GENE	RAI S	YMBOLS/ ABBR.
SYMBOL		DESCRIPTION
	ADDIX	-SECTION NO.
F		SECTION NO.
M		- SECTION VIEW SHEET NO.
F M1		DETAIL DESIGNATION
F 1	<u>F-1</u>	EQUIPMENT DESIGNATION
1		SHEET KEY NOTES
	POC	POINT OF CONN. (CONN. NEW TO EXISTING)
	POD	POINT OF DISCONNECTION
		ARROW INDICATES DIRECTION OF FLOW
$OR \underbrace{(A) \frac{SIZE}{CFM}(X)}_{(A) CFM(X)}$		AIR DEVICE CALL OUT. TYP. OF (X) DEVICES.
	(R)	REMOVE
	(E)	EXISTING
	DN AFF	
	AFF	ABOVE FINISHED FLOOR ABOVE FINISHED GRADE
	TOP	TOP OF PIPE (AFF)
	NTS	NOT TO SCALE
	AMB	AMBIENT
	BTUH	BRITISH THERMAL UNIT PER HOUR
	CFH	CUBIC FEET PER HOUR
	cv	CONSTANT VOLUME
	dB	DECIBEL
	DB	DRY-BULB
	DDC	DIRECT DIGITAL CONTROL
	DEFL	DEFLECTION DIAMETER
	DWG	DRAWING
	EER	ENERGY EFFICIENT RATIO
	ENT	ENTERING
	°F	DEGREE FAHRENHEIT
	FPI	FINS PER INCH
	FPM	
	FT WC GAL	FEET WATER COLUMN GALLON
	GPH	GALLONS PER HOUR
	GPM	GALLONS PER MINUTE
	IN WC	INCH WATER COLUMN
	LBS	POUNDS
	LVG	LEAVING
	MAX	
	MBH MIN	THOUSAND BTUH MINIMUM
	NC	NOISE CRITERIA
	0.C.	ON CENTER
	P.D.	PRESSURE DROP/ DIFFERENTIAL
	PRESS	
	PSIG	POUNDS PER SQUARE INCH GAUGE
	PWL	SOUND POWER LEVEL
	QTY RH	QUANTITY RELATIVE HUMIDITY
	SPECS	SPECIFICATIONS
	SQ	SQUARE
	SQ.FT	SQUARE FEET
	SS	STAINLESS STEEL
	TYP	
	UON VEL.	UNLESS OTHERWISE NOTED
	VEL. VTR	VENT THROUGH ROOF
	WB	WET-BULB
	W/	WITH
	W/O	WITHOUT
<		

GENERAL ELECTRICAL ABBR.

DESCRIPTION

BHP BRAKE HORSE POWER

MCA MINIMUM CIRCUIT AMP

MFS MAXIMUM FUSE SIZE

PROTECTION

RLA RUNNING LOAD AMP

RPM REVOLUTION PER MINUTE

MCC MOTOR CONTROL CENTER

MAX. OVER CURRENT

FLA | FULL LOAD AMP

HP HORSEPOWER

HZ HERTZ

MOCP

KW KILOWATTS

SYMBOL ABBR

>			1	DAMPERS
SYI DOUBLE	MBC		DES	SCRIPTION
	5		RETU	IRN DUCT UP
	$\subseteq -$		SUPF	PLY DUCT UP
~	5		EXHA	UST DUCT UP
	5		SUPF	PLY DUCT DOWN
- //	5		RETU	IRN DUCT DOWN
-	5		EXHA	UST DUCT DOWN
	5	-5	ROUN	ND DUCT DOWN
	5		ROUN	ND DUCT UP
	5			T DROP
	5			ISITION-RECT. TO 7. OR ROUND TO ND
	5		TRAN ROUN	ISITION-RECT. TO ND
		,N	VANE	ED ELBOW
			CAPF	PED DUCTWORK
			NO C	TING DUCTWORK HANGE IT SOLID LINE)
				TING DUCTWORK TO EMOVED (DASHED
		-(1L)↓		W/ INTERNAL LININ THICK 2L= 2" THICH
		<u> </u>	CONI	CAL TAP
		Ĭ.		CAL SPIN-IN FITTING JAL VOLUME DAMPE
SYM	BOL	SINGLE	ABBR	DESCRIPTION
			FD	FIRE DAMPER
			SD	SMOKE DAMPER
	F/S		FSD	FIRE SMOKE DAMPE CONTROLLED BY DU SMOKE DETECTOR
C C	F/S	L ⇔C	FSD(C)	FIRE SMOKE DAMP CONTROLLED BY CORRIDOR AREA SMOKE DETECTOR
	S		MD	MOTORIZED DAMP
			VD	MANUAL VOLUME DAMPER W/ LOCKING QUADRA
	B		COD	CABLE OPERATED MANUAL DAMPER
	₿		BD	BACKDRAFT DAMP

