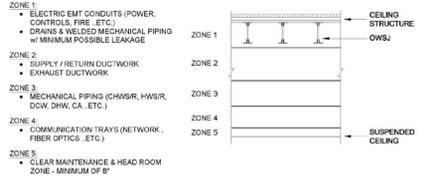


DFL PROJECTS GENERAL NOTES & PROCEDURES:

- THE GENERAL CONTRACTOR SHALL ARRANGE AND PAY FOR ALL NECESSARY PERMITS, INSPECTIONS & RE-INSPECTIONS REQUIRED TO BE PERFORMED BY LOCAL AUTHORITIES HAVING JURISDICTION INCLUDING INSPECTION AND TESTING EXCEPT FOR BUILDING PERMIT TO THE CITY OF OTTAWA WHICH WILL BE APPLIED FOR BY OWNER. TURN OVER TO THE OWNER ALL ORIGINAL APPROVAL DOCUMENTATION & CERTIFICATES.
 - CONTRACTOR TO BE RESPONSIBLE FOR THE PROVISION (SUPPLY AND INSTALLATION) OF ALL MATERIALS, EQUIPMENT & SERVICES SHOWN ON THE PROJECT DRAWINGS & SPECIFICATIONS AS REQUIRED FOR A FULLY OPERABLE SYSTEM, UNLESS CHANGED OR REPLACED BY REVISED DRAWINGS, SPECIFICATIONS OR ADDENDA.
 - THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION WORK. BE RESPONSIBLE FOR ALL FLOOR CUTTING, CORE DRILLING, ALL CHASES, OPENINGS AND PATCHING AS MAY BE REQUIRED BY ALL SUB TRADES WHO MAY OR MAY NOT BE UNDER HIS CONTRACT AGREEMENTS.
 - DRAWINGS ARE NOT INTENDED TO SHOW THE DETAILS & ROUTE OF EACH COMPONENT TO BE INSTALLED OR REMOVED. THEY ARE ONLY PROVIDING A GENERAL OVERVIEW OF THE PROJECT SCOPE. THE CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW THE SITE CONDITIONS DURING THE TENDER PERIOD AND EXAMINE THE EXTENT OF THE DEMOLITION, REMOVALS & NEW INSTALLATIONS TO INCLUDE IN THE TENDER PRICE ALL NECESSARY LABOR AND MATERIAL REQUIRED FOR A FULLY OPERABLE SYSTEM AS INTENDED.
 - ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT CODES, BY LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES WHERE VARIED BY THE PROJECT SPEC.
 - ALL DIMENSIONS TO BE VERIFIED ON SITE. EXACT LOCATION & ELEVATION OF EQUIPMENT IS SUBJECT TO SITE MEASUREMENTS.
 - CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR ALL MATERIAL, EQUIPMENT & FIXTURES TO ENGINEER FOR APPROVAL BEFORE COMMENCING INSTALLATION OR ORDERING. ALL SAMPLES TO BE PROVIDED UPON CSA REQUEST AT NO ADDITIONAL COST.
 - ALL SUPPLIED MATERIALS, FIXTURES & EQUIPMENT TO BE NEW, FREE FROM DEFECTS, CERTIFIED & APPROVED BY CODE. REUSE OF ANY EXISTING PARTS IN NOT PERMITTED UNLESS APPROVED BY OWNER.
 - CSA SHALL BE GIVEN THE OPTION OF RETAINING ANY REMOVED OR DEMOLISHED COMPONENTS OR EQUIPMENT. COORDINATE AND HAND OVER TO CSA PROJECT MANAGER AS REQUIRED. DISPOSE OF ANY REMAINING OR UNWANTED EQUIPMENT OR SERVICES AND REMOVE OFF SITE IN A LEGAL MANNER AND COMPLY WITH THE ENVIRONMENTAL PROTECTION ACT, ONTARIO REGULATIONS FOR WASTE MANAGEMENT PROGRAM CERTIFICATE OF DISPOSAL TO BE HANDED OVER TO OWNER AFTER REMOVALS ARE DONE.
 - INSTALL ALL EQUIPMENT IN FULL ACCORDANCE WITH THE MANUFACTURER SPECIFICATIONS & RECOMMENDATIONS.
 - ALL TRADES SHOULD BE LICENSED TO PERFORM ALL WORK SHOWN ON THE DRAWINGS INCLUDING REMOVALS & DEMOLITION IN THE PROVINCE OF ONTARIO.
 - DO NOT DAMAGE EXISTING FIRE SEPARATIONS AND FIRE PROTECTIONS IN THE PROJECT AREAS. ANY DAMAGES INCURRED TO EXISTING FIRE SEPARATIONS AND PROTECTIONS SHALL BE RESTORED TO APPROVED CONDITIONS TO MEET REQUIRED RATING AND CODES AT NO ADDITIONAL COSTS TO THE PROJECT.
 - UNDER ANY CIRCUMSTANCES, DO NOT BLOCK REQUIRED ACCESS TO EXITS AND FIRE ESCAPE ROUTES DURING THE PROJECT DURATION. ALL EXISTING LIFE SAFETY SYSTEMS AND INDICATORS SHALL BE OPERATIONAL AT ALL TIMES.
 - SMOKE EATERS & POWERED EXHAUST FANS VENTED TO OUTSIDE OF BUILDING MUST BE USED DURING ALL BRAZING / WELDING / SOLDERING / CUTTING / GRINDING ACTIVITIES TO MINIMIZE CONTAMINATION & ODOOR TO ADJACENT AREAS PARTICULARLY IN CLEAN ROOMS. PROVIDE 72 HOUR NOTICE TO CSA TO ARRANGE FOR HOT WORK PERMITS. CONTRACTOR TO PROVIDE THEIR OWN FIRE EXTINGUISHER, USE OF DFL FIRE EXTINGUISHERS IS NOT PERMITTED. ALL HOT WORK TO BE DONE BY 2:30PM MAX ALLOWING FOR ONE HOUR FIRE WATCH. ALL HOT WORK AREAS TO BE INSPECTED BY GC SITE REPRESENTATIVE AT THE END OF THE FIRE WATCH PERIOD.
 - CONTRACTOR TO PROTECT ALL ARCHITECTURAL FINISHES & FLOORING DURING CONSTRUCTION, BE RESPONSIBLE FOR ANY DAMAGES TO EXISTING SURFACES RESULTING FROM ALL PROJECTS WORK. THE CONTRACTOR SHALL MAKE GOOD ALL DAMAGED SURFACES INCLUDING ANY PAINT TOUCH-UPS REQUIRED. REPAIR ALL WALLS, FLOORS & CEILINGS IN CORE AREA WHERE MECHANICAL & ELECTRICAL SERVICES PASS THROUGH.
 - EXACT TARPING LIMITS AND ACCESS ROUTES TO BE DETERMINED ON SITE IN COORDINATION WITH CSA PROJECT MANAGER.
 - ALL TARPS TO BE NEW HEAVY DUTY POLYETHYLENE, WATER / MILDEW / TEAR RESISTANT, WHITE, TIGHT SEALED FROM DECK TO FLOOR AND WALL TO WALL, CONTRACTOR TO PROVIDE ACCESS ZIPPERS OR DOORS AS REQUIRED BY CSA. USE METAL STUDS AS FRAMING SUPPORTS, NO WOOD MATERIALS TO BE USED IN TARPS CONSTRUCTION UNLESS APPROVED BY CSA.
 - APPROVED METHODS TO ATTACH STUDS / TARPS TO BUILDING AS FOLLOW:
 - ON FLOORS: HEAVY DUTY COMMERCIAL DOUBLE SIDED TAPE TO SECURE METAL STUDS TO FLOORS, USE OF SCREWS OR TAPCONS ARE NOT PERMITTED.
 - ON DRYWALLS / MASONRY / METAL SIDING WALLS: DUCT OR TUCK TAPE IS NOT ALLOWED DIRECTLY ON BUILDING FINISHES AS IT WILL DAMAGE THEM WHEN REMOVED; APPLY MASKING PAINT GREEN TAPE FIRST AND THEN DUCT / TUCK TAPE ON TOP OF IT. STUDS CAN BE SCREWED TO DRYWALL / MASONRY WALLS GIVING THAT ALL HOLES WILL BE PATCHED & PAINTED (WHOLE WALL / AREA TO BE PAINTED, SMALL / LOCAL PAINT PATCHES ARE NOT PERMITTED).
 - TARPS CAN BE HANGED OFF BUILDING STEEL STRUCTURAL USING HIGH STRENGTH CABLE TIES, PROVIDE HEAVY DUTY GAUGE UNISTRUTS AS NEEDED FOR CROSS RUNS OR TO DISTRIBUTE TARP LOAD.
 - HANGING TARPS FROM BUILDING SERVICES (DUCTWORK, CONDUITS, PIPES, SUPPORTS, HANGERS, ETC.) IS NOT PERMITTED.
 - CONTRACTOR IS RESPONSIBLE FOR CLEANING, PATCHING, REPAIRING & PAINTING ALL DAMAGED SURFACES & TAPE MARKS AFTER REMOVING TARPS.
- PROVIDE FLOOR PROTECTION TO ENTIRE PROJECT AREAS BEFORE ANY WORK STARTS AS FOLLOW:
 - FLOOR TO BE WIPED CLEAN FROM ANY DEBRIS OR DUST PARTICLES.
 - PROVIDE MIN. 1/8" FOAM LAYER DIRECTLY ON ALL FLOORING.
 - PROVIDE 12MM PLYWOOD SHEETS ON TOP OF FOAM LAYER, ALL SHEET SEAMS TO BE DUCT-TAPED TO PREVENT DEBRIS / DUST FROM GETTING TRAPPED UNDER THE PROTECTION SHEETS. USE OF OSB SHEETS IS NOT PERMITTED.
- PROVIDE FURNITURE AND EQUIPMENT PROTECTION AS FOLLOW:
 - OFFICE / LAB FURNITURE AND EQUIPMENT: TO BE COMPLETELY COVERED AND WRAPPED WITH NEW HEAVY DUTY CLEAR PLASTIC ROLL SHEETS.
 - SENSITIVE LAB TESTING EQUIPMENT: TO BE COMPLETELY COVERED AND WRAPPED WITH NEW HEAVY DUTY CLEAR PLASTIC ROLL SHEETS, CLEAN SCAFFOLDING TO BE ERECTED ON TOP OF ALL LAB EQUIPMENT TO PROTECT FROM POSSIBLE FALLING OBJECTS.
- CONTRACTOR TO PROVIDE BILINGUAL CONSTRUCTION, ACCESS & SAFETY SIGNAGE, SIGNS TO BE POSTED ON ALL PROJECT FENCES & ENTRANCES AT THE START OF PROJECT AND BEFORE COMMENCING ANY WORK.
- ACCESS TO THE SITE FOR MATERIAL, WORK FORCES AND FOR WASTE REMOVAL IS TO BE COORDINATED WITH CSA PROJECT MANAGER, USE ONLY ELEVATORS DESIGNATED BY CSA AND PROTECT THEM FROM DAMAGE.
- WHEN TESTING ACTIVITIES ARE NOT UNDERWAY, LARGE OR SMALL LOADING DOCKS CAN BE USED TO MOVE MATERIALS IN AND OUT OF THE BUILDING FROM 7:00 AM TO 8:00 AM WITHOUT CSA NEEDING TO PROVIDE NOTICE TO BUILDING STAFF. IF ACCESS IS REQUIRED AFTER THIS TIME OR FOR LONGER PERIODS, 72 HOUR NOTICE MUST BE PROVIDED TO CSA PROJECT MANAGER TO CONFIRM AVAILABILITY AND ARRANGE FOR PROPER PROTECTION.
- SANITARY FACILITIES WILL BE ASSIGNED FOR CONTRACTOR'S PERSONNEL. OTHERS SHALL NOT BE USED. KEEP FACILITIES CLEAN.
- ONLY DESIGNATED AREAS ARE TO BE USED FOR LUNCH AND BREAK TIME. ALL OTHER AREAS ARE OFF LIMITS INCLUDING CAMPUS CAFETERIA.
- CONTRACTOR TO RESPECT ALL BUILDING FLOOR LOADING LIMITATIONS, COORDINATE AND CONFIRM WITH CSA PROJECT MANAGER PRIOR TO BRING IN ANY HEAVY TOOLS, EQUIPMENT AND LIFTS. ANY AREAS WITH DESIGNATED LIMITATIONS WITHIN THE WORK AREA SHALL BE CLEARLY LABELED AND PROTECTED BY THE CONTRACTOR.
- GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO KEEP THE OWNER'S ACCESS AREAS AND CORRIDORS CLEAN AT ALL TIMES.
 - CLEAN AND REMOVE ALL DEMOLITION AND CONSTRUCTION WASTE FROM PROJECT SITE ON DAILY BASIS AND UPON COMPLETION OF PROJECT.
 - TRANSPORT ALL LOOSE MATERIALS IN / OUT OF BUILDING IN CLEAN COVERED CONTAINERS.
 - DO NOT USE CSA WASTE CONTAINERS. AN AREA WILL BE DESIGNATED FOR LOCATING CONTRACTOR WASTE BINS UPON REQUEST.
 - CONTRACTOR TO PROVIDE ALL CLEANING EQUIPMENT & SUPPLIES. USE OF BUILDING CLEANING EQUIPMENT OR SUPPLIES ARE NOT PERMITTED.
- DO NOT SUBJECT ANY PART OF THE BUILDING TO ANY NOISE, DUST OR ANY OTHER UNACCEPTABLE ENVIRONMENTAL CONDITIONS DURING THE COURSE OF THE PROJECT. ANY NOISY / DUSTY / SMELLY ACTIVITIES SHALL BE DONE AFTER REGULAR WORKING HOURS OR WEEKENDS, COORDINATE WITH CSA PROJECT MANAGER WITH A MINIMUM NOTICE OF 72 HOURS.

