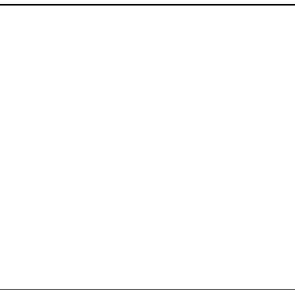
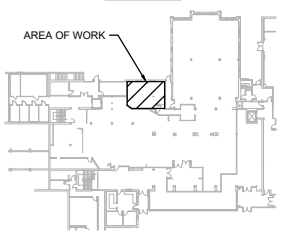


GROUND FLOOR PLAN - CLEARANCE DIMENSIONS

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

KEYPLAN



REVISIONS

NO.	ISSUED FOR	DATE
00	CLEARANCE DIMENSIONS	24.05.01
01		
02		
03		

NORTH

DESIGN	BCD	DRAWN	BCD
CHECKED	JRG	REVIEWED	JRG

PROJECT
WILFRID LAURIER
UNIVERSITY DISH ROOM-
DH1-13 RENOVATIONS

ADDRESS
75 UNIVERSITY AVE W,
WATERLOO, ON N2L 3C5

PROJECT NO.
CE-5716

DRAWING TITLE
SK.PARTIAL
BASEMENT/GROUND
FLOOR PLAN

DRAWING NUMBER
SK.A1 OF 1

24-005885

75 UNIVERSITY AVE W.
DINING HALL

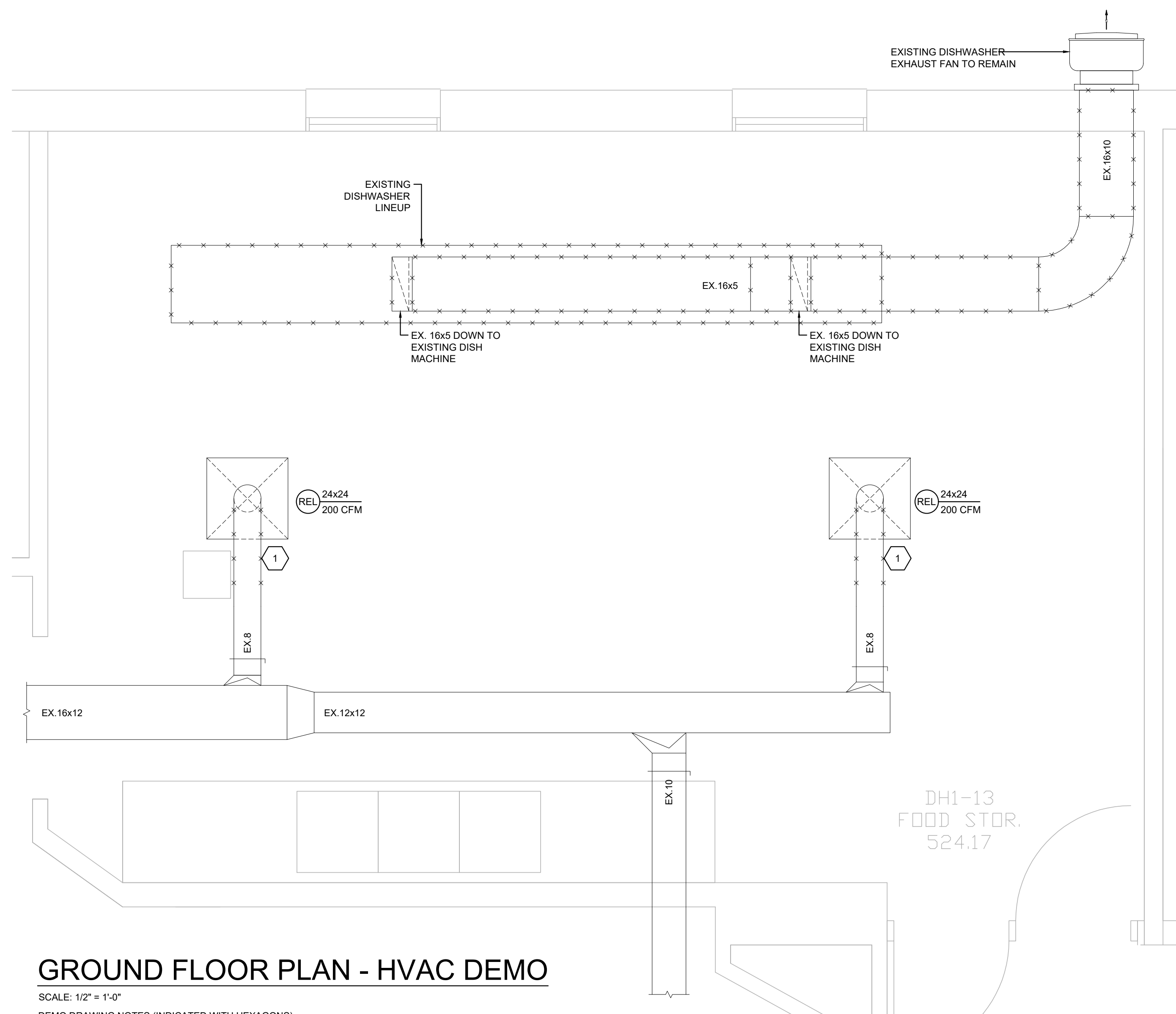
THE CITY OF **Waterloo**

BUILDING INSPECTION

NOTE: THIS DEPARTMENT MUST BE NOTIFIED OF, AND APPROVE ALL CHANGES FROM THESE PLANS. ALL CONSTRUCTION TO CONFORM TO THE ONTARIO BUILDING CODE. THE BUILDER ASSUMES FULL LIABILITY FOR ERRORS AND OMISSIONS. THESE DRAWINGS MUST BE KEPT ON SITE UNTIL FINAL INSPECTION HAS BEEN COMPLETED.

2024-05-15

LARGE BUILDINGS: TO BOOK AN INSPECTION CALL THE INSPECTION REQUEST LINE AT 519-747-8789.



GROUND FLOOR PLAN - HVAC DEMO

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

DEMO DRAWING NOTES (INDICATED WITH HEXAGONS):

- EXISTING SUPPLY DIFFUSER TO BE RELOCATED. SEE PROPOSED PLAN ON DRAWING M4 FOR MODIFICATIONS.
- REMOVE ALL EXISTING DISHWASHER EXHAUST DUCTWORK BACK TO EXISTING WALL MOUNTED EXHAUST FAN.

DIFFUSER SCHEDULE				
DWG REF	MANUF.	MODEL	FINISH	REMARKS
S1	PRICE	SCD	WHITE	SQUARE CONE DIFFUSER, STEEL CONSTRUCTION, 3 CONES REMOVABLE FROM THE DIFFUSER FACE.
R1	PRICE	80	WHITE	EGG CRATE GRILLE, EXTRUDED ALUMINUM CONSTRUCTION, CW VOLUME DAMPER.
E1	PRICE	630	WHITE	SINGLE DEFLECTION, LOUVERED RETURN GRILLE, ALUMINUM CONSTRUCTION.

GENERAL NOTE: MOUNTING FRAME TO SUIT CEILING TYPES. SEE ARCHITECTURAL REFLECTED CEILING PLAN DRAWINGS FOR CEILING TYPES. PROVIDE INTEGRAL FIRE STOP FLAPS WHERE FIRE DAMPERS ARE INDICATED ON DRAWINGS.
APPROVED MANUFACTURERS: PRICE, METALAIR, NAILOR, TITUS, KREUGER

PLUMBING FIXTURE SCHEDULE				
DWG REF	DESCRIPTION	HOT	COLD	DRAIN
FFD	FLOOR DRAIN- EPOXY COATED CAST IRON FLOOR DRAIN WITH ANCHOR FLANGE, REVERSIBLE CLAMPING COLLAR WITH PRIMARY AND SECONDARY WEEPHOLES, ADJUSTABLE CAST IRON (STANDARD) HUB FUNNEL, AND NO HUB (STANDARD) OUTLET. WATTS DRAINAGE - MODEL: FD-100-DD	--	--	3"
HD	HUB DRAIN- EPOXY COATED CAST IRON FLOOR DRAIN WITH ANCHOR FLANGE, WEEPHOLES, ADJUSTABLE NICKEL BRONZE (STANDARD) HUB FUNNEL, AND NO HUB (STANDARD) OUTLET. WATTS DRAINAGE-MODEL: FD-200-DD	--	--	3"

GENERAL NOTES: (APPLICABLE TO ALL DRAWINGS)

- THESE DRAWINGS ARE AN INTEGRAL PART OF THE SPECIFICATIONS WHICH ACCOMPANY THEM.
- ALL MATERIALS AND WORKMANSHIP SHALL BE NEW UNLESS NOTED OTHERWISE, FREE OF DEFECTS, AND COMPLY WITH ALL APPLICABLE STANDARDS.
- ALL DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE.
- INSTALL DUCTWORK / PIPING TIGHT TO UNDERSIDE OF STRUCTURE UNLESS NOTED OTHERWISE.
- DO NOT SCALE DRAWINGS. OBTAIN ALL DIMENSIONS FROM EXISTING ARCHITECTURAL PLANS, SITE INSPECTIONS, AND MANUFACTURER'S SHOP DRAWINGS.
- ALL MATERIALS WITHIN RETURN AIR PLENUMS SHALL HAVE A FLAME-SPREAD RATING NOT MORE THAN 25 AND A SMOKE DEVELOPED CLASSIFICATION NOT MORE THAN 50.
- OPENINGS IN EXTERIOR WALLS AND ROOF ARE TO BE PROPERLY FLASHED AND MADE WEATHERPROOF.
- ALL NECESSARY CUTTING / PATCHING FOR MECHANICAL WORK SHALL BE PROVIDED BY APPROPRIATE TRADE(S) AT CONTRACTOR'S EXPENSE UNLESS NOTED OTHERWISE.
- MAKE GOOD ALL BUILDING COMPONENTS DAMAGED BY WORK OF THIS TRADE TO THE CONSULTANT SATISFACTION.
- PROVIDE ALL SLEEVES, INSERTS AND HANGERS REQUIRED FOR THE WORK. TREAT ALL SLEEVES OR HOLES PIERCING ACOUSTICAL SEPARATIONS FOR INSTALLATIONS OF THIS DIVISION TO MAINTAIN ACOUSTICAL RATING. ALL GAPS SHALL BE PACKED WITH ACOUSTICAL INSULATION AND SEALED AT BOTH ENDS WITH ACOUSTICAL CAULKING. PATCH ALL OPENINGS AROUND INSTALLATIONS OF THIS DIVISION PIERCING FIRE OR SMOKE SEPARATIONS WITH AN APPROVED WATERTIGHT SMOKE AND FIRE STOP SEALANT.
- INSTALL ALL EQUIPMENT & ASSOCIATED DUCTWORK, PIPING, APPURTENANCES TO PROVIDE MAINTENANCE ACCESS. ALLOW FOR ALL ACCESS DOORS REQUIRED FOR EQUIPMENT INSTALLATIONS & SERVICE. ENSURE PROPER ACCESS DOOR SIZE, TYPE AND FIRE RATING.
- COORDINATE ALL WORK WITH OTHER TRADES AND SUPPLIERS/MANUFACTURERS TO AVOID INTERFERENCES AND CONFLICTS BETWEEN SERVICES. PLAN WORK WELL IN ADVANCE TO ELIMINATE INSTALLATION AND COORDINATION DIFFICULTIES. COOPERATE WITH OTHER TRADES ON SITE TO RESOLVE INTERFERENCES TO SATISFACTORILY COMPLETE THE PROJECT.
- THIS TRADE IS RESPONSIBLE FOR ALL EXCAVATION / BACKFILL REQUIRED TO INSTALL SERVICES SHOWN ON THESE DRAWINGS
- BACKFLOW PREVENTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF CSA STANDARD B64
- DEBRIS WILL BE KEPT TO A MINIMUM. ON COMPLETION OF CONSTRUCTION AND PRIOR TO THE FINAL INSPECTION AND ACCEPTANCE BY THE OWNER, SITE SHALL BE CLEANED AND ALL SCRAP MATERIALS RESULTING FROM THE WORK SHALL BE REMOVED.
- PRIOR TO THE FINAL INSPECTION, ALL EQUIPMENT SHALL BE CLEANED. ALL CONSTRUCTION DUST AND DIRT SHALL BE REMOVED FROM INSTALLED EQUIPMENT AT THE END OF THE JOB.
- EXISTING INSTALLATIONS SHOWN FOR GENERAL REFERENCE ONLY. ATTEND SITE TO ASSESS WORK PRIOR TO BID SUBMISSION. INCLUDE ALL COSTS TO MODIFY AND / OR EXTEND NEW WORK AS REQUIRED TO MEET DESIGN INTENT. VERIFY ALL EXISTING DUCT / PIPE SIZES & CLEARANCES ON SITE.
- SCHEDULE AND PHASE WORK TO REDUCE INTERFERENCE AND DOWNTIME OF EXISTING SYSTEMS. NOTIFY OWNER'S REPRESENTATIVE OF ALL DOWNTIME PRIOR TO PROCEEDING WITH WORK.
- REMOVE EXISTING CEILING TILES AS REQUIRED TO PERFORM WORK. SAFELY STORE TILES FOR REINSTALLATION AFTER WORK & INSPECTIONS ARE COMPLETE. EXISTING DAMAGED TILES MUST BE IDENTIFIED & REPORTED TO OWNER'S REPRESENTATIVE BEFORE REMOVAL. REPLACE ANY DAMAGED TILES TO MATCH EXISTING.
- MEASURE & DOCUMENT EXISTING AIRFLOWS AT GRILLES / REGISTERS / DIFFUSERS TO BE RE-BALANCED. FINAL BALANCING REPORT MUST INCLUDE AS-FOUND AND FINAL AIRFLOW MEASUREMENTS.
- WHERE REPLACEMENT EQUIPMENT EXPOSES PREVIOUSLY UNFINISHED SURFACES, FINISH TO MATCH ADJACENT ASSEMBLIES.
- ALLOW FOR SCOPING OF EXISTING CONCEALED DRAINAGE PIPING TO VERIFY LOCATION & ROUTING.

