BY THIS CONTRACTOR AND AS PER STRUCTURAL ENGINEER'S INSTRUCTIONS.

1.9. USE ONLY EXISTING T-BAR CEILING KNOCKOUTS FOR WIRE/CABLE OR CONDUIT. IF NEW HOLES ARE REQUIRED, THEY ARE TO BE DRILLED IN THE CENTRE OF THE T-BAR USING THE SAME DIAMETER HOLE AS THE EXISTING KNOCKOUT CAPS.

1.10. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, C.S.A. CERTIFIED AND MANUFACTURED TO THE STANDARDS SPECIFIED.

1.11. WHERE THERE IS NO ALTERNATIVE TO SUPPLYING EQUIPMENT THAT IS NOT C.S.A. CERTIFIED, OBTAIN SPECIAL APPROVAL FROM THE LOCAL INSPECTION DEPARTMENT.

1.12. SUBMIT TO THE LOCAL ELECTRICAL INSPECTION DEPARTMENT, THE NECESSARY NUMBER OF DOCUMENTS FOR EXAMINATION, SPECIAL INSPECTION AND APPROVAL, PRIOR TO THE COMMENCEMENT OF THE WORK, AND PAY ALL COSTS AND ASSOCIATED FEES.

1.13. THE DRAWINGS FOR THE ELECTRICAL WORK ARE DIAGRAMMATIC PERFORMANCE DRAWINGS ONLY, INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE THE GENERAL ARRANGEMENT AND APPROXIMATE LOCATION OF ELECTRICAL EQUIPMENT. THE DRAWINGS DO NOT INTEND TO SHOW ARCHITECTURAL, INTERIOR DESIGN, MECHANICAL, STRUCTURAL OR BASE BUILDING DETAILS. CONTRACTOR SHALL BE RESPONSIBLE FOR A THOROUGH KNOWLEDGE OF SAME PRIOR TO PROCEEDING WITH THE WORK.

1.14. ANY DISCREPANCIES BETWEEN DRAWINGS AND/OR SPECIFICATIONS AND EXISTING CONDITIONS MUST BE REFERRED TO THE DESIGN CONSULTANT/ARCHITECT PRIOR TO ANY WORK.

1.15. MAKE, AT NO ADDITIONAL COST, ANY CHANGES OR ADDITIONS TO MATERIALS AND EQUIPMENT NECESSARY TO ACCOMMODATE STRUCTURAL CONDITIONS (OFFSETS AROUND BEAMS, COLUMNS, ETC.)

1.16. ACCESS PANELS MUST BE REVIEWED AND APPROVED BY OWNER PRIOR TO CLOSING CEILINGS.

**2. BASE BUILDING REQUIREMENTS**

2.0. ANY BASE BUILDING LIGHTING FIXTURES NOT BEING USED ARE TO BE RETURNED TO THE OWNER.

2.1. ALL RELOCATED BASE BUILDING LIGHTING FIXTURES MUST BE INDEPENDENTLY SUPPORTED FROM BUILDING STRUCTURE WITH TENSO CHAINS, MINIMUM OF TWO (2) POINTS.

2.2. CONTRACTOR MUST FOLLOW BASE BUILDING REQUIREMENTS AND TENANT IMPROVEMENT GUIDELINES PROVIDED DURING THE TENDER.

2.3. WHEN DELETING AND/OR MAKING SAFE EXISTING ELECTRICAL WORK, ENSURE THAT ALL DISCONNECTED WIRING IS CAPPED OFF.

2.4. EXISTING DEVICES DESIGNATED TO BE RELOCATED/REUSED SHALL BE INSPECTED AND REFURBISHED TO ENSURE CORRECT OPERATION WHEN PUT BACK INTO SERVICE AND MEETS ELECTRIC SAFETY INSPECTOR'S APPROVAL. OUTLET BOXES AND WIRING AND/OR CONDUITS THAT ARE CORRODED OR DAMAGED ARE TO BE REPLACED.