### SYMBOL ABBR DESCRIPTION AF AFTER FILTER AH AIR HANDLING UNIT B BOILER TYPE BB BASEBOARD CAV CONSTANT AIR VOLUME CC COOLING COIL CH CHILLER FOG DIESEL OIL GAUGE DOP DIESEL OIL PUMP EF EXHAUST FAN FC | FAN COIL UNIT FF | FINAL FILTER FT FLASH TANK FS FLOOR SINK HC HEATING COIL HU HUMIDIFIER SECTION MUA MAKE-UP AIR UNIT PF PRE-FILTER P PUMP RF RETURN FAN SF SUPPLY FAN ST SOUND TRAP VAV VARIABLE AIR VOLUME

	CONTROLS			
SYMBOL	ABBR DESCRIPTION			
A	A	CONTROL AIR (PNEUMATIC)		
FS	FS	FLOW SWITCH		
PS	PS	PRESSURE SWITCH		
(T)(E)	(E) T	EXISTING THERMOSTAT		
T	т	NEW THERMOSTAT		
TS		SPACE TEMPERATURE SENSOR		
S		DUCT MOUNTED SMOKE DETECTOR		
Э		SPACE HUMIDISTAT		
HS		SPACE HUMIDITY SENSOR		
PS		SPACE PRESSURE SENSOR		
CD		CARBON DIOXIDE SENSOR		
CO		CARBON MONOXIDE SENSOR		

VFD VARIABLE FREQUENCY DRIVE

WF WATER FILTRATION

## MECHANICAL LEGEND

USED IN THIS SET OF MECHANICAL DRAWINGS )

SYMBOL AE

 $\searrow$ 

 $\searrow$ 

 $\searrow$ 

 $\blacksquare \bigtriangleup$ 

 $\mathbf{A}$ 

 $\sum$ 

H

\_\_\_\_\_\_

LENGTH

L/D

SYMBOL AI

 $\bowtie$ 

FC

 $|\mathbf{X}|$ 

—— | | ——

 $-\bigcirc$ 

 $\bigcirc$ 

 $\vdash$ 

 $\bowtie$ 

-()-(

(PLAN) (ELEV)

CFM

 $\mathbf{A}$ 

HVAC SYMBOLS/ ABBR.

	)
BBR	DESCRIPTION
CD	SUPPLY DIFFUSER- 4-WAY THROW
CD	SUPPLY DIFFUSER- 3-WAY THROW
CD	SUPPLY DIFFUSER- 2-WAY THROW
CD	SUPPLY DIFFUSER- 1-WAY THROW
LD	SUPPLY SLOT DIFFUSER
R/RG	RETURN AIR GRILLE
	LOW PRESSURE FLEXIBLE DUCT
AP	CEILING ACCESS PANEL
	HUMIDIFIER
	FLEXIBLE DUCT CONNECTION
	AIR DEVICE CALL OUT. TYP. OF (X) DEVICES.
WL	EXTERIOR WALL LOUVER (UNDER ARCH. SECTION)
UC	UNDERCUT DOOR (UNDER ARCH. SECTION)
D/L	DOOR LOUVER (UNDER ARCH. SECTION)
L/D	LOUVER DOOR FULL HEIGHT. (UNDER ARCH. SECTION)
	RETURN/ EXHAUST AIR FLOW SYMBOL
	SUPPLY AIR FLOW SYMBOL
	RISE IN DIRECTION OF AIRFLOW
	DROP IN DIRECTION OF AIRFLOW
BOD	BOTTOM OF DUCT (AFF)
OD	TOP OF DUCT (AFF)
CFM	CUBIC FEET PER MINUTE
DP	DISCHARGE PLENUM
EA	EXHAUST AIR
SP	EXTERNAL STATIC PRESSURE
FO	FLAT OVAL DUCT
MA	MAKE-UP AIR
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR STANDARD AIR CUBIC FEET PER
CFM	MINUTE
S.P.	STATIC PRESSURE
TG	TRANSFER GRILLE
ΓSP	TOTAL STATIC PRESSURE
VMS	WIRE MESH SCREEN
	/

VALVES
DESCRIPTION
DRAIN VALVE W/ HOSE END CONN.
CHECK VALVE W/ INDICATION OF FLOW DIRECTION
PRESSURE REDUCING VALVE
SOLENOID VALVE
AUTO FLOW CONTROL VALVE TEST PORTS
CIRCUIT SETTER OR BALANCII VALVE
GLOBE VALVE (STRAIGHT PATTERN)
GLOBE VALVE (ANGLE PATTERN)
BUTTERFLY VALVE
BALL VALVE
AUTOMATIC TEMP. CONTROL VALVE, 2-WAY
AUTOMATIC TEMP. CONTROL VALVE, 3-WAY
TEMPERATURE/ PRESSURE RELIEF VALVE
VALVE IN RISER
STRAINER W/ BLOW-OFF & CAPPED HOSE-END CONNECTION
GATE VALVE
OUTSIDE STEM AND YOKE
BALL VALVE W/ HOSE CONNECTION
PLUG VALVE