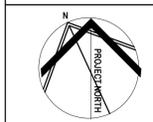
- PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE SAW-CUT OR CORE DRILLED. JACK HAMMERING IS NOT PERMITTED. ALL WALLS, FLOORS & CEILING PENETRATIONS TO BE SEALED BY CONTRACTOR IN ACCORDANCE WITH APPLICABLE CODES & THE ENGINEER'S REQUIREMENTS. USE OF POWDER ACTUATED TOOLS USING EXPLOSIVES IS PROHIBITED.
- PARTS NOTED TO BE SUPPLIED BY DEPARTMENT REPRESENTATIVE SHALL BE FULLY INSTALLED & SUPPORTED BY CONTRACTOR AT NO ADDITIONAL COST.
- PROJECTS MAY TAKE PLACE IN A CLEANROOM ENVIRONMENT, MANDATING SPECIAL MEASURES BE TAKEN TO REDUCE LABORATORY DISRUPTION. CLASS 8 (100,000) CLEANROOM STANDARDS ARE TO BE MET FOR THE AREA SURROUNDING CONSTRUCTION AT ALL TIMES AND ARE SUBJECT TO VERIFICATION.
- ALL PERSONNEL (CONTRACTORS, ADMIN, INSPECTORS, OPERATORS... EXCEPT MATERIAL DRIVERS MUST ATTEND ONE-TIME MANDATORY DFL SECURITY BRIEFING (20-30 MINUTES) BEFORE STARTING ANY WORK ON SITE, ADHERE TO THE INFORMATION PRESENTED AT ALL TIMES. SECURITY BRIEFING WILL TAKE PLACE ON FIRST DAY OF THE PROJECT AND THEN ON THE FOLLOWING MONDAYS' MORNING ONLY FOR ADDED NAMES UPON GC REQUEST. NO INDIVIDUAL OR EMERGENCY BRIEFING REQUESTS WILL BE ALLOWED. ANY PERSON WHO DID NOT ATTEND THIS BRIEFING WILL NOT BE ALLOWED TO WORK ON SITE - NO EXCEPTIONS.
- IMPROPER / UNCLEAN / RIPPED CLOTHING, FOUL LANGUAGE, IMPROPER BEHAVIOR, SMOKING, VAPING, DRUG USE OR CANNABIS USE WILL NOT BE TOLERATED AND WORKER WILL BE ESCORTED OFF CAMPUS IMMEDIATELY AND NOT ALLOWED TO RETURN- NO EXCEPTIONS. A DESIGNATED AREA WILL BE PROVIDED FOR SMOKING AND VAPING, CANNABIS USE NOT PERMITTED IN ANY AREAS.
- CSA, AT THEIR DISCRETION, MAY REQUEST A WORKER TO LEAVE THE SITE IF THERE IS DEMONSTRATED IMPAIRED MENTAL OR PHYSICAL CAPABILITY AFFECTING HIS/HER WORK PERFORMANCE AND POSSIBLY PUTTING OTHERS AT RISK DUE TO CONSUMPTION OF ALCOHOL, CANNABIS OR ILLEGAL SUBSTANCES.
- DFL IS A HIGH PROFILE OCCUPIED BUILDING, USE OF MUSIC OR RADIO ON SITE IS NOT PERMITTED.
- ALL GENERAL CONTRACTOR & SUB-TRADES WORKERS, INSPECTORS, OPERATORS, ETC. HAVE TO BE ESCORTED AT ALL TIMES WHILE IN BUILDING AND ON CAMPUS.
 - CSA WILL PROVIDE SECURITY COMMISSIONAIRES TO ESCORT PERSONNEL DURING NORMAL WORKING HOURS, ANY ESCORT REQUEST FOR ADDITIONAL WORK OUTSIDE NORMAL HOURS WILL BE SUBJECT TO MANAGEMENT & AVAILABILITY APPROVALS AND WILL BE BACK-CHARGED TO GC.
 - PRIOR TO PROJECT START, GC TO PROVIDE A FULL LIST -AS MUCH AS POSSIBLE- OF ALL PERSONNEL WORKING ON THE PROJECT AS WELL AS ENGINEERS, SUPPLIERS, OPERATORS & INSPECTORS TO ISSUE NECESSARY FORMS FOR CAMPUS AND CSA BUILDING ACCESS.
 - NAME, COMPANY NAME & NATIONALITY IS REQUIRED FOR EACH INDIVIDUAL, NON-CANADIAN WILL REQUIRE A COPY OF PASSPORT, ALLOW FOR TWO TO THREE WEEKS FOR SECURITY CHECK.
 - VISIT CLEARANCE REQUEST (VCR) FORM WILL BE ISSUED BY CSA SECURITY TO CAMPUS SECURITY WITH ALL GC PROVIDED NAMES PRIOR TO PROJECT START DATE, VCR FORM WILL BE UPDATED AND RESEND TO CAMPUS SECURITY ONLY ONCE A WEEK ON FRIDAYS' NOON FOR NEXT WEEK ACCESS. REQUESTS FOR ADDITIONAL NAMES CAN BE PROVIDED BY GC FROM MONDAY MORNING UNTIL THURSDAY @ 1:00PM ON EVERY WEEK FOR NEXT WEEK ACCESS. ANY NAMES RECEIVED AFTER THURSDAY @ 1:00PM CANNOT BE ADDED FOR THE NEXT WEEK AND WILL BE CONSIDERED FOR THE FOLLOWING WEEK.
 - INDIVIDUALS WHO ARE NOT ON VCR LIST WILL BE DENIED ACCESS BY CAMPUS SECURITY. NO EXPIATIONS AND NO EMERGENCY REQUESTS WILL BE ACCEPTED.
 - PROVIDE AT LEAST FOUR FULL WORKING DAYS' NOTICE TO CSA PROJECT MANAGER FOR ANY AFTER HOURS OR WEEKEND WORK REQUESTS FOR CSA MANAGEMENT & CAMPUS APPROVALS.
 - PROVIDE AT LEAST 72 HOUR NOTICE FOR ANY ADDITIONAL NAMES OR FOR AFTER HOURS OR WEEKEND WORK.
 - PROVIDE TWO FULL WORKING DAYS' NOTICE FOR ANY DELIVERY OF MATERIALS OR RENTAL EQUIPMENT DELIVERY OR PICK-UP (ONLY NAME OF THE COMPANY AND TYPE OF DELIVERY IS REQUIRED - NAME OF DRIVER IS NOT REQUIRED) TO ISSUE THE PROPER FORMS TO CAMPUS SECURITY. GENERAL CONTRACTOR MUST BE ON SITE TO INSPECT & RECEIVE THE SHIPMENT. IF THE DELIVERY PERTAINS TO LIFTING EQUIPMENT, ONE OF THE QUALIFIED CONTRACTORS ASSIGNED TO USE THE EQUIPMENT MUST INSPECT AND RECEIVE THE LIFT FROM THE RENTAL COMPANY. NO LAST MINUTE REQUEST WILL BE ACCEPTED.
 - NOTIFY CSA IMMEDIATELY OF ANY CHANGE IN SCHEDULE THAT AFFECTS THE NEED FOR SECURITY ESCORTS.
- GENERAL CONTRACTOR (GC) REPRESENTATIVE HAS TO BE PRESENT ON SITE AT ALL TIMES AND ACCOMPANY ALL SUB-TRADE WORKERS, TRADES & SUB-TRADES ARE NOT ALLOWED TO BE ON SITE OR TO WORK WITHOUT THE PRESENCE OF APPROVED DESIGNATED GC REPRESENTATIVE - NO EXCEPTIONS.
- WEEKEND AND/OR AFTER-HOURS SHUTDOWNS TO BE SCHEDULED IN AGREEMENT WITH CSA PROJECT MANAGER. PROVIDE AT LEAST 72 HOUR NOTICE IN ADVANCE.
- CSA IS COMMITTED TO ENSURING A HEALTHY AND SAFE ENVIRONMENT FOR ITS EMPLOYEES, CONTRACTORS AND VISITORS AND WILL ALIGN ITSELF WITH CONTRACTORS WHO SHARE IN THIS VISION.
 - THE REQUIREMENTS OUTLINED BELOW ARE PROVIDED AS REFERENCE AND ARE THERE TO ASSIST THE CONTRACTING COMPANY WHO PERFORMS THE WORK AND ACCEPTS THIS COMMITMENT COMPLETELY:
 - ONTARIO OCCUPATIONAL HEALTH AND SAFETY ACT: [HTTP://WWW.E-LAWS.GOV.ON.CA](http://www.e-laws.gov.on.ca)
 - INFRASTRUCTURE HEALTH AND SAFETY ASSOCIATION "GUIDE TO DEVELOPING HEALTH AND SAFETY POLICIES AND PROGRAMS IN CONSTRUCTION" A COMPREHENSIVE GUIDE GEARED TO MID- TO LARGE-SIZED GENERAL CONTRACTORS FOR DEVELOPING AND IMPLEMENTING AN EFFECTIVE HEALTH AND SAFETY PROGRAM. [HTTP://WWW.IHSA.CA](http://www.ihsa.ca)
 - INFRASTRUCTURE HEALTH AND SAFETY ASSOCIATION "CONSTRUCTION HEALTH AND SAFETY MANUAL", GUIDANCE ON HAZARD CONTROLS FOR ONTARIO CONTRACTORS: [HTTP://WWW.IHSA.CA](http://www.ihsa.ca)
 - THE GENERAL CONTRACTOR WILL BE REQUIRED TO PREPARE AND SUBMIT TO THE CSA PROJECT MANAGER A FULL PROJECT HEALTH AND SAFETY PLAN, HEREIN CALLED PHSP, PRIOR TO THE COMMENCEMENT OF ANY WORKS AND WITHIN 2 WEEKS OF CONTRACT AWARD.
 - THE GENERAL CONTRACTOR SHALL PROVIDE CSA PROJECT MANAGER A COPY OF ALL NOTICES OR OTHER WRITTEN CORRESPONDENCE PROVIDED TO OR RECEIVED BY THE ONTARIO MINISTRY OF LABOR, FOR THE DURATION OF THE CONTRACT.
 - THE GENERAL CONTRACTOR SHALL FULLY IMPLEMENT THE PHSP FOR THE FULL DURATION OF THE CONTRACT.
 - A COPY OF ALL APPLICABLE TRAINING CERTIFICATES MUST BE PROVIDED PRIOR TO COMMENCING ANY WORK. CERTIFICATES MUST SHOW EXACT COMPANY NAME AND ADDRESS THAT PROVIDED THE TRAINING. CSA RESERVES THE RIGHT TO REQUEST THE COURSE OUTLINE FROM THE COMPANY THAT PROVIDED THE TRAINING. IF THE PROOF OF TRAINING DOES NOT DEMONSTRATE THE WORKER AS BEING COMPETENT OPERATORS, FURTHER TRAINING MAY BE REQUESTED BY THE CSA PRIOR TO COMMENCING ANY WORK AT NO ADDITIONAL COST.
- GC TO PROVIDE A MINIMUM OF 48 HOUR NOTICE TO CSA PRIOR FOR ANY DELIVERIES. GENERAL CONTRACTOR MUST BE ON SITE TO RECEIVE THE SHIPMENT. IF THE DELIVERY PERTAINS TO LIFTING EQUIPMENT, THE QUALIFIED CONTRACTOR SCHEDULED TO USE THE EQUIPMENT MUST INSPECT AND RECEIVE THE LIFT FROM THE COMPANY.
- GC AND ALL HIS SUB-TRADES ARE RESPONSIBLE TO PROVIDE ALL LADDERS, SCAFFOLDING, LIFTS, CRANES AND ALL OTHER EQUIPMENT & TOOLS REQUIRED FOR PROJECT SCOPE INCLUDING INSTALLING & REMOVING TARPS & PROTECTION MATERIALS. USE OF BUILDING TOOLS, EQUIPMENT, TROLLEYS, FORKLIFTS, SKIDS, LADDERS, LIFTS, CRANES, ETC. ARE NOT PERMITTED. GC SHALL PROVIDE PROOF OF ALL PROPER WORKING TRAINING AND CERTIFICATIONS FOR USE OF TOOLS AND EQUIPMENT, ALONG WITH EQUIPMENT SERVICE RECORDS IF REQUESTED.
- ALL TRADES TO FOLLOW BUILDING SERVICE ELEVATIONS STANDARD AS FOLLOW:
 - ZONE 1:
 - ELECTRIC EMT CONDUITS (POWER, CONTROLS, FIRE, ETC.)
 - CRANES & WELDED MECHANICAL PIPING
 - MINIMUM POSSIBLE LEAKAGE
 - ZONE 2:
 - SUPPLY / RETURN DUCTWORK
 - EXHAUST DUCTWORK
 - ZONE 3:
 - MECHANICAL PIPING (CHWSR, HWSR, DCW, DHW, CA, ETC.)
 - ZONE 4:
 - COMMUNICATION TRAYS (NETWORK, FIBER OPTICS, ETC.)
 - ZONE 5:
 - CLEAR MAINTENANCE & HEAD ROOM
 - ZONE - MINIMUM OF 6'
- GENERAL CONTRACTOR AND ALL TRADES TO FOLLOW ALL CAMPUS & CSA/DFL PROCEDURES AT ALL TIMES. GC IS RESPONSIBLE TO DISTRIBUTE ALL PROCEDURES TO ALL HIS WORKERS & SUB-TRADES AND POLICE TRADES FOR COMPLIANCE.
- THE PROJECT IS A PHASED PROJECT. CONTRACTOR TO PROVIDE CONSTRUCTION SCHEDULE BASED ON PHASING INDICATED AND ALLOW FOR PHASED CONSTRUCTION.
- WORK UNDER THIS PROJECT MAYBE CONDUCTED AT ELEVATIONS IN EXCESS OF 20m± (65 FT ±), CONTRACTOR MUST ENSURE THAT ALL STAFF & SUB CONTRACTORS ARE TRAINED IN ELEVATED WORK AND FALL PROTECTION.



BUILDING STANDARDS - SERVICES ELEVATIONS

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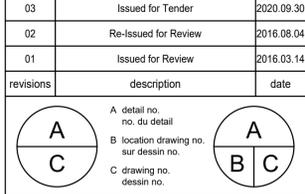
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Contractor to verify all dimensions & conditions on site and immediately notify the engineer of all discrepancies.

revisions	description	date
03	Issued for Tender	2020.09.30
02	Re-Issued for Review	2016.08.04
01	Issued for Review	2016.03.14



project project

BAY 3 REFIT PROJECT

ADDRESS

DFL PROJECTS GENERAL NOTES & PROCEDURES

Designed By	J.ALEXANDER	Conçu par
Date		(yyyy/mm/dd)
Drawn By	R.CAMERON	Dessiné par
Date		(yyyy/mm/dd)
Reviewed By	J.ALEXANDER	Examiné par
Date		(yyyy/mm/dd)
Approved By	J.ALEXANDER	Approuvé par
Date		(yyyy/mm/dd)
Tender	M. FARID	Soumission
Project Manager	Administrateur de projets	
Project no.	CSA15-G8b	No. du projet
Drawing no.	G2	No. du dessin

MECHANICAL GENERAL NOTES:

- ALL MATERIALS AND WORKMANSHIP SHALL - AS A MINIMUM - BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING:
 - NATIONAL BUILDING CODE - NBC (LATEST EDITION)
 - ONTARIO BUILDING CODE (OBC) (LATEST EDITION)
 - CAN / CGA - B149.1 & -2, ASHRAE 90.1
 - ONTARIO PLUMBING & FIRE CODES
 - NFPA STANDARDS, PARTICULARLY NFPA 13, 14 & 96
 - ALL OTHER APPLICABLE PROVINCIAL, MUNICIPAL AND SAFETY CODES AND REGULATIONS.
- CONFIRM ALL PIPING / DUCTWORK DIMENSIONS AND ELEVATIONS ON SITE PRIOR TO INSTALLATION OR ORDERING EQUIPMENT.
- CONTRACTOR TO ARRANGE FOR ALL NECESSARY HOT WORK PERMITS, ALLOW FOR 24 HOURS NOTICE AT LEAST FOR CSA TO ISSUE.
- BE RESPONSIBLE FOR REMOVAL AND REINSTATING CEILINGS AS NECESSARY. USE GLOVES TO PROTECT FROM FINGER PRINTS. PROTECT T-BAR GRID & TILES DURING WORK.
- CONTRACTOR SHALL BE RESPONSIBLE FOR RELOCATING ANY SERVICES OBSTRUCTING THE PATH OF NEW PIPING / DUCTWORK / EQUIPMENT AND SHALL DO SO AFTER ENGINEER'S APPROVAL AND AT NO ADDITIONAL COST.
- ALL BUILDING HVAC RETURN / EXHAUST GRILLS WITHIN CONSTRUCTION AREA MUST BE MUST BE BLOCKED AT ALL TIMES DURING CONSTRUCTION. PROVIDE DUST SEALS ON ALL SUPPLY DIFFUSERS. DO NOT OPERATE HVAC UNTIL FINAL CLEAN-UP.
- USE OF THE WRAPS, TIE WIRE, PERFORATED BAND, WIRE CHAIN OR SOLID RING TYPE HANGERS IS NOT PERMITTED.
- USE OF C CLAMPS ON STEEL BEAMS IS NOT PERMITTED, USE BEAM CLAMP TO SUPPORT ALL THREADED RODS FROM ALL BEAMS AND OWS).
- SEVERAL SYSTEMS OR PART OF SYSTEMS WILL BE SUBJECT TO A SHUT-DOWN PERIOD. BE RESPONSIBLE FOR HAVING ALL NECESSARY TOOLS, MANPOWER AND EQUIPMENT REQUIRED TO MAXIMIZE THE PRODUCTION DURING A SHUT-DOWN. ALL SHUT DOWNS SHALL BE COORDINATED WITH THE OWNER REPRESENTATIVES AND THE ENGINEER WITH A 48 HOURS NOTICE.
- VERIFY THE EXACT LOCATION OF EXISTING SERVICES AND MAINS TO BE TYING-IN, REMOVED OR CAPPED PRIOR TO COMMENCING WORK.
- PROVIDE VIBRATION HANGER KIT & DUCT FLEXIBLE CONNECTIONS TO ALL CEILING EXHAUST FANS. WIRE BRIDGE ALL DUCT CONNECTORS FOR ELECTRICAL CONTINUITY, USE #8 AWC.
- USE FLAT BOTTOM DUCT TRANSITION PIECES FOR EFFECTIVE DRAINAGE.
- ALL DUCT WORK AND SHEET METAL SHALL BE IN ACCORDANCE WITH S.M.A.C.N.A. - LOW VELOCITY SYSTEM.
- SEAL ALL LONGITUDINAL AND CIRCUMFERENCE DUCT JOINTS WITH HIGH VELOCITY DUCT SEALER, "DURO DYNE" OR APPROVED EQUAL.
- AS A MINIMUM PROVIDE 25mm THICK, HEAVY DENSITY, RIGID FIBERGLASS INSULATION WITH VAPOR BARRIER AND JACKETING ON ALL PLUMBING PIPING. INSULATE THE LAST 10 FEET FROM OUTSIDE OF ALL EXHAUST & FRESH AIR INTAKE DUCTWORK WITH 40mm FIBERGLASS WRAP. ALL INSULATION JOINTS TO BE STAGGERED. PROVIDE REMOVABLE INSULATION JOINTS AT ALL VALVES & UNIONS WITH VELCRO STRIPS.
- ALL EXPOSED JACKETING TO BE CCI .016" ALUMACLAD, PEBBLED (STUCCO) FINISH.
- PROVIDE 300mm INSULATION PROTECTION GALVANIZED SHIELD / SADDLE PLATES WITH LOCK TABS AT EACH PIPE HANGER LOCATION.
- ALL PIPING TO BE PRESSURE TESTED FOR A MINIMUM OF 24 HOURS AND IN ACCORDANCE WITH THE CODE REQUIREMENTS. DO NOT CONCEAL OR INSULATE ANY PIPING UNTIL TESTED & REVIEWED BY ENGINEER.
- PROVIDE NEW VOLUME CONTROL DAMPERS ON ALL NEW AND MODIFIED DUCTWORK. FIRE DAMPERS MUST BE PROVIDED ON ALL DUCTS OR AIR TRANSFER OPENINGS PENETRATING A BUILDING FIRE SEPARATION AND SHALL BE PROVIDED WITH PROPER DUCT ACCESS DOORS.
- FLEXIBLE DUCTS SHALL BE LIMITED TO A MAXIMUM LENGTH OF 6 FEET AND MINIMUM DIAMETER OF 150mm.
- ALL HVAC CONTROLS AND WIRING SHALL BE SIZED, SELECTED BY A SPECIALIZED CONTROLS SUB-TRADE IN FULL ACCORDANCE WITH EQUIPMENT MANUFACTURER RECOMMENDATIONS.
- ISOLATE COPPER PIPE FROM HANGER OR OTHER PIPING WHERE ELECTROLYTIC ACTION CAN OCCUR.
- VENT AND PRIME ALL P-TRAP FIXTURES IN ACCORDANCE WITH THE ONTARIO LATEST EDITION PLUMBING CODE. USE AUTOMATIC PRIMERS "ANCON" OR "ZURN" AT ALL NEW & EXISTING FLOOR DRAINS. ALL FIXTURES VENTS TO BE CONNECTED TO BUILDING COMMON PLUMBING VENTS.
- APPROVED PLUMBING ACCESSORIES & VALVES: ANCON, ZURN, WATTS & CRANE.
- ALL DRAINAGE AND VENT PIPING TO BE CAST IRON WITH MJ JOINTS OR DWV COPPER AS RATED BY MANUFACTURERS FOR RETURN AIR PLENUM USE AND APPROVED BY CODE.
- ALL PLUMBING PIPING SHALL BE TYPE "L" NEW COPPER WITH LEAD FREE SOLDERED JOINTS. USE ONLY STRAIGHT COPPER RUNS, COPPER COILS OF ANY SIZE ARE NOT PERMITTED.
- ALL TEMPERATURE & PRESSURE GAUGES TO BE 100mm-125mm DIAL SIZE, STAINLESS STEEL & GLYCERIN FILL. USE THERMO WELLS ON ALL TEMPERATURE GAUGES.
- USE VMC KORFUND MAXI-FLEX NEOPRENE MOUNTING FLOOR PADS ON ALL HEAVY EQUIPMENT TO ISOLATE VIBRATION & PROTECT FLOORING. GRADE / COLOR TO MACH LOAD.
- USE ARMSTRONG CBV FOR ALL CIRCUIT BALANCING VALVES.
- CONTRACTOR TO PROVIDE FULL DRAWINGS, SKETCHES & SPECIFICATIONS FOR ALL PROPOSED SERVICES SUPPORTS, ANCHORS & HANGERS UNDER THIS PROJECT SCOPE FOR PROJECT MANAGER APPROVAL BEFORE COMMENCING ANY WORK.
- CONTRACTOR TO SUPPORT ALL SERVICES SHOWN ON PROJECT SCOPE FROM BUILDING STRUCTURAL MEMBERS, SUPPORT ALL MECHANICAL PIPING USING CLEVIS HANGERS AT ADEQUATE SPACING TO INSURE NO SAG OR FAILURE OF JOINTS, ADEQUATELY BRACE PIPING AND ALLOW FOR EXPANSION OR CONTRACTION. PROVIDE EXPANSION LOOPS OR JOINTS SIZED TO COMPENSATE FOR CHANGES IN PIPE LENGTH CAUSED BY A TEMPERATURE DIFFERENTIAL OF 65°C FOR TYPICAL BUILDING SYSTEMS AND 200°C FOR LAB SPECIAL SYSTEMS. ALL SUPPORTS & HANGERS TO BE HOT DIPPED GALVANIZED OR ZINC ELECTROPLATED.
- CONTRACTOR TO PROVIDE FULL SYSTEM OF SUPPORTS AND HANGERS COMPLETE WITH ALL NECESSARY BRACKETS, BASE PLATES, INSERTS, FASTENERS, RODS AND ALL OTHER ACCESSORIES IN ACCORDANCE WITH MSS SP-58 AND TO MATCH EXISTING BUILDING SUPPORTS. ALL SUPPORTS & HANGERS TO BE E. MYATT, ITT GRINNELL OR APPROVED EQUAL.
- CONTRACTOR TO TEMPORARILY SUPPORT ALL REMAINING PIPING LEFT AFTER DEMOLITION OR MODIFICATION UNTIL NEW PIPING & BRANCHES ARE TIED IN & INSTALLED AND FINAL PERMANENT SUPPORTS ARE IN PLACE.
 - LABEL ALL PIPING, EQUIPMENT & DUCTWORK WITH REFERENCE TO THEIR SERVICE AND LOCATION. USE W.H. BRADY LABELS STYLE, 9-946 VINYL FILM, 50mm WIDE. MATCH BUILDING IDENTIFICATION / LABELING SYSTEM AS FOLLOWS:
 - WHITE LETTERS & ARROWS ON GREEN TAPE:
 - DOMESTIC & SEPARATED COLD WATER
 - CHILLED WATER SUPPLY & RETURN
 - CONDENSED & TOWER WATER SUPPLY & RETURN
 - DRAINAGE, SANITARY, STORM & VENTS
 - HVAC SUPPLY & RETURN, EXHAUST AIR & FRESH AIR INTAKE DUCTWORK
 - DOMESTIC HOT WATER
 - HEATING WATER SUPPLY & RETURN
 - COMPRESSED AIR
 - STEAM PIPING
 - WHITE LETTERS & ARROWS ON RED TAPE:
 - FIRE & SPRINKLERS PROTECTION SYSTEM
 - WHITE LETTERS & ARROWS ON BLUE TAPE:
 - LAB SERVICES (LN2, GN2 SUPPLY, PURGE & VENTS)
- CONTRACTOR SHALL ALLOW FOR TWO (2), FOUR (4) HOUR COORDINATION MEETINGS ON SITE AT KICK-OFF OF THE PROJECT WITH PROJECT ENGINEER AND DEPARTMENT REPRESENTATIVE FOR PROJECT UNDERSTANDING, SCHEDULING, PROCEDURE REVIEW AND TRADE COORDINATION. ALL SUB-TRADES SHALL ATTEND COORDINATION MEETINGS SO AS TO ASSIST IN INTERFERENCE AND WORK COORDINATION.
- CONTRACTOR SHALL REFER TO SPECIFICATIONS FOR ADDITIONAL WORKING REQUIREMENTS RELATED TO THE FACILITY AND CLEANROOM PROCEDURES.
- THE PROJECT IS A PHASED PROJECT. CONTRACTOR TO ALLOW FOR PHASED CONSTRUCTION.