2.5. ALL EXISTING ELECTRICAL EQUIPMENT WHICH ARE NO LONGER REQUIRED SHALL BE REMOVED AND DISPOSED OF, OFF-SITE.

2.6. CONDUITS THAT ARE TO BE CUT BACK ARE TO TERMINATE IN A JUNCTION BOX.

2.7. CLEAN LUMINAIRE REFLECTORS AND LENSES, LAMPS, AND OTHER SURFACES THAT HAVE BEEN EXPOSED TO CONSTRUCTION DUST AND DIRT. CLEAN THE INSIDES AND OUTSIDES OF PANELBOARDS, SPLITTERS AND OTHER ELECTRICAL EQUIPMENT.

**3. WORKMANSHIP**

3.1. WORK SHALL BE PERFORMED BY LICENSED TRADESMEN SKILLED IN THE WORK TO BE PERFORMED. ONLY FIRST-CLASS WORKMANSHIP WILL BE ACCEPTED WITH RESPECT TO SAFETY, ACCESSIBILITY, DURABILITY, NEATNESS OF DETAIL, AND APPEARANCE.

3.2. ANY DAMAGE CAUSED TO THE PROPERTY OF THE OWNER THROUGH POOR WORKMANSHIP IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL PAY FOR THE REPAIR OF SAME, WITHOUT EXPENSE TO THE OWNER.

**4. CLEAN UP**

4.1. CONSTRUCTION SITE SHALL BE KEPT CLEAN AND FREE FROM DEBRIS DURING THE DURATION OF THE PROJECT. CLEAN UP REFUSE, CAUSED BY ELECTRICAL WORK, DAILY FROM THE SITE, DISPOSE OF REFUSE AS DIRECTED BY THE GENERAL CONTRACTOR OR OWNER.

4.2. AFTER SUBSTANTIAL COMPLETION, REMOVE FROM THE PREMISES ALL SURPLUS AND WASTE MATERIAL AND DEBRIS. LEAVE THE SITE AND BUILDING IN CLEAN CONDITION.

**5. TEMPORARY POWER**

5.1. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO CO-ORDINATE WITH OTHER TRADES AND OWNER TO PROVIDE TEMPORARY POWER C/W CORDS AND TEMP DISTRIBUTION SYSTEM AS REQUIRED DUE TO NEW CONSTRUCTION OR CONTINUITY OF SERVICE IN THE BASE BUILDING.

**6. CUTTING AND PATCHING**

6.1. ALL CUTTING AND PATCHING REQUIRED TO THE EXISTING BUILDING STRUCTURE FOR THE ELECTRICAL OPENING SHALL BE INCLUDED UNDER THIS CONTRACT AND BE ACCEPTABLE TO THE OWNER. OBTAIN WRITTEN APPROVAL FROM OWNER PRIOR TO ANY CUTTING IS CARRIED OUT.

6.2. ANY OPENING IN EXISTING STRUCTURE SHALL BE CO-ORDINATED, X-RAYED, CUT OR DRILLED AND PATCHED, AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR, UNLESS OTHERWISE ADVISED BY THE GENERAL CONTRACTOR.

6.3. WHERE CONDUITS OR OTHER ELECTRICAL EQUIPMENT PASS THROUGH FIRE-RATED WALLS OR FLOORS, PROVIDE FIRE-STOPPING MATERIAL LISTED WITH, AND BEAR LABEL OF CSA AND ULC, AND MAINTAIN SAME FIRE RATING OF BUILDING COMPONENT PENETRATION.

**7. SHOP DRAWINGS**

7.1. SUBMIT SHOP DRAWINGS FOR LIGHTING FIXTURES, PANELBOARDS, TRANSFORMERS, AND OTHER MAJOR ELECTRICAL EQUIPMENT/SYSTEMS AS REQUESTED BY THE ELECTRICAL ENGINEER FOR APPROVAL.

**8. WARRANTY**

8.1. CONTRACTOR SHALL PROVIDE A WRITTEN WARRANTY OF ALL MATERIALS, EQUIPMENT AND WORKMANSHIP UNDER THIS DIVISION FOR A PERIOD OF ONE (1) YEAR, COMMENCING ON THE DATE OF SUBSTANTIAL PERFORMANCE OR ACCEPTANCE OF THE COMPLETED PORTION BY THE ARCHITECT/INTERIOR DESIGNER/ PROJECT MANAGER, WHICHEVER DATE IS LATER.