PIPING			
SYMBOL	ABBR	DESCRIPTION	
	(E)	EXISTING PIPING (LIGHT SOLID LINE)	
	(R)	EXISTING PIPING TO BE REMOVED (DASHED LINE)	
	HWS	HEATING WATER SUPPLY	
	HWR	HEATING WATER RETURN	
	BHF	BOOSTER HEATER SUPPLY	
	BHR	BOOSTER HEATER RETURN	
	CHS	CHILLED WATER SUPPLY	
	CHR	CHILLED WATER RETURN	
	CWS	CONDENSER WATER SUPPLY	
	CWR	CONDENSER WATER RETURN	
	RS	REFRIGERANT SUCTION	
	RL	REFRIGERANT LIQUID	
	RHG	REFRIGERANT HOT GAS	
	DR	EQUIPMENT DRAIN	
	D	INDIRECT DRAIN	
	v	VENT	
—2"HWS—		PIPE SIZE/ PIPE TYPE	
	1	·	
MISC. PIPING			

ABBR	DESCRIPTION			
BD	BOILER BLOW DOWN			
BF	BOILER FEED			
во	BLOW OFF			
CF	CHEMICAL FEEDER			
STEAM				
	BD BF BO CF			

STEAM			
SYMBOL	ABBR	DESCRIPTION	
	LPS	LOW PRESSURE STEAM SUPPLY	
_//_	MPS	MEDIUM PRESSURE STEAM SUPPLY	
_////_	HPS	HIGH PRESSURE STEAM SUPPLY	
	LPR	LOW PRESSURE STEAM CONDENSATE RETURN	
	MPR	MEDIUM PRESSURE STEAM CONDENSATE RETURN	
	HPR	HIGH PRESSURE STEAM CONDENSATE RETURN	
-00	PR	PUMPED CONDENSATE RETURN	
$-\otimes$ -		STEAM TRAP	
	PRV	PRESSURE REDUCING VALVE	
	CRU	CONDENSATE RETURN UNIT	
	LBS/HR	POUNDS PER HOUR	

GENERATOR			
SYMBOL	ABBR	DESCRIPTION	
	GEN EX	GENERATOR ENGINE EXHAUST	
	DOS FOS	DIESEL OIL SUPPLY	
	DOR FOR	DIESEL OIL RETURN	
	JWS	JACKET WATER SUPPLY	
	JWR	JACKET WATER RETURN	
	CAC C	CHARGED AIR COOLING COLD CIRCUIT	
	CAC H	CHARGED AIR COOLING HOT CIRCUIT	
	DR	EQUIPMENT DRAIN	
<u> </u>			

FITTINGS			
SYMBOL	ABBR	DESCRIPTION	
	P&T	PRESSURE/ TEMPERATURE PORT TAPS	
	CR	CONCENTRIC REDUCER	
	ER	ECCENTRIC REDUCER	
EJ ──  ──	EJ	EXPANSION JOINT	
	U	UNION	
		THERMOMETER W/THERMOWELL	
	AV	AIR VENT	
	FC	FLEXIBLE PIPE CONNECTOR	
	PG	PRESSURE GAUGE W/GAUGE COCK	
Ŏ—		ELBOW UP	
<u> </u>		ELBOW DOWN	
———		TEE UP	
		TEE DOWN	
]		PIPE CAP OR PLUG	
<u>z</u>	TPR	TEMPERATURE/ PRESSURE RELIEF VALVE	
	STR	STRAINER W/ BLOW-OFF & CAPPED HOSE- END CONNECTION	
, <u> </u>	1		

### MECHANICAL/PLUMBING/ SPRINKLER/ELECTRICAL COORDINATION REQUIREMENTS FOR MECHANICAL AND PLUMBING EQUIPMENT AS INDICATED ON THE DIVISION 21, 22, AND 23 DRAWINGS THE DIVISION 21, 22 AND 23 CONTRACTORS SHALL COORDINATE WITH DIVISION 26 CONTRACTOR TO CONNECT ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON THE MECHANICAL AND

PLUMBING DRAWINGS. COORDINATE FOR COMPLETE WIRING, STARTERS, AND DISCONNECTING MEANS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT.

GENERAL MECHANICAL CONTRACT REQUIREMENTS:

<u>GENERAL:</u>

- 1. UNLESS OTHERWISE NOTED. THE WORK DESCRIBED ON THE PLANS AND SPECIFICATIONS SHALL INCLUDE THE FURNISHING AND INSTALLATION OF ALL LABOR AND MATERIALS NECESSARY FOR SYSTEMS. CONTRACTOR SHALL FURNISH THESE EVEN IF ITEMS REQUIRED TO ACHIEVE THIS (I.E. OFFSETS, ISOLATION AND BALANCING DEVICES, MAINTENANCE CLEARANCES, ETC.) ARE NOT SPECIFICALLY SHOWN.
- 2. DATA GIVEN ON THE DRAWINGS IS AS EXACT AS COULD BE SECURED. ABSOLUTE ACCURACY IS NOT GUARANTEED AND THE CONTRACTOR SHALL OBTAIN AND VERIFY EXACT LOCATIONS, MEASUREMENTS, LEVELS. SPACE REQUIREMENTS. POTENTIAL CONFLICTS WITH OTHER TRADES, ETC. AT THE SITE AND SHALL SATISFACTORILY ADAPT HIS WORK TO THE ACTUAL CONDITIONS OF THE JOB.
- 3. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND SHALL NOT BE SCALED. THEY SHOW CERTAIN PHYSICAL RELATIONSHIPS WHICH MUST BE ESTABLISHED WITHIN THE DIVISION 23 WORK AND ITS INTERFACE WITH OTHER WORK. ESTABLISHING THIS RELATIONSHIP IN THE FIELD IS THE EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR. THIS DIVISION SHALL COORDINATE ITS WORK WITH ALL DIVISIONS OF THE WORK AND ADJUST ITS WORK AS REQUIRED BY THE ACTUAL CONDITIONS OF THE PROJECT.
- A. THE CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A BID TO BECOME THOROUGHLY FAMILIAR WITH THE ACTUAL CONDITIONS OF THE PROJECT. NO EXTRAS WILL BE ALLOWED DUE TO LACK OF KNOWLEDGE OF EXISTING CONDITIONS.
- B. CERTAIN SYSTEMS REQUIRE ENGINEERING OF INSTALLATION DETAILS BY CONTRACTOR. UNLESS FULLY DETAILED IN THE CONTRACT DOCUMENTS, SUCH ENGINEERING IS THE EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR. C. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHERE
- CLEARANCES ARE LIMITED, AND WHERE INSTALLATION DRAWINGS OR SCHEMATICS, "CONSTRUCTION DRAWINGS", OR COORDINATION DRAWINGS MAY BE REQUIRED IN ACCORDANCE WITH, OR IN EXCESS OF, THOSE REQUIRED BY THE SPECIFICATIONS. THE CONTRACTOR SHALL PREPARE ALL SUCH COORDINATION DRAWINGS AS PART OF THE BASE CONTRACT.
- 4. THESE NOTES ONLY SUPPLEMENT, AND DO NOT REPLACE, THE SPECIFICATIONS.
- 5. DEFINITIONS AND TERMINOLOGY
- A. THE DEFINITIONS OF DIVISION 1 AND THE GENERAL CONDITIONS OF THIS SPECIFICATION ALSO APPLY TO THE DIVISION 23 CONTRACT DOCUMENTS.
- B. "CONTRACT DOCUMENTS" CONSTITUTE THE DRAWINGS, SPECIFICATIONS, GENERAL CONDITIONS, PROJECT MANUALS, ETC., PREPARED BY ENGINEER (OR OTHER DESIGN PROFESSIONAL IN ASSOCIATION WITH ENGINEER) FOR CONTRACTOR'S BID OR CONTRACTOR'S NEGOTIATIONS WITH THE OWNER. THE DIVISION 23 DRAWINGS AND SPECIFICATIONS PREPARED BY THE ENGINEER ARE NOT CONSTRUCTION DOCUMENTS.
- "CONSTRUCTION DOCUMENTS", "CONSTRUCTION DRAWINGS", AND 2. DUCT DIMENSIONS ARE INSIDE CLEAR. SIMILAR TERMS FOR DIVISION 23 WORK REFER TO INSTALLATION DIAGRAMS, SHOP DRAWINGS AND COORDINATION DRAWINGS PREPARED BY THE CONTRACTOR USING THE DESIGN INTENT SPECIFICATIONS DETAIL THE CONTRACTOR'S RESPONSIBILITY FOR "ENGINEERING BY CONTRACTOR" AND FOR PREPARATION OF CONSTRUCTION DOCUMENTS.
- "FURNISH" MEANS TO "SUPPLY" AND USUALLY REFERS TO AN ITEM OF EQUIPMENT.
- "INSTALL" MEANS TO "SET IN PLACE, CONNECT AND PLACE IN FULL OPERATIONAL ORDER". F. "PROVIDE" MEANS TO "FURNISH AND INSTALL".
- "EQUIVALENT" MEANS "MEETS THE SPECIFICATIONS OF THE REFERENCE PRODUCT OR ITEM IN ALL SIGNIFICANT ASPECTS." SIGNIFICANT ASPECTS SHALL BE AS DETERMINED BY THE ARCHITECT/ENGINEER.
- H. "WORK BY OTHER(S) DIVISIONS": "RE: XX DIVISION". AND SIMILAR EXPRESSIONS MEANS WORK TO BE PERFORMED UNDER THE CONTRACT DOCUMENTS, BUT NOT NECESSARILY UNDER THE DIVISION OR SECTION OF THE WORK ON WHICH THE NOTE APPEARS. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE THE WORK OF THE CONTRACT BETWEEN HIS/HER SUPPLIERS, SUBCONTRACTORS AND EMPLOYEES. IF CLARIFICATION IS REQUIRED, CONSULT ARCHITECT/ENGINEER BEFORE SUBMITTING BID.
- I. BY INFERENCE, ANY REFERENCE TO A "CONTRACTOR" OR "SUB-CONTRACTOR" MEANS THE ENTITY WHICH HAS CONTRACTED WITH THE OWNER FOR THE WORK OF THE CONTRACT DOCUMENTS.
- "ENGINEER" MEANS THE DESIGN PROFESSIONAL FIRM WHICH HAS PREPARED THESE CONTRACT DOCUMENTS. ALL QUESTIONS, SUBMITTALS, ETC. OF THIS DIVISION SHALL BE ROUTED THROUGH THE ARCHITECT TO THE ENGINEER (THROUGH PROPER CONTRACTUAL CHANNELS).