GENERAL DEMOLITION NOTES: (APPLICABLE TO ALL DRAWINGS)

- ALL EXISTING EQUIPMENT TO REMAIN UNLESS IDENTIFIED OTHERWISE ON THE DRAWINGS, GENERAL NOTES OR SPECIFICATIONS.
- EXTENTS OF DEMOLITION SHOWN ARE APPROXIMATE AND THIS TRADE IS RESPONSIBLE FOR ALL DEMOLITION REQUIRED TO MEET DESIGN INTENT.
- REMOVE ALL UNUSED, ABANDONED OR REDUNDANT PIPING, HANGERS, & ACCESSORIES BACK TO SOURCE & CAP.
- COORDINATE WITH FACILITY MAINTENANCE DEPARTMENT FOR DISPOSAL OF REMOVED DEVICES. DISPOSE OF ALL UNWANTED DEVICES AS REQUIRED AS PER FACILITY STANDARDS.

PIPING LEGEND	
ITEM	DESCRIPTION
---	NEW ITEM
---	EXISTING ITEM TO REMAIN
-x-x-	EXISTING ITEM TO BE REMOVED
---	BELOW FLOOR PIPING
---	POTABLE (DOMESTIC) COLD WATER (DCW)
---	POTABLE (DOMESTIC) HOT WATER (DHW)
---	SANITARY DRAIN
---	GATE VALVE
---	BALL VALVE
---	BACKFLOW PREVENTER
---	DOUBLE CHECK VALVE ASSEMBLY
---	REDUCED PRESSURE ASSEMBLY
---	ELBOW TURNED UP
---	ELBOW TURNED DOWN
---	PIPE CAP
---	PIPE SINGLE LINE CUTOFF
---	FLOOR CLEAN OUT
---	FLOOR DRAIN; FFD: FUNNEL FLOOR DRAIN; HD: HUB DRAIN
---	NEW CONNECTION TO EXISTING

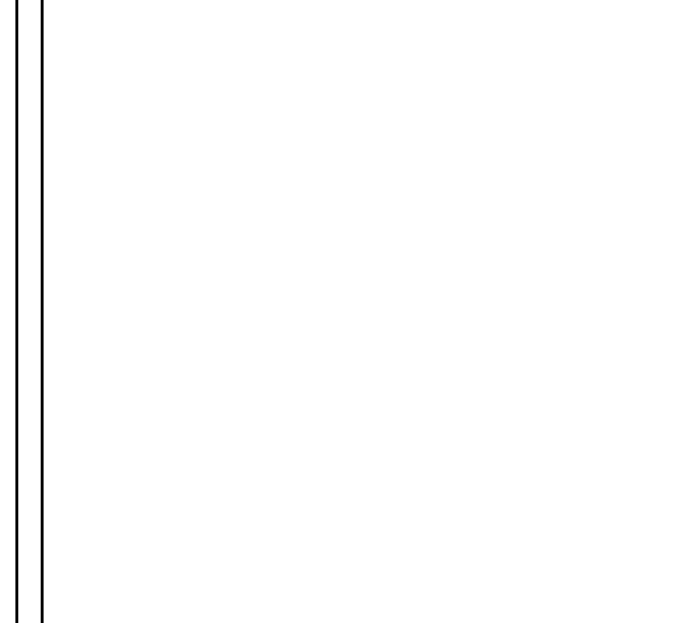
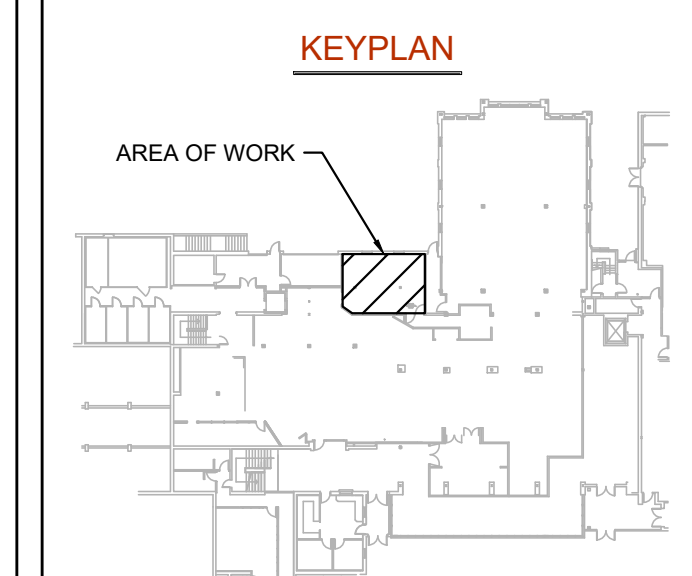
THIS IS A STANDARD LEGEND. ALL SYMBOLS MAY NOT NECESSARILY BE USED ON DRAWINGS.

DUCTWORK LEGEND	
SYMBOL	DESCRIPTION
---	NEW ITEM
---	EXISTING ITEM TO REMAIN
-x-x-	EXISTING ITEM TO BE REMOVED
REL	EXISTING ITEM TO BE RELOCATED
ER	EXISTING ITEM IN RELOCATED POSITION
EX	EXISTING ITEM TO REMAIN
---	DUCTWORK SHOWN DOUBLE LINE
---	BALANCING DAMPER
---	BACKDRAFT DAMPER
---	NEW CONNECTION TO EXISTING
---	SUPPLY AIR GRILLE
---	RETURN AIR GRILLE
---	SIDEWALL GRILLE CW BALANCE DAMPER TYPICAL AT ALL SIDEWALL GRILLES
---	EXTERNALLY INSULATED DUCT
---	DRAWING NOTE TAG
---	DIFFUSER TAG DIFFUSER/GRILLE SIZE (AND NECK SIZE WHERE APPLICABLE) AIR VOLUME (CFM OR L/S AS INDICATED) DIFFUSER/GRILLE DESIGNATION (REFER TO SCHEDULE FOR TYPE)
---	EQUIPMENT TAG EQUIPMENT TYPE EQUIPMENT NUMBER (REFER TO SCHEDULES FOR INFO)
---	NEW DIFFUSER NOTES SQUARE DIFFUSER (ROUND IF SHOWN) DUCT COLLAR CONNECTION SIZE AS PER GRILLE AND DIFFUSER SCHEDULE FLEXIBLE DUCT - MAX. 5'-0" (1.5M) DIFFUSER SUPPLY DUCT - TO BE THE SAME SIZE AS DIFFUSER COLLAR BALANCE DAMPER - TYPICAL AT ALL DIFFUSER SUPPLIES SUPPLY DUCT
---	EXISTING DIFFUSER NOTES EXISTING DIFFUSER - RELOCATE TO NEW LOCATION AS REQUIRED TO SUIT LAYOUT EXISTING BALANCE DAMPER - RE-BALANCE TO PROVIDE AIR CAPACITY INDICATED - PROVIDE DAMPER IF ONE DOES NOT EXIST. EXISTING/NEW SUPPLY DUCT PER DWGS

THIS IS A STANDARD LEGEND. ALL SYMBOLS MAY NOT NECESSARILY BE USED ON DRAWINGS.

Callidus Engineering
We Make Buildings Work

LONDON: 1385 North Routledge Park, Unit 9 London, ON N8H 5N5 P 519.472.7640
KINGSTON: 1471 John Counter Blvd, Unit 301 Kingston, ON K7M 8S8 P 613.900.0845
KITCHENER: 210-137 Glasgow Street, Office #141 Kitchener, ON N2G 4X8 P 519.472.7640
W www.callidus.ca E info@callidus.ca



REVISIONS		
NO.	ISSUED FOR	DATE
00	90% CLIENT REVIEW	23.09.15
01	FINAL CLIENT REVIEW	23.12.01
02	FINAL CLIENT REVIEW	23.12.22
03	PERMIT	24.01.16
04	CLIENT REVIEW	24.01.26
05	PERMIT AND TENDER	24.02.26

NORTH

LICENCED PROFESSIONAL ENGINEER
J. Gordon
24.02.26
PROVINCE OF ONTARIO

DESIGN	BCD	DRAWN	BCD
CHECKED	JRG	REVIEWED	JRG

PROJECT
WILFRID LAURIER UNIVERSITY DISH ROOM

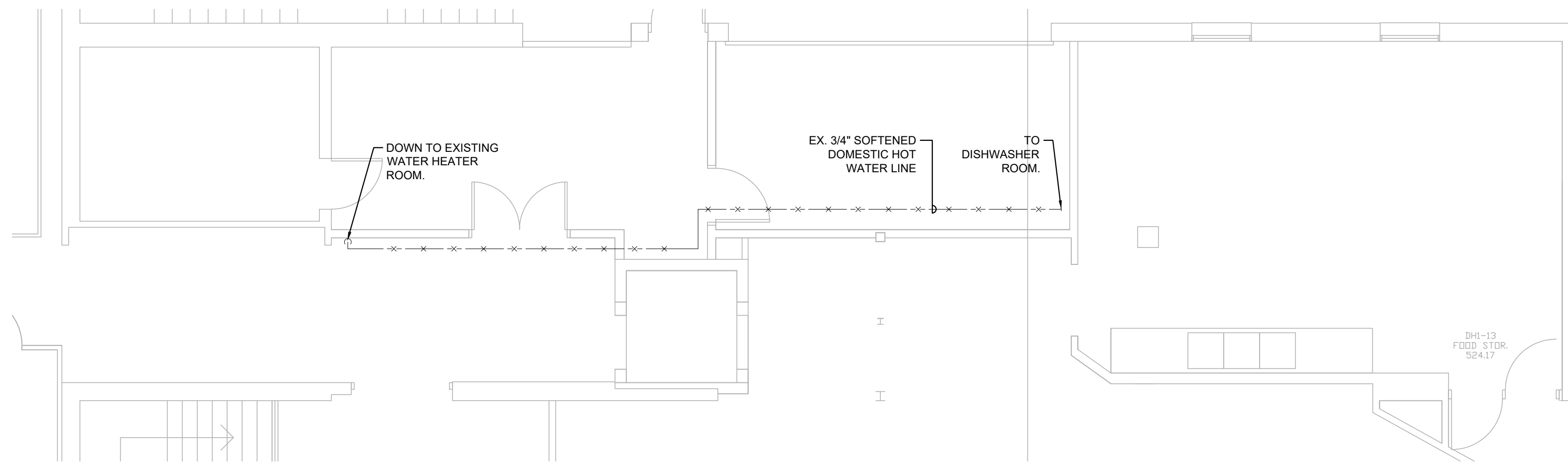
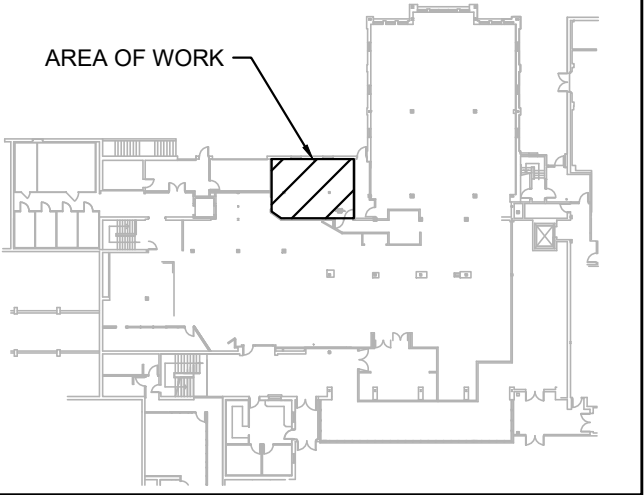
ADDRESS
75 UNIVERSITY AVE W,
WATERLOO, ON N2L 3C5