**9. AS-BUILT DRAWINGS**

- UPON COMPLETION OF WORK, ELECTRICAL CONTRACTOR SHALL PROVIDE THESE (3) SETS OF WHITE PRINTS TO REFLECT 'AS-BUILT' CONDITIONS. 'AS-BUILT' DRAWINGS SHALL INCORPORATE ANY CHANGES OR DEVIATIONS FROM THE TENDER DOCUMENTS.
- CONTRACTOR SHALL ALSO PROVIDE ELECTRONIC FILES IN AUTOCAD FORMAT IN A CD DISK TO REFLECT 'AS-BUILT' CONDITIONS.
- CONTRACTOR TO MARK THE DRAWINGS AS 'AS-BUILT' ALONG WITH ELECTRICAL CONTRACTORS COMPANY NAME.

**10. CLOSE-OUT DOCUMENTS**

SUBMIT 3 CDS OF ELECTRONIC COPY AND ONE 3-RING BINDER OF HARD COPY OF THE CLOSEOUT DOCUMENTS WHICH SHALL INCLUDE BUT NOT BE LIMITED TO:

- ESA INSPECTION REPORT AND FINAL CERTIFICATE
- STAMPED APPROVED SHOP DRAWINGS
- WARRANTY LETTER
- AS-BUILT DRAWING (CAD 2004 FILE AND PDF FORMAT)
- FIRE ALARM VERIFICATION REPORT

## DESIGN NOTES:

1. PROPOSED LOCATION FOR NEW 225KVA PAD MOUNTED TRANSFORMER SUPPLIED AND INSTALLED BY UTILITY. EXACT LOCATION AND ORIENTATION TO BE CONFIRMED BY UTILITY PRIOR TO CONSTRUCTION.
2. ALL DUCT BANKS TO BE PROVIDED BY ELECTRICAL CONTRACTOR.
3. PRIMARY CABLES TERMINATION TO THE TRANSFORMER BY UTILITY.
4. COORDINATE WITH UTILITY TO PROVIDE NEW PRIMARY SERVICE FROM UTILITY POLE TO PRIMARY DUCT BANKS INSIDE THE SCHOOL PROPERTY ZONE.
5. ELECTRICAL CONTRACTOR TO PROVIDE CABLES, GROUNDING, GUARD POSTS AND FOUNDATION FOR THE NEW SERVICE AS PER UTILITY AND ESA REQUIREMENTS.
6. PROVIDE SUPPORT FOR SERVICE CONDUITS ON WALL AND ROOF. COORDINATE WITH MECHANICAL AND ROOF CONTRACTOR FOR THE EXACT CONDUIT PATH AND ELEVATION.
7. NEW DOGHOUSE ABOVE THE ELECTRICAL ROOM TO BE USED FOR TERMINATION OF CONDUCTORS TO NEW 600A/3P FUSED SERVICE DISCONNECT.
8. COORDINATE WITH THE ROOFING CONTRACTOR FOR THE EXACT LOCATION AND SIZE OF THE DOGHOUSE. REFER TO THE STRUCTURAL DRAWINGS FOR DOGHOUSE AND ROOFTOP CONDUIT SUPPORT DETAIL.
9. CONDUIT STUB UP POINT AND CONNECTION FROM RIGID PVC TO RIGID GALVANIZED STEEL FOR EXTERIOR RUN.
10. CONTRACTOR TO INFORM UTILITY WHEN DUCT INSTALLATION IS READY FOR INSPECTION. THIS SHALL BE DONE BEFORE ANY BACKFILL.
11. COORDINATE AND INFORM ESA FOR ALL REQUIRED INSPECTIONS DURING CONSTRUCTION.
12. THE EXACT DUCT BANK PATH SHALL BE DETERMINED IN COORDINATION WITH UTILITY AND EXISTING UNDERGROUND SERVICES. FOLLOW ALL REQUIRED CLEARANCE FROM OTHER UNDERGROUND SERVICES. ANY REQUIRED CROSSOVER WITH THE EXISTING SERVICES SHALL MEET OAKVILLE HYDRO AND CORRESPONDING SERVICE PROVIDER.
13. **RESTORE ALL SITE SURFACES TO THE PREVIOUS CONDITION. REINSTALL ASPHALT, LANDSCAPING, CONCRETE PAVEMENT, CURBS.**