## EXISTING BUILDING:

- 1. THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE EXISTING BUILDING WILL BE OCCUPIED BY THE OWNER DURING CONSTRUCTION. CONTINUED OPERATION OF THE FACILITY SHALL NOT BE HINDERED BY THIS WORK. THE CONTRACTOR SHALL ACCOUNT FOR ALL ADDITIONAL COSTS WHICH MAY BE INCURRED BY HIM DUE TO THE DIFFICULTY OF WORKING OVER AND AROUND EMPLOYEES, DESKS, EQUIPMENT, ETC.; AND DUE TO THE HOURS OF THE DAY IN WHICH AN AREA MAY BE AVAILABLE WHEN SUBMITTING HIS BID.
- 2. MAINTAIN A MARK-UP SET OF DRAWINGS WHICH INDICATE VARIATIONS IN THE ACTUAL INSTALLATION FROM THE ORIGINAL DESIGN. SURRENDER DRAWINGS TO OWNER UPON COMPLETION. INCORPORATE 9. GREASE DUCTS: THESE NOTES INTO THE AS-BUILDING DRAWINGS.
- 3. COORDINATE ALL PENETRATIONS OF THE FLOOR SLAB PRIOR TO COMMENCING WORK. UTILIZE X-RAY AND VISUAL INVESTIGATION OF EXISTING CONDITIONS AS REQUIRED PRIOR TO DRILLING OR CUTTING. COORDINATE ALL NEW PENETRATIONS WITH OTHER DIVISIONS OF THE WORK. ALL CONTRACTORS ARE INDIVIDUALLY RESPONSIBLE FOR ALL PENETRATIONS REQUIRED BY THEIR DIVISIONS.
- ELECTRICAL COORDINATION: 1. VERIFY THE ELECTRICAL SERVICE PROVIDED BY THE ELECTRICAL CONTRACTOR BEFORE ORDERING ANY MECHANICAL EQUIPMENT **REQUIRING ELECTRICAL CONNECTIONS.**
- PROVIDE PREMIUM EFFICIENCY MOTORS (NEMA STANDARD MG1-2003, TABLES 12-12 AND 12-13) WITH 1.15 SERVICE FACTOR ON ALL EQUIPMENT. MOTORS SHALL BE CAPABLE OF OPERATING CONTINUOUSLY AT 105°F UNDER JOBSITE CONDITIONS AND ALTITUDE.
- 3. UNLESS NOTED OTHERWISE, ALL MECHANICAL EQUIPMENT SHALL BE PROVIDED WITH HOA SWITCH AND STARTER COMPATIBLE WITH EQUIPMENT AND BMS SYSTEM. STARTERS SHALL BE PROVIDED BY DIVISION 23 UNLESS IN A MOTOR CONTROL CENTER. ALL DISCONNECTS SHALL BE FURNISHED BY DIVISION 26.
- 4. THE ELECTRICAL POWER FOR CERTAIN EQUIPMENT PROVIDED UNDER DIVISION 23 HAS NOT BEEN SPECIFICALLY INDICATED ON THE ELECTRICAL DRAWINGS AND MUST BE PROVIDED BY AND FIELD COORDINATED BY THE DIVISION 23 TRADE REQUIRING SUCH POWER.
- 5. SUFFICIENT POWER FOR THIS PURPOSE SHALL BE FURNISHED AS "SPARE", DEDICATED CIRCUIT CAPACITY IN DIVISION 26'S PANELBOARDS. ALL WIRING, CONDUIT AND ELECTRICAL DEVICES DOWNSTREAM OF THE PANELBOARDS IS THE RESPONSIBILITY OF THE DIVISION 23 TRADE REQUIRING THE POWER UNLESS OTHERWISE SHOWN ON THE ELECTRICAL DRAWINGS. SUCH EQUIPMENT IS HEREBY DEFINED AS:
- A. ELECTRICAL HEAT TRACE. REQUIRED HEAT TRACE LOCATIONS. CAPACITIES AND SPECIFICATION ARE SHOWN OR INDICATED ON THE DRAWINGS. PROVIDE ELECTRICAL HEAT TRACING ON ALL PIPES THAT ARE SUBJECT TO FREEZING, THIS INCLUDES AREAS LIKE LOADING DOCK, INTAKE/RELIEF/EXHAUST SHAFTS, ETC. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- TEMPERATURE CONTROL PANELS, CONTROL AIR COMPRESSORS AND LINE VOLTAGE POWER FOR 24V CONTROL TRANSFORMERS. REQUIRED CONNECTION ARE INCLUDED IN DIVISION 23 09 00 AND WILL BE SHOWN BY THAT CONTRACTOR'S CONTROL SUBMITTAL DRAWINGS.
- D. IT IS NOT PERMISSIBLE TO UTILIZE "SPARE" POWER FROM ADJACENT POWER CIRCUITS TO SERVE ANY OF THE ABOVE LOADS. ALL POWER MUST COME FROM DEDICATED CIRCUITS. 6. SMOKE DETECTORS:
- A. PROVIDE A SMOKE DETECTOR IN THE SUPPLY AND RETURN FOR ALL AIR HANDLERS 2,000 CFM OR GREATER, PROVIDE UL LISTED SMOKE DETECTORS IN RETURN AIR SYSTEMS IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE AND ELSEWHERE AS SHOWN ON THE DRAWINGS.
- SMOKE DETECTORS WILL BE FURNISHED AND SET IN PLACE UNDER THIS DIVISION. DETECTORS WILL BE WIRED UNDER DIVISION 26. SMOKE DETECTORS MUST BE OF THE SAME MANUFACTURER, AND COMPATIBLE WITH THE FIRE ALARM SYSTEM PROVIDED UNDER DIVISION 26 (IF APPLICABLE).
- CONNECT RELAY(S) TO FAN CONTROL CIRCUIT TO STOP FAN WHEN SMOKE IS DETECTED. INSTALLATION:
- 1. SUSPEND EACH TRADE'S WORK SEPARATELY FROM THE STRUCTURE. DUCTWORK SHALL BE HELD TIGHT TO STRUCTURE EXCEPT WHERE