MECHANICAL LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING PIPING/DUCTWORK/EQUIPMENT
---	EXISTING PIPING/DUCTWORK/EQUIPMENT TO BE REMOVED/RELOCATED
---	NEW/RELOCATED PIPING/DUCTWORK/EQUIPMENT
(E)	DENOTES EXISTING EQUIPMENT
(X)	DENOTES EXISTING EQUIPMENT TO BE REMOVED
(R)	DENOTES RELOCATED EQUIPMENT
(N)	DENOTES NEW EQUIPMENT
---	BELOW GRADE/SLAB PIPING
SA	SUPPLY AIR
RA	RETURN AIR
OA	OUTDOOR AIR
EA	EXHAUST AIR
DCW	DOMESTIC COLD WATER PIPING
SAN	SANITARY PIPING
ST	STORM PIPING
COND	CONDENSATE DRAIN PIPING
HWS	HEATING WATER SUPPLY PIPING
HWR	HEATING WATER RETURN PIPING
CHWS	CHILLED WATER SUPPLY PIPING
CHWR	CHILLED WATER RETURN PIPING
STEAM	STEAM PIPING
○	PIPING UP
→	PIPING DOWN
→	PIPING OFFSET
→	BRANCH PIPING DOWN
○	FLOOR DRAIN
FD-1	CAP
HB-1	PIPE BREAK
HOSE	HOSE BIBB
STR	STRAINER
UN	UNION
RED	REDUCER
U	FLOW DIRECTION
IT	RUNNING P-TRAP
IT	BALL VALVE
ISV	ISOLATION VALVE
CV	CHECK VALVE
CBV	CIRCUIT BALANCING VALVE (CBV)
PRV	PRESSURE REDUCING VALVE (PRV)
DV	DRAIN VALVE
3-WAY	3-WAY CONTROL VALVE (DDC)
P	PUMP
TM	THERMOMETER
PG	PRESSURE GAUGE
AAV	AUTOMATIC AIR VENT C/W VALVE
RTU	RECTANGULAR DUCTWORK
RTU	ROUND DUCTWORK
RTU	ACOUSTICALLY LINED DUCTWORK
RTU	THERMALLY INSULATED DUCTWORK
RTU	RECTANGULAR DUCTWORK OFFSET
RTU	ROUND DUCTWORK OFFSET
RTU	DUCTWORK UP
RTU	DUCTWORK DOWN
RTU	DUCTWORK TRANSITION
RTU	RECTANGULAR TO ROUND DUCTWORK TRANSITION
RTU	TURNING VANES
FD	FIRE DAMPER
BD	BALANCING DAMPER
T	TEMPERATURE SENSOR
H	HUMIDITY SENSOR
P	PRESSURE SENSOR
RTU	LOW VOLTAGE CONTROL WIRING
RTU	ROOFTOP UNIT

Canadian Space Agency / Agence spatiale canadienne

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03	Issued for Tender	2020.09.30
02	Re-Issued for Review	2016.08.04
01	Issued for Review	2016.03.14

A detail no. du detail
B location drawing no. sur dessin no.
C drawing no. dessin no.

project project

BAY 3 REFIT PROJECT

ADDRESS

drawing dessin

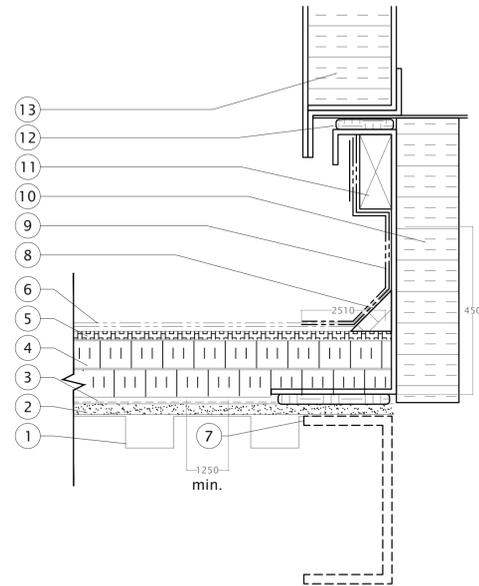
MECHANICAL GENERAL NOTES, LEGEND & SCHEDULES

Designed By	J.ALEXANDER	Conçu par
Date		(yyyy/mm/dd)
Drawn By	R.CAMERON	Dessiné par
Date		(yyyy/mm/dd)
Reviewed By	J.ALEXANDER	Examiné par
Date		(yyyy/mm/dd)
Approved By	J.ALEXANDER	Approuvé par
Date		(yyyy/mm/dd)
Tender	M. FARID	Soumission
Project Manager	Administrateur de projets	
Project no.	CSA15-G8b	No. du projet
	2016-008	
Drawing no.	M1	No. du dessin

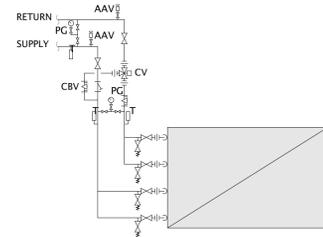
AIR HANDLING UNIT SCHEDULE (AIR HANDLING UNITS SUPPLIED BY DEPARTMENTAL REPRESENTATIVE)																		
TAG	LOCATION	SUPPLY FAN			RETURN FAN			COOLING DATA (CHILLED WATER)			HEATING DATA (HOT WATER)		ELECTRICAL DATA		PHYSICAL DIMENSIONS WxLxH (mmxmmxmm)	WEIGHT (KG)	REMARKS	
		CAPACITY (L/S)	EXTERNAL STATIC PRESSURE (Pa)	POWER (kW)	CAPACITY (L/S)	EXTERNAL STATIC PRESSURE (Pa)	POWER (kW)	NET COOLING CAPACITY (kW)	NET SENSIBLE COOLING CAPACITY (kW)	FLUID FLOW RATE (L/S)	CAPACITY (kW)	FLUID FLOW RATE (L/S)	V/Ø/Hz	FLA/MCA/MOP				
AHU-7	MECHANICAL ROOM M6	14158	438	22	14158	250	2x 12	372	261	16	262	5.7	575/3/60	-/-	3188x1275x2439	7652	C/W COOLING COIL EXTERNAL BYPASS	
AHU-8	MECHANICAL ROOM M6	14158	438	22	14158	250	2x 12	372	261	16	262	5.7	575/3/60	-/-	3188x1275x2439	7652	C/W COOLING COIL EXTERNAL BYPASS	

NOTES: 1. CHILLED WATER: EWT = 7.2°C, LWT = 12.7°C
2. HOT WATER: EWT = 82.2°C, LWT = 71.1°C

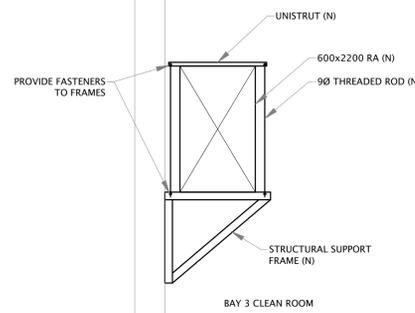
- ROOF CURB DETAIL**
- 1 STEEL DECK (EXISTING)
 - 2 12.7mm WATERPROOF GYPSUM BOARD MECHANICALLY FASTENED TO STEEL DECK (EXISTING)
 - 3 VAPOUR BARRIER SELF-ADHERING APPROVED (EXISTING)
 - 4 63mm POLYSTY INSULATION (R18) (EXISTING)
 - 5 PROTECTION RECOVERY BOARD (EXISTING)
 - 6 2 PLY MODIFIED BITUMEN MEMBRANE (EXISTING)
 - 7 STRUCTURAL SUPPORT
 - 8 2 PLY MODIFIED BITUMEN MEMBRANE FLASHED TO NEW AHU SUPPORTS/ROOF CURB
 - 9 2x4 CEDAR NAILER (SUPPLIED AS PART OF AHU-S)
 - 10 TYPICAL: SELF-ADHESIVE NEOPRENE AIR & WATER SEAL BETWEEN BOTTOM OF ROOF CURB AND STEEL BEAM/VAPOUR BARRIER
 - 11 PENTHOUSE LOUVRE C/W FRAME



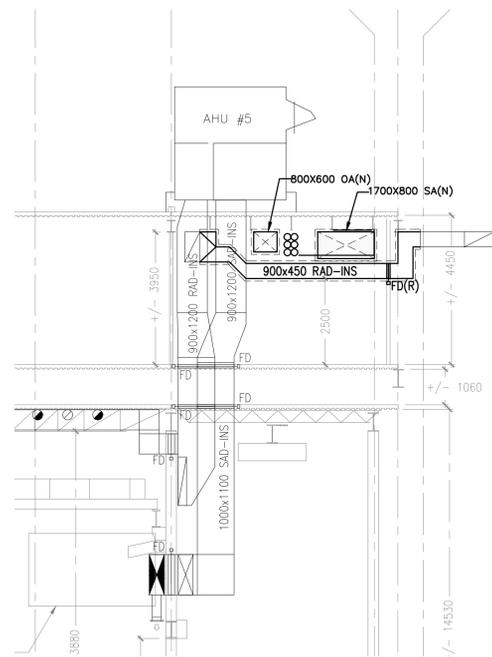
1 PENTHOUSE LOUVRE DETAIL
Scale: NTS



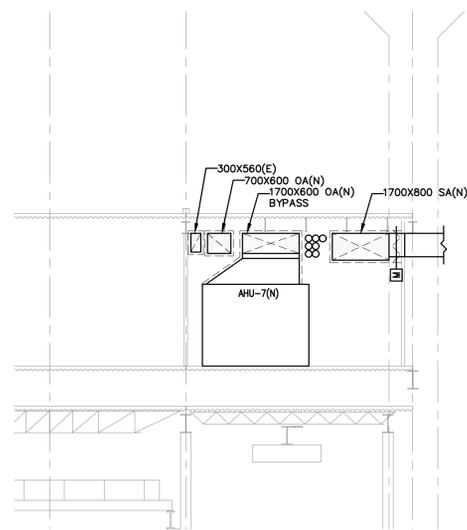
3 TYPICAL COIL CONNECTION DETAIL CHILLED WATER AND HOT WATER
Scale: NTS



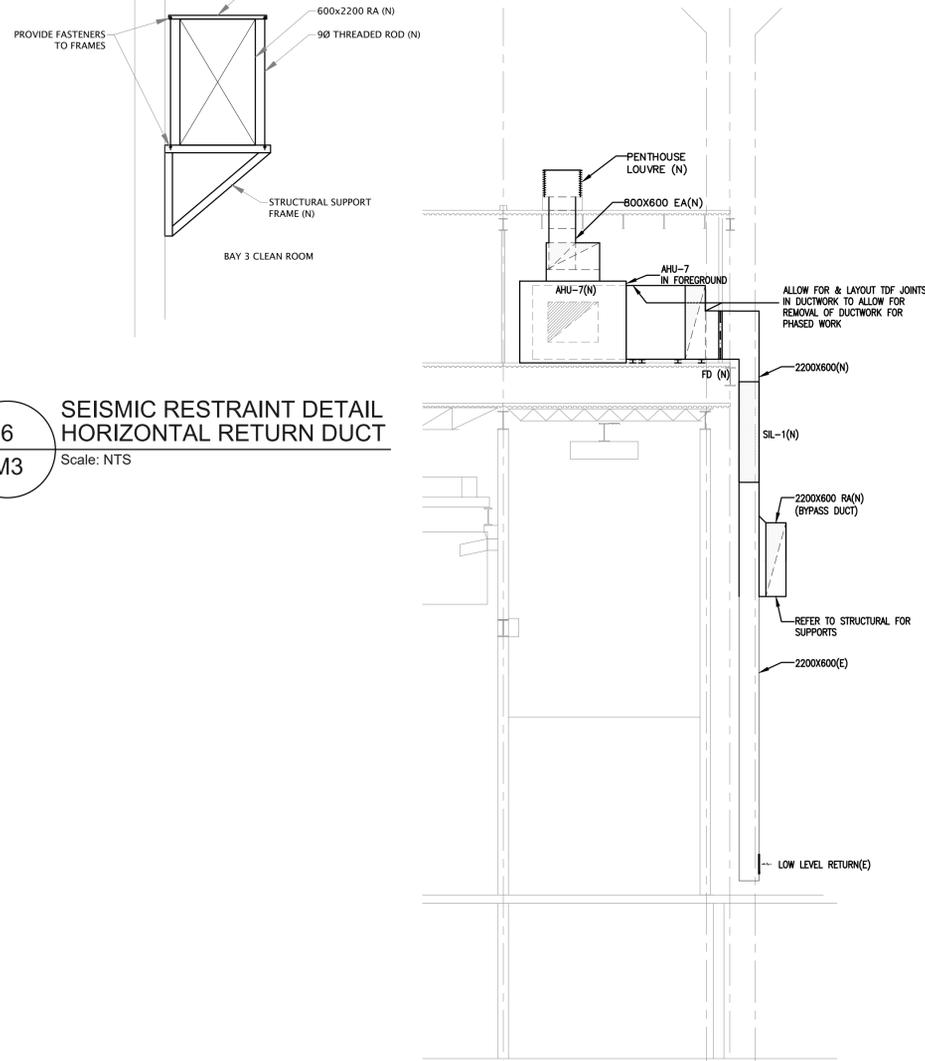
6 SEISMIC RESTRAINT DETAIL HORIZONTAL RETURN DUCT
Scale: NTS



2 LEVEL 4 MECHANICAL ROOM M6 HVAC SECTION VIEW - NEW WORK
Scale: 1:100



4 LEVEL 4 MECHANICAL ROOM M6 HVAC SECTION VIEW - NEW WORK
Scale: 1:100



5 LEVEL 4 MECHANICAL ROOM M6 HVAC SECTION VIEW - NEW WORK
Scale: 1:100

SILENCER SCHEDULE																
TAG	LOCATION	SIZE WxH (mmxmm)	LENGTH (mm)	AIRFLOW (L/S)	AIR VELOCITY (M/S)	PRESSURE DROP (Pa)	DYNAMIC INSERTION LOSS								BASIS OF DESIGN	REMARKS
							63	125	250	500	1000	2000	4000	8000		
SIL-1	BAY 3	2200 x 800	3000	14150	8	50	17	21	26	36	25	18	16	13	KINETICS	RETURN
SIL-2	BAY 3	2200 x 800	3000	14150	8	50	17	21	26	36	25	18	16	13	KINETICS	RETURN
SIL-3	BAY 3	900 x 900	2400	3537	4	45	9	19	34	49	50	51	28	20	KINETICS	SUPPLY
SIL-4	BAY 3	1200 x 700	2400	3537	4	45	12	20	30	47	50	39	23	18	KINETICS	SUPPLY
SIL-5	BAY 3	1200 x 700	2400	3537	4	45	12	20	30	47	50	39	23	18	KINETICS	SUPPLY
SIL-6	BAY 3	1200 x 700	2400	3537	4	45	12	20	30	47	50	39	23	18	KINETICS	SUPPLY

NOTES: 1. SILENCER PERFORMANCE LISTED ABOVE IS TO FORM THE BASIS OF DESIGN AND SILENCER MANUFACTURER SHALL MEET OR EXCEED THIS EQUIPMENT SOUND POWER LEVELS.

