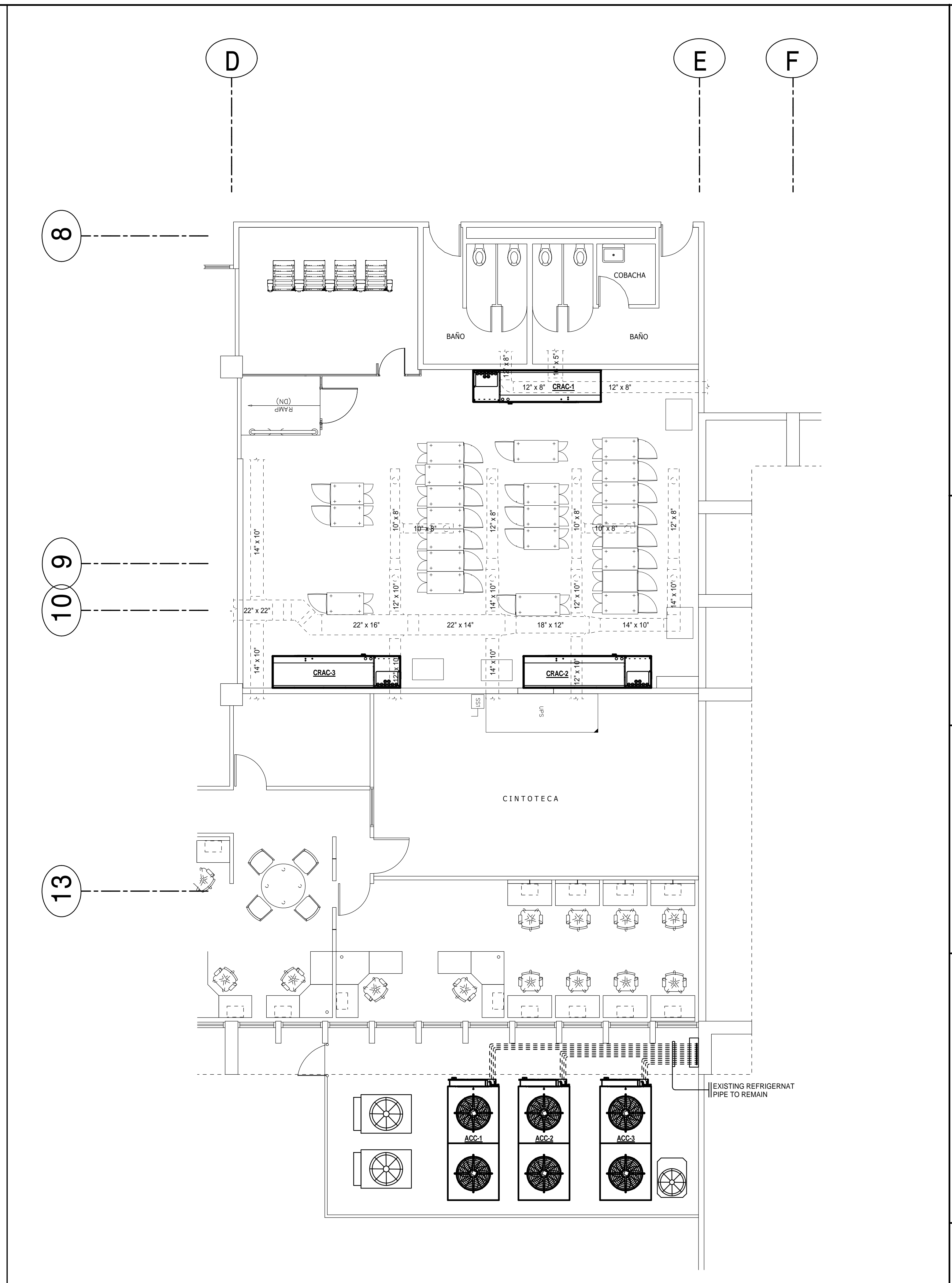
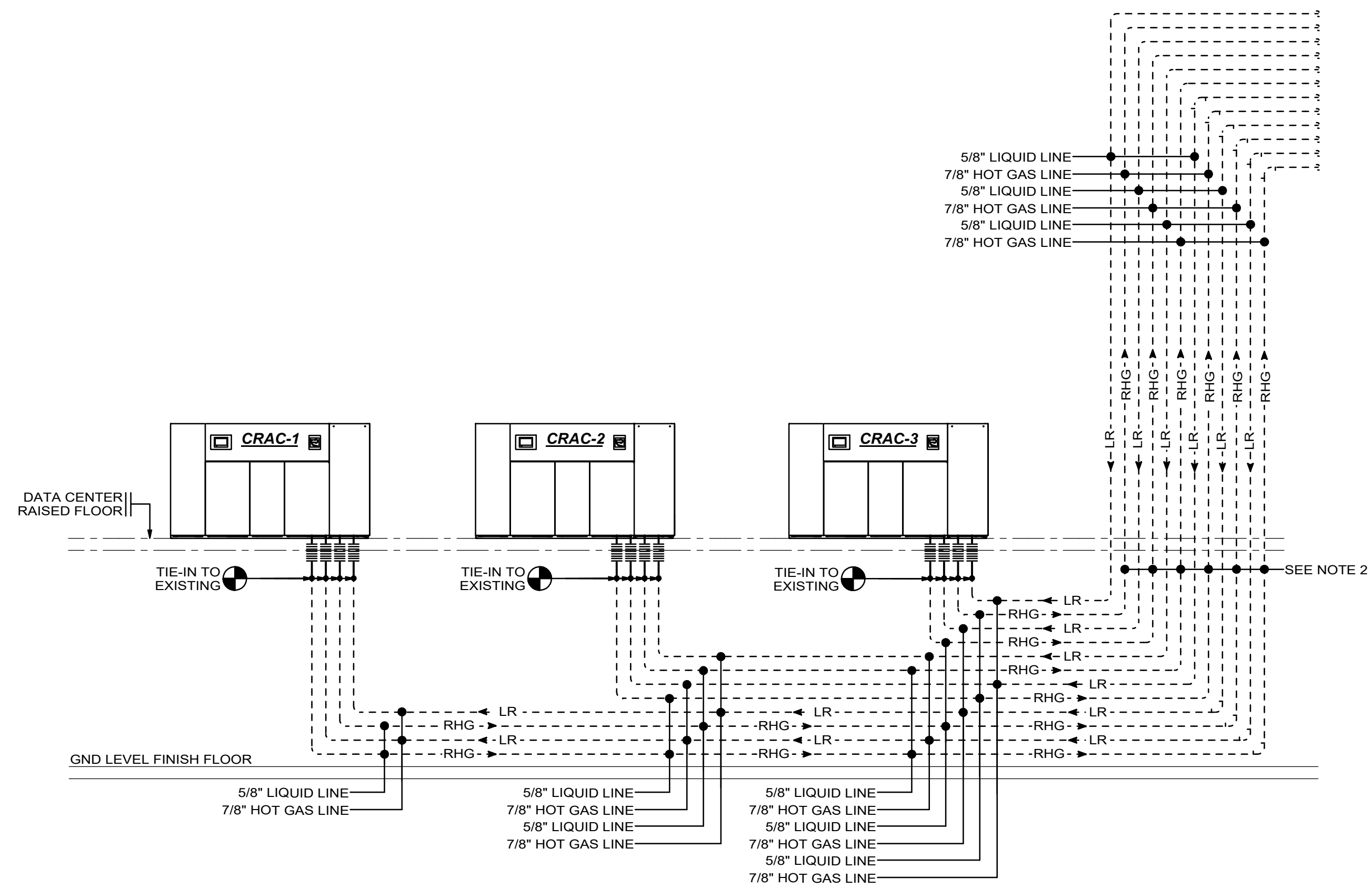


1 EXISTING DATA CENTER ROOM FLOOR PLAN, AIR CONDITIONING AND VENTILATION LAYOUT
 M-1.0 SCALE: 3/16" = 1'-0"



2 PROPOSED DATA CENTER ROOM FLOOR PLAN, AIR CONDITIONING AND VENTILATION LAYOUT
 M-1.0 SCALE: 3/16" = 1'-0"

DRAWING NO. M-1.0	DATE: MAY 2018	PROJECT NAME DATA CENTER A/C UNITS REPLACEMENT TRIBUNAL DE SAN JUAN	SHEET TITLE EXISTING & PROPOSED DATA CENTER ROOM FLOOR PLAN	REVISIONS No. Description
	SCALE: 1/4" = 1'-0"			
CONSULTING ENGINEER JORGE LEDON WEBSTER CENTRO OPERACIONAL MERCADERO INFOPOLIS SUITE 604 LOS CAÑOS AVE. & ROAD NO. 28 GUAYNABO P.R. 00985 TEL. (787) 707-1950 / FAX: (787) 707-1953 email address: jorge@lwweb.com		<small> THIS DRAWING AND ITS CONTENTS ARE THE PROPERTY OF THE OFFICE OF JORGE LEDON WEBSTER P.E. AND SHALL BE LOANED TO YOU FOR THE PROJECT ONLY. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE ENGINEER. </small>		

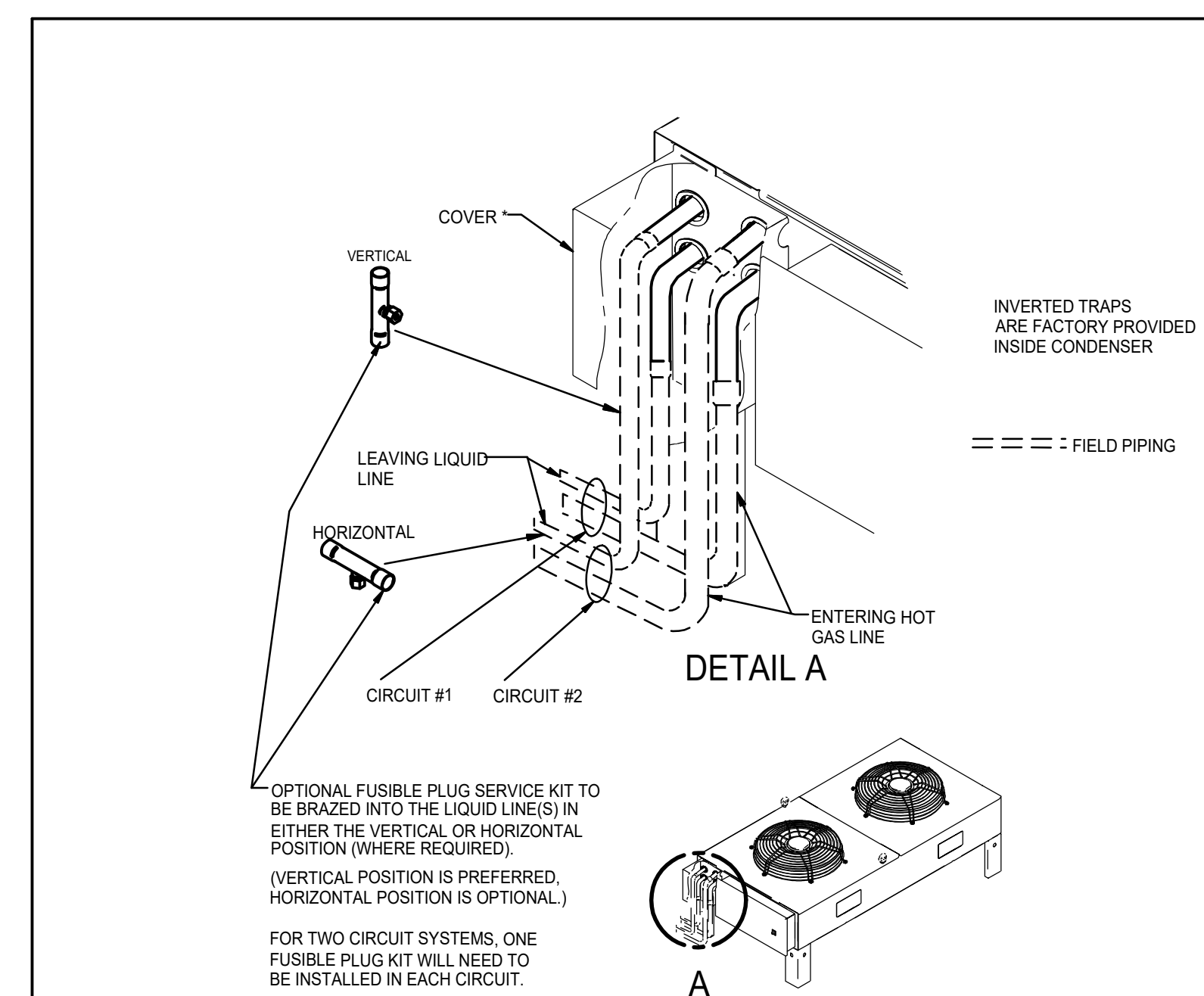
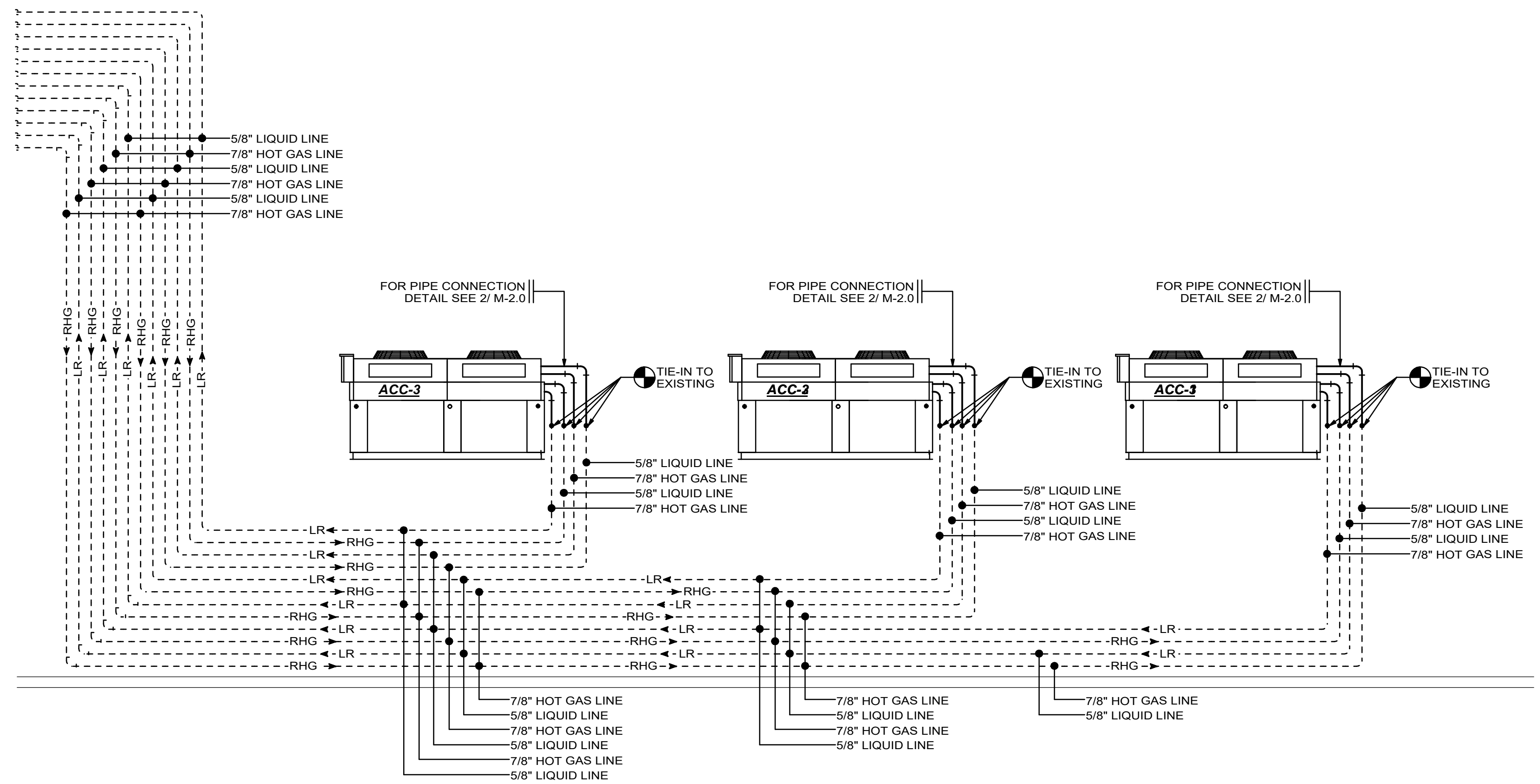


PIPING LEGEND:

- LR LIQUID REFRIGERANT
- RHG REFRIGERANT HOT GAS
- EXISTING REFRIGERANT LINE
- NEW REFRIGERANT LINE

NOTES:

- 1 REFRIGERANT PIPING CONNECTION TO CHILLER SHALL BE DONE WITH FLEXIBLE CONNECTIONS.
- 2 FIELD VERIFY THAT OIL TRAPS ARE PROVIDED IF TRAP ARE NOT INSTALLED PROVIDE AS PART OF PROJECT.



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REVISIONS	No.	Date	Description

SHEET TITLE
CRAC UNITS PIPING DIAGRAM

PROJECT NAME
DATA CENTER A/C UNITS REPLACEMENT TRIBUNAL DE SAN JUAN

JORGE LEDON WEBSTER
CONSULTING ENGINEER
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DRAWING NO.
M-2.0
DATE
MAY 2019
SCALE
1/4" = 1'-0"

DATA ROOM AIR CONDITIONING UNIT SCHEDULE

GENERAL DATA					FANS					COOLING COIL										REHEAT COIL				FILTERS			COMPRESSOR					ELECTRICAL DATA																
UNIT NO.	SERVICE	MANUFACTURER	UNITS WEIGHT (LBS)	MODEL NO.	QTY.	TYPE	DRIVE	SIZE	TOTAL AIR (CFM)	EXTER. STATIC PRESS. (IN WG.)	TOTAL STATIC PRESS. (IN WG.)	FAN SPEED RPM	MOTOR DATA		HEAT TRANSFER CHARACTERISTICS		CFM	NO. OF COILS	TOTAL FACE AREA	EA COIL		MAX. AIR VEL. (FPM)	ROWS	FINS PER FT.	ENTERING AIR		LEAVING AIR		TYPE	KW. INPUT	CONTROL TYPE	# OF STAGES	QTY	SIZE L x W (IN.)	MERV RATING	QTY	TYPE	KW. INPUT TOTAL	REFRIGERANT TYPE	RPM	REFRIGERANT LINE SIZE (IN.)		VOLTS	PHASES	HERTZ	FULL LOAD AMPS.	MIN. CIRCUIT AMPS.	MOCP AMPS.
													RPM	MOTOR HP (EA)	TOTAL (BTUH)	SENSIBLE (BTUH)				LENGTH	WIDTH				° F DB	° F WB	° F DB	° F WB													LIQUID	HOT GAS						
CRAC-1	COMPUTER ROOM	VERTIV / LIEBERT CO.	1,970	DS07DADA	2	BI	EC	560	9,600	.2	---	0.3500	0.3500	4.15	245,584	191,861	9,600	2	24.65	---	---	388.67	3	12	75	62.6	56.1	53.5	ELECTRIC	9	SCR	VARIABLE	4	25" x 20"	11	2	DIGITAL SCROLL	---	407C	3500	(2) 5/8"	(2) 7/8"	460	3	60	59.9	72.9	80
CRAC-2	COMPUTER ROOM	VERTIV / LIEBERT CO.	1,970	DS07DADA	2	BI	EC	560	9,600	.2	---	0.3500	0.3500	4.15	245,584	191,861	9,600	2	24.65	---	---	388.67	3	12	75	62.6	56.1	53.5	ELECTRIC	9	SCR	VARIABLE	4	25" x 20"	11	2	DIGITAL SCROLL	---	407C	3500	(2) 5/8"	(2) 7/8"	460	3	60	59.9	72.9	80
CRAC-3	COMPUTER ROOM	VERTIV / LIEBERT CO.	1,970	DS07DADA	2	BI	EC	560	9,600	.2	---	0.3500	0.3500	4.15	245,584	191,861	9,600	2	24.65	---	---	388.67	3	12	75	62.6	56.1	53.5	ELECTRIC	9	SCR	VARIABLE	4	25" x 20"	11	2	DIGITAL SCROLL	---	407C	3500	(2) 5/8"	(2) 7/8"	460	3	60	59.9	72.9	80

NOTES: ① FURNISH UNIT WITH NON LOCKING DISCONNECT SWITCH. ② MICROPROCESSOR BASED CONTROL PANEL. ③ DISPOSABLE FILTERS (FURNISH ONE SPARE SET TO OWNER) ④ FACTORY FURNISHED THERMOSTAT ⑤ SINGLE POINT POWER KIT

AIR COOLED CONDENSER SCHEDULE

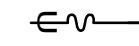

GENERAL DATA					FANS					ELECTRICAL DATA										REFRIGERANT LINES SIZES			
UNIT NO.	LOCATION	SERVICE	MANUFACTURER	MODEL	TYPE	WEIGHT	NUMBER OF FANS	FAN KW EACH MOTOR	RPM	FAN TYPE	AIRFLOW CFM	VOLTS	PHASES	HERTZ	FULL LOAD AMPS.	MIN. CIRCUIT AMPS.	MOCP	CONDENSER		REFRIGERANT	CONDENSING TEMP. °F	LIQUID IN O.D.	HOT GAS IN O.D.
																		CIRCUITS	FACE AREA				
ACC-1	CONDENSER YARD	CRAC-1	VERTIV / LIEBERT CO.	MCL-110E8AE0021	MICRO CHANNEL	829	2	1.9	1750	ELM	16,887	460	3	60	5.6	6.3	15	2	---	R407C	95°	(2) 1-1/8"	(2) 7/8"
ACC-2	CONDENSER YARD	CRAC-2	VERTIV / LIEBERT CO.	MCL-110E8AE0021	MICRO CHANNEL	829	2	1.9	1750	ELM	16,887	460	3	60	5.6	6.3	15	2	---	R407C	95°	(2) 1-1/8"	(2) 7/8"
ACC-3	CONDENSER YARD	CRAC-3	VERTIV / LIEBERT CO.	MCL-110E8AE0021	MICRO CHANNEL	829	2	1.9	1750	ELM	16,887	460	3	60	5.6	6.3	15	2	---	R407C	95°	(2) 1-1/8"	(2) 7/8"

NOTES: ① TRANSIENT VOLTAGE SURGE SUPPRESSOR ② VARIABLE SPEED DRIVE ③ DUAL CIRCUIT ④ DISCONNECT SWITCH ⑤ ALUMINUM FRAME ⑥ 60" LEGS ⑦ IBC COMPLIANT WIND LOAD ⑧ FACTORY APPLIED COIL COATING (E-COAT WITH LIV TOP COAT)

GENERAL NOTES:

- ALL EQUIPMENT UNDER THIS SECTION MUST MOUNTED ON 4" THICK CONCRETE BASES AND SPRING TYPE VIBRATION ISOLATORS WITH A MINIMUM OF 2" DEFLECTION. VIBRATION ISOLATORS MUST BE TREATED AS FOLLOWS: ALL STEEL PARTS TO BE HOT DIP GALVANIZED, ALL BOLTS & NUTS CADMIUM PLATED AND ALL SPRINGS CADMIUM PLATED AND NEOPRENE COATED.
- THIS CONTRACTOR MUST MAKE ELECTRICAL CONNECTION TO ALL THE EQUIPMENT FURNISHED UNDER THIS SCOPE OF WORK, FROM A DISCONNECT SWITCH FURNISHED & INSTALLED BY ELECTRICAL CONTRACTOR, LOCATED 5'-0" FROM EACH MOTOR. ALSO, IT SHALL FURNISH ALL NECESSARY CONTROL WIRING.
- ELECTRICAL CONTRACTOR MUST FURNISH ALL MOTOR STARTERS NEEDED FOR HIS EQUIPMENT, WITH A.H.O.A. SWITCH AND PILOT LIGHT.
- WHEN PROJECT GETS COMPLETED, AND BEFORE FINAL INSPECTION, THIS CONTRACTOR MUST ENGAGE THE SERVICES OF A PROFESSIONAL BALANCER, TO PERFORM WATER AND AIR BALANCING OF ALL SYSTEMS. SUBMITT THREE COPIES OF BALANCING DATA TO ARCHITECT & ENGINEER FOR APPROVAL PRIOR TO FINAL INSPECTION.
- THIS CONTRACTOR MUST INSPECT PROJECT SITE AND MUST COORDINATE HIS WORK WITH THAT OF OTHER TRADES PRIOR TO SUBMITTING HIS PROPOSAL FOR THIS WORK. AFTER CONTRACT GETS AWARDED, NO EXTRAS WILL BE ALLOWED FOR COORDINATION OF FOR PROJECT SITE CONDITIONS.
- ALL PIPING MUST BE AMERICAN MANUFACTURED. TEST ALL PIPING FOR A PERIOD NOT LESS THAN 24 HRS. ALL PIPES TEST MUST BE WITNESSED AND APPROVED BY THE OWNER'S REPRESENTATIVE.
- ALL REFRIGERANT PIPING SHALL BE RIGID COPPER TYPE "K" (REFRIGERANTION GRADE) SOLDERED.
- INSULATE REFRIGERANT SUCTION LINES WITH 3/4" THICK ARMAFLEX INSULATION. VAPOR SEAL ALL SEAMS WITH BENJAMIN FOSTER 6025. DO NOT SLIT INSULATION. COVER ALL INSULATION EXPOSED TO AMBIENT WITH 0.16 ALUMINUM JACKET JOHNS MANVILLE "METAL ON" SECURED WITH 1/2" STAINLESS STEEL STRAPS EVERY 12"C.C.. FINISH ALL FITTINGS WITH GLASSFAB & BENJAMIN FOSTER 6025 MASTIC.
- AFTER INSTALLATION ALL EQUIPMENT SHALL BE PAINTED WITH TWO COATS OF P.P.G. SYSTEM 190 H.D. AQUAPON RUST PREVENTIVE PAINT TO PREVENT CORROSION. COLOR TO BE SELECTED BY ARCHITECT.

AIR CONDITIONING LEGEND

ITEM	DESCRIPTION
CFM	CUBIC FEET PER MINUTE
D.L.	DOOR LOUVER
O.B.D.	OPPOSED BLADE DAMPER
C.D.	CEILING DIFUSSER
F.A.I.	FRESH AIR INTAKE
R.A.R.	RETURN AIR REGISTER
R.A.G.	RETURN AIR GRILLE
M.D.	MOTORIZED DAMPER
A.H.U.	AIR HANDLING UNIT
EF	EXHAUST FAN
CU	CONDENSING UNIT
CT	COOLING TOWER
P.	PUMP
E.R.	EXHAUST REGISTER
F.D.	FIRE DAMPER
R.A.	RETURN AIR
DN.	DOWN
F.L.D.	FULL LOUVERED DOOR
	DOOR UNDERCUT
D.G.	DOOR GRILLE
G.V.	GATE VALVE
	THERMOSTAT
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CWS	CONDENSER WATER RETURN
CWR	CONDENSER WATER RETURN
S.D.	SMOKE DETECTOR

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REVISIONS	No.	Date	Description

SCHEDULES, GENERAL NOTES AND LEGEND

PROJECT NAME
**DATA CENTER
 A/C UNITS REPLACEMENT
 TRIBUNAL DE SAN JUAN**

JORGE LEDON WEBSTER
 CONSULTING ENGINEER
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 email address: jorge@lweng.com

CONTAMINANT/ACID TEST PROCEDURE:

1. START THE COMPRESSOR AND PUT THE SYSTEM IN OPERATION. AS THE CONTAMINANTS IN THE SYSTEM ARE FILTERED OUT, THE PRESSURE DROP ACROSS THE FILTER-DRIER WILL INCREASE. OBSERVE THE PRESSURE DIFFERENTIAL ACROSS THE FILTER-DRIERS FOR A MINIMUM OF FOUR HOURS, PREFERABLY BY MEANS OF ONE GAUGE AND A MANIFOLD TO ELIMINATE GAUGE ERROR. IF THE PRESSURE DROP EXCEEDS THE MAXIMUM LIMITS REQUIRED BY THE FILTER MANUFACTURER, REPLACE THE FILTER-DRIER AND RESTART THE SYSTEM.
2. AFTER THE COMPLETION OF STEP 1, ALLOW THE UNIT TO OPERATE FOR 48 HOURS. CHECK THE ODOR (WARNING, SMELL CAUTIOUSLY) AND COMPARE THE COLOR OF THE OIL WITH THE SAMPLE TAKEN IN STEP 1. USE OF AN COPELAND UNIVERSAL ACID ALERT TEST KIT IS RECOMMENDED TO TEST FOR ACID CONTENT. IF THE OIL IS DISCOLORED, HAS AN ACID ODOR, IS ACIDIC, OR IF THE MOISTURE INDICATOR INDICATES A HIGH MOISTURE CONTENT IN THE SYSTEM, CHANGE THE FILTER-DRIERS. THE COMPRESSOR OIL CAN BE CHANGED IF CONSIDERED DESIRABLE. ALLOW THE SYSTEM TO OPERATE FOR AN ADDITIONAL 48 HOURS AND RECHECK AS BEFORE. REPEAT UNTIL THE OIL REMAINS CLEAN, ODOR AND ACID FREE, AND THE COLOR APPROACHES THAT OF THE ORIGINAL SAMPLE.
3. REPLACE THE LIQUID LINE FILTER-DRIER WITH A COPELAND EK OF THE NORMALLY RECOMMENDED SIZE. REMOVE THE SUCTION LINE FILTER-DRIER AND REPLACE WITH PERMANENT TYPE SUCTION LINE FILTER OR FILTER DRIER. 4. AFTER THE CLEANING PROCEDURE IS COMPLETED, RECHECK IN APPROXIMATELY TWO WEEKS TO ENSURE THAT THE SYSTEM CONDITION AND OPERATION IS COMPLETELY SATISFACTORY.

DISPOSAL OF EQUIPMENT:

- THE FINAL PERSON IN THE DISPOSAL CHAIN (SUCH AS A SCRAP METAL RECYCLER OR LANDFILL OWNER) IS RESPONSIBLE FOR ENSURING THAT REFRIGERANT IS RECOVERED FROM EQUIPMENT BEFORE ITS FINAL DISPOSAL.
- THE FINAL PERSON IN THE DISPOSAL CHAIN SHALL ACCEPT ONLY EQUIPMENT THAT NO LONGER HOLDS A REFRIGERANT CHARGE. THAT PERSON IS RESPONSIBLE FOR MAINTAINING A SIGNED STATEMENT FROM THE PERSON WHO DROPPED OFF THE APPLIANCE. THE SIGNED STATEMENT MUST INCLUDE THE NAME AND ADDRESS OF THE PERSON WHO RECOVERED THE REFRIGERANT, AND THE DATE THAT THE REFRIGERANT WAS RECOVERED. ALTERNATIVELY, THIS COULD BE A COPY OF A CONTRACT BETWEEN THE PERSON OR COMPANY DELIVERING THE EQUIPMENT(S) TO THE FINAL PROCESSOR AND THEIR SUPPLIER, STATING THAT THEIR SUPPLIER WILL PROPERLY RECOVER THE REFRIGERANT PRIOR TO DELIVERY.
- THE FINAL PERSON IN THE DISPOSAL CHAIN SHALL ENTER INTO A CONTRACT WITH ITS REGULAR, COMMERCIAL SUPPLIER WHICH SPECIFIES THE SUPPLIER WILL PROPERLY RECOVER THE REFRIGERANT OR VERIFY ITS PROPER RECOVERY PRIOR TO DELIVERY. THIS CONTRACT OPTION IS INTENDED TO HELP STREAMLINE TRANSACTIONS BETWEEN BUSINESSES AND IS NOT APPROPRIATE FOR USE WITH INFREQUENT SUPPLIERS (E.G., INDIVIDUALS AND PEDDLERS).
- EPA DOES NOT MANDATE OR ACCEPT A STICKER AS A FORM OF VERIFICATION THAT THE REFRIGERANT HAS BEEN PROPERLY RECOVERED PRIOR TO DISPOSAL. THE FINAL DISPOSER MUST STILL OBTAIN FROM A SUPPLIER A SIGNED STATEMENT THAT INCLUDES THE NAME AND ADDRESS OF THE PERSON WHO RECOVERED THE REFRIGERANT, AND THE DATE THAT THE REFRIGERANT WAS RECOVERED. ALTERNATIVELY, SUCH AN APPLIANCE MAY BE COVERED BY A CONTRACT BETWEEN THE FINAL DISPOSER AND THE SUPPLIER THAT SPECIFIES THE SUPPLIER WILL BE RESPONSIBLE FOR PROPERLY RECOVERING REFRIGERANT PRIOR TO DELIVERY TO THE FINAL DISPOSER.
- THE EQUIPMENT USED TO RECOVER REFRIGERANT FROM EQUIPMENT PRIOR TO THEIR FINAL DISPOSAL MUST MEET THE SAME PERFORMANCE STANDARDS AS REFRIGERANT RECOVERY EQUIPMENT USED FOR SERVICING.

EPA NO LONGER REQUIRES PERSONS INVOLVED IN THE FINAL DISPOSAL OF APPLIANCES TO CERTIFY TO THEIR EPA REGIONAL OFFICE THAT THEY HAVE OBTAINED AND ARE PROPERLY USING EPA-CERTIFIED REFRIGERANT RECOVERY EQUIPMENT.

EVACUATION OF REFRIGERANT PROCEDURE:

THIS PROCEDURE APPLIES TO EVACUATION OF REFRIGERANT FROM APPLIANCES CONTAINING ANY CLASS I OR CLASS II REFRIGERANT OR ANY NON-EXEMPT SUBSTITUTE REFRIGERANT.

- (A) EQUIPMENT BEFORE OPENING EQUIPMENT OR DISPOSING OF SUCH EQUIPMENT, TECHNICIANS MUST EVACUATE THE REFRIGERANT, INCLUDING ALL THE LIQUID REFRIGERANT, TO THE LEVELS IN TABLE 1 USING A RECOVERY AND/OR RECYCLING CERTIFIED MACHINE. TECHNICIANS SHALL EVACUATE THE ENTIRE EQUIPMENT TO BE DISPOSED, THE REFRIGERANT IN THE EQUIPMENT EXTERNAL RECEIVER. A TECHNICIAN MUST VERIFY THAT THE APPLICABLE LEVEL OF EVACUATION HAS BEEN REACHED IN THE EQUIPMENT OR THE PART BEFORE IT IS OPENED.
 - (I)EVACUATION OF THE EQUIPMENT TO THE ATMOSPHERE SHALL NOT BE PERFORMED.
 - (I) EVACUATE NON-LEAKING COMPONENTS TO BE OPENED OR DISPOSED OF TO THE LEVELS SPECIFIED IN TABLE 1; AND
 - (II) EVACUATE LEAKING COMPONENTS TO BE OPENED OR DISPOSED OF TO THE LOWEST LEVEL THAT CAN BE ATTAINED WITHOUT SUBSTANTIALLY CONTAMINATING THE REFRIGERANT. THIS LEVEL MAY NOT EXCEED 0 PSIG.
 - (3) RECORDKEEPING. TECHNICIANS EVACUATING REFRIGERANT FROM APPLIANCES WITH A FULL CHARGE OF MORE THAN 5 AND LESS THAN 50 POUNDS OF REFRIGERANT FOR PURPOSES OF DISPOSAL OF THAT APPLIANCE MUST KEEP RECORDS DOCUMENTING THE FOLLOWING FOR THREE YEARS.
 - (I) THE COMPANY NAME, LOCATION OF THE APPLIANCE, DATE OF RECOVERY, AND TYPE OF REFRIGERANT RECOVERED FOR EACH APPLIANCE;
 - (II) THE TOTAL QUANTITY OF REFRIGERANT, BY TYPE, RECOVERED FROM ALL DISPOSED APPLIANCES IN EACH CALENDAR MONTH; AND
 - (III) THE QUANTITY OF REFRIGERANT, BY TYPE, TRANSFERRED FOR RECLAMATION AND/OR DESTRUCTION, THE PERSON TO WHOM IT WAS TRANSFERRED, AND THE DATE OF TRANSFER.

WHERE TO RETURN USED REFRIGERANT

CONTRACTORS AND TECHNICIANS SHALL RETURN RECOVERED REFRIGERANT TO A CONSOLIDATOR (SUCH AS A REFRIGERANT MANUFACTURER, SUPPLIER, WHOLESALE DISTRIBUTOR, OR REFRIGERANT RECOVERY COMPANY) FOR PACKAGING AND PREPARATION PRIOR TO RECLAMATION, OR IN SOME CASES DIRECTLY TO AN EPA RECLAIMER.

TABLE 1--REQUIRED LEVELS OF EVACUATION FOR APPLIANCES

TYPE OF APPLIANCE	INCHES OF HG VACUUM (RELATIVE TO STANDARD ATMOSPHERIC PRESSURE OF 29.9 INCHES HG) USING RECOVERY AND/OR RECYCLING EQUIPMENT MANUFACTURED OR IMPORTED BEFORE
NOVEMBER 15, 1993 USING RECOVERY AND/OR RECYCLING EQUIPMENT MANUFACTURED OR IMPORTED ON OR AFTER	NOVEMBER 15, 1993
VERY HIGH-PRESSURE APPLIANCE ⁰⁰ , HIGH-PRESSURE APPLIANCE, OR ISOLATED COMPONENT OF SUCH APPLIANCE, WITH A FULL CHARGE OF LESS THAN 200 POUNDS OF REFRIGERANT ⁰⁰ , HIGH-PRESSURE APPLIANCE, OR ISOLATED COMPONENT OF SUCH APPLIANCE, WITH A FULL CHARGE OF 200 POUNDS OR MORE OF REFRIGERANT ⁴¹⁰ , MEDIUM-PRESSURE APPLIANCE, OR ISOLATED COMPONENT OF SUCH APPLIANCE, WITH A FULL CHARGE OF LESS THAN 200 POUNDS OF REFRIGERANT ⁴¹⁰ , MEDIUM-PRESSURE APPLIANCE, OR ISOLATED COMPONENT OF SUCH APPLIANCE, WITH A FULL CHARGE OF 200 POUNDS OR MORE OF REFRIGERANT ⁴¹⁵ , LOW-PRESSURE APPLIANCE ²⁵ MM HG ABSOLUTE ²⁵ MM HG ABSOLUTE	29.9

FLUSHING PROCEDURE FOR REFRIGERANT LINES:

1. REMOVE ANY OBSTACLES.
 - ANY EQUIPMENT SUCH AS FILTERS AND EXPANSION VALVES THAT MIGHT OBSTRUCT THE LINE SHOULD BE REMOVED PRIOR TO THE PURGE.
2. DO A NITROGEN PRE-FLUSH.
 - THIS WILL PULL AWAY ANY LOOSE DEBRIS FROM THE SIDES OF THE LINES SO THE SOLVENT CAN MORE EASILY DO ITS WORK. 120 PSI IS RECOMMENDED. IT'S ALSO GOOD PRACTICE TO OSCILLATE THE PRESSURE TO ENCOURAGE DISLODGING OF DEBRIS.
3. PREPARE THE LINES.
 - YOU MAY NEED TO CUT LONGER LINES INTO SHORTER SEGMENTS FOR MORE EFFECTIVE FLUSHING. 50-FOOT SEGMENTS WORK WELL. YOU'LL ALSO NEED TO FIND A FITTING FOR THE INLET -- YOU CAN BRAZE ON A 1/4-INCH BRASS FLARE FITTING OR HOLD A CONICAL RUBBER FITTING IN PLACE DURING FLUSHING. FINALLY, CRIMP THE EXTERIOR END OF THE LINES TO ENCOURAGE HIGHER PRESSURE IN THE LINE.
4. CONDUCT THE FLUSH.
 - FLUSH FROM INTERIOR TO EXTERIOR TO MINIMIZE FUMES. BE SURE TO USE A TARP OR OTHER METHOD TO PROTECT AREAS WHERE A SOLVENT SPILL IS A POSSIBILITY. FLUSH ALL PIPES WITH ENSOLV NEXT PIPE FLUSHING SOLUTION. COLLECT USED FLUSHING LIQUID AT THE END OF THE LINE IN A BUCKET OR OTHER SOLVENT-PROOF RECEPTACLE. FLUSH UNTIL THE LIQUID COMES OUT CLEAR. IT'S A GOOD IDEA TO REPLACE THE BUCKET WITH A CLEAN ONE NEAR THE END OF THE PROCESS SO YOU CAN TELL WHETHER THE SOLVENT IS RUNNING CLEAR.
5. DO A NITROGEN POST-FLUSH.
 - DO THIS IMMEDIATELY (WITHIN 10-15 MINUTES) AFTER FLUSHING, BEFORE THE SOLVENT HAS A CHANCE TO THOROUGHLY EVAPORATE.
6. CLEAN UP.
 - FOLLOW PROPER PROCEDURE FOR ENVIRONMENTALLY RESPONSIBLE DISPOSAL OF WASTE SOLVENT AS PER EPA REGULATIONS.

OF COURSE, SIMPLY REPLACING OLD LINESSETS IS THE ONLY WAY TO BE 100 PERCENT SURE THAT YOUR LINES ARE CLEAN. BUT IN RETROFIT SITUATIONS WHERE COMPLETE REPLACEMENT IS NOT POSSIBLE, FLUSHING THE LINES WITH ENSOLV NEXT SOLVENT IS THE BEST ALTERNATIVE SOLUTION. TRY IT FOR THE PROTECTION AND LONG WORKING LIFE OF YOUR REFRIGERATION SYSTEM UPGRADE.

DEMOLITION & REMOVAL OF EXISTING CRAC UNITS:

1. DATA CENTER SHALL REMAIN IN OPERATION ALL TIMES, CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS TO ENSURE COOLING OF THE DATA CENTER WILL BE PROVIDED WITHOUT ANY INTERRUPTIONS.
2. DATA CENTER IS A LIMITED ACCESS/SECURE AREA, ANY WORK SHALL BE STRICTLY COORDINATED WITH THE DATA CENTER PERSONNEL AND IN ACCORDANCE WITH THEIR RULES AND REGULATIONS.
3. DATA CENER WORKSPACE IS VERY LIMITED, AND CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS NOT TO DISRUPT THE OPERATION OF THE CENTER AND TO AVOID DAMAGE TO EXISTING EQUIPMENT AND STRUCTURE.
4. DATA CENTER REQUIRES THAT ANY TWO OF THE UNITS BE OPERATIONAL AT ALL TIMES.
5. CONTRACTOR SHALL REMOVE ONE CRAC UNIT AND ITS CORRESPONDING AIR-COOLED CONDENSER AT A TIME. WORK SHALL INCLUDE BUT NOT BE LIMITED TO:
 - A. REMOVE POWER SUPPLY TO THE EXISTING CRAC UNIT AND ITS CORRESPONDING AIR-COOLED CONDENSER AND MAKE SAFE.
 - B. REMOVE/RECOVER THE REFRIGERANT AND OIL INSIDE THE SYSTEM. (SEE REFRIGERANT RECOVERY NOTES).
 - C. DISCONNECT THE REFRIGERATION HOT GAS AND SUCTION LINES FROM THE UNIT AND MAKE SAFE. THESE UNITS SHALL BE REUSED FOR THE NEW UNITS TO BE INSTALLED. CAPS AND PRESSURIZATION SHALL BE PROVIDED TO AVOID MOISTURE ACCUMULATION INSIDE THE PIPES.
 - D. REMOVE THE CRAC UNIT AND ITS CORRESPONDING AIR-COOLED CONDENSER. FLUSH THE UNITS OF ALL THE REFRIGERANT INSIDE (SEE REFRIGERANT FLUSHING NOTES) AND DISCARD UNITS IN ACCORDANCE WITH EPA RULE 608.
 - E. REMOVE EXISTING ELECTRICAL FEEDERS TO UNIT LEAVING THE EMPTY CONDUIT IN PLACE FOR NEW WIRING. REMOVE DISCONNECT SWITCHES AND DISCARD OFF PROPERLY.
 - F. REMOVE EXISTING CRAC UNIT SUPPORT BASE AND DISCARD OFF PROPERLY.
 - G. CLEAN AREA THOROUGHLY.
 - H. REPEAT PROCEDURE FOR NEXT UNIT AFTER NEW UNIT IS INSTALLED AND OPERATIONAL.

NEW EQUIPMENT INSTALLATION NOTES:

1. CLEAN/FLUSH ALL REFRIGERANT LINES THOROUGHLY (SEE REFRIGERANT FLUSHING NOTES).
2. INSTALL NEW SEISMIC BASE FRAME FOR NEW CRAC UNIT AS PER MANUFACTURER'S INSTALLATION INSTRUCTION.
3. INSTALL NEW CRAC UNIT ON BASE IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.
4. ADJUST EXISTING FLOOR TILES TO NEW CRAC UNIT. CUT AND/OR PROVIDE NEW TILES AS NEEDED.
5. FURNISH AND INSTALL NEW WIRING FOR UNIT. PROVIDE SEAL-TITE® FLEXIBLE CONDUIT FOR CONNECTION TO NEW UNIT. ALL WIRING SHALL BE PROPERLY CONNECTED, AND BOLTS TORQUED TO EQUIPMENT INSTALLATION INSTRUCTIONS.
6. CONNECT REFRIGERANT LINES TO NEW CRAC UNIT AT THE REQUIRED POINTS OF CONNECTIONS. ALL CONNECTIONS SHALL BE BRAZED.
7. INSTALL REMOTE AIR-COOLED CONDENSER ON EXTERIOR PAD ACCORDING TO MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE STAINLESS STEEL WEDGE BOLTS TO ANCHOR UNIT TO PAD.
8. FURNISH AND INSTALL NEW WIRING TO A NEW 60 AMP NEMA 4X STAINLESS STEEL NON FUSED DISCONNECT SWITCH.
9. FURNISH AND INSTALL NEW WIRING FROM THE DISCONNECT SWITCH TO THE AIR-COOLED CONDENSER POINT OF CONNECTION. FINAL CONNECTION TO UNIT SHALL BE DONE WITH SEAL-TITE® FLEXIBLE CONDUIT. ALL WIRING SHALL BE PROPERLY CONNECTED, BOLTED AND TORQUED AS PER EQUIPMENT INSTALLATION INSTRUCTIONS.
10. CONNECT REFRIGERANT LINES TO AIR COOLED CONDENSERS POINT OF CONNECTION. INSTALL AS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. ALL PIPE CONNECTIONS SHALL BE BRAZED.
11. VERIFY SYSTEM FOR LEAKS.
12. EVALUATE ALL REFRIGERANT LINES AND SYSTEM ACCORDING TO EQUIPMENT MANUFACTURER'S INSTRUCTIONS.
13. AFTER SYSTEM EVALUATION IS PERFORMED, FILL THE SYSTEM WITH REFRIGERANT ACCORDING TO MANUFACTURER SPECIFICATIONS AND INSTALLATION INSTRUCTIONS. ALL REFRIGERANT REQUIRED SHALL BE NEW NON RECLAIMED.
14. STARTUP THE UNIT AFTER EQUIPMENT MANUFACTURER REPRESENTATIVE HAS INSPECTED ALL INSTALLATION AND APPROVES THE UNIT. VERIFY THAT ALL SYSTEMS ARE IN PERFECT OPERATING CONDITION.
15. VERIFY THE REFRIGERANT ON THE SYSTEMS FOR CONTAMINANTS AND/OR ACID CONTENT (SEE CONTAMINANT/ACID TEST PROCEDURE).

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M-3.1
NOTES
NOT TO SCALE

REVISIONS	No.	Date	Description

NOTES

PROJECT NAME
**DATA CENTER
A/C UNITS REPLACEMENT**
TRIBUNAL DE SAN JUAN

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M-3.1
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SCALE: 1/4" = 1'-0"

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