PROJECT NO.
CE-5716

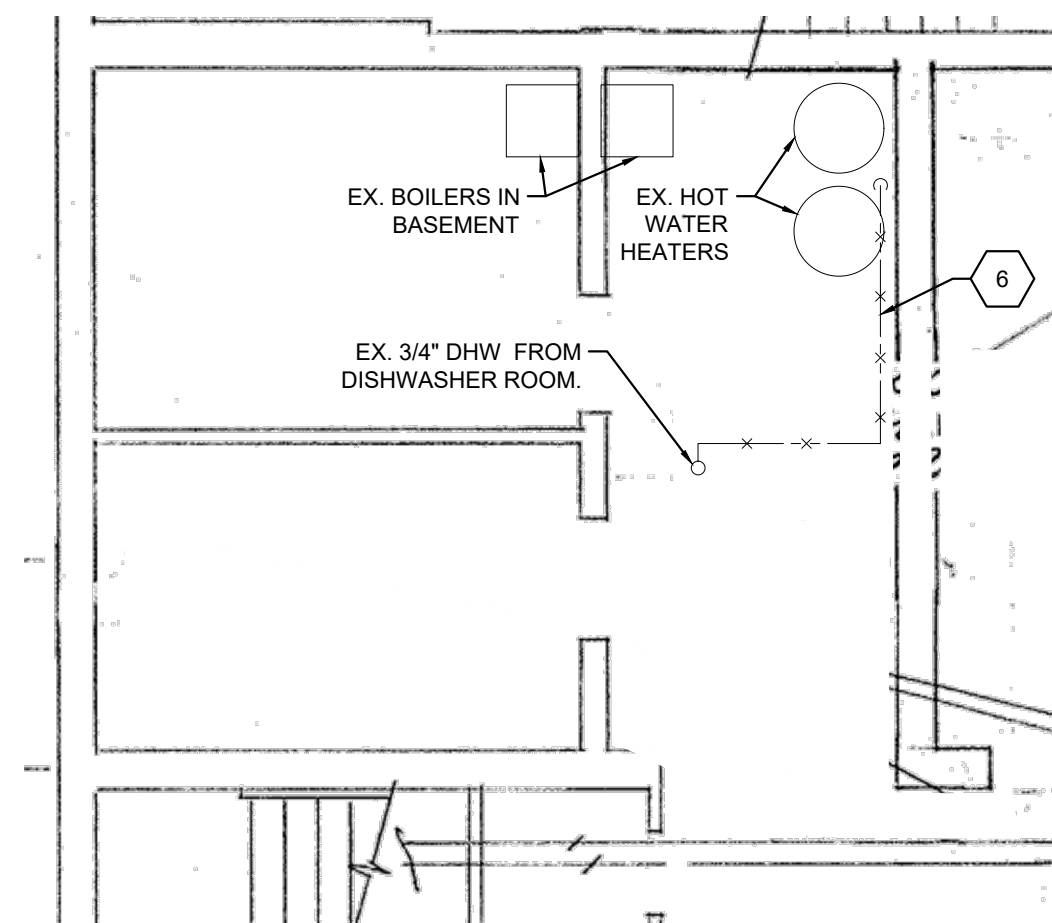
DRAWING TITLE
MECHANICAL SCHEDULES,
LEGENDS & GROUND FLOOR
PLAN - HVAC DEMO

DRAWING NUMBER
M1 OF 6

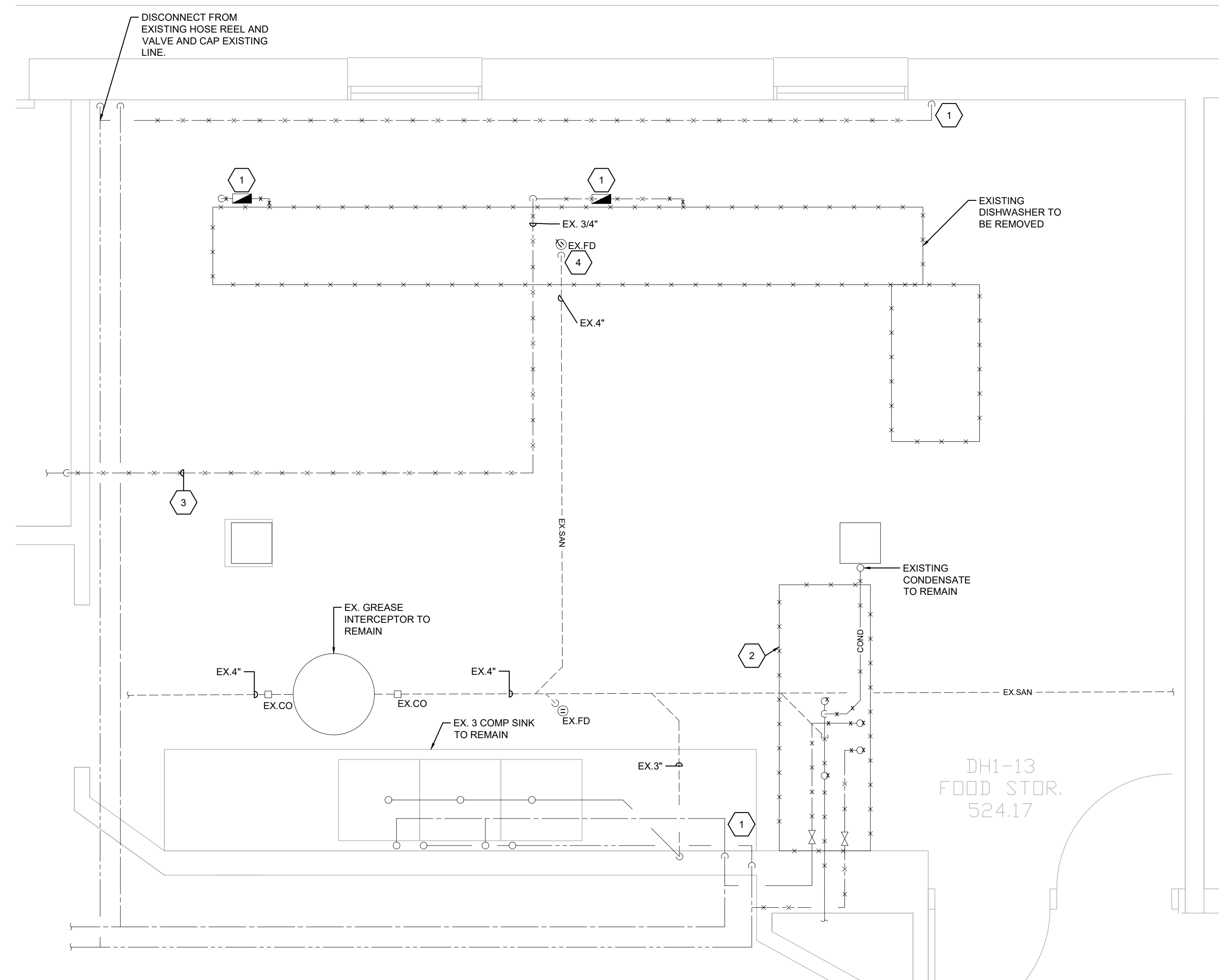
KEYPLAN



EXTENDED FIRST FLOOR PLAN - PLUMBING DEMO
SCALE: 3/16" = 1'-0"



BASEMENT FLOOR PLAN - PLUMBING DEMO
SCALE: 3/16" = 1'-0"



GROUND FLOOR PLAN - PLUMBING DEMO
SCALE: 1/2" = 1'-0"

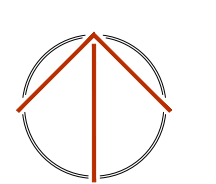
DEMO DRAWING NOTES (INDICATED WITH HEXAGONS):

1. REMOVE EXISTING BACKFLOW PREVENTORS AND HOSE REEL BEHIND THE EXISTING DISH MACHINE AND RETURN THEM TO THE FACILITY TEAM.
2. REMOVE EXISTING TWO COMPARTMENT SINK AND HAND OVER TO FACILITY. CAP EXISTING SANITARY PIPING IN WALL OR FLUSH WITH FLOOR AFTER REMOVAL OF PLUMBING FIXTURE. EXISTING DOMESTIC WATER PIPING TO BE REMOVED BACK TO MAIN AND CAPPED.
3. REMOVE EXISTING DEDICATED 3/4" DOMESTIC HOT WATER LINE TO THE DISHWASHER BACK TO THE MAIN BRANCH OFF THE WATER TANKS.
4. REMOVE EXISTING FLOOR DRAIN. TEMPORARILY CAP EXISTING LINE FOR USE WITH NEW DISHWASHER LINEUP. SEE DRAWING M3 FOR REQUIRED MODIFICATIONS.
5. TRACE AND CONFIRM ROUTING ON SITE PRIOR TO DEMOLITION.
6. REMOVE EXISTING 3/4" DHW LINE FROM HERE TO EXISTING CONNECTION AT DISHWASHER.

REVISIONS

NO.	ISSUED FOR	DATE
00	90% CLIENT REVIEW	23.09.15
01	FINAL CLIENT REVIEW	23.12.01
02	FINAL CLIENT REVIEW	23.12.22
03	PERMIT	24.01.16
04	CLIENT REVIEW	24.01.26
05	PERMIT AND TENDER	24.02.26

NORTH



DESIGN	BCD	DRAWN	BCD
CHECKED	JRG	REVIEWED	JRG

PROJECT

WILFRID LAURIER
UNIVERSITY DISH ROOM

ADDRESS

75 UNIVERSITY AVE W,
WATERLOO, ON N2L 3C5

PROJECT NO.

CE-5716

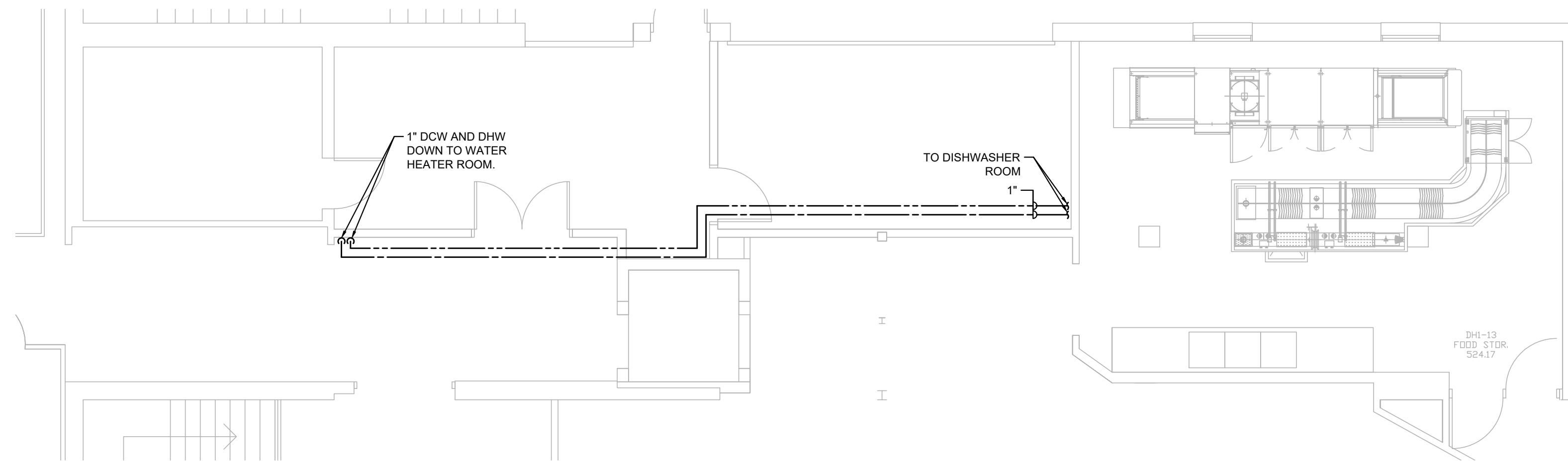
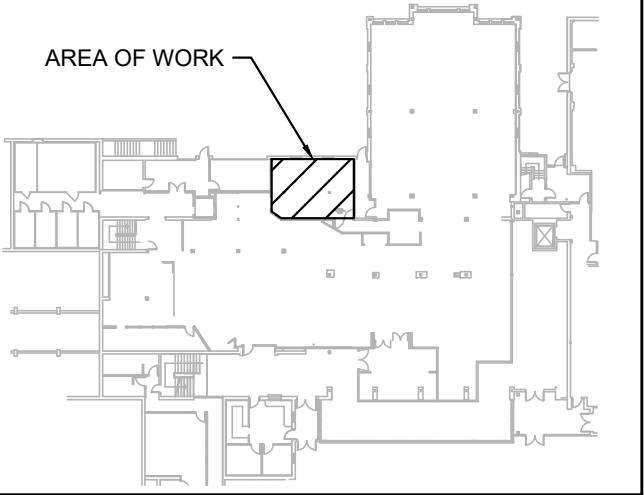
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PARTIAL BASEMENT/GROUND
FLOOR PLAN - PLUMBING
DEMO

DRAWING NUMBER

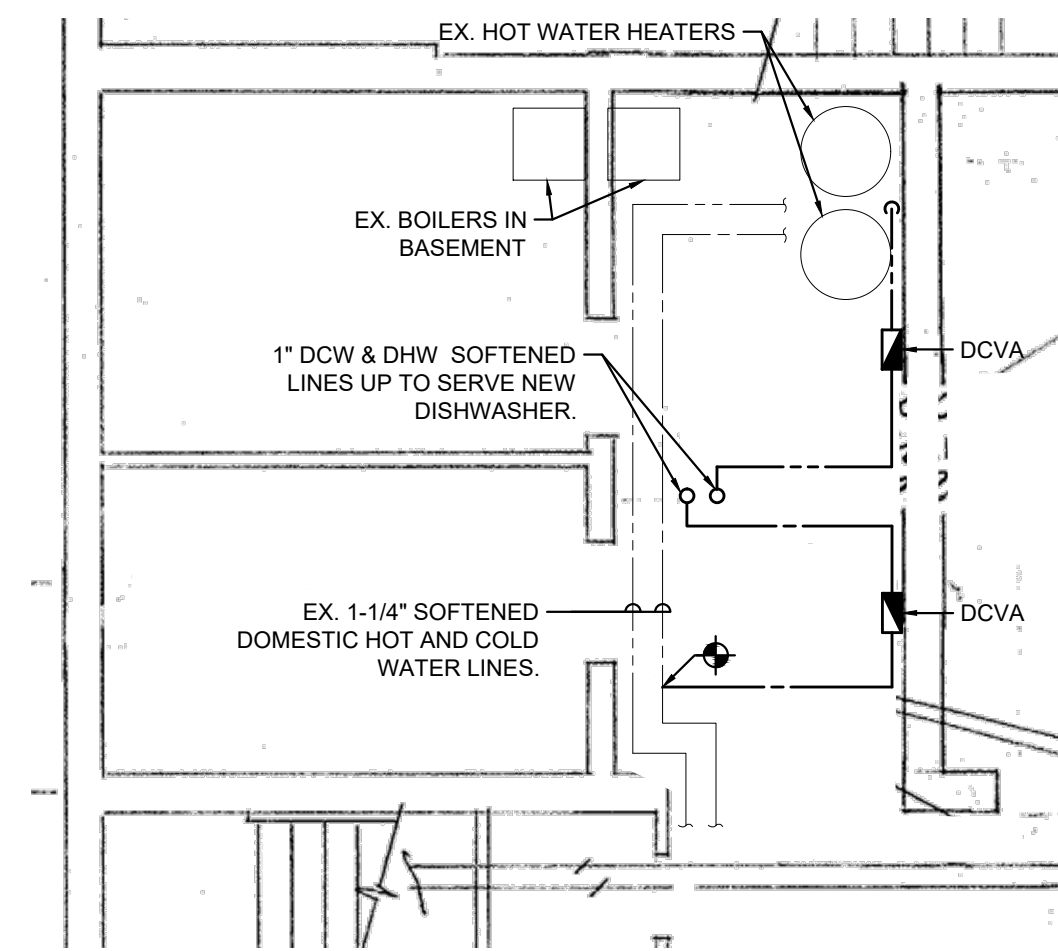
M2 OF 6

KEYPLAN



EXTENDED FIRST FLOOR PLAN - PLUMBING

SCALE: 3/16" = 1'-0"