- OTHERWISE SHOWN.
- INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE OR WHERE LOCAL CODES OR REGULATIONS
- TAKE PRECEDENCE. COMPLETE AND OPERATIONAL HVAC, FIRE PROTECTION AND PLUMBING 3. PROVIDE MANUFACTURER'S RECOMMENDED SERVICE CLEARANCE AROUND ALL EQUIPMENT REQUIRING SAME.
  - 4. PROVIDE FOR SAFE CONDUCT OF THE WORK, CAREFUL REMOVAL AND DISPOSITION OF MATERIALS AND PROTECTION OF PROPERTY WHICH IS TO REMAIN UNDISTURBED.
  - 5. PROVIDE ACCESS DOORS FOR ALL EQUIPMENT, VALVES, CLEANOUTS, ACTUATORS AND CONTROLS WHICH REQUIRE ACCESS FOR ADJUSTMENT OR SERVICING AND WHICH ARE LOCATED IN OTHERWISE INACCESSIBLE LOCATIONS.
  - A. FOR EQUIPMENT LOCATED IN "ACCESSIBLE LOCATIONS" SUCH AS LAY-IN CEILINGS: LOCATE EQUIPMENT TO PROVIDE ADEQUATE SERVICE CLEARANCE FOR NORMAL MAINTENANCE WITHOUT REMOVING ARCHITECTURAL, ELECTRICAL OR STRUCTURAL ELEMENTS SUCH AS THE CEILING SUPPORT SYSTEM. ELECTRICAL FIXTURES, ETC. "NORMAL MAINTENANCE" INCLUDES, BUT IS NOT LIMITED TO:FILTER CHANGING; GREASING OF BEARINGS; USING P/T PORTS FOR PRESSURE OR TEMPERATURE MEASUREMENTS;
  - SERVICING CONTROL VALVES AND SERVICING CONTROL PANELS. ISOLATE ALL PRESSURIZED PIPE (CHILLED WATER, STEAM, HOT WATER, ETC.) EACH RISER, BRANCH, PIECE OF EQUIPMENT, AND AREA SERVED.
  - 7. NO CHILLED WATER OR HEATING WATER LINES SHALL BE LOCATED EXPOSED IN FINISHED SPACES OR BELOW THE BUILDING SLAB UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
  - 8. ALL CURBS, ROOF JACKS, ROOF THIMBLES, SANITARY VENTS, ROOF DRAINS, ETC. SHALL BE COMPATIBLE WITH ROOFING SYSTEM TO BE PROVIDED. REFERENCE ARCHITECTURAL DIVISION FOR REQUIRED FLASHING DETAILS. 9. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL
  - CONCRETE EQUIPMENT PAD DIMENSIONS, BASED ON THE FINAL EQUIPMENT SELECTION, TO THE STRUCTURAL AND GENERAL CONTRACTOR FOR INCLUSION IN THOSE CONTRACTOR'S WORK AS DESCRIBED BY THE GENERAL CONTRACTOR.
  - 10. UNDER THE BASE CONTRACT, THE CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS NECESSARY TO SPLIT EQUIPMENT INTO MULTIPLE PIECES TO FACILITATE RIGGING TO FINAL INSTALLED LOCATION. CONTRACTOR SHALL REASSEMBLE THE EQUIPMENT AND TEST TO CONFIRM PROPER OPERATION AND MAINTAIN ALL THE MANUFACTURERS WARRANTEES.
  - 11. WARRANTY: AT A MINIMUM, THE ENTIRE MECHANICAL SYSTEM SHALL BE WARRANTED AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR AFTER ACCEPTANCE OF THE SYSTEM BY THE OWNER. REFER TO INDIVIDUAL SPECIFICATION SECTIONS FOR SPECIFIC WARRANTY REQUIREMENTS.
  - DUCTWORK INSTALLATION: 1. SEAL ALL SEAMS (LONGITUDINAL AND TRANSVERSE) AIR TIGHT WITH SEALANT PER SPECIFICATIONS.
  - 3. DIFFUSER NECK SIZE IS SAME AS FLEXIBLE DUCT SIZE.
- INDICATED ON THE ENGINEER'S CONTRACT DOCUMENTS. THESE 4. UNLESS OTHERWISE NOTED, ALL CHANGES IN DIRECTION SHALL BE MADE WITH RADIUS ELBOWS WITH RADIUS TO CENTERLINE EQUAL TO
  - 1.5 DUCT WIDTH. 5. WHERE REQUIRED FOR SPACE CONSTRAINTS, PROVIDE MITERED ELBOWS WITH TURNING VANES AS FOLLOWS
  - A. FOR DUCT WIDTHS OF 36" OR LESS, PROVIDE MANUFACTURED SINGLE WIDTH TURNING VANES, WITH NO TRAILING EDGES AND SPACING IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS FOR "STANDARD SPACING".
  - B. USE DOUBLE THICKNESS (AIRFOIL) BLADES WITHOUT TRAILING EDGES FOR DUCT WIDTHS GREATER THAN 36". 6. ALL FLEXIBLE DUCTS SHALL NOT BE LESS THAN 2', OR MORE THAN 5' IN
  - LENGTH. INSTALL FLEXIBLE DUCTWORK SUCH THAT: A. MINIMUM OVERALL LENGTH OF 3D, STRAIGHT INTO NECK OF DIFFUSER.
  - B. MAXIMUM OF 135° OF TOTAL TURNING IN ENTIRE LENGTH OF FLEXIBLE DUCT.
  - C. MINIMUM TURNING RADIUM OF R = 1.5D.
  - D WHERE \* D = FLEXIBLE DUCT DIAMETER