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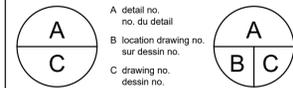
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project project

BAY 3 REFIT PROJECT

ADDRESS

MECHANICAL DETAILS & SECTIONS

Designed By	J.ALEXANDER	Conçu par	
Date		(yyyy/mm/dd)	
Drawn By	R.CAMERON	Dessiné par	
Date		(yyyy/mm/dd)	
Reviewed By	J.ALEXANDER	Examiné par	
Date		(yyyy/mm/dd)	
Approved By	J.ALEXANDER	Approuvé par	
Date		(yyyy/mm/dd)	
Tender	M. FARID	Soumission	

Project Manager / Administrateur de projets

Project no. / No. du projet

CSA15-G8b

2016-008

Drawing no. / No. du dessin

M2

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A	B	C
detail no.	location drawing no.	drawing no.
no. du detail	sur dessin no.	dessin no.

project / projet

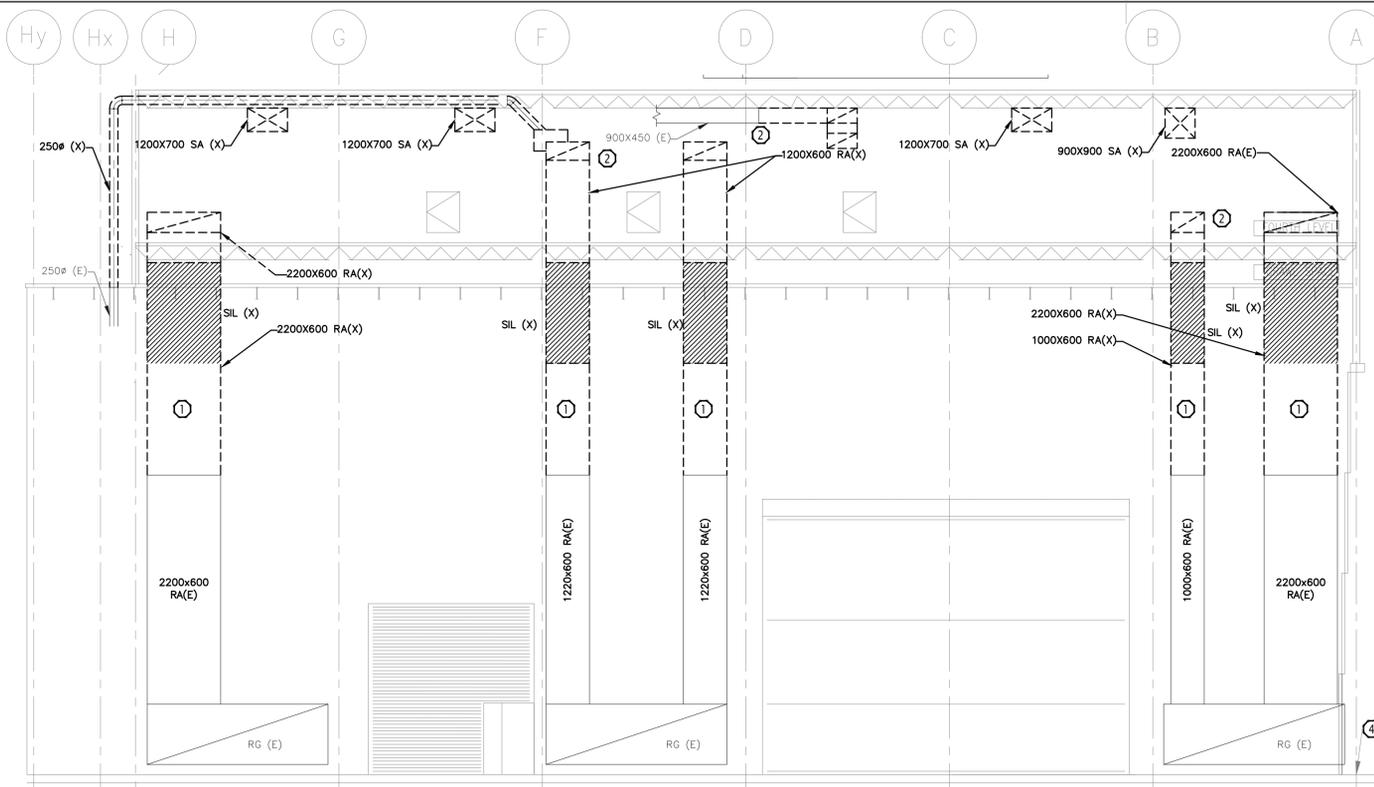
BAY 3 REFIT PROJECT

ADDRESS

drawing / dessin

MECHANICAL SECTIONS

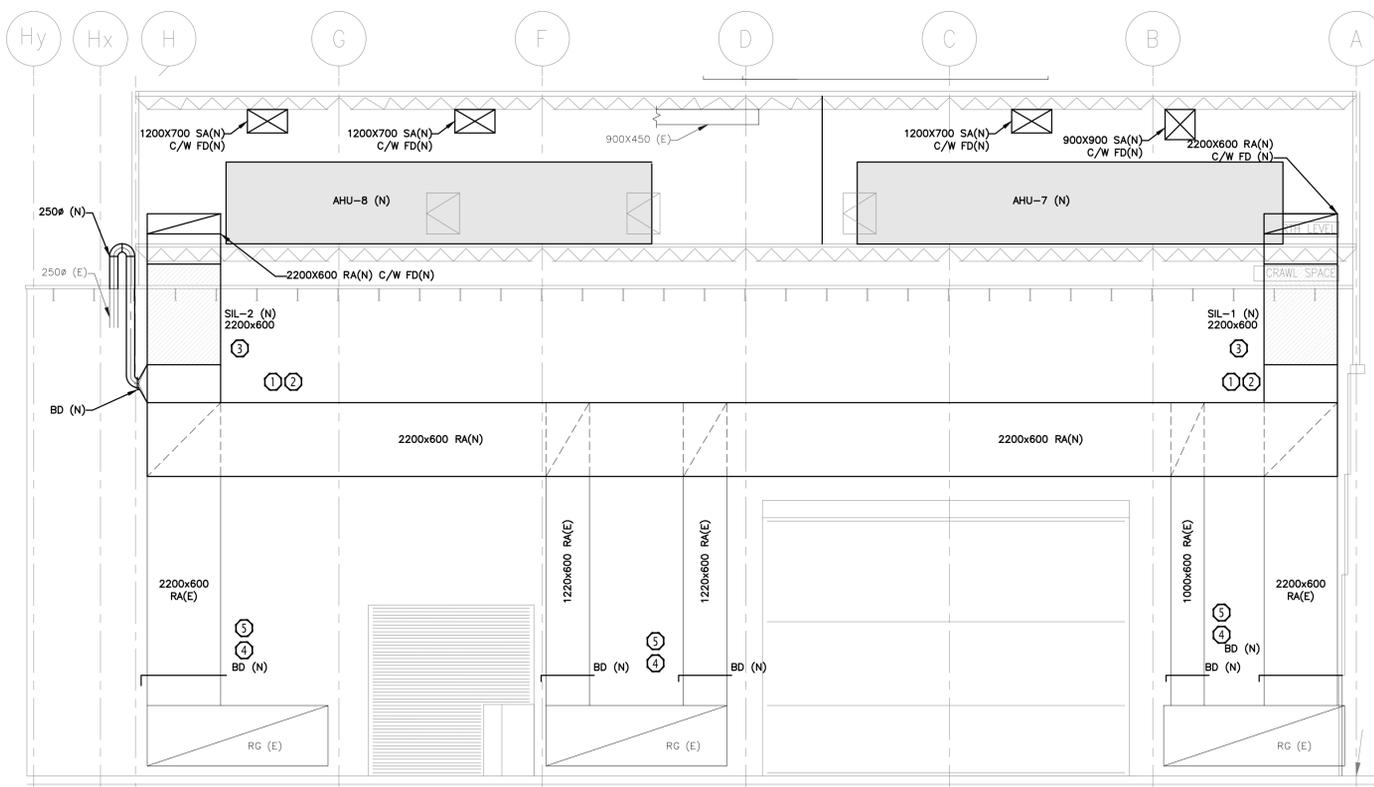
Designed By	J.ALEXANDER	Conçu par	
Date		(yyyy/mm/dd)	
Drawn By	R.CAMERON	Dessiné par	
Date		(yyyy/mm/dd)	
Reviewed By	J.ALEXANDER	Examiné par	
Date		(yyyy/mm/dd)	
Approved By	J.ALEXANDER	Approuvé par	
Date		(yyyy/mm/dd)	
Tender	M. FARID	Soumission	
Project Manager	M. FARID	Administrateur de projets	
Project no.	CSA15-G8b	No. du projet	
			2016-008
Drawing no.	M3	No. du dessin	



DESCRIPTION OF HVAC DEMOLITION:

- REMOVE INDICATED DUCTWORK.
- PATCH WALL PENETRATIONS TO MATCH EXISTING WALL CONSTRUCTION & FIRE RATING WHERE ABANDONED.
- NOTE THIS IS A COMPOSITE DRAWING WHICH DOES NOT INCLUDE PROJECT PHASING. REFER TO DRAWINGS M8 & M9 FOR DUCTWORK PHASING.
- PROVIDE PROTECTION AND TARPING. REFER TO SPECIFICATIONS.

1
M3
LEVEL 4 MECHANICAL ROOM M6
HVAC SECTIONAL VIEW - COMPOSITE DEMOLITION
Scale: 1:100

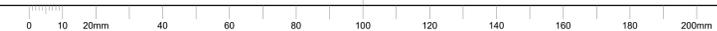


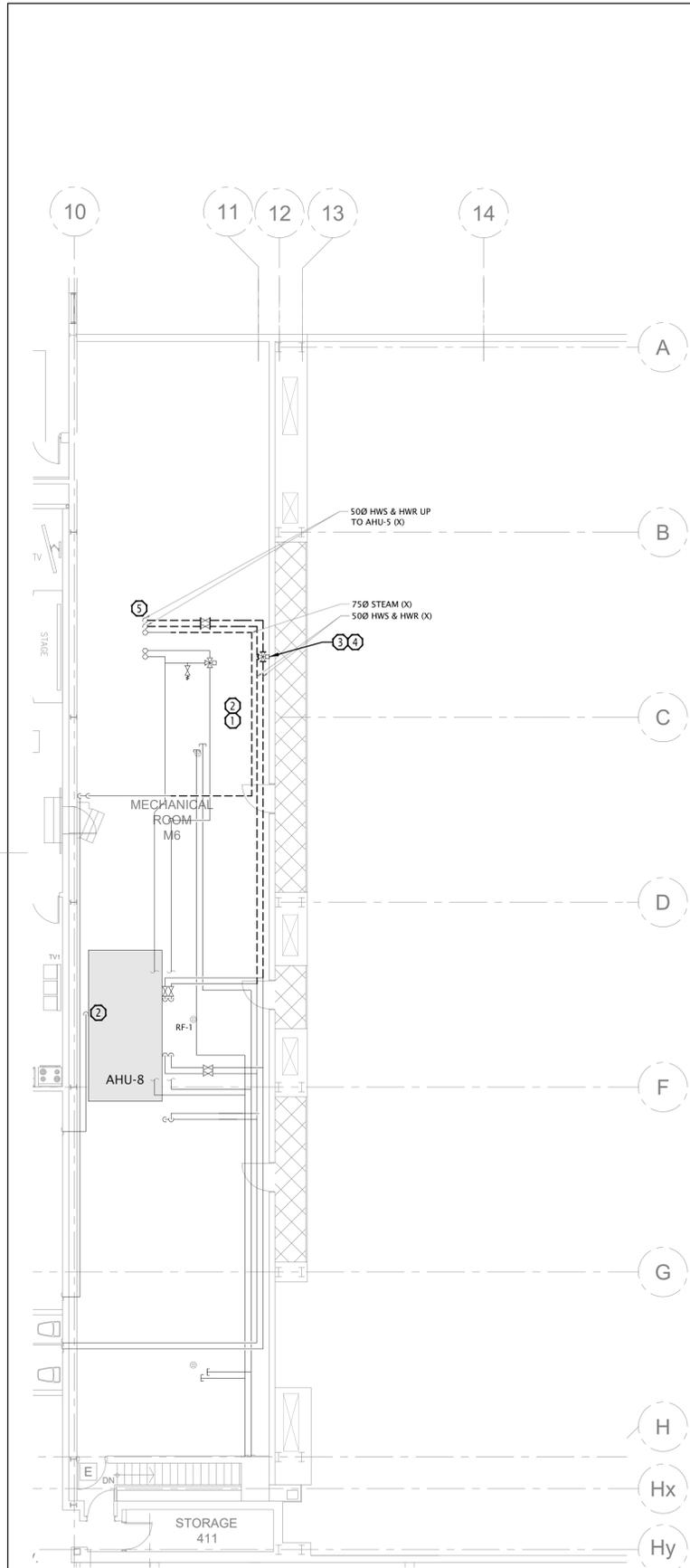
DESCRIPTION OF HVAC NEW WORK:

- PROVIDE NEW DUCTWORK.
- PROVIDE STRUCTURAL SUPPORT FOR NEW DUCTWORK FROM EXISTING COLUMNS. CONTRACTOR SHALL ALLOW FOR WELDING OF NEW DUCTWORK SUPPORTS FROM EXISTING COLUMNS INCLUDING PRIMING & REPAINTING TO MATCH EXISTING. REFER TO STRUCTURAL ENGINEERING DRAWINGS FOR DETAILS.
- PROVIDE NEW RETURN AIR SILENCERS IN VERTICAL.
- PROVIDE NEW RETURN MANUAL BALANCING DAMPERS.
- CONTRACTOR SHALL CUT, PATCH, REPAIR & PAINT DRYWALL TO ALLOW FOR DAMPER INSTALLATION. PROVIDE ACCESS DOOR FOR ACTUATOR SERVICE.
- NOTE THIS IS A COMPOSITE DRAWING WHICH DOES NOT INCLUDE PROJECT PHASING. REFER TO DRAWINGS M8 & M9 FOR DUCTWORK PHASING.

2
M3
LEVEL 4 MECHANICAL ROOM M6
HVAC SECTIONAL VIEW - NEW WORK
Scale: 1:100

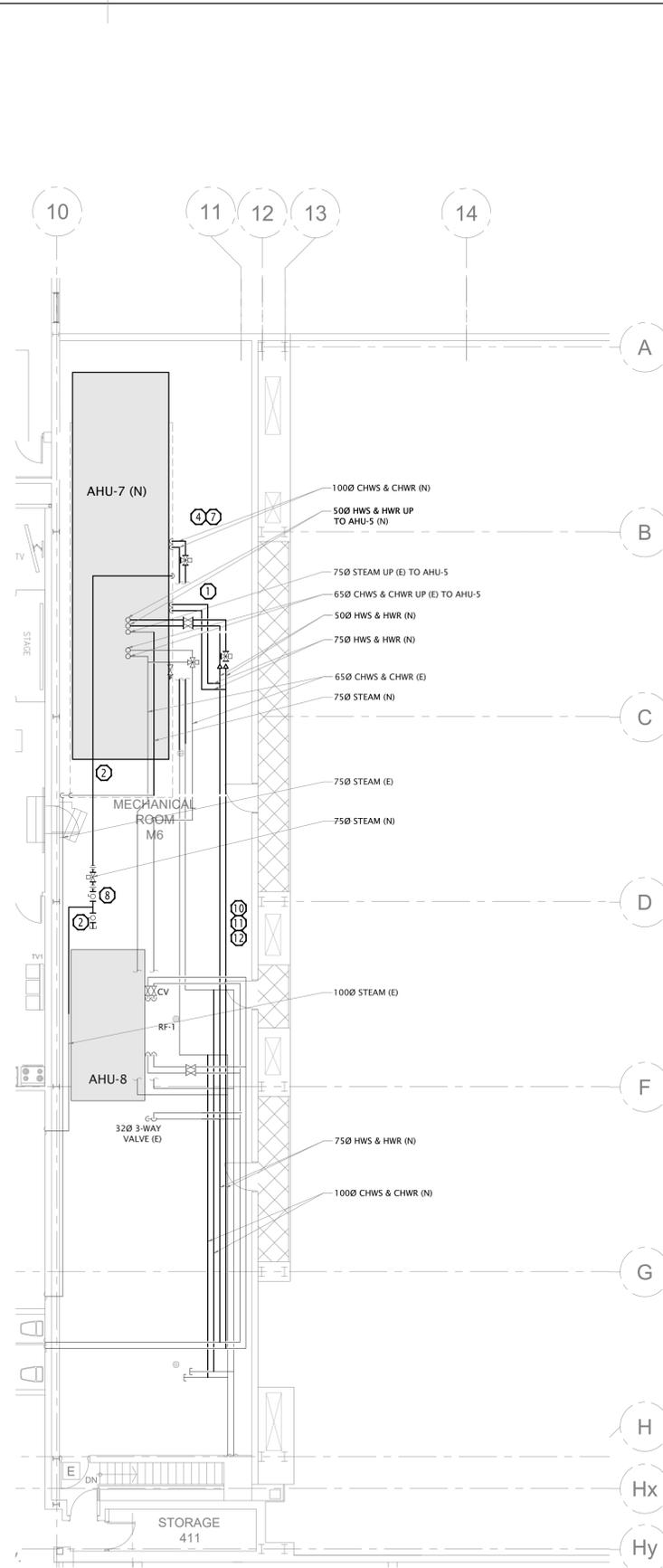
C





DESCRIPTION OF UTILITIES DEMOLITION:

- ① REMOVE EXISTING HEATING WATER SUPPLY & RETURN PIPING C/W ASSOCIATED VALVES & ACCESSORIES.
- ② REMOVE EXISTING STEAM PIPING C/W ASSOCIATED ACCESSORIES. LOCK OUT STEAM HUMIDIFIER DURING WORK.
- ③ REMOVE & RETAIN THREE-WAY CONTROL VALVE SERVING AHU-5.
- ④ ALL CONTROLS SHALL BE DISCONNECTED BY BASE BUILDING CONTROLS CONTRACTOR PRIOR TO REMOVAL.
- ⑤ PRIOR TO START OF DEMOLITION WORK, CONTRACTOR TO ROUGH IN ALL WORK ASSOCIATED WITH AHU-5 (E) LOCATED ON ROOF TO MINIMIZE SHUTDOWN PERIOD.

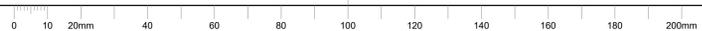


DESCRIPTION OF UTILITIES NEW WORK:

- ① PROVIDE NEW HEATING WATER SUPPLY & RETURN & CHILLED WATER SUPPLY & RETURN PIPING C/W THERMAL INSULATION, IDENTIFICATION & ASSOCIATED VALVES & ACCESSORIES. PROVIDE JACKET.
- ② PROVIDE NEW STEAM PIPING C/W THERMAL INSULATION, JACKET, IDENTIFICATION & ASSOCIATED VALVES & ACCESSORIES.
- ③ PROVIDE SYSTEM TAGGING & IDENTIFICATION.
- ④ PROVIDE NEW 3-WAY CONTROL VALVES ON NEW CHILLED WATER AND HOT WATER COILS FOR NEW AHU-7.
- ⑤ PATCH AND REPAIR INSULATION WHERE REQUIRED.
- ⑥ PROVIDE SYSTEM TESTING, CLEANING, AND FLUSHING.
- ⑦ REFERENCE DETAIL 3/M2 FOR ADDITIONAL CONNECTION DETAILS TO HOT WATER AND CHILLED WATER COILS.
- ⑧ PROVIDE NEW STEAM CONTROL VALVE ON HUMIDIFICATION LOW PRESSURE STEAM PIPE. VALVE SHALL BE 24V MODULATING, 2-WAY, MOTORIZED CONTROL VALVE.
- ⑨ PROVIDE SYSTEM TESTING & BALANCING.
- ⑩ REINSTALL AHU-5 CONTROL VALVE C/W ACCESSORIES.
- ⑪ PROVIDE NEW BAS CONTROLS & INTEGRATION. REFER TO SPECIFICATIONS FOR DETAILS.
- ⑫ BASE BUILDING CONTROLS CONTRACTOR SHALL RECONNECT REMOVED CONTROLS, TEST & VERIFY OPERATION.