BASEMENT FLOOR PLAN - PLUMBING

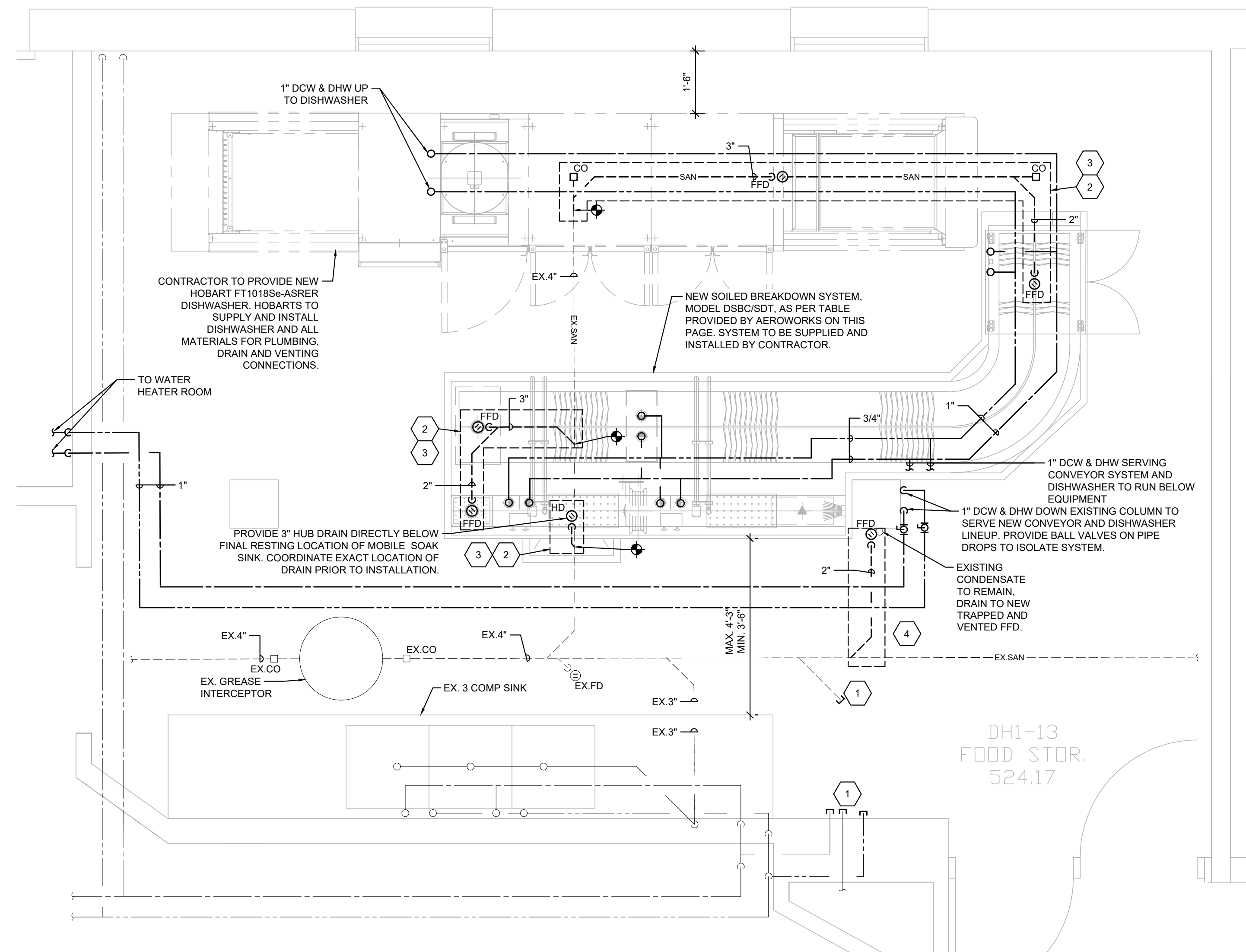
SCALE: 3/16" = 1'-0"

SOILED BREAKDOWN SYSTEM EQUIPMENT					
EQUIPMENT	MODEL NUMBER	QTY	DCW (ID)	DHW (ID)	SAN (ID)
SOILED DISH TABLE	SDT	1	1/2" (QTY. 2)	1/2" (QTY. 2)	1 1/2"
DOUBLE SLAT BELT ACCUMULATION CONVEYOR	DSBC	1	1/2" AT DRIVE CABINET	1/2" AT DRIVE CABINET	1-1/2" AT DRIVE CABINET 1-1/2" AT TAIL TANK
HOSE CLEAN UP STATION	HRA-30	1	1/2"	1/2"	
MOBILE SOAK SINK	SS2323	1			
S/S TABLE	S/S TABLE	1			

DISHWASHING EQUIPMENT CONTACT LIST

AEROWORKS - CONVEYOR SYSTEM
HENIK PATEL - HENIK@AEROWORKS.COM

HOBART - DISHWASHER SYSTEM
RYLEY MARTINELL - RYLEY.MARTINELL@HOBARTS.CA
437-772-1948



GROUND FLOOR PLAN - PLUMBING

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

DRAWING NOTES (INDICATED WITH HEXAGONS):

- CAP EXISTING SANITARY PIPING IN WALL OR FLUSH WITH FLOOR.
- TRENCH FLOOR AS REQUIRED TO CONNECT DRAINS TO PROPOSED DISHWASHER AND CONVEYOR SYSTEMS.
- SANITARY CONNECTIONS TO PROPOSED DISHWASHER AND CONVEYOR SYSTEMS TO BE TRAPPED AND VENTED. VENTS TO RUN UNDER SLAB TO RISE TIGHT TO WALL OR COLUMN.
- TRENCH FLOOR AS REQUIRED TO CONNECT TO EXISTING CONDENSATE LINE FROM ABOVE. TRAP AND VENT AS REQUIRED BY CODE.

COMBUSTIBLE PIPING MATERIALS SHALL COMPLY WITH OBC 3.1.5.16.

ALL MATERIALS WITHIN A FLOOR OR ROOF ASSEMBLY USED AS A RETURN AIR PLENUM SHALL HAVE A FLAME-SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE DEVELOPED CLASSIFICATION OF NOT MORE THAN 50. EXPOSED WOOD AND WOOD FRAMING IS NOT PERMITTED WITHIN A RETURN AIR PLENUM AS PER OBC 3.6.4.3.

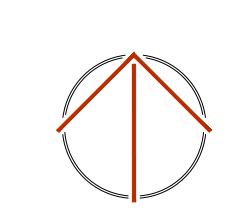
REVIEW ALL PROPOSED FIRE STOPPING SYSTEMS WITH THE BUILDING INSPECTOR ON SITE PRIOR TO ANY INSTALLATIONS.

ALL PLUMBING FIXTURES MUST BE CSA APPROVED TO THE APPLICABLE TEST STANDARD LISTED IN OBC 7.2.2.2. SUBMIT CSA APPROVAL DOCUMENTATION TO THE BUILDING INSPECTOR UPON REQUEST.

REVISIONS

NO.	ISSUED FOR	DATE
00	90% CLIENT REVIEW	23.09.15
01	FINAL CLIENT REVIEW	23.12.01
02	FINAL CLIENT REVIEW	23.12.22
03	PERMIT	24.01.16
04	CLIENT REVIEW	24.01.26
05	PERMIT AND TENDER	24.02.26

NORTH



DESIGN	BCD	DRAWN	BCD
CHECKED	JRG	REVIEWED	JRG

PROJECT

WILFRID LAURIER
UNIVERSITY DISH ROOM

ADDRESS

75 UNIVERSITY AVE W,
WATERLOO, ON N2L 3C5

PROJECT NO.

CE-5716

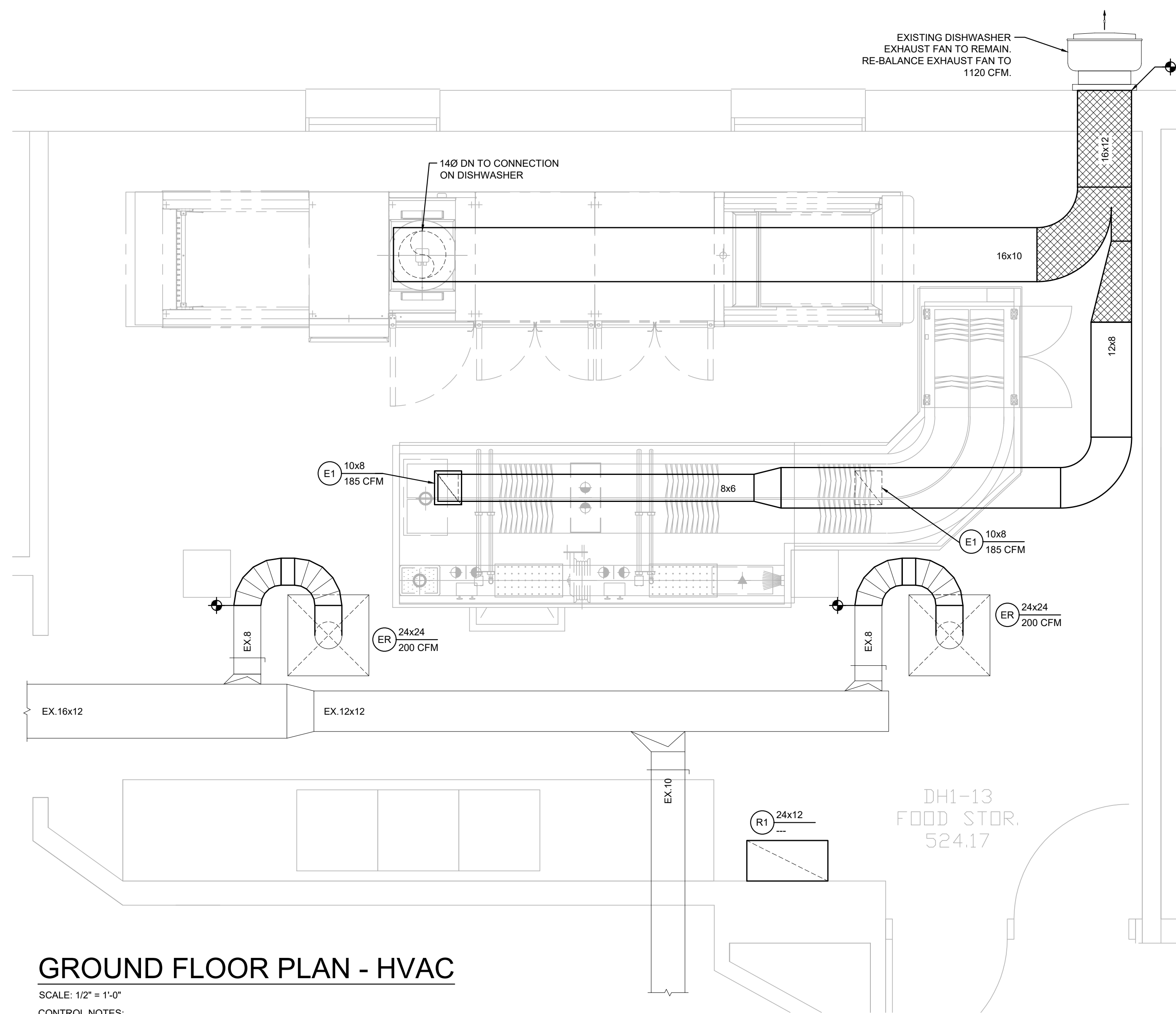
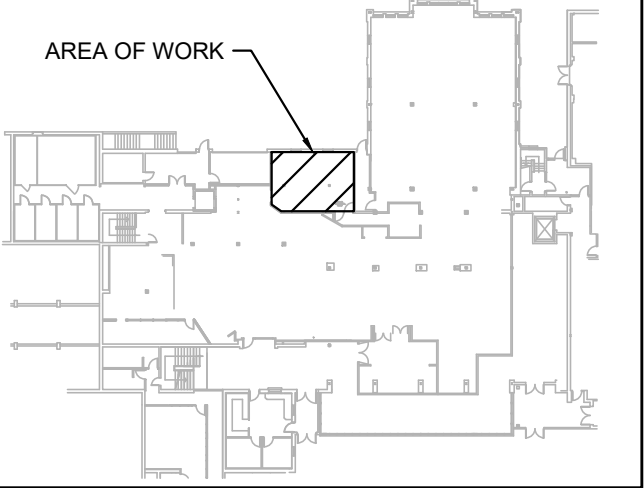
DRAWING TITLE

PARTIAL BASEMENT/GROUND
FLOOR PLAN - PROPOSED
PLUMBING

DRAWING NUMBER

M3 OF 6

KEYPLAN



GROUND FLOOR PLAN - HVAC

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

CONTROL NOTES:

1. GENERAL

- REFER TO DRAWINGS AND SCHEMATICS FOR DEVICE AND EQUIPMENT LOCATIONS.

EXHAUST SYSTEM:
EXISTING DISHWASHER EXHAUST FAN

GENERAL

- COORDINATE OCCUPANCY SCHEDULE WITH OWNER PRIOR TO PROGRAMMING TIME CLOCK

CONTROL DEVICES:

- PROGRAMMABLE 7-DAY DIGITAL TIME CLOCK

OPERATING SEQUENCE:

- ENERGIZE / DE-ENERGIZE FAN ON OFF FROM TIMECLOCK

ALL MATERIALS WITHIN A FLOOR OR ROOF ASSEMBLY USED AS A RETURN AIR PLENUM SHALL HAVE A FLAME-SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED CLASSIFICATION OF NOT MORE THAN 50. EXPOSED WOOD AND WOOD FRAMING IS NOT PERMITTED WITHIN A RETURN AIR PLENUM AS PER OBC 3.6.4.3.

REVISIONS

NO.	ISSUED FOR	DATE
00	90% CLIENT REVIEW	23.09.15
01	FINAL CLIENT REVIEW	23.12.01
02	FINAL CLIENT REVIEW	23.12.22
03	PERMIT	24.01.16
04	CLIENT REVIEW	24.01.26
05	PERMIT AND TENDER	24.02.26

NORTH

DESIGN	BCD	DRAWN	BCD
CHECKED	JRG	REVIEWED	JRG

PROJECT

WILFRID LAURIER
UNIVERSITY DISH ROOM

ADDRESS

75 UNIVERSITY AVE W,
WATERLOO, ON N2L 3C5

PROJECT NO.

CE-5716

DRAWING TITLE

PARTIAL GROUND FLOOR
PLAN - PROPOSED HVAC

DRAWING NUMBER

M4 OF 6

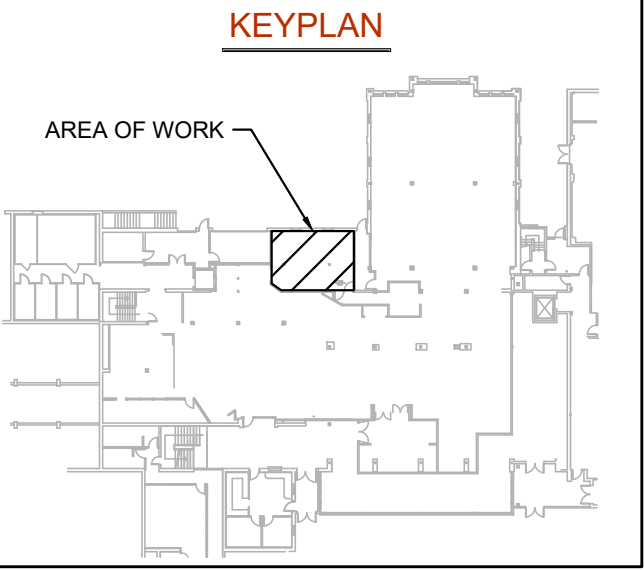


Table with 3 columns: NO., ISSUED FOR, DATE. Lists revision history from 01 to 05.

REVISIONS

Table with 3 columns: NO., ISSUED FOR, DATE. Lists revision history from 01 to 05.



Table with 4 columns: DESIGN, BCD, DRAWN, BCD. Shows design and drawing status.

PROJECT WILFRID LAURIER UNIVERSITY DISH ROOM

ADDRESS 75 UNIVERSITY AVE W, WATERLOO, ON N2L 3C5

PROJECT NO. CE-5716

DRAWING TITLE SPECIFICATIONS - MECHANICAL

DRAWING NUMBER M5 OF 6

Main specifications table with columns for section numbers (1.1 to 4.3.3.1.3.2), descriptions, and references. Includes sections for Mechanical General Requirements, Insulation, Piping, and Hangers.

COMBUSTIBLE PIPING MATERIALS SHALL COMPLY WITH OBC 3.1.5.16.

6. AIR DISTRIBUTION SYSTEM:

6.1. DUCTWORK:

6.1.1. GENERAL:

- 6.1.1.1. PROVIDE DUCTWORK CONSTRUCTED TO SMACNA 250 PA (1" W.G.) PRESSURE CLASSIFICATION & SEAL CLASS A. FOLLOW ALL OF THE LATEST SMACNA REQUIREMENTS.
- 6.1.1.2. SEAL ALL DUCT JOINTS AND CONNECTIONS TO DIFFUSERS AND EQUIPMENT WITH HIGH VELOCITY WATER BASED DUCT SEALER.
- 6.1.1.3. PROVIDE DUCTS OF SIZES INDICATED ON DRAWINGS. WHERE DUCTS ARE TO BE FURNISHED WITH ACOUSTIC DUCT INSULATION, ADJUST DUCT SIZE TO ACCOMMODATE THICKNESS. WITH CLEAR INSIDE DIMENSIONS AS INDICATED ON DRAWINGS.
- 6.1.1.4. CONTINUOUSLY SOLDER OR SEAL JOINTS IN EXTERIOR AIR INTAKE DUCTS AND PLENUMS TO PREVENT DRIPPING OF MOISTURE.
- 6.1.1.5. PROVIDE DUCTWORK OF GALVANIZED STEEL SHEET UNLESS INDICATED OTHERWISE.
- 6.1.1.6. DUCTWORK ASPECT RATIOS CAN BE ADJUSTED TO A MAXIMUM OF 4:1 WHILE KEEPING AT LEAST THE SAME CROSS SECTIONAL AREA. TO AVOID INTERFERENCES, AS REQUIRED.

6.1.2. RECTANGULAR DUCTWORK:

- 6.1.2.1. FOR LONGITUDINAL JOINTS ON RECTANGULAR DUCTWORK, FURNISH PITTSBURGH LOCK JOINTS TIGHTLY CLOSED ALONG FULL LENGTH OF SEAM.
- 6.1.2.2. CROSS-BREAK FLAT SURFACES BETWEEN JOINTS, OR BETWEEN JOINTS AND INTERMEDIATE REINFORCEMENTS, TO PREVENT VIBRATION OR BUCKLING.
- 6.1.2.3. WHERE ELBOWS ARE INDICATED AS SQUARE TYPE, PROVIDE AIR TURNING VANES OF DOUBLE BLADE CONSTRUCTION.

6.1.3. FLEXIBLE TYPE ROUND DUCTWORK:

- 6.1.3.1. FURNISH FLEXIBLE TYPE ROUND DUCTWORK BETWEEN TRUNK SUPPLY DUCT AND CEILING DIFFUSERS AND WHERE INDICATED ON DRAWINGS (MAXIMUM 1,500 MM (5') LENGTH). REFER TO DETAIL ON DRAWING.
- 6.1.3.2. PROVIDE FLEXIBLE DUCT OF POLYMERIC LINER BONDED TO WIRE SPIRAL. WHERE INSTALLED IN CEILING SPACE USED AS A RETURN PLENUM, DUCTS SHALL MEET BUILDING CODE FLAME SPREAD AND SMOKE DEVELOPMENT REQUIREMENTS.
- 6.1.3.3. FLEXIBLE TYPE ROUND DUCTWORK EXPOSED TO VIEW IS NOT ACCEPTABLE.

6.1.4. DISHWASHER EXHAUST DUCTWORK: FABRICATE EXHAUST DUCTWORK FROM DISHWASHER UNIT OR HOOD THROUGH EXHAUST FAN TO ATMOSPHERE. INCLUDING FIRE DAMPERS, FROM 0.5 MM (26 GA) STAINLESS STEEL SHEET TYPE 304 TO ASTM A 167-99 WITH 2B FINISH. FURNISH DRIVE SLIP, S-SLIP OR 25 MM (1") POCKET SLIP TRANSVERSE JOINTS AT 2,400 MM (8'-0") OC. FURNISH PITTSBURGH SEAM OR DOUBLE SEAM LONGITUDINAL JOINTS. BRAZE ALL JOINTS IN BOTTOM SECTIONS OF HORIZONTAL DUCTWORK.

6.1.5. SUPPORTS AND HANGERS:

- 6.1.5.1. RECTANGULAR DUCTWORK:
 - 6.1.5.1.1. FOR DUCTS UP TO 760 MM (30") WIDE: FURNISH STRAP HANGERS OF GALVANIZED SHEET STOCK WITH EDGES FOLDED OVER. BEND STRAP HANGER AROUND BOTTOM OF DUCT FOR MINIMUM OF 38 MM (1-1/2") AND ATTACH TO SIDES AND BOTTOM OF DUCT.
- 6.1.5.2. ROUND DUCTWORK:
 - 6.1.5.2.1. FOR DUCTS UP TO 900 MM (36") DIAMETER: FURNISH STRAP BAND AND HANGER OF 25 MM (1") X 20 GA. GALVANIZED SHEET STOCK WITH EDGES FOLDED OVER. BAND IS TO FIT TIGHT TO DUCT ALL AROUND AND CONNECT TO HANGER STRAP WITH LOAD RATED FASTENER.

6.2. DIFFUSERS, REGISTERS AND GRILLES:

- 6.2.1. REFER TO SCHEDULE AND TAGS ON DRAWINGS FOR ACCESSORIES, NECK SIZE, DIMENSIONS AND CAPACITY.
- 6.2.2. COORDINATE PLACEMENT OF DIFFUSERS, REGISTERS AND GRILLES IN CEILINGS WITH ELECTRICAL AND CEILING INSTALLATION TRADES AND EXACT LOCATION TO FINAL APPROVAL OF CONSULTANT.
- 6.2.3. PROVIDE FRAME ACCESSORIES AS REQUIRED TO SUIT CEILING AND WALL CONSTRUCTION. COORDINATE WITH ARCHITECTURAL DRAWINGS.

6.3. SHEET METAL SPECIALTIES:

- 6.3.1. BALANCING DAMPERS:
 - 6.3.1.1. LOCKING QUADRANT BALANCING DAMPERS, MANUALLY OPERATED OPPOSED BLADE TYPE, OR BUTTERFLY BLADE TYPE, FABRICATED FROM GALVANIZED STEEL SHEET. PROVIDE WHERE INDICATED ON DRAWINGS AND AS REQUIRED TO ALLOW FOR SYSTEM BALANCING.
- 6.3.2. ACCESS DOORS: PROVIDE ACCESS DOORS IN DUCTWORK AND PLENUMS TO ALLOW SERVICING, MAINTENANCE AND INSPECTION OF CONTROL DAMPERS, FIRE DETECTORS, BOTH SIDES OF FIRE AND FIRE/SMOKE DAMPERS, CONTROL ELEMENTS, BEARINGS AND AS INDICATED ON DRAWINGS. FURNISH ACCESS DOORS AT LEAST 300 MM X 150 MM (12" X 6") UNLESS DUCT DIMENSIONS PREVENT.
- 6.3.3. FLEXIBLE DUCT CONNECTIONS: 75 MM (3") WIDE LISTED FIRE RETARDENT NEOPRENE COATED WOVEN GLASS FIBRE FABRIC TO NFPA 701, CRIMPED INTO 75 MM (3") 24 GA. (0.6MM) GALVANIZED STEEL EDGING STRIPS. MANUFACTURED TO SMACNA STANDARDS

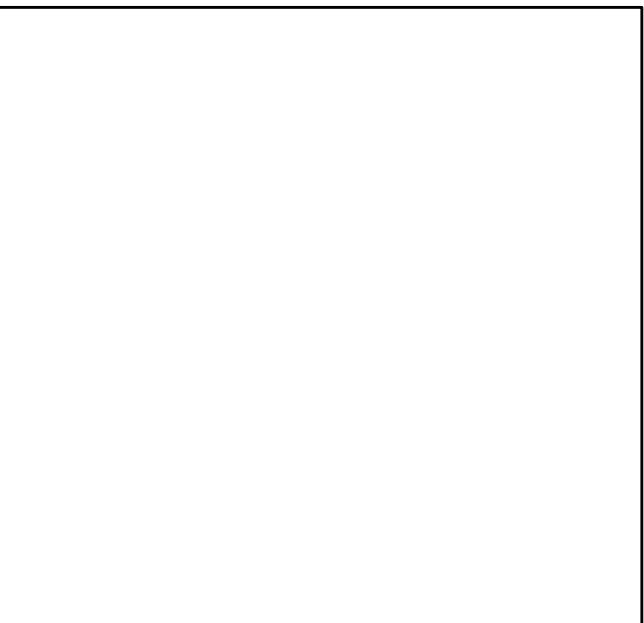
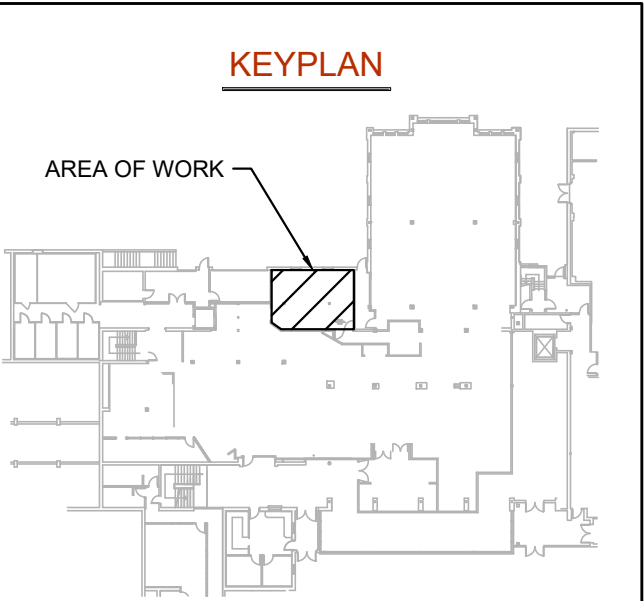
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REVISIONS