## BUILDING ELECTRICAL SERVICE SIZE CALCULATION BASED ON RULE 8-204 OF OESC.

| | | |
|---|---|---|
| 1. | TOTAL AREA | 3,000 $m^2$ |
| 2. | TOTAL CLASSROOM AREA | 1,450 $m^2$ |
| 3. | BASIC LOAD (CLASSROOM @ 50W/$m^2$) | 72,500 W |
| 4. | BASIC LOAD @ 10W/$m^2$ | 15,500 W |
| 5. | OTHER LOADS | 115,425 W |
| 6. | TOTAL (BY ADDING 3,4 & 5) | 203,425 W |
| 7. | LESS ELEC. HEATING | N/A |
| 8. | LOAD PER SQUARE METER | 67.81 W/$m^2$ |
| 9. | TOTAL LOAD WITH DEMAND FACTORS | 116,969 W |
| 10. | CONTINUOUS LOAD (X1.25) | 146,212 W |
| 11. | MINIMUM SERVICE SIZE @ 208V/3Ø | 405.85 A (600A) |

## MAXIMUM SHORT CIRCUIT AT MAIN SERVICE DISCONNECT

1. INFINITE SHORT CIRCUIT ON PRIMARY
2. 225KVA TRANSFORMER WITH 2% IMPEDANCE
3. AVAILABLE SHORT CIRCUIT AT SECONDARY TERMINALS: 31,200KA
4. CONSIDERING 60m SECONDARY SERVICE LENGTH
5. MAXIMUM AVAILABLE SHORT CIRCUIT AT MAIN SERVICE DISCONNECT 14.5KA

**ALL NEW EQUIPMENT TO BE RATED FOR MINIMUM 22KAIC.**

Revisions

| Ref. | No. | Description | Date | Initial |
|---|---|---|---|---|
| △ | 1 | 50% REVIEW | 2022/02/17 | |
| △ | 2 | OAKVILLE HYDRO | 2022/04/19 | |
| △ | 3 | ESA PLAN REVIEW | 2022/04/20 | |
| △ | 4 | TENDER | 2022/04/21 | |

Project:

GLADYS SPEERS PS RENOVATIONS
2150 SAMWAY RD, OAKVILLE, ON L6L 2P6


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APR.21, 2022
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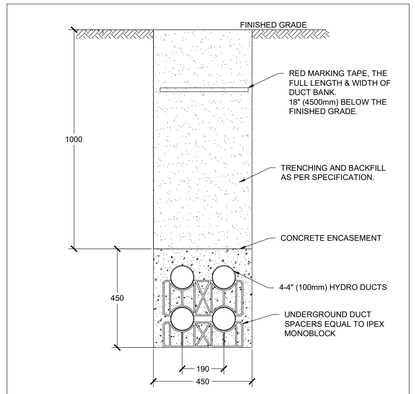
Title:

**ELECTRICAL SERVICES SITE PLAN**

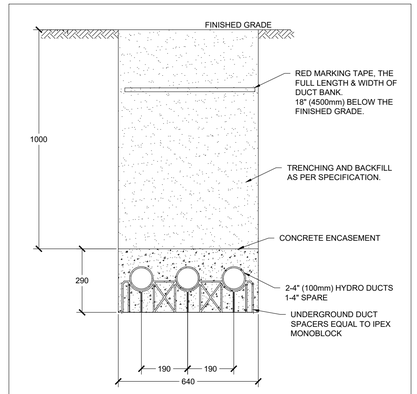
| | |
|---|---|
| Drawn by: K.N. | Date: APRIL 2022 |
| Checked by: K.N. | Plotted: |
| Scale: AS SHOWN | Issued: |
| Job No.: 2022–04 | Drawing No.: **E-200** |
| Set No.: | of: |




1. ENCASE DUCTS IN 20 MPa CONCRETE ON 1/2" (13mm) PEA GRAVEL.
2. SLOPE DUCT BANK A MINIMUM OF 3" (75mm) PER 100' (30.5M) (AWAY FROM BUILDING).
3. CONCRETE ENCASED DUCTS SHALL BE CSA APPROVED PVC TYPE II.
4. PROVIDE 1-3/16" (4.75mm) MIN. POLYPROPYLENE FISH ROPE IN EACH CONCRETE ENCASED OR DIRECT BURIED DUCT. SEAL DUCT ENDS WITH AN APPROVED DUCT PLUG.