1
M6
LEVEL 4 MECHANICAL ROOM M6
PHASE 1 UTILITIES DEMOLITION
Scale: 1:100

2
M6
LEVEL 4 MECHANICAL ROOM M6
PHASE 1 UTILITIES NEW WORK
Scale: 1:100



ÉRIC VACHON
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A	B	C
detail no. no. du détail	location drawing no. sur dessin no.	drawing no. dessin no.

project / projet

BAY 3 REFIT PROJECT

ADDRESS

drawing / dessin
LEVEL 4 MECHANICAL ROOM M6 PHASE 1 UTILITIES DEMOLITION & NEW WORK

Designed By	J.ALEXANDER	Conçu par
Date		(yyyy/mm/dd)
Drawn By	R.CAMERON	Dessiné par
Date		(yyyy/mm/dd)
Reviewed By	J.ALEXANDER	Examiné par
Date		(yyyy/mm/dd)
Approved By	J.ALEXANDER	Approuvé par
Date		(yyyy/mm/dd)
Tender	M. FARID	Soumission

Project Manager / Administrateur de projets
Project no. / No. du projet
CSA15-G8b

Drawing no. / No. du dessin
M6

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A	A detail no. no. du detail	A
C	B location drawing no. sur dessin no.	B C
	C drawing no. dessin no.	

project / projet

BAY 3 REFIT PROJECT

ADDRESS

drawing / dessin

LEVEL 4 MECHANICAL ROOM M6 PHASE 2 UTILITIES DEMOLITION & NEW WORK

Designed By	J.ALEXANDER	Conçu par	J.ALEXANDER
Date		(yyyy/mm/dd)	
Drawn By	R.CAMERON	Dessiné par	R.CAMERON
Date		(yyyy/mm/dd)	
Reviewed By	J.ALEXANDER	Examiné par	J.ALEXANDER
Date		(yyyy/mm/dd)	
Approved By	J.ALEXANDER	Approuvé par	J.ALEXANDER
Date		(yyyy/mm/dd)	
Tender	M. FARID	Soumission	

Project Manager / Administrateur de projets

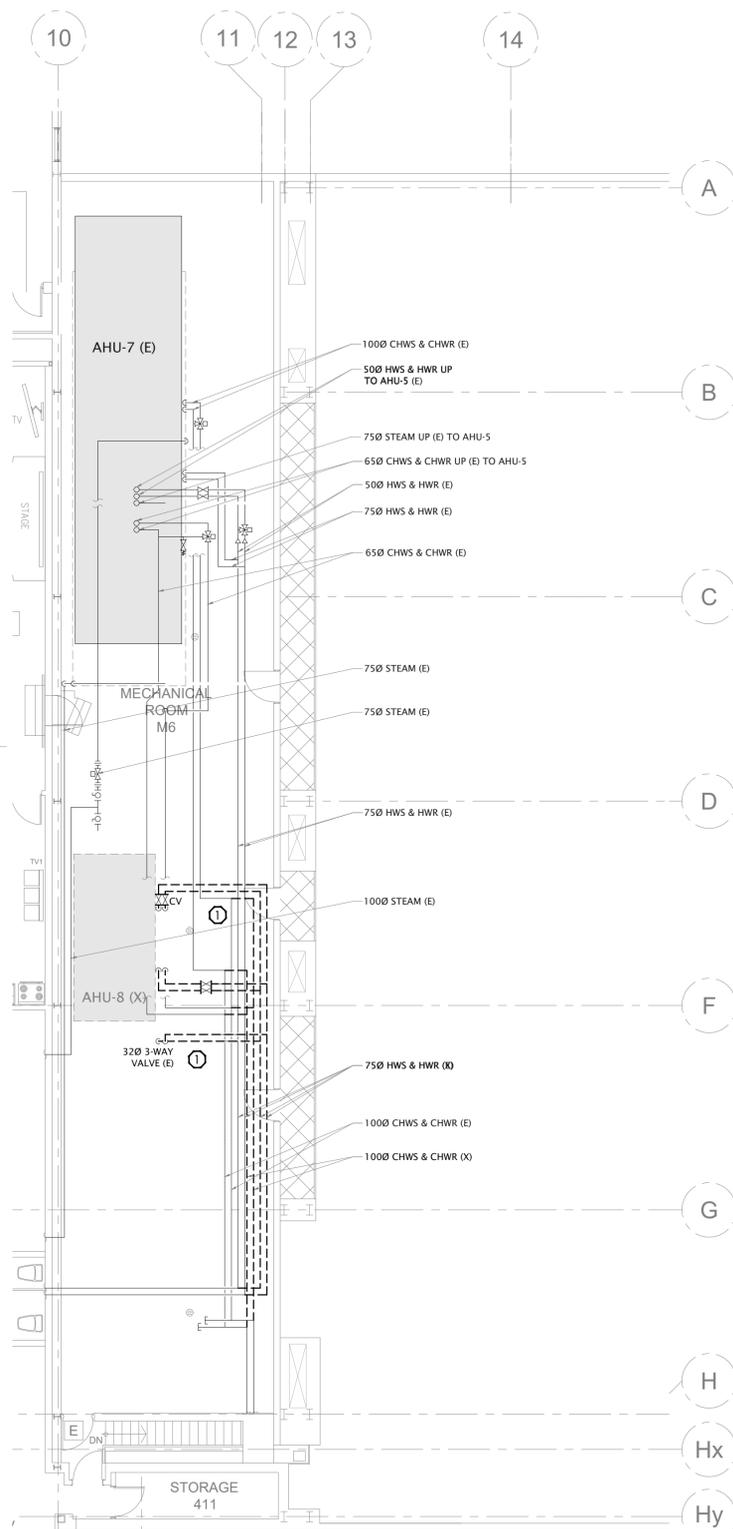
Project no. / No. du projet

CSA15-G8b

2016-008

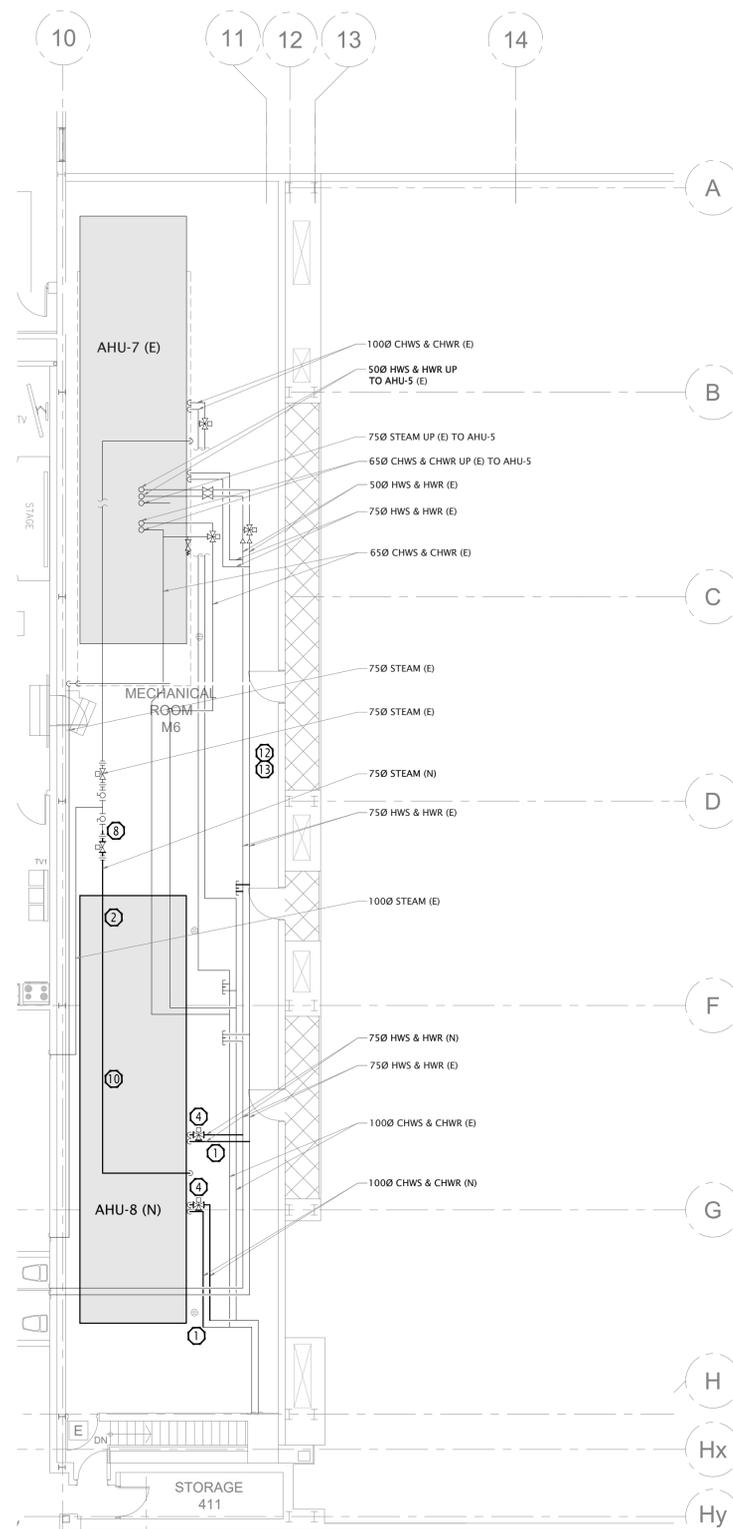
Drawing no. / No. du dessin

M7



DESCRIPTION OF UTILITIES DEMOLITION:

- ① CONTRACTOR SHALL REMOVE INDICATED CHILLED & HOT WATER PIPING C/W ALL ACCESSORIES. COORDINATE SYSTEM SHUTDOWNS WITH DEPARTMENT REPRESENTATIVE.
- ② ALL CONTROLS SHALL BE DISCONNECTED BY BASE BUILDING CONTROLS CONTRACTOR PRIOR TO REMOVAL.



DESCRIPTION OF UTILITIES NEW WORK:

- ① PROVIDE NEW HEATING WATER SUPPLY & RETURN & CHILLED WATER SUPPLY & RETURN PIPING C/W THERMAL INSULATION, IDENTIFICATION & ASSOCIATED VALVES & ACCESSORIES. PROVIDE JACKET.
- ② PROVIDE NEW STEAM PIPING C/W THERMAL INSULATION, JACKET, IDENTIFICATION & ASSOCIATED VALVES & ACCESSORIES.
- ③ PROVIDE SYSTEM TAGGING & IDENTIFICATION.
- ④ PROVIDE NEW 3-WAY CONTROL VALVES ON NEW CHILLED WATER AND HOT WATER COILS FOR NEW AHU-8.
- ⑤ PATCH AND REPAIR INSULATION WHERE REQUIRED.
- ⑥ PROVIDE SYSTEM TESTING, CLEANING, AND FLUSHING.
- ⑦ REFERENCE DETAIL 3/M2 FOR ADDITIONAL CONNECTION DETAILS TO HOT WATER AND CHILLED WATER COILS.
- ⑧ PROVIDE NEW STEAM CONTROL VALVE ON HUMIDIFICATION LOW PRESSURE STEAM PIPE. VALVE SHALL BE 24V MODULATING, 2-WAY, MOTORIZED CONTROL VALVE.
- ⑨ PROVIDE NEW STEAM PIPING C/W THERMAL INSULATION, JACKET, IDENTIFICATION & ASSOCIATED VALVES & ACCESSORIES.
- ⑩ PROVIDE SYSTEM TAGGING & IDENTIFICATION.
- ⑪ PROVIDE SYSTEM TESTING & BALANCING.
- ⑫ PROVIDE NEW BAS CONTROLS & INTEGRATION. REFER TO SPECIFICATIONS FOR DETAILS.
- ⑬ BASE BUILDING CONTROLS CONTRACTOR SHALL RECONNECT REMOVED CONTROLS, TEST & VERIFY OPERATION.

1
M7
LEVEL 4 MECHANICAL ROOM M6 PHASE 2 UTILITIES DEMOLITION

Scale: 1:100

2
M7
LEVEL 4 MECHANICAL ROOM M6 PHASE 2 UTILITIES NEW WORK

Scale: 1:100

ÉRIC VACHON
Director, Security & Facilities
MAGDI FARID, P. Eng.
Manager, DFL Operations & Security



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revisions	description	date
03	Issued for Tender	2020.09.30
02	Re-Issued for Review	2016.08.04
01	Issued for Review	2016.03.14

A	B	C
detail no. no. du détail	location drawing no. sur dessin no.	drawing no. dessin no.

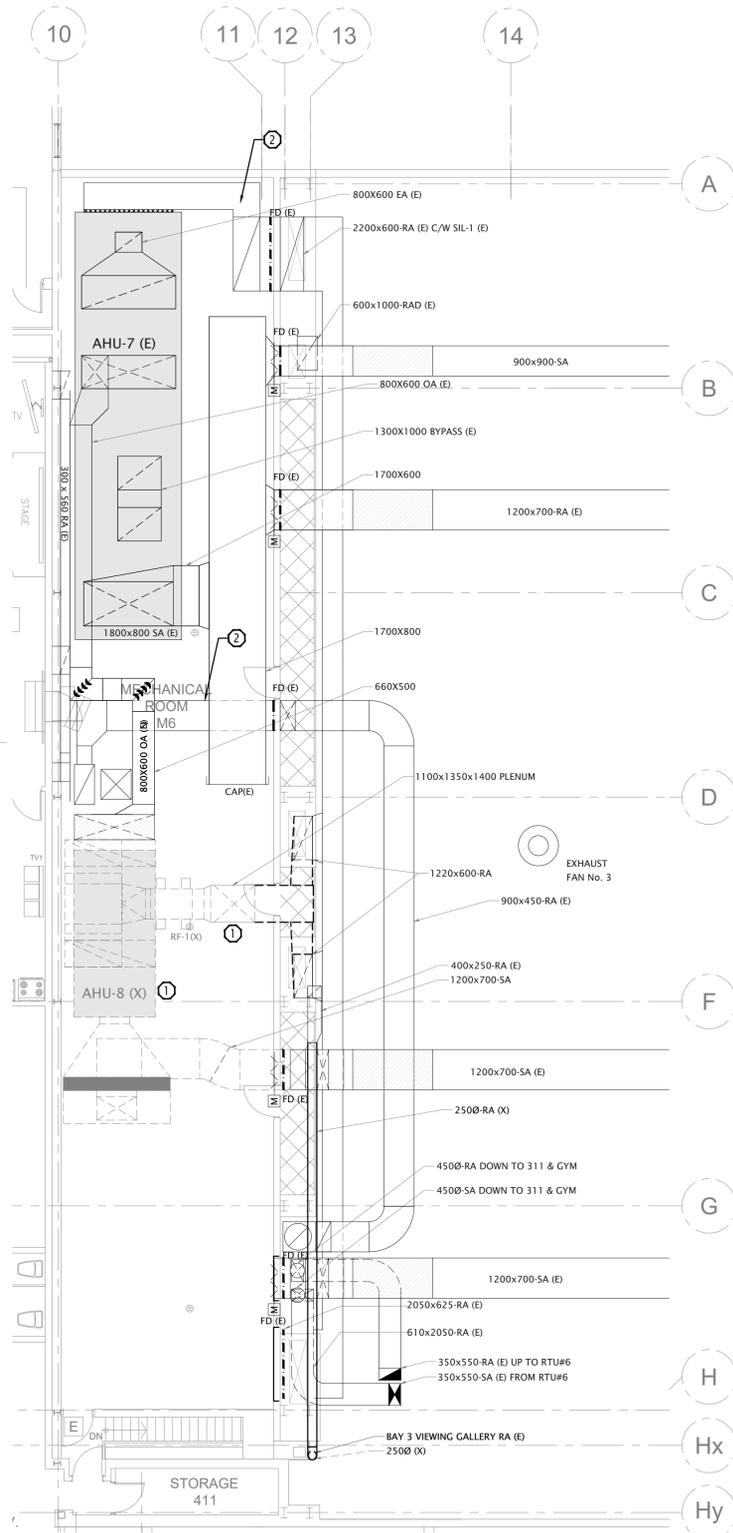
project / projet
BAY 3 REFIT PROJECT
ADDRESS

drawing / dessin
LEVEL 4 MECHANICAL ROOM M6 PHASE 2 HVAC DEMOLITION & NEW WORK

Designed By	J.ALEXANDER	Conçu par	
Date		(yyyy/mm/dd)	
Drawn By	R.CAMERON	Dessiné par	
Date		(yyyy/mm/dd)	
Reviewed By	J.ALEXANDER	Examiné par	
Date		(yyyy/mm/dd)	
Approved By	J.ALEXANDER	Approuvé par	
Date		(yyyy/mm/dd)	
Tender	M. FARID	Soumission	

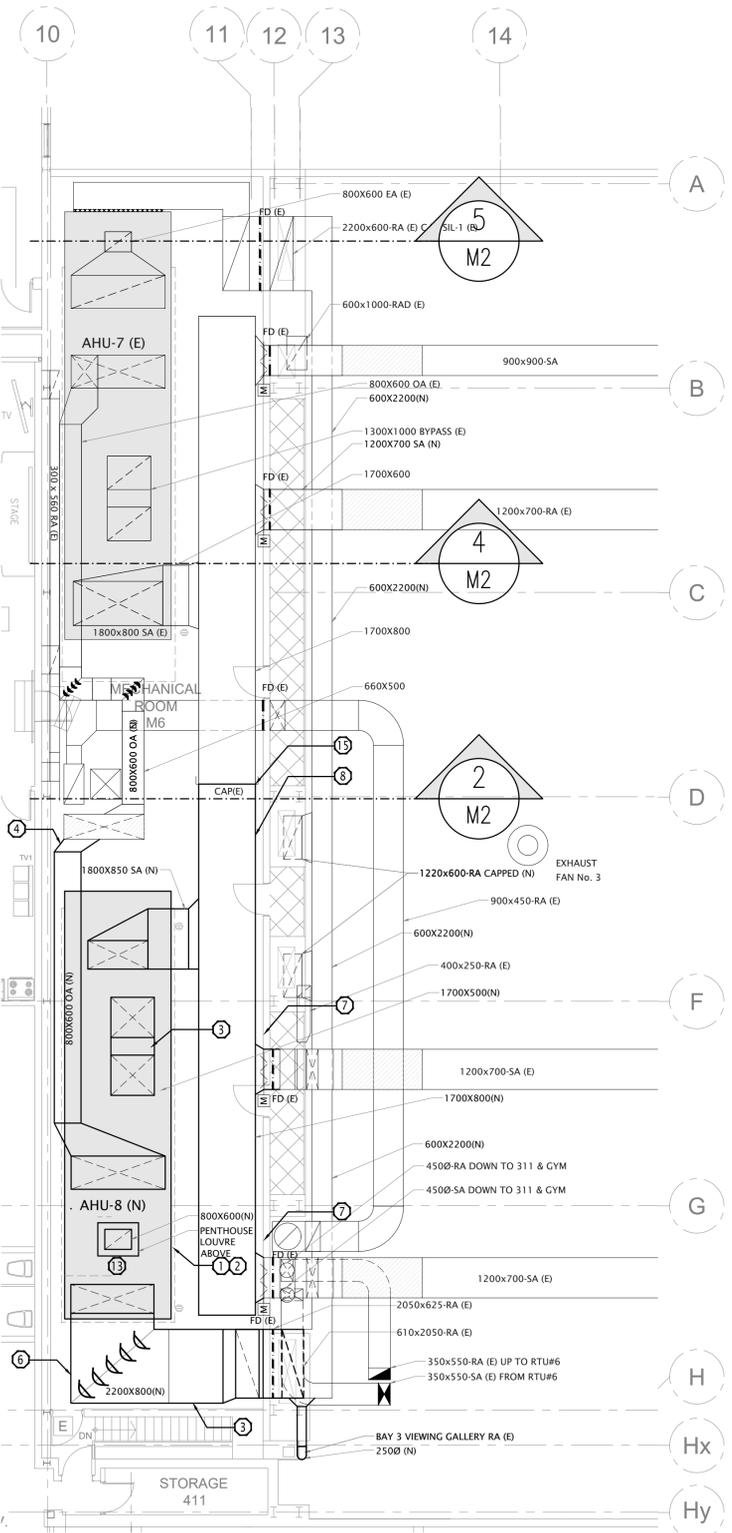
Project Manager / Administrateur de projets
Project no. / No. du projet
CSA15-G8b
2016-008

Drawing no. / No. du dessin
M9



1
M9
LEVEL 4 MECHANICAL ROOM M6
PHASE 2 HVAC DEMOLITION
Scale: 1:100

- DESCRIPTION OF HVAC DEMOLITION:**
- AHU-8 & RF-1 C/W ALL ACCESSORIES AND INDICATED DUCTWORK SHALL BE REMOVED. CONTRACTOR SHALL ALLOW IN SCHEDULING FOR REMOVAL & WORK ON SITE. ALLOW TO CUT UP & REMOVE UNIT THROUGH MECHANICAL ROOM ACCESS DOORS.
 - TEMPORARILY REMOVE AND REINSTATE DUCTWORK TO ACCOMMODATE THE REMOVAL OF AHU-8. RF-1, MATERIALS AND MOVE INTO SPACE NEW AHU-8 AND MATERIALS. REINSTATE DUCTWORK TO MINIMIZE BAY 3 SHUTDOWN.
 - AHU-7 SHALL BE IN FULL OPERATION TO MINIMIZE THE SHUTDOWN REQUIREMENTS OF BAY 3.
 - ONCE AHU-7 IS FULLY COMMISSIONED BASE BUILDING CONTROLS CONTRACTOR SHALL REMOVE CONTROLS FOR AHU-8 (X).