NO.	ISSUED FOR	DATE
00	90% CLIENT REVIEW	23.09.15
01	FINAL CLIENT REVIEW	23.12.01
02	FINAL CLIENT REVIEW	23.12.22
03	PERMIT	24.01.16
04	CLIENT REVIEW	24.01.26
05	PERMIT AND TENDER	24.02.26

NORTH

LICENCED PROFESSIONAL ENGINEER
J. Gordon
24.02.26
PROVINCE OF ONTARIO

DESIGN	BCD	DRAWN	BCD
CHECKED	JRG	REVIEWED	JRG

PROJECT
WILFRID LAURIER
UNIVERSITY DISH ROOM

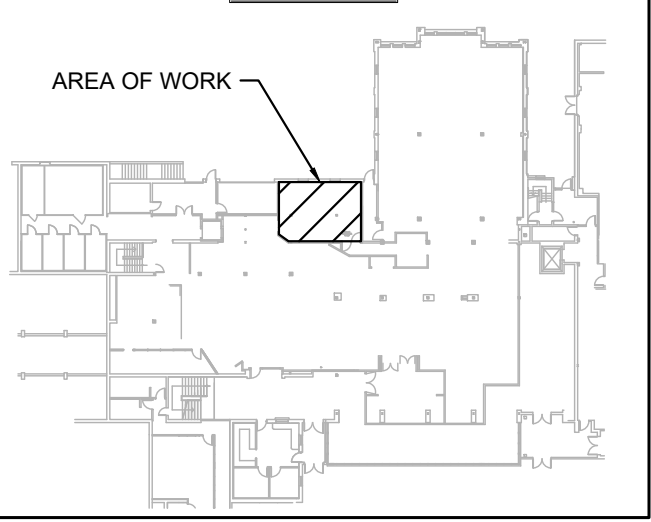
ADDRESS
75 UNIVERSITY AVE W,
WATERLOO, ON N2L 3C5

PROJECT NO.
CE-5716

DRAWING TITLE
SPECIFICATIONS CONT'D -
MECHANICAL

DRAWING NUMBER
M6 OF 6

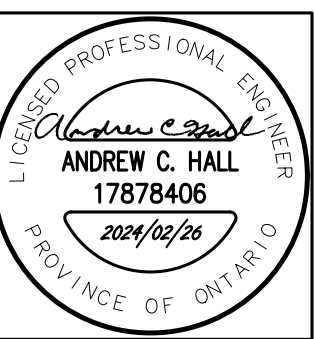
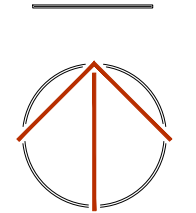
KEYPLAN



REVISIONS

NO.	ISSUED FOR	DATE
00	90% CLIENT REVIEW	23.09.15
01	FINAL CLIENT REVIEW	23.12.01
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05	PERMIT AND TENDER	24.02.26

NORTH



DESIGN	SPO	DRAWN	SPO/AV
CHECKED	ACH	REVIEWED	ACH

PROJECT

WILFRID LAURIER UNIVERSITY DISH ROOM

ADDRESS

75 UNIVERSITY AVE W,
WATERLOO, ON N2L 3C5

PROJECT NO.

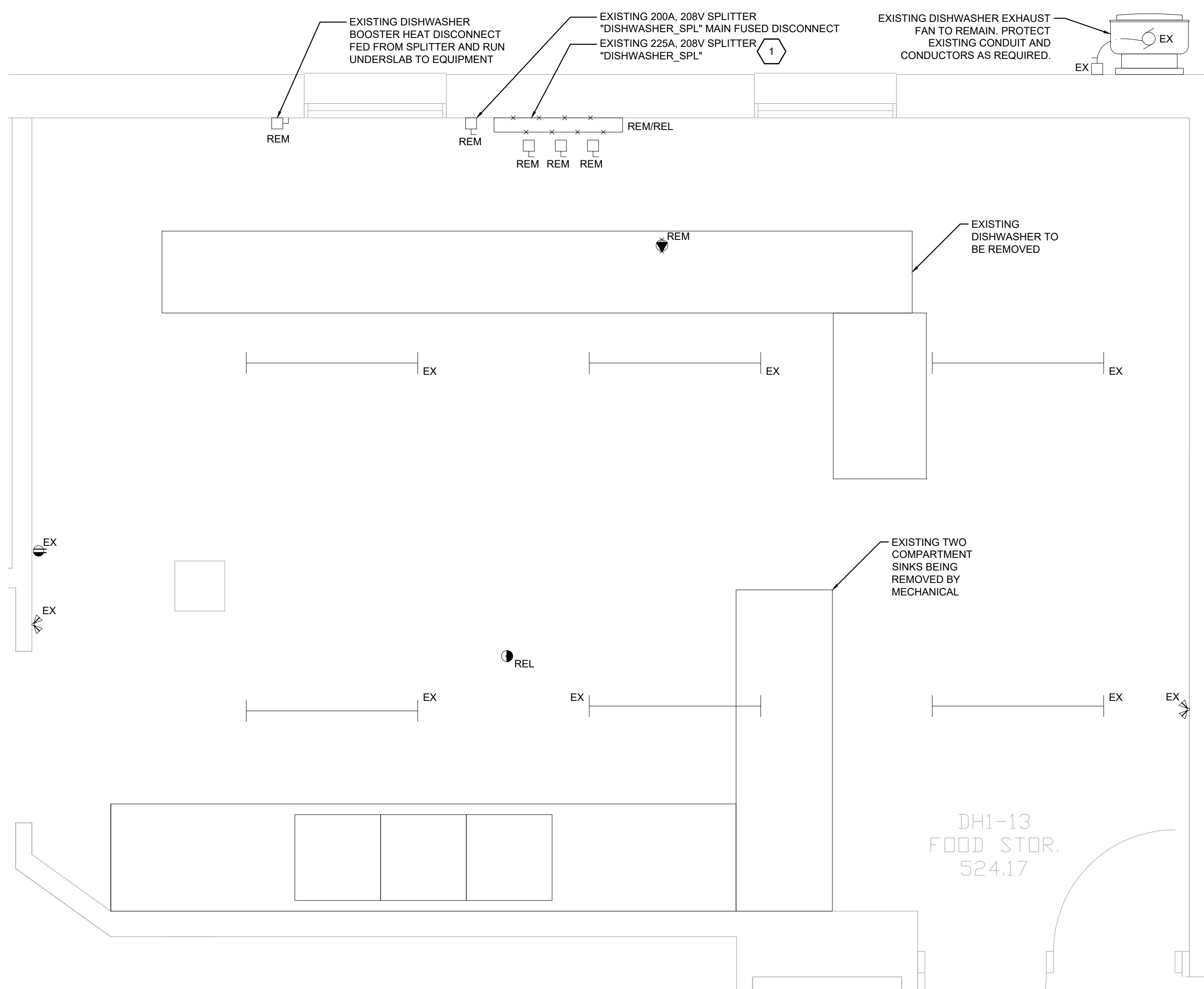
CE-5716

DRAWING TITLE

GROUND FLOOR PLANS,
SCHEDULES, NOTES, &
LEGEND

DRAWING NUMBER

E1 OF 2



GROUND FLOOR PLAN - DEMOLITION POWER AND SYSTEMS

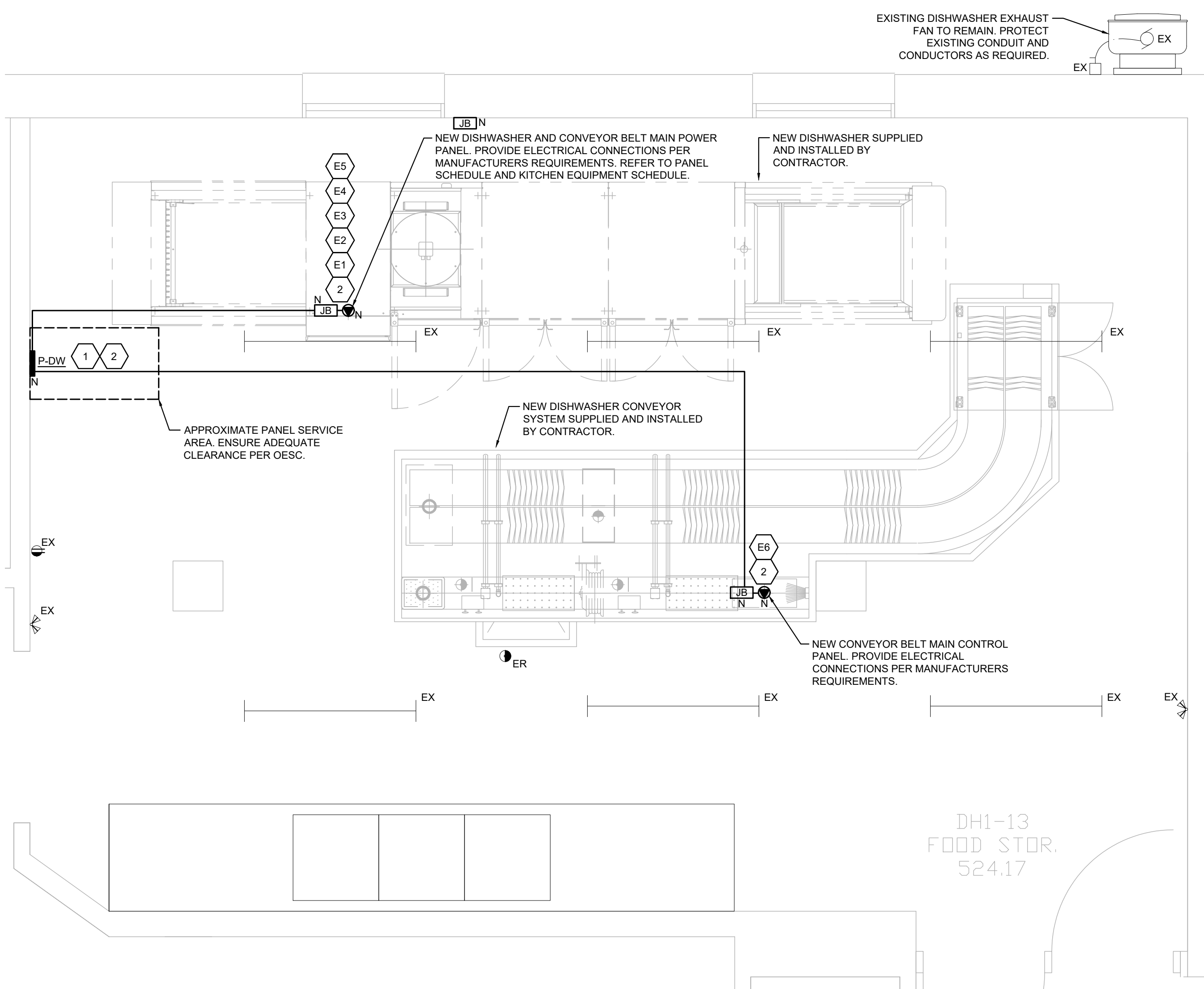
SCALE: 1/2" = 1'-0"

DEMOLITION DRAWING NOTES (INDICATED WITH HEXAGONS):

1. PROTECT EXISTING FEED TO SPLITTER 'DISHWASHER_SPLT' FOR RECONNECTION TO NEW PANEL 'P-DW'.

GENERAL DRAWING NOTES (APPLICABLE TO ALL DRAWINGS):

1. EXISTING LIGHTING AND LIGHTING CONTROL TO REMAIN.
2. ALL EXISTING ELECTRICAL EQUIPMENT TO REMAIN UNLESS OTHERWISE IDENTIFIED ON THE DRAWINGS, GENERAL NOTES, OR SPECIFICATIONS.
3. NOT ALL EXISTING ELECTRICAL DEVICES SHOWN. EXISTING CONDITIONS SHOWN ARE LIMITED TO A VISUAL SITE TAKEOFF BY CALLIDUS ENGINEERING AND A REVIEW OF HISTORICAL DRAWINGS PROVIDED BY WLU. CONTRACTOR TO ATTEND SITE PRIOR TO PRICING AND FLAG ANY SITE CONDITIONS IMPACTING THE SCOPE OF WORK TO THE CONSULTANT.
4. COORDINATE WITH FACILITY MAINTENANCE DEPARTMENT FOR DISPOSAL OF REMOVED DEVICES. DISPOSE OF ALL UNWANTED DEVICES AS REQUIRED PER FACILITY STANDARDS.
5. DISCONNECT AND MAKE SAFE EQUIPMENT FOR REMOVAL BY MECHANICAL. COORDINATE WITH MECHANICAL TRADE AND NEW EQUIPMENT SUPPLIER FOR SCHEDULING OF DISCONNECTION OF EXISTING EQUIPMENT AND POWER ROUGH IN TO NEW EQUIPMENT.



GROUND FLOOR PLAN - PROPOSED POWER AND SYSTEMS

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

PROPOSED DRAWING NOTES (INDICATED WITH HEXAGONS):

1. REPLACE EXISTING 'DISHWASHER_SPLT' 208V 225A RATED SPLITTER AND ASSOCIATED DISCONNECTS WITH NEW 200A PANEL 'P-DW' AND NEW OVERCURRENT DEVICES FOR NEW HOBART DISHWASHING MACHINE. CONFIRM NAMING CONVENTION WITH FACILITY PRIOR TO APPLYING PERMANENT LABELS. REUSE EXISTING FEED TO 'DISHWASHER_SPLT' FOR NEW PANEL FROM DISTRIBUTION PANEL 'DH_PNL', SUBJECT TO OESC COMPLIANCE. MODIFY AND EXTEND EXISTING CONDUCTORS AND CONDUIT AS REQUIRED. REFER TO PANEL SCHEDULE FOR DETAILS.
2. POWER FOR DISHWASHER/CONVEYER BELT ASSEMBLY COMPONENTS TO BE RUN FROM NEW PANEL, OVERHEAD IN CEILING SPACE, TO JUNCTION BOX IN CEILING THEN TO FLEXIBLE CABLE DOWN TO EQUIPMENT MAIN POWER CONTROL PANEL. CONFIRM POWER CONNECTION TYPES AND LOCATIONS WITH FINAL EQUIPMENT SHOP DRAWINGS AND EQUIPMENT INSTALLER (HOBART). PROVIDE STRAIN RELIEF (KELLEM GRIP OR EQUIVALENTS) TO INDIVIDUAL FLEX DROPS TO EQUIPMENT AS REQUIRED. CONTRACTOR TO PROVIDE 24" X 4" STAINLESS STEEL WIRE MESH CABLE TRAY FROM CEILING TO CONTROL PANEL FOR SUPPORTING OF POWER CABLES AND PIPING. CABLE TRAY TO BE CABLOFIL OR APPROVED EQUAL. CONFIRM EXACT REQUIREMENTS AND DIMENSIONS WITH DISHWASHER AND CONVEYOR EQUIPMENT MANUFACTURERS.
3. RELOCATE EXISTING FIRE DETECTOR AS REQUIRED FOR NEW MECHANICAL WORK. COORDINATE WITH MECHANICAL DRAWINGS AND TRADE TO FINALIZE RELOCATION ONSITE. RE-VERIFY DEVICE IF REQUIRED.

PANEL: P-DW	VOLTS: 208 / 120	MAINS: 200 Amps, Main Breaker Amps
PH/Wire: 3 / 3		A.I.C.: TBC
FED FROM: DH_PNL	TYPE: BCP	MOUNTING: Surface, NEMA 3R ENCLOSURE

kW	Type	DESCRIPTION / LOCATION	OCD			CCT			LOAD			kW	
			A	P	P	NO.	Ph	CCT	NO.	P	A		Type
3.49	EQU	DISHWASHER - MOTOR AND CONTROLS (1TB)	40	3		1	a	2			EQU	DISHWASHER - DUAL RINSE (4TB)	3.57
3.49	EQU	DISHWASHER - MOTOR AND CONTROLS (1TB)				3	b	4	3	40	EQU	DISHWASHER - DUAL RINSE (4TB)	3.57
3.49	EQU	DISHWASHER - MOTOR AND CONTROLS (1TB)				5	c	6			EQU	DISHWASHER - DUAL RINSE (4TB)	3.57
5.77	EQU	DISHWASHER - ELECTRIC TANK HEAT (2TB)	70	3		7	a	8			EQU	DISHWASHER - ELECTRIC BOOSTER (5TB)	5.00
5.77	EQU	DISHWASHER - ELECTRIC TANK HEAT (2TB)				9	b	10	3	60	EQU	DISHWASHER - ELECTRIC BOOSTER (5TB)	5.00
5.77	EQU	DISHWASHER - ELECTRIC TANK HEAT (2TB)				11	c	12			EQU	DISHWASHER - ELECTRIC BOOSTER (5TB)	5.00
5.77	EQU	DISHWASHER - ELECTRIC TANK HEAT (3TB)	70	3		13	a	14	2	15	EQU	CONVEYOR BELT - MAIN CONTROL PANEL	1.00
5.77	EQU	DISHWASHER - ELECTRIC TANK HEAT (3TB)				15	b	16			EQU	CONVEYOR BELT - MAIN CONTROL PANEL	1.00
5.77	EQU	DISHWASHER - ELECTRIC TANK HEAT (3TB)				17	c	18					
						19	a	20					
						21	b	22					
						23	c	24					
						25	a	26					
						27	b	28					
						29	c	30					
						31	a	32					
						33	b	34					
						35	c	36					
						37	a	38					
						39	b	40					
						41	c	42					

Phase kW	a	b	c	total kW	Max. Demand	54.6 kW	Notes:
Connected Load	24.6	24.6	23.6	72.8	Min. Equip	208 V, 3 PH	
Summer Demand	18.4	18.4	17.7	54.6	100% Rated	OK	151 A
Winter Demand	18.4	18.4	17.7	54.6	80% Rated	OK	189 A

ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
EX	EXISTING TO REMAIN
REM	REMOVE EXISTING
REL	RELOCATE EXISTING
N	NEW
---	DEMOLITION
---	EXISTING
---	NEW
■	ELECTRICAL PANEL
○	CONNECTION TO MOTOR OR MOTORIZED PIECE OF EQUIPMENT
●	DIRECT CONNECTION
■	FUSED DISCONNECT
□	NON-FUSED DISCONNECT
⊕	GFI RECEPTACLE
⚡	EMERGENCY LIGHT HEADS - SINGLE AND DOUBLE
▭	RECTANGULAR LIGHT FIXTURE
JB	JUNCTION BOX

KITCHEN EQUIPMENT SCHEDULE													
ITEM NO	DESCRIPTION	ELECTRICAL REQUIREMENTS											
		HP	KW	FLA	MCA MOCP	VOLTS	PHASE	WIRING	PLUG IN REC	DIRECT CONN	CCT No.	ISO SWITCH	NOTES
E1	DISHWASHER - MOTOR AND CONTROLS (1TB)	-	-	29.1	40	208	3	3-#8+GND IN 21MM C	-	X	DW-1,3,5	-	-
E2	DISHWASHER - ELECTRIC TANK HEAT (2TB)	-	17.3	48	70	208	3	3-#4+GND IN 27MM C	-	X	DW-7,9,11	-	-
E3	DISHWASHER - ELECTRIC TANK HEAT (3TB)	-	17.3	48	70	208	3	3-#4+GND IN 27MM C	-	X	DW-13,15,17	-	-
E4	DISHWASHER - DUAL RINSE (4TB)	-	10.7	29.7	40	208	3	3-#8+GND IN 21MM C	-	X	DW-2,4,6	-	-
E5	DISHWASHER - ELECTRIC BOOSTER (5TB)	-	15	41.6	60	208	3	3-#6+GND IN 27MM C	-	X	DW-8,10,12	-	-
E6	CONVEYOR - MAIN CONTROL PANEL	-	-	-	-	208	1	2-#12+GND IN 21MM C	-	X	DW-14,16	-	-

GENERAL NOTES:
 - EQUIPMENT NOTES CORRESPOND TO HOBART EQUIPMENT DRAWING ZFT23-113.
 - COORDINATE ALL POWER REQUIREMENTS AND CONNECTION LOCATIONS WITH FINAL EQUIPMENT SHOP DRAWINGS AT NO ADDITIONAL COST TO THE OWNER.
 - COORDINATE WITH EQUIPMENT SUPPLIER/INSTALLER (HOBARTS) FOR DELINEATION IN ELECTRICAL SCOPE. CONFIRM IF HOBARTS IS PROVIDING AND INSTALLING THE FLEX FROM THE CEILING JUNCTION BOX TO EQUIPMENT PRIOR TO ROUGH-IN. PROVIDE ANY ADDITIONAL WIRING, CONDUIT, JUNCTION BOXES ETC FOR A COMPLETE INSTALLATION.
 - REFER TO PROPOSED DRAWINGS NOTE 2 FOR ADDITIONAL WIRING INSTRUCTIONS.

ELECTRICAL GENERAL REQUIREMENTS

GENERAL CONDITIONS

- ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO ELECTRICAL SAFETY CODE, THE LOCAL ELECTRICAL SAFETY AUTHORITY INSPECTION OFFICE, THE ONTARIO BUILDING CODE, THE ONTARIO FIRE CODE AND ANY OTHER LOCAL REGULATIONS HAVING JURISDICTION OVER THE WORK OF THIS TRADE.
- BEFORE TENDERING, EXAMINE THE SITE AND ALL DRAWINGS AND SPECIFICATIONS OF ALL TRADES AND BE FAMILIAR WITH THE WORK OF THIS TRADE. NO EXTRAS WILL BE ALLOWED FOR THE FAILURE TO DO SO.
- ALL ELECTRICAL WORK SHALL COMPLY WITH CSA ELECTRICAL BULLETIN APPLICABLE AT TENDER CLOSE. WHERE SPECIFIC BULLETINS ARE NOT NAMED THEY ARE STILL CONSIDERED AN INTEGRAL PART OF THIS SPECIFICATION.
- PROVIDE ALL GROUNDING AND BONDING TO GROUND REQUIRED, REGARDLESS IF NOT SHOWN ON THE DRAWINGS. GROUNDING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO ELECTRICAL SAFETY CODE.
- PROVIDE ALL NEW MATERIALS HAVING CSA, CUL, WARNOCK HERSEY OR OTHER APPROVAL AGENCY LABEL AND LISTING. ALL WORKMANSHIP BY THIS TRADE SHALL BE FIRST CLASS, CONFORMING TO INDUSTRY STANDARD PRACTICES FOR SAFETY, ACCESSIBILITY, DURABILITY AND NEATNESS FOR ACCEPTANCE BY THE OWNERS' REPRESENTATIVES.
- ARRANGE AND PAY FOR ALL PERMITS AND INSPECTION FEES REQUIRED FOR THE WORK OF THIS TRADE. SUBMIT TO THE LOCAL ELECTRICAL INSPECTION DEPARTMENT AND/OR ELECTRICAL SUPPLY AUTHORITY ANY AND ALL DRAWINGS REQUIRED FOR PERMITS, FEES, APPROVALS, EXAMINATIONS AND SERVICES.
- PROVIDE ALL CUTTING AND PATCHING REQUIRED FOR THE WORK OF THIS TRADE. ALL CUTTING AND PATCHING SHALL BE PERFORMED BY QUALIFIED TRADES PERSONS. INCLUDE ALL COSTS FOR CUTTING AND PATCHING RELATED TO THE WORK OF THIS TRADE IN THE TENDER PRICE.
- TOUCH-UP ALL SHOP PAINTED EQUIPMENT DAMAGED IN TRANSIT OR DURING INSTALLATION TO MATCH ORIGINAL SHOP FINISH.
- AVOID ACCUMULATION OF DEBRIS AS THE WORK PROGRESSES. ON COMPLETION OF THE CONSTRUCTION AND PRIOR TO THE FINAL INSPECTION AND ACCEPTANCE BY THE OWNER, CLEAN UP AND REMOVE FROM THE SITE ALL SCRAP MATERIALS RESULTING FROM THE WORK OF THIS TRADE.
- CO-ORDINATE THE WORK OF THIS TRADE WITH ALL OTHER TRADES ON THE JOB SO THAT THE WORK MAY PROGRESS WITHOUT ANY DELAY.
- PRIOR TO THE FINAL INSPECTION, CLEAN ALL ELECTRICAL EQUIPMENT. CLEAN ALL CONSTRUCTION DUST AND DIRT FROM INSTALLED EQUIPMENT AT THE END OF THE JOB.
- UPON COMPLETION OF THE WORK, PROVIDE THE FINAL UNCONDITIONAL CERTIFICATE OF ACCEPTANCE FROM THE LOCAL ELECTRICAL SAFETY AUTHORITY INSPECTION OFFICE.
- PROVIDE A ONE YEAR GUARANTEE ON ALL MATERIALS, AND LABOUR FROM THE DATE OF ACCEPTANCE BY THE OWNER. COMPLETE ALL WARRANTY REGISTRATION DOCUMENTATION ON BEHALF OF THE BUILDING OWNER. SUBMIT COPIES OF COMPLETED DOCUMENTATION IN OPERATIONS AND MAINTENANCE MANUALS.
- ON MULTI-PHASE FEEDERS AND PANELS, ADJUST THE PHASE LOADING SO AS NOT TO EXCEED A PHASE IMBALANCE OF 10% LINE TO LINE, UNDER NORMAL OPERATING CONDITIONS OF THE FEEDER OR PANEL.
- SUBMIT SHOP DRAWINGS IN ELECTRONIC PDF FORMAT FOR THE FOLLOWING EQUIPMENT: BREAKERS, FIRE ALARM DEVICES, EXIT AND EMERGENCY LIGHTING UNITS, ETC. THE SHOP DRAWINGS SHALL BEAR THE NAME OF THE MANUFACTURER, THE MANUFACTURER'S CATALOGUE NUMBER, AND THE CONSULTANT'S DESIGNATION, ALONG WITH ALL PERTINENT INFORMATION PERTAINING TO THAT SPECIFIC PIECE OF EQUIPMENT.
- ALL ELECTRICAL EQUIPMENT SHALL BE MOUNTED PLUMBED TRUE.
- OBTAIN ONE SET OF PRINTS FOR AS-BUILT PURPOSES AND RECORD ON THESE PRINTS ALL CHANGES TO THE DESIGN DRAWINGS TO REFLECT THE ACTUAL CONSTRUCTION CONDITIONS, EQUIPMENT LOCATIONS AND EQUIPMENT SPECIFICATIONS. AT THE END OF CONSTRUCTION, AND PRIOR TO THE FINAL INSPECTION BY THE CONSULTANT, TRANSFER AS-BUILT MARK-UPS TO AUTOCAD/REVIT AND SUBMIT AUTOCAD AND PDF FILES TO THE CONSULTANT SUBMIT FOR REVIEW. SUBMIT FINAL CAD FILES OF THE AS-BUILT DRAWINGS ON USB KEY. NO FINAL INSPECTION WILL BE PERFORMED UNTIL THESE DRAWINGS ARE SUBMITTED.
- PREPARE THREE SETS OF OPERATIONS AND MAINTENANCE MANUALS FOR PRESENTATION TO THE OWNER. PROVIDE COPIES OF ALL REVIEWED SHOP DRAWINGS FOR THE PROJECT. MANUFACTURER'S INSTALLATION INSTRUCTIONS, MANUFACTURER'S MAINTENANCE INSTRUCTIONS, AND COPIES OF ALL TEST DATA, VERIFICATION CERTIFICATES, MANUFACTURER'S WARRANTIES AND GUARANTEES. THE GUARANTEE OF THIS TRADE INDICATING START DATE AND END DATE AS WELL AS CONTRACT NUMBERS.
- WHERE THE WORD PROVIDE IS USED IN THESE SPECIFICATIONS OR ON THE DRAWINGS, IT HAS THE MEANING "PROVIDE AND INSTALL COMPLETE WITH ALL ASSOCIATED MOUNTING HARDWARE AND CONNECTIONS".
- CHANGES IN THE WORK
- 20.1. CHANGES TO THE CONTRACT REQUIRING ADDITIONS TO OR DELETIONS FROM THE WORK OF THIS DIVISION SHALL BE CARRIED OUT UPON WRITTEN REQUEST OF THE CONSULTANT. EXTRAS TO THE CONTRACT OR CREDITS SHALL BE SUBMITTED WITH A COMPLETE COST BREAKDOWN AS FOLLOWS. MATERIALS, QUANTITIES AND UNIT PRICES FOR ALL EQUIPMENT REQUIRED OR DELETED. UNIT MAN HOURS TOTAL MATERIAL COST, TOTAL MAN HOURS, HOURLY RATE. (REFER TO SUPPLEMENTARY CONDITIONS AND GENERAL CONTRACT). TOTAL OVERHEAD AND PROFIT. (REFER TO SUPPLEMENTARY CONDITIONS AND GENERAL CONTRACT).

WIRES AND CABLES SHALL COMPLY WITH OBC 3.1.5.18.

CONDUCTORS & RACEWAYS

- USE TW75 OR RW90 COPPER CONDUCTORS CSA APPROVED FOR THE APPLICATION. SIZE THE CONDUCTORS SO THAT THE MAXIMUM BRANCH CIRCUIT VOLTAGE DROP DOES NOT EXCEED 3%. MINIMUM CONDUCTOR SIZE IS #12 AWG UNLESS OTHERWISE INDICATED.
- DESIGN IS BASED ON COPPER CONDUCTORS EXCEPT WHERE SHOWN ON THE DRAWINGS. ALUMINUM CONDUCTORS MAY BE USED ONLY FOR FEEDERS #6 AWG OR LARGER. SIZE THE ALUMINUM CONDUCTORS TO THE EQUIVALENT AMPACITY OF COPPER CONDUCTORS. CONDUCTORS IN UNDERGROUND RACEWAYS MAY BE RWU90 IN POLYETHYLENE PIPE.
- TERMINATE ALUMINUM FEEDER CONDUCTORS WITH PRESSURE CONNECTORS, AND UTILIZE AN OXIDE PREVENTATIVE SOLUTION "PENETROX" ON ALL BARE SURFACES. LUGS TO BE ALUMINUM OR ALUMINUM/COPPER ALLOY ONLY.
- ALL CONDUCTORS ARE TO BE INSTALLED IN RACEWAYS AS DESCRIBED BELOW:
 - IN CONCRETE SLAB, UNDERGROUND BURIED, BELOW SLAB ON GRADE OR EXTERIOR EXPOSED SURFACE RACEWAYS: PVC CONDUIT
 - INTERIOR SURFACE RACEWAYS, BRANCH CIRCUIT WIRING FROM PANELS, CONCEALED IN ACCESSIBLE CEILINGS AND INTERIOR WALLS OR IN INTERIOR CONCRETE BLOCK CONSTRUCTION: EMT RACEWAYS
 - IN METAL STUD PARTITION WALLS, BRANCH CIRCUIT WIRING FROM PANELS IN SUITE OR TENANT OCCUPANCIES, IN INTERIOR CONCRETE BLOCK WALLS, FOR FINAL DROPS TO FIXTURES IN CEILING SPACES. (LENGTH NOT TO EXCEED 3M IN THIS APPLICATION); ARMoured CABLE (BX)
 - IN WOOD STUD CONSTRUCTION: NMD-7 COPPER CONDUCTORS ARE PERMITTED FOR BRANCH CIRCUIT WIRING AS DIRECTED BY THE ENGINEER.
 - FOR EXISTING CONSTRUCTION WHERE EXISTING WALLS AND FINISHES ARE TO REMAIN: SURFACE METAL RACEWAYS (SMR)
 - OBTAIN PERMISSION FROM THE CONSULTANT PRIOR TO INSTALLATION. COLOUR AND SIZE OF RACEWAYS TO BE CONFIRMED WITH CONSULTANT FOR THE SPECIFIC APPLICATION.
- MINIMUM RACEWAY SIZE FOR EXTERIOR U/G BURIED APPLICATION IS 3/4" (19MM), MINIMUM BURIES DEPTH IS 36" (900MM) BELOW FINISHED GRADE.
- ALL CONDUIT AND WIRING IS TO BE CONCEALED IN ALL FINISHED AREAS.

SERVICE AND DISTRIBUTION

- DISTRIBUTION SYSTEM IS EXISTING. PROVIDE AND INSTALL NEW EQUIPMENT, AND MODIFY EXISTING DISTRIBUTION AND EQUIPMENT, AS DESCRIBED ON THE DRAWINGS.

- ACCEPTABLE MANUFACTURERS FOR DISTRIBUTION EQUIPMENT INCLUDE: EATON-CUTLER HAMMER, AND SCHNEIDER CANADA. PREFERENCE TO MATCH PREVALENT EXISTING MANUFACTURER WITHIN FACILITY. SEEK OUT AND REVIEW FACILITY STANDARDS FOR ANY ADDITIONAL REQUIREMENTS.
- FUSES SHALL BE BUSS OR APPROVED EQUAL, OF THE CLASS, TYPE AND AMPERE RATING AS SHOWN ON THE DRAWINGS.
- PROVIDE STICK ON LABEL FOR ALL DISCONNECT SWITCHES, STARTERS, AND PANELS TO CLEARLY INDICATE EQUIPMENT CONTROLLED OR AREA SERVED. INDICATE FUSE SIZE AND TYPE ON ALL FUSED DISCONNECTS.
- PROVIDE CIRCUIT BREAKER PANELS OF THE TYPE, WITH AMPERE CAPACITY, NUMBER OF POLES, BRANCH BREAKER CAPACITY, ETC., AS SPECIFIED IN PANEL SCHEDULE. MOUNTING TO BE AS INDICATED.
- ALL BUSBARS TO BE TIN PLATED COPPER. PROVIDE COPPER GROUND BUS IN EACH PANELBOARD.
- PROVIDE A TYPEWRITTEN DIRECTORY CARD ON THE INSIDE OF THE PANEL DOOR IN A METAL FRAME WITH CLEAR PLASTIC COVER.
- ALL BRANCH BREAKERS SHALL BE THERMAL-MAGNETIC TRIP INDICATED, AMBIENT TEMPERATURE COMPENSATED AND BOLTED TO THE BUS BAR.
- ALL SURFACE MOUNTED EQUIPMENT SHALL BE MOUNTED ON 19 MM (3/4"), FIRE RATED, PLYWOOD BACKBOARD.

WIRING FOR OTHER TRADES

- PROVIDE POWER WIRING FOR ELECTRICALLY OPERATED EQUIPMENT OF OTHER TRADES AS NOTED ON THE DRAWINGS OR DEFINED IN THIS SPECIFICATION. PROVIDE ALL STARTERS AND DISCONNECT SWITCHES FOR A COMPLETE AND OPERATING SYSTEM.
- PROVIDE POWER AND WIRING TO THE ELECTRICALLY OPERATED EQUIPMENT AS DETAILED IN WIRING FOR MECHANICAL EQUIPMENT SCHEDULE. THIS LIST DOES NOT DETAIL THE SCOPE OF WORK FOR EACH PIECE OF EQUIPMENT. CO-ORDINATE WITH MECHANICAL CONTRACTOR FOR THE EXACT POWER REQUIREMENTS OF THE EQUIPMENT TO BE SUPPLIED TO THE PROJECT. DO NOT PROCEED WITH THE INSTALLATION OF ANY OF THE ELECTRICAL ROUGH-IN UNTIL THE POWER SUPPLY REQUIREMENTS AND THE POINTS OF CONNECTION HAVE BEEN ESTABLISHED FROM THE SHOP DRAWINGS FOR THE EQUIPMENT OF MECHANICAL CONTRACTOR.
- PROVIDE POWER WIRING TO ALL CONTROL DEVICES SUPPLIED BY MECHANICAL CONTRACTOR AND OPERATING AT 100 VAC OR GREATER.
- PROVIDE CONTROL WIRING FOR ALL CONTROL DEVICES WITH OPERATING VOLTAGES OF THE CONTROLS GREATER THAN 100VAC.
- PROVIDE RACEWAYS/CONDUITS FOR ALL CONTROL WIRING AS IDENTIFIED ON THE DRAWINGS FOR USE BY MECHANICAL CONTRACTOR. PROVIDE OUTLET BOXES AS DIRECTED BY MECHANICAL CONTRACTOR FOR ALL TERMINAL POINTS IN THE CONTROL SYSTEM. CO-ORDINATE WITH MECHANICAL CONTRACTOR.

RENOVATIONS ON EXISTING BUILDING

- RENOVATIONS SHALL BE MADE ON THE EXISTING BUILDING AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN. REMOVE ALL EXISTING LUMINAIRES, OUTLET BOXES, SWITCHES, RECEPTACLES, ETC. AS INDICATED ON DRAWINGS. ALL EQUIPMENT REMOVED AND NOT REUSED SHALL REMAIN THE PROPERTY OF THE OWNER UNLESS SPECIFICALLY NOTED OTHERWISE. ALL EQUIPMENT INSTALLED IN RENOVATED AREAS SHALL BE NEW. ELECTRICAL TRADE WILL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR ELECTRICAL INSTALLATION. ALL CONDUIT SHALL BE INSTALLED CONCEALED IN FINISHED AREAS UNLESS SPECIFICALLY NOTED OTHERWISE.
- NEW CONDUCTORS SHALL BE INSTALLED TO THE NEAREST OUTLET AS REQUIRED FOR EQUIPMENT THAT IS RELOCATED. INSTALLATION OF JUNCTION BOXES FOR SPLICING PURPOSES SHALL NOT BE PERMITTED UNLESS SPECIFICALLY CALLED FOR.
- PROVIDE ALL CONDUCTORS REQUIRED TO RECONNECT EXISTING CIRCUITS WHERE REQUIRED THAT MAY BE DISRUPTED DUE TO RENOVATIONS ON THE EXISTING FLOOR.
- PROVIDE NEW BREAKERS WHERE REQUIRED IN EXISTING PANELS TO PICK-UP ADDITIONAL CIRCUITS INDICATED ON THE DRAWINGS.
- COORDINATE WITH MECHANICAL DRAWINGS AND SAFELY DISCONNECT AND REMOVE ALL MOTOR/MECHANICAL EQUIPMENT BEING DEMOLISHED. REMOVE UNUSED WIRING/CONNECTION BACK TO SOURCE PANEL. EXTEND WIRING/CONNECTION OF ALL MOTOR/MECHANICAL EQUIPMENT BEING RELOCATED. PROVIDE PROPER JUNCTION BOX AT EACH POINT OF EXTENSION.

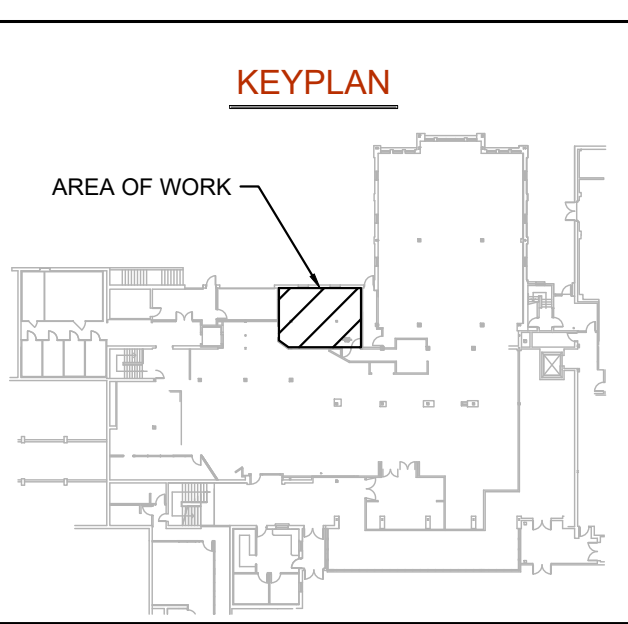
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REVISIONS

NO.	ISSUED FOR	DATE
00	90% CLIENT REVIEW	23.09.15
01	FINAL CLIENT REVIEW	23.12.01
02	FINAL CLIENT REVIEW	23.12.22
03	PERMIT	24.01.16
04	CLIENT REVIEW	24.01.26
05	PERMIT AND TENDER	24.02.26

NORTH

DESIGN	SPO	DRAWN	SPO/AV
CHECKED	ACH	REVIEWED	ACH

PROJECT

WILFRID LAURIER
UNIVERSITY DISH ROOM

ADDRESS

75 UNIVERSITY AVE W,
WATERLOO, ON N2L 3C5

PROJECT NO.

CE-5716

DRAWING TITLE

ELECTRICAL
SPECIFICATIONS & SINGLE
LINE DIAGRAM

DRAWING NUMBER

E2 OF 2

