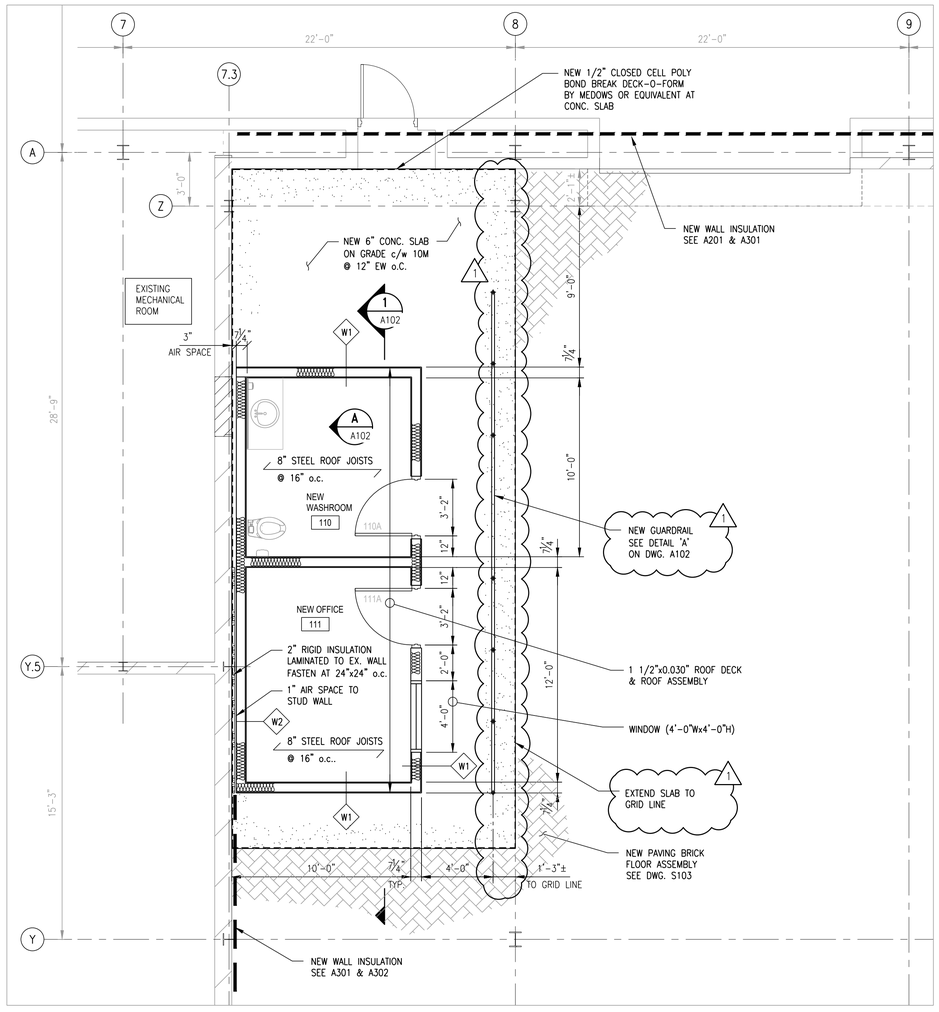
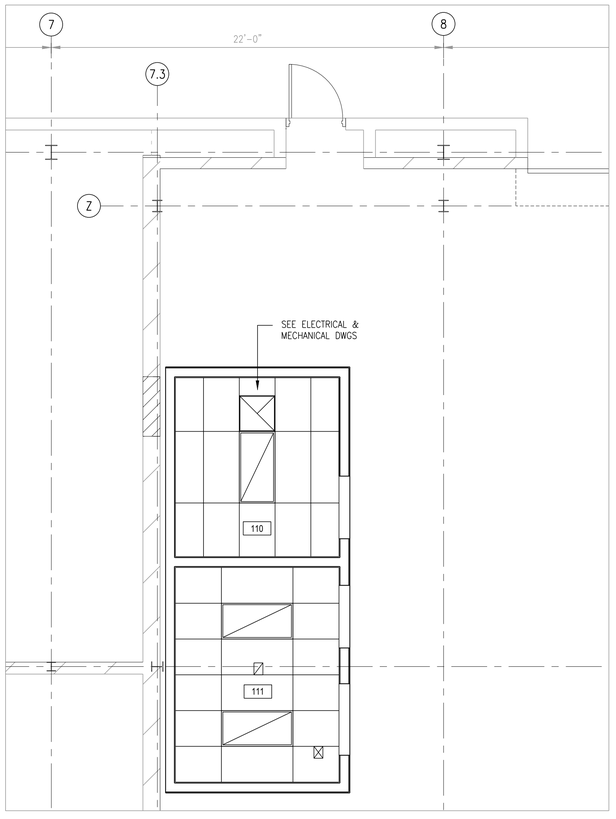


NORTH

PART FLOOR PLAN

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



NORTH

REFLECTED CEILING PLAN

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

CEILING TO BE 24"x48" ACT T-BAR GRID @ 8'-0" A.F.F.

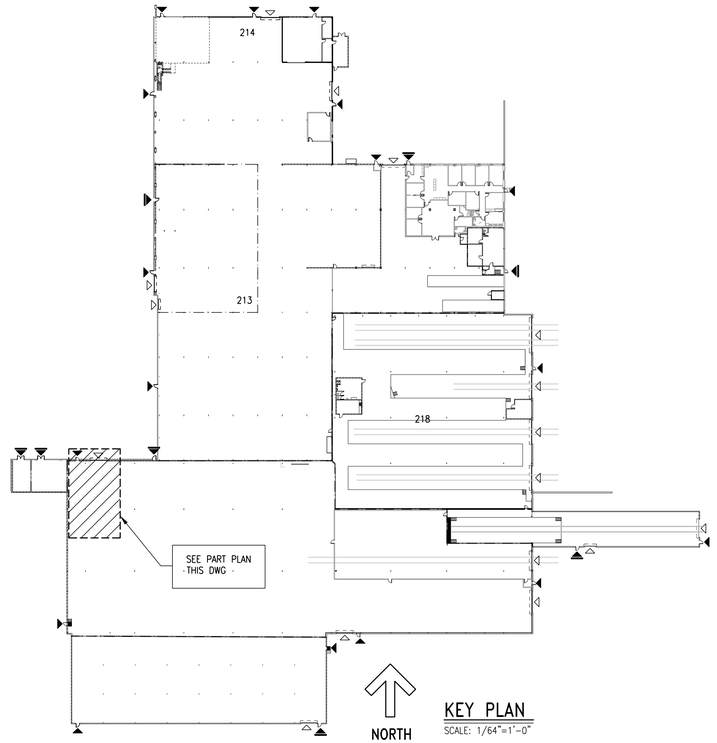
NORTH

KEY PLAN – SITE

SCALE: N.T.S.

DRAWING LIST:

A101	KEY PLAN, OBC MATRIX, PART FLOOR PLAN, WASHROOM DETAILS & DRAWING LIST
A102	DOOR SCHEDULE, FINISH SCHEDULE, WASHROOM DETAILS
A201	ROOF PLAN – NEW INSULATION
A301	WALL ELEVATIONS – NEW INSULATION
A302	SECTIONS & DETAILS
S101	FLOOR SLAB DEMOLITION – EAST
S102	FLOOR SLAB DEMOLITION – WEST
S103	FLOOR SLAB NEW – WEST
S104	FLOOR SLAB NEW – EAST
S201	WALL ELEVATIONS
S202	ROOF OPENING FRAMING PLAN, SECTIONS & DETAILS
M101	PART PLAN – HVAC
M102	PART PLAN – NATURAL GAS HEATING
M103	PART PLANS – PIPING, DRAINAGE & HVAC
M104	PART SOUTH PLAN – EXIST. & NEW SPRINKLER
M105	CONTROL DIAGRAMS & DETAILS
M106	MECHANICAL SPECIFICATION
E101	WEST FLOOR PLAN – POWER & SPECIFICATIONS
E102	EAST FLOOR PLAN – POWER, ONE-LINE DIAGRAM, SCHEMATIC, PANEL SCHEDULE & NOTES
E103	PARTPLANS – LIGHTING & POWER



NORTH

KEY PLAN

SCALE: 1/64"=1'-0"

W1

- ⅝" ABUSE RESISTANT GYPSUM
- 6" STEEL STUDS @ 16" O.C. MAX.
- BATT INSULATION
- 6 MIL POLY VAPOUR BARRIER
- ⅝" ABUSE RESISTANT GYPSUM

W2

- 2" RIGID INSULATION
- 1" AIR SPACE
- 6" STEEL STUDS @ 16" O.C. MAX.
- BATT INSULATION
- 6 MIL POLY VAPOUR BARRIER
- ⅝" ABUSE RESISTANT GYPSUM

Name of Practice:	ATKINSON ENGINEERING INC. 786 KING ST EAST. HAMILTON, ON L8M 1A6 TEL: 905-523-1988, FAX: 905-523-6221
Name of Project:	HAMILTON-OSHAWA PORT AUTHORITY BUILDING 218 UPGRADES
Location:	204 HILLYARD ST. HAMILTON, ON

Ontario Building Code
Data Matrix, Part 11 – Renovation of Existing Building

				Building Code Reference
11.1	Existing Building classification:	Describe Existing Use: WAREHOUSE Construction Index: N/A Hazard Index: N/A X Not Applicable (no change of major occupancy)		11.2.1 T 11.2.1.1A T 11.2.1.1B to N
11.2	Alteration to Existing Building is:	Basic Renovation X Extensive Renovation ☐		11.3.3.1 11.3.3.2
11.3	Reduction in Performance Level:			11.4.2
		Structural:	X No ☐ Yes	11.4.2.1
		By Increase in occupant load:	X No ☐ Yes	11.4.2.2
		By change of major occupancy:	X No ☐ Yes	11.4.2.3
		Plumbing:	X No ☐ Yes	11.4.2.4
		Sewage-system:	X No ☐ Yes	11.4.2.5
11.4	Compensating Construction:			11.4.3
		Structural:	X No ☐ Yes (explain)	11.4.3.2
		Increase in occupant load:	X No ☐ Yes (explain)	11.4.3.3
		Change of major occupancy:	X No ☐ Yes (explain)	11.4.3.4
		Plumbing:	X No ☐ Yes (explain)	11.4.3.5
		Sewage system:	X No ☐ Yes (explain)	11.4.3.6
11.5	Compliance Alternatives Proposed:	X No ☐ Yes (give number[s])		11.5.1

REVISIONS

no	description	date
0	ISSUED FOR TENDER	SEPT. 5, 2025
1	REVISED FOR ADDENDUM#3	NOV. 4, 2025

LICENSED PROFESSIONAL ENGINEER
C. A. BAKER
100121757
Nov. 4, 2025
PROVINCE OF ONTARIO

ATKINSON ENGINEERING INC.
786 King Street East Tel. 905.523.1988
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www.atkinsonengineering.com

HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

project title:
HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawn: BTD
date: JUNE 2025

scale: AS NOTED

project number: 25-38

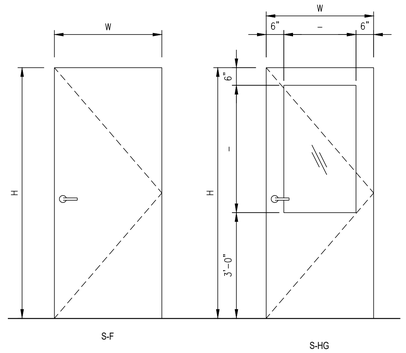
drawing title:
KEY PLAN, OBC MATRIX, PART FLOOR PLAN
WASHROOM DETAILS & DRAWING LIST

checked: CB
date: SEPT. 2025

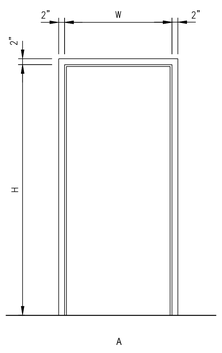
DRAWING NUMBER: A101

1 Revision

DOOR TYPES



FRAME TYPES



DOOR SCHEDULE

DOOR #	TYPE	DOOR					FRAME				PUSH & PULL	CLOSER	DOOR STOP	DOOR SWEEP	WEATHERSTRIP	THRESHHOLD	KICK PLATE	LOCKSET	1 1/2" BUTT HINGES	F.R.R. (MIN)	COMMENTS
		WIDTH	HEIGHT	THICKNESS	MATERIAL	FINISH	TYPE	MATERIAL	FINISH	GLAZING											
110 A	S-F	3'-2"	7'-0"	1 3/4"	HM	PT	A	HM	PT				X				X	PRIV	X		
111 A	S-HG	3'-2"	7'-0"	1 3/4"	HM	PT	A	HM	PT	TG		X	X				X	KL	X		

DOOR SCHEDULE ABBREVIATIONS

AL	ALUMINUM	HM	HOLLOW METAL
EX.	EXISTING	PT	PAINT
GWG	GEORGIAN WIRE GLASS	TG	TEMPERED GLASS

HARDWARE SCHEDULE ABBREVIATIONS

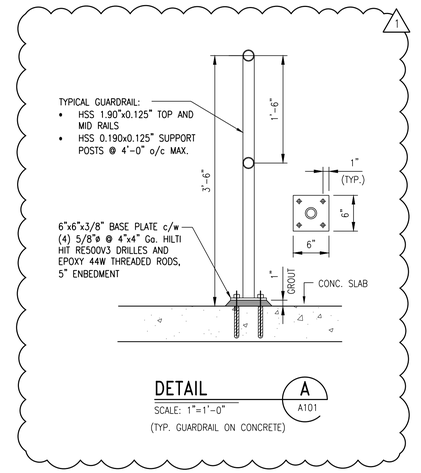
KL	KEYED LOCKSET w/ LEVER HANDLES	PS	PASSAGE SET - LEVER HANDLE
KPD	KEYED PANIC DEVICE w/ LEVER HANDLE ON OTHER SIDE	PRIV	PRIVACY SET - LEVER HANDLE
PD	PANIC DEVICE w/ LEVER HANDLE ON OTHER SIDE	PP	PUSH / PULL

ROOM SCHEDULE

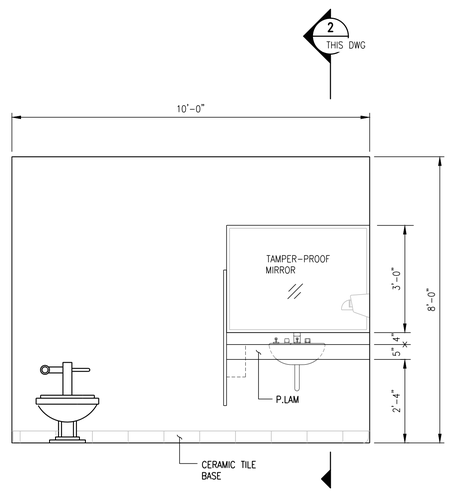
NO.	NAME	FLOOR FINISH	BASE FINISH	WALL FINISH	CEILING		COMMENTS
					FINISH	HEIGHT	
110	NEW WASHROOM	SL	CT	CT / PT GB	ACT-1	8'-0"	CT BASE BOARD & PAINT WALLS
111	NEW OFFICE ROOM	VT	RCB	PT	ACT-1	8'-0"	CT BASE BOARD & PAINT WALLS

ROOM FINISH SCHEDULE ABBREVIATIONS

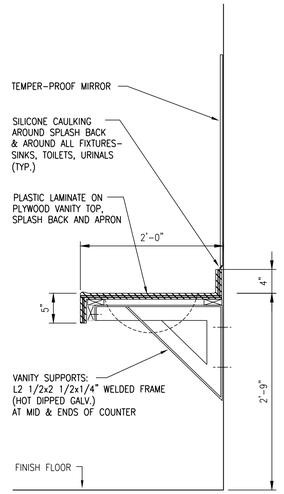
CT	CERAMIC TILE	VT	VINYL REINFORCED TILE	SL	CONCRETE SEALER
RCB	RUBBER COVE BASE	PT	PAINT		



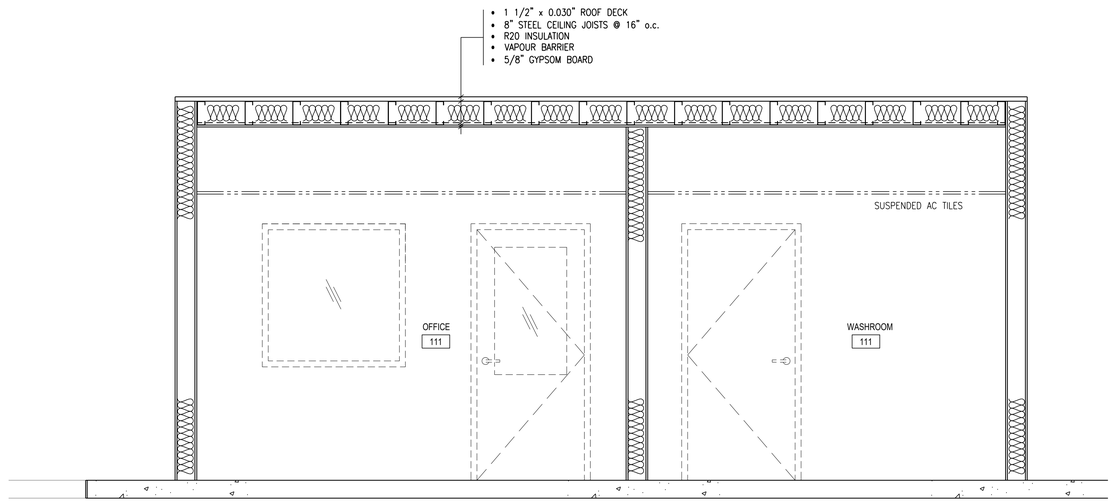
DETAIL A — A101
SCALE: 1"=1'-0"
(TYP. GUARDRAIL ON CONCRETE)



ELEVATION A — A101 (LOOKING WEST)
SCALE: 1/2"=1'-0"



SECTION 2 — THIS DWG (TYP. VANITY)
SCALE: 1"=1'-0"



SECTION 1 — A101 (LOOKING WEST)
SCALE: 1/2"=1'-0"

DESIGN LOADS:
DL: 17.2 PSF I_{LL} = 1.0
LL 20.9 PSF
WL: 10.0 PSF (INTERNAL) I_{WL} = 1.0

SEISMIC: I_E = 1.0 PGA = 0.275
So (0.2) = 0.43
SITE CLASS 'E'

REVISIONS

no	description	date
0	ISSUED FOR TENDER	SEPT. 5, 2025
1	REVISED FOR ADDED GUARD	NOV. 4, 2025

LICENSED PROFESSIONAL ENGINEER — C. A. BAKER — 100121757 — Nov. 4, 2025 — PROVINCE OF ONTARIO

ATKINSON ENGINEERING INC.
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www.atkinsonengineering.com

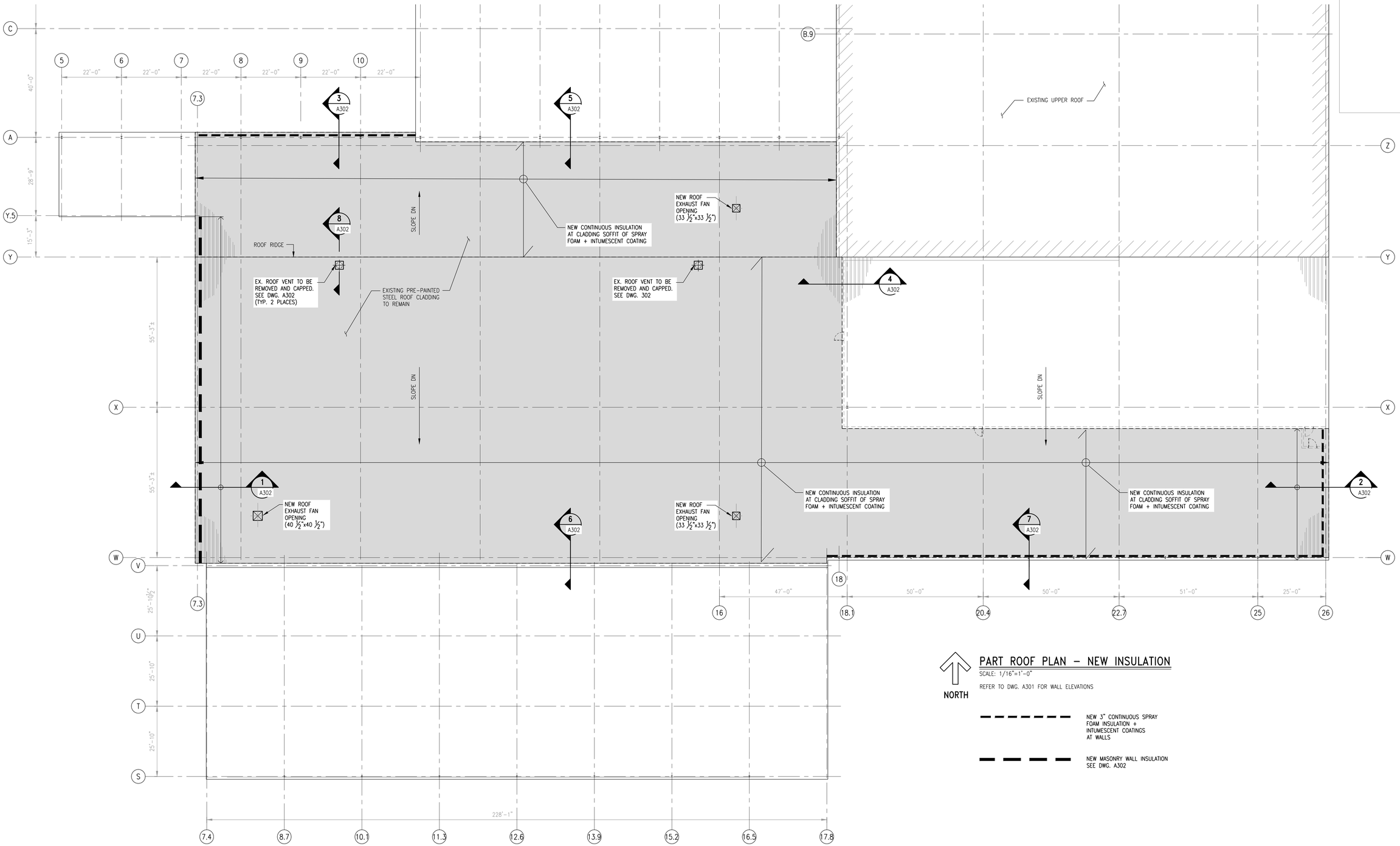
HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

project title: HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawing title: DOOR SCHEDULE, FINISH SCHEDULE, WASHROOM DETAILS

drawn: BTD
date: JUNE 2025
checked: CB
date: SEPT. 2025

scale: AS NOTED
project number: 25-38
DRAWING NUMBER: A102
1 Revision



PART ROOF PLAN – NEW INSULATION

SCALE: 1/16"=1'-0"

REFER TO DWG. A301 FOR WALL ELEVATIONS

NORTH

NEW 3" CONTINUOUS SPRAY FOAM INSULATION + INTUMESCENT COATINGS AT WALLS

NEW MASONRY WALL INSULATION SEE DWG. A302

REVISIONS		
no	description / date	
0	ISSUED FOR TENDER SEPT. 5, 2025	

LICENSED PROFESSIONAL ENGINEER
C. A. BAKER
100121757
Sept.5, 2025
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HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

project title:
HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawing title:
ROOF PLAN - NEW INSULATION

drawn: BTD
date: JUNE 2025

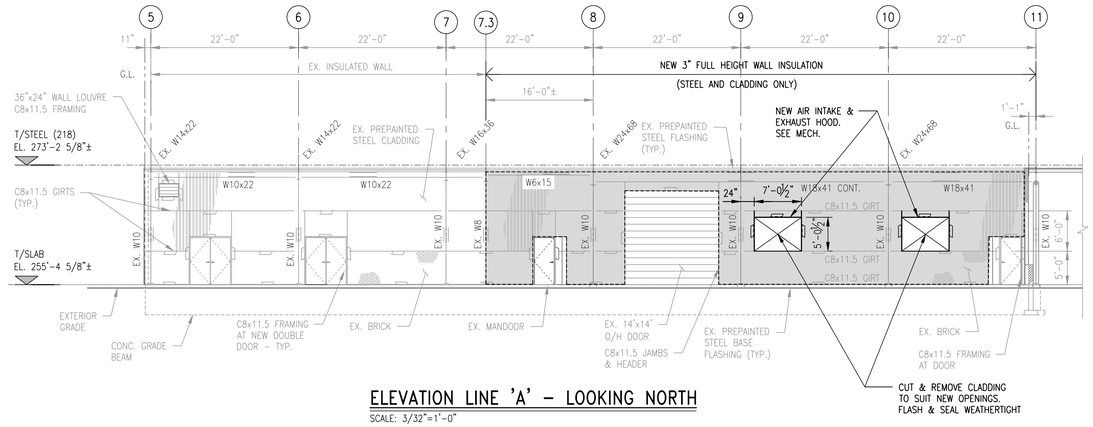
checked: CB
date: SEPT. 2025

scale: AS NOTED

project number: 25-38

DRAWING NUMBER: A201

0 Revision



ELEVATION LINE 'A' – LOOKING NORTH

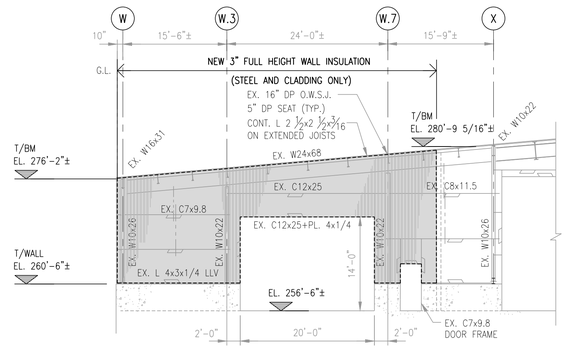
SCALE: 3/32"=1'-0"

INSULATION: 3" SPF BY SOPRA +
DC315 INTUMESCENT COATING

ELEVATION LINE '7.3' – LOOKING WEST

SCALE: 3/32"=1'-0"

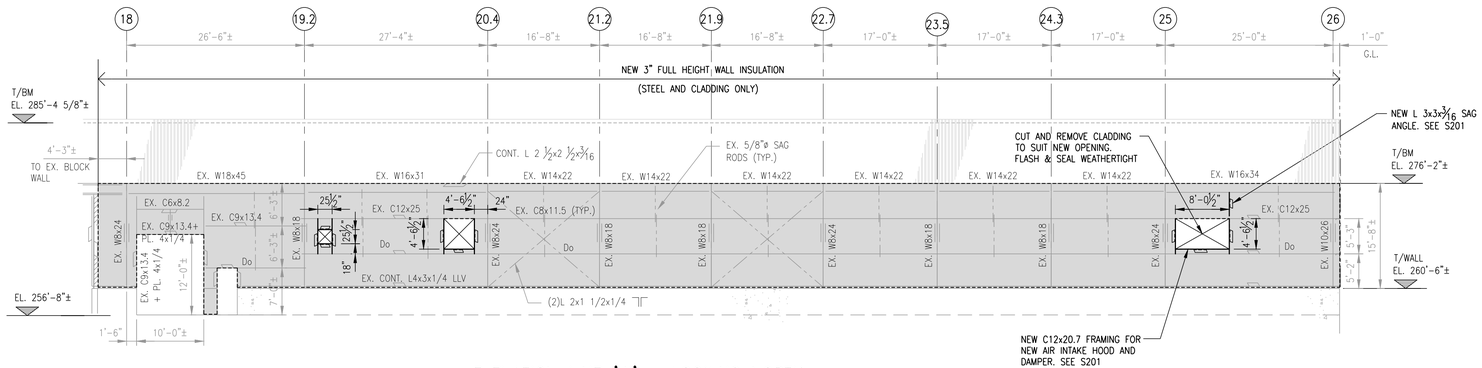
INSULATION: 2" CONT. RIGID INSULATION LAMINATED TO BLOCK WALL
3" Z-CHANNEL FURRING, RIGID INSULATION & 5/8" GYPSUM BOARD



ELEVATION LINE '26' – LOOKING WEST

SCALE: 3/32"=1'-0"

INSULATION: 3" SPF BY SOPRA +
DC315 INTUMESCENT COATING



ELEVATION LINE 'W' – LOOKING NORTH

SCALE: 3/32"=1'-0"

INSULATION: 3" SPF BY SOPRA +
DC315 INTUMESCENT COATING

REVISIONS

no	description	date
0	ISSUED FOR TENDER	SEPT. 5, 2025

LICENSED PROFESSIONAL ENGINEER
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100121757
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HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

project title:
HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawing title:
WALL ELEVATIONS - NEW INSULATION

drawn: BTD
date: JUNE 2025

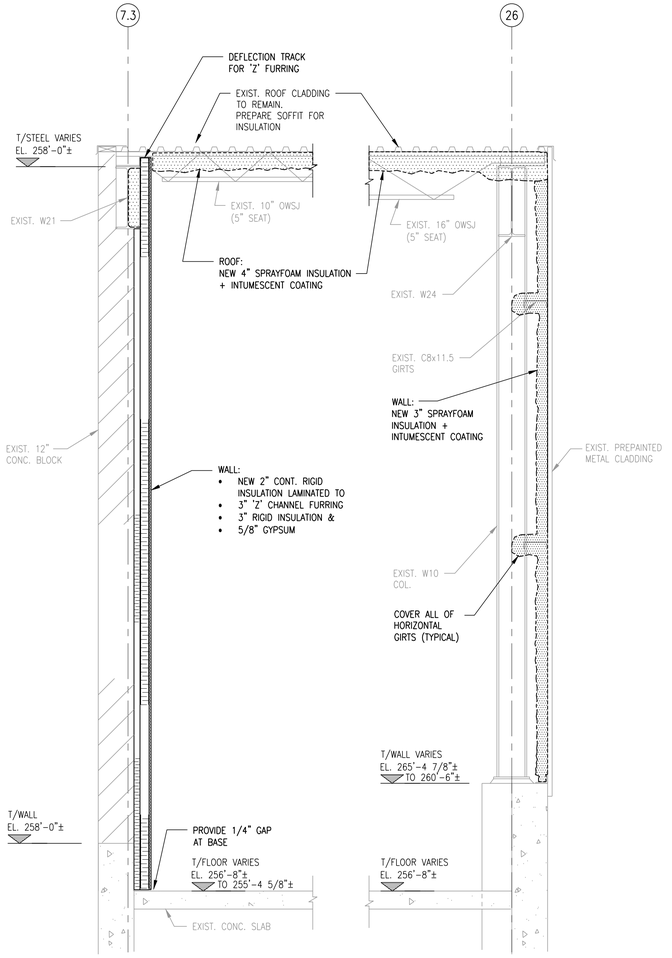
checked: CB
date: SEPT. 2025

scale: AS NOTED

project number: 25-38

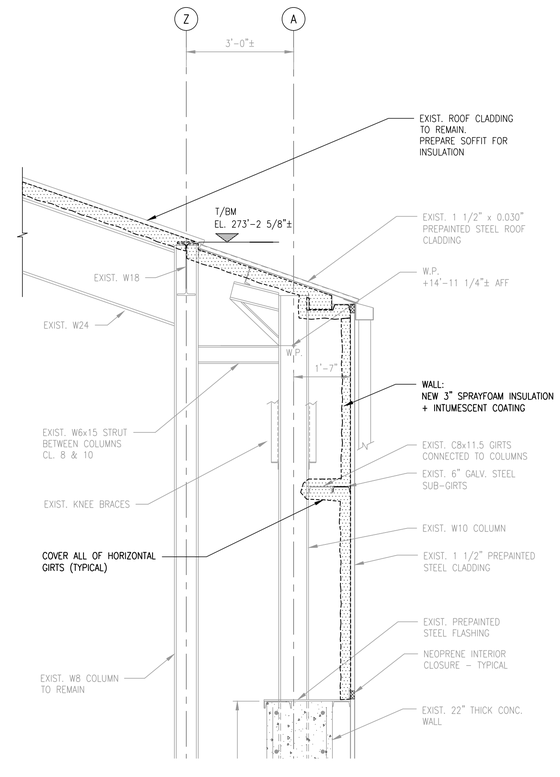
DRAWING NUMBER: A301

Revision: 0

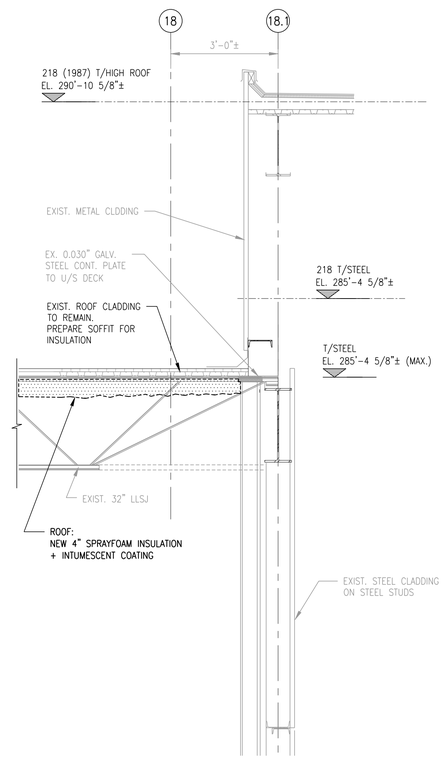


SECTION 1 A201
SCALE: 1/2"=1'-0"

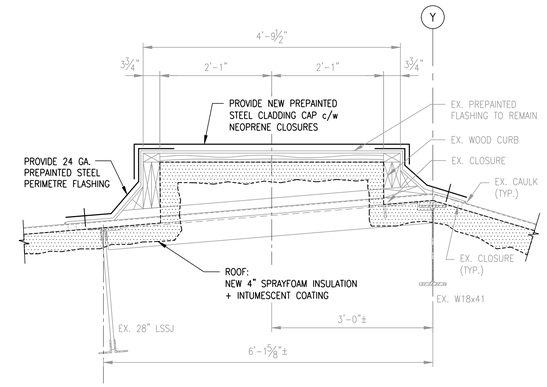
SECTION 2 A201
SCALE: 1/2"=1'-0"



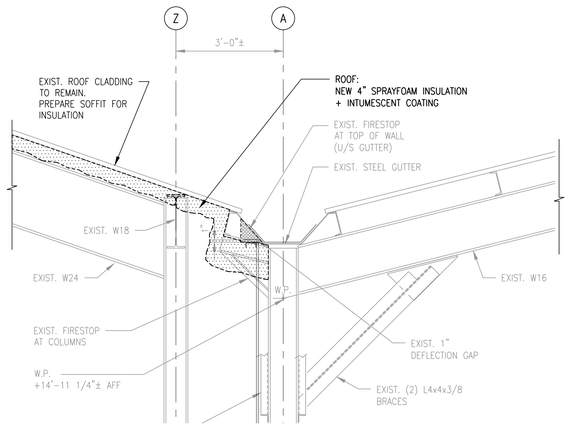
SECTION 3 A201
SCALE: 1/2"=1'-0"



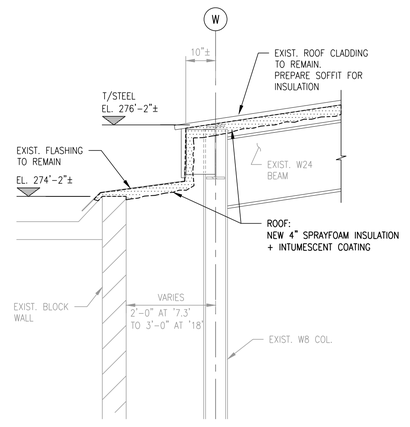
SECTION 4 A201
SCALE: 1/2"=1'-0"



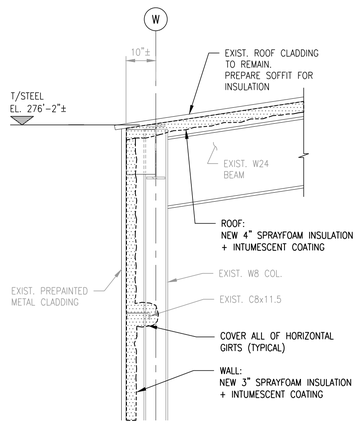
SECTION 8 A201
SCALE: 3/4"=1'-0"
TYP. 2 PLACES



SECTION 5 A201
SCALE: 1/2"=1'-0"



SECTION 6 A201
SCALE: 1/2"=1'-0"



SECTION 7 A201
SCALE: 1/2"=1'-0"

REVISIONS

no	description	date
0	ISSUED FOR TENDER SEPT. 5, 2025	

LICENSED PROFESSIONAL ENGINEER
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100121757
Sept.5, 2025
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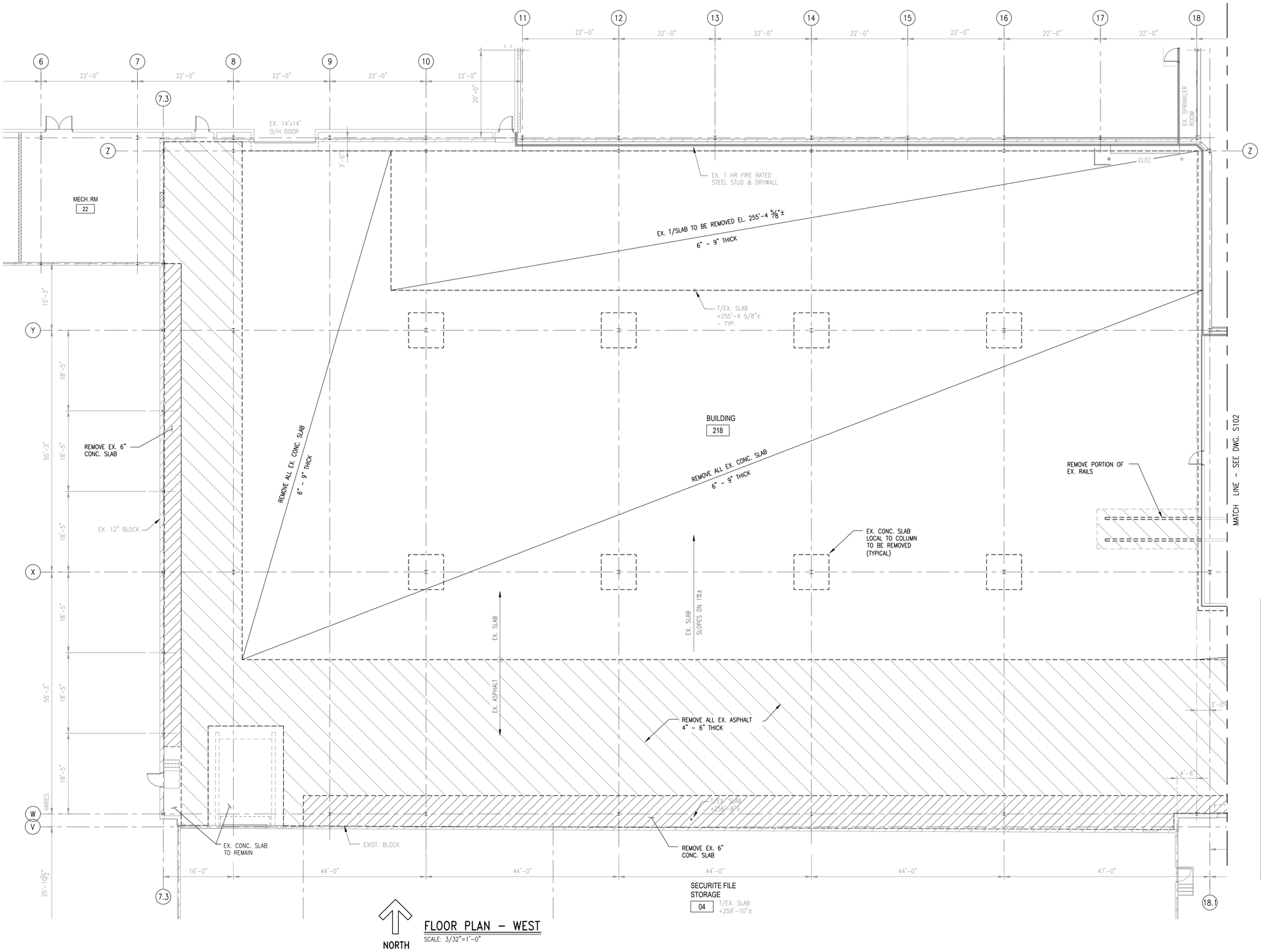
HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

project title: HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawing title: SECTIONS & DETAILS

drawn: BTD
date: JUNE 2025
checked: CB
date: SEPT. 2025

scale: AS NOTED
project number: 25-38
DRAWING NUMBER: A302
0 Revision



NORTH

FLOOR PLAN – WEST

SCALE: 3/32"=1'-0"

GENERAL NOTES:

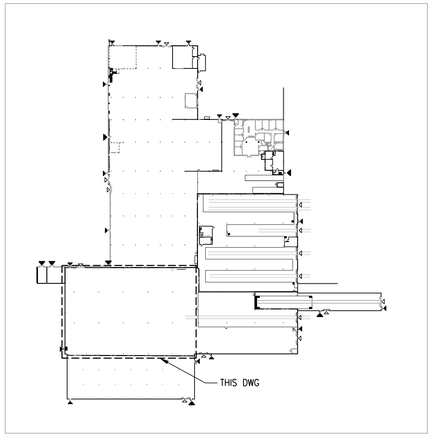
1. DO ALL WORK SHOWN ON DRAWINGS AND SPECIFIED HEREIN TO DEMOLISH EXISTING CONCRETE FLOOR, INCLUDING ANY EMBEDDED STEEL SHAPES, EDGE ANGLES, RAIL LINES, BURIED MATERIAL ETC.
2. ANY AND ALL ELECTRICAL AND CONTROL WORK INCLUDING REMOVALS AND RELOCATIONS BY CONTRACTOR. IDENTIFY AND NOTIFY HOPA OF ALL EQUIPMENT, SERVICES AND CONDUITS TO BE REMOVED/RELOCATED.
3. FIELD MEASURE AND MAKE ADJUSTMENTS TO SUIT EXISTING CONDITIONS.
4. DO NOT SCALE DRAWINGS.
5. PRIOR TO EXCAVATION, LOCATE ALL BURIED SERVICES. CONTACT HOPA, BELL CANADA, UNION GAS, AND CITY OF HAMILTON FOR TELEPHONE, GAS, WATER AND SEWER LOCATIONS.
6. PROVIDE PROTECTION FROM EXISTING EQUIPMENT AND ANY OTHER WORK REQUIRED TO ENSURE SAFE CONDITIONS FOR WORKERS.
7. PROTECT ALL EXISTING EQUIPMENT AND CONDITIONS FROM DAMAGE DURING CONSTRUCTION.

EXCAVATION AND BACKFILL:

1. COORDINATE MATERIALS REMOVALS, EXISTING SOIL REVIEW AND BACKFILL COMPACTION TESTING WITH WITH OWNERS GEOTECHNICAL ENGINEER.
2. GEOTECHNICAL ENGINEER IS
   CHUNG AND VANDERDOELEN ENGINEERING LTD.
   311 VICTORIA STREET NORTH
   KITCHENER, ON N2H 5E1
   519-742-8979
3. EXCAVATE AS REQUIRED TO CONSTRUCT SLABS ON GRADE AND PAVING BRICK SYSTEM INCLUDING BASE COURSE, AND BEDDING. SEE SPECIFICATIONS FOR DISPOSAL OF REMOVED MATERIAL.
4. BACKFILL FOR SLAB ON GRADE BASE COURSE SHALL BE GRANULAR "A" MATERIAL PLACED IN MAXIMUM 8" LIFTS AND COMPACTED TO 100% S.P.M.D.D.
5. EXISTING GRANULAR MAY BE REUSED UNDER DIRECTION AND APPROVAL OF OWNERS GEOTECHNCIAL ENGINEER.

CONCRETE REMOVALS:

1. DISPOSE OF ALL REMOVED MATERIAL OFF SITE.
2. SAWCUT AND REMOVE ALL EXISTING CONCRETE AND ASPHALT WHERE SHOWN.
3. INCLUDE FOR ALL EMBEDDED STEEL REMOVALS VISIBLE AT THE EXISTING TOP SURFACE.
4. CONCRETE AND ASPHALT THICKNESS VARIES AS NOTED. INCLUDE FOR ALL REMOVALS.



NORTH

KEY PLAN

SCALE: N.T.S.

REVISIONS

no	description	date
0	ISSUED FOR TENDER	SEPT. 5, 2025

LICENSED PROFESSIONAL ENGINEER
C. A. BAKER
100121757
Sept.5, 2025
PROVINCE OF ONTARIO

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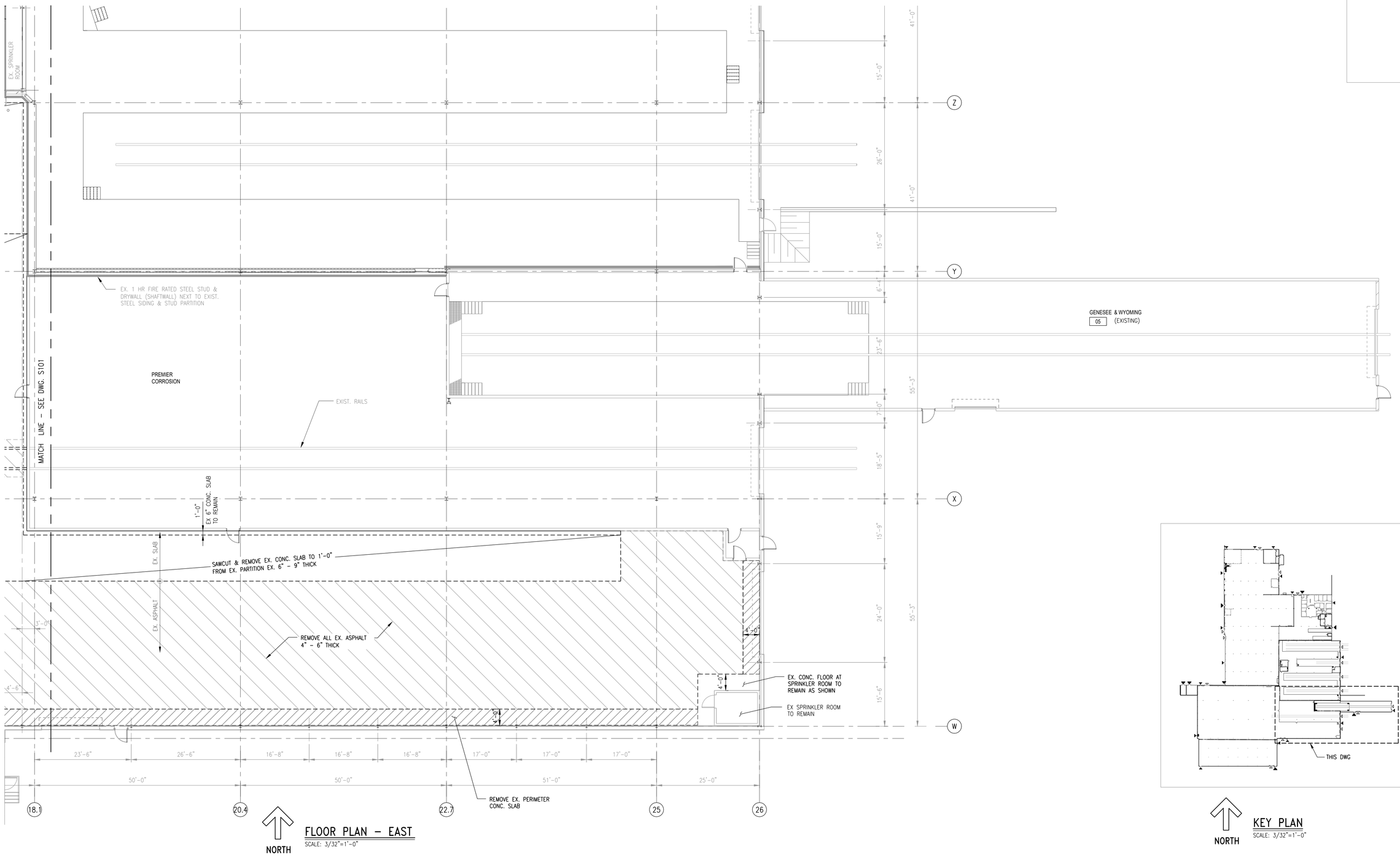
HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

project title:
HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawing title:
FLOOR SLAB DEMOLITION - WEST

drawn: BTD
date: JUNE 2025
checked: CB
date: SEPT. 2025

scale: AS NOTED
project number: 25-38
DRAWING NUMBER: S101
0 Revision



FLOOR PLAN - EAST

SCALE: 3/32"=1'-0"

KEY PLAN

SCALE: 3/32"=1'-0"

REVISIONS		
no	description	date
0	ISSUED FOR TENDER	SEPT. 5, 2025

LICENSED PROFESSIONAL ENGINEER
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100121757
Sept.6, 2025
PROVINCE OF ONTARIO

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Hamilton ON L8M 1A6
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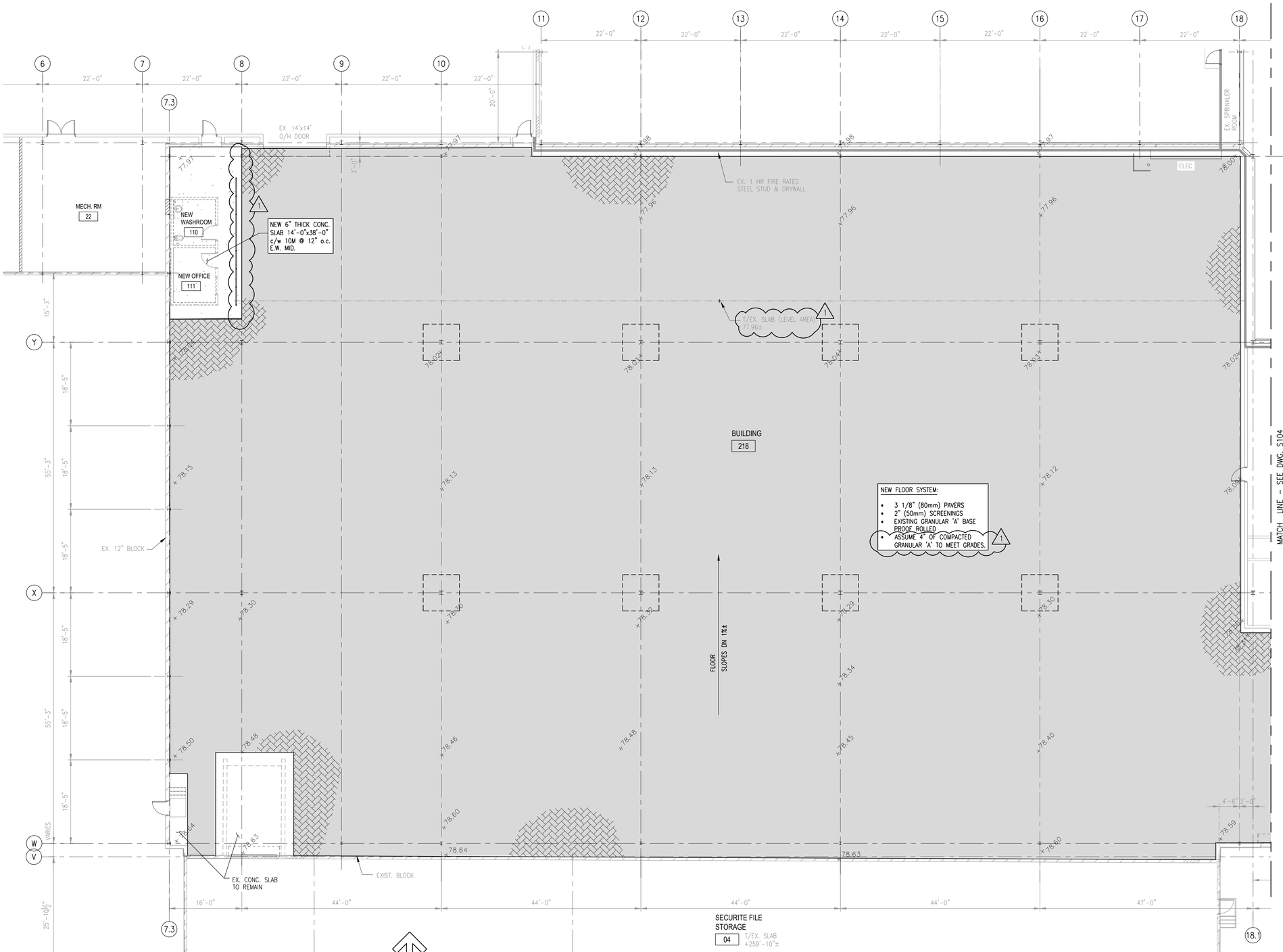
HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

project title:
HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawing title:
FLOOR SLAB DEMOLITION - EAST

drawn: BTD
date: JUNE 2025
checked: CB
date: SEPT. 2025
scale: AS NOTED
project number: 25-38
DRAWING NUMBER: S102
Revision: 0



FLOOR PLAN – WEST

SCALE: 3/32"=1'-0"

NORTH

NOTE: EXISTING ELEVATION IN METRIC (MATCH EXISTING ELEVATIONS)

GENERAL NOTES:

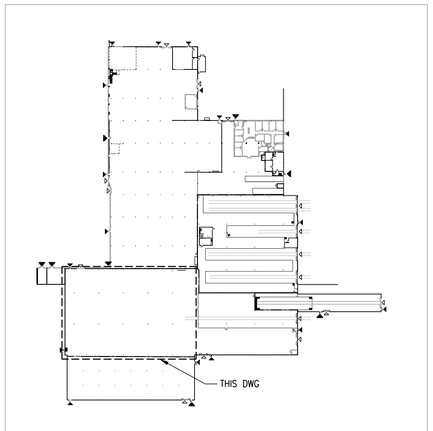
1. DO ALL WORK SHOWN ON DRAWINGS AND SPECIFIED HEREIN TO CONSTRUCT NEW FLOOR INCLUDING NEW CONCRETE AND PAVING BRICK SYSTEM.
2. FIELD MEASURE AND MAKE ADJUSTMENTS TO SUIT EXISTING CONDITIONS.
3. DO NOT SCALE DRAWINGS.
4. PROVIDE PROTECTION FROM EXISTING EQUIPMENT AND ANY OTHER WORK REQUIRED TO ENSURE SAFE CONDITIONS FOR WORKERS.
5. PROTECT ALL EXISTING EQUIPMENT AND CONDITIONS FROM DAMAGE DURING CONSTRUCTION.

NEW BRICK PAVER SYSTEM:

1. NEW FLOOR SYSTEM DESIGN BY HOPA. PROJECT SPECIFICATIONS AND COORDINATE MATERIALS REMOVALS, EXISTING SOIL REVIEW AND BACKFILL COMPACTION TESTING WITH OWNERS GEOTECHNICAL ENGINEER.
2. GEOTECHNICAL ENGINEER IS CHUNG AND VANDERDOELEN ENGINEERING LTD.
   311 VICTORIA STREET NORTH
   KITCHENER, ON N2H 5E1
   519-742-8979
3. CONSTRUCT PAVING BRICK SYSTEM INCLUDING PROOF ROLLING OF EXPOSED BASE COURSE, AND NEW BEDDING. SEE SPECIFICATIONS FOR ALL PRODUCTS AND MATERIALS.
4. BACKFILL FOR SLAB ON GRADE BASE COURSE SOFT SPOTS SHALL BE GRANULAR "A" MATERIAL PLACED IN MAXIMUM 6" LIFTS AND COMPACTED TO 100% S.P.M.D.D. SUB-EXCAVATE AS REQUIRED.
5. EXISTING GRANULAR MAY BE REUSED UNDER DIRECTION AND APPROVAL OF OWNERS GEOTECHNCIAL ENGINEER.

CONCRETE:

1. ALL CONCRETE WORK TO CSA-A23.1- CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION.
2. INTERIOR SLAB ON GROUND CONCRETE TO BE TYPE C-1, 35 MPa 28 DAY STRENGTH, 75± SLUMP, 5-8% AIR. COMPOSITE SLAB CONCRETE TO BE TYPE N, 25 MPa 28 DAY STRENGTH, 75± SLUMP. EXTERIOR CONCRETE TO BE C-2, 32MPA, 5-% AIR. NO CALCIUM CHLORIDE OR OTHER SALTS TO BE ADDED. SUBMIT MIX DESIGN FOR APPROVAL.
4. SUBMIT MIX DESIGN FOR APPROVAL.
5. REBAR TO BE GRADE 400 DEFORMED BARS TO CAN/CSA-G30.18-M92-BILLET STEEL BARS FOR CONCRETE REINFORCEMENT. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
6. CONTACT ATKINSON ENGINEERING INC. FOR REVIEW OF REINFORCING STEEL A MINIMUM OF 24 HRS. BEFORE PLACEMENT SO ANY DEFICIENCIES CAN BE CORRECTED.
7. PROVIDE A STEEL TROWEL FINISH TO CONCRETE SLAB.
8. CURE SLAB FOR A MINIMUM OF 7 DAYS BY COVERING WITH WET BURLAP AND POLY SHEETING.



KEY PLAN

SCALE: N.T.S.

NORTH

REVISIONS		
no	description	date
0	ISSUED FOR TENDER SEPT. 5, 2025	
1	REVISED CONC. SLAB AND ELEVATION NOTE NOV. 4, 2025	

LICENSED PROFESSIONAL ENGINEER
C. A. BAKER
100121757
Nov. 4, 2025
PROVINCE OF ONTARIO

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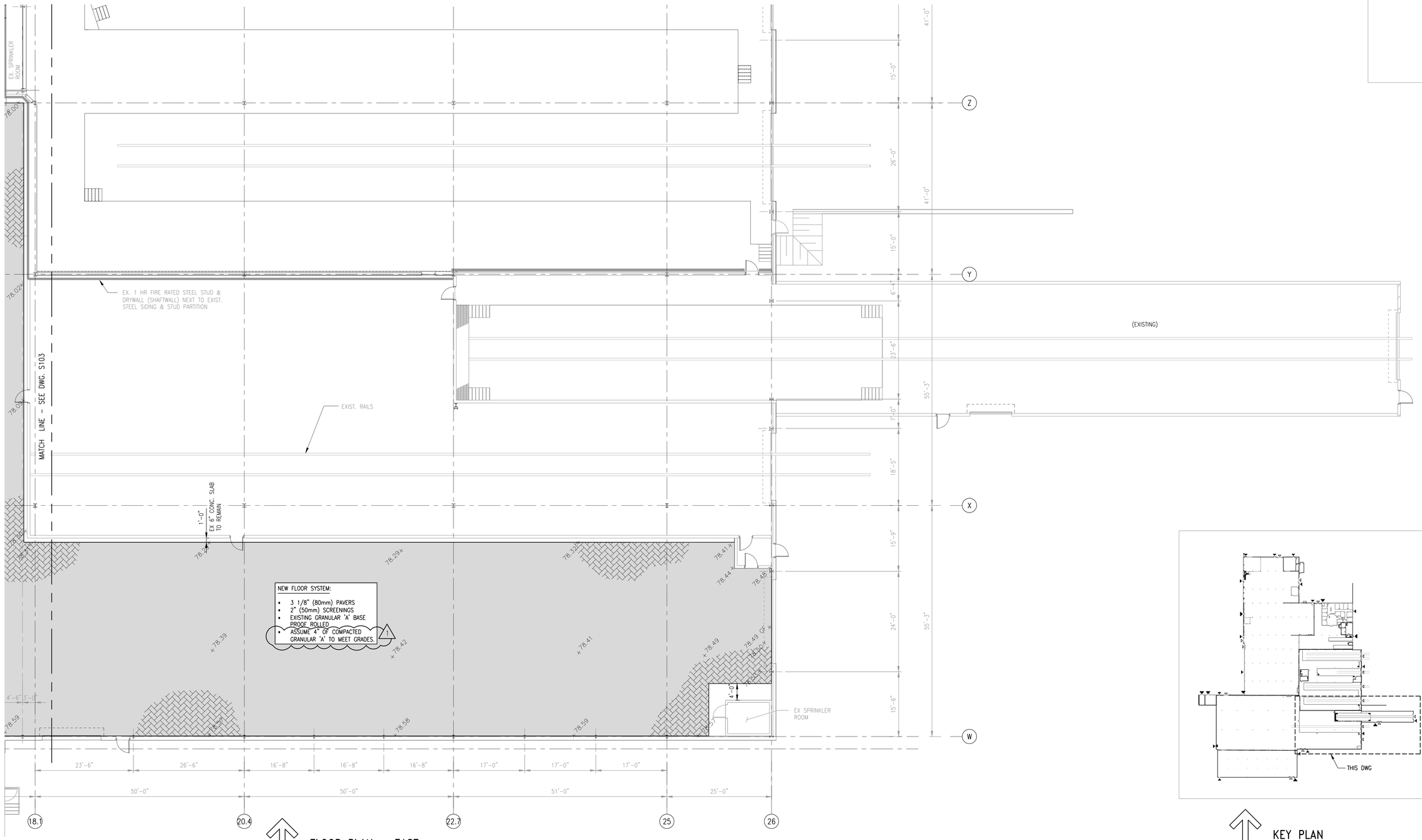
786 King Street East
Hamilton ON L8M 1A6
Tel. 905.523.1988
Fax. 905.523.6221
www.atkinsonengineering.com

HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

project title:	HAMILTON-OSHAWA PORT AUTHORITY PIER 15 - 204 HILLYARD ST. BUILDING 218 UPGRADES
drawing title:	FLOOR SLAB NEW - WEST
drawn:	BTD
date:	JUNE 2025
checked:	CB
date:	SEPT. 2025
scale:	AS NOTED
project number:	25-38
DRAWING NUMBER:	S103
	1 Revision



NORTH

FLOOR PLAN - EAST

SCALE: 3/32"=1'-0"

+78.58 NOTE: EXISTING ELEVATION IN METRIC (MATCH EXISTING ELEVATIONS) 1

NORTH

KEY PLAN

SCALE: 3/32"=1'-0"

REVISIONS		
no	description	date
0	ISSUED FOR TENDER	SEPT 5, 2025
1	REVISED ELEVATION NOTE	NOV. 4, 2025

LICENSED PROFESSIONAL ENGINEER
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100121757
Nov. 4, 2025
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HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

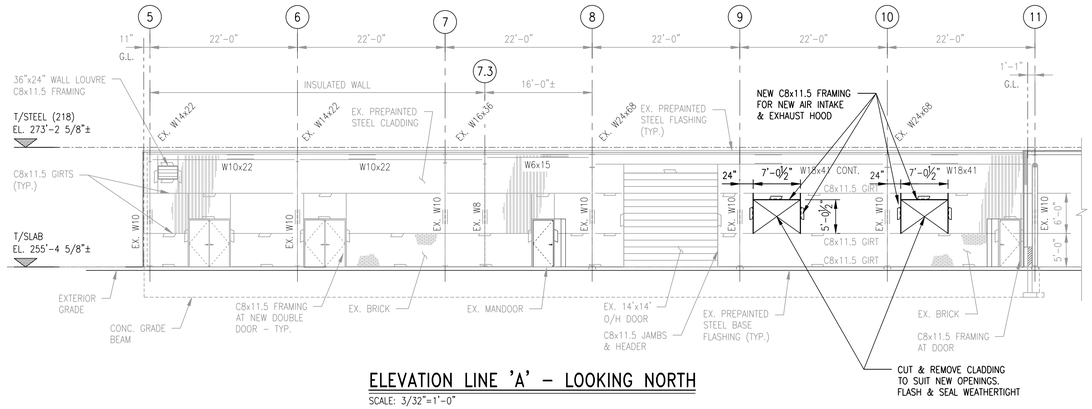
project title:
HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawing title:
FLOOR SLAB NEW - EAST

drawn: BTD
date: JUNE 2025
checked: CB
date: SEPT. 2025

scale: AS NOTED
project number: 25-38

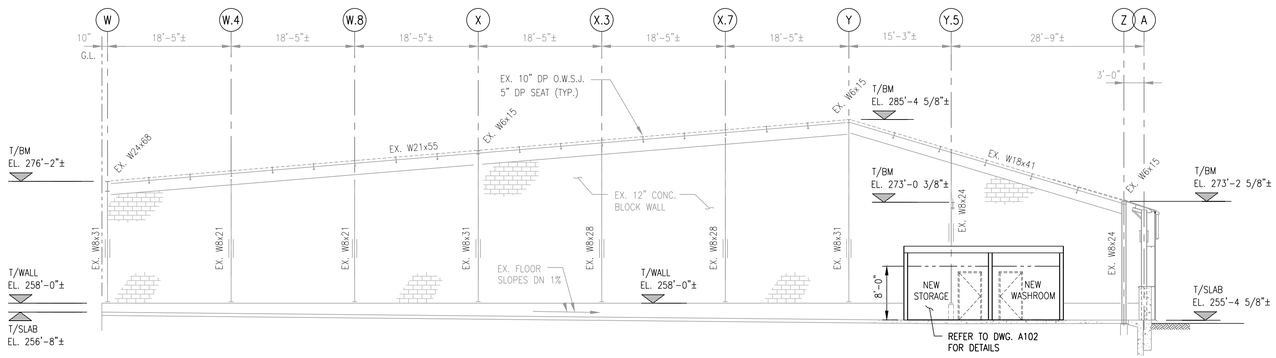
DRAWING NUMBER: S104
1 Revision



ELEVATION LINE 'A' – LOOKING NORTH

SCALE: 3/32"=1'-0"

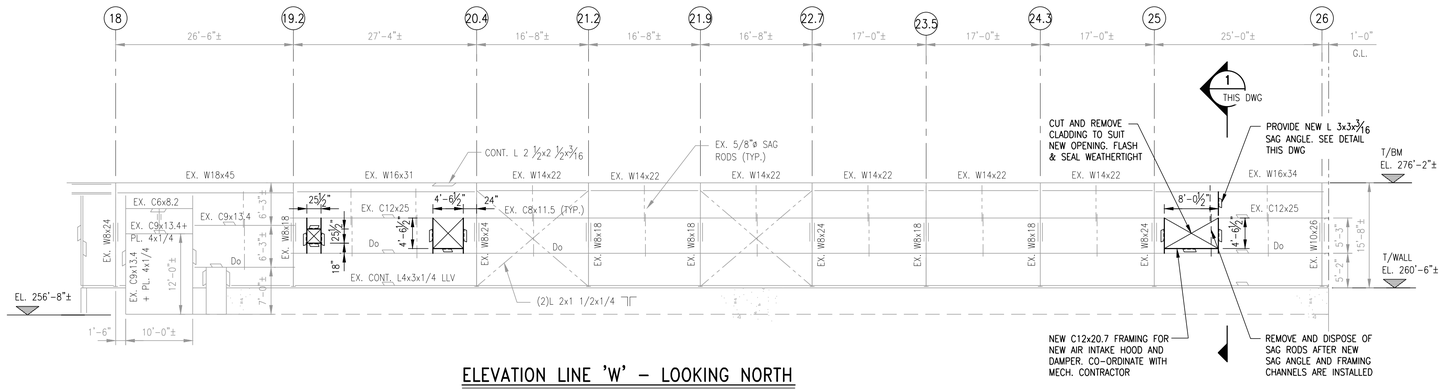
REFER TO DWG. A301 FOR NEW INSULATION



ELEVATION LINE '7.3' – LOOKING WEST

SCALE: 3/32"=1'-0"

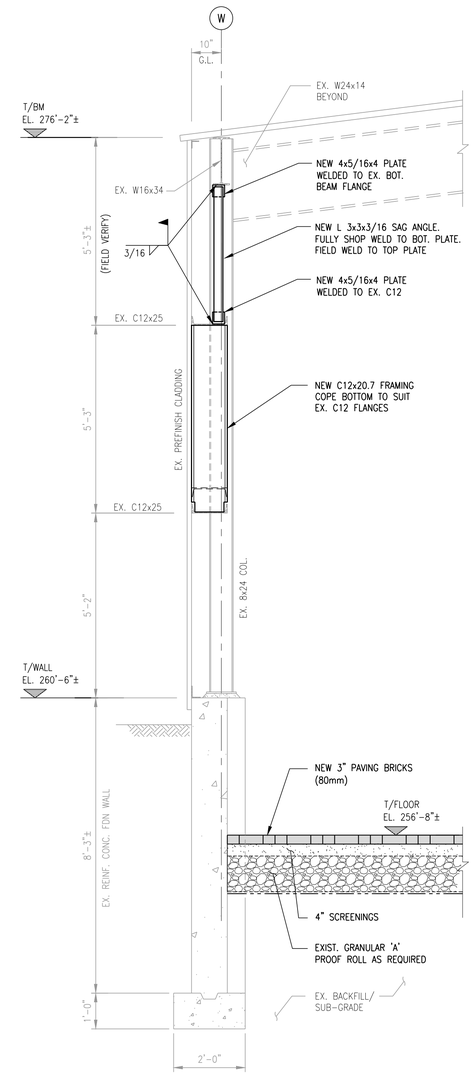
REFER TO DWG. A301 FOR NEW INSULATION



ELEVATION LINE 'W' – LOOKING NORTH

SCALE: 3/32"=1'-0"

REFER TO DWG. A301 FOR NEW INSULATION



SECTION 1

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

THIS DWG

REVISIONS

no	description	date
0	ISSUED FOR TENDER	SEPT. 5, 2025

LICENSED PROFESSIONAL ENGINEER
C. A. BAKER
100121757
Sept. 5, 2025
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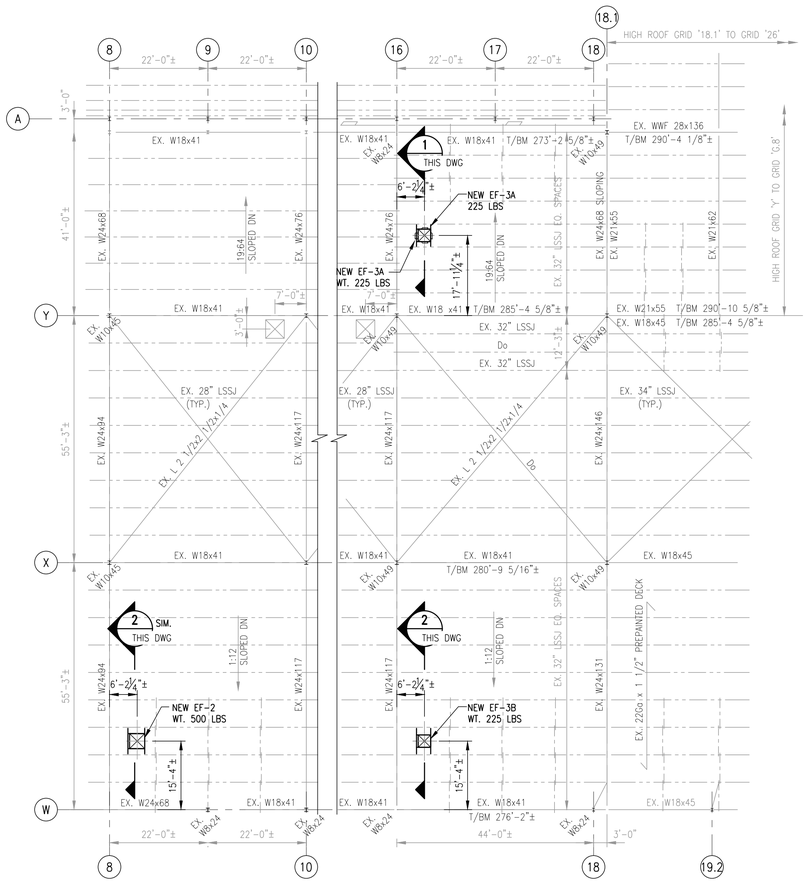
HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

project title:
HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawing title:
WALL ELEVATIONS & SECTION FOR
NEW MECHANICAL OPENINGS

drawn: BTD
date: JUNE 2025
checked: CB
date: SEPT. 2025

scale: AS NOTED
project number: 25-38
DRAWING NUMBER: S201
0 Revision



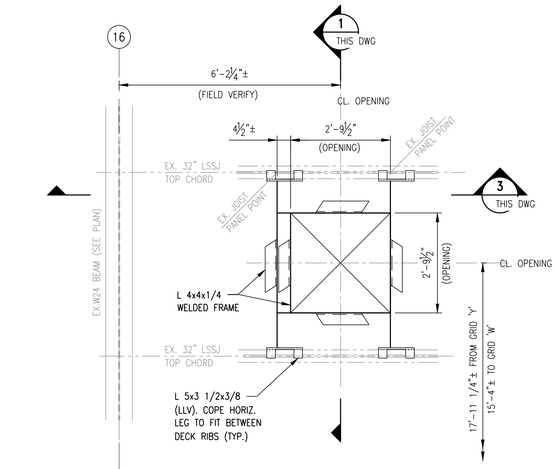
PART ROOF FRAMING PLAN

SCALE: 1/16"=1'-0"

EXISTING ROOF LOADS:

DL:	1 1/2" DECK	1.7 PSF
	JOISTS	1.5 PSF
	BEAMS/STRUCTURES	2.7 PSF
	SERVICES	5.0 PSF
		10.9 PSF

SNOW LOAD: 27 PSF Is = 1.0

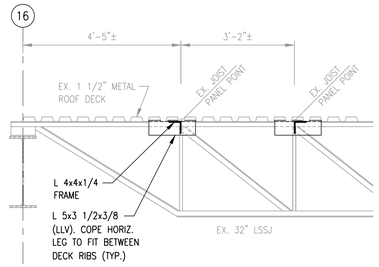


DETAIL

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

A THIS DWG

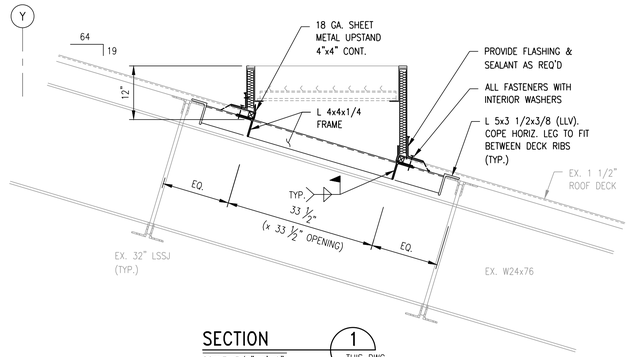
- SEE PLAN FOR OPENING LOCATIONS CO-ORDINATE w/ MECHANICAL
- THREE (3) REQUIRED



SECTION

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

3 THIS DWG



SECTION

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

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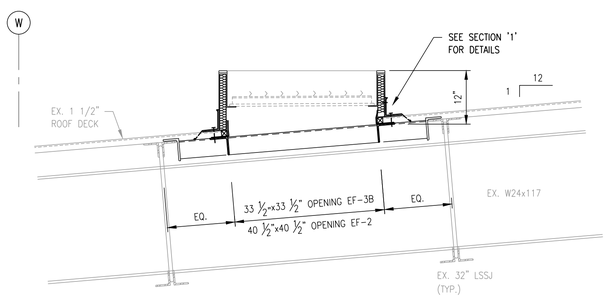
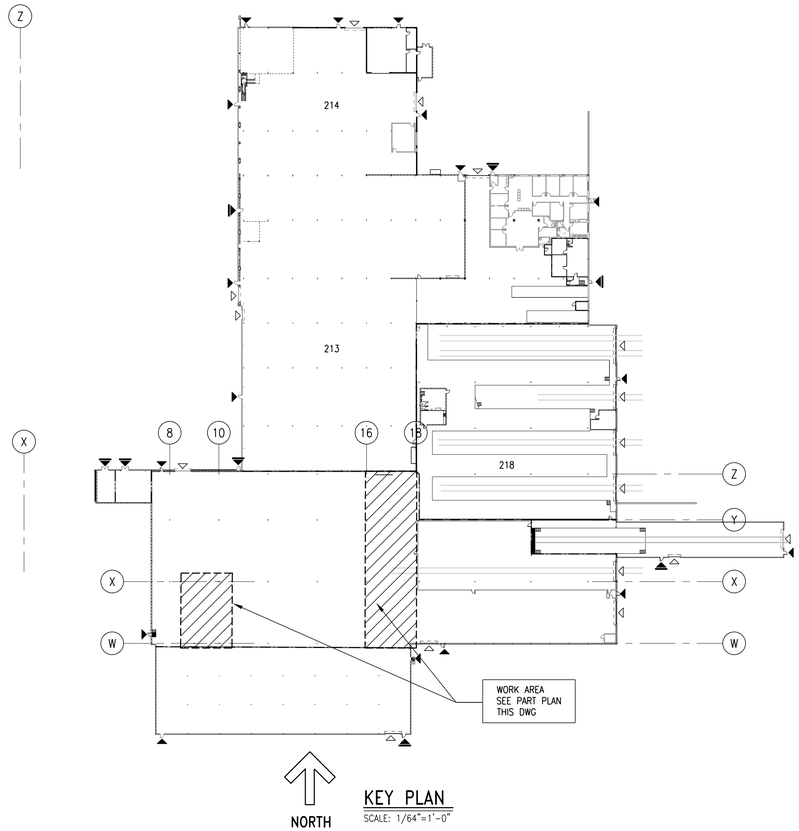


SECTION

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

2 THIS DWG



KEY PLAN

SCALE: 1/64"=1'-0"

REVISIONS		
no	description	date
0	ISSUED FOR TENDER	SEPT. 5, 2025

LICENSED PROFESSIONAL ENGINEER — C. A. BAKER — 100121757 — Sept.5, 2025 — PROVINCE OF ONTARIO

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HOPA PORTS — HAMILTON OSHAWA PORT AUTHORITY

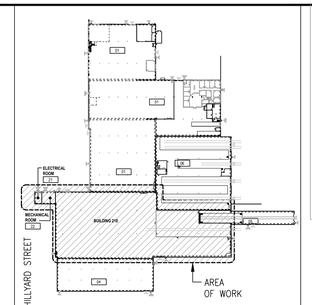
project title: HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawing title: ROOF OPENING FRAMING PLAN, SECTIONS & DETAILS

drawn: BTD
date: JUNE 2025
checked: CB
date: SEPT. 2025

scale: AS NOTED
project number: 25-38

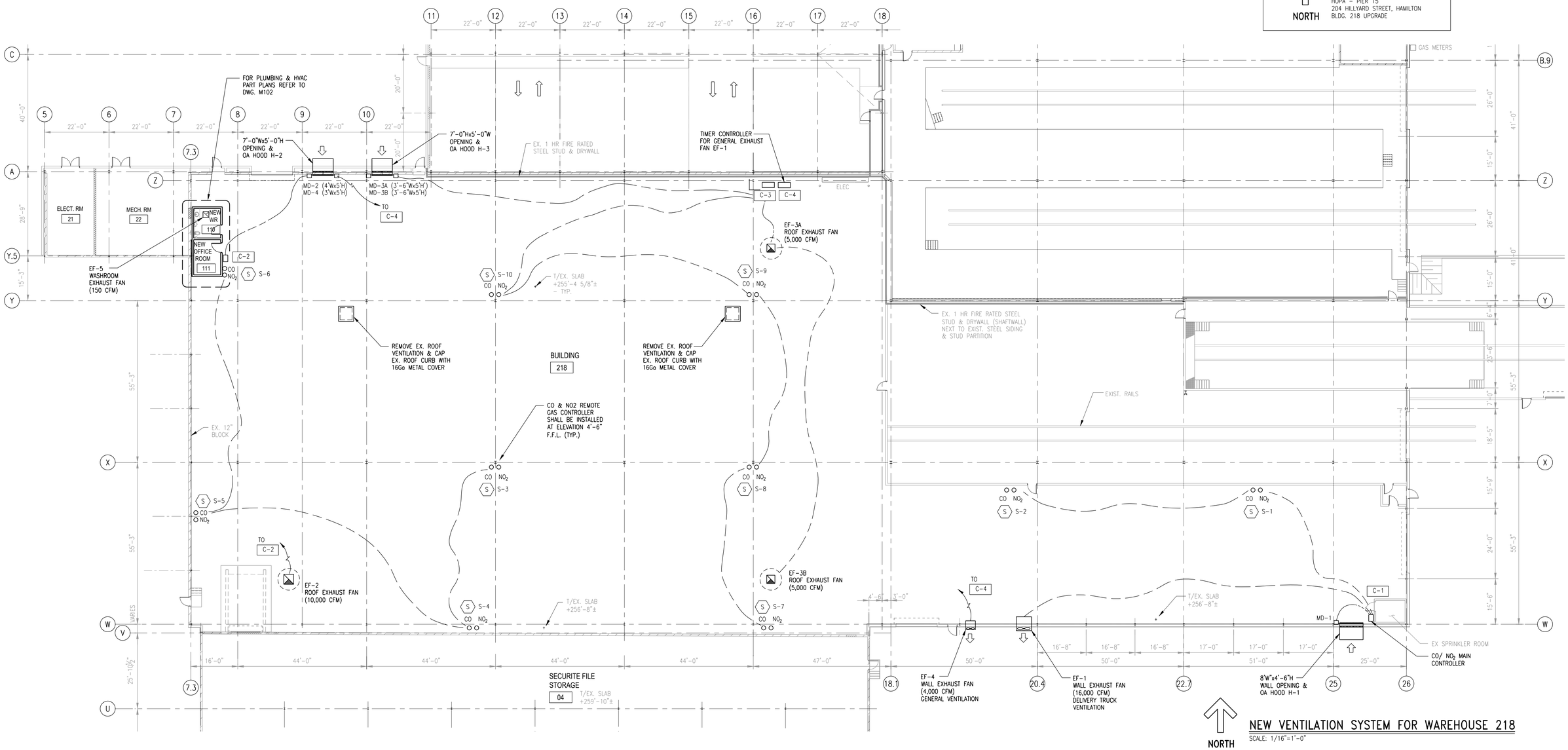
DRAWING NUMBER: S202
0 Revision



KEY PLAN

SCALE: N.T.S.
HOPA – PIER 15
204 HILLYARD STREET, HAMILTON
BLDG. 218 UPGRADE

NORTH



NORTH

NEW VENTILATION SYSTEM FOR WAREHOUSE 218

SCALE: 1/16"=1'-0"

REVISIONS		
no	description	date
0	ISSUED FOR TENDER	SEPT. -, 2025

LICENSED PROFESSIONAL ENGINEER
M.N.KHAN
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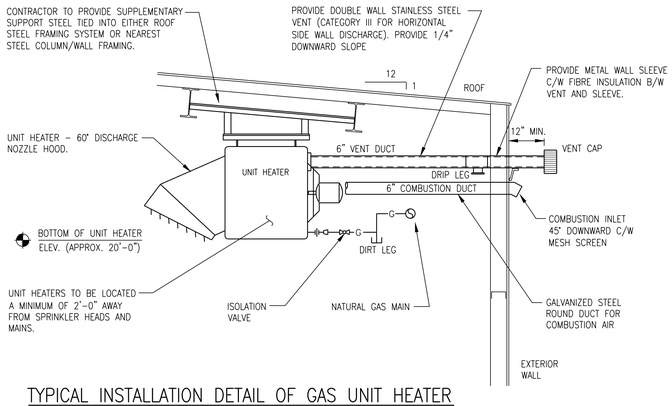
HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

project title: HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawing title: PART PLAN - HVAC

drawn: BTD
date: JUNE 2025
checked: MK
date: SEPT. 2025

scale: AS NOTED
project number: 25-38
DRAWING NUMBER: M101
0 Revision



TYPICAL INSTALLATION DETAIL OF GAS UNIT HEATER

SCALE: N.T.S.

SCHEDULE FOR NATURAL GAS UNIT HEATERS

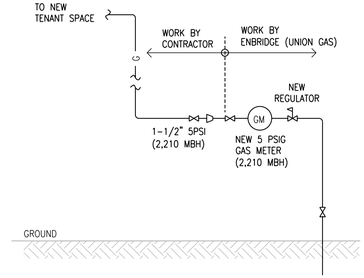
TAG	TAG	TAG	CAPACITY		AIR FLOW	MOTOR		Weight	NOTES
			INPUT	OUTPUT	CFM	POWER	HP	lbs	
UH-1	MODINE	PTP400SS0112FBAN	400 MBH	328 MBH	5387	230V/1/60HZ	3/4	340	1 to 10, 12
UH-2	MODINE	PTP400SS0112FBAN	400 MBH	328 MBH	5387	230V/1/60HZ	3/4	340	1 to 10, 12
UH-3	MODINE	PTP400SS0112FBAN	400 MBH	328 MBH	5387	208V/1/60HZ	3/4	340	1 to 9, 11, 12

NOTES:
1- INDIRECT GAS FIRED, POWER EXHAUSTED HEATER
2- CSA APPROVED
3- 24V CONTROL TRANSFORMER
4- STAINLESS STEEL HEAT EXCHANGER
5- TWO-STAGE HEATING
6- 60 DEG. DEFLECTOR HOOD
7- SIDEWALL VENT TERMINAL
8- CATEGORY III VENTING FOR HORIZONTAL CONFIGURATION AND SIDEWALL EXHAUST
9-NON-PROGRAMMABLE DIGITAL THERMOSTAT WITH SWITCHING HONEYWELL TH5220D1029 OR EQUIVALENT
10- 230V/1PH TO 115V MAIN TRANSFORMER
11- 208/1PH TO 115V MAIN TRANSFORMER
12- APPROVED EQUIVALENT: RAZNOR, LENNOX

SCHEDULE FOR GAS RADIANT HEATERS

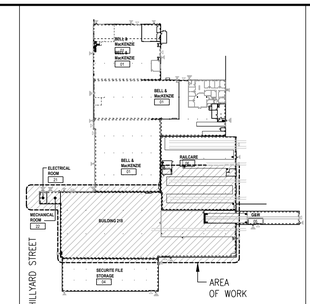
TAG	MAKE	MODEL	HEATING CAPACITY		MOTOR		NOTES
			MAX	MIN	POWER	HP	
RH-1	SUPERIOR SRP	TX-205	205 MBH	160 MBH	115V/1ph/60HZ	1/8	1 TO 10
RH-2	SUPERIOR SRP	TX-150	150 MBH	115 MBH	115V/1ph/60HZ	1/8	1 TO 10
RH-3	SUPERIOR SRP	TX-150	150 MBH	115 MBH	115V/1ph/60HZ	1/8	1 TO 10
RH-4	SUPERIOR SRP	TX-150	150 MBH	115 MBH	115V/1ph/60HZ	1/8	1 TO 10
RH-5	SUPERIOR SRP	TX-150	150 MBH	115 MBH	115V/1ph/60HZ	1/8	1 TO 10
RH-6	SUPERIOR SRP	TX-205	205 MBH	160 MBH	115V/1ph/60HZ	1/8	1 TO 10

Remarks:
1- LOW INTENSITY -TWO STAGE RADIANT TUBE HEATER
2- 24V CONTROL TRANSFORMER
3-TWO STAGE TOUCH SCREEN THERMOSTATS CE211
4- 50 FEET LONG HEATER
5- REFLECTOR AND BRACKETS
6- CG052 GAS FLEX
7- GAS SHUT OFF VALVE
8- ROOF EXHAUST VENT KIT
9- INSTALLATION HEIGHT=22 FT
10- FLUE/ AIR CONNECTIONS (4"Ø):
MAX. VENT LENGTH-30FT
MAX. COMBUSTION LENGTH=30FT
VENT+COMBUSTION LENGTH=50FT



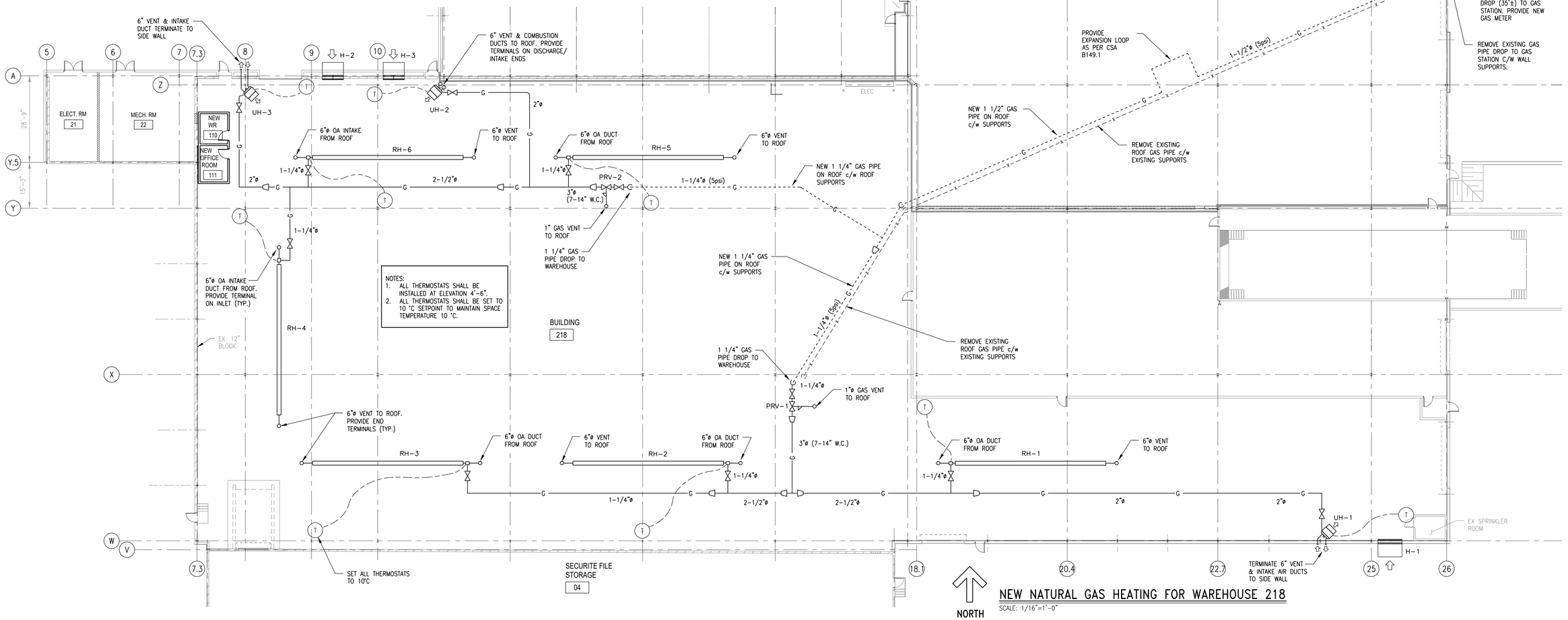
INSTALLATION DETAIL OF NEW GAS SERVICE

SCALE: N.T.S.



KEY PLAN

SCALE: N.T.S.
HOPA – PIER 15
204 HILLYARD STREET, HAMILTON
BLDG. 218 UPGRADE



NEW NATURAL GAS HEATING FOR WAREHOUSE 218

SCALE: 1/16"=1'-0"

REVISIONS

no	description	date
0	ISSUED FOR TENDER	SEPT. 5, 2025

LICENSED PROFESSIONAL ENGINEER
M.N.KHAN
100170457
SEPT. 5, 2025
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HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

project title: HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawing title: PART PLAN - NATURAL GAS HEATING

drawn: BTD
date: JUNE 2025
checked: MK
date: SEPT. 2025

scale: AS NOTED
project number: 25-38
DRAWING NUMBER: M102
Revision: 0

NEW SPLIT AIR-CONDITIONING (HEAT PUMP) UNIT SCHEDULE

Tag Name	Type	Description	Location	Manufacturer	Unit Model	SEER2	EER2	Gross Cooling Capacity (BTUH)	Sensible Cooling Capacity (BTUH)	Rated Heating Capacity (BTUH)	Volts-Ph-Hz	MCA Amp	MOP Amp	Weight (lbs)
AC-1	Indoor Ductless Wall-mounted Fan unit	Split AC (Heat Pump) System	New Office/Storage	Daikin	FTXM12WVJU9	25.2	13.2	12,000	11,400	13,600	-	12.3	15	29
CU-3	Remote Condening unit		Outdoor	Daikin	RXM12WVJU9						208-230/1/60			96

Included:
1- Remote Condensing Unit with Heat pump Inverter Compressors
2- Wall-mounted Wired Digital LCD Thermostat BRC944B2-A08 With Wiring Kit
3- Wind Baffle KPW063B4E
4- Precharged R32 refrigerant
5- Wall Bracket: Daikin DACA-WB-3
6- 10 years compressor warranty
7- Approved Equivalent: Mitsubishi, LG, Trane

ENERGY RECOVERY VENTIALTION UNIT SCHEDULE

Tag Name	Manufacturer	Model/Size	Area Served	Ducts Configuration	Supply Fan Total Airflow (CFM)	Supply Fan ESP (in.wg)	Exhaust Fan Total Airflow (CFM)	Exhaust Fan ESP (in.wg)	Weight (lbs)	Heating - Sensible Recovery Efficiency	Moisture Transfer	Cooling - Latent Recovery Efficiency	Moisture Transfer	Power Supply	MCA	MOCP
ERV-1	Reversomatic	Mini RERV-80	New Office/Storage	Horizontal	75	0.3	75	0.3	20.0	61%	0.42	40%	0.38	120/1/60	0.75	15

Notes:
1- High Latent transfer (HLT) Recovery Core
2- Automatic Fan Cylced Defrost
3- Washable MERV 4 Filters
4- Variable speed PSC Motors and fans
5- Wall-Mounted Brackets (By Division-15)
6- TC100-120P-LCD Programmable Time Delay Switch (120V)
7-Single Intake Wall Vent SVI

PLUMBING FIXTURES SCHEDULE

Tag	Description	Specification
EWH-1	Electric Hot water Heater Tank	**Giant Model: 106SEO-1R5M,** Electric hot water heater tank, CSA, CGA approved, 5 Imp Gallons capacity, 1500 watts, 120V/1Ph, CSA/ASME Rated T&P valve. Approved Equivalent: Rheem, AO Smith**.** **Accessories Included:** **HoldRite 40-SWHP-WM Water Heater Stands & Hangers -** Wall-mounted, Water heater platform, Galvanized steel construction, Static load rating 375 lb. with 2X safety factor (depending on structural anchorage).
WC-1	Water Closet-Floor Mounted	**American Standard 3461001.020 Toilet - MADERA**™ FloWise®, Toilet, Floor mounted with floor outlet, Toilet operates in the range of 4.2 to 6.0 LPF (1.1 - 1.6 GPF), Vitreous china, White finish, EverClean® antimicrobial surface, Elongated bowl. **Centoco 500STSCCFE-001 Seat** - Open front Toilet seat Without cover, For elongated bowl, White Polypropylene plastic, Color-matched plastic check hinges with one solid metal hinge pin and bolt. **Sloan ROYAL 111-YO-1.1 Flush Valve** - ROYAL® Manual Exposed Water closet flushometer, constructed from Semi-red brass, Polished chrome finish, 4.2 LPF (1.1 GPF).
L-1	Lavatory/ Drop-in Sink	**Franke Commercial OV1821-5-3 Basin -** Drop-in Lavatory, Grade 18-10 Type 304 18 gauge Stainless steel, Mirror finished rim, #4 satin finished bowl. **Chicago Faucets 420-T45E2805ABCP Faucet -** Manual, Single handle, Lavatory faucet. **McGuire 155A Fixture Drain -** Straight drain, Cast brass, Chrome-plated finish **McGuire LFBV170 Supply - CONVERTIBLE™** Commercial Faucet Supply kit, consisting of (2) stop valves, (2) risers, (2) flanges (standard), Lead Free Brass body, Chrome-plated finish, Convertible loose key/triangle handle, Angle stop, 305 mm (12") C.P. lavatory flexible copper riser tubes (standard), 13 mm (1/2") Sweat inlet x 10 mm (3/8") O.D. outlet. **McGuire 8872C P-Trap -** Heavy cast brass, 32 mm (1-1/4") x 32 mm (1-1/4") size, Adjustable P-Trap, With cleanout plug.
HB	Hose Bib	**Hose Bib Jay R. Smith Fig. 5670-H**, Hose bib shall be ¾" NPT female threaded inlet and ¾" hose connection complete with vacuum breaker, Brass body, wheel handle.

Plumbing Connections Schedule

TAG	TYPE	SAN	TRAP	VENT	HW	CW
WC-1	Water Closet	3"				1"
L-1	Lavatory		1-1/4"	1-1/4"	1/2"	1/2"

PLUMBING NOTES:
1. ALL PLUMBING, DRAINAGE AND VENT PIPING SHALL CONFORM TO ONT. REG. 332/12 BUILDING CODE, PART 7.
2. DO NOT COVER ANY STORM, SANITARY, VENT AND WATER PIPING PRIOR TO TESTING. INSPECTOR SHALL WITNESS THE TEST.
3. ALL PLUMBING AND DRAINAGE PIPES PENETRATING FIRE SEPARATIONS SHALL BE FIRE STOPPED.
4. ALL PLUMBING AND DRAINAGE PIPES SHALL BE OF NON-COMBUSTIBLE CONSTRUCTION.
5. EVERY INTERIOR LEADER SHALL BE PROVIDED WITH A CLEANOUT FITTING AT THE BOTTOM OF THE LEADER AS PER OBC DIV. B, 7.4.7.1 (3).
6. ALL FLOOR DRAIN SHALL BE VENTED AND PRIMED AS PER OBC DIV. B, 7.5.1.1 (1) AND OBC DIV. B, 7.4.5.5.
7. SANITARY VENTS LINES FOR PLUMBING FIXTURES ARE NOT SHOWN ON THE DRAWING. MECHANICAL CONTRACTOR TO PROVIDE VENT LINE. VENTS SHALL BE GROUP VENTED AND TERMINATED TO THE ROOF. REFER TO PLUMBING SCHEDULE ON DRAWING FOR VENT REQUIREMENT FOR EACH FIXTURE AND REFER OBC DIV. B, 7.5.

ELECTRIC CONVECTOR HEATER SCHEDULE

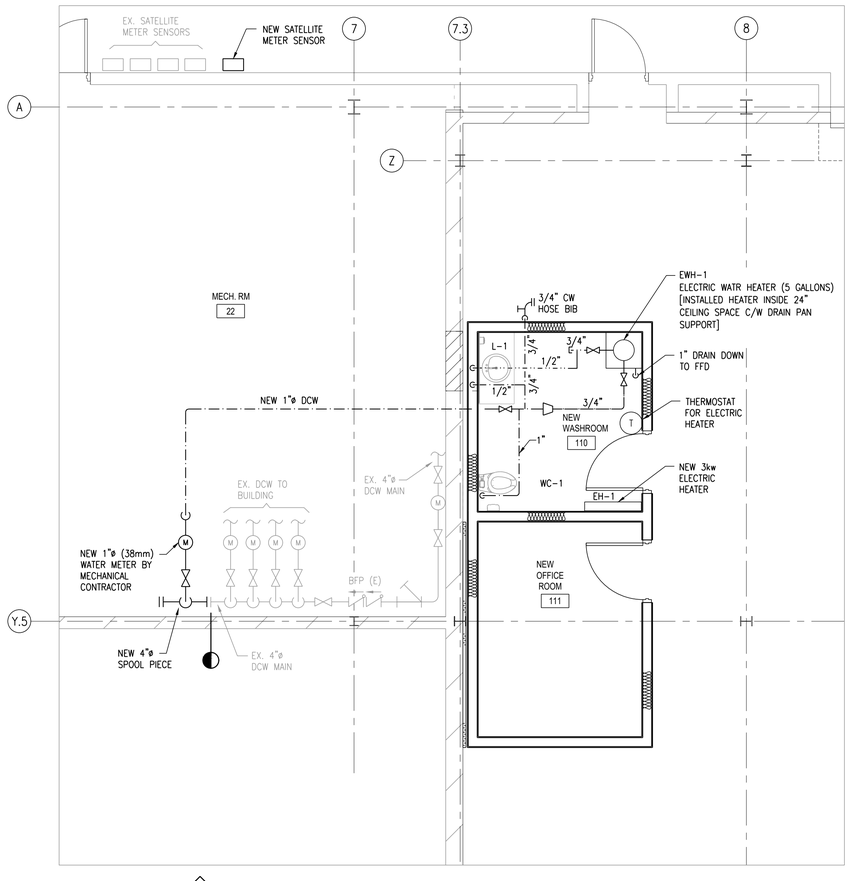
Tag	Description	Heater Location	Manufacturer	Model #	Electric Capacity (KW)	Length inch	Power Volts	Power Ph.	Notes
EH-1	Wall-mounted Electric Convector Heater	New Washroom	Ouellet	OLI3038	3	37-3/16	208	3	1 to 3

Notes:
1- Sloped top with 16 ga Steel front cover
2- Disconnect by Div. 16
3- Single Pole Line voltage Thermostat OTL221

Electric Duct Heater Schedule

Tag	Duct Size	Heater Collar Size	Manufacturer	Model #	KW	POWER Volts	POWER Phase	ΔT °F	Notes
EDH-1	5"ø	5"ø	Thermolec	Thermo-Air, TER-5-1120	1	120	1	50	1 to 5

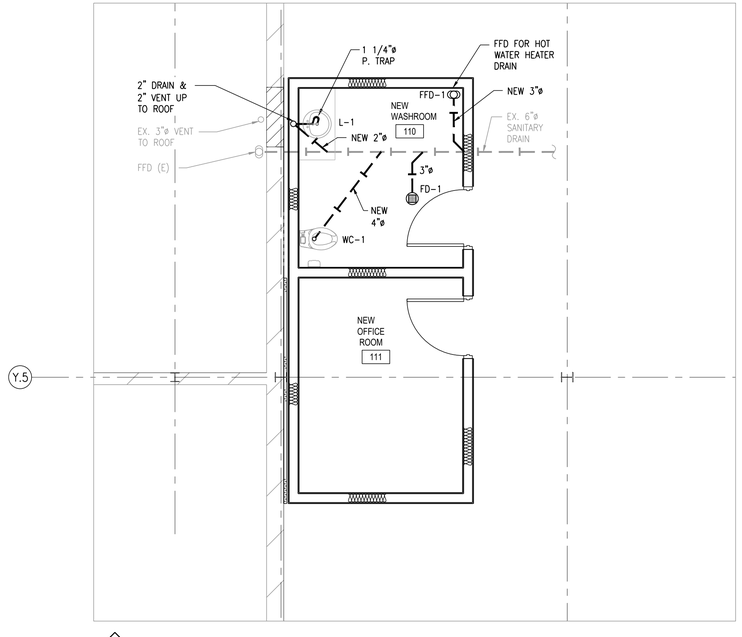
Notes:
1- Heater Enclosure c/w Inlet & Outlet Duct Collars
2- Automatic Reset Thermal Cutout
3- Air Flow Switch
4- Built-in Temperature Controller & Temperature Sensor (Set to 43 °F)
5- Terminal Block



NORTH

NEW DOMESTIC WATER PIPING PART PLAN

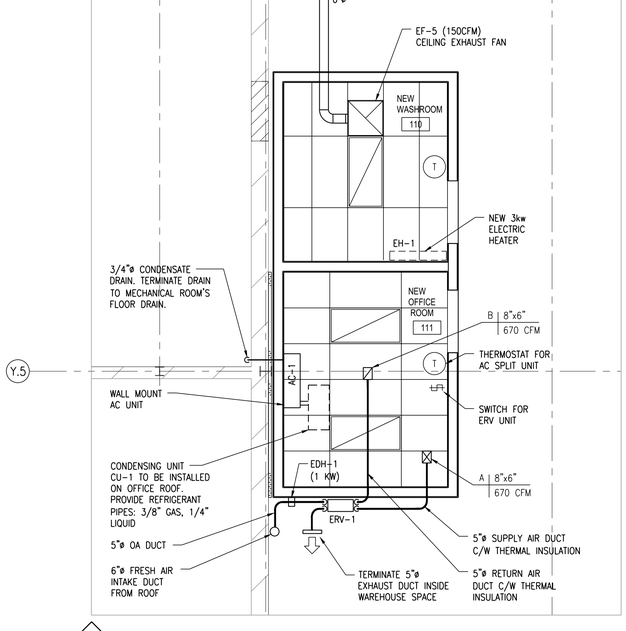
SCALE: 1/4"=1'-0"



NORTH

NEW UNDER SLAB DRAINAGE PART PLAN

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



NORTH

NEW WASHROOM & STORAGE ROOM HVAC PART PLAN

SCALE: 1/4"=1'-0"
CEILING TO BE 24"x48" ACT T-BAR GRID @ 8'-0" A.F.F.

REVISIONS

no	description	date
0	ISSUED FOR TENDER	SEPT. 5, 2025

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HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

project title: HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawing title: PART PLANS - PIPING, DRAINAGE & HVAC

drawn: BTD
date: JUNE 2025
checked: MK
date: SEPT. 2025
scale: AS NOTED
project number: 25-38
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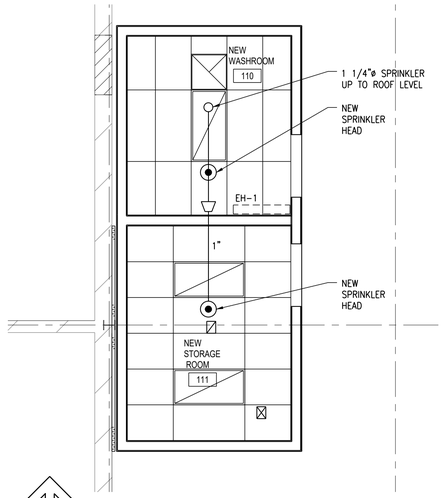

NORTH

PART PLAN – NEW SPRINKLER

SCALE: 1/16"=1'-0"

NORTH

PART SOUTH PLAN – EXISTING & NEW SPRINKLERS

SCALE: 1/16"=1'-0"

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PIER 15 - 204 HILLYARD ST.
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drawn: BTD
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SEQUENCES OF OPERATION – NEW VENTILATION SYSTEMS:

GENERAL VENTILATION SYSTEM:

1. GENERAL VENTILATION FANS EF-4 AND TIMER CONTROLLER C-4:
   THE CONSTANT SPEED FAN TO PROVIDE MINIMUM AMOUNT OF CONTINUOUS VENTILATION REQUIRED AS PER ASHRAE 62.1 DURING OCCUPANCY PERIOD. FAN OPERATION SHALL BE CONTROLLED VIA TIMER CONTROLLER F-1 AND WILL BE PROGRAMMED TO RUN FAN BETWEEN 6:00 AM MORNING TO 10:00 PM EVENING EVERYDAY EXCEPT WEEKEND. FANS OPERATION CAN BE MANUALLY OVERRIDDEN FOR TEMPORARY OPERATION DURING OFF HOURS OR WEEKEND. FAN SHALL BE INTERLOCKED WITH ASSOCIATED MOTORIZED DAMPER MD-4. MOTORIZED DAMPER (ON/OFF TYPE) SHALL BE FULLY OPENED WHEN EF-4 IS ENABLED.

VENTILATION FOR CO & NO2 GAS DETECTION SYSTEMS:

1. EXHAUST FANS EF-1, EF-2 & EF-3A/3B, GAS DETECTION CONTROLLERS C-1, C-2, AND C-3:
   IT IS INTENDED TO OPERATE CONSTANT SPEED FANS EF-1, EF-2 & EF-3/A/3B VIA RESPECTIVE MAIN GAS CONTROLLERS C-1, C-2 & C-3. CONTROLLERS SHALL BE INTERLOCKED WITH THEIR RESPECTIVE MOTORIZED DAMPERS MD-1, MD-2 & MD-3A/MD-3B. EXHAUST FANS SHALL BE PROGRAMMED TO ACTIVATE BY CO & NO2 MAIN CONTROLLER WHEN CO OR NO2 DETECTS FROM ANY OF REMOTE CO/NO2 SENSOR. UPON DETECTION OF GAS, EXHAUST FAN WILL BE ACTIVATED TO REMOVE EXHAUST AIR FROM EFFECTED ZONE UNTIL CO AND NO2 LEVELS REACHES TO THE SET POINTS.

GENERAL,TOXIC AIR REMOVAL AND WASHROOM EXHAUST FANS SCHEDULE

Tag	Description	Fan Location	Type	Manufacturer	Model #	Flow (cfm)	EXT. SP (IN. WC)	RPM	SONES	POWER				Weight (lbs)	Wall / Roof Opening	Notes
										Volts	Phase	HZ	HP			
EF-1	Toxic Air Exhaust Fan	Sidewall- Warehouse	Wall Propeller BeltDrive	PennBarry	PNB-048-09122	16,000	0.25	599	40	575	3	60	2	600	54½"x54½"	1 to 8 and12
EF-2	Toxic Air Exhaust Fan	Roof- Warehouse	Down Centrifugal Belt Drive	PennBarry	DX36B	10,000	0.25	390	12	575	3	60	1.5	500	40½"x40½"	3,4,5,7,8,9,12
EF-3A	Toxic Air Exhaust Fan	Roof- Warehouse	Down Centrifugal Belt Drive	PennBarry	DX24B	5,000	0.25	591	12	575	3	60	3/4	225	29½"x29½"	3,4,5,7,8,10,12
EF-3B	Toxic Air Exhaust Fan	Roof- Warehouse	Down Centrifugal Belt Drive	PennBarry	DX24B	5,000	0.25	591	12	575	3	60	3/4	225	29½"x29½"	3,4,5,7,8,10,12
EF-4	General Exhaust Fan	Sidewall- Warehouse	Wall Propeller DirectDrive	PennBarry	PND-021-09118	4,000	0.25	1750	38	575	3	60	1/2	100	25½"x25½"	1 to 8 and12
EF-5	Washroom Exhaust Fan	New Washroom	Ceiling Fan Direct Drive	Broan	Losone L150	150	0.25	750	2	115	1	60	87 Watts	23	NR	11

Notes:
1- Exterior 45° Weather Hood w/ Birdscreen & Flange
2- Wall-Mounted Sleeve
3- Backdraft Damper
4- Single Speed Motor
5-Weather Proof Coating: Entire Fan body and blades
6- Rear Fan Guard c/w removable Panel
7- Unfused NEMA 3R Disconnect
8- H-0-A Starter With dry contacts for interlocking By Division-16
9- 12" High 18ga insulated-Sloped Roof Curb (1:3 Pitch)-Type SFP
10- 12" High 18ga insulated-Sloped Roof Curb (1:12 Pitch)-Type SFP
11- 6" Wall Cap c/w Backdraft and Insect Screen, Broan 641
12- Approved Equivalent: Greenheck, Loren Cook, PennBarry, Twincity

PROGRAMMABLE TIMER AND GASEOUS CONTROLLERS SCHEDULE

TAG	DESCRIPTON	SYSTEM SERVING	MAKE	MODEL	ELECTRICAL	TRANSMITTERS CONNECTED	NOTES
C-1	CARBONMONOXIDE & NITROGENDIOXIDE CONTROLLER	EF-1	HONEYWELL	301C	120V/1/60	S-1, S-2	1,3
C-2	CARBONMONOXIDE & NITROGENDIOXIDE CONTROLLER	EF-2	HONEYWELL	301C	120V/1/60	S-3, S-4, S-5, S-6	1,3
C-3	CARBONMONOXIDE & NITROGENDIOXIDE CONTROLLER	EF-3A, EF-3B	HONEYWELL	301C	120V/1/60	S-7, S-8, S-9, S-10	1,3
C-4	GENERAL EXHAUST PROGRMMABLE TIMER CONTROLLER	EF-4	HONEYWELL	ST7009C1001	120V/1/60		2

Notes:
1- EACH SENSOR S-X SHALL BE PAIR OF TWO CO & NO2 TRANSMITTERS/CONTROLLERS E3SASCO & E3SASNO2 COMPLETE WITH METAL PROCTECTIVE GUARD E3PT-CAGE
2- APPROVED EQUIVALENT: INTERMATIC, MODEL: FM 1D50A-120
3- PROVIDE 24VAC TRANSFORMER (100 VA TO 150 VA)

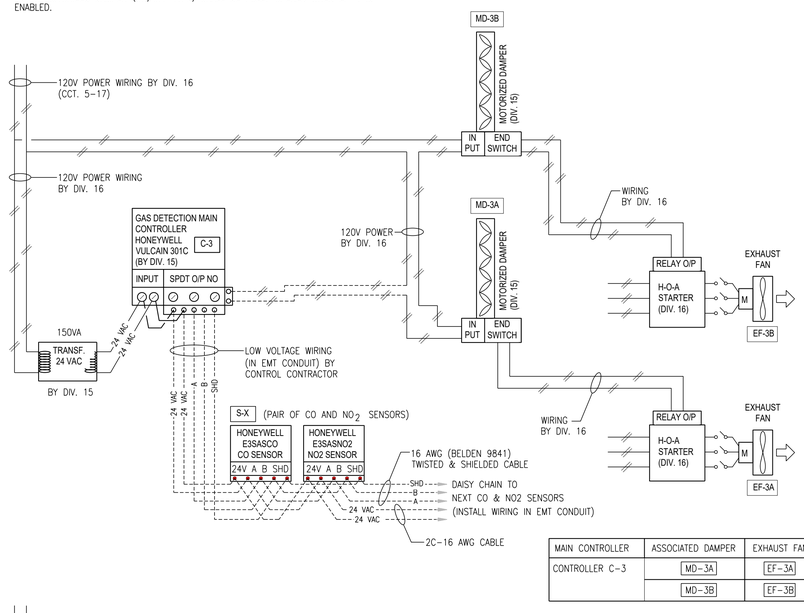
DAMPERS SCHEDULE

Damper Tag	Description	Damper Size Width" x Height "	Multi-Sectional Configuration	Associated Hood	System Serving (Interlocked)	Make and Model	Actuator				
							Volts	Type	Make	Model	Notes
MD-1	Motorized Damper	96"X54"	2x1	H-1 (96"x54")	EF-1	TAMCO, 9000 SERIES	120V	ON/OFF	BELIMO	AFBUP-S	1,2,3,4
MD-2	Motorized Damper	48"X60"	2x1	H-2 (84"x60")	EF-2	TAMCO, 9000 SERIES	120V	ON/OFF	BELIMO	AFBUP-S	1,2,4
MD-4	Motorized Damper	36"X60"			EF-4	TAMCO, 9000 SERIES	120V	ON/OFF	BELIMO	AFBUP-S	1,2,4
MD-3A	Motorized Damper	42"X60"	2x1	H-3 (84"x60")	EF-3A	TAMCO, 9000 SERIES	120V	ON/OFF	BELIMO	AFBUP-S	1,2,4
MD-3B	Motorized Damper	42"X60"			EF-3A	TAMCO, 9000 SERIES	120V	ON/OFF	BELIMO	AFBUP-S	1,2,4

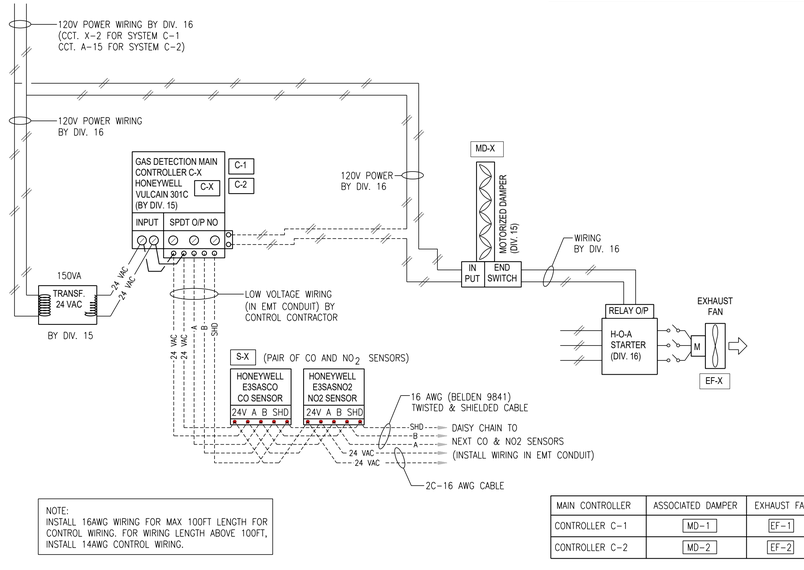
Notes:
1- 180 in-lb min. Torque
2- Insulated Damper
3- Provide MD-1 in two sections 48"Wx54" with two actuators MD-1A and MD-1B
4- Approved equivalent: Nailor, Ventex, Ruskin, Greenheck

Outdoor Air Intake Hoods Schedule

Tag	Description	Opening Size	Make & Model
H-1	45 degree 16ga Galvanized Steel (Welded Construction) Outoor Air Intake Hood c/w Aluminum Birdscreen-1/4"x1/4" Openings	8'-0" Wide X 4'-6" High	VENTEX-WHD-45 or Equivalent
H-2	46 degree 16ga Galvanized Steel (Welded Construction) Outoor Air Intake Hood c/w Aluminum Birdscreen-1/4"x1/4" Openings	7'-0" Wide X 5'-0" High	VENTEX-WHD-45 or Equivalent
H-3	46 degree 16ga Galvanized Steel (Welded Construction) Outoor Air Intake Hood c/w Aluminum Birdscreen-1/4"x1/4" Openings	7'-0" Wide X 5'-0" High	VENTEX-WHD-45 or Equivalent



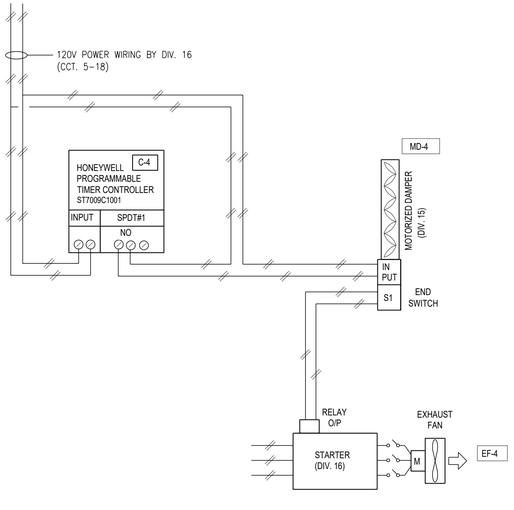
MAIN CONTROLLER	ASSOCIATED DAMPER	EXHAUST FAN	ASSOCIATED CO & NO2 SENSORS
CONTROLLER C-3	MD-3A	EF-3A	S-7 S-8 S-9 S-10
	MD-3B	EF-3B	



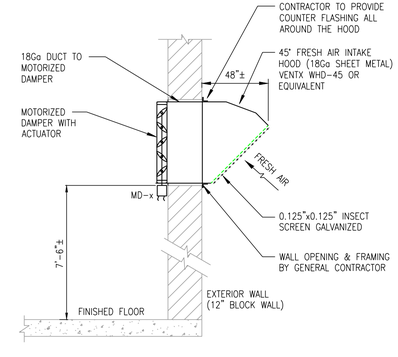
MAIN CONTROLLER	ASSOCIATED DAMPER	EXHAUST FAN	ASSOCIATED CO & NO2 SENSORS
CONTROLLER C-1	MD-1	EF-1	S-1 S-2
CONTROLLER C-2	MD-2	EF-2	S-3 S-4 S-5 S-6

NOTE:
INSTALL 16AWG WIRING FOR MAX 100FT LENGTH FOR CONTROL WIRING. FOR WIRING LENGTH ABOVE 100FT, INSTALL 14AWG CONTROL WIRING.

TYPICAL WIRING AND CONTROL DIAGRAM OF CO & NO2 CONTROLLERS FOR WAREHOUSE EXHAUST FANS EF-1, EF-2 AND EF-3A, EF-3B



WIRING AND CONTROL DIAGRAM OF TIMER CONTROLLER FOR GENERAL EXHAUST FAN EF-4



TYP. DETAIL OF FRESH AIR INTAKE HOOD w/MOTORIZED DAMPER

SCALE: N.T.S.

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HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

project title: HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawing title: CONTROL DIAGRAMS & DETAILS

drawn: BTD
date: JUNE 2025
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date: SEPT. 2025
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DRAWING NUMBER: M105
0 Revision

GENERAL NOTES:

1. THE DRAWINGS SHOW THE PIPING AND DUCTWORK GENERAL ARRANGEMENT. THE ACTUAL PIPING AND DUCTWORK LAYOUT IS TO BE DETERMINED PRIOR TO FABRICATION ONLY AFTER CLOSE EXAMINATION OF THE FOLLOWING:
   1.1. NEW AND EXISTING INSTALLATIONS INCLUDING ALL PIPING SYSTEMS, DUCTWORK, LIGHTS, STRUCTURAL MEMBERS AND CEILINGS. COORDINATE BETWEEN THE TRADES.
   1.2. THE PIPING/DUCTWORK WILL REQUIRE ADDITIONAL OFFSETS IN ADDITION TO THOSE INDICATED. TO ACCOUNT FOR ALL RESTRICTIONS ENCOUNTERED, INCLUDE FOR SUCH IN THE TENDER PRICE.
2. PROVIDE ALL LABOUR, MATERIAL, EQUIPMENT AND SERVICES REQUIRED TO COMPLETE THE WORK OF ALL DIVISIONS, INCLUDING MECHANICAL, ELECTRICAL, MILLWORK/GENERAL TRADE WORK.
3. ANY EQUIPMENT/FIXTURES OR DEVICES NOT SHOWN ON DEMOLITION DRAWINGS BUT THAT NEED TO BE RELOCATED/REMOVED TO PERFORM THE WORK WILL BE INCLUDED IN THE CONTRACT PRICE.

SCOPE OF WORK:

1. THE WORK SHALL INCLUDE BUT SHALL NOT NECESSARILY BE LIMITED TO THE FOLLOWING:

   1.1. DEMOLITION:

      1.1.1. REMOVE EXISTING TWO ROOF VENTILATORS AND CAP EXISTING ROOF CURB WITH 16GA GALVANIZED SHEET METAL CAP. INSTALL 3/4" PLYWOOD AND 1" RIGID INSULATION ABOVE ROOF CURB BEFORE INSTALLING METAL CAP.
      1.1.2. REMOVE EXISTING NATURAL GAS PIPING INSTALLED ON ROOF AND UP TO MAIN GAS METERS STATION. REMOVE ALL INTERIOR ABANDONED GAS PIPING AND ASSOCIATED REGULATORS WITH VENTING.

   1.2. NEW WORK:

      1.2.1. CONTRACTOR TO LOCATE EXISTING 6"ø PVC SANITARY DRAIN LINE BEFORE CUTTING FLOOR FOR NEW DRAIN CONNECTIONS. LOCATION OF EXISTING SANITARY DRAIN SHOWN ON THE DRAWING IS NOT ACCURATE. AFTER LOCATING EXISTING DRAIN MAIN, MODIFY NEW PIPING LAYOUT TO SUITE INSTALLATION.
      1.2.2. PROVIDE SANITARY DRAIN, PLUMBING VENTS, DOMESTIC WATER PIPING FOR NEW PLUMBING FIXTURES. PLUMBING VENTS ARE NOT SHOWN ON THE DRAWING. PROVIDE VENTS AS PER OBC. CONTRACTOR TO GROUP ALL VENTS AND TERMINATE TO ROOF. SAW CUT AND PATCH FLOOR FOR NEW SANITARY DRAIN, P-TRAP PRIMER WATER LINE AND VENT.
      1.2.3. PROVIDE NEW ELECTRICAL HOT WATER HEATER AND INSTALL ON DRAINABLE SUPPORT BASIN. PROVIDE 3/4" DRAIN PIPE FROM SUPPORT BASIN TO NEAREST FUNNEL FLOOR DRAIN.
      1.2.4. PAY ALL APPLICABLE FEES REQUIRED FOR DRAINAGE PERMIT AND NEW SATELLITE WATER METER. INSTALL NEW METER ON EXISTING 4" WATER MAIN. MODIFY EXISTING 4" MAIN FOR NEW 1" BRANCH LINE CONNECTION. INSTALL NEW ISOLATION VALVE AND WATER METER.
      1.2.5. PROVIDE NEW ROOF AND WALL EXHAUST FANS C/W ALL ACCESSORIES. REFER TO EXHAUST FANS SCHEDULES AND PLANS. INSTALL ROOF CURBS FOR NEW ROOF EXHAUST FANS.
      1.2.6. PROVIDE NEW GAS DETECTION MAIN CONTROLLERS C/W CARBON MONOXIDE "CO" AND NITROGEN DIOXIDE NO2 REMOTE SENSORS/TRANSMITTERS.
      1.2.7. PROVIDE NEW EXHAUST FANS TIMER CONTROLLER FOR GENERAL EXHAUST FAN.
      1.2.8. PROVIDE NEW WALL INTAKE AIR HOODS C/W MOTORIZED DAMPERS WITH ACTUATORS. REFER TO PLANS AND SCHEDULE.
      1.2.9. PROVIDE NEW PLUMBING FIXTURES FOR NEW WASHROOM. REFER TO PLUMBING SCHEDULE.
      1.2.10. PROVIDE NEW SPLIT AC UNIT WITH REMOTE CONDENSING UNIT FOR NEW STORAGE/OFFICE SPACE.
      1.2.11. PROVIDE NEW ERV UNIT WITH DUCT HEATER FOR NEW STORAGE/OFFICE SPACE.
      1.2.12. PROVIDE NEW ELECTRIC CONVECTOR HEATER FOR NEW WASHROOM C/W WALL THERMOSTAT.
      1.2.13. PROVIDE NEW RADIANT TUBE GAS HEATER C/W ALL ACCESSORIES. HANG HEATER TO OWSJ.
      1.2.14. PROVIDE NEW GAS UNIT HEATER C/W ALL ACCESSORIES. PROVIDE HANGERS AND SUPPORTS FOR NEW HEATERS.
      1.2.15. PROVIDE VENTING AND COMBUSTION AIR INTAKE DUCTS FOR NEW GAS RADIANT HEATERS AND UNIT HEATERS. PROVIDE COUNTER FLASHING ON OPENING TO THE ROOF AND SIDE WALL DUCTS.
      1.2.16. PROVIDE NEW NATURAL GAS PIPING C/W HANGERS, WALL AND ROOF SUPPORTS. PROVIDE ISOLATION VALVES AS NEEDED. HOPA TO CONTACT ENBRIDGE FOR NEW GAS CONNECTION AND METER.
      1.2.17. PROVIDE NEW 5PSI TO 7-14"W.C. GAS REGULATORS AS SHOWN ON THE DRAWING. PROVIDE VENTING AND TERMINATE TO OUTSIDE THROUGH ROOF.
      1.2.18. PROVIDE NEW DRY SPRINKLER PIPE FOR NEW WASHROOM AND OFFICE AND TIE-IN TO EXISTING ZONE FIRE SPRINKLER SYSTEM.
      1.2.19. CONTRACTOR TO BE RESPONSIBLE FOR COMMISSIONING & STARTUP OF ALL NEW MECHANICAL EQUIPMENT. REFER TO COMMISSIONING SPECIFICATION.
      1.2.20. MECHANICAL CONTRACTOR TO CARRY CONTROL CONTRACTOR AS A SUBCONTRACTOR FOR ALL CONTROL RELATED WORK. REFER TO CONTROL SPECIFICATION. ALL LOW VOLTAGE WIRING, INSTALLATION OF TIMER AND CO-NO2 CONTROLLERS, GASEOUS SENSORS, SPLIT AC UNIT, ERV UNIT, ELECTRIC CONVECTOR HEATER, DUCT HEATER, ACTUATORS, FAN AND DAMPERS INTERLOCKING SHALL BE PERFORMED BY THIS CONTRACTOR. REFER TO CONTROL AND WIRING SCHEMATIC ON DRAWING M103.
      1.2.21. PROVIDE TESTING AND BALANCING OF NEW EXHAUST FAN AND SUBMIT REPORT.
      1.2.22. PROVIDE HANGERS AND SUPPORTS FOR PIPING, DUCTWORK AND MECHANICAL EQUIPMENT.
      1.2.23. PROVIDE SEISMIC RESTRAINTS AS PER OBC.
      1.2.24. PROVIDE IDENTIFICATION TAGS ON ALL NEW EQUIPMENT, AND PIPING.
      1.2.25. FOR COMPLETE NEW SCOPE OF WORK, REFER TO DRAWINGS AND NOTES.

PERMITS, LAWS AND REGULATIONS:

1. EQUIPMENT, INSTALLATION METHODS, AND WORK PROVIDED UNDER THIS DIVISION SHALL CONFORM TO THE LATEST EDITION, AT DATE OF TENDER, OF STANDARDS AND CODES, CURRENT BY-LAWS AND REGULATIONS OF AUTHORITIES HAVING JURISDICTION. IN CASE OF CONFLICT, THE CODES, BY-LAWS AND REGULATIONS TAKE PRECEDENCE OVER THE CONTRACT DRAWINGS.

2. GIVE ALL NOTICES, OBTAIN AND PAY FOR ALL PERMITS, AND PAY ALL FEES NECESSARY TO COMPLETE THE WORK OF THIS DIVISION.

3. FURNISH TO THE OWNER NECESSARY INSPECTION CERTIFICATES AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH THE LAWS AND REGULATIONS OF AUTHORITIES HAVING JURISDICTION.

4. ALL WORK SHALL CONFORM TO THE LATEST REVISION OF THE FOLLOWING CODES AND STANDARDS:

   4.1. THE ONTARIO BUILDING CODE.
   4.2. THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS PREPARED BY THE ONTARIO MINISTRY OF LABOUR.
   4.3. REGULATIONS AND STANDARDS FOR INDUSTRIAL ESTAB. BY THE ONTARIO MINISTRY OF LABOR.
   4.4. CONSTRUCTION SAFETY ACT.
   4.5. ALL SURFACE PREPARATION SHALL CONFORM TO THE STEEL STRUCTURES PAINTING COUNCIL.
   4.6. UNDERWRITERS' LABORATORIES - ULC AND CANADIAN STANDARDS ASSOCIATION - CSA
   4.7. REGULATIONS OF CITY OF HAMILTON.
   4.8. ONTARIO PLUMBING CODE, REGULATION 901/90, AND SUPPLEMENTS 401/91 AND 134/92.
   4.9. TSSA
   THE MOST STRINGENT REQUIREMENTS OF THESE AUTHORITIES SHALL APPLY.

5. CONTRACTOR SHOULD CONTACT ENGINEER IMMEDIATELY IF ERRORS, AMBIGUITIES, DISCREPANCIES, OMISSIONS, OR CONTRADICTING NOTES ARE FOUND ON THE CONTRACT DRAWINGS OR SPECIFICATION IN ORDER TO HAVE MATTER RESOLVED BEFORE FABRICATING OR INSTALLATION.

GUARANTEE:

1. GUARANTEE ALL APPARATUS FURNISHED UNDER THIS DIVISION TO REMAIN IN SERVICEABLE CONDITION FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE.

LIABILITY:

1. ASSUME FULL RESPONSIBILITY FOR THE LAYOUT OF WORK AND FOR ANY DAMAGE CAUSED TO THE PROPERTY OF THE OWNER, OR OTHER TRADES, THROUGH THE IMPROPER LOCATION OF MATERIALS, EQUIPMENT, OR CARRYING OUT OF THIS WORK.

WORKMANSHIP:

1. ONLY FIRST CLASS WORKMANSHIP WILL BE ACCEPTED, NOT ONLY WITH REGARD TO SAFETY, EFFICIENCY, DURABILITY, ETC. BUT ALSO WITH REGARD TO THE NEATNESS OF DETAIL.

DRAWINGS:

1. THE DRAWINGS ARE IN PART DIAGRAMMATIC, INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE THE GENERAL ARRANGEMENT OF EQUIPMENT, DUCTWORK AND PIPING. FOLLOW THESE DRAWINGS IN LAYING OUT THE WORK. BECOME FAMILIAR WITH ALL CONDITIONS AFFECTING THE WORK, AND VERIFY THE SPACES IN WHICH THE WORK WILL BE INSTALLED. ALLOW FOR OFFSETS AND TRANSITIONS IN PIPING TO AVOID INTERFERENCE WITH OBSTRUCTIONS.

2. CONTRACTOR TO PROVIDE AS-BUILT DRAWINGS UPON COMPLETION OF WORK SHOWING ANY DEVIATIONS FROM THE DESIGN DRAWINGS.

3. SHOP DRAWINGS: PROVIDE ONE (1) ELECTRONIC COPY OF SHOP DRAWINGS TO ENGINEER FOR REVIEW OF FOLLOWING:

3.1	EXHAUST FANS	3.2	SPLIT AC UNIT
3.3	DAMPERS AND ACTUATORS	3.4	ERV UNIT
3.5	HOODS	3.6	DUCT HEATER
3.7	EXHAUST FAN TIMER CONTROLLER	3.8	ELECTRIC CONVECTOR HEATER
3.9	CO-NO2 SENSORS & CONTROLLERS	3.10	PLUMBING FIXTURES
3.11	CONTROL WIRING SCHEMATIC	3.12	SPRINKLER SYSTEM
3.13	GAS RADIANT TUBE AND UNIT HEATERS	3.14	SEISMIC RESTRAINTS

CLOSE-OUT DOCUMENTS AND MAINTENANCE MANUALS:

1. PROVIDE HARD COPIES OF MAINTENANCE MANUALS, WARRANTIES LETTERS, APPROVED SHOP DRAWINGS, TESTING AND COMMISSIONING REPORTS, BALANCING REPORTS, ETC. IN A BINDER TO ENGINEER FOR REVIEW AND APPROVAL. MULTIPLE COPIES TO BE PREPARED FOR TURN OVER TO OWNER AT CONCLUSION OF PROJECT.

MATERIALS:

1. ALL MATERIALS SHALL BE NEW.

DUCT, PIPING AND EQUIPMENT LABELING:

1. PROVIDE DUCT, PIPING AND EQUIPMENT LABELING INCLUDING CONTENTS, DIRECTION OF FLOW, LOCATIONS OF MARKERS, COLOURS ETC.
2. EQUIPMENT TAGS SHALL BE (2) PLY LAMINATED ENGRAVED IDENTIFICATION TAGS.

TRAINING:

1. ALLOW FOR ONE (1) FULL DAY OF TRAINING TO CLIENT'S DESIGNATED MAINTENANCE STAFF FOR EACH SYSTEM OF PROPER OPERATION, SET-UP AND MAINTENANCE.

CUTTING AND PATCHING:

1. EACH SECTION SHALL BE RESPONSIBLE FOR CUTTING AND PATCHING AND MAKING GOOD TO EXECUTE HIS WORK PROPERLY. IN EACH CASE, TRADESMEN QUALIFIED IN THE WORK BEING CUT AND PATCHED SHALL BE EMPLOYED TO ENSURE THAT IT IS CORRECTLY AND NEATLY DONE.

2. THE SECTION REQUIRING CUTS, HOLES, SLEEVES OR ANCHORS FOR ITS WORK SHALL LOCATE AND PROVIDE THEM. SLEEVE ALL PIPE PENETRATIONS THROUGH WALLS.

3. FILL ALL VOIDS AROUND PIPE SLEEVES WITH FIRE STOP MATERIAL SUITABLE FOR THE ASSEMBLY.

PLUMBING/PIPING:

1. ALL WORK TO CONFORM TO ONTARIO BUILDING CODE, ONTARIO WATER RESOURCES ACT, REGULATION NO. 815/84, RESPECTING PLUMBING, AS REVISED TO DATE; CANADIAN PLUMBING CODE; CONSTRUCTION SAFETY ACT; AND REGULATIONS OF CITY AND PROVINCIAL AUTHORITIES HAVING JURISDICTION. THE MOST SEVERE REQUIREMENTS OF THESE AUTHORITIES SHALL GOVERN.

2. DOMESTIC COLD, HOT WATER PIPING:

   A. 2-1/2" AND SMALLER SHALL BE TYPE 'L' HARD COPPER TUBING WITH SOLDERED FITTINGS TO ASTM B88-03

   B. FITTINGS: 2-1/2" AND SMALLER COPPER FITTINGS WITH SOLDERED ENDS

   C. BALL VALVES: 2 1/2" AND SMALLER DOMESTIC WATER ISOLATION BALL VALVES SHALL BE FULL PORT 2-PIECE BRONZE BODY AND CHROME PLATED BRASS BALL, CLASS 150. ACCEPTABLE MATERIAL: WATTS, CRANE, KITZ, M.A. STEWART.

   D. INSULATE DOMESTIC HOT, COLD AND RECIRC WATER WITH 1" THICK MANSON ALLEY-K-APT FIBERGLASS INSULATION WITH ALL-PURPOSE VAPOUR BARRIER JACKET (VAPOUR BARRIER FOR COLD LINES ONLY). ALTERNATE: KNAUF. REPAIR EXISTING INSULATION TO PIPING EXPOSED DURING CONSTRUCTION. FINISH ALL EXPOSED PIPING AND FITTINGS WITH PVC JACKET. ONLY THE PIPING INSIDE THE NEW DROP CEILING NOT REQUIRED PVC JACKETING

3. SANITARY AND VENT - ABOVE GROUND:
   A. PIPE SIZE 2½" AND SMALLER SHALL BE DWV COPPER PIPE TO ASTM B306 WITH DRAINAGE FITTINGS AND 95/5 TIN/ANTIMONY SOLDER JOINTS.
   B. PIPE SIZE 3" AND LARGER SHALL BE CSA CLASS 4000 CAST IRON SOIL PIPE AND FITTINGS WITH MECHANICAL JOINTS AND HEAVY DUTY COUPLINGS MEETING ASTM STANDARD C1540-02 OR IPEX SYSTEM-XFR FIRE RATED.

4. SANITARY AND VENT - BELOW GRADE:
   A. PIPE SIZE 2½" AND SMALLER SHALL BE TYPE L COPPER TUBE WITH 95/5 TIN/ANTIMONY SOLDER JOINTS OR CSA APPROVED ABS PLASTIC CAN/CSA-B181.1 DWV.
   B. PIPE SIZE 3" AND LARGER SHALL BE CSA CLASS 4000 CAST IRON SOIL PIPE AND FITTINGS WITH MECHANICAL JOINTS AND HEAVY DUTY COUPLINGS MEETING ASTM STANDARD C1540-02 OR CAN/CSA-B182.2 PVC GASKETED SEWER PIPE.

5. REFRIGERANT PIPING:
   5.1. REFRIGERANT PIPING 1" AND UNDER SHALL BE HARD COPPER TO ASTM B280 (TYPE ACR OR TYPE 'B') OR ANNEALED COPPER TO ASTM B280 WITH MINIMUM WALL THICKNESS AS PER CSA B52 AND ANSI/ASME B31.5. FITTINGS SHALL BE WROUGHT COPPER TO ASME B16.22 WITH SILVER SOLDERED JOINTS.
   5.2. REFRIGERANT VALVES 1" AND UNDER SHALL BE CLASS 500, GLOBE TYPE, DIAPHRAGM PACKLESS, WITH FORGED BRASS BODY AND BONNET, MOISTURE PROOF SEAL FOR BELOW FREEZING APPLICATIONS, BRAZED CONNECTION. LEAK AND PRESSURE TEST IN ACCORDANCE WITH CSA B52 AND MANUFACTURES RECOMMENDATIONS. CONNECT TO EQUIPMENT WITH ISOLATION VALVES AND UNIONS.
   5.3. INSULATE REFRIGERANT PIPING WITH 3/4" THICK ARMAFLEX SELF-SEAL PIPING INSULATION. ALL EXPOSED GAS OR LIQUID PIPES SHALL BE INSULATED WITH UV PROTECTED COATING.
   5.4. INSTALL REFRIGERANT PIPING AND ALL ACCESSORIES TO THE SPLIT SYSTEM FOR A COMPLETE INSTALLATION ACCORDING TO THE MANUFACTURER'S REQUIREMENTS AND TO CSA B53.
   5.5. PROVIDE WALL SUPPORTS OR ROOF SUPPORTS AS REQUIRED.
   5.6. TEST NEW REFRIGERANT PIPING AS PER A/C UNIT MANUFACTURER'S INSTRUCTIONS.

6. NATURAL GAS PIPING:

   6.1. THE ENTIRE GAS PIPING INSTALLATION SHALL CONFORM TO THE ONTARIO GAS UTILIZATION CODE AND CSA B149.1 STANDARD.
   6.2. GAS PIPING SHALL BE C.S. SCH. 40 SEAMLESS, GRADE A OR B, ASTM A53.
   6.3. GAS PIPING 2" (51MM) AND SMALLER OPEN TO VENTILATED SPACES, SHALL BE SCREWED WITH 15 LB. MALLEABLE IRON FITTINGS.
   6.4. GAS PIPING 2" (51MM) AND SMALLER WITHIN SEALED MECHANICAL SHAFTS, SHALL BE SOCKET WELDED FITTINGS.
   6.5. GAS PIPING 2-1/2" AND ABOVE SHALL HAVE PLAIN END WITH WELDED FITTINGS TO CSA W47.1.
   6.6. NATURAL GAS SHUT-OFF VALVES SHALL BE LUBRICATED PLUG VALVES, CLASS 250 SEMI-STEEL BODY AND PLUG, HANDLE OPERATED COMPLETE WITH WRENCH OR PROVINCIAL CODE APPROVED BALL VALVES. ACCEPTABLE MATERIAL: PR (NEO); NEMANOMILLKEN, OR APPROVED EQUAL.
   6.7. PROVIDE NATURAL GAS PRESSURE REGULATOR (INTERNAL RELIEF TYPE) TO REDUCE THE PRESSURE FROM 5 PSI TO 7-14" W.C. (WHERE INDICATED). REGULATOR SHALL BE NORGAS OR EQUIVALENT (FISHER AND ITRON) CERTIFIED TO ANSI Z21.80/CSA 6.22, PROVIDE RELIEF VENT PIPING AND DISCHARGE OUTSIDE THE BUILDING AT LEAST 10FT AWAY FROM ANY FRESH AIR INTAKE. SIZE TO SUIT CAPACITIES SHOWN ON THE DRAWINGS.
      6.7.1. REGULATOR RG-1: NORGAS MODE: NGR04, INLET PRESSURE=4-5PSI, OUTLET PRESSURE=10" W.C., SIZE=1-1/4"ø, CAPACITY=1,700 SCFH, ORIFICE=3/8", SPRING: BLACK (9"-14" W.C.)
      6.7.2. REGULATOR RG-2: NORGAS MODE: NGR08, INLET PRESSURE=4-5PSI, OUTLET PRESSURE=10" W.C., SIZE=1-1/4"ø, CAPACITY=2,500 SCFH, ORIFICE=3/8", SPRING: BLACK (8"-18" W.C.)
   6.8. PAINT ALL INTERIOR AND EXTERIOR NEW NATURAL GAS PIPING TO COLOR YELLOW.
   6.9. PROVIDE EXPANSION JOINTS AND LOOPS IN GAS PIPING AS PER GAS CODE (CAN/CSA B149.1).
   6.10. ROOF PIPE SUPPORT SHALL BE EZ-SLEEPER BY PIPE-EASE INC. OR EQUIVALENT.

7. FD - FLOOR DRAINS:
   A. GENERAL DUTY IN FINISHED AREAS; CAST BODY ROUND, ADJUSTABLE HEAD, NICKEL BRONZE STRAINER, WITH STAINLESS STEEL SCREWS, INTEGRAL SEEPAGE PAN, TRAP PRIMER TAPPING, AND CLAMPING COLLAR. ACCEPTABLE MATERIAL: SMITH 2005A-P050; ALTERNATES: EQUAL BY ZURN, ENPOCO, WATTS

7. FFD - FLOOR DRAINS WITH COMBINATION FUNNEL:
   A. FUNNEL FLOOR DRAIN, ALL DUCO COATED CAST IRON BODY, FLASHING CLAMP WITH SEEPAGE OPENINGS AND ADJUSTABLE 8½" (216MM) DIAMETER C.I. GRATE WITH 4" X 9" (101.6MM X 228.6MM) OVAL FUNNEL AND TRAP SEAL PRIMER. ACCEPTABLE MATERIAL: SMITH SERIES 2320-3591-P050; ALTERNATES: EQUAL BY ZURN, ENPOCO, WATTS.

8. CO - CLEANOUT _ ACCEPTABLE MATERIAL: SMITH 4000 OR EQUAL BY ZURN, WATTS. CAST BODY, MEMBRANE CLAMPING BODY COLLAR, ADJUSTABLE COLLAR, NON_SEIZING SEALING PLUG, T HANDLE SERVICING WRENCH, AND SOLID NICKEL BRONZE FRAME AND COVER. IN FINISHED AREAS, TOP SHALL BE SUITABLE FOR THE FINISH.

9. TRAP SEAL PRIMERS:
   A. ALL BRASS WITH INTEGRAL VACUUM BREAKER, NPS 1/2 (13 MM) SOLDER ENDS, NPS 1/2 (13 MM) DRIP LINE CONNECTION. PPP INC. OR EQUIVALENT.

10. PROVIDE PLUMBING FIXTURES (WATER CLOSET, WASH BASIN, URINAL, AND ELECTRIC HOT WATER HEATER). REFER TO PLUMBING SCHEDULES ON DRAWING M102 FOR COMPLETE DESCRIPTIONS.

11. PIPE SLEEVES REQUIRED THROUGH EXTERIOR WALL SHALL BE CONSTRUCTED OF 10 GAUGE GALVANIZED STEEL AND FINISH PAINTED TO MATCH EXISTING EXTERIOR CLADDING COLOR.

12. PROVIDE HANGERS AND SUPPORTS FOR PIPING AS PER PLUMBING CODE. PROVIDE SEISMIC RESTRAINTS AS INDICATED IN THE SEISMIC RESTRAINT SECTION.

HVAC SPECIFICATIONS:

1. SITE CHECK ALL THE DUCT SIZES SHOWN ON THE DRAWING PRIOR TO THE FABRICATION OF DUCTWORK.

2. THE DUCTWORK SHOWN ON THE DRAWINGS ARE SCHEMATIC ONLY. SITE VERIFY THE ACTUAL DUCT RUNS AND INSTALL NEW DUCTWORK TO SUIT EXISTING AND NEW MECHANICAL AND ELECTRICAL SERVICES. ALL SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS.

3. DUCTWORK FABRICATION AND SUPPORTING METHODS SHALL BE AS PER LATEST EDITION OF ASHRAE AND SMACNA STANDARDS AND METHODS FOR LOW VELOCITY DUCTWORK AND SEALED WITH HIGH VELOCITY SEALER.

4. HVAC DUCTWORK SHALL BE GALVANIZED STEEL TO +/- 2" W.C. WALL SLEEVE FOR EXTERIOR INTAKE HOOD SHALL BE 18 GA. GALVANIZED STEEL.

5. INSULATE COOLING AND HEATING SUPPLY AND RETURN AIR DUCT INSTALLED IN CEILING WITH 1" THERMAL INSULATION C/W VAPOR BARRIER.

6. PROVIDE VENTING FOR RADIANT TUBE HEATERS AND GAS UNIT HEATERS AS PER MANUFACTURER'S RECOMMENDATION. PROVIDE TYPE B VENT FOR RADIANT TUBE HEATERS AND DOUBLE WALL STAINLESS STEEL VENT FOR GAS UNIT HEATERS. PROVIDE RAIN CAP (TERMINALS) ON BOTH VENT AND COMBUSTION AIR INTAKE DUCTS.

7. PROVIDE HANGERS AND SUPPORTS AS PER ASHRAE AND SMACNA. PROVIDE SEISMIC RESTRAINTS WHERE REQUIRED AS PER CODE.

8. SUPPLY AIR GRILLE OR DIFFUSER:
   8.1. TYPE A: SUPPLY AIR GRILLE, EH PRICE 520/F/L/A/B12
   8.2. TYPE B: RETURN AIR GRILLE, EH PRICE 530/F/L/A/B12

9. TEST AND BALANCE THE SYSTEM FOR THE AIR QUANTITIES INDICATED. TEST AND BALANCE ALL NEW EXHAUST FANS. MAKE ALL NECESSARY ADJUSTMENTS TO PUT INTO PROPER OPERATION. AN APPROVED INDEPENDENT TESTING AND BALANCING COMPANY WILL BE SELECTED TO DO ALL TESTING AND BALANCING IN ACCORDANCE WITH THIS SPECIFICATION. AN INDEPENDENT TESTING AND BALANCING COMPANY SHALL BE CARRIED BY THE MECHANICAL CONTRACTOR TO DO ALL TESTING AND FAN MEASUREMENTS TO INCLUDE: CFM, S.P., RPM, VOLTS, AMPS AND BALANCING IN ACCORDANCE WITH THIS SPECIFICATION. A WRITTEN REPORT SHALL BE PROVIDED. IF RESULTS INDICATE UNUSED TESTING ACCURACY, OMISSIONS, OR INCOMPLETE BALANCING/ADUSTMENT, IN THE OPINION OF THE CONSULTANT, REBALANCE ENTIRE SYSTEM(S) AT NO INCREASE IN CONTRACT PRICE. TESTING AND BALANCING TO BE CONSIDERED COMPLETE ONLY WHEN FINAL REPORTS ARE APPROVED BY CONSULTANT. APPROVED LIST OF CONTRACTORS ARE AS FOLLOWS: DYNAMIC FLOW BALANCING
   - ED MOLNAR (905)338-0808 AIR AUDIT
   - DAVE LIPSIT (905)740-0871
   - TROUP ENGINEERING (905)-562-8080

CONTROLS:

1. CONTROL CONTRACTOR SHALL BE A SUBCONTRACTOR FOR MECHANICAL TRADE.
2. THE CONTROL CONTRACTOR SHALL SUPPLY AND INSTALL ALL LOW VOLTAGE CONTROL WIRING, SWITCHES, CONTACTS, SENSORS, AND RELAYS (AS REQUIRED) PROVIDING THE FUNCTIONS FOR NEW EXHAUST FANS, GAS MONITORING SYSTEM, ERV UNIT, DUCT-MOUNTED ELECTRIC HEATER, THERMOSTATS FOR SPLIT AC UNIT AND ELECTRIC CONVECTOR HEATER. PROVIDE FANS & DAMPERS INTERLOCKING. ALL WIRING SHALL BE WITHIN EMT CONDUIT.
3. CONTROL CONTRACTOR SHALL ASSIST BALANCER TO ACTIVATE CONTROLS OF NEW SYSTEMS BEING TESTED AND BALANCED. CONTROL CONTRACTOR TO INSTALL, CALIBRATE, PROGRAM, AND TEST ALL EXHAUST FANS TIMER CONTROLLER AND GAS MONITORING CONTROLLERS C/W SENSORS. SUBMIT FINAL TESTING, CALIBRATION AND COMMISSIONING REPORT OF NEW CO AND NO2 CONTROLLER SYSTEMS.

COMMISSIONING:

1. ENSURE THAT ALL EQUIPMENT AND SYSTEMS ARE OPERABLE AND SAFE FOR NORMAL OPERATION. ALL TESTING, ADJUSTING, BALANCING WORK AND RECORD KEEPING SHALL BE COMPLETE PRIOR TO COMMISSIONING. OPERATIONAL TESTS ON EQUIPMENT, PIPING, DUCTWORK AND CONTROL SYSTEMS SHALL BE PERFORMED PRIOR TO COMMISSIONING TO VERIFY THAT PRESSURE AND FLOW RATES MEET DESIGN REQUIREMENTS.
2. USE QUALIFIED PERSONNEL TO COMMISSION MECHANICAL EQUIPMENT AND SYSTEMS:
   2.1. MECHANICAL EQUIPMENT SHALL BE OPERATED IN SPECIFIED MODES OF CONTROL AND SEQUENCES OF OPERATION, AND EMERGENCY CONDITIONS.
   2.2. MECHANICAL SYSTEMS SHALL BE OPERATED IN ALL MODES OF SYSTEM OPERATION (SEASONAL, OCCUPIED/UNOCCUPIED, ETC.) INCLUDING ALL INDIVIDUAL INTERLOCK AND CONDITIONAL LOGIC, ALL CONTROL SEQUENCES, BOTH FULL AND ABNORMAL CONDITIONS FOR WHICH THERE IS A SPECIFIED SYSTEM OR CONTROL RESPONSE.
   2.3. IF VERIFICATION OF FUNCTIONAL PERFORMANCE CANNOT BE COMPLETED DUE TO SEASONAL REASONS, LACK OF OCCUPANCY, DEFICIENCIES BEYOND THE SCOPE OF THE MECHANICAL WORK, OR ANY OTHER REASON, THIS SHALL BE NOTED AND THIS WORK SHALL BE COMPLETED AT A DATE AND TIME TO BE DETERMINED.
   2.4. TESTS WHICH FAIL TO VERIFY ACCEPTABLE PERFORMANCE OF EQUIPMENT AND SYSTEMS SHALL BE REPEATED AFTER CORRECTIVE MEASURES ARE CARRIED OUT, AND THIS PROCESS SHALL CONTINUE UNTIL ACCEPTABLE PERFORMANCE IS ACHIEVED.
   2.5. ENSURE PARTICIPATION AND COOPERATION OF SPECIALTY TRADES (DIVISION 16, TESTING, ADJUSTING & BALANCING, CONTROLS, EQUIPMENT MANUFACTURER'S TECHNICIANS, ETC.)
   2.6. FUNCTIONAL PERFORMANCE TESTS SHALL BE WITNESSED BY OWNER. SUBMIT TEST REPORTS WHICH SHALL INCLUDE SPACE FOR REMARKS AND OWNER'S ACCEPTANCE SIGNATURE.
3. ENSURE AND CERTIFY THE FOLLOWING DOCUMENTS ARE COMPLETE AND CORRECT:
   3.1. SHOP DRAWINGS AND PRODUCT DATA.
   3.2. TEST REPORTS.
   3.3. OPERATION AND MAINTENANCE MANUALS.
   3.4. AS-BUILT DRAWINGS
4. FULLY INSTRUCT AND TRAIN OPERATING AND MAINTENANCE PERSONNEL IN CARE, ADJUSTMENT, AND OPERATION OF MECHANICAL EQUIPMENT AND SYSTEMS. THESE SHALL INCLUDE THE FOLLOWING FOR THIS PROJECT:
   4.1. EXHAUST FANS
   4.2. FRESH AIR DAMPERS AND ACTUATORS
   4.3. EXHAUST FANS TIMER CONTROLLER
   4.4. CO-NO2 GAS DETECTION CONTROLLER AND REMOTE SENSORS
   4.5. CONTROLS INTERLOCKING FOR NEW HVAC SYSTEM
   4.6. NEW SPLIT AC UNIT
   4.7. ERV UNIT AND ELECTRIC DUCT HEATER
5. PROVIDE A WRITTEN REPORT FOR COMMISSIONING AND TESTING OUTLINED ABOVE,

SEISMIC RESTRAINTS: NOTES REGARDING OBC SECTION 4.1.8.18 FOR THE SEISMIC RESTRAINT OF ELEMENTS OF STRUCTURES, NON-STRUCTURAL COMPONENTS AND EQUIPMENT:

1. ALL STRUCTURAL ELEMENTS, NON-STRUCTURAL COMPONENTS, SERVICES AND EQUIPMENT TO BE RESTRAINED AGAINST SEISMIC FORCES IN ACCORDANCE WITH O.B.C. SECTION 4.1.8.18. CONTRACTORS RESPONSIBLE FOR THE INSTALLATION OF MECHANICAL AND ITEMS MUST ENGAGE A PROFESSIONAL ENGINEER REGISTERED IN ONTARIO TO DESIGN THESE RESTRAINTS AND PROVIDE FIELD REVIEW, ALL AS PER O.B.C. 2012

   1.1. FULL SHOP DRAWINGS OF SEISMIC RESTRAINT SYSTEMS INCLUDING CALCULATIONS ARE TO BE SUBMITTED BY CONTRACTOR FOR REVIEW BY PROJECT STRUCTURAL ENGINEER.
   1.2. PROVIDE FINAL SIGN-OFF LETTER FROM SEISMIC ENGINEER STATING THAT ALL MECHANICAL ITEMS HAVE BEEN RESTRAINED AS PER ONTARIO BUILDING CODE.

2. SEISMIC DATA

   IMPORTANCE CATEGORY IS NORMAL DISASTER I_E(ULS) = 1.0

   Sa(0.2) = 0.33, SITE CLASS E, Fa = 1.876

3. DESIGN FOR LATERAL FORCE $Vp = 0.3FaSa(0.2)\ I_E\ SpWp$

   Sp = CpArAx/Rx

   Cp, Ar, AND Rx FROM TABLE 4.1.8.18, DEPENDING ON CATEGORY

   Ax = 1 + 2Hx/Hr, USE VALUES APPROPRIATE FOR THE LOCATION OF THE MECH. EQUIPMENT.

FIRE PROTECTION SPECIFICATIONS:

1. ALL SPRINKLER AND FIRE MAIN WORK TO BE PERFORMED BY A MEMBER CONTRACTOR OF THE CANADIAN AUTOMATION SPRINKLER ASSOCIATION IN ACCORDANCE WITH FACTORY MUTUAL, NFPA STANDARD NO. 13, NFPA STANDARD NO. 24 (STANDARD FOR THE INSTALLATION OF PRIVATE MAIN AND THEIR APPURTENANCES), ONTARIO FIRE CODE AND LOCAL AUTHORITY HAVING JURISDICTION.

2. PROVIDE ALL ITEMS, MATERIALS, ARTICLES, AND EQUIPMENT, AND PERFORM ALL OPERATIONS SHOWN ON THE DRAWINGS AND/OR HEREINAFTER SPECIFIED, INCLUDING THE LABOUR, EQUIPMENT, MATERIALS, AND INCIDENTALS REQUIRED FOR INSTALLATION, TESTING, AND PUTTING INTO PROPER OPERATION COMPLETE AUTOMATIC SPRINKLER SYSTEM AS SHOWN, AS SPECIFIED, AND AS OTHERWISE REQUIRED. COMPLETE SYSTEMS SHALL BE LEFT READY FOR CONTINUOUS AND SATISFACTORY OPERATION.

3. THE WORK SHALL INCLUDE, BUT SHALL NOT NECESSARILY BE LIMITED TO THE FOLLOWING:
   3.1. PROVIDE DRY SPRINKLER PIPE C/W SPRINKLER HEADS FOR NEW OFFICE AND WASHROOM. CONNECT NEW DRY SPRINKLER LINE TO EXISTING DRY SPRINKLER FIRE ZONE.
   3.2. PROVIDE PIPE HANGERS AND SUPPORT.
   3.3. HYDRAULIC CALCULATION AND FLOW TEST.

4. SUPPORT PIPES APPROPRIATELY WITH HANGERS AND SUPPORTS SUPPLIED AND INSTALLED IN ACCORDANCE TO NPFA STANDARDS.

5. CONTRACTOR SHALL OBTAIN FIRE DEPARTMENT AND ALL LOCAL APPROVALS AS REQUIRED.

6. PROVIDE ALL LOW POINT DRAINS ON ALL TRAPPED PORTIONS OF PIPING IN ACCORDANCE TO NFPA STANDARDS.

7. ALL MATERIALS, ACCESSORIES AND EQUIPMENT SHALL BE ULC APPROVED STANDARD PRODUCTS, SPECIFICALLY DESIGNED FOR THE FIRE PROTECTION SYSTEMS SPECIFIED AND SHALL CARRY ULC LABELS.

8. DESIGN AND INSTALLATION SHALL BE IN ACCORDANCE WITH NFPA USING PIPE SCHEDULE CALCULATION METHOD FOR ORDINARY HAZARD GROUP II OCCUPANCIES.

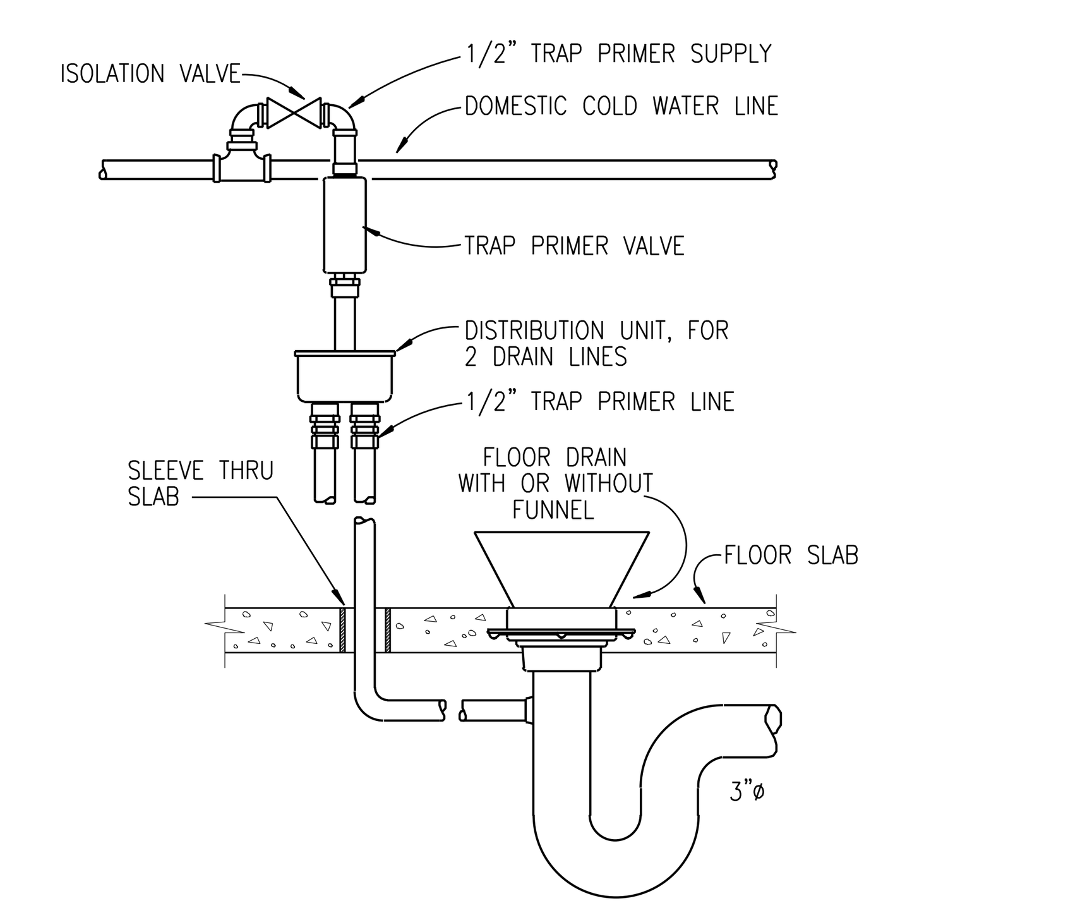
9. PIPE SHALL BE SCHEDULE ASTM A795, ASTM A53, ASTM A135, ANSI B36.10 WITH FITTINGS THAT WITHSTAND A COLD WATER WORKING PRESSURE OF NOT LESS THAN 175 PSI (1210 kPa) AND SHALL BE CAST OR MALLEABLE IRON IN COMPLIANCE WITH UNDERWRITER'S STANDARDS. FOR THREADED STEEL PIPE (2½" AND BELOW), PIPE SHALL BE SCH. 40. FOR WELDED OR ROLL-GROOVED PIPE (3" AND ABOVE), REFER TO NFPA 13 FOR PIPE THICKNESS. PROVIDE VICTAULIC COUPLINGS FOR PIPE 3" DIA AND ABOVE.

10. STANDARD PIPE COUPLINGS SHALL BE SAME MATERIAL AND STRENGTH AS ADJOINING PIPE AND SHALL CONFORM TO DESIGNATED STANDARDS FOR FITTINGS IN SUCH PIPELINES.

11. SPRINKLER HEADS SHALL BE FM, ULC AND NFPA APPROVED WITH STANDARD TEMPERATURE RATING OF 165°F, CONCEALED PENDANT SYTLE WITH CHROME FINISH IN LIGHT HAZARD CEILING AREAS AND UPRIGHT STYLE IN HIGH ROOF WAREHOUSE AREAS. SPRINKLERS HEADS SHALL BE GRINNELL OR VIKING OR TYCO.

12. ENGINEERING DESIGN CRITERIA:
   12.1. WAREHOUSE: ORDINARY HAZARD GROUP II. 0.2 GPM/SQFT OVER MOST REMOTE 1500 SQ.FT AREA.
   12.2. OFFICES AND WASHROOMS AREAS WITH CEILING: LIGHT HAZARD OCCUPANCY. PROVIDE 0.1 GPM /SQ.FT OVER MOST REMOTE 1500 SQ.FT AREA.

13. TESTS AND CERTIFICATES: ON COMPLETION OF THE JOB, FURNISH AND PAY FOR A CERTIFICATE OF APPROVAL SHOWING THAT THE COMPLETE JOB IS IN ACCORDANCE WITH THE RULES AND REGULATIONS OF GOVERNING AUTHORITIES. SPRINKLER SYSTEM SHALL BE PRESSURE TESTED IN ACCORDANCE WITH NFPA 13.



TYPICAL TRAP SEAL PRIMER DETAIL FOR NEW WASHROOM FLOOR DRAINS

SCALE: N.T.S

REVISIONS

no	description	date
0	ISSUED FOR TENDER	SEPT. 5, 2025
1	RE-ISSUED FOR TENDER	NOV. 4, 2025

LICENSED PROFESSIONAL ENGINEER M.N.KHAN 100170457 NOV. 4, 2025 PROVINCE OF ONTARIO

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HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

project title: HAMILTON-OSHAWA PORT AUTHORITY PIER 15 - 204 HILLYARD ST. BUILDING 218 UPGRADES

drawing title: MECHANICAL SPECIFICATION

drawn: BTD | date: JUNE 2025

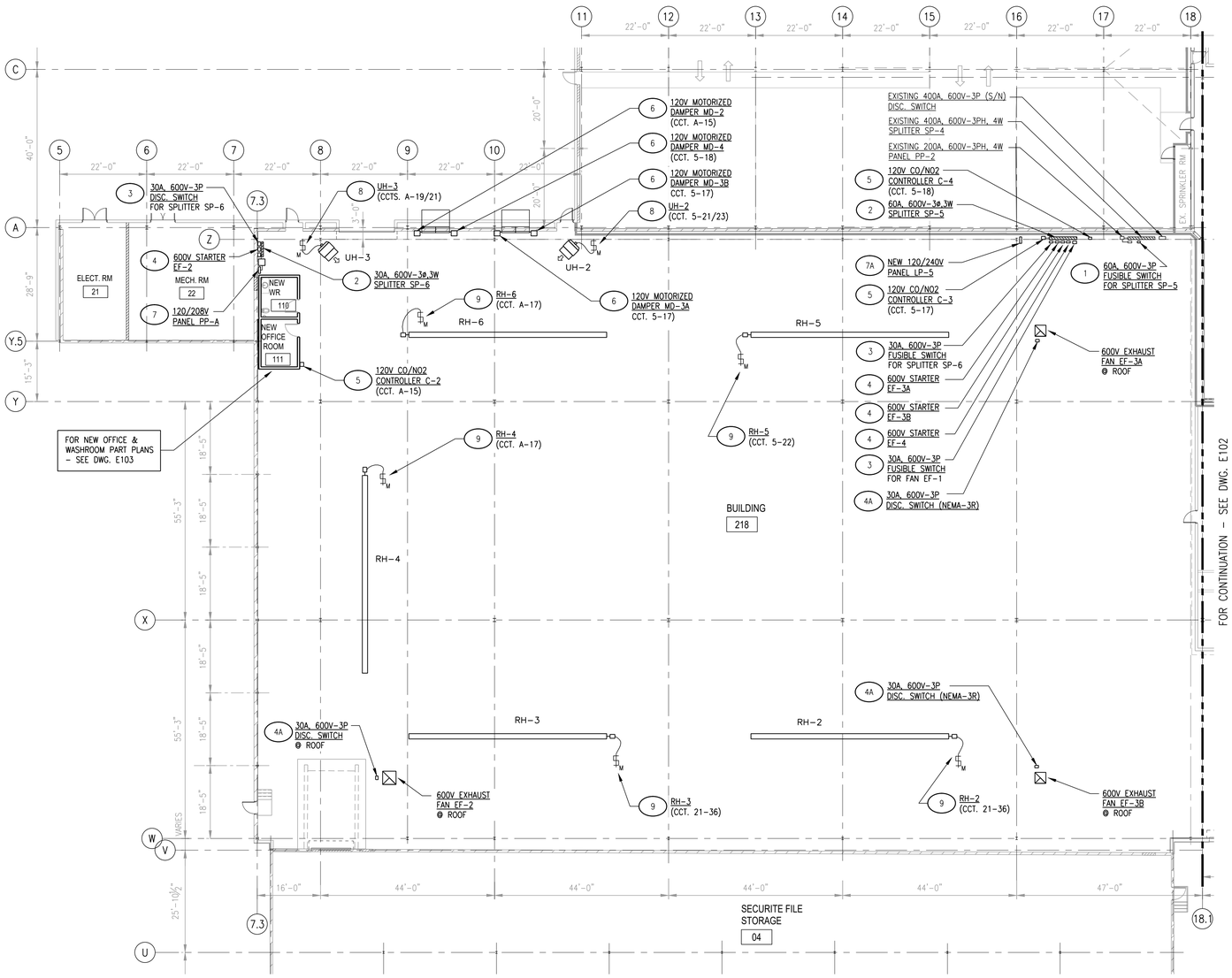
checked: MK | date: SEPT. 2025

scale: AS NOTED

project number: 25-38

DRAWING NUMBER: M106

Revision: 1



NORTH

WEST FLOOR PLAN – POWER

SCALE: 1/16"=1'-0"

LEGEND:

MANUAL STARTER (M.H. 4'-0" AFF, UNLESS NOTED OTHERWISE)

CONSTRUCTION NOTES:

1. PROVIDE 60A FUSIBLE SWITCH & CONNECT TO EXISTING 600V SPLITTER SP-4 AS REQUIRED. REFER TO ONE-LINE DIAGRAM ON DWG. E102.
2. PROVIDE 600V SPLITTER & CONNECT TO CONFORM TO ONE-LINE DIAGRAM ON DWG. E102.
3. PROVIDE 600V DISCONNECT SWITCH & CONNECT TO CONFORM TO ONE-LINE DIAGRAM ON DWG. E102.
4. PROVIDE 600V SIZE 1 FVNR STARTER & CONNECT TO CONFORM TO ONE-LINE DIAGRAM ON DWG. E102. REFER TO TYPICAL EXHAUST FAN STARTER SCHEMATIC ON DWG. E102.

   NOTE: PROVIDE CONTROL INTERLOCKING BETWEEN STARTER AND PERSPECTIVE MOTORIZED DAMPER ENDSWITCH TO CONFORM TO WIRING DIAGRAMS ON DWG. M104.

4A. PROVIDE 600V DISCONNECT SWITCH & CONNECT TO RESPECTIVE EXHAUST FAN AS REQUIRED. LOCATE TO SUIT FIELD CONDITIONS.

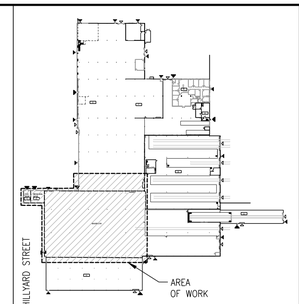
5. PROVIDE 120V POWER TO CONTROLLER & CONNECT AS INDICATED. CONTROLLER SUPPLIED & INSTALLED BY MECHANICAL TRADE.
6. PROVIDE 120V POWER TO MOTORIZED DAMPERS & CONNECT AS INDICATED. DAMPER SUPPLIED & INSTALLED BY MECHANICAL TRADE.

   NOTE: PROVIDE CONTROL INTERLOCKING BETWEEN STARTER AND PERSPECTIVE MOTORIZED DAMPER ENDSWITCH TO CONFORM TO WIRING DIAGRAMS ON DWG. M104.

7. REFER TO POWER SCHEDULE ON DWG. E103.

7A. REPLACE EXISTING 120/240V PANEL WITH NEW PANEL TO CONFORM TO PANEL SCHEDULE ON DWG. E102. RECONNECT EXISTING POWER FEED & ASSOCIATED BRANCH WIRING AS REQUIRED.

8. PROVIDE 230V MANUAL STARTER & CONNECT AS INDICATED ON PLAN. CONNECT POWER TO UNIT HEATER AS REQUIRED.
9. PROVIDE 120V MANUAL STARTER & CONNECT AS INDICATED. LOCATE ADJACENT TO HEATER TO SUIT FIELD CONDITIONS (APPROX. 20'-0" AFF). CONNECT SWITCH TO HEATER AS REQUIRED.



NORTH

KEY PLAN

SCALE: N.T.S.
HOPA – PIER 15
204 HILLYARD STREET, HAMILTON
BLDG. 218 UPGRADE

SPECIFICATIONS:

1. ALL EQUIPMENT SHALL BE AS SPECIFIED ON THIS DRAWING. ANY DEVIATION FROM THESE SPECIFICATIONS MUST BE APPROVED BY ENGINEER.
2. ALL INDOOR CONDUIT SHALL BE ELECTRICAL METALLIC TUBING (EMT) COMPLETE WITH STEEL CONNECTORS AND COUPLINGS (DIECAST NOT ACCEPTABLE). TECK CABLE SHALL BE PERMITTED WHERE INDICATED ON PLANS.
3. ALL CONDUCTORS SHALL BE MIN. #12 AWG RW90 COPPER (RATED 600V).
4. PROVIDE ALL NECESSARY GROUNDING ASSOCIATED WITH NEW WORK.
5. INSTALLATION SHALL CONFORM TO ONTARIO ELECTRICAL SAFETY CODE (LATEST EDITION). PROVIDE COPY OF ALL INSPECTION REPORTS TO ENGINEER.
6. ELECTRICAL CONTRACTOR FEES SHALL INCLUDE FOR ALL ESA INSPECTION COSTS AND/OR REQUIRED PERMITS.
7. PROVIDE EQUIPMENT NAMEPLATES AS REQUIRED. LAMACOID TYPE – WHITE LETTERING ON BLACK BACKGROUND TO SUIT.
8. PRIOR TO SUBMITTING FEES CONTRACTOR SHALL VISIT SITE AND BE AWARE OF FIELD CONDITIONS AFFECTING THE SCOPE OF WORK. ALL NEW CONDUIT/WIRING SHALL BE ROUTED TO SUIT FIELD CONDITIONS.
9. ALL CONDUIT PENETRATIONS IN FLOORS AND WALLS SHALL BE FIREPROOFED AS REQUIRED.
10. CABLE ROUTINGS SHOWN ON PLAN ARE DIAGRAMMATIC. EXACT ROUTING & TERMINATION POINTS SHALL BE FIELD VERIFIED.
11. UPDATE PANEL DIRECTORIES TO CONFORM WITH SCOPE IDENTIFIED ON THIS DRAWING.
12. DISCONNECT SWITCHES SHALL BE RATED AS PER PLANS. ACCEPTABLE MANUFACTURER: EATON OR SCHNEIDER
13. NEW 120/208V POWER DISTRIBUTION PANEL SHALL BE RATED 100A, 120V/208V-3 PHASE, 4 WIRE, COPPER BUS. COMPLETE WITH REQUIRED CIRCUIT BREAKERS. PANEL SHALL BE MINIMUM 30 CCT COMPLETE WITH PANEL DIRECTORY REFLECTING USAGE FOR EACH CIRCUIT UTILIZED.

    MANUFACTURER: SCHNEIDER (SQ. 'D'), OR APPROVED EQUIVALENT.

14. NEW STEP-DOWN TRANSFORMER SHALL BE RATED 15 KVA, 600V: 120/208V-3PH, 4 WIRE, COPPER.

    MANUFACTURER: HAMMOND, OR APPROVED EQUIVALENT

15. FRACTIONAL HORSEPOWER MANUAL STARTERS SHALL BE RATED 1 HP, 120V OR 230V AS APPLICABLE, EEMAC-1 COMPLETE WITH OVERLOAD PROTECTION AND PILOT LIGHT.

    MANUFACTURER: EATON, OR APPROVED EQUIVALENT.

16. COMBINATION MAGNETIC FVNR STARTERS SHALL BE RATED 600V-3P, SIZE 1 COMPLETE WITH HAND-OFF-AUTO SELECTOR SWITCH AND "RUNNING" PILOT LIGHT. STARTERS SHALL HAVE CONTROL TRANSFORMERS AND BE CAPABLE TO BE INTERLOCKED WHEN IN 'AUTO' MODE. REFER TO SCHEMATICS ON DRAWINGS E-102.

    MANUFACTURER: SCHNEIDER, EATON, OR APPROVED EQUIVALENT.

17. NEW 120/240V POWER DISTRIBUTION PANEL SHALL BE RATED 225A, 120/240V-1PHASE, 3 WIRE, COPPER BUS, COMPLETE WITH REQUIRED CIRCUIT BREAKERS. PANEL SHALL BE MINIMUM 30 CCT COMPLETE WITH PANEL DIRECTORY REFLECTING USAGE FOR EACH CIRCUIT UTILIZED.

    MANUFACTURER: HAMMOND, OR APPROVED EQUIVALENT

REVISIONS

no	description	date
0	ISSUED FOR TENDER	SEPT. 5, 2025

LICENSED PROFESSIONAL ENGINEER
JOHN A. MILES
SEPT. 05, 2025
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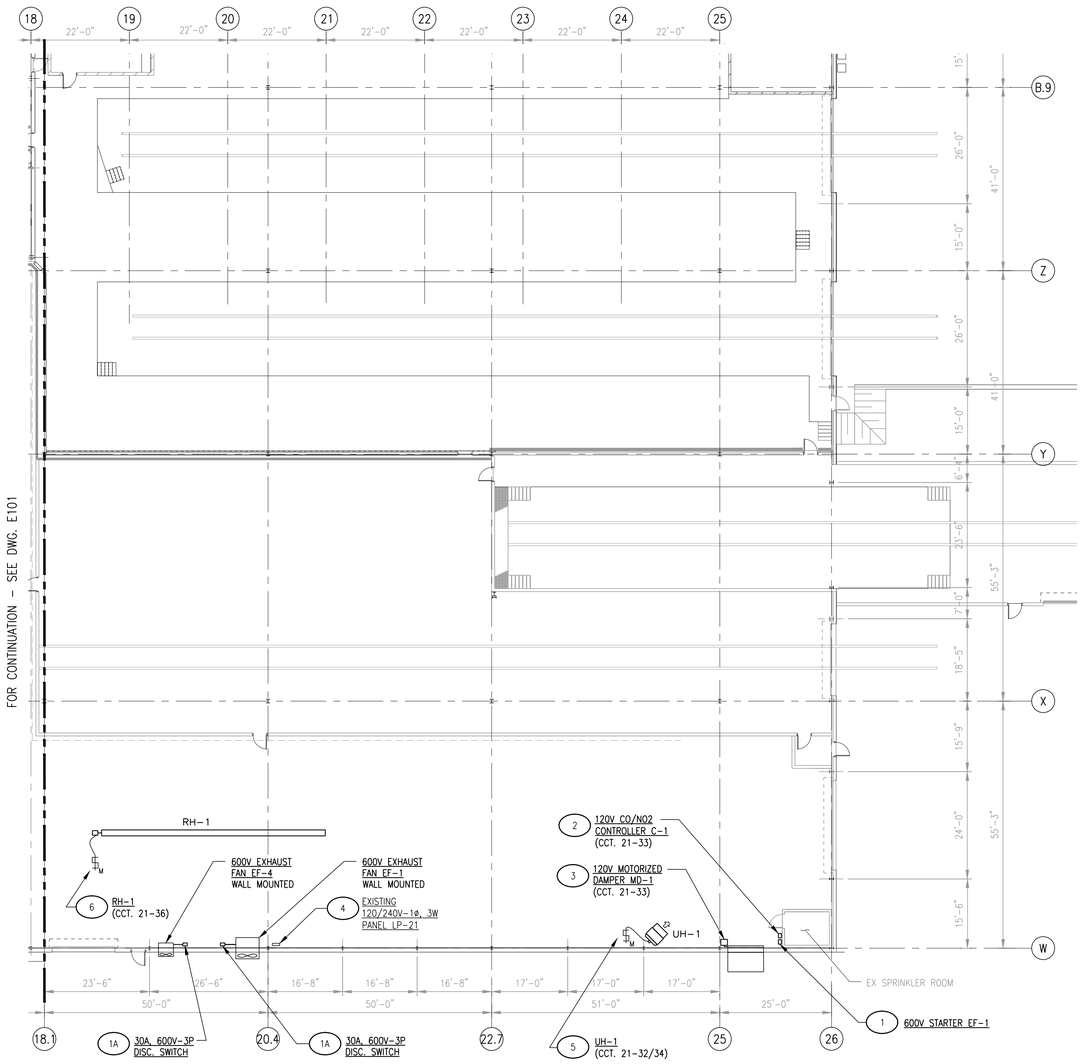
HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

project title: HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawing title: WEST FLOOR PLAN - POWER & SPECIFICATIONS

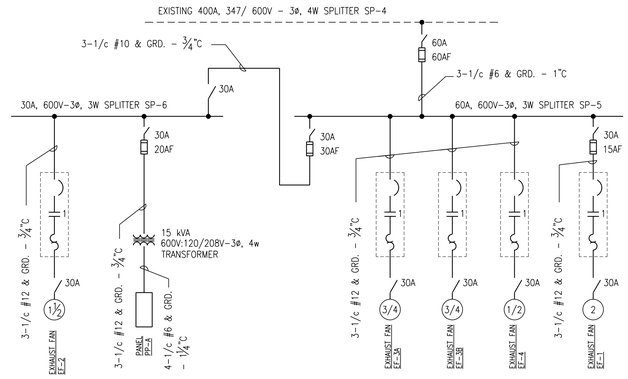
drawn: BTD
date: JUNE 2025
checked: JAM
date: SEPT. 2025
scale: AS NOTED
project number: 25-38
DRAWING NUMBER: E101
0 Revision



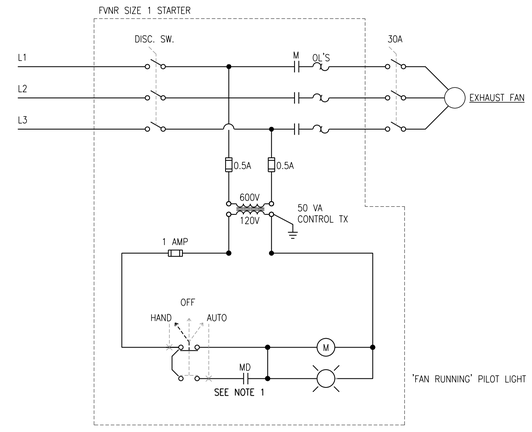
NORTH

EAST FLOOR PLAN - POWER

SCALE: 1/16"=1'-0"



PARTIAL ONE-LINE DIAGRAM



TYPICAL 600V EXHAUST FAN SCHEMATIC

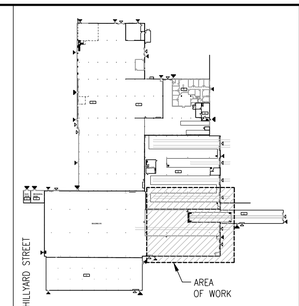
(TYPICAL FOR EF-1, EF-2, EF-3A, EF-3B & EF-4)

NOTE 1: PROVIDE CONTROL INTERLOCKING BETWEEN STARTER AND RESPECTIVE MOTORIZED DAMPER ENDSWITCH TO CONFORM TO WIRING DIAGRAMS ON DWG. M105.

EXISTING PANEL LP-21 — MAIN FEEDER TOP ENTRY — 200A, 120/240V-1ø, 3W (MIN. 10 KAIC)

	CCT.	DESCRIPTION		BREAKER SIZE	WIRING
△	32	UNIT HTR UH-1	(3/4 HP)	15A-2P	2#12
△	34				
△	36	HEATERS RH-1, RH-2, RH-3	(FLA-3A)	15A-1P	2#12
△	33	CONTROLLER C-1/ MOTORIZE DAMPER MD-1		15A-1P	2#12
△	35	SPARE		15A-1P	–

△ PROVIDE NEW BREAKER & CONNECT AS REQUIRED



NORTH

KEY PLAN

SCALE: N.T.S.
HOPA - PIER 15
204 HILLYARD STREET, HAMILTON
BLDG. 218 UPGRADE

CONSTRUCTION NOTES:

1. PROVIDE 600V SIZE 1 FVNR STARTER & CONNECT TO CONFORM TO ONE-LINE DIAGRAM ON THIS DRAWING. REFER TO TYPICAL EXHAUST FAN STARTER SCHEMATIC ON THIS DRAWING.

   NOTE: PROVIDE CONTROL INTERLOCKING BETWEEN STARTER AND PERSPECTIVE MOTORIZED DAMPER ENDSWITCH TO CONFORM TO WIRING DIAGRAMS ON DWG. M104.

1A. PROVIDE 600V DISCONNECT SWITCH & CONNECT TO RESPECTIVE EXHAUST FAN AS REQUIRED. LOCATE TO SUIT FIELD CONDITIONS.

2. PROVIDE 120V POWER TO CONTROLLER & CONNECT AS INDICATED. CONTROLLER SUPPLIED & INSTALLED BY MECHANICAL TRADE.

3. PROVIDE 120V POWER TO MOTORIZED DAMPER & CONNECT AS INDICATED. DAMPER SUPPLIED & INSTALLED BY MECHANICAL TRADE.

   NOTE: PROVIDE CONTROL INTERLOCKING BETWEEN STARTER AND PERSPECTIVE MOTORIZED DAMPER ENDSWITCH TO CONFORM TO WIRING DIAGRAMS ON DWG. M104.

4. PROVIDE NEW BREAKERS IN EXISTING 120/240V PANEL TO CONFORM TO PARTIAL PANEL SCHEDULE ON THIS DRAWING.

5. PROVIDE 230V MANUAL STARTER & CONNECT AS INDICATED ON PLAN. CONNECT POWER TO UNIT HEATER AS REQUIRED.

6. PROVIDE 120V MANUAL STARTER & CONNECT AS INDICATED. LOCATE ADJACENT TO HEATER TO SUIT FIELD CONDITIONS (APPROX. 20'-0" AFF). CONNECT SWITCH TO HEATER AS REQUIRED.

NEW PANEL LP-5 — MAIN FEEDER TOP ENTRY — 225A, 120/240V-1ø, 3W (MIN. 10 KAIC)

	CCT.	DESCRIPTION		BREAKER SIZE	WIRING	
▲	1	EXISTING LOAD		20A-1P	EXIST.	
▲	3					
▲	5					
▲	7					
▲	9					
▲	11					
▲	13					
▲	15					
	17	CONTROLLER C-3/ MOTORIZED DAMPERS MD-3A & MD-3B		15A-1P	2#10	
	19	CONTROLLER C-4/ MOTORIZED DAMPER MD-4		15A-1P	2#10	
	21	UNIT HTR UH-2	(3/4 HP)	15A-2P	2#12	
	23					
	25	SPACE		–	–	
	27			–	–	
	29			–	–	
▲	2	EXISTING LOAD		20A-1P	EXIST.	
▲	4					
▲	6					
▲	8					
▲	10			15A-1P		
▲	12			15A-1P		
▲	14			15A-2P		
	16					
▲	18			15A-2P		
	20					
	22	HEATER RH-5	(FLA-1A)	15A-1P	2#12	
	24	SPARE		15A-1P	–	
	26	SPACE		–	–	
	28			–	–	
	30			–	–	

▲ EXISTING BRANCH WIRING SHALL BE CONNECTED TO RESPECTIVE BREAKER AS BEFORE

REVISIONS

no	description	date
0	ISSUED FOR TENDER SEPT. 5, 2025	

LICENCED PROFESSIONAL ENGINEER — JOHN A. MILES — SEPT. 05, 2025 — PROVINCE OF ONTARIO

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HOPA PORTS | HAMILTON OSHAWA PORT AUTHORITY

project title: HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawn: BTD
date: JUNE 2025

scale: AS NOTED

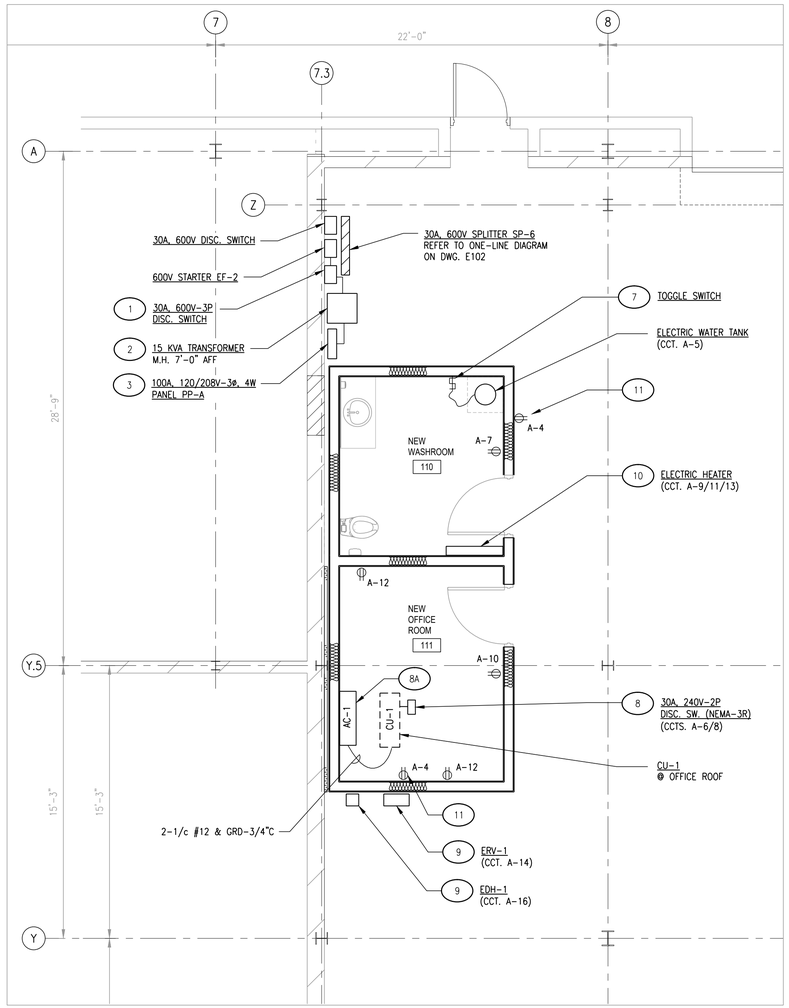
project number: 25-38

drawing title: EAST FLOOR PLAN - POWER, ONE-LINE DIAGRAM, SCHEMATIC, PANEL SCHEDULE & NOTES

checked: JAM
date: SEPT. 2025

DRAWING NUMBER: E102

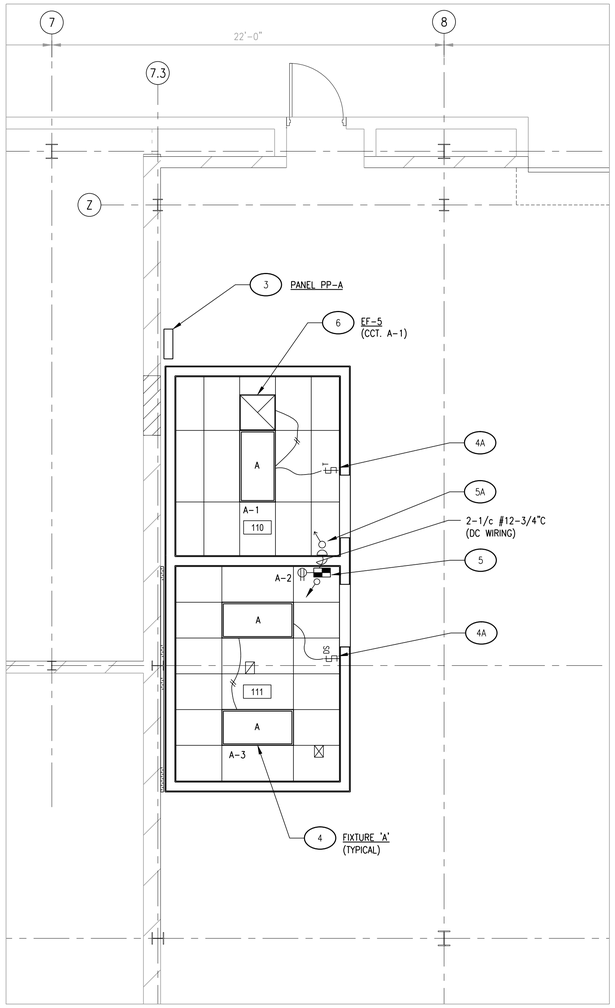
0 Revision



NORTH

PART PLAN – POWER

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



NORTH

PART PLAN – LIGHTING

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

CEILING TO BE 24"x48" ACT T-BAR GRID @ 8'-0" A.F.F.

LEGEND

- A – METALUX CAT. #24CGTS-NUV-LOW-3500, 120V, 35W, 3500K, 85 CRI, 0-10V DIMMING, 2'x4' LED LAY-IN FIXTURE
- DS – LEVITON CAT. #DDD10-IDW, SMART SENSOR, PIR, 0-10V DIMMING WALLBOX/ OCCUPANCY SENSOR, 120V, 1000W, WHITE C/W COVER PLATE
- $_T$ – LEVITON CAT. #DT230-1LW 20A, 120V, 30 MINUTE COUNTDOWN TIMER SWITCH
- $ – 15A, 120V TOGGLE SWITCH M.H. 4'-6" AFF
- – 15A, 120V DUPLEX RECEPTACLE (CSA 5-15R) M.H. 18" AFF, UNLESS NOTED OTHERWISE
- ET – AIMLITE CAT. #EBST-6-36-4WLR-ADT-ACT, 120V INPUT, 6 VDC OUTPUT, 3 WATT WALL MOUNTED STEEL BATTERY UNIT C/W ONE 4W LED LAMP, AND AUTOMATIC TEST SELF-DIAGNOSTIC. PROVIDE 15A, 120V RECEPTACLE ADJACENT TO UNIT C/W AC CORD/PLUG TO SUIT.
- – AIMLITE CAT. #RMSM-1-6V-4WLR-WHT, 6 VDC, SINGLE HEAD, 4W LED LAMP, WHITE FINISH

CONSTRUCTION NOTES:

1. PROVIDE 30A DISCONNECT SWITCH & CONNECT TO CONFORM TO PARTIAL ONE-LINE DIAGRAM ON DWG. E102.
2. PROVIDE 15 KVA TRANSFORMER & CONNECT TO CONFORM TO ONE-LINE ON DWG. E102.
3. PROVIDE POWER PANEL & CONNECT TO CONFORM TO ONE-LINE DIAGRAM ON DWG. E102. REFER TO PANEL SCHEDULE ON DWG. E102.
4. PROVIDE LAY-IN FIXTURE & CONNECT AS INDICATED.
4A. PROVIDE LIGHTING CONTROL SWITCH & CONNECT AS REQUIRED.
5. PROVIDE EMERGENCY LIGHTING BATTERY UNIT & CONNECT AS REQUIRED. LOCATE TO SUIT FIELD CONDITIONS.
5A. PROVIDE REMOTE 6 VDC LIGHTING HEAD & CONNECT AS REQUIRED. LOCATE TO SUIT FIELD CONDITIONS.
6. PROVIDE 120V POWER TO EXHAUST FAN.
   NOTE: FAN SHALL BE CONNECTED TO TIMER SWITCH AS REQUIRED.
7. PROVIDE 120V TOGGLE SWITCH TO DISCONNECT POWER TO ELECTRIC WATER TANK. LOCATE SWITCH IN CEILING SPACE TO SUIT FIELD CONDITIONS.
8. PROVIDE DISCONNECT SWITCH FOR CONDENSER UNIT CU-1 & CONNECT 208V POWER AS REQUIRED. LOCATE ADJACENT TO UNIT TO SUIT FIELD CONDITIONS.
8A. AC-1 POWER SHALL BE FED FROM CU-1. CONNECT AS REQUIRED.
9. PROVIDE 120V POWER TO MECHANICAL EQUIPMENT & CONNECT AS REQUIRED.
10. PROVIDE 208V POWER TO ELECTRIC HEATER & CONNECT AS REQUIRED.
11. PROVIDE 120V RECEPTACLE AT 7'-0" AFF FOR TENANT TV MONITORS. COORDINATE EXACT LOCATION WITH TENANT AS REQUIRED.

NEW PANEL PP-A — MAIN FEEDER TOP ENTRY — 100A, 120/208V-3ø, 4W (MIN. 10 KAIC)

CCT.	DESCRIPTION		BREAKER SIZE	WIRING
1	ROOM 110 – LIGHTING/ EF-5	(150 W)	15A-1P	2#12
3	ROOM 111 – LIGHTING	(70 W)	15A-1P	2#12
5	HOT WATER TANK	(1500 W)	20A-1P	2#12
7	ROOM 110 – RECEPTACLE		15A-1P	2#12
9				
11	ROOM 110 – ELECTRIC HEATER	(3 kW)	15A-3P	3#12
13				
15	CONTROLLER C-2/ MD-2		15A-1P	2#12
17	HEATERS RH-4 & RH-6	(FLA-2A)	15A-1P	2#12
19	UNIT HTR UH-3	(3/4 HP)	15A-2P	2#12
21				
23	SPARE		15A-1P	–
25	SPACE		–	–
27			–	–
29			–	–
2	EMERGENCY LIGHTING BATTERY UNIT		15A-1P	2#12
4	TV MONITOR RECEPTACLES		15A-1P	2#12
6	CONDENSER UNIT CU-1/ AC-1	(FLA-12.3A)	20A-2P	2#12
8				
10	ROOM 111 – RECEPTACLE		15A-1P	2#12
12	ROOM 111 – RECEPTACLES		15A-1P	2#12
14	ROOM 111 – ERV-1	(FLA-0.75A)	15A-2P	2#12
16	ROOM 111 – EDH-1	(FLA-8.3A)	15A-1P	2#12
18	SPARE		15A-1P	–
20	SPARE		15A-1P	–
22	SPARE		15A-1P	–
24	SPARE		15A-1P	–
26	SPACE		–	–
28			–	–
30			–	–

REVISIONS

no	description	date
0	ISSUED FOR TENDER	SEPT. 5, 2025
1	RE-ISSUED FOR TENDER	NOV. 4, 2025

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HOPA PORTS — HAMILTON OSHAWA PORT AUTHORITY

project title: HAMILTON-OSHAWA PORT AUTHORITY
PIER 15 - 204 HILLYARD ST.
BUILDING 218 UPGRADES

drawing title: PART PLANS - LIGHTING & POWER

drawn: BTD
date: JUNE 2025
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date: SEPT. 2025

scale: AS NOTED
project number: 25-38

DRAWING NUMBER: E103
1 Revision