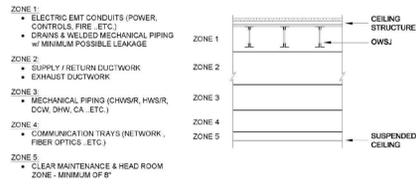


2
M9
LEVEL 4 MECHANICAL ROOM M6
PHASE 2 HVAC NEW WORK
Scale: 1:100

- DESCRIPTION OF HVAC NEW WORK:**
- AHU-8 SHALL BE MOUNTED DIRECTLY ON THE FLOOR WITHOUT HOUSE KEEPING PAD.
 - INSTALL NEW AHU-8. AHU-8 (NEW) SHALL BE SUPPLIED BY DEPARTMENTAL REPRESENTATIVE UNIT CURRENTLY IN SECTIONS IN SPACE.
 - PROVIDE EXTERNAL COOLING COIL BYPASS DUCT.
 - PROVIDE NEW FRESH AIR DUCT C/W 50mm THICK THERMAL INSULATION AND JACKET.
 - PROVIDE NEW RELIEF AIR DUCT UP TO ROOF C/W 50mm THICK THERMAL INSULATION AND JACKET.
 - PROVIDE NEW RETURN AIR DUCTWORK UNINSULATED.
 - PROVIDE NEW 24V, SPRING RETURN, NORMALLY OPEN, PARALLEL BLADE MOTORIZED DAMPERS.
 - PROVIDE NEW SUPPLY AIR DUCTWORK C/W THERMAL INSULATION & JACKET.
 - PROVIDE NEW DUCTWORK THERMAL INSULATION C/W TAGGING AND JACKET.
 - PROVIDE BAS CONTROLS & INTEGRATION. REFER TO SPECIFICATIONS FOR DETAIL.
 - PROVIDE START-UP TESTING & BALANCING FOR AHU-8. AHU-8 START-UP SHALL BE BY UNIT MANUFACTURER. COORDINATE WITH UNIT MANUFACTURER.
 - AHU-8, ALL ASSOCIATED DAMPERS, AND CONTROLS SHALL BE FULLY OPERATIONAL AT THE COMPLETION OF PHASE 2.
 - PROVIDE PENTHOUSE LOUVRE ON ROOF ABOVE CUT ROOF AND REINSTATE ROOFING TO TIE INTO PENTHOUSE LOUVRE CURB. PROVIDE C 200x17 STRUCTURAL STEEL FRAMING AROUND OPENING TO ADJACENT STRUCTURE. PENTHOUSE CURB SHALL BE SECURED TO FRAMING. PATCH & REPAIR ROOF. REFER TO DETAIL 5 ON M3 FOR ROOFING DETAILS.
 - PROVIDE SYSTEMS TESTING & BALANCING.
 - REMOVE MAIN HEADER CAP SEPARATING AHU-8 AND AHU-7 AND CONNECT DURING TIME DIRECTED BY DEPARTMENTAL REPRESENTATIVE.
 - INSTALLATION OF NEW AHU-8 SHALL BE COMPLETED WHILE AHU-7 IS OPERATIONAL.
 - PROVIDE COMPLETE SYSTEM/CONTROLS (AHU-7 & AHU-8) FINAL COMMISSIONING & SEQUENCE OF OPERATION TESTING.
 - ALL DUCTWORK IN MECHANICAL ROOM SHALL BE 18 GAUGE. ALL DUCTWORK IN BAY 3 SHALL BE 14 GAUGE.
 - ALL DUCTWORK IN BAY 3 TO BE PAINTED TO MATCH EXISTING COLOURS. ALL DUCTWORK IN MECHANICAL ROOM TO BE PAINTED WHITE.
 - BASE BUILDING CONTROLS CONTRACTOR SHALL PROVIDE NEW AHU-8 CONTROLS C/W INTEGRATION TO BAS SYSTEM.

GENERAL ELECTRICAL NOTES:

1. ALL TRADES TO FOLLOW BUILDING SERVICE ELEVATIONS STANDARD AS FOLLOW:



BUILDING STANDARDS - SERVICES ELEVATIONS

2. CONTRACTOR AND ALL TRADES TO FOLLOW ALL CAMPUS & CSA/DFL PROCEDURES AT ALL TIMES, GENERAL CONTRACTOR IS RESPONSIBLE TO DISTRIBUTE ALL PROCEDURES TO ALL HIS WORKERS & SUB-TRADES.

1. THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH ALL ISSUED CONTRACT SPECIFICATIONS, ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS, EXCEPT WHERE REPLACED OR CHANGED BY DIRECTIVE OR CORRECTIVE ADDENDA OR REVISED DRAWINGS AND SPECIFICATIONS.

2. ALL WORK MUST BE IN FULL ACCORDANCE WITH THE CANADIAN ELECTRIC CODE PART 1 C22.1-18 AND THE LATEST EDITION OF THE ONTARIO SAFETY CODE.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROVISION (SUPPLY, INSTALLATION & WIRING) OF ALL EQUIPMENT SHOWN ON THE CONTRACT DRAWINGS AND SPECIFICATIONS UNLESS CHANGED OR REPLACED BY REVISED DRAWINGS, SPECIFICATIONS ADDENDA.

4. ALL DIMENSIONS SHALL BE VERIFIED ON SITE. EXACT LOCATION OF EQUIPMENT IS SUBJECT TO SITE MEASUREMENTS.

5. IF ANY DISCREPANCY OCCURS ON THE ENGINEER'S DRAWINGS, THE CONTRACTOR SHALL, DURING TENDERING, ASSUME THE LARGER / GREATER. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

6. DRAWINGS ARE NOT INTENDED TO SHOW THE DETAILS OF CONDUIT ROUTES, OFFSETS, ETC. BE RESPONSIBLE FOR CAREFULLY EXAMINE THE WORK SITE PRIOR TO TENDER CLOSE-OUT AND INCLUDE IN THE TENDER PRICE ALL NECESSARY LABOR AND MATERIAL REQUIRED FOR A FULLY OPERABLE SYSTEM AS INTENDED.

7. PARTS NOTED ON DRAWINGS TO BE SUPPLIED BY OWNER SHALL BE FULLY INSTALLED & SUPPORTED BY CONTRACTOR.

8. ALL CONDUIT RUNS SHALL BE COLOR CODED TO BUILDING COLOR CODE. ALL CONDUITS TO BE MARKED AT THE START AND END OF EACH RUN & AT BOTH SIDES OF ANY WALL. STANDARD ELECTRIC TAPE IS TO BE USED FOR MARKING.

9. USE OF THE WRAPS OR TIE WIRE IS NOT ACCEPTABLE.

10. ALL CONDUITS RUNS LENGTH SHOWN ON DRAWINGS ARE FOR GENERAL REFERENCE ONLY, CONTRACTOR TO EXAMINE SITE TO DETERMINE EXACT ROUTE & DIMENSIONS.

11. IMMEDIATELY AFTER AWARDED THE CONTRACT, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A DETAILED WORK SCHEDULE, IN THE FORM OF COMPUTERIZED BAR CHART OUTLINING ALL PROJECT ACTIVITIES AND SCHEDULED SHUT DOWNS.

12. CORE DRILL WALLS AND FLOORS FOR NEW SERVICES & WIRING. SEALING OF ALL EXISTING OPENINGS AFTER SERVICES ARE REMOVED SHALL FORM PART OF THIS CONTRACT.

13. INSTALL EQUIPMENT IN FULL ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS.

14. ALL SERVICES OR EQUIPMENT THAT IS SHOWN TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY COMPLETE WITH ALL ASSOCIATED SERVICES, SUPPORTS, HANGERS ETC. ANY ABANDONED OR UNUSED COMPONENTS FOUND WITHIN THE SCOPE OF THIS PROJECT SHALL BE TERMINATED, REMOVED AND REMAINING IF ANY SHALL BE MADE SAFE.

15. DRAWINGS ARE NOT INTENDED TO SHOW THE DETAILS OF EACH COMPONENT TO BE INSTALLED OR REMOVED. THEY ARE ONLY PROVIDING A GENERAL OVERVIEW OF THE PROJECT SCOPE. BE RESPONSIBLE TO REVIEW THE SITE CONDITIONS DURING THE TENDER PERIOD AND EXAMINE THE EXTENT OF THE DEMOLITION, REMOVALS & NEW INSTALLATIONS.

16. OWNER SHALL BE GIVEN THE OPTION OF RETAINING ANY REMOVED COMPONENTS OR EQUIPMENT. COORDINATE AND HAND OVER AS NECESSARY. DISPOSE OF ANY REMAINING UNWANTED EQUIPMENT OR SERVICES AND REMOVE OFF SITE.

17. DO NOT SUBJECT ANY PART OF THE BUILDING TO ANY NOISE, DUST OR ANY OTHER UNACCEPTABLE ENVIRONMENTAL CONDITIONS DURING THE COURSE OF THE PROJECT. ANY NOISY / DUSTY / SMELLY ACTIVITIES SHALL BE DONE AFTER HOURS OR AT WEEKENDS, COORDINATE WITH CSA PROJECT MANAGER WITH A MINIMUM NOTICE OF 48 HOURS.

18. ALL MATERIALS AND WORKMANSHIP SHALL - AS A MINIMUM - BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING:

- 18.1. CANADIAN ELECTRICAL CODE.
- 18.2. ONTARIO ELECTRICAL SAFETY CODE.
- 18.3. ONTARIO BUILDING CODE - OBC.
- 18.4. NATIONAL FIRE ALARM CODE NFPA 72.
- 18.5. ONTARIO FIRE CODE.
- 18.6. ALL OTHER APPLICABLE PROVINCIAL, MUNICIPAL AND SAFETY CODES AND REGULATIONS.

19. CONTRACTOR SHALL ARRANGE AND PAY FOR ALL NECESSARY PERMITS AND WORK REQUIRED TO BE PERFORMED BY LOCAL AUTHORITIES INCLUDING INSPECTION BY ESA AND TESTING.

20. ALL ELECTRICAL PRODUCTS AND EQUIPMENT SHALL BE NEW, FREE OF DEFECTS & CSA CERTIFIED.

21. BE RESPONSIBLE FOR REMOVAL AND REINSTATING CEILINGS AS NECESSARY, PROTECT CEILING GRID & TILES DURING WORK.

22. ALL NEW & EXISTING SUSPENDED LIGHT FIXTURES, FANS ... ETC. SHALL BE PROVIDED WITH SECURITY CHAINS TO MEET CODE.

23. BREAKERS FEEDING EMERGENCY AND EXIT SYSTEM SHALL BE MARKED AND PROVIDED WITH MECHANICAL LOCKS.

24. CONTRACTOR TO BALANCE ELECTRICAL LOAD ON THE THREE-PHASE SUPPLY. MEASUREMENTS TO BE SUBMITTED TO ENGINEER FOR APPROVAL BEFORE FINAL INSPECTION STARTS.

25. CONTRACTOR TO PROVIDE ALL WIRING AS SHOWN ON THE LINE DIAGRAM, POWER PANELS AND SERVICES PANEL INCLUDING THE BRANCH FEEDERS.

26. ALL WIRING TO BE MINIMUM #12 AWG COPPER STRANDED WIRES UNLESS OTHERWISE STATED. CONDUITS & JUNCTION BOXES SHALL NOT BE LOADED MORE THAN 60% OF ITS MAXIMUM RATED CAPACITY.

27. ALL ELECTRICAL RACEWAYS & EQUIPMENT TO BE SQUARE TO BUILDING LINES AND SHALL BE SEPARATELY SUPPORTED FROM BUILDING STRUCTURE. A GROUND CONDUCTOR IS REQUIRED FOR ALL RACEWAYS.

28. ALL CONNECTORS & COUPLINGS SHALL BE STEEL WITH INSULATED THROATS, ALL CONDUITS TO BE EMT, MINIMUM OF 3/4" UNLESS OTHERWISE STATED. ARMORED CABLE IS NOT A CONDUIT & PROJECT MANAGER MUST APPROVE THE USE OF IT.

29. LOCATE ALL BOXES ON STRAIGHT RUNS. EACH BOX TO BE BONDED.

30. ALL OUTLETS, SWITCHES, COMMUNICATION JACKS TO BE WHITE, DECORA STYLE W/ BRUSHED STAINLESS STEEL COVER PLATE.

31. ALL POWER DISTRIBUTION PANELS & DISCONNECTS TO BE "SQUARE D" UNLESS OTHERWISE STATED.

32. USE OF THE WRAPS, TIE WIRE, PERFORATED BAND, WIRE CHAIN OR SOLID RING TYPE HANGERS IS NOT PERMITTED.

33. USE OF C-CLAMPS ON BEAMS IS NOT PERMITTED. ALWAYS USE BEAM CLAMP TO SUPPORT THREADED RODS.

34. WIRING OF ALL WASHROOM LIGHTS SHALL BE ON THE SAME EXHAUST FAN AM12 TIME DELAY SWITCH (SUPPLIED BY DIV. 23) TO OPERATE THE FAN AND LIGHT TOGETHER AND ADJUSTED TO PERMIT CONTINUED FAN OPERATION FOR 20 MINUTES AFTER THE LIGHTS HAS BEEN TURNED OFF.

35. ENGAGE "CHUBB EDWARDS" IN ALL FIRE PANEL MODIFICATIONS, CONNECTIONS, PROGRAMMING, TESTING, VERIFICATIONS AND COMMISSIONING.

36. ALL CONDUIT RUNS SHALL BE COLOR CODED TO BUILDING COLOR CODE. ALL CONDUITS TO BE MARKED AT THE START AND END OF EACH RUN & AT BOTH SIDES OF ANY WALL. STANDARD ELECTRIC TAPE IS TO BE USED FOR MARKING.

- 36.1. 120/208V - BLUE
- 36.2. 120/240V - GREY
- 36.3. 277/480V - BLACK
- 36.4. 347/600V - PURPLE
- 36.5. BUILDING AUTOMATION & LAB CONTROLS: ORANGE
- 36.6. SECURITY ACCESS & CAMERA: YELLOW
- 36.7. GROUNDING: BROWN
- 36.8. TELEPHONE / DATA: GREEN
- 36.9. P.A. FIRE SAFETY: PINK
- 36.10. FIRE ALARM: RED
- 36.11. SPECIAL COMMUNICATION: WHITE

- 37. AT THE END OF THE PROJECT:
- 37.1. TIDY UP ALL WIRINGS.
- 37.2. PROVIDE ALL NECESSARY LABELING, IDENTIFY ALL CIRCUITS AND PROVIDE TYPE WRITTEN PANEL LEGEND.
- 37.3. MEASURE AND RECORD THE MAXIMUM LOAD ON EACH PHASE.
- 37.4. SUBMIT AS-BUILT DRAWINGS, OMM'S & FINAL ESA INSPECTION CERTIFICATE RECORDS TO ENGINEER.

LINETYPE LEGEND	
SYMBOL	DESCRIPTION
	EXISTING CONDUIT/EQUIPMENT
	EXISTING CONDUIT/EQUIPMENT TO BE REMOVED/RELOCATED
	NEW/RELOCATED CONDUIT/EQUIPMENT
	CONDUIT BELOW GRADE/SLAB
	MECHANICAL EQUIPMENT
	ROOM OUTLINE

POWER AND SYSTEMS LEGEND	
SYMBOL	DESCRIPTION
	ELECTRICAL PANEL MOUNTING: SURFACE / RECESSED
	600V TO 120/208V TRANSFORMER (SIZE INDICATED)
	ELECTRICAL BOX: JB - POWER, TC - TELECOMMUNICATIONS
	DIRECT MOTOR CONNECTION TO 208/600V 3Ø EQUIPMENT, HOSEPOWER INDICATED
	DISCONNECT
	MANUAL MOTOR STARTER
	MANUAL MOTOR STARTER W/ PILOT LIGHT
	MAGNETIC MOTOR STARTER
	COMBINATION MAGNETIC MOTOR STARTER
	VARIABLE FREQUENCY DRIVE
	MOTOR RATED SWITCH
	CONDUIT STUB C/W INSULATED PLASTIC BUSHINGS / CONDUIT UP / CONDUIT DOWN
	DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE OVERCOUNTER
	DUPLEX RECEPTACLE 5-20R
	DUPLEX RECEPTACLE GFI
	DUPLEX RECEPTACLE GFI OVERCOUNTER
	DUPLEX RECEPTACLE GFI 5-20R
	DUPLEX RECEPTACLE GFI 5-20R OVERCOUNTER

LIGHTING AND LIFE SAFETY LEGEND	
SYMBOL	DESCRIPTION
	1'x4' SUSPENDED LIGHTING FIXTURE (TYPE INDICATED)
	1'x4' SUSPENDED LIGHTING FIXTURE (TYPE INDICATED) - CONNECTED TO EMERGENCY LIGHTING CIRCUIT
	WALL MOUNTED LIGHTING FIXTURES (TYPE INDICATED)
	LIGHT SWITCH
	LIGHT SWITCH - 3-WAY
	WALL MOUNTED EXIT LIGHT FIXTURE. ARROW INDICATES DIRECTION OF EXIT. CONNECTED TO 120V UNSWITCHED LIGHTING CIRCUIT AND BATTERY PACK SERVING AREA.
	F/A HORN, CONNECTED TO F/A SYSTEM
	F/A COMBINATION HORN/STROBE, CONNECTED TO F/A SYSTEM
	[ADDRESSABLE] F/A HEAT DETECTOR, CONNECTED TO F/A SYSTEM
	[ADDRESSABLE] F/A SMOKE DETECTOR, CONNECTED TO F/A SYSTEM
	[ADDRESSABLE] F/A DUCT SMOKE DETECTOR, CONNECTED TO F/A SYSTEM AND MECHANICAL VENTILATION UNIT
	[ADDRESSABLE] F/A DUCT SMOKE DETECTOR C/W PILOT LIGHT, CONNECTED TO F/A SYSTEM AND MECHANICAL VENTILATION UNIT
	F/A PULL STATION
	END OF LINE RESISTOR, CONNECTED TO F/A SYSTEM
	P/A SPEAKER

LUMINAIRE SCHEDULE									
TAG	MANUFACTURER	MODEL	VOLTAGE	LAMP				BALLAST/DRIVER DESIGN	REMARKS
				WATTS	CCT	LUMENS	TYPE		
A	METALUX	WPLD4035C	120V	45	3500K	4000	LED	0-10V DIMMING	COORDINATE LOCATION WITH MECHANICAL TRADES

- NOTES: 1. ALL DRIVERS SHALL BE 0-10V DIMMABLE
2. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING FINISH, T-BAR DETAILS, TO ENSURE FIXTURES ARE COMPLETE WITH APPROPRIATE FRAME KITS.
3. PROVIDE SEISMIC RESTRAINT IN CONFORMANCE TO OBC REQUIREMENTS

ÉRIC VACHON
Director, Security & Facilities

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Manager, DFL Operations & Security



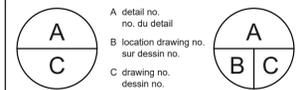
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revisions	description	date
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02	Re-Issued for Review	2016.08.04
01	Issued for Review	2016.03.14



project project

BAY 3 REFIT PROJECT

ADDRESS

drawing dessin

ELECTRICAL GENERAL NOTES, LEGENDS, AND SCHEUDLES

Designed By	M.LACHOWICZ	Conçu par
Date		(yyyy/mm/dd)
Drawn By	J.GIBSON	Dessiné par
Date		(yyyy/mm/dd)
Reviewed By	M.LACHOWICZ	Examiné par
Date		(yyyy/mm/dd)
Approved By	M.LACHOWICZ	Approuvé par
Date		(yyyy/mm/dd)
Tender	M.LACHOWICZ	Soumission

Project Manager Administrateur de projets

Project no. No. du projet

CSA15-G8b

2016-008

Drawing no. No. du dessin

E1

ELECTRICAL PANEL M6-1-SP (DEMOLITION)										
SERVICE	AMP	CIRCUIT	A	B	C	CIRCUIT	AMP	SERVICE		
AHU-5	60	1	X			2	20	SPARE		
		3		X		4				
		5			X	6				
M6-3-DP	50	7	X			8	15	RTU-6		
		9		X		10				
		11			X	12				
M6-2-ST	60	13	X			14	40	AHU-8-SF		
		15		X		16				
		17			X	18				
AHU-8-RF	15	19	X			20	60	AHU-7-SF		
		21		X		22				
		23			X	24				
AHU-9-SF	40	25	X			26	100	SPARE		
		27		X		28				
		29			X	30				
SPARE	50	31	X			32	50	SPARE		
		33		X		34				
		35			X	36				
SPARE	15	37	X			38	15	SPARE		
		39		X		40				
		41			X	42				

COPPER BUS, HINGED PANELS
30, 4W
347/600V
SURFACE

ELECTRICAL PANEL M6-1-SP (NEW WORK)										
SERVICE	AMP	CIRCUIT	A	B	C	CIRCUIT	AMP	SERVICE		
AHU-5	60	1	X			2	20	SPARE		
		3		X		4				
		5			X	6				
M6-3-DP	50	7	X			8	15	RTU-6		
		9		X		10				
		11			X	12				
M6-2-ST	60	13	X			14	40	SPARE		
		15		X		16				
		17			X	18				
SPARE	15	19	X			20	150	AHU-8		
		21		X		22				
		23			X	24				
AHU-7	150	25	X			26	100	SPARE		
		27		X		28				
		29			X	30				
SPARE	60	31	X			32	50	SPARE		
		33		X		34				
		35			X	36				
SPARE	15	37	X			38	15	SPARE		
		39		X		40				
		41			X	42				

COPPER BUS, HINGED PANELS
30, 4W
347/600V
SURFACE

ELECTRICAL PANEL M6-1-DP (DEMOLITION)										
SERVICE	AMP	CIRCUIT	A	B	C	CIRCUIT	AMP	SERVICE		
SPARE	30	1	X			2	15	SPARE - WIRES IN JB IN M6 BETWEEN GRIDLINES 3-F		
		3		X		4			15	OUTLETS - M6
		5			X	6			15	EXHAUST FAN
SPARE	30	7	X			8	15	3 UNIT HEATERS IN M6		
		9		X		10				
		11			X	12			15	SPARE
SPARE	30	13	X			14	15	HONEYWELL		
		15		X		16			15	DECOMMISSIONED AHU LIGHTS
		17			X	18			15	SPARE
SPARE	30	19	X			20	15	'G' STAIRWELL CAMERA		
		21		X		22			15	JCI
		23			X	24			15	SPARE
SPARE	30	25	X			26	40	SPARE		
		27		X		28				
		29			X	30				
LIGHTS - M6	15	31	X			32	20	SPARE		
		33		X		34				
		35			X	36			30	SPARE
BUG ZAPPER - M6	20	37	X			38	30	SPARE		
		39		X		40				
		41			X	42			30	SPARE

COPPER BUS, HINGED PANELS
30, 4W
120/208V
225A
SURFACE

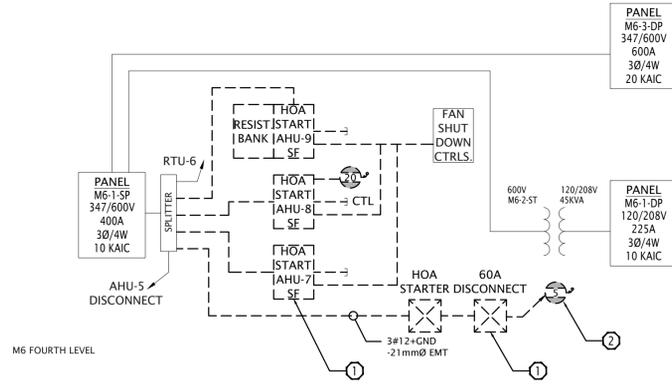
1
E3
PANEL SCHEDULE M6-1-SP
DEMOLITION WORK
Scale: N.T.S.

2
E3
PANEL SCHEDULE M6-1-SP
NEW WORK
Scale: N.T.S.

3
E3
PANEL SCHEDULE M6-1-DP
DEMOLITION
Scale: N.T.S.

ELECTRICAL PANEL M6-1-DP (NEW WORK)										
SERVICE	AMP	CIRCUIT	A	B	C	CIRCUIT	AMP	SERVICE		
SPARE	30	1	X			2	15	SPARE - WIRES IN JB IN M6 BETWEEN GRIDLINES 3-F		
		3		X		4			15	OUTLETS - M6
SPARE	30	5			X	6	15	EXHAUST FAN		
		7	X			8			15	3 UNIT HEATERS IN M6
SPARE	30	9		X		10	15	SPARE		
		11			X	12				
		13	X			14				
SPARE	30	15		X		16	15	HONEYWELL		
		17			X	18			15	AHU-7 LIGHTS
		19	X			20			15	AHU-8 LIGHTS
SPARE	30	21			X	22	15	'G' STAIRWELL CAMERA		
		23			X	24			15	JCI
		25	X			26				
AHU-7 MAINTENANCE RECEPTACLE	20	27	X			28	40	SPARE		
AHU-8 MAINTENANCE RECEPTACLE	20	29		X	30					
LIGHTS - M6	15	31	X			32	20	SPARE		
AHU-7 CONTROLS	15	33		X	34					
AHU-8 CONTROLS	15	35			X	36	30	SPARE		
BUG ZAPPER - M6	20	37	X			38				
SPARE	15	39		X		40	30	SPARE		
		41			X	42				

COPPER BUS, HINGED PANELS
30, 4W
120/208V
225A
SURFACE

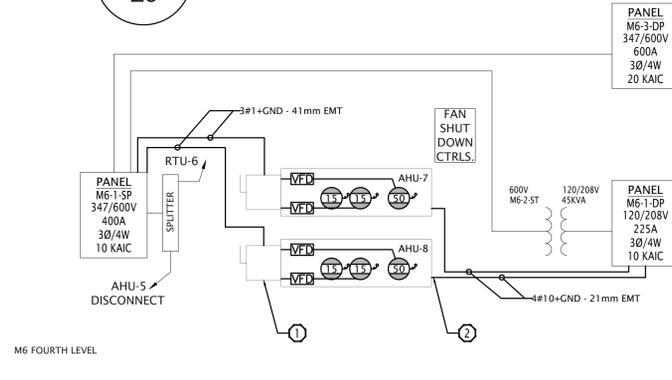


5
E3
SINGLE LINE DIAGRAM
DEMOLITION
Scale: N.T.S.

DESCRIPTION OF SITE DISTRIBUTION DEMOLITION:

- TYPICAL: DISCONNECT AND REMOVE IDENTIFIED STARTERS AND CONDUIT BACK TO SOURCE.
- TYPICAL: DISCONNECT SUPPLY FAN (SF) AND RETURN FAN (RF) MOTORS FOR AHU-8. REMOVAL BY MECHANICAL TRADES.

4
E3
PANEL SCHEDULE M6-1-DP
NEW WORK
Scale: N.T.S.



6
E3
SINGLE LINE DIAGRAM
NEW WORK
Scale: N.T.S.

DESCRIPTION OF SITE DISTRIBUTION NEW WORK:

- TYPICAL (OF 2 AHU UNITS): PROVIDE 600V CONNECTION C/W CONDUIT AND WIRING TO FACTORY MOUNTED DISCONNECT. PROVIDE CONNECTION FROM DISCONNECT TO VFD AND FROM VFDs TO FANS.
- TYPICAL (OF 2): PROVIDE TWO (2) 15A CIRCUITS TO LIGHTING AND CONTROLS, AND ONE (1) 20A CIRCUIT TO MAINTENANCE RECEPTACLE.
- REFER TO PHASE DRAWINGS. WORK TO BE PERFORMED IN TWO SEPARATE PHASES.

ÉRIC VACHON
Director, Security & Facilities
MAGDI FARID, P. Eng.
Manager, DFL Operations & Security



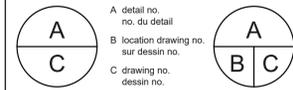
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revisions	description	date
03	Issued for Tender	2020.09.30
02	Re-Issued for Review	2016.08.04
01	Issued for Review	2016.03.14



project project

BAY 3 REFIT PROJECT

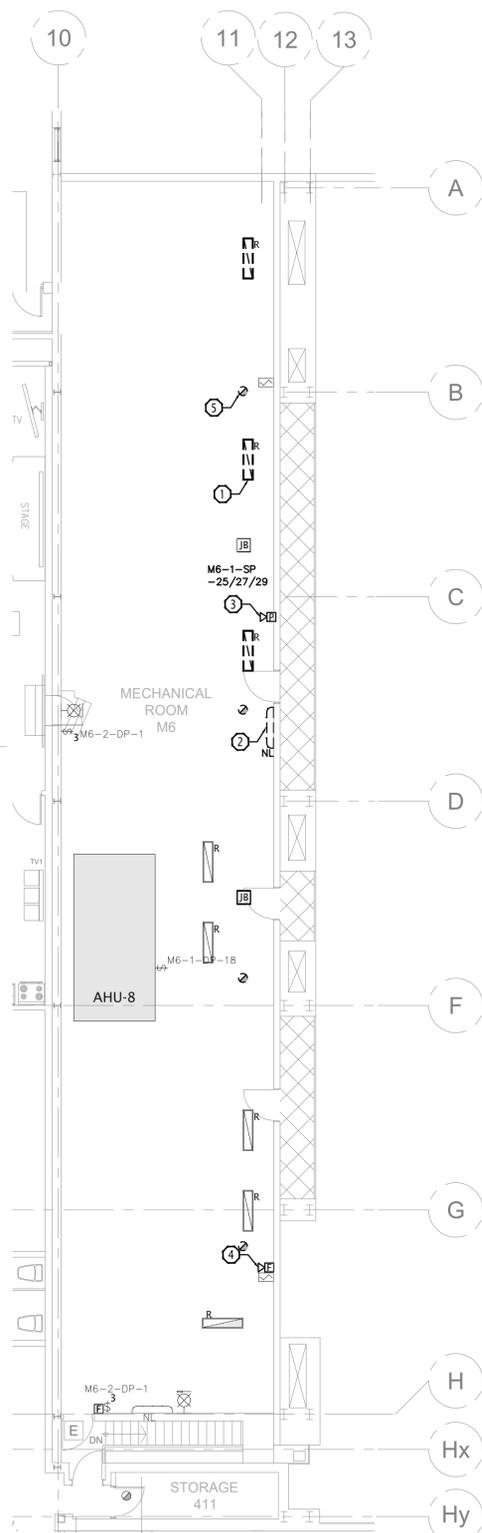
ADDRESS

ELECTRICAL PANEL SCHEDULES AND SINGLE LINE DIAGRAM

Designed By	M.LACHOWICZ	Conçu par	
Date		(yyyy/mm/dd)	
Drawn By	J.GIBSON	Dessiné par	
Date		(yyyy/mm/dd)	
Reviewed By	M.LACHOWICZ	Examiné par	
Date		(yyyy/mm/dd)	
Approved By	M.LACHOWICZ	Approuvé par	
Date		(yyyy/mm/dd)	
Tender	M.LACHOWICZ	Soumission	
Project Manager	Administrateur de projets		
Project no.	CSA15-G8b	No. du projet	
		2016-008	
Drawing no.	E2	No. du dessin	

DESCRIPTION OF LIGHTING DEMOLITION:

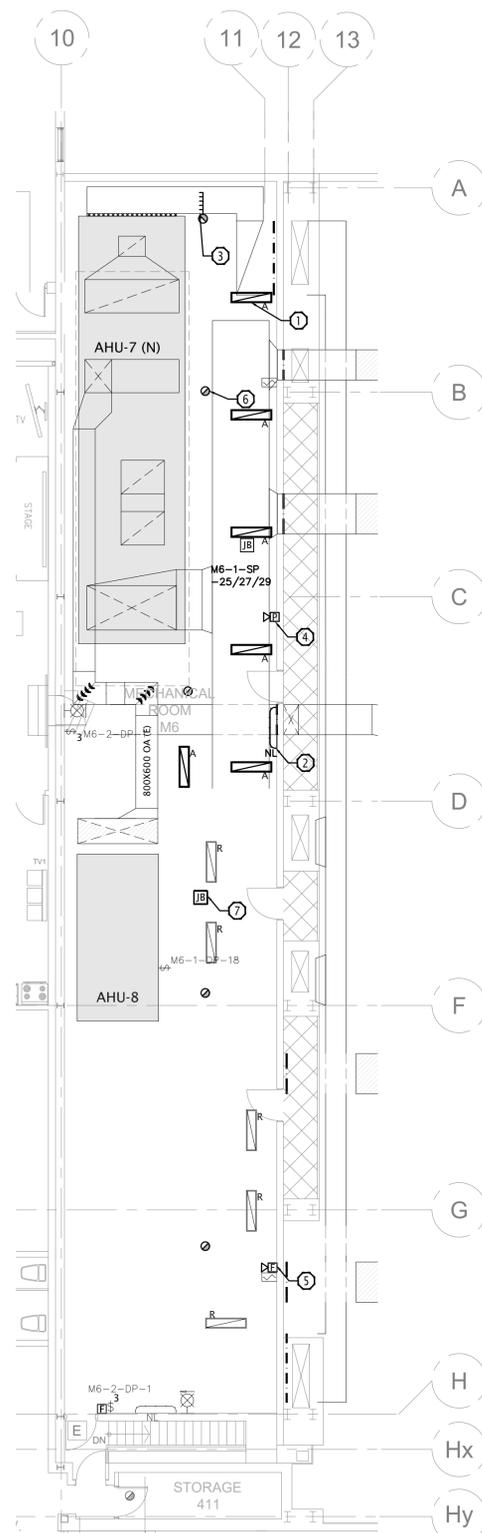
- ① TYPICAL (OF 3): DISCONNECT AND REMOVE HARD PIPED LIGHTING FIXTURE TO ALLOW THE CONSTRUCTION OF NEW DUCTWORK. RETAIN CIRCUIT FOR NEW CONSTRUCTION. MODIFY CONDUITS TO SUIT NEW DUCTWORK LAYOUT. COORDINATE WITH MECHANICAL TRADES FOR INTERFERENCES.
- ② DISCONNECT EXISTING WALL MOUNTED LIGHT. RETAIN FOR REUSE IN NEW CONSTRUCTION.
- ③ DISCONNECT P.A. FIRE SAFETY SPEAKER. RETAIN FOR REUSE IN NEW CONSTRUCTION.
- ④ DISCONNECT FIRE ALARM HORN. RETAIN FOR REUSE IN NEW CONSTRUCTION.
- ⑤ TYPICAL: DISCONNECT SMOKE DETECTORS. RETAIN FOR REUSE IN NEW WORK.
- ⑥ DISCONNECT AHU-5 DUCT SMOKE DETECTOR MODULE. RETAIN FOR REUSE IN NEW LOCATION. MODIFY AND EXTEND CONDUIT AS REQUIRED TO REMOVE JUNCTION BOX ABOVE NEW LOCATION OF DUCTWORK. RETAIN MODULE FOR REUSE IN NEW CONSTRUCTION.



1
LEVEL 4 MECH ROOM M6
LIGHTING & LIFE SAFETY DEMOLITION - PHASE 1
Scale: 1:100
E5

DESCRIPTION OF LIGHTING NEW WORK:

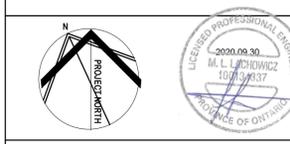
- ① TYPICAL: PROVIDE LIGHTING FIXTURE C/W CONDUIT AND WIRING. PROVIDE UNISTRUT MOUNTING SUPPORT C/W THREADED ROD ON EITHER END OF DUCTWORK AND MOUNTING ACCESSORIES. MOUNT LIGHTING FIXTURE TO UNISTRUT SUPPORT AND CONNECT TO CIRCUIT RETAINED DURING DEMOLITION. LIGHTS SHALL BE MOUNTED UNDERNEATH NEW DUCTWORK. COORDINATE INTERFERENCES WITH MECHANICAL TRADES.
- ② INSTALL RELOCATED FIXTURE BELOW NEW DUCT WORK.
- ③ TYPICAL: PROVIDE DUCT SMOKE DETECTORS C/W ADDRESSABLE FIRE ALARM MODULE. PROVIDE CONNECTION TO FIRE ALARM SYSTEM AND VFD DRIVES. MODIFY CONDUIT AND WIRING AS REQUIRED.
- ④ INSTALL RELOCATED PA SPEAKER BELOW LEVEL OF NEW DUCTWORK. MODIFY CONDUIT AND WIRING AS REQUIRED.
- ⑤ INSTALL RELOCATED FIRE ALARM HORN BELOW LEVEL OF NEW DUCTWORK. MODIFY CONDUIT AND WIRING AS REQUIRED.
- ⑥ INSTALL RELOCATED SMOKE DETECTOR IN ACCESSIBLE SPACE BETWEEN DUCTWORK AND AIR HANDLING UNIT. COORDINATE WITH MECHANICAL HVAC AND PLUMBING TRADES. MODIFY CONDUIT AND WIRING AS REQUIRED.
- ⑦ PROVIDE SMOKE DETECTOR MODULE FOR AHU-5. MODIFY CONDUIT AND WIRING AS REQUIRED.
- ⑧ RETAIN SERVICES OF BASE BUILDING FIRE ALARM CONTRACTOR PROVIDE FIRE ALARM VERIFICATION REPORT.