  - \* R = RADIUS OF TURN AS MEASURED TO CENTERLINE OF DUCT. . RETURN AIR PLENUM: THE HVAC SYSTEM WILL USE THE SPACE ABOVE THE CEILING AS A RETURN AIR PLENUM. CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF NFPA AND LOCAL CODE REQUIREMENTS FOR ALL MATERIAL INSTALLED IN THE RETURN AIR PLENUM.
  - A. IN ADDITION, THE CONTRACTOR SHALL PROVIDE A COMPLETE RETURN AIR PATH BETWEEN ALL RETURN AIR DEVICES (GRILLES ETC.) AND THEIRRESPECTIVE HVAC UNIT. MAXIMUM VELOCITY OF RETURN AIR IN PLENUM SHALL GENERALLY NOT EXCEED 250 FEET PER MINUTE, NOR EXCEED 750 FEET PER MINUTE AT ANY CROSS-SECTION OF THE RETURN AIR PATH.
  - BRANCH LINES:
  - A. MAKE ALL TAPS TO ROUND DUCTWORK WITH CONICAL TEES. B. MAKE ALL TAPS TO RECTANGLE DUCTWORK WITH 45° ENTRY OR CONICAL SPIN IN TO ROUND.
  - C. INCLUDE DAMPERS AT ALL BRANCH LINES.
  - - A. INSTALL AND SLOPE PER BUILDING CODE REQUIREMENTS. PROVIDE COLLECTION RESERVOIRS AS REQUIRED FOR LONG
  - HORIZONTAL RUNS. B. WRAP IN TWO HOUR RATED FIRE WRAP. COORDINATE WITH ARCHITECTURAL PLANS. WRAP DUCT SUPPORTS FOR TWO (2) HOUR RATING.
  - C. WRAP MUST BE RATED FOR 1,900° F AND HAVE A MINIMUM R VALUE OF 10.
  - D. DUCTWORK SHALL BE WRAPPED WITH ZERO-CLEARANCE, 2-HOUR, UL RATED, DUCT WRAP. PROVIDE A MINIMUM OF TWO LAYERS FOR ZERO CLEARANCE AND A VERTICAL CHASE TO MAINTAIN THE "SEPARATE CHASE" DEFINITION OF THE NYC MODIFIED IBC.
  - E. ALL ACCESS DOORS SHALL BE CONSTRUCTED TO ALLOW REMOVAL AND REINSTALLATION WITHOUT DAMAGE TO THE FIRE
  - 10. DUCT SIZES NOT CALLED OUT SHALL BE DETERMINED BASED ON 0.08" S.P. LOSS OR LESS PER 100 FT. OF LENGTH.
  - 11. ASSUME ROUND OR OVAL DUCTS IN EXPOSED AREAS.
  - 12. INCLUDE DAMPERS AT ALL BRANCH LINES, WHERE SHOWN ON THE DRAWINGS. AND WHERE OTHERWISE REQUIRED FOR BALANCING. DAMPERS SHALL BE INSTALLED A MINIMUM OF 3'-0" FROM ANY REGISTER.
  - PIPE INSTALLATION:
  - 1. ALL PIPING SHALL BE ADEQUATELY SUPPORTED FROM THE BUILDING STRUCTURE TO PREVENT SAGGING, POCKETING, SWAYING OR DISPLACEMENT BY MEANS OF HANGERS AND SUPPORTS. PIPING IS NOT TO BE SUPPORTED BY EQUIPMENT.
  - 2. PROVIDE DIELECTRIC UNIONS BETWEEN DISSIMILAR MATERIALS.
  - 3. PROVIDE MANUAL AIR VENTS AND CAPPED HOSE-END DRAINS WITH ISOLATION VALVES AT PIPING HIGH AND LOW POINTS.
  - 4. WELD PIPE IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS. WELDERS SHALL BE CERTIFIED FOR TYPE OF WORK BEING PERFORMED.
  - 5. FLUSH OUT PIPING AND REMOVE CONTROL DEVICES BEFORE PERFORMING PRESSURE TEST. DO NOT USE PIPING SYSTEM VALVES TO ISOLATE SECTIONS WHERE TEST PRESSURE EXCEEDS VALVE PRESSURE RATING. PRESSURIZE PIPING AT AS SPECIFIED IN THE SPECIFICATION OR TO 100 PSIG MINIMUM. IF LEAKAGE IS OBSERVED OR IF TEMPERATURE COMPENSATED PRESSURE DROP EXCEEDS 1% OF TEST PRESSURE, REPAIR LEAKS AND RETEST. DO NOT USE AIR PRESSURE TO TEST PLASTIC PIPE.
  - 6. PROVIDE SUPPORT UNDER ELBOWS ON PUMP SUCTION AND DISCHARGE LINES. 7. ALL STRAINERS SHALL BE FURNISHED WITH A "ROUGHING" SCREEN
  - AND TWO (2) SCREENS FOR NORMAL OPERATION. INSTALL STRAINER WITH ROUGHING SCREEN AND OPERATE SYSTEM FOR 24 HOURS MINIMUM (RUN DOMESTIC WATER SYSTEMS AT MAX FLOW FOR A MINIMUM OF ONE HALF (1/2) HOUR. REMOVE ROUGHING SCREEN AND INSTALL NORMAL SCREEN, AFTER TWO WEEKS OF NORMAL OPERATION INSTALL NEW NORMAL SCREEN.
  - 8. PIPING SIZES SHALL BE BASED ON 2' OR LESS HEAD LOSS PER 100 FEET OF LENGTH. VELOCITIES SHALL NOT EXCEED 10 FEET PER SECOND. 9. INSTALL ALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION
  - WITHIN THE PIPING SYSTEM. ENSURE ALL REQUIRED PIPE EXPANSION WILL OCCUR IN THE PROPER DIRECTION AND SEGMENT OF PIPE. PROPERLY ANCHOR (RE: SPECIFICATIONS) ALL PIPING REQUIRING EXPANSION/CONTRACTION ISOLATION. COORDINATE PIPE EXPANSION/CONTRACTION TO PREVENT DAMAGE TO ANY AND ALL BUILDING COMPONENTS.

- 10. PROVIDE ISOLATION VALVES AT EVERY HYDRONIC BRANCH LINE WHERE INDICATED OR NOT.
- CONDENSATE DRAINAGE:
- 1. PROVIDE CONDENSATE DRAINAGE FOR ALL COOLING COILS AND OVERFLOW PANS.
- ROUTE CONDENSATE PIPING, FULL SIZE OF DRIP PAN CONNECTION, TO NEAREST CODE APPROVED RECEPTACLE. INSULATE WHERE LOCATED ABOVE FINISHED CEILINGS.
- 3. HEAT TRACE CONDENSATE LINES FROM FOOD SERVICE EQUIPMENT
- LOUVERS:
- ALL LOUVERS LOCATED ON EXTERIOR WALLS SHALL BE PROVIDED BY ARCHITECTURAL DIVISION. ALL OTHER LOUVERS SHALL BE PROVIDED BY DIVISION 23. REQUIRED LOUVER FREE AREAS ARE INDICATED ON DIVISION 23 DRAWINGS. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO CONFIRM THAT THE REQUIRED FREE AREA HAS BEEN PROVIDED, PRIOR TO CONNECTION TO THAT LOUVER. DIVISION 23 SHALL PROVIDE ALL LOUVER PLENUMS.
- CUTTING, PATCHING AND DEMOLITION: KEEP DEMOLITION & CUTTING TO MINIMUM REQUIRED FOR PROPER EXECUTION OF WORK.
- BE RESPONSIBLE FOR ALL CUTTING AND PATCHING NECESSARY FOR
- THE COMPLETION OF THE WORK. 3. NO CUTTING (NOT SHOWN ON THE CONTRACT DOCUMENTS) SHALL BE DONE WITHOUT THE APPROVAL OF THE ARCHITECT AS TO LOCATIONS,
- METHOD AND EXTENT OF THE CUTTING. REPAIR ALL ACCIDENTAL OR INTENTIONAL DAMAGE TO MATCH
- EXISTING CONSTRUCTION WITH NO NOTICEABLE DIFFERENCE IN CONTINUITY, APPEARANCE OR FUNCTION. 5. DEMOLISH AND CAP ALL INDICