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Submittal 24-272-001

PROJECT NAME	PROJECT ADDRESS	DATE SUBMITTED
NAPANEE PETRO CANADA 24-272	638 COUNTY RD. 41, R.R. #6 NAPANEE, ONTARIO	Oct 10, 2024

TO	FROM
Mohammed Lodhi	MOHAMMED LODHI
COMPANY	COMPANY
BG PLUMBING INC.	Consult Mechanical Inc.
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mohammed.l@consultmechanical.com	mohammed.l@consultmechanical.com
ADDRESS	ADDRESS
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Title

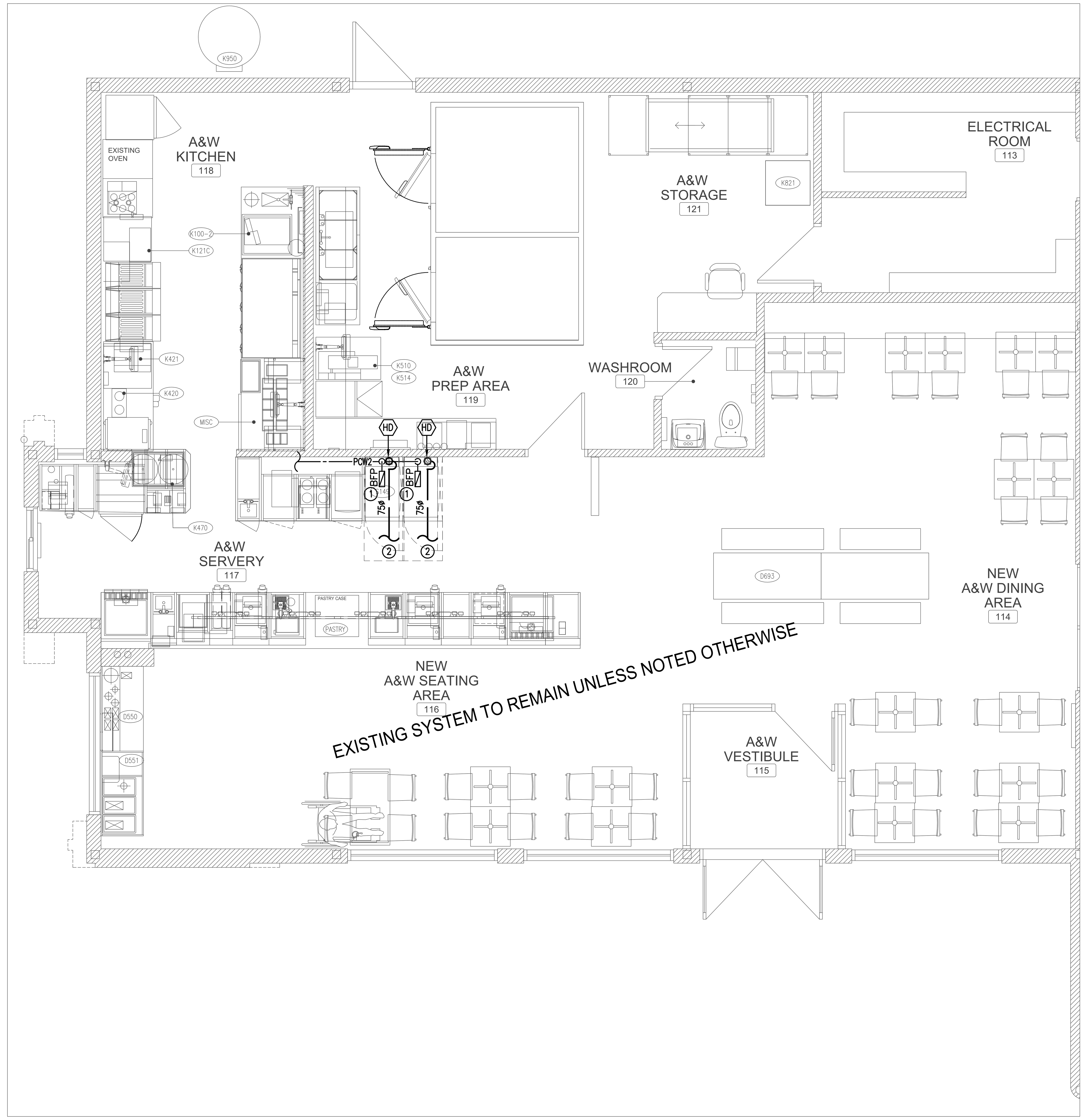
IFC DRAWINGS

Description

IFC MECH. DRAWINGS

Package Items

SPEC	SUBSECTION	ITEM	TYPE



GENERAL NOTES:

1. VERIFY EXACT LOCATION OF EXISTING SERVICES ON SITE.
2. PROVIDE PLUMBING VENTS, TRAPS, TRAPS PRIMING AND BACKFLOW PREVENTERS AS REQUIRED BY BUILDING CODE, PLUMBING CODE AND ALL LOCAL REGULATIONS.
3. TERMINATE PLUMBING VENT AT LEAST 1000mm (39") ABOVE OR 3500mm (11'–6") IN ANY DIRECTION FROM AIR INLET, WINDOW OR DOOR. COORDINATE ON SITE.
4. PROVIDE WATER PIPE SIZE REDUCTION FITTINGS AND END FITTINGS AS REQUIRED TO MATCH EQUIPMENT CONNECTIONS.
5. REFER ALSO TO DRAWING WITH MECHANICAL SPECIFICATIONS.
6. PROVIDE SHUT–OFF VALVE AT EACH WATER CONNECTION TO FIXTURE.
7. FOR 75ø SANITARY TO HAVE MINIMUM 2% SLOPE, AND 100ø & ABOVE TO HAVE MINIMUM 1% SLOPE.

KEYED NOTES

① CONNECT 15ø PCW2 FROM EXISTING TO FRESH BLENDER (S149) c/w BACKFLOW PREVENTER (DUAL CHECK VALVE BFP # SD2, S.S.). VERIFY ON SITE.

② CONNECT DRAIN TO EXISTING. VERIFY ON SITE. CUT AND PATCH FLOOR AS REQUIRED.

NORTH

LICENSED PROFESSIONAL ENGINEER
H. CHEN
100134411
PROVINCE OF ONTARIO

No.	Description	Date
–	ISSUED FOR CONSTRUCTION	24.10.04
–	ISSUED FOR TENDER	24.09.17
–	ISSUED FOR PERMIT	24.08.28

REVISIONS

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4. ALL WORK TO CONFORM TO THE LATEST LOCAL BUILDING CODES, BY–LAWS, & NFPA REQUIREMENTS, IN ADDITION TO OTHER REGULATIONS HAVING JURISDICTION

Consultant

TRISTAR ENGINEERING
Division of 1041549 Ontario Limited
8901 Woodbine Avenue, Unit #207

Architect

PAUL ARCHITECT

PETRO-CANADA
A Suncor business

Project
PETRO CANADA REFRESH & A&W MODERNIZATION
638 COUNTY RD. 41, R.R. #6
NAPANEE, ONTARIO

Title
A&W FLOOR PLAN
PLUMBING & DRAINAGE LAYOUT

File Name

Project No.	Consultant	Drawn By	Checked By	Scale
24085	Tristar	HC	HC	1:40

Date Created: AUG 2024

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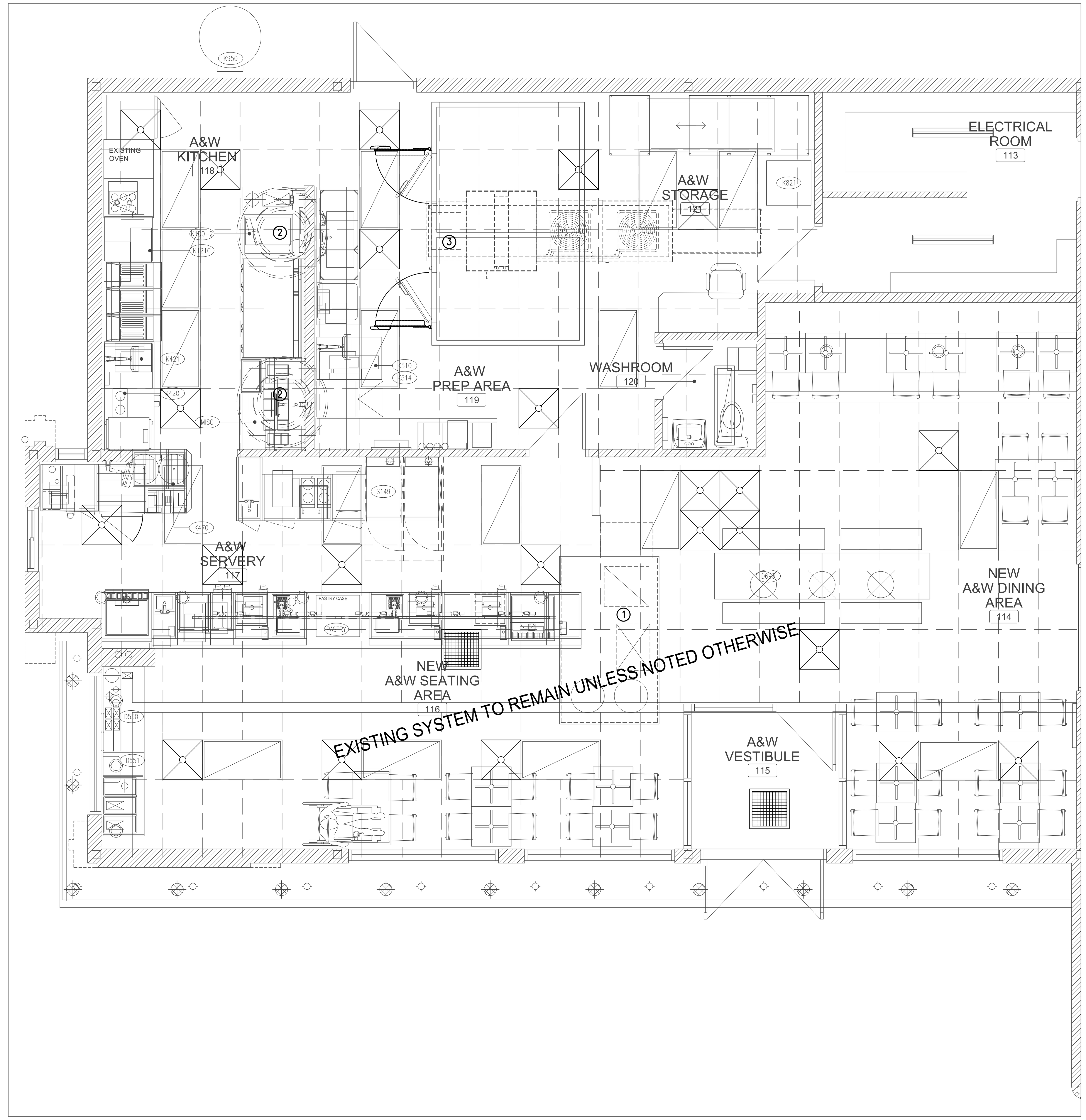
TRUE NORTH CONSTRUCTION NORTH

NORTH



GENERAL NOTES:

1. GREASE DUCT SHALL BE 16 GA. WELDED STEEL KITCHEN EXHAUST DUCT. PROVIDE CLEANOUTS AND REQUIRED CLEARANCES AS PER NFPA 96. PENETRATION TO NFPA 96.
2. WRAP THE ENTIRE LENGTH OF KITCHEN EXHAUST DUCT WITH 2 LAYERS OF FASTWRAP XL BLANKET.
3. MAKEUP AIR UNIT IS TO INTERLOCK WITH KITCHEN EXHAUST FANS TO ENERGIZE.

KEYED NOTES

① CONNECT S&R.A. DUCTS FROM NEW ROOFTOP AC UNIT TO EXISTING DISTRIBUTION c/w 2" FLEXIBLE CONNECTIONS, 1" ACOUSTIC LINER AND TRANSITION DUCTS. COORDINATE ON SITE.

② CONNECT GREASE DUCT FROM EXISTING TO NEW EXHAUST FAN TO NFPA-96, c/w CLEANOUT AND TRANSITION. COORDINATE ON SITE.

③ CONNECT MAKEUP AIR DUCT FROM NEW MUA UNIT TO EXISTING DISTRIBUTION c/w 2" FLEXIBLE CONNECTION, 1" ACOUSTIC LINER, AND TRANSITION DUCT. COORDINATE ON SITE..

INTERIOR RENO, NO FRESH AIR/ HEATING LOAD REVISION REQUIRED.

LICENSED PROFESSIONAL ENGINEER
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PETRO-CANADA
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Project
PETRO CANADA REFRESH & A&W MODERNIZATION
638 COUNTY RD. 41, R.R. #6
NAPANEE, ONTARIO

Title
A&W FLOOR PLAN
H.V.A.C. LAYOUT

File Name

Project No.	Consultant	Drawn By	Checked By	Scale
24085	Tristar	HC	HC	1:40

Date Created: AUG 2024

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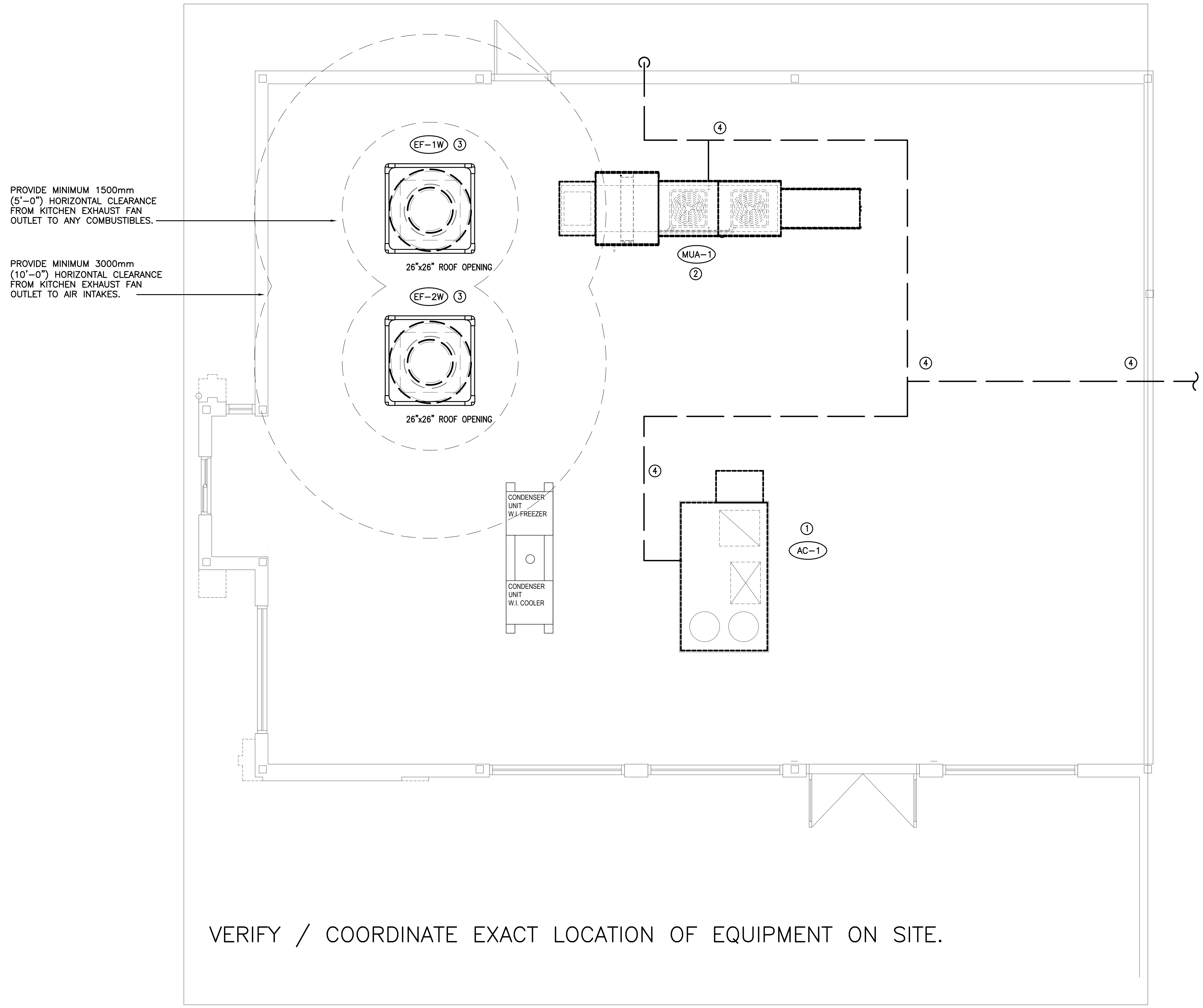

KEYED NOTES

① REPLACE EXISTING LENNOX RTU WITH NEW, RECONNECT GAS TO SUIT, RECONNECT S&R.A DUCTS TO EXISTING c/w TRANSITION DUCTS, 2" FLEXIBLE CONNECTIONS, AND 1" ACOUSTIC LINER. COORDINATE EXACT LOCATION AND CONNECTIONS ON SITE. SUPPLY AND INSTALL CURB ADAPTOR AS REQUIRED. REPLACE EXISTING THERMOSTAT WITH NEW.

② REPLACE EXISTING MAKEUP AIR UNIT WITH NEW c/w NEW CONTROLLER, RECONNECT GAS TO SUIT, RECONNECT SUPPLY AIR DUCT TO EXISTING c/w TRANSITION DUCT, 2" FLEXIBLE CONNECTIONS, AND 1" ACOUSTIC LINER. COORDINATE EXACT LOCATION AND CONNECTIONS ON SITE. SUPPLY AND INSTALL CURB ADAPTOR AS REQUIRED.