2
LEVEL 4 MECH ROOM M6
LIGHTING & LIFE SAFETY NEW WORK - PHASE 1
Scale: 1:100
E5

ÉRIC VACHON
Director, Security & Facilities

MAGDI FARID, P. Eng.
Manager, DFL Operations & Security



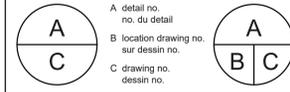
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01	Issued for Review	2016.03.14



project / projet

BAY 3 REFIT PROJECT

ADDRESS

drawing / dessin
**MÉCH ROOM M6
LIGHTING & LIFE
SAFETY DEMO &
NEW WORK PHASE 1**

Designed By	MLACHOWICZ	Conçu par
Date		(yyyy/mm/dd)
Drawn By	J.GIBSON	Dessiné par
Date		(yyyy/mm/dd)
Reviewed By	MLACHOWICZ	Examiné par
Date		(yyyy/mm/dd)
Approved By	MLACHOWICZ	Approuvé par
Date		(yyyy/mm/dd)
Tender	MLACHOWICZ	Soumission

Project Manager / Administrateur de projets
Project no. / No. du projet
CSA15-G8b

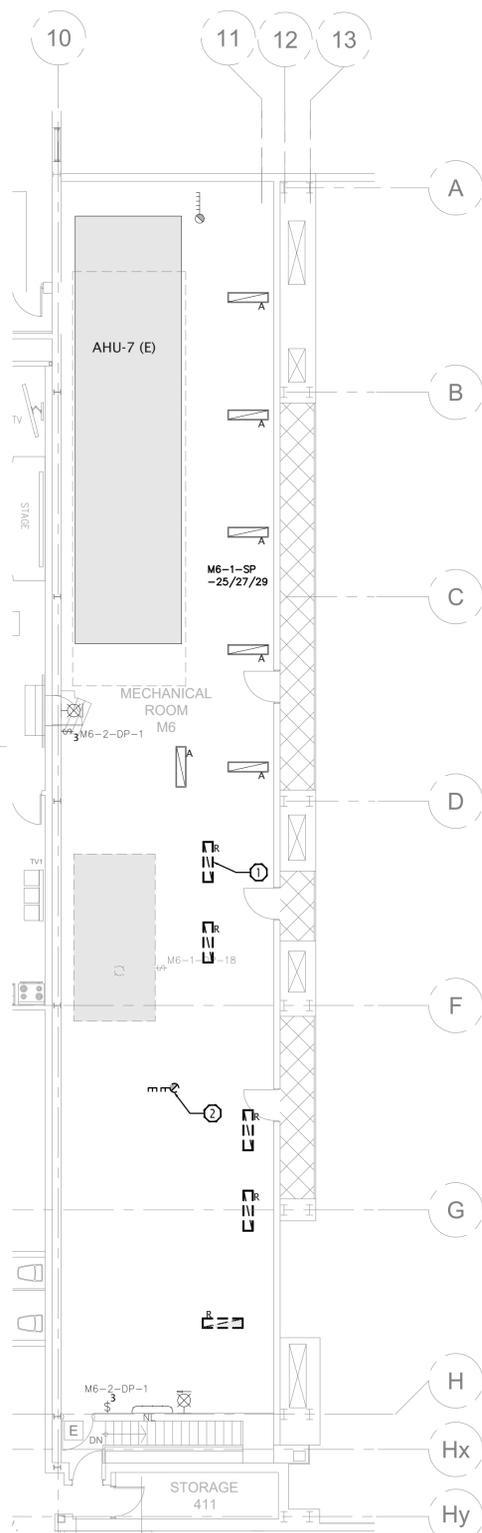
Drawing no. / No. du dessin
E4

DESCRIPTION OF LIGHTING DEMOLITION:

- ① TYPICAL (OF 4): DISCONNECT AND REMOVE HARD PIPED LIGHTING FIXTURE TO ALLOW THE CONSTRUCTION OF NEW DUCTWORK. RETAIN CIRCUIT FOR NEW CONSTRUCTION. MODIFY CONDUITS TO SUIT NEW DUCTWORK LAYOUT. COORDINATE WITH MECHANICAL TRADES FOR INTERFERENCES.

DESCRIPTION OF LIFE SAFETY DEMOLITION:

- ② THE FOLLOWING SCOPE OF WORK SHALL BE COMPLETED DURING PHASE 1 AND PHASE 2: DISCONNECT AND REMOVE DUCT SMOKE DETECTOR. REMOVE CONDUIT AND WIRING BACK TO NEAREST JUNCTION BOX.



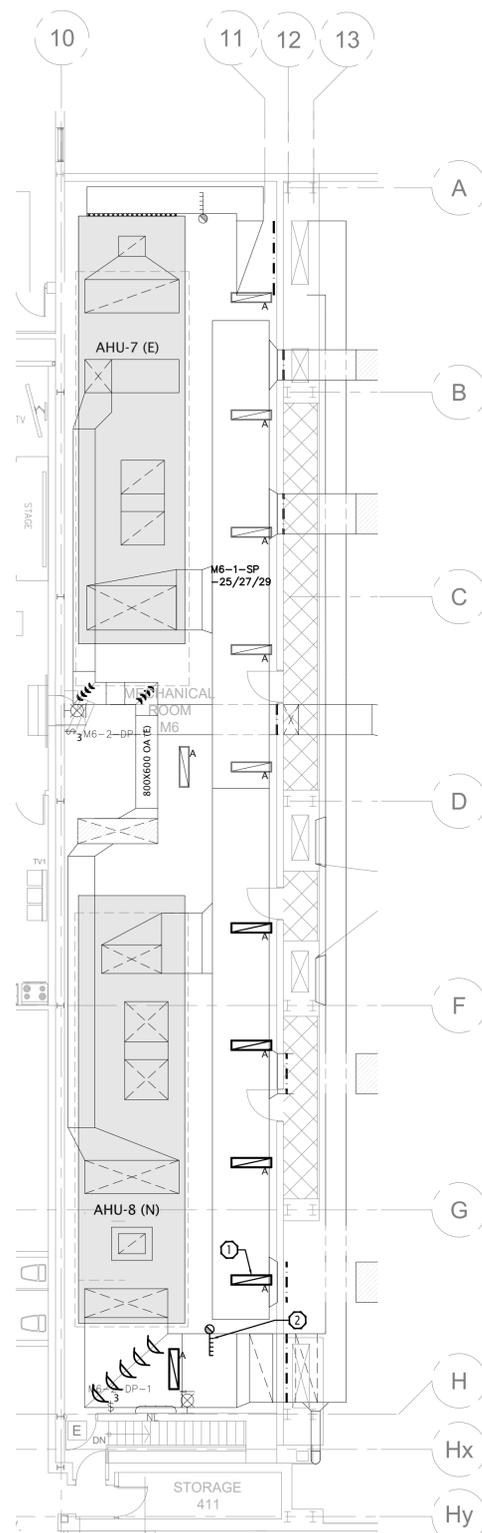
1
LEVEL 4 MECH ROOM M6
LIGHTING & LIFE SAFETY DEMOLITION - PHASE 2
Scale: 1:100
E6

DESCRIPTION OF LIGHTING NEW WORK:

- ① TYPICAL: PROVIDE LIGHTING FIXTURE C/W CONDUIT AND WIRING. PROVIDE UNISTRUT MOUNTING SUPPORT C/W THREADED ROD ON EITHER END OF DUCTWORK AND MOUNTING ACCESSORIES. MOUNT LIGHTING FIXTURE TO UNISTRUT SUPPORT AND CONNECT TO CIRCUIT RETAINED DURING DEMOLITION. LIGHTS SHALL BE MOUNTED UNDERNEATH NEW DUCTWORK. COORDINATE INTERFERENCES WITH MECHANICAL TRADES.

DESCRIPTION OF LIFE SAFETY NEW WORK:

- ② PROVIDE DUCT SMOKE DETECTORS C/W ADDRESSABLE FA MODULE. PROVIDE CONNECTION TO FIRE ALARM SYSTEM. RETAIN SERVICES OF BASE BUILDING FIRE ALARM CONTRACTOR TO PROVIDE VERIFICATION REPORT.



2
LEVEL 4 MECH ROOM M6
LIGHTING & LIFE SAFETY NEW WORK - PHASE 2
Scale: 1:100
E6

ÉRIC VACHON
Director, Security & Facilities
MAGDI FARID, P. Eng.
Manager, DFL Operations & Security



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01	Issued for Review	2016.03.14

A	B	C
A detail no. no. du détail	A	A
B location drawing no. sur dessin no.	B	B
C drawing no. dessin no.	C	C

project / projet

BAY 3 REFIT PROJECT

ADDRESS

drawing / dessin
**MÉCH ROOM M6
LIGHTING & LIFE
SAFETY DEMO &
NEW WORK PHASE 2**

Designed By	MLACHOWICZ	Conçu par	
Date		(yyyy/mm/dd)	
Drawn By	J.GIBSON	Dessiné par	
Date		(yyyy/mm/dd)	
Reviewed By	MLACHOWICZ	Examiné par	
Date		(yyyy/mm/dd)	
Approved By	MLACHOWICZ	Approuvé par	
Date		(yyyy/mm/dd)	
Tender	MLACHOWICZ	Soumission	
Project Manager	Administrateur de projets		
Project no.	CSA15-G8b	No. du projet	
			2016-008
Drawing no.	E6	No. du dessin	





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A	A detail no. / no. du détail	A
B	B location drawing no. / sur dessin no.	B
C	C drawing no. / dessin no.	C

project / projet

BAY 3 REFIT PROJECT

ADDRESS / dessin

drawing / dessin

STRUCTURAL PLANS, SECTIONS AND DETAILS

Designed By / Conçu par
 Date / (2020/10/17)
 L. ATKINSON

Drawn By / Dessiné par
 Date / (2020/8/13)
 J. BEDFORD

Reviewed By / Examiné par
 Date / (2020/10/17)
 L. ATKINSON

Approved By / Approuvé par
 Date / (2020/10/17)
 L. ATKINSON

Tender / Soumission
 L. ATKINSON

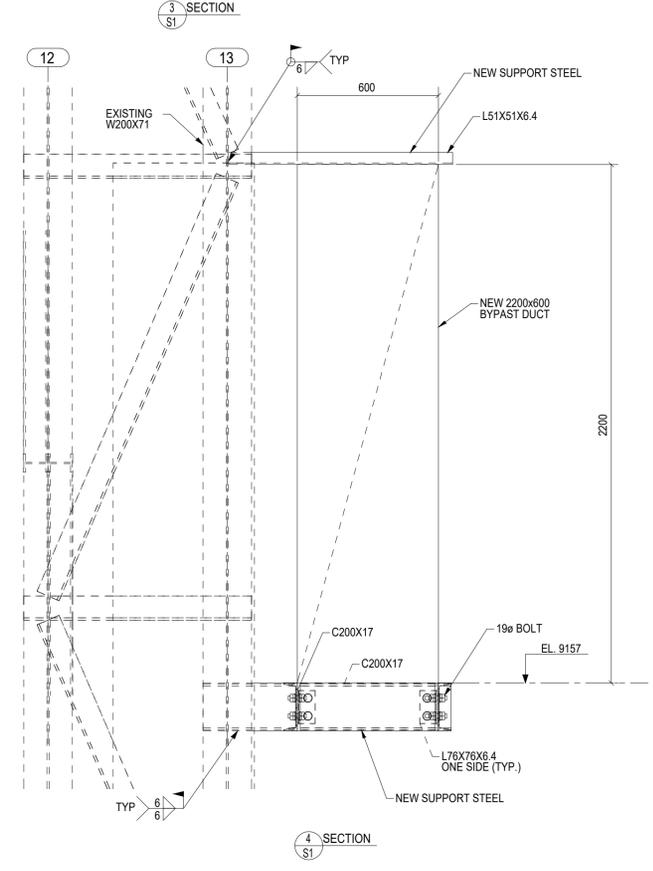
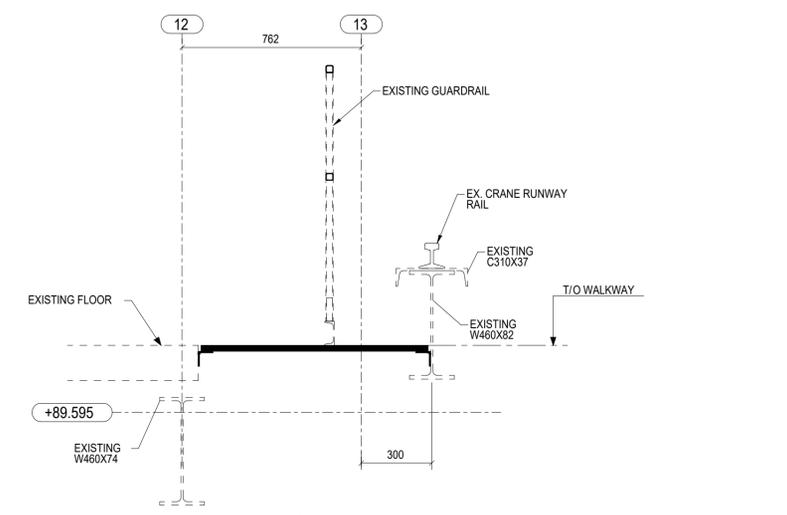
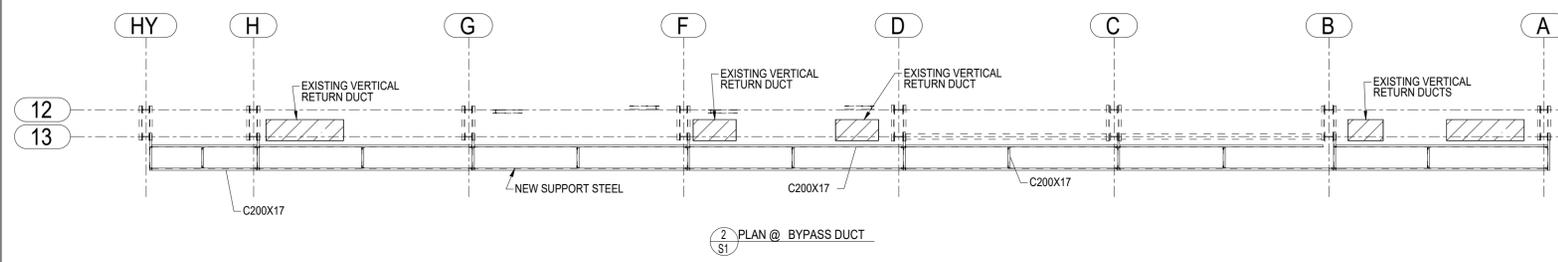
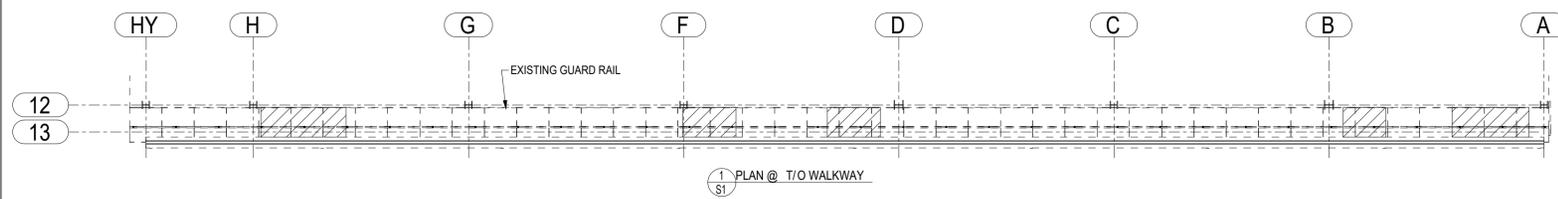
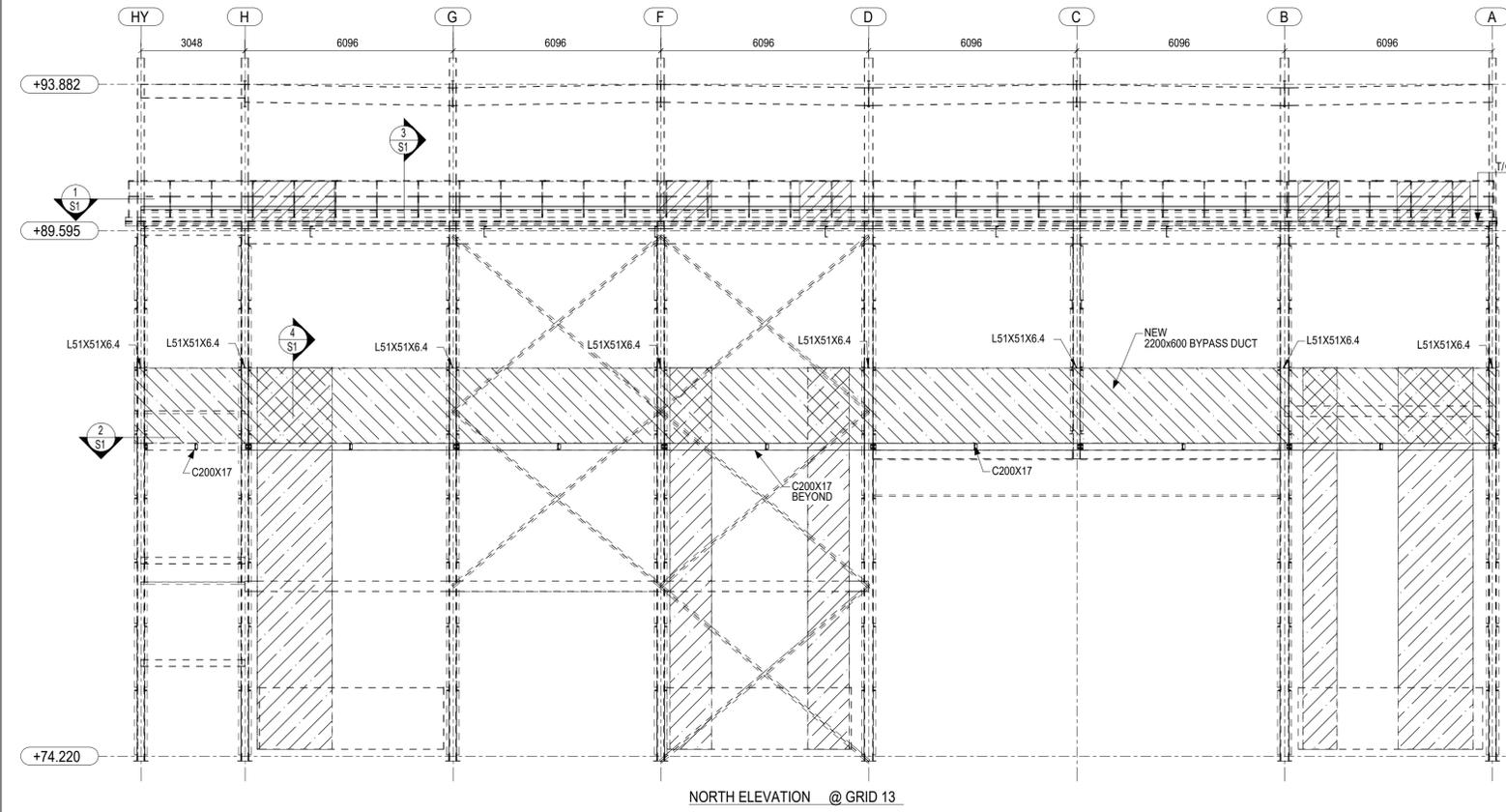
Project Manager / Administrateur de projets

Project no. / No. du projet
CSA15-G8b

2016-008

Drawing no. / No. du dessin

S1



- STRUCTURAL STEEL**
- STRUCTURAL STEEL SHALL COMPLY WITH CAN/CSA-S16 2016 EDITION
- STEEL GRADES:
 HSS TO BE G40.21-M350W (CLASS C).
 OTHER MATERIAL TO BE G40.21-300W.
 - FIELD BOLTS - 3/4" ø A325 (BEARING TYPE).
 - ALL OTHERS TO BE SNUG-TIGHTENED WITH TURN-OF-NUT METHOD.
 - WASHERS FOR FIELD BOLTS TO BE PLACED UNDER TURNED ELEMENT.
 - WELD IN ACCORDANCE WITH W59.13 E49xx ELECTRODES.
 - SHOP AND TOUCH-UP PAINT:
 - SURFACE PREPARATION: TO SSPC SP3
 - SHOP PRIMER