**EXACT CONSTRUCTION DETAILS SHALL CONFORM TO LOCAL UTILITY REQUIREMENTS AND DETAILS.**

A / E-201 SECONDARY DUCT BANK
NTS

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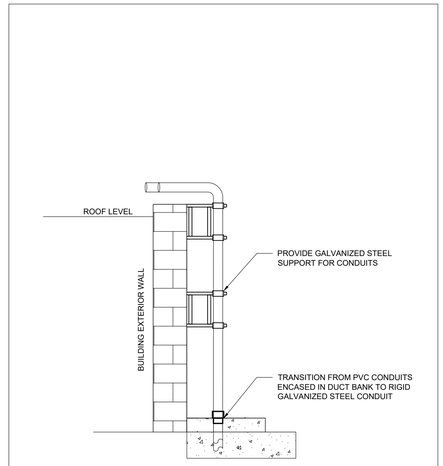
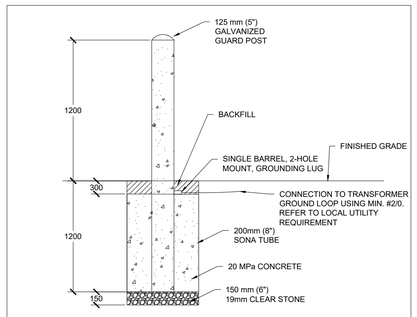
3. CONCRETE ENCASED DUCTS SHALL BE CSA APPROVED PVC TYPE II.
4. PROVIDE 1-3/16" (4.75mm) MIN. POLYPROPYLENE FISH ROPE IN EACH CONCRETE ENCASED OR DIRECT BURIED DUCT. SEAL DUCT ENDS WITH AN APPROVED DUCT PLUG.

**EXACT CONSTRUCTION DETAILS SHALL CONFORM TO LOCAL UTILITY REQUIREMENTS AND DETAILS.**

B / E-201 PRIMARY DUCT BANK
NTS



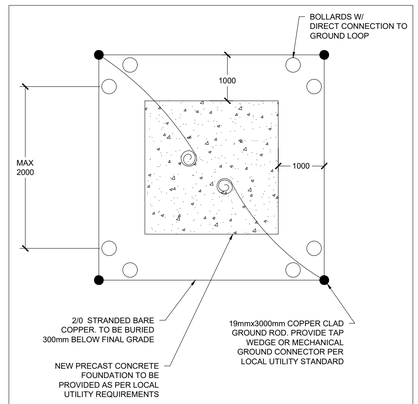

C / E-201 U/G TO OUTDOOR TRANSITION
NTS




1. NUMBER OF GUARD POSTS AND LOCATIONS SHOWN ARE TYPICAL ARRANGEMENTS. ACTUAL NUMBER OF GUARD POSTS AND LOCATION SHALL BE PROVIDED AS PER LOCAL UTILITY REQUIREMENT.
2. PAINT GUARD POST WITH SAFETY YELLOW PAINT. FOR PROPER ADHESION OF PAINT, GUARD POST SHALL BE CLEANED AND PRIMED PRIOR TO PAINTING. A REFLECTIVE STRIP IF REQUIRED SHALL BE PLACED AT EACH POST.
3. CONTRACTOR TO INSTALL A 300mm CONSTRUCTION JOINT AROUND THE GUARD POSTS EXCEPT IN GRASSY BOULEVARDS.

**EXACT CONSTRUCTION DETAILS SHALL CONFORM TO LOCAL UTILITY REQUIREMENTS AND DETAILS.**

D / E-201 BOLLARD MOUNTING DETAIL
NTS




1. LEAVE MIN. 3.0m COILED GROUND CONDUCTORS INSIDE FOUNDATION.
2. ALL POWER AND GROUND CONDUCTORS TO INSIDE FOUNDATION THROUGH DUCT FACE. SEAL ALL DUCT ENTRIES WITH FOAM OR APPROVED EQUIVALENT.
3. PROVIDE SOAK PIT AS PER LOCAL UTILITY REQUIREMENTS.

**EXACT CONSTRUCTION DETAILS SHALL CONFORM TO LOCAL UTILITY REQUIREMENTS AND DETAILS.**

E / E-201 PAD MOUNTED XFMR GROUNDING
NTS

Revisions

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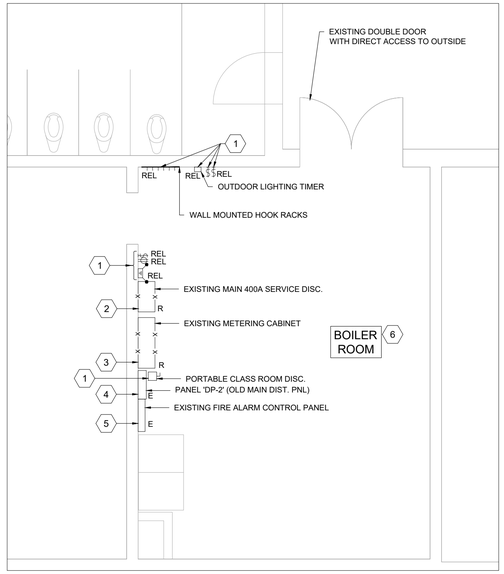
Title:

**ELECTRICAL SERVICES DETAILS**

| Drawn by: | Date: |
|---|---|
| K.N. | APRIL 2022 |
| Checked by: K.N. | Plotted: |
| Scale: AS SHOWN | Issued: |
| Job No.: 2022–04 | Drawing No.: **E-201** |
| Set No.: | of: |




1 BOILER ROOM - DEMO WORK

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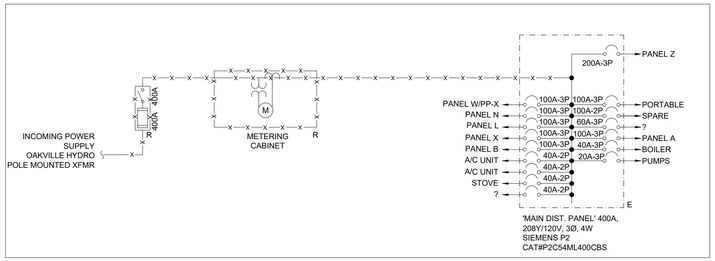


2 SINGLE LINE DIAGRAM - DEMO WORK

NTS

**DEMO NOTES:**

1. ALLOW FOR RELOCATION OF THE EXISTING EQUIPMENT TO MAKE SPACE READY FOR NEW INSTALLATION.
2. REMOVE THE EXISTING 400A FUSED DISCONNECT SWITCH C/W WIRING AND CONDUIT. REMOVE THE SERVICE CONDUCTOR GUARDS. PATCH, REPAIR AND PAINT CONDUCTOR PENETRATION POINT ON BOILER ROOM FLOOR TO MATCH EXISTING.
3. EXISTING OAKVILLE HYDRO METERING TO BE REMOVED.
4. EXISTING MAIN PANEL TO REMAIN, RE-FED AND RENAME AS SHOWN IN THE NEW CONSTRUCTION NOTES.
5. EXISTING FIRE ALARM CONTROL PANEL TO REMAIN.
6. ALLOW FOR RELOCATION OF ANY WALL/CEILING MOUNTED EQUIPMENT AS REQUIRED FOR NEW SERVICE AND DOGHOUSE INSTALLATION.

| ELECTRICAL LEGEND | |
|---|---|
| **ABBREVIATION** | |
| E | EXISTING TO REMAIN |
| R | EXISTING TO BE DEMOLISHED/REMOVED |
| N | NEW MATERIAL/EQUIPMENT/SERVICES |
| REL | MATERIAL/EQUIPMENT/SERVICES TO BE RELOCATED. |
| ER | EXISTING IN RELOCATED POSITION |
| WP | WEATHER PROOF |
| NIC | NOT IN CONTRACT |
| **SINGLE LINE DIAGRAM** | |
| | CIRCUIT BREAKER |
| | DRAWOUT CIRCUIT BREAKER |
| | FUSED SWITCH |
| | POWER DISTRIBUTION TRANSFORMER |
| M M | METER - METERING CABINET |
| | AUTOMATIC TRANSFER SWITCH (CIRCUIT BREAKER TYPE) |
| | AUTOMATIC TRANSFER SWITCH (NON-CIRCUIT BREAKER TYPE) |