③ REPLACE EXISTING GREASE EXHAUST FAN WITH NEW c/w NEW CURB AND GREASE GUARD. GREASE EXHAUST FAN ON ROOF CURB c/w GREASE GUARD FILTER BASES

④ BRUSH AND CLEAN EXISTING GAS PIPING WITH STEEL BRUSH, THEN REPAINT YELLOW WITH RUSTING INHIBITING PAINT WITH TWO LAYERS TO COMPLY WITH GAS CODE APPLICATIONS.

LICENSED PROFESSIONAL ENGINEER
H. CHEN
100134411
PROVINCE OF ONTARIO

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PETRO-CANADA
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Project
PETRO CANADA REFRESH & A&W MODERNIZATION
638 COUNTY RD. 41, R.R. #6
NAPANEE, ONTARIO

Title
A&W ROOF PLAN
MECHANICAL LAYOUT

File Name

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24085	Tristar	HC	HC	1:40

Date Created
AUG 2024

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NORTH

KEYED NOTES

1. CONNECT 15ø H&C.W. FROM EXISTING TO HAND SINK (49A), DRAIN TO EXISTING.
2. CONNECT 15ø H&C.W. FROM EXISTING TO DUMP SINK (49B), DRAIN TO EXISTING.
3. CONNECT 15ø C.W. FROM EXISTING TO COFFEE MACHINE (77) c/w WATER FILTER AND BFP (DUAL CHECK VALVE BFP # SD2, S.S.), DRAIN TO HUB DRAIN.
4. CONNECT 15ø C.W. FROM EXISTING TO DISPENSER (8) c/w WATER FILTER AND BFP (DCVA # 007QT–S), DRAIN TO HUB DRAIN.
5. CONNECT 15ø C.W. FROM EXISTING TO ICE SYSTEM (9) c/w WATER FILTER AND BFP (DCVA # 007QT–S), DRAIN TO HUB DRAIN.
6. CONNECT DRAIN TO EXISTING. VERIFY ON SITE. CUT AND PATCH FLOOR AS REQUIRED.

GENERAL NOTES:

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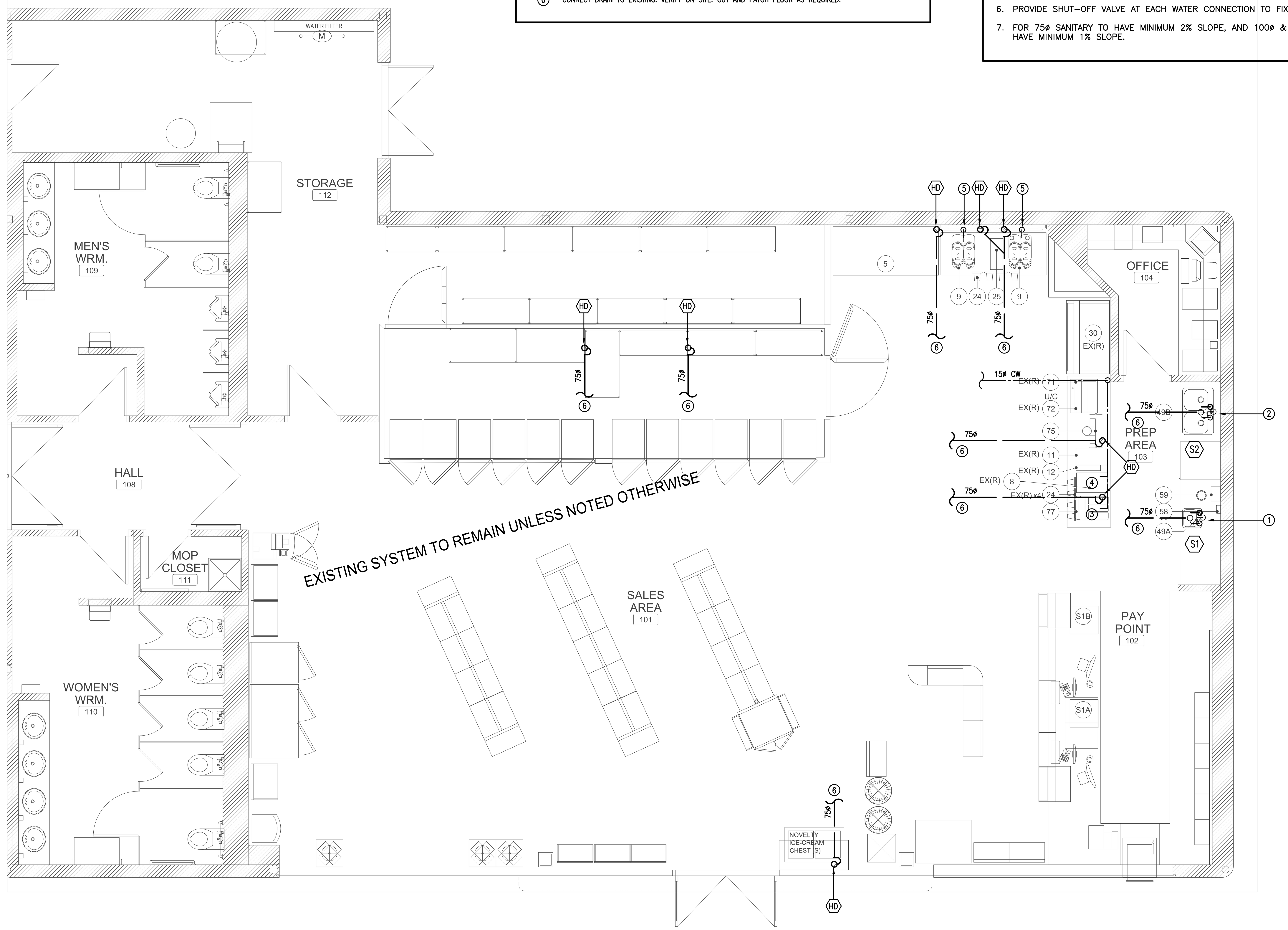
6. PROVIDE SHUT–OFF VALVE AT EACH WATER CONNECTION TO FIXTURE.
7. FOR 75ø SANITARY TO HAVE MINIMUM 2% SLOPE, AND 100ø & ABOVE TO HAVE MINIMUM 1% SLOPE.



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Project
PETRO CANADA REFRESH & A&W MODERNIZATION
638 COUNTY RD. 41, R.R. #6
NAPANEE, ONTARIO

Title
C-STORE FLOOR PLAN
PLUMBING LAYOUT

File Name

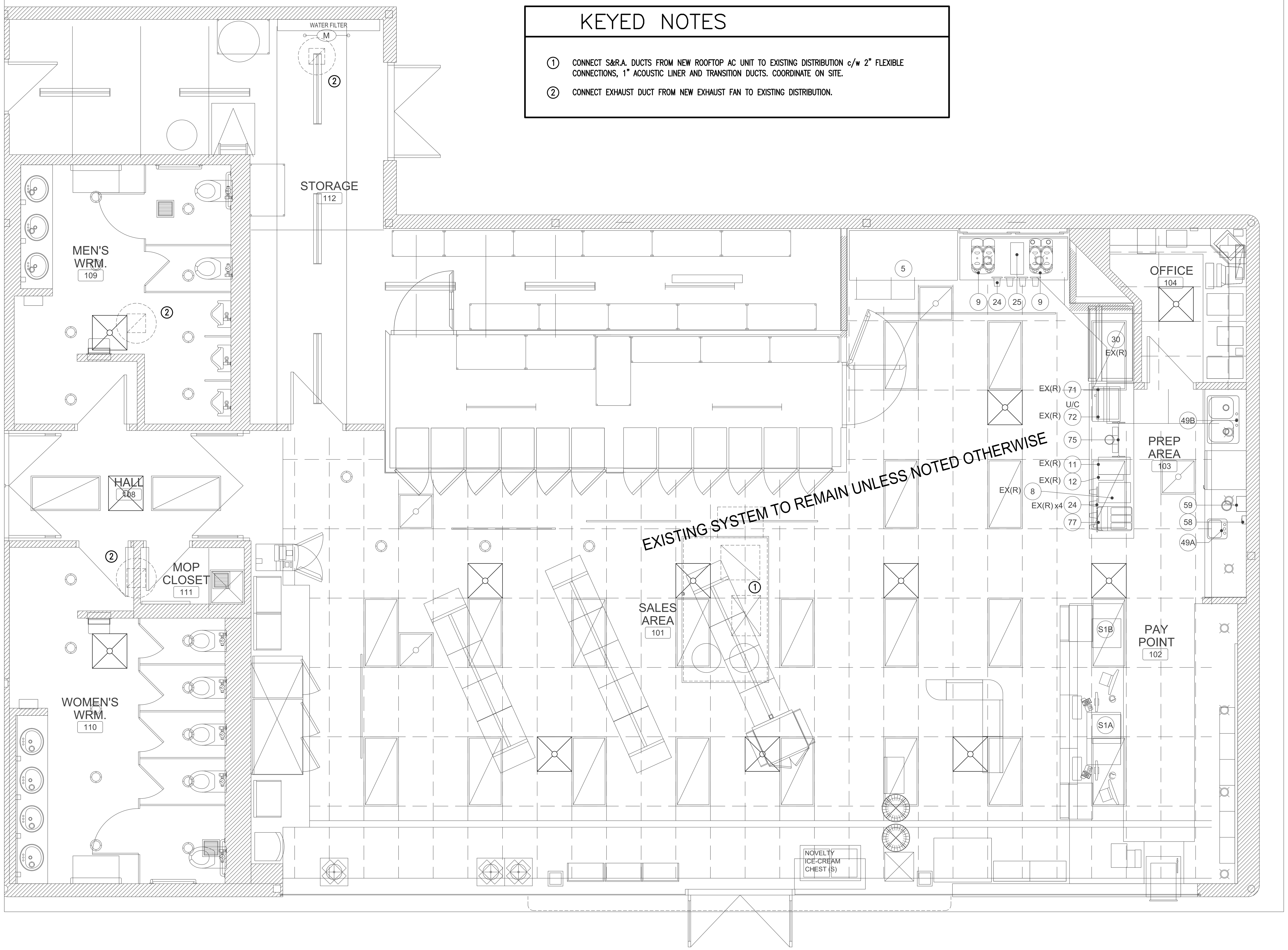
Project No	Consultant	Drawn By	Checked By	Scale
24085	Tristar	HC	HC	1:40

Date Created: AUG 2024
Concept: -
Page Number: M2.1

NORTH

KEYED NOTES

1. CONNECT S&R.A. DUCTS FROM NEW ROOFTOP AC UNIT TO EXISTING DISTRIBUTION c/w 2" FLEXIBLE CONNECTIONS, 1" ACOUSTIC LINER AND TRANSITION DUCTS. COORDINATE ON SITE.
2. CONNECT EXHAUST DUCT FROM NEW EXHAUST FAN TO EXISTING DISTRIBUTION.



INTERIOR RENO, NO FRESH AIR/ HEATING LOAD REVISION REQUIRED.

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Project
PETRO CANADA REFRESH & A&W MODERNIZATION
638 COUNTY RD. 41, R.R. #6
NAPANEE, ONTARIO

Title
C-STORE FLOOR PLAN
H.V.A.C. LAYOUT

File Name

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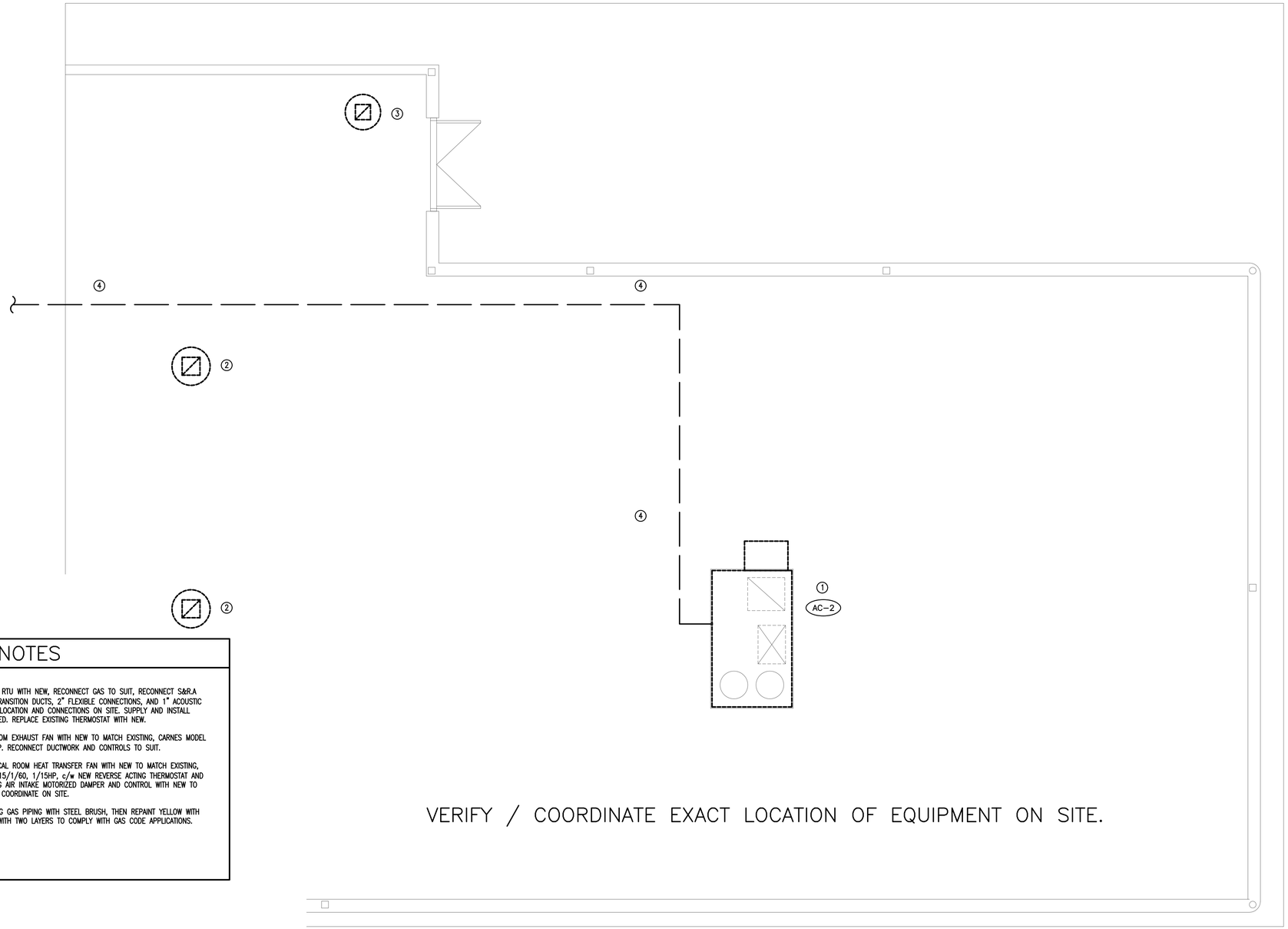

NORTH

VERIFY / COORDINATE EXACT LOCATION OF EQUIPMENT ON SITE.

2

KEYED NOTES

1. REPLACE EXISTING LENNOX RTU WITH NEW, RECONNECT GAS TO SUIT, RECONNECT S&R.A DUCTS TO EXISTING c/w TRANSITION DUCTS, 2" FLEXIBLE CONNECTIONS, AND 1" ACOUSTIC LINER. COORDINATE EXACT LOCATION AND CONNECTIONS ON SITE. SUPPLY AND INSTALL CURB ADAPTOR AS REQUIRED. REPLACE EXISTING THERMOSTAT WITH NEW.
2. REPLACE EXISTING WASHROOM EXHAUST FAN WITH NEW TO MATCH EXISTING, CARNES MODEL VEBK10, 115/1/60, 1/3HP. RECONNECT DUCTWORK AND CONTROLS TO SUIT.
3. REPLACE EXISTING ELECTRICAL ROOM HEAT TRANSFER FAN WITH NEW TO MATCH EXISTING, CARNES MODEL VEBK08, 115/1/60, 1/15HP, c/w NEW REVERSE ACTING THERMOSTAT AND STARTER. REPLACE EXISTING AIR INTAKE MOTORIZED DAMPER AND CONTROL WITH NEW TO INTERLOCK WITH NEW FAN. COORDINATE ON SITE.
4. BRUSH AND CLEAN EXISTING GAS PIPING WITH STEEL BRUSH, THEN REPAINT YELLOW WITH RUSTING INHIBITING PAINT WITH TWO LAYERS TO COMPLY WITH GAS CODE APPLICATIONS.

LICENSED PROFESSIONAL ENGINEER
H. CHEN
100134411
PROVINCE OF ONTARIO

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638 COUNTY RD. 41, R.R. #6
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Title
C-STORE ROOF PLAN
MECHANICAL LAYOUT

File Name

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24085	Tristar	HC	HC	1:40

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MECHANICAL SPECIFICATIONS

1.0 GENERAL

1.1

THE RESPONSIBILITY AND SCOPE OF EACH SUB-TRADE RESTS SOLELY WITH THE CONTRACTOR. EXTRAS WILL NOT BE CONSIDERED BASED ON THE GROUNDS OF DIFFERENCE IN INTERPRETATION OF SPECIFICATIONS AND DRAWINGS AS TO WHICH TRADE INVOLVED SHALL PROVIDE CERTAIN SPECIALTIES OR MATERIALS. SHOULD ANY CONFLICTS OCCUR BETWEEN LAYOUTS SHOWN ON DRAWING & APPLICABLE CODES, THE CODE REQUIREMENTS SHALL BE ADHERED TO.

1.2 EXAMINATION OF WORK

DRAWINGS ARE DIAGRAMMATIC AND APPROXIMATELY TO SCALE. THE CONTRACT DOCUMENTS ESTABLISH SCOPE, MATERIAL AND QUALITY AND ARE NOT DETAIL INSTALLATION INSTRUCTIONS.

1.3 INTENT

IT IS THE INTENT OF THIS SPECIFICATION AND DRAWINGS TO PROVIDE FOR A COMPLETE AND FULLY OPERATING SYSTEM IN COMPLETE ACCORD WITH ALL APPLICABLE CODES. THESE SPECIFICATIONS MAY NOT COVER EACH AND EVERY ITEM REQUIRED FOR THE COMPLETE MECHANICAL INSTALLATION. THEREFORE, THE CONTRACTOR SHALL MADE HIS OWN PROVISIONS FOR ALL LABOUR, MATERIALS AND EQUIPMENTS DEEMED NECESSARY TO COMPLETE THE MECHANICAL SYSTEM.

THE SPECIFICATIONS ARE INTEGRAL WITH THE DRAWINGS WHICH ACCOMPANY THEM. NEITHER IS TO BE USED ALONE. ANY ITEM OR SUBJECT OMITTED FROM ON, BUT IMPLIED ON THE OTHER IS PROPERLY SPECIFIED.

ALL WORK TO CONFORM TO LATEST NATIONAL, PROVINCAIL, MUNICIPAL CODES, BYLAWS & REGULATIONS AND AUTHORITIES HAVING JURISDICTION.

WHENEVER DIFFERENCES OCCURRED IN THE CONTRACT DOCUMENTS, THE MAXIMUM CONDITION WILL GOVERN AND BE INCLUDED IN THE CONTRACT PRICE.

CONFORM TO MANUFACTURER'S INSTRUCTIONS, DETAILS AND PROCEDURES FOR EQUIPMENT INSTALLATIONS.

INSTALL EQUIPMENTS IN LOCATIONS AND ROUTES SHOWN WITH MINIMUM INTERFERENCE WITH OTHER SERVICES OR TRADES. REMOVE AND REPLACE EQUIPMENTS IMPROPERLY INSTALLED.

ALL NEW INSTALLATIONS TO MEET OR EXCEED BASE BUILDING STANDARDS.

1.4 INSURANCE

THE CONTRACTOR MUST HAVE COMPREHENSIVE GENERAL LIABILITY INSURANCE COVERAGE OF NOT LESS THAN $2,000,000.00 INCLUDING NON OWNED CAR COVERAGE, CONTRACTUAL LIABILITY AND CONTAINING A CROSS LIABILITY CLAUSE. COVERAGE SHALL INCLUDE LOSS OR DAMAGE CAUSED BY THE CONTRACTOR.

THE CONTRACTOR SHALL CARRY FULL EMPLOYEE'S LIABILITY INSURANCE IN ACCORDANCE WITH THE WORKER'S COMPENSATION ACT.

1.5 LIABILITY

THIS CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR LAYING OUT HIS WORK AND FOR ANY DAMAGE CAUSED TO OWNER OR OTHER CONTRACTOR BY IMPROPER LOCATION OR CARRYING OUT HIS WORK.

THIS CONTRACTOR SHALL PROTECT ALL FINISHED AND UNFINISHED WORK OF HIS OWN AND OTHER CONTRACTORS, INCLUDING EXISTING FROM DAMAGE DUE TO CARRYING OUT HIS WORK.

VERIFY ALL EXISTING ELEVATIONS, DIMENSIONS, CLEARANCES & BUILDING FEATURES PRIOR TO COMMENCING INSTALLATION.

1.6 COORDINATION & CO-OPERATION

COORDINATE WORK WITH ALL OTHER SUBCONTRACTORS AND TRADES INVOLVED.

CONFIRM IN WRITING TO GENERAL CONTRACTOR/ENGINEER ANY EXISTING SERVICES OR WORKS DEEMED TO BE UNACCEPTABLE/DEFECTIVE PRIOR TO COMMENCING WORK.

1.7 INTERRUPTION OF SERVICES

WHILE WORK IS IN PROGRESS, CONTINUITY OF SERVICES SHALL BE MAINTAINED TO ALL EXISTING SERVICES. INTERRUPTIONS SHALL BE COORDINATED WITH THE OWNER AS TO TIME AND DURATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY INTERRUPTIONS TO SERVICES AND SHALL REPAIR ANY DAMAGES TO THE EXISTING SYSTEMS CAUSED BY HIS OPERATIONS.

THE CONTRACTOR SHALL INCLUDE IN HIS PRICE ANY COST FOR PREMIUM TIME OUTSIDE OF NORMAL WORKING HOURS TO COMPLETE THE WORK ON SCHEDULE AND TO MAINTAIN ALL EXISTING SYSTEMS IN OPERATION.

1.8 CERTIFICATES, FEES, ETC.

GIVE ALL NOTICES, OBTAIN ALL PERMITS AND PAY ALL FEES SO THAT THE WORK SPECIFIED MAY BE CARRIED OUT. FURNISH ANY CERTIFICATES AT THE OWNER'S REQUEST AS EVIDENCE THAT WORK INSTALLED CONFORMS WITH THE LAWS AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTIONS CERTIFICATES/PERMITS ARE TO BE PROVIDED FOR QUALITY OF WORKMANSHIP & WORKMAN QUALIFICATIONS.

INSPECTIONS SHALL BE MADE PROMPTLY. IF ANY WORK IS COVERED UP WITHOUT CONSENT, IS SHALL, IF REQUIRED, BE UNCOVERED FOR EXAMINATION AND MAKE GOOD AT NO EXTRA COST TO OWNER.

1.9 IDENTIFICATION

PROVIDE FOR IDENTIFICATION OF PIPING & DUCTWORK WITH MARKERS SHOWING SERVICE & DIRECTION OF FLOW. APPLY LABELS AT MAXIMUM 50' INTERVALS, BEFORE AND AFTER PASSING THROUGH WALLS, AT ACCESS DOOR OPENINGS, AT EACH SHUT OFF VALVE AND ADJACENT TO EACH PIECE OF EQUIPMENT. LABELS SHALL BE WATERPROOF AND HEAT RESISTANT WITH YELLOW BACKGROUND, MINIMUM 1" LETTERING AND DRY ADHESIVE BACKING. PROVIDE 3M #76 ADHESIVE IN ADDITION TO DRY ADHESIVE BACKING.

PROVIDE 2" WIDE COLOUR BAND OF PLASTIC PRESSURE SENSITIVE TAPE FOR PIPING SYSTEMS. SPACING SHALL BE SAME AS LABELS.

TAG AUTOMATIC CONTROLS, ELECTRIC SWITCHES, INSTRUMENTS AND RELAYS WITH LAMICOID LABELS WITH 1/2" LETTERS AND KEY WITH CONTROL SCHEMATICS.

PROVIDE LAMICOID LABELS WITH 1/2" LETTERS ON EQUIPMENT AND MOTOR STARTERS.

1.10 CUTTING AND PATCHING

UNLESS BUILDER'S WORK IS EXCLUDED FROM HIS SCOPE OF WORK, THE MECHANICAL CONTRACTOR SHALL INCLUDE AND BE RESPONSIBLE FOR CUTTING, PATCHING AND MAKE GOOD ALL OPENINGS REQUIRED FOR THE MECHANICAL SERVICES.

X-RAY SLAB PRIOR TO CUTTING OPENINGS.

LOCATE HOLES AND PROVIDE SLEEVES, CUTTING & FITTING REQUIRED FOR MECHANICAL WORK. RELOCATE IMPROPERLY LOCATED HOLES AND REPAIR WORK ACCORDINGLY.

PROVIDE EXPANSION BOLTS, HANGER RODS, BRACKETS AND SUPPORTS.

DO NOT ALTER STRUCTURAL MEMBERS OF BUILDING WITHOUT OBTAINING APPROVAL FROM ARCHITECT.

PERFORM PATCHING OF FINISHED WORK IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF SPECIFICATIONS.

1.11 FLASHING

DO ALL FLASHING AND COUNTER FLASHING WHERE DUCTS AND OTHER MECHANICAL PARTS ARE PASSING THROUGH WEATHER AND/OR WATER PROOF WALLS, FLOORS AND ROOFS, ALL TO THE SATISFACTION OF THE OWNER.

1.12 FIRE STOPPING

PROVIDE FIRE STOPPING & SMOKE SEALS AROUND MECHANICAL SERVICE PIPING AND DUCT PENETRATIONS THROUGH FIRE RATED FLOORS AND ASSEMBLIES. WORK SHALL BE INSTALLED TO MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES.

ACCEPTABLE FIRESTOPPING SYSTEMS FOR VERTICAL PENETRATIONS ARE 3M FIRE BARRIER PENETRATIONS SEALING SYSTEM, BIO-FIRE PROTECTION LTD., FIRE STOPPING & SMOKE SEALS, DOW CORNING FIRE STOP SEALANT, FOR HORIZONTAL PENETRATIONS, APPROVED MANUFACTURER IS FYRE FLANGE BY FIRE SLEEVE INDUSTRIES INC.

1.13 PIPE HANGERS, SUPPORTS AND SLEEVES

HANGERS AND SUPPORTS SHALL SECURE PIPES IN PLACE, PREVENT VIBRATION, MAINTAIN GRADE BY ADJUSTMENT, PROVIDE FOR EXPANSION AND CONTRACTION AND SHALL BE DIRECTLY FROM THE STRUCTURE.

1.14 SEISMIC PROTECTION

ALL PIPING, DUCTWORK, EQUIPMENTS ETC. SHALL BE BRACED TO RESIST SEISMIC MOVEMENTS DURING EARTHQUAKE.

ENGAGE THE SERVICES OF THE SEISMIC PROFESSIONAL TO DESIGN, REVIEW & INSPECTIONS OF THE ENTIRE MECHANICAL SYSTEM. SUBMIT COPY OF CERTIFICATE TO CONSULTANT PRIOR TO SUBSTANTIAL PERFORMANCE.

1.15 TESTING

TEST ALL EQUIPMENTS AND MATERIALS WHERE REQUIRED BY SPECIFICATIONS OR AUTHORITIES HAVING JURISDICTION, TO DEMONSTRATE ITS PROPER TO THE OWNER'S REPRESENTATIVE. TEST PROCEDURES SHALL BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF THE ASME, ASHRAE, SMACNA, NFPA, CSA AND OTHER RECOGNIZED TEST CODES AS FAR AS FIELD CONDITIONS PERMIT.

ALL GAS PIPING SHALL BE TESTED AS REQUIRED BY AUTHORITIES HAVING JURISDICTION.
ALL LOW VELOCITY DUCT SYSTEMS, INCLUDING SUPPLY, RETURN AND EXHAUST SHALL BE CHECKED FOR TIGHTNESS. ALL LEAKS SHALL BE REPAIRED BEFORE DUCTS ARE FURRED INTO ENSURE TOTAL OUTLET CAPACITY IS WITHIN 5% OF THE QUANTITY BEING SUPPLIED BY THE AIR SYSTEMS.

1.16 ELECTRIC MOTORS AND WIRING

CONTRACTOR TO REVIEW ALL EQUIPMENT REQUIRING ELECTRICAL HOOK-UP WITH ELECTRICAL CONTRACTOR AND ELECTRICAL DRAWINGS PRIOR TO ODERING EQUIPMENT. CONFIRM ALL ELECTRICAL CHARACTERISTICS AS REQUIRED.

SUPPLY ALL MECHANICAL EQUIPMENTS WITH ELECTRIC MOTORS AS REQUIRED.

THE ELECTRICAL SUBCONTRACTOR SHALL BE RESPONSIBLE TO SUPPLY ALL MOTOR STARTERS AND DISCONNECT SWITCHES FOR ALL MOTORS FOR THE PROJECT, ALL LINE VOLTAGE WIRING TO STARTERS AND STARTERS TO MOTORS EXCEPT ON PREWIRED PACKAGED EQUIPMENT.

CONTROLS (FAN SWITCHES) CONNECTED TO MECHANICAL EQUIPMENTS SHALL BE SUPPLIED BY THE MECHANICAL TRADE AND SHALL BE INSTALLED, WIRED IN AND CONNECTED BY THE CONTROL TRADE.

1.17 RECORD "AS-BUILT" DRAWINGS

KEEP IN THE JOB OFFICE AN EXTRA SET OF WHITE PRINTS AND SPECIFICATIONS ON WHICH ALL CHANGES AND DEVIATIONS SHALL BE RECORDED DAILY. AT COMPLETION OF THE PROJECT, TURN OVER TO THE ENGINEER THREE SETS OF NEAT AS-BUILT DRAWINGS AND SPECIFICATIONS. THESE EXTRA SETS OF WHITE PRINT AND SPECIFICATIONS SHALL BE PROVIDED BY THE ARCHITECT.

1.18 SHOP DRAWINGS

BEFORE FABRICATION OF ANY MATERIALS OR EQUIPMENTS, SUBMIT A MINIMUM OF 10 COMPLETE SETS OF DRAWINGS AND DATA SHEETS COVERING ALL ITEMS OF EQUIPMENTS FURNISHED AND INTEND FOR INSTALLATION.,

THE ENGINEER'S REVIEW SHALL NOT RELIEVE THIS CONTRACTOR FROM RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENTS IN ACCORDANCE WITH THE DESIGN INTENT AND CONTRACT DOCUMENTS. ALL DIMENSIONS AND SUITABILITY FOR SITE CONDITIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR, ALL ELECTRICAL CHARACTERISTICS MUST BE COORDINATED WITH THE ELECTRICAL SUB-CONTRACTOR.

REPAIR ANY TEMPORARY EQUIPMENT USED FOR TEMPORARY HEAT, TO THE FULL SATISFACTION OF THE OWNER.

1.19 STANDARD OF WORKMANSHIP & MATERIALS

MAKE & QUALITY OF MATERIALS USED ARE SUBJECT TO APPROVAL BY THE ENGINEER. REMOVE CONDEMNED MATERIALS AND INSTALL SUITABLE MATERIALS IN THEIR PLACE.

MATERIAL SHALL BE NEW & UNIFORM PATTERN THROUGHOUT.

EMPLOY ONLY TRADESMAN WITH PROPER LICENSE FOR WORK.

1.20 INSPECTIONS (SUBSTANTIAL COMPLETION)

NOTIFY CONSULTANT 2 DAYS PRIOR TO FINAL INSPECTION. ALL SYSTEMS SHALL BE FULLY OPERATIONAL AND ANY DEFICIENCIES SHALL BE IDENTIFY TO ENGINEER.

ALL DEFICIENCIES SHALL BE COMPLETED WITHIN 2 WEEKS AFTER SUBSTANTIAL COMPLETION. FAILURE TO COMPLETE WORK WITHIN THE TIME FRAME WILL RESULT IN WORK BEING DONE BY THE OWNER AND THE COST BEAR BY THE CONTRACTOR.

1.22 EQUIPMENT CLEANUP

DUCTS AND EQUIPMENTS SHALL BE THOROUGHLY CLEANED OF DIRT, CUTTINGS AND OTHER FOREIGN SUBSTANCES. DISCONNECT, CLEAN AND RECONNECT WHENEVER NECESSARY FOR THE PURPOSE OF LOCATING AND REMOVING OBSTRUCTIONS. REPAIR WORK DAMAGED IN THE CAUSE OF REMOVING OBSTRUCTIONS. DUCTS SHALL BE PROFESSIONALLY VACUUM CLEANED PRIOR TO TURNING OVER TO OWNER.

1.23 GUARANTEE

THE MECHANICAL SUBCONTRACTOR, AS A CONDITION PRECEDENT TO FINAL PAYMENT AFTER COMPLETION OF HIS WORK, SHALL GIVE OWNER A WRITTEN GUARANTEE WARRANTING ALL APPARATUS FURNISHED UNDER THE CONTRACT FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF HIS WORK BY THE ARCHITECT AND ENGINEER.

ATTEND IMMEDIATELY, AT NO COST TO OWNER, TO ANY AND ALL DEFECTS OCCURRING DURING THE WARRANTEE PERIOD.

1.24 OPERATION AND MAINTENANCE DATA

FURNISH THREE SETS OF OPERATING AND MAINTENANCE DATA FOR ALL EQUIPMENTS AND SYSTEMS. DATA SHALL BE ASSEMBLED IN BOOK FORM WITH HARD COVER AND INDEX, IDENTIFY FRONT COVER WITH NAME AND LOCATION OF THE PROJECT, CONSULTING ENGINEER AND CONTRACTOR. PRIOR TO SUBSTANTIAL COMPLETION SUBMIT ONE COPY TO ENGINEER FOR APPROVAL.

1.25 APPROVALS

THE PRICE SUBMITTED FOR THIS CONTRACT SHALL BE BASED ON THE USE OF MATERIALS AND EQUIPMENTS SPECIFIED. IF THIS CONTRACTOR WISHES TO QUOTE ON EQUIVALENT MATERIALS AND EQUIPMENTS, HE MUST QUOTE ON PRODUCTS APPROVED BY THE ENGINEER IN WRITING , AS AN EQUIVALENT TO THE PRODUCT SPECIFIED.

THIS CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY ADDITIONAL WORK OR MATERIALS REQUIRED BY THE MECHANICAL TRADE OR OTHER CONTRACTORS TO ACCOMMODATE APPROVED EQUIVALENT MATERIALS OR EQUIPMENTS. EXTRAS SHALL NOT BE APPROVED TO COVER SUCH WORK.