Revisions

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|---|---|---|---|---|
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| △ | 3 | ESA PLAN REVIEW | 2022/04/20 | |
| △ | 4 | TENDER | 2022/04/21 | |

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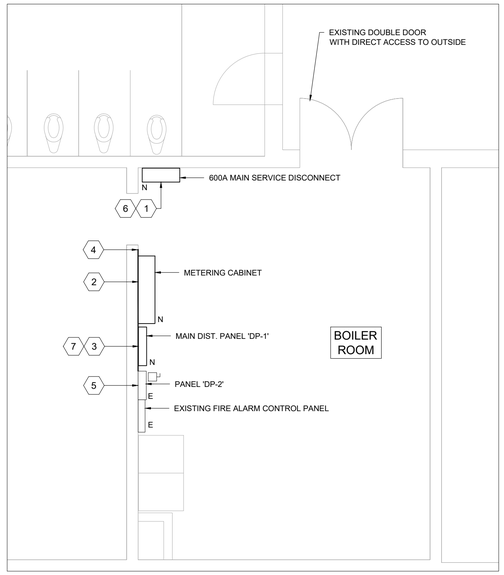


3 BOILER ROOM - NEW WORK

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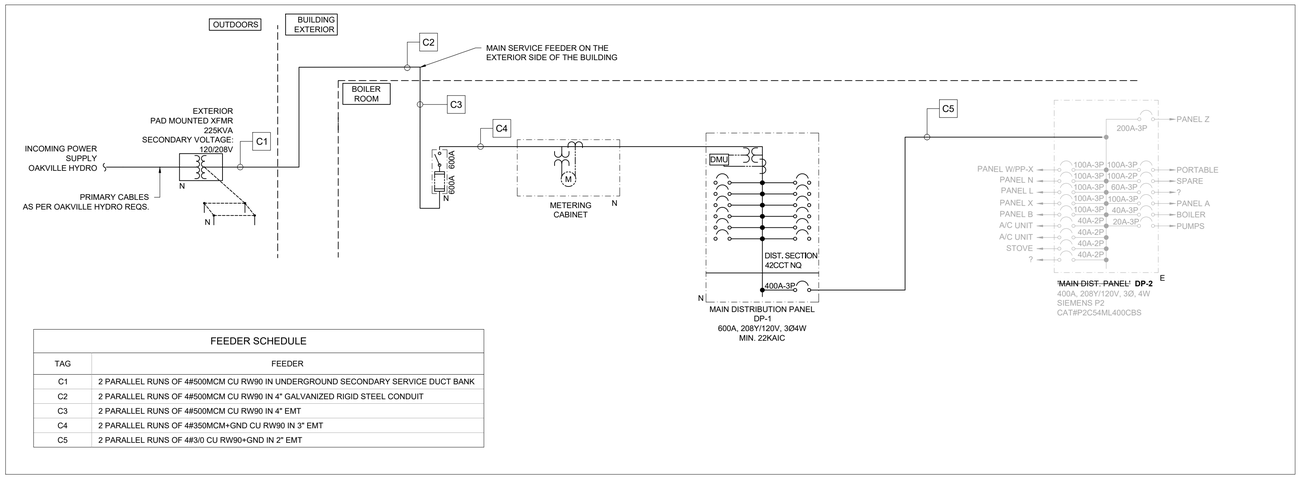


| FEEDER SCHEDULE | |
|---|---|
| TAG | FEEDER |
| C1 | 2 PARALLEL RUNS OF 4#500MCM CU RW90 IN UNDERGROUND SECONDARY SERVICE DUCT BANK |
| C2 | 2 PARALLEL RUNS OF 4#500MCM CU RW90 IN 4" GALVANIZED RIGID STEEL CONDUIT |
| C3 | 2 PARALLEL RUNS OF 4#500MCM CU RW90 IN 4" EMT |
| C4 | 2 PARALLEL RUNS OF 4#350MCM+GND CU RW90 IN 3" EMT |
| C5 | 2 PARALLEL RUNS OF 4#3/0 CU RW90+GND IN 2" EMT |

4 SINGLE LINE DIAGRAM - NEW WORK

NTS

**DESIGN NOTES:**

1. PROVIDE AND INSTALL NEW 600A FUSED DISCONNECT SWITCH, RATED FOR SERVICE ENTRANCE EQUIPMENT C/W SYSTEM BACKBOARD AND FEEDERS AS SHOWN IN THE SINGLE LINE DIAGRAM.
2. PROVIDE AND INSTALL NEW 1200mmX1200mmX300mm METERING CABINET C/W REMOVABLE 1100mmX1100mm BACK-PLATE AS PER OAKVILLE HYDRO REQUIREMENTS.
3. PROVIDE AND INSTALL NEW 600A, 120/208V, 3Ø4W MAIN DISTRIBUTION PANEL C/W A DIGITAL METERING UNIT AND BRANCH CIRCUITS AS SHOWN IN THE SLD. NEW MAIN DISTRIBUTION PANEL MUST COMPLETE WITH AT LEAST 42CCT NQ DISTRIBUTION TO BE USED FOR NEW HVAC EQUIPMENT INSTALLATION.
4. EXTEND THE EXISTING SYSTEM BACKBOARD TO SUITE NEW EQUIPMENT INSTALLATION.
5. RENAME THE OLD MAIN DISTRIBUTION PANEL TO PANEL 'DP-2'. PROVIDE AND INSTALL LAMACOID LABEL. PROVIDE AN UPDATE, TYPED, PRINTED PANEL SCHEDULE TO REPLACE THE EXISTING SCHEDULE.
6. COORDINATE WITH ROOFING CONTRACTOR FOR THE EXACT LOCATION AND SIZE OF THE NEW DOGHOUSE. ALLOW FOR RELOCATION OF THE EXISTING EQUIPMENT IN BOILER ROOM AS REQUIRED.
7. PANEL 'DP-1' SPECIFICATION & FEATURES
   - ENCLOSURE TYPE 2, WITH DOOR AND LOCK
   - BOX CAT# MH68HH
   - DIMENSIONS: 74"H x 27"W x 5.75"D
   - BUSSING: 600A RATED COPPER BUS, SILVER/TIN PLATED
   - DRIP HOOD
   - INCREASE TOP END GUTTER 6"
   - BRANCH USER PLACEMENT
   - SOLID NEUTRAL
   - INCREASE LEFT SIDE GUTTER 7"
   - GROUND BAR
   - PM5563 W/ DISPLAY
   - TOP FEED
   - 22KA SCCR
   - MAIN LUG 600A
   - APPROVED VENDOR: SQUARE D

**GENERAL SERVICE UPGRADE NOTES:**

1. CHECK THE SITE AND DO ALL REQUIRED MEASURING. CHECK THE REQUIRED BENDING RADIUS FOR ALL FEEDERS AND BRANCH CIRCUITS PRIOR ORDERING EQUIPMENT.
2. CHECK THE PHASE ROTATION BEFORE AND AFTER SERVICE CHANGE OVER.
3. REFER TO THE STRUCTURAL DRAWINGS FOR CONDUIT ROOF TOP SUPPORT AND DOGHOUSE DETAILS.
4. PROPERLY SEAL ALL CONDUITS TO AVOID ANY CONDENSATION BUILDUP AS PER OESC RULE 6-312.
5. MODIFY THE EXISTING BUILDING GROUNDING AS REQUIRED TO SUITE NEW WORK AND OESC REQUIREMENTS.


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Title:

**ELECTRICAL SERVICES FLOOR PLAN & SINGLE LINE DIAGRAM**

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|---|---|
| Drawn by: K.N. | Date: APRIL 2022 |
| Checked by: K.N. | Plotted: |
| Scale: AS SHOWN | Issued: |
| Job No.: 2022–04 | Drawing No.: **E-300** |
| Set No.: | of: |