1.26 VALUATION OF CHANGES

FOR EACH CHANGE, SUBMIT A COMPLETE, ITEMIZED BREAKDOWN OF LABOUR AND MATERIAL AT NET COST, SHOWING QUANTITIES, UNIT COST, HOURS PER EACH ITEM INSTALLED, PROFIT, OVERHEAD ETC.,

ONLY THE NET DIFFERENCE BETWEEN AN EXTRA AND A CREDIT WILL BE SUBJECT TO OVERHEAD AND PROFIT MARK UP.

1.27 SPRINKLER & FIRE PROTECTION SYSTEM

CONTRACTOR SHALL ENGAGE REGISTERED SPRINKLER & FIRE PROTECTION ENGINEERS TO DESIGN THE ENTIRE SPRINKLER & FIRE SUPPRESSION SYSTEM. HE SHALL MAKE PROVISIONS FOR DESIGN, FIELD REVIEW , ASSURANCE LETTERS & CERTIFICATIONS OF THE ENTIRE SPRINKLER & FIRE SUPPRESSION SYSTEM AT PROJECT COMPLETION.

ENGAGE SERVICES OF THE FIRE PROTECTION SYSTEM ENGINEER TO PERFORM FUNCTIONAL TESTING OF THE FIRE SUPPRESSION SYSTEMS AND DEVICES. & ACCEPTANCE TESTING FOR CONTRACTOR'S MATERIAL AND TEST CERTIFICATE AS PER NFPA STANDARDS. SUBMIT COPY OF ALL CERTIFICATES TO THIS ENGINEER. FIRE SUPPRESSION SYSTEM SHALL INCLUDE FIRE SPRINKLER, FIRE HOSE STANDPIPE & KITCHEN HOOD FIRE SUPPRESISON SYSTEM AS APPLIOCABLE. REFER TO ARCHITECTURAL SPECIFICATION.

WELDER TO SUBMIT TRADE CERTIFICATION & LETTER TO THIS ENGINEER CERTIFYING QUALITY OF ALL WELDS AND MATERIAL ARE IN CONFORMANCE OF ALL APPLICABLE CODES.

CONTRACTOR TO VERIFY COMPATIBILITY AND LOCATION OF ELECTRICAL SUPERVISION ANCILLARY ALARM AND CONTROL DEVICES WITH BASE BUILDING SYSTEMS PRIOR TO COMMENCING INSTALLATION.

2.0 PLUMBING

2.1 PIPE AND PIPE FITTINGS

DRAINAGE & VENT PIPING ABOVE GRADE SHALL BE DWV COPPER OR CAST IRON WITH MECHANICAL JOINTS.

ALL BELOW GRADE STORM, SANITARY, DRAINS & VENT STACKS SHALL BE ABS (DWV) PIPING TO CAN/CSA-B181.

SANITARY DRAINS 40mm AND SMALLER MAY BE HARD TEMPERED COPPER DRAINAGE TUBE (DWV).

DOMESTIC HOT & COLD WATER PIPING ABOVE GRADE AND INSIDE BUILDING SHALL BE TYPE L HARD COPPER.

DOMESTIC PIPING SOLDER SHALL BE LEAD FREE.

DOMESTIC HOT & COLD WATER BELOW GRADE SHALL BE TYPE L HARD COPPER.

GAS PIPING SHALL BE CARBON STEEL, SCHEDULE 40, GRADE A, TO ASTM A-53. FITTINGS AND VALVES SHALL BE CGA APPROVED. PAINT ALL OUTSIDE EXPOSED GAS PIPING.

GAS SERVICE VALVES SHALL BE LUBRICATED PLUG TYPE WITH SQUARE HEAD & REMOVABLE OPERATING SPANNER FOR INSIDE & OUTSIDE SERVICE OR CGA APPROVED BALL VALVES FOR INSIDE SERVICE ONLY.

PROVIDE CGA APPROVED FLEXIBLE METALLAIC HOSE CONNECTOR INSTALLED IN ACCORDANCE WITH CODE REQUIREMENTS FOR MOVABLE APPLIANCES. PROVIDE 24" OF TYPE K SOFT COPPER TUBING AT CONNECTION TO EACH APPLIANCE. COPPER FITTINGS SHALL BE BRACED WITH SILVER SOLDER AND BE PROTECTED FROM ELECTROLYSIS BY BRASS ADAPTORS.

PROVIDE PIPE SLEEVES FOR ALL PIPING PASSING THROUGH FLOOR SLAB. PIPE SLEEVES WILL PROJECT 50 mm ABOVE FINISHED FLOOR LEVEL AND BE CAULKED TO MAKE WATER TIGHT PENETRATION.

WHERE DISSIMILAR METALS ARE JOINED OR SUPPORTED, THE PIPING SHALL HAVE NON CONDUCTING TYPE CONNECTIONS OR HANGERS TO PREVENT GALVANIC CORROSION.

PROVIDE ALL VALVES AS SHOWN ON THE DRAWINGS OR REQUIRED BY LOCAL BUILDING CODES AND AUTHORITIES HAVING JURISDICTION.

PROVIDE APPROVED DOUBLE CHECK VALVE BACKFLOW PREVENTERS ON WATER SUPPLY TO FIRE PROTECTION SYSTEMS. WATTS 700 SERIES OR APPROVED EQUIVALENT.

PROVIDE TRAP PRIMERS ,WATTS 200 OR EQUIVALENT, AS REQUIRED TO MAINTAIN TRAP SEAL.

PROVIDE WATER HAMMER ARRESTERS ON GROUP OF PLUMBING FIXTURES, ON TOP OF RISERS. & ON ALL EQUIPMENT & DEVICES WITH SOLENOID VALVES.

PROVIDE VACUUM BREAKER ON WATER SUPPLY TO HOSE BIBBS.

PROVIDE PILOT OPERATED GLOBE TYPE PRESSURE REDUCING VALVE WITH BRONZE STRAINER ASSEMBLY TO LIMIT STATIC WATER PRESSURE TO 85 PSI ON INCOMING WATER LINE TO PLUMBING CODE REQUIREMENTS. PRV SHALL BE WATTS PV-10M WITH Y STRAINER TO SIZES INDICATED.

PROVIDE COMPLETE VENT SYSTEM AS REQUIRED BY BUILDING CODE, PLUMBING CODE AND LOCAL REGULATIONS.

2.2 PIPE INSULATION

PROVIDE INSULATION C/W VAPOUR BARRIER TO ALL ROOF DRAINS, RAINWATER LEADERS, DOMESTIC HOT & COLD WATER LINES.

PIPE INSULATION SHALL BE 1" THICK, EXCEPT FOR PIPE SIZES 3/4"ø OR LESS, USE 1/2" THICK INSULATION.

FINISH INSULATION NEATLY AT HANGERS, SUPPORTS AND OTHER PROTRUSIONS. INSULATE FITTINGS AND VALVES.

2.3 CLEANOUTS

CLEAN-OUTS IN CONCRETE SHALL BE ADJUSTABLE TYPE FOR LEVEL INSTALLATION.

CLEANOUT IN UNFINISHED AREAS SHALL BE ZURN Z-1500.

CLEANOUT IN FINISHED AREAS SHALL BE ZURN ZN-1508.

CLEANOUT IN SUB-SURFACE DRAINAGE SYSTEM EXTENSION SHALL BE ZURN Z-1500, IN UNFINISHED CONCRETE ZURN Z-1440 ENCASED IN 16"X16"X4" THICK CONCRETE PAD IN SOFT LANDSCAPPAING AND ZURN Z-1502 IN FINISHED CONCRETE OR PAVERS.

3.0 VENTILATION AND AIR CONDITIONING

3.1 DUCTWORK

DUCTWORK SHALL BE GALVANIZED STEEL AND SHALL BE LOCK FORMING QUALITY. ALL DUCTWORK SHALL BE CONSTRUCTED, BRACED, CONNECTED AND JOINTED AS RECOMMENDED IN THE LATEST ISSUE OF ASHRAE GUIDE AND THE DUCT CONSTRUCTION STANDARDS ISSUED BY THE SHEET METAL NATIONAL ASSOCIATION INC. (SMACNA). ALL DUCTWORK SHALL BE INSTALLED TO CONFORM TO THE NATIONAL BUILDING CODE, NFPA PAMPHLETS 90A AND 91 AND IN ACCORDANCE WITH APPLICABLE CODES. THE MINIMUM SHEET METAL THICKNESS FOR DUCTS SHALL BE AS FOLLOWS:

RECTANGULAR DUCTS MAXIMUM WIDTH	GAUGE
UP TO 300MM	0.48MM
300 TO 750 MM	0.60MM
751MM TO 1400 MM	0.80MM
1401MM TO 2100MM	0.95MM
2200MM AND OVER	1.30MM

ROUND DUCTWORK SHALL BE SUSPENDED BY BAND IRON HANGERS.

RECTANGULAR DUCTWORK SHALL BE SUPPORTED AT MAXIMUM 2400 SPACING.

ALL DUCTS ASSOCIATED WITH FANS AND OTHER MACHINERY SHALL BE INSTALLED WITH CANVAS FLEXIBLE CONNECTIONS ON INLET & OUTLET OPENINGS.

ALL FANS & AIR HANDLING UNITS SHALL BE MOUNTED WITH VIBRATION ISOLATORS.

PROVIDE THERMALLY INSULATED FLEXIBLE DUCT CONNECTIONS FROM DUCT BRANCHES TO SUPPLY AIR DIFFUSERS, 1500mm(5') MAXIMUM. DO NOT USE FLEX DUCTS FOR ELBOWS.

PROVIDE SEISMIC SUPPORTS AND CABLING FOR GRILLES AND DIFFUSERS.

INSTALL FIRE DAMPER AT ALL PENETRATIONS THROUGH FIRE RATED WALLS AND/OR REQUIRED BY BUILDING INSPECTOR AS PER BUILDING CODE.

RIGIDLY SUPPORT FRAME AND SEAL INTO FIRE WALL. PROVIDE ACCESS FOR SERVICING. ACCESS PANELS SHALL BE MINIMUM 12"X12".

PROVIDE UL LISTED AND LABELED FIRE DAMPERS.

FIRE DAMPERS IN MEDIUM & HIGH PRESSURE DUCTWORK SHALL BE CURTAIN TYPE.

SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL FIRE WALLS, FLOORS & CEILING.

PROVIDE APPROVED FIRE STOPPING & SMOKE SEALS AROUND ALL PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS AND CEILING ASSEMBLIES TO CSA STANDARD CAN4-S115-M85.

FUSIBLE LINKS SHALL BE SET AT 72°C.

3.3 VOLUME DAMPER

INSTALL WHERE SHOWN OR REQUIRED FOR BALANCING, SINGLE BLADE WITH LOCKING QUADRANT.

3.4 AIR OUTLETS

PROVIDE ALL AIR OUTLETS COMPLETE WITH ACCESSORIES AS SPECIFIED HEREIN AND INDICATED ON THE DRAWINGS. COORDINATE LOCATIONS OF ALL AIR OUTLETS WITH LIGHTING. THE POSITIONS INDICATED ARE APPROXIMATE ONLY. THIS CONTRACTOR SHALL CHECK THE LOCATION OF ALL OUTLETS AND SHALL MAKE SUCH ADJUSTMENTS IN POSITION AS NECESSARY TO CONFORM WITH ARCHITECTURAL FEATURES AT NO EXTRA COST TO OWNER

3.5 AIR SYSTEM TESTING , BALANCING AND COMMISSIONING

BALANCE SYSTEM FOR RATED AIR FLOW, ROOM TEMPERATURE CONTROL AND CURRENT DRAW AFTER INSTALLATION IS COMPLETE AND IN FULL WORKING ORDER. ADJUST CONTROL FOR CONTINUOUS AIR CIRCULATION AND MINIMUM ENERGY CONSUMPTION. ADJUST FAN SPEED AS REQUIRED TO OBTAIN SPECIFIC PERFORMANCES. BALANCE SYSTEM FOR OUTSIDE AIR AS GIVEN IN UNIT PERFORMANCE.

COMMISSION ENTIRE MECHANICAL SYSTEM INCLUDE START UP REPORT IN MAINTENANCE MANUAL

THE BALANCING CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS, REPLACE MOTOR AND FAN SHEAVES AND BELTS UPON BALANCING OF EXISTING & NEW AIR SYSTEMS.

3.6 DUCT INSULATION

INSULATION THICKNESS AND PERFORMANCE SHALL CONFORM TO REQUIREMENTS OF ASHRAE/IES STANDARD 90.1

ALL COVERINGS SHALL BE APPLIED IN A WORKMANLIKE MANNER TO PRESENT A NEAT AND CLEAN APPEARANCE AT COMPLETION OF THE WORK TO THE SATISFACTION OF THE ENGINEER. INSULATION ASSEMBLIES SHALL COMPLY WITH BRITISH COLUMBIA BUILDING REGULATIONS WITH FRAME SPREAD AND SMOKE DEVELOPED RATINGS NOT EXCEEDING 25 TO 50 RESPECTIVELY.

APPLY 25MM THICK ACOUSTIC INSULATION ON SUPPLY AIR AND RETURN AIR DUCTWORK 3600mm (12 FT.) FROM ROOF TOP UNITS.

APPLY 40MM THICK FLEXIBLE FIBROUS GLASS INSULATION WITH FACTORY APPLIED REINFORCED ALUMINUM FOIL VAPOUR BARRIER ON ALL SUPPLY AIR DUCTWORK (APPLICABLE ONLY WHERE SPACE ABOVE CEILING IS NOT USED FOR RETURN AIR).

APPLY 25MM THICK FLEXIBLE FIBROUS GLASS INSULATION WITH FACTORY APPLIED REINFORCED ALUMINUM FOIL VAPOUR BARRIER ON COMBUSTION AND OUTSIDE AIR INTAKE DUCTWORK.

3.7 CONTROLS

PROVIDE SYSTEM COMPONENTS CONSISTING OF THERMOSTATS, CONTROL VALVES, DAMPERS, OPERATORS, INDICATING DEVICES, INTERFACE EQUIPMENTS AS REQUIRED TO OPERATE MECHANICAL SYSTEM AND TO PERFORM FUNCTIONS SPECIFIED.

CONTROL FOR ECONOMIZER SECTIONS, ALL OUTDOOR & RELIEF DAMPERS TO BE ELECTRIC OR DDC.

PROVIDE PROGRAMMABLE THERMOSTAT WITH LOCKABLE COVER/GUARD.

INSTALL MOTOR DAMPERS ON OUTSIDE OF DUCTS NOT IN AIRSTREAM.

VERIFY LOCATION OF ALL THERMOSTATS BEFORE INSTALLATION. LOCATE THERMOSTAT AT 1500MM ABOVE FLOOR.

TAG AUTOMATIC CONTROLS, ELECTRIC SWITCHES, INSTRUMENTS & RELAYS WITH LAMICOID LABELS WITH 1/2" LETTERS AND KEY WITH CONTROL SWITCHES.

4.0 APPROVED ALTERNATE EQUIPMENT SUPPLIER

ROOF TOP AIR HANDLING UNITS	NONE
MAKE UP AIR UNIT	NONE
KITCHEN EXHAUST FANS	PENN, COOK,
PLUMBING FIXTURES	CRANE, DELTA
GREASE INTERCEPTOR & DRAINS	ZURN
DOMESTIC WATER HEATER	A.O. SMITH

NOTES:

1. CONTRACTOR TO BE RESPONSIBLE FOR PLUMBING CONNECTIONS TO ALL KITCHEN EQUIPMENTS AS PER A & W KITCHEN DRAWING & EQUIPMENT LIST.
2. FOLLOW MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS FOR ALL EQUIPMENT, DUCTWORK, PIPING & VENTING INSTALLATIONS.
3. KITCHEN INSTALLATIONS TO CONFORM TO NFPA #96 AND ALL APPLICABLE CODES.KITCHEN EXHAUST DUCTING MUST BE WELDED 16 GAUGE(1.37MM) CARBON STEEL OR 18 GAUGE STAINLESS STEEL(1.09 MM).
4. ALL PLUMBING FIXTURE SHOWN ON EITHER OR BOTH ARCHITECTURAL AND MECHANICAL DRAWINGS ARE PROPERLY SPECIFIED.
5. CONTRACTOR TO SUPPLY AND INSTALL NEW WET AGENT EXHAUST HOOD FIRE SUPPRESSION SYSTEM, MODEL KIDDE SENTINAL OR RANGE GUARD SYSTEM,SUITABLE FOR VEGETABLE OIL COOKING. SYSTEM TO BE DESIGNED AND LISTED IN ACCORDANCE WITH UL300 OR ULC/ORDC1254.6-1995
6. CONTRACTOR TO MAKE GOOD GAS CONNECTIONS TO ALL KITCHEN EQUIPMENTS. INTERLOCK KITCHEN SOLENOID GAS VALVE TO KITCHEN CANOPY FIRE SUPPRESSION SYSTEM.
7. MAINTAIN 18" CLEARANCE BETWEEN KITCHEN EXHAUST DUCT & COMBUSTIBLES OR PROTECT DUCTWORK AS REQUIRED AS PER NFPA #96.
8. SUBMIT SPRINKLER AND FIRE EXTINGUISHING SYSTEM CERTIFICATES TO OWNER.
9. ALL FLEX DUCTS TO BE FLEXMASTER MODEL T/L. MAXIMUM LENGTH 5'0".
10. ACCESS PANELS FOR ALL WALL PLUMBING CLEANOUTS TO BE STAINLESS STEEL.
11. THE MECHANICAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL OTHER TENDER DOCUMENTS AND DRAWINGS.
12. MAINTAIN MINIMUM 10' SEPARATION BETWEEN EXHAUST & NEAREST FRESH AIR INTAKE.
13. ALL PLUMBING VENT LINES TO BE INSTALLED TO ONTARIO BUILDING CODE.
14. UNDERCUT ALL WASHROOM DOORS BY 3/4".
15. PROVIDE BACKFLOW PREVENTER ON ALL COLD WATER SUPPLY TO WATER COOLED COMPRESSORS, MILKSHAKE MACHINE, DRINK DISPENSERS, CARBONATORS, MUGHWASHERS ETC.
16. EVAPORATOR DRAIN REQUIRED FOR ALL WALK-IN COOLERS AND FREEZERS.
17. IN THE EVENT OF FIRE, MAKE UP AIR UNIT AND ROOF TOP UNIT RT-1 WILL BOTH SHUT DOWN, KITCHEN EXHAUST FANS WILL CONTINUE TO OPERATE.
18. DURING MORNING STARTUP, MAKE UP AIR UNIT TO FIRST START. ONCE AIR FLOW IS PROVEN, KITCHEN EXHAUST FANS EF-1 & EF-2 WILL THEN START. WHEN EXHAUST AIR FLOW IS PROVEN, MAKE UP AIR UNIT HEATING WILL BE ENERGIZED. IF EITHER MAKE UP AIR OR EXHAUST AIR FLOW IS NOT PROVEN IN 30 SECONDS, THE ENTIRE KITCHEN VENTILATION SYSTEM WILL SHUT DOWN.
19. DURING OCCUPIED HOURS, INTAKE DAMPERS IN ROOF TOP UNIT RT-1WILL BE MINIMUM 30% OPEN FOR 1,000 CFM OUTDOOR AIR. THE SUPPLY FAN WILL RUN CONTINUOUSLY. DURING UNOCCUPIED HOURS, THE OUTDOOR AIR INTAKE DAMPER WILL BE FULLY CLOSED FOR NIGHT SETBACK OPERATION. THE SUPPLY FAN WILL ONLY RUN INTERMITTENTLY ON CALL FOR HEATING.
20. CONTRACTOR TO COORDINATE DUCT LAYOUT & INSTALLATION WITH ROOF TRUSS MANUFACTURER.
21. COORDINATE & CONFIRM ALL POWER, PHASE & VOLTAGE REQUIREMENTS FOR MECHANICAL EQUIPMENTS WITH ELCTRICAL CONTRACTOR.
22. PLUMBING CONTRACTOR TO COORDINATE LOCATIONS AND FINISHES OF FLOOR DRAINS WITH TILLING CONTRACTOR.
23. MECHANICAL CONTRACTOR TO SUPPLY & INSTALL MAKE UP AIR UNIT, ALL ROOF TOP AIR HANDLING UNITS AND EXHAUST FANS. KITCHEN EXHAUST HOODS TO BE SUPPLIED BY A & W & INSTALLED BY THIS CONTRACTOR.

NORTH

LICENSED PROFESSIONAL ENGINEER
H. CHEN
100134411
PROVINCE OF ONTARIO

No.	Description	Date
–	ISSUED FOR CONSTRUCTION	24.10.04
–	ISSUED FOR TENDER	24.09.17
–	ISSUED FOR PERMIT	24.08.28

REVISIONS

1. THIS DRAWING IS THE PROPERTY OF A&W FOOD SERVICES OF CANADA INC., & MAY NOT BE USED IN WHOLE OR IN PART FOR ANY PROJECT OTHER THAN THAT DESIGNATED HEREON
2. DO NOT SCALE DRAWINGS – WRITTEN DIMENSIONS TAKE PRECEDENCE
3. CONTRACTOR TO VERIFY JOB SITE DIMENSIONS & CONDITIONS, REPORT ANY & ALL DISCREPANCIES TO THE OWNER & A&W IMMEDIATELY BEFORE PROCEEDING WITH WORK
4. ALL WORK TO CONFORM TO THE LATEST LOCAL BUILDING CODES, BY-LAWS, & NFPA REQUIREMENTS, IN ADDITION TO OTHER REGULATIONS HAVING JURISDICTION

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Project
PETRO CANADA REFRESH & A&W MODERNIZATION
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Title
MECHANICAL SPECIFICATIONS

File Name

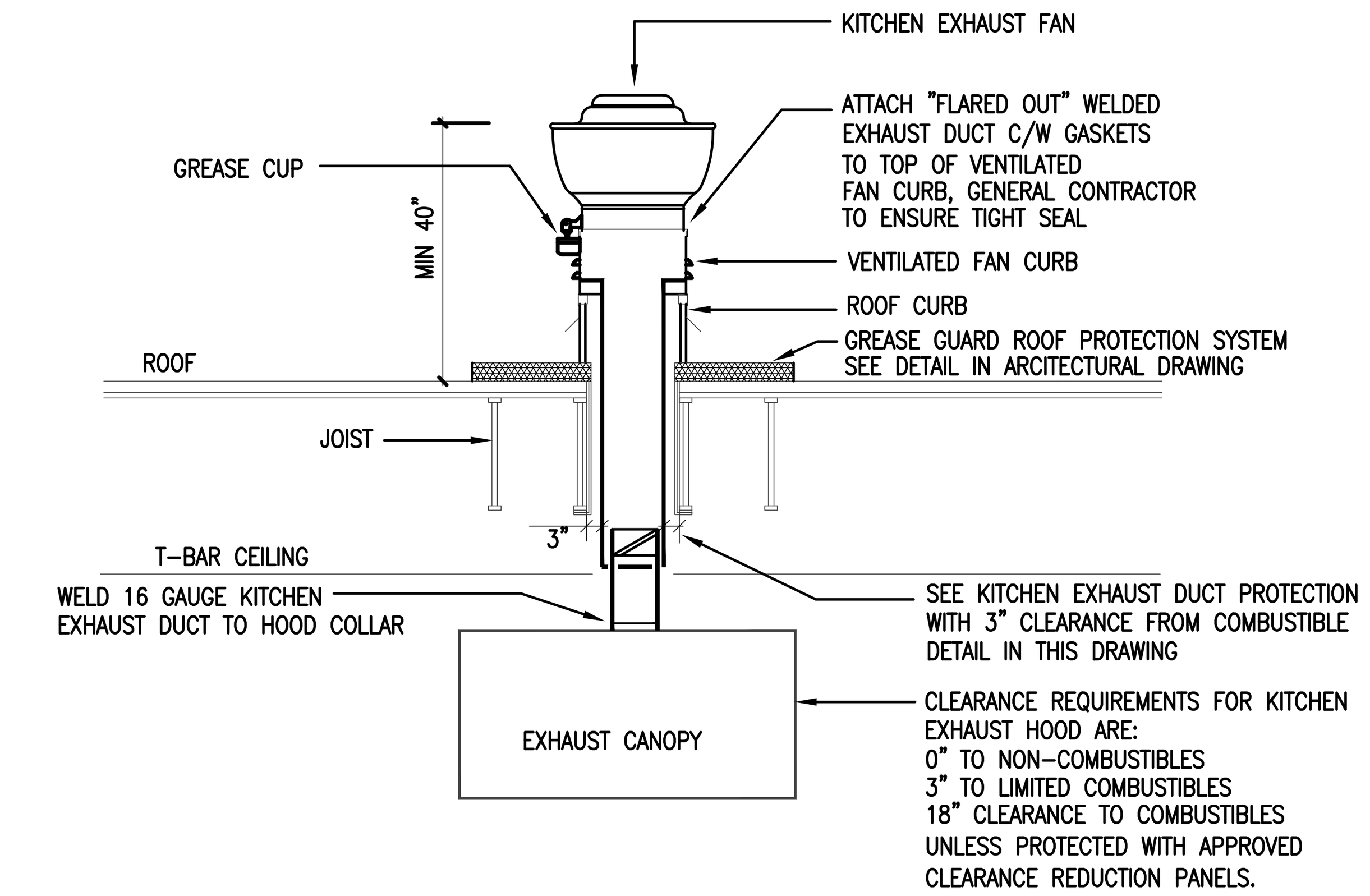
Project No.	Consultant	Drawn By	Checked By	Scale
24085	Tristar	HC	HC	-

Date Created
AUG 2024

Concept
-

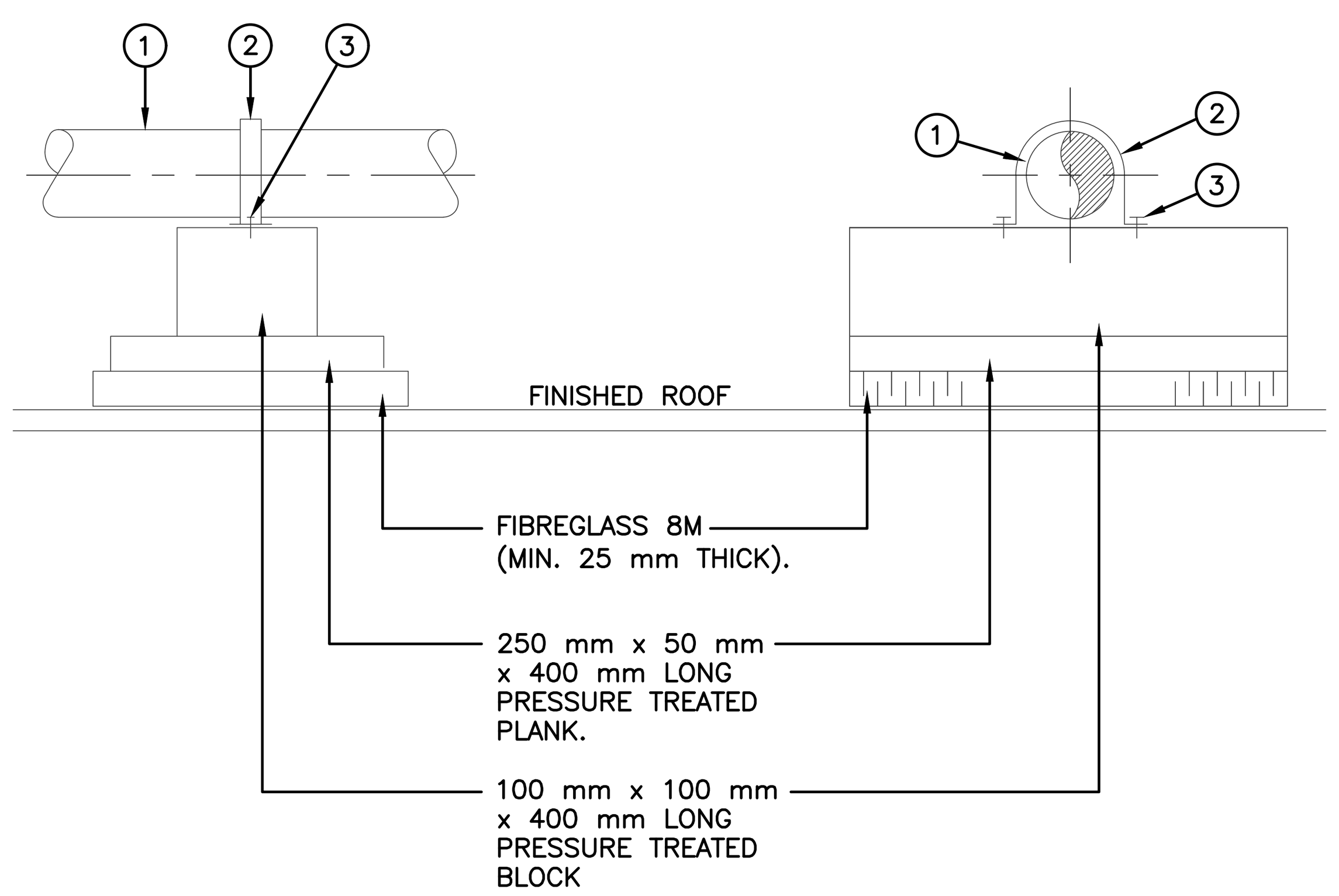
Page Number
M3

NORTH



KITCHEN EXHAUST FAN & DUCT CONNECTION DETAIL

NOT TO SCALE



1. SCHEDULE 40 STEEL PIPE.
2. WROUGHT IRON STRAPS – GRINNELL FIG. 262 OR EQUAL. COAT WITH RUST PREVENTIVE PAINT.
3. CADIUM PLATED No.12 – 50mm LONG WOOD SCREWS.

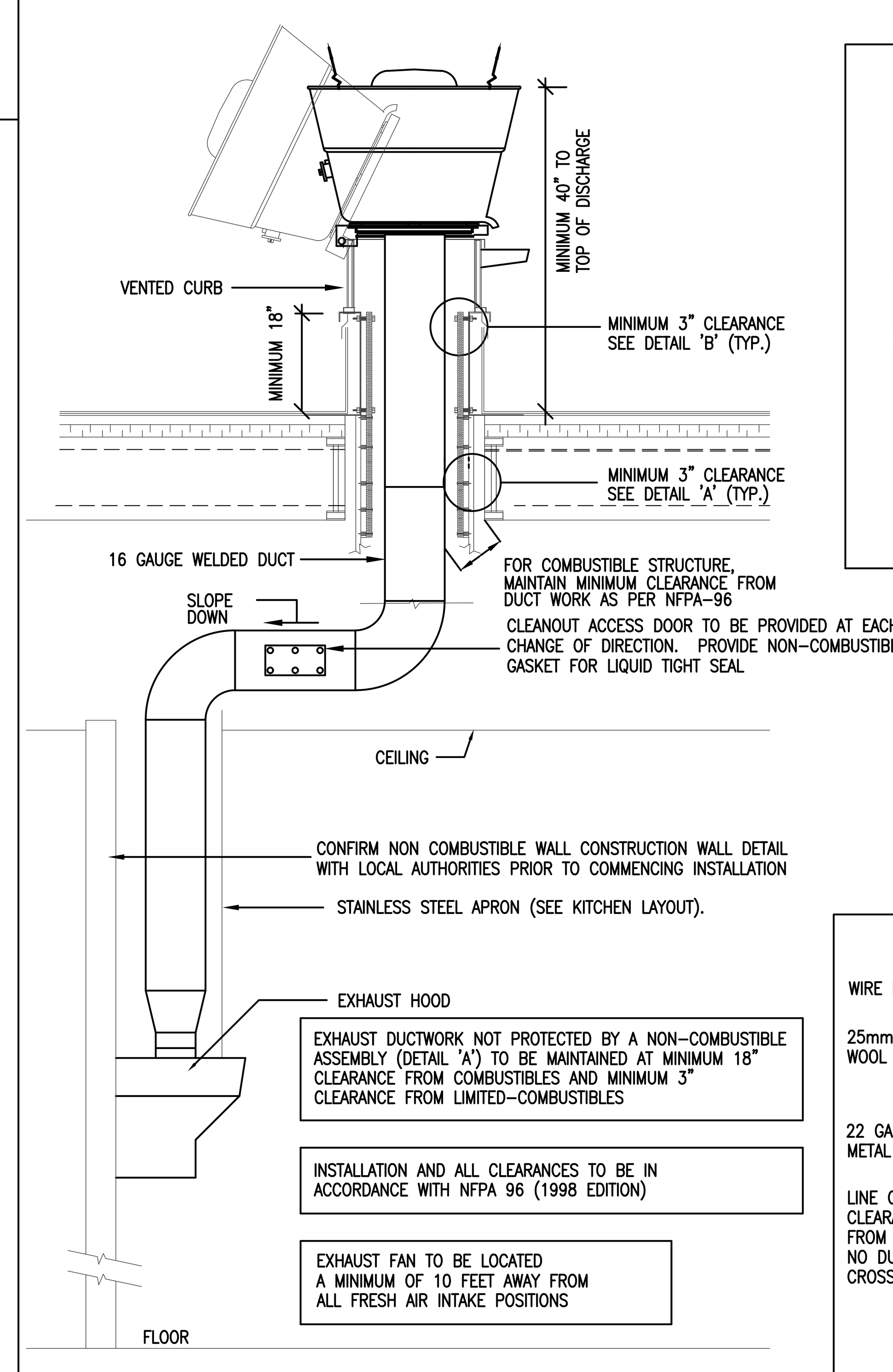
PIPE SUPPORT SPACING: (HORIZONTAL)

NOTE:
ALL PIPING TO BE PAINTED YELLOW OR BANDED AS PER CAN/CGA B149.1-00 LATEST EDITION.

PIPE SIZE	SPACING
12 mm (1/2") OR LESS	2.0 m (6'-0")
19 mm – 25 mm (3/4" – 1")	2.5 m (8'-0")
32 mm – 65 mm (1 1/4" – 2 1/2")	3.0 m (10'-0")
75 mm – 100 mm (3" – 4")	5.0 m (15'-0")
125 mm – 200 mm (5" – 8")	6.0 m (20'-0")
250 mm (10") OR LARGER	8.0 m (25'-0")

GAS PIPING SUPPORT DETAIL

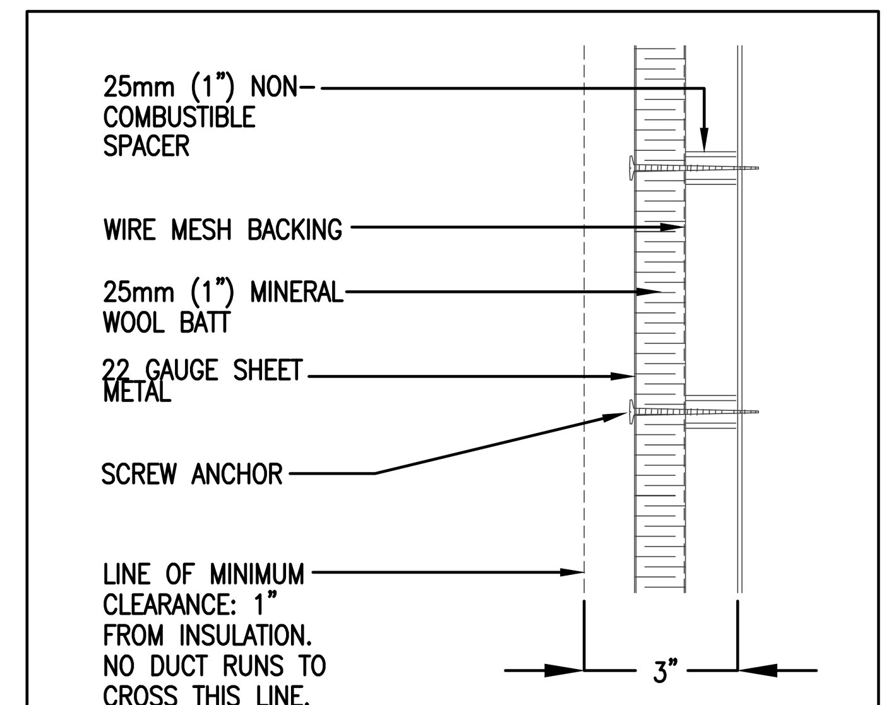
N.T.S.



EXHAUST DUCTWORK NOT PROTECTED BY A NON-COMBUSTIBLE ASSEMBLY (DETAIL 'A') TO BE MAINTAINED AT MINIMUM 18" CLEARANCE FROM COMBUSTIBLES AND MINIMUM 3" CLEARANCE FROM LIMITED-COMBUSTIBLES

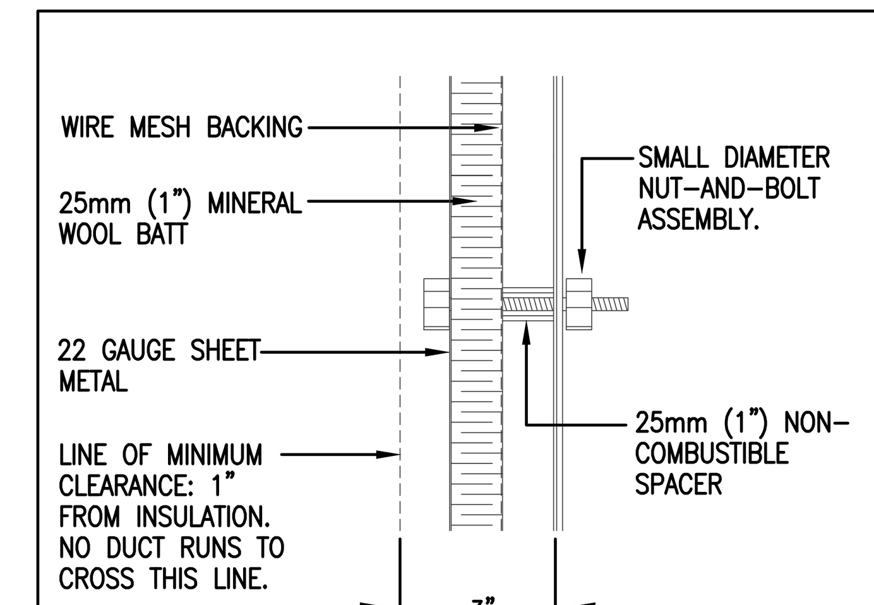
INSTALLATION AND ALL CLEARANCES TO BE IN ACCORDANCE WITH NFPA 96 (1998 EDITION)

EXHAUST FAN TO BE LOCATED A MINIMUM OF 10 FEET AWAY FROM ALL FRESH AIR INTAKE POSITIONS



DETAIL 'A'

NOT TO SCALE



DETAIL 'B'

NOT TO SCALE

KITCHEN EXHAUST SYSTEM DETAIL

NOT TO SCALE

No.	Description	Date
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PETRO-CANADA
A Suncor business

Project
PETRO CANADA REFRESH & A&W MODERNIZATION
638 COUNTY RD. 41, R.R. #6
NAPANEE, ONTARIO

Title
DETAILS

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24085	Tristar	HC	HC	-

Date Created
AUG 2024

Concept
-

Page Number
M4

NORTH

PLUMBING FITTINGS

DESIGNATION	WATTS	SMITH	ZURN
FFD (FUNNEL FLOOR DRAIN)	FD-200-EG-1-7	2010A – 3580NB	ZN-211-BF-P
FD (FLOOR DRAIN)	FD-200-A-1-7	2010A – P050	ZN-211-B-P
HD (HUB DRAIN)	FD-200-EF-1	2010A – 2645	ZN-211-BF
RD (ROOF DRAIN)	RD-100-BD	1010RCA	Z-121-RC
CO (CLEANOUT)	CO-200-R-1 CO-200-RC-1(FOR CARPET)	4020Y (FINISHED) 4020 (FOR CARPET)	ZN-1602 ZN-1603
HB (NON-FREEZE HOSE BIBB)	HY-725		

ALL FLOOR DRAINS TO BE TRAP SEALED & PRIMED. TRAP PRIMER SHALL BE WATTS MODEL MS 810.

PLUMBING FITTINGS SHALL BE WATTS, SMITH OR ZURN.

PLUMBING FIXTURE SCHEDULE

TAG	SPECIFICATION	CW	HW	WASTE	VENT
S1	HAND SINK. KINDRED MODEL CSLA1515-6-2CB, 3 HOLE, 8" CENTERS, BACK LEDGE, GRADE 18-8 TYPE 302 STAINLESS STEEL, SINGLE COMPARTMENT, SATIN FINISHED RIM AND BOWL, SELF-RIMMING, SOUND DEADENING AND MOUNTING KIT, STRAINER. CHICAGO FAUCETS #1100-V-L9-XK FAUCET, C.P. 8" C.C., DECK MOUNTED, SOLID CAST BRASS LEAD-FREE BODY, 1/4 TURN CERAMIC DISC VALVE CARTRIDGES, 9" LONG SWING SPOUT WITH VANDAL-RESISTANT AERATOR OUTLET AND CAST BRASS HOODED LEVER HANDLES. PROVIDE SUPPLIES, C.P. WITH METAL ANGLE STOPS, ADAPTORS, ESCUTCHEONS AND METAL FLEXIBLE RISERS. PROVIDE 'P' TRAP, CAST BRASS 1-1/2" WITH CLEANOUT, UNION AND ESCUTCHEON.	15	15	40	32
S2	DOUBLE SINK. KINDRED COMMERCIAL QCLA2027L/8 S.S. SINK, 3 HOLE, 8" CENTERS, BACK LEDGE, GRADE 18-8 TYPE 302 STAINLESS STEEL, SINGLE COMPARTMENT, SATIN FINISHED RIM AND BOWL, SELF-RIMMING, SOUND DEADENING AND MOUNTING KIT, STRAINER. CHICAGO FAUCETS #1100-V-L9-XK FAUCET, C.P. 8" C.C., DECK MOUNTED, SOLID CAST BRASS LEAD-FREE BODY, 1/4 TURN CERAMIC DISC VALVE CARTRIDGES, 9" LONG SWING SPOUT WITH VANDAL-RESISTANT AERATOR OUTLET AND CAST BRASS HOODED LEVER HANDLES. PROVIDE SUPPLIES, C.P. WITH METAL ANGLE STOPS, ADAPTORS, ESCUTCHEONS AND METAL FLEXIBLE RISERS. PROVIDE 'P' TRAP, CAST BRASS 1-1/2" WITH CLEANOUT, UNION AND ESCUTCHEON.	15	15	40	32

* ALL FIXTURES SHALL BE BY ONE MANUFACTURER, DO NOT MIX AND MATCH FIXTURES FROM EQUAL MANUFACTURERS.
* ALL FIXTURES SHALL BE SUPPLIED & INSTALLED BY THIS CONTRACTOR UNLESS OTHERWISE NOTED.

H.V.A.C. LEGEND

DESCRIPTION	SYMBOL
RECT. AND ROUND SUPPLY AIR DUCT UP	
RECT. AND ROUND SUPPLY AIR DUCT DOWN	
RECT. AND ROUND RETURN OR EXHAUST AIR DUCT UP	
RECT. AND ROUND RETURN OR EXHAUST AIR DUCT DOWN	
BAFFLE THIS SIDE OF DIFFUSER	
INTERNAL ACOUSTIC DUCT LINING	
DOUBLE LINE DUCTWORK	
SINGLE LINE DUCTWORK (RIGID)	
FLEXIBLE DUCTS	
TIMER	T
THERMOSTAT C/W TAMPERPROOF GUARD	T G
VOLUME/BALANCING DAMPER (B.D.)	B.D.
GRILLES, REGISTERS & DIFFUSERS A. INDICATES TYPE. B. INDICATES SIZE OF GRILLE OR DIFFUSER NECK CONNECTION C. INDICATES CAPACITY FOR EACH (L/S)	A B C
FIRE DAMPER	F/D
MOTORIZED DAMPER	M/D M
SPLITTER DAMPER	S/D
VOLUME DAMPER	B/D
UNDER CUT DOOR 20MM	U/C
THERMAL INSULATION	

KITCHEN VENTILATION PRE-ORDERED EQUIPMENT: SUPPLIED BY A&W INSTALLED BY MECHANICAL

KITCHEN HOOD (H-1) (FRYERS)

EXISTING

KITCHEN HOOD (H-2) (GRILL)

EXISTING

MUA-1 MAKEUP AIR UNIT

REFER TO DRAWING M-6,7,8

EF-1W/ EF-2W GREASE EXHAUST FAN

REFER TO DRAWING M-6,7,8

ULC FILE# MH27251

EQUIPMENT SCHEDULE

DESIG.	DESCRIPTION
AC-1	GAS FIRED ROOFTOP AC UNIT, LENNOX MODEL KGC150S4M, MULTISTAGE VOLUME, 6000CFM, 0.8"ESP, 12.5TON, 240/194 MBH HEATING INPUT/ OUTPUT. 575/3/60, 3HP, MCA 21. c/w POWER EXHAUST, 7-DAY PROGRAMMABLE THERMOSTAT, WEATHER DISCONNECT, DRAIN TRAP, MERV 8 FILTERS, 410a REFRIGERANT, GFI 20A DISCONNECT, CURB ADAPTOR AS REQUIRED. SUPPLY AND INSTALL DUAL ENTHALPY ECONOMIZER (SET MIN FRESH AIR 25%).
AC-2	GAS FIRED ROOFTOP AC UNIT, LENNOX MODEL KGC150S4M, MULTISTAGE VOLUME, 6000CFM, 0.8"ESP, 12.5TON, 240/194 MBH HEATING INPUT/ OUTPUT. 575/3/60, 3HP, MCA 21. c/w POWER EXHAUST, 7-DAY PROGRAMMABLE THERMOSTAT, WEATHER DISCONNECT, DRAIN TRAP, MERV 8 FILTERS, 410a REFRIGERANT, GFI 20A DISCONNECT, CURB ADAPTOR AS REQUIRED. SUPPLY AND INSTALL DUAL ENTHALPY ECONOMIZER (SET MIN FRESH AIR 25%).
	GAS FIRED ROOFTOP AC UNIT, LENNOX MODEL KGC150S4M, MULTISTAGE VOLUME, 6000CFM, 0.8"ESP, 12.5TON, 240/194 MBH HEATING INPUT/ OUTPUT. 575/3/60, 3HP, MCA 21. c/w POWER EXHAUST, 7-DAY PROGRAMMABLE THERMOSTAT, WEATHER DISCONNECT, DRAIN TRAP, MERV 8 FILTERS, 410a REFRIGERANT, GFI 20A DISCONNECT, CURB ADAPTOR AS REQUIRED. SUPPLY AND INSTALL DUAL ENTHALPY ECONOMIZER (SET MIN FRESH AIR 25%).

PLUMBING LEGEND

- PCW1 — PURIFIED DOMESTIC COLD WATER FOR POP MACHINE, JUICE MACHINE & NITRO DISPENSER
- PCW2 — PURIFIED DOMESTIC COLD WATER FOR ICE MAKER & FRESH BLENDERS
- PCW(RO) — PURIFIED DOMESTIC COLD WATER FOR COFFEE MACHINES & CVAP
- DOMESTIC COLD WATER
- DOMESTIC HOT WATER
- DOMESTIC HOT WATER RECIRCULATION
- G — NATURAL GAS
- UNDERFLOOR SANITARY DRAIN
- ABOVEGROUND SANITARY DRAIN
- UNDERGROUND STORM DRAIN
- ABOVEGROUND STORM DRAIN
- CO — CLEANOUT (FLOOR TYPE)
- CO — CLEANOUT (HIGH LEVEL)
- FFD — FUNNEL FLOOR DRAIN
- FD — FLOOR DRAIN
- RD — ROOF DRAIN
- HD — HUB DRAIN
- CTE — CONNECT TO EXISTING
- VALVE
- TP — TRAP PRIMER
- HB — HOSE BIB
- BFP — BACKFLOW PREVENTER
- EX — EXISTING

LICENSED PROFESSIONAL ENGINEER
H. CHEN
100134411
PROVINCE OF ONTARIO

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Concept: -

Page Number: M5

NORTH

FOR QUESTIONS, CALL THE
Seattle Office
REGION 85
PHONE: (425) 212-5996
EMAIL: reg85@captiveaire.com

EXHAUST FAN INFORMATION - JOB#5964511

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	EF-1	1	DU180HFA	CAPTIVEAIRE	1250	1.400	1120	ODP,PREMIUM	1.000	0.7280	3	575	1.3	277 FPM	160	12.7
2	EF-2	1	DU180HFA	CAPTIVEAIRE	1250	1.400	1120	ODP,PREMIUM	1.000	0.7280	3	575	1.3	277 FPM	160	12.7

CONDENSER DETAILS

FAN UNIT NO	TAG	FAN UNIT MODEL #	CONDENSER NO	TONNAGE	VOLTAGE	PHASE	FREQUENCY	MCA	RLA	MAX FUSE SIZE	MIN WIRE SIZE	SEER
3	MAU-1	A2-D.250-20D-MPU	1	3	575	3 Phase	60 HZ	5.3 AMPS	3.8 AMPS	15 AMPS	14 AWG	14
			2	5	575	3 PHASE	60 HZ	7.6 AMPS	5.7 AMPS	15 AMPS	14 AWG	14

MUA FAN INFORMATION - JOB#5964511

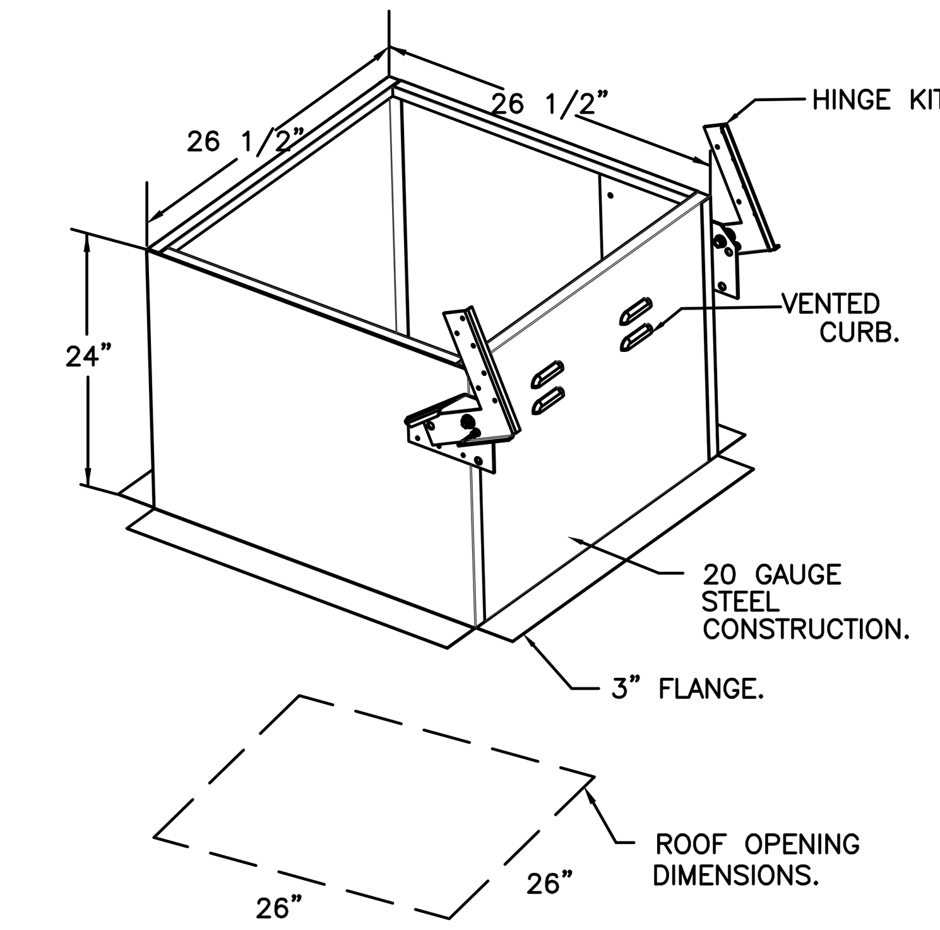
FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	MCA	MOCP	WEIGHT (LBS)	SONES
3	MAU-1	1	A2-D.250-20D-MPU	20MF-2-MOD	A2-D.250	2000	2300	0.460	1223	TEFC,PREMIUM	2.000	0.9660	3	575	2.6	14.3A	15A	1796	9.8

COILS - JOB#5964511

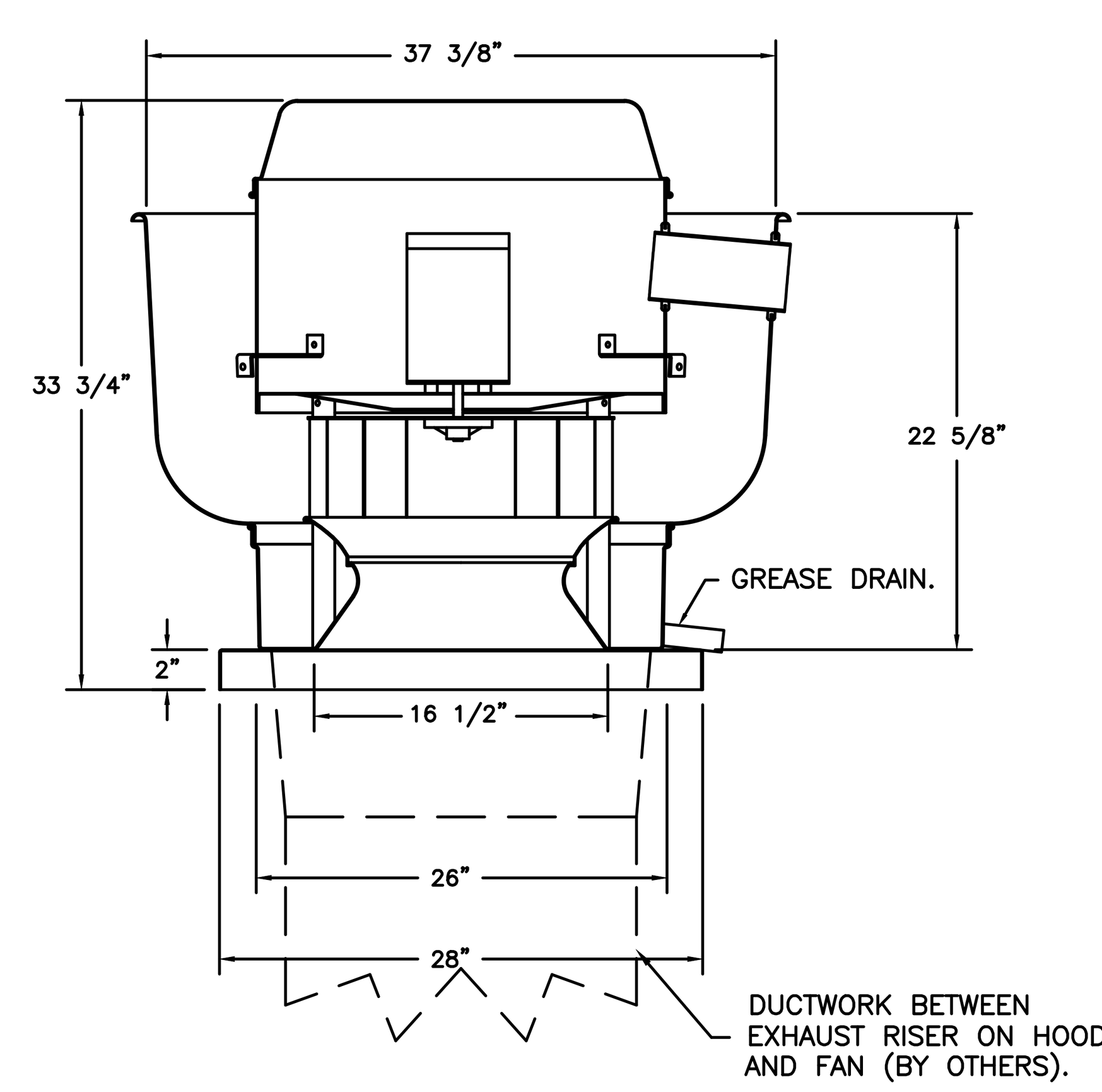
FAN UNIT NO	TAG	COIL TYPE	DESIGN CFM	COOLING											HEATING								
				ENTERING DB TEMP	ENTERING WB TEMP	LEAVING DB TEMP	LEAVING WB TEMP	ENTERING FLUID TEMP	LEAVING FLUID TEMP	FLUID FLOW RATE	PERCENT GLYCOL	TOTAL CAPACITY	SENSIBLE CAPACITY	LATENT CAPACITY	ENTERING DB TEMP	LEAVING DB TEMP	ENTERING FLUID TEMP	LEAVING FLUID TEMP	FLUID FLOW RATE	PERCENT GLYCOL	STEAM PRESSURE	TOTAL CAPACITY	SENSIBLE CAPACITY
3	MAU-1	DX	2300	83.0°F	70.0°F	59.6°F	56.7°F	---	---	---	---	96.0 MBH	56.8 MBH	39.2 MBH	---	---	---	---	---	---	---	---	---

GAS FIRED MAKE-UP AIR UNIT(S)

FAN UNIT NO	TAG	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE	BURNER EFFICIENCY(%)
3	MAU-1	195090	179483	74°F	7 IN. W.C. - 14 IN. W.C.	NATURAL	92



FANS #1 (EF-1), #2 (EF-2) - DU180HFA EXHAUST FAN



FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS

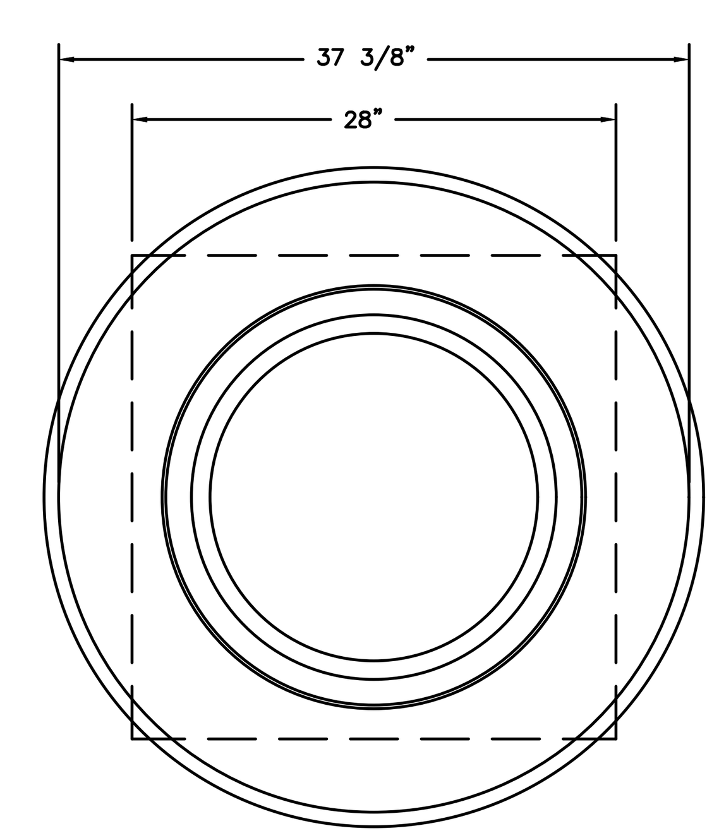
- GREASE BOX.
- FAN BASE CERAMIC SEAL - INSTALLED AT PLANT - FOR GREASE DUCTS.
- 2 YEAR PARTS WARRANTY.

FAN ACCESSORIES

FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	EF-1	YES						
2	EF-2	YES						
3	MAU-1						YES	

CURB ASSEMBLIES

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	EF-1	52 LBS	CURB	26.500"W X 26.500"L X 24.000"H VENTED HINGED.
2	# 2	EF-2	52 LBS	CURB	26.500"W X 26.500"L X 24.000"H VENTED HINGED.
3	# 3	MAU-1	92 LBS	CURB	31.000"W X 145.000"L X 20.000"H INSULATED.



TOP VIEW

LICENSED PROFESSIONAL ENGINEER
H. CHEN
100134411
PROVINCE OF ONTARIO

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KITCHEN VENTILATION SYSTEM DETAILS AND SCHEDULES

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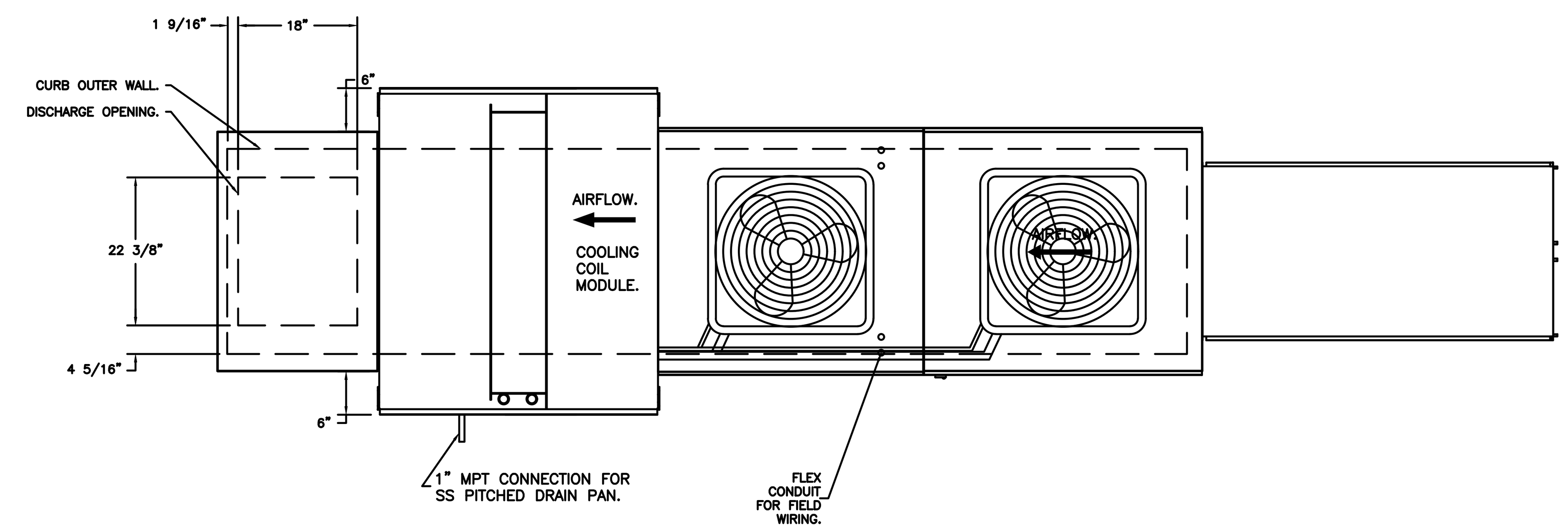
NORTH

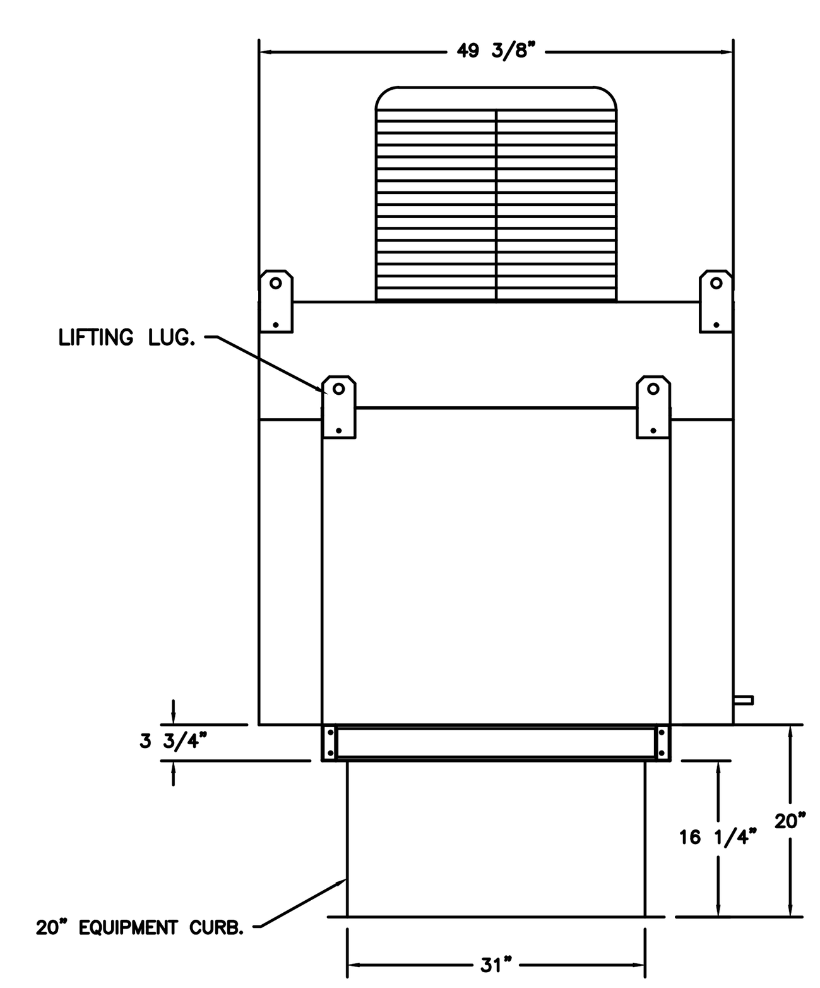
FAN #3 A2-D.250-20D-MPU – HEATER (MAU-1)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 20" MIXED FLOW DIRECT DRIVE FAN.
2. INTAKE HOOD WITH EZ FILTERS.
3. DOWN DISCHARGE – AIR FLOW RIGHT -> LEFT.
4. PROFILE PLATE CONFIGURATION FOR SIZE 2 DIRECT FIRED UNIT FOR LOW CFM APPLICATIONS.
5. PILOT LOCATED UPSTREAM OF FIRST REDUNDANT SOLENOID VALVE OF SIZE 1-3 MAX GAS PRESSURE OF 14" WC.
6. MOTORIZED BACK DRAFT DAMPER 22.75" X 24" FOR SIZE 2 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, LF120S ACTUATOR INCLUDED.
7. LOW FIRE START. ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
8. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE.
9. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC., 2.5" DIAMETER, 1/4" THREAD SIZE.
10. FREEZESTAT WITH 10' SENSOR. FACTORY SET AT 35°F AND 10 MINUTES.
11. 8 TON, DUAL CIRCUIT (3/5) MODULAR PACKAGED AC COOLING OPTION FOR SIZE 2 DF/EH MODULAR PACKAGED UNIT. INCLUDES CONDENSER, DX COIL, FILTER/DRYER KIT, THERMAL EXPANSION VALVE, R410A REFRIGERANT, AND REFRIGERANT PIPING. (1200 TO 3000 CFM) NOT BUILT WITH OPPOSITE SIDE CONTROLS OR OPPOSITE AIRFLOW DIRECTION. CONDENSERS REQUIRE SEPARATE 575V, 3 PHASE POWER SUPPLY UNLESS ORDERED WITH SINGLE POINT CONNECTION. COIL = 3EY1302T.
12. DOWNTURN PLENUM FOR SIZE 2 COOLING COIL MODULE – REQUIRED FOR DOWN DISCHARGE COOLING COIL APPLICATIONS.
13. GFCI 15 AMP CONVENIENCE OUTLET FOR HEATER ENCLOSURE. POWER SUPPLY BY OTHERS – INCLUDES RECEPTACLE AND J BOX.
14. BUTTERFLY MOD VALVE OPTION FOR MOD SIZE 2 (1" MOD VALVE).
15. CONTROL PANEL ENCLOSURE HEATER, INCLUDES 100W, 120V HEATER. RECOMMENDED FOR WINTER DESIGN TEMPERATURE LESS THAN 0°F. OPERATES ON PCB CONTROLS IN IBT SINGLE MODULES OR RTU.
16. SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRE PANEL OR WITH DCV PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM DCV TO MUA SWITCH.
17. HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BURNER/BLOWER/MPU SECTION).
18. 2 YEAR PARTS WARRANTY

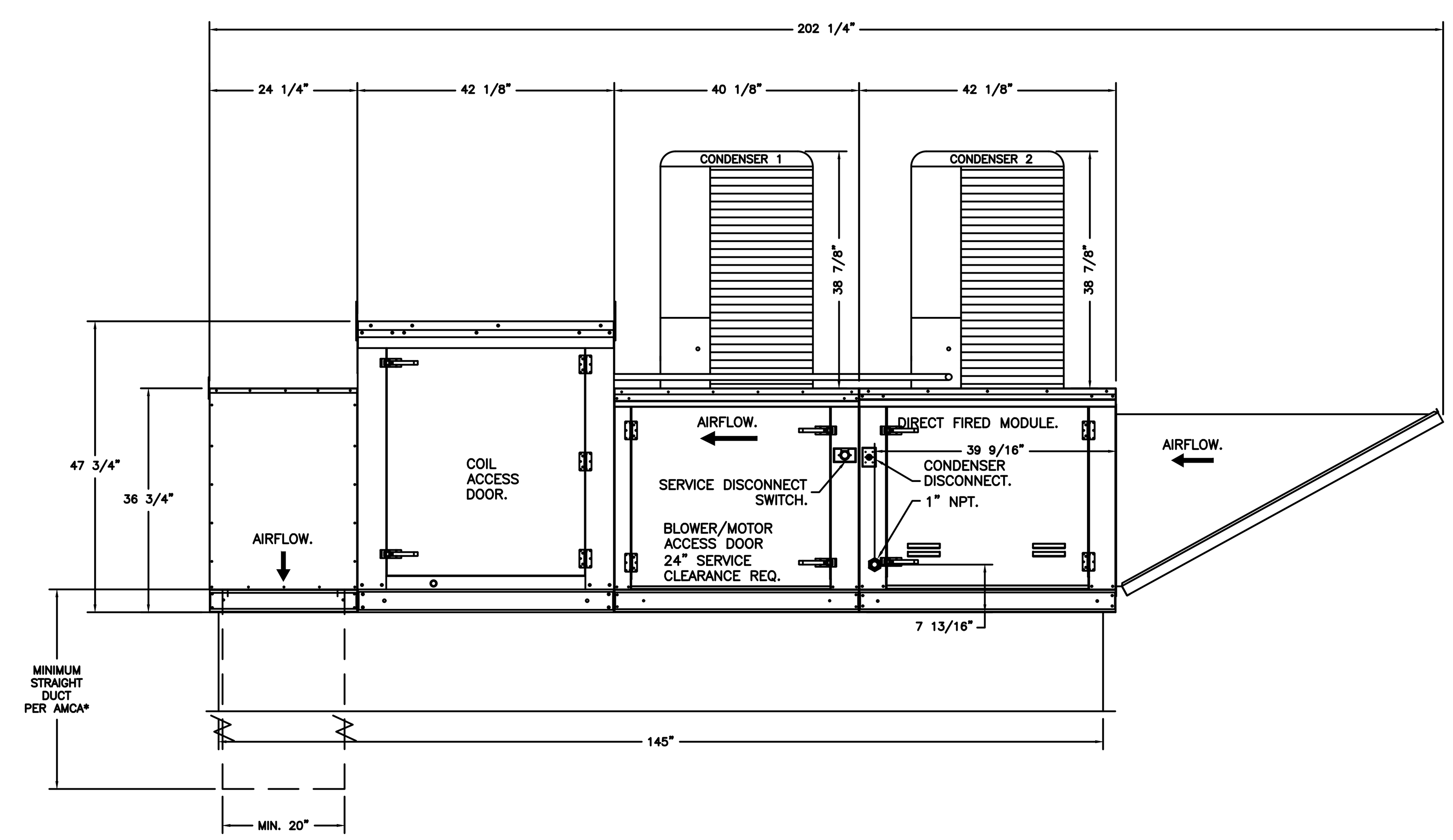
*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT.
SUGGESTED STRAIGHT DUCT SIZE IS 20" x 20".

SUPPLY SIDE HEATER INFORMATION:

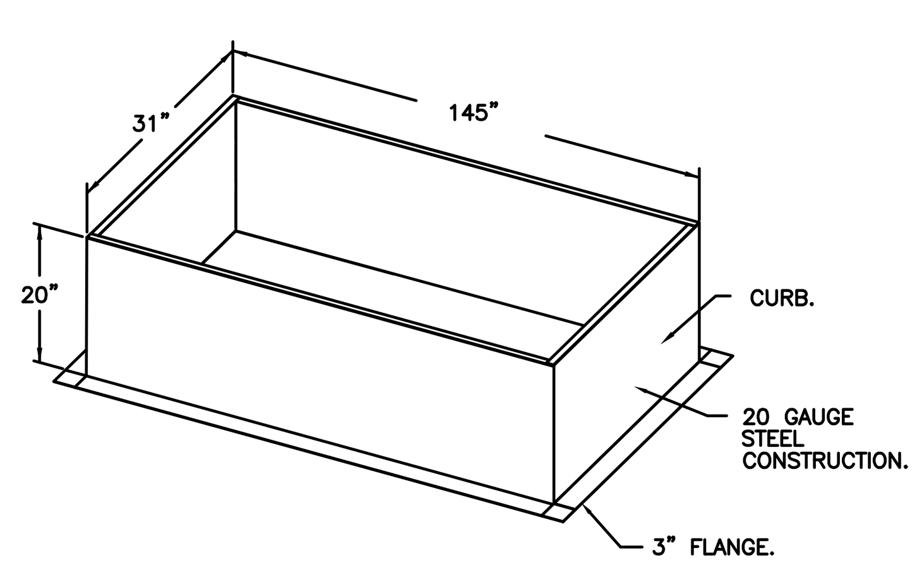
WINTER TEMPERATURE = 0°F. TEMP. RISE = 75°F.
BTUs CALCULATED OFF ACTUAL AIR DENSITY.
OUTPUT BTUs AT ALTITUDE OF 0.0 FT. = 182686.
INPUT BTUs AT ALTITUDE OF 0.0 FT. = 198572.
OUTPUT BTUs AT ALTITUDE OF 118 FT. = 181909.
INPUT BTUs AT ALTITUDE OF 118 FT. = 197727.







OPTIONS:
- FULL BOTTOM CORNERS.



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NORTH

SYSTEM DESIGN VERIFICATION (SDV)

IF ORDERED, CAS SERVICE WILL PERFORM A SYSTEM DESIGN VERIFICATION (SDV) ONCE ALL EQUIPMENT HAS HAD A COMPLETE START UP PER THE OPERATION AND INSTALLATION MANUAL. TYPICALLY, THE SDV WILL BE PERFORMED AFTER ALL INSPECTIONS ARE COMPLETE.

ANY FIELD RELATED DISCREPANCIES THAT ARE DISCOVERED DURING THE SDV WILL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR AND CORRESPONDING TRADES ON SITE. THESE ISSUES WILL BE DOCUMENTED AND FORWARDED TO THE APPROPRIATE SALES OFFICE. IF CAS SERVICE HAS TO RESOLVE A DISCREPANCY THAT IS A FIELD ISSUE, THE GENERAL CONTRACTOR WILL BE NOTIFIED AND BILLED FOR THE WORK. SHOULD A RETURN TRIP BE REQUIRED DUE TO ANY FIELD RELATED DISCREPANCY THAT CANNOT BE RESOLVED DURING THE SDV, THERE WILL BE ADDITIONAL TRIP CHARGES.

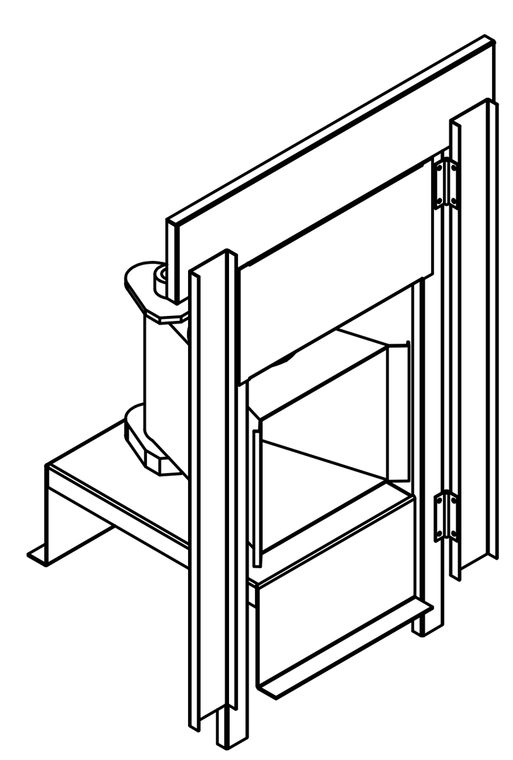
DURING THE SDV, CAS SERVICE WILL ADDRESS ANY DISCREPANCY THAT IS THE FAULT OF THE MANUFACTURER. SHOULD A RETURN TRIP BE REQUIRED, THE GENERAL CONTRACTOR AND APPROPRIATE SALES OFFICE WILL BE NOTIFIED. THERE WILL BE NO ADDITIONAL CHARGES FOR MANUFACTURER DISCREPANCIES.

GREASE DUCT & CHIMNEY SPECIFICATIONS:
PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW" DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURES INSTALLATION GUIDE.
PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12".
DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT OR CHIMNEY IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 OR UL-103 HT LISTED DOUBLE WALL GREASE DUCT OR DOUBLE WALL CHIMNEY EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 2R TYPE HT, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

CUSTOMER APPROVAL TO MANUFACTURE:

APPROVED AS NOTED ☐
APPROVED WITH NO EXCEPTION TAKEN ☐
REVISE AND RESUBMIT ☐
SIGNATURE ____________
YOUR TITLE ____________ DATE ____________



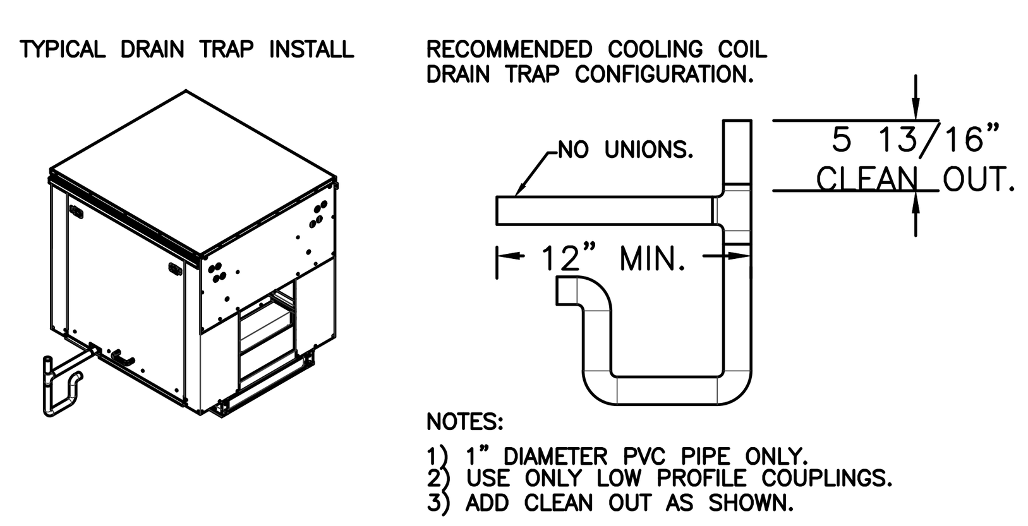
DIRECT FIRED (DF) PROFILE PLATE ASSEMBLY

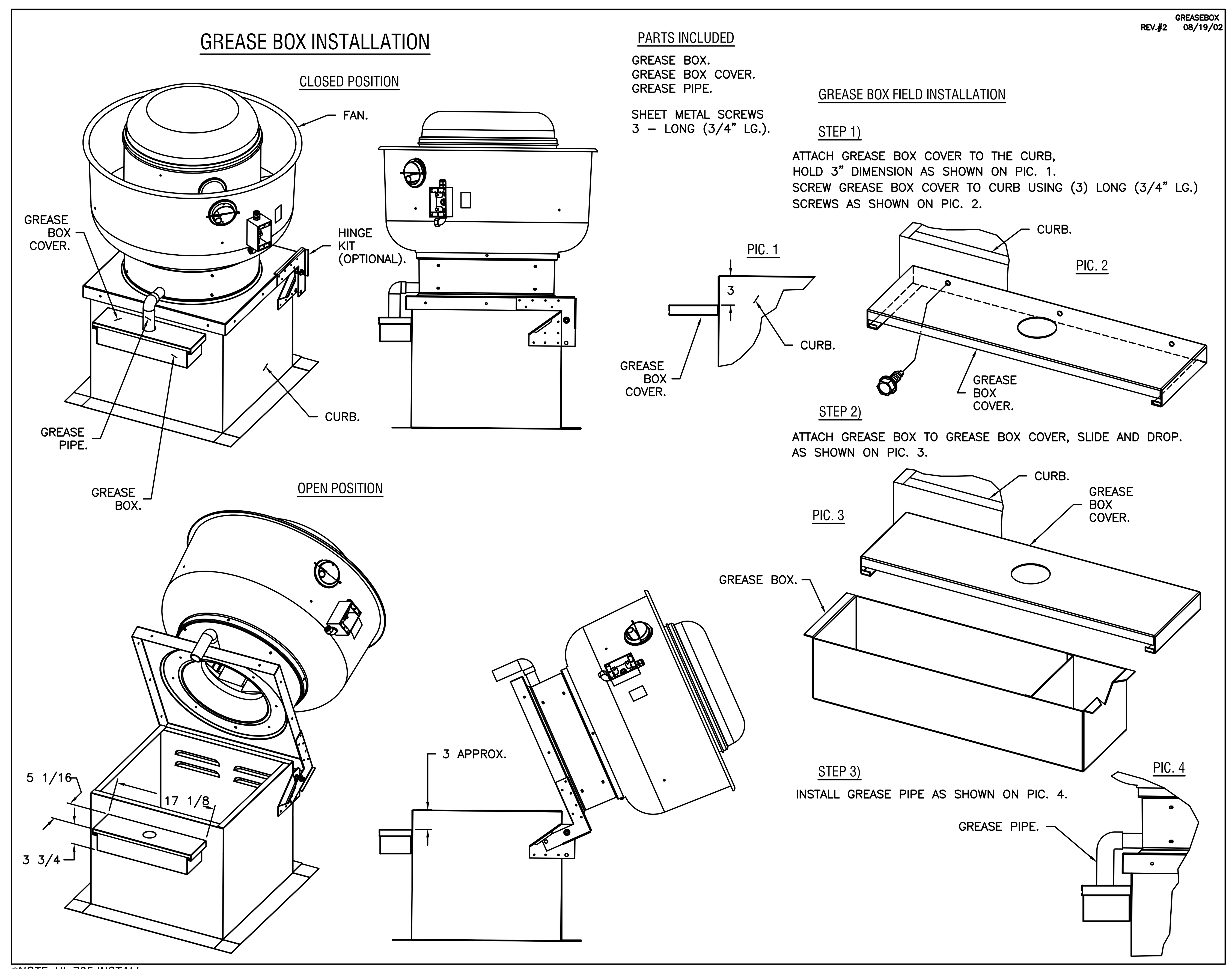
DIRECT FIRED PROFILE PLATE SPECIFICATIONS:
DESCRIPTION:
DIRECT FIRED BURNERS SHALL HAVE PATENTED (US PATENT NO.: US6629523B2), SELF-ADJUSTING PROFILE PLATES DESIGNED TO ENSURE PROPER AIR VELOCITY AND PRESSURE DROP ACROSS THE BURNER. PROFILE PLATES SHALL ALLOW BURNERS TO ACHIEVE CLEAN COMBUSTION BY LIMITING BY-PRODUCT LEVELS TO A MAXIMUM OF 5PPM OF CARBON MONOXIDE (CO), AND 0.5PPM OF NITROGEN DIOXIDE (NO2). DIRECT FIRED UNITS SHALL BE CONFIGURED WITH THE BLOWER MOUNTED DOWNSTREAM OF THE BURNER. THIS ARRANGEMENT WILL ENSURE A CONSISTENT AIRFLOW, REGARDLESS OF INLET AIR TEMPERATURE.

APPLICATION:
SPRING-LOADED BURNER PROFILE PLATES ARE ENGINEERED TO AUTOMATICALLY REACT TO THE MOMENTUM OF A FRESH AIR STREAM, WITHOUT THE NEED FOR ANY MOTORS OR ACTUATORS TO MECHANICALLY ADJUST THEM. WITH THIS FEATURE, ALL DF UNITS ARE DESIGNED FOR DEMAND CONTROL VENTILATION (DCV) REQUIREMENTS.

CERTIFICATIONS:
ALL PROFILE PLATE ASSEMBLIES SHALL BE INCLUDED IN THE DF UNIT'S ETL LISTING AND COMPLY WITH COMBINED SAFETY STANDARDS ANSI Z83.4 AND CSA 3.7 (NON-RECIRCULATING DF HEATERS) AND ANSI Z83.18 (RECIRCULATING DF HEATERS).

GENERAL CONSTRUCTION:
-PROFILE PLATES SHALL BE FORMED FROM G90 GALVANIZED STEEL.
-PROFILE PLATES SHALL VARY IN SIZE PER UNIT.
-PROFILE PLATES SHALL BE MOUNTED ALONG THE SAME PLANE AS THE DISCHARGE OF THE BURNER.
-DESIGN SHALL INCORPORATE PROPERLY TORQUED, PERMANENTLY MOUNTED SPRING HINGES.
-SPRING HINGES SHALL BE MADE FROM PLATED STEEL.





*NOTE: UL 705 INSTALL.

No.	Description	Date
-	ISSUED FOR CONSTRUCTION	24.10.04
-	ISSUED FOR TENDER	24.09.17
-	ISSUED FOR PERMIT	24.08.28

REVISIONS

1. THIS DRAWING IS THE PROPERTY OF A&W FOOD SERVICES OF CANADA INC., & MAY NOT BE USED IN WHOLE OR IN PART FOR ANY PROJECT OTHER THAN THAT DESIGNATED HEREON
2. DO NOT SCALE DRAWINGS - WRITTEN DIMENSIONS TAKE PRECEDENCE
3. CONTRACTOR TO VERIFY JOB SITE DIMENSIONS & CONDITIONS, REPORT ANY & ALL DISCREPANCIES TO THE OWNER & A&W IMMEDIATELY BEFORE PROCEEDING WITH WORK
4. ALL WORK TO CONFORM TO THE LATEST LOCAL BUILDING CODES, BY-LAWS, & NFPA REQUIREMENTS, IN ADDITION TO OTHER REGULATIONS HAVING JURISDICTION

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Project
PETRO CANADA REFRESH & A&W MODERNIZATION
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NAPANEE, ONTARIO

Title
KITCHEN VENTILATION SYSTEM DETAILS AND SCHEDULES

File Name

Project No.	Consultant	Drawn By	Checked By	Scale
24085	Tristar	HC	HC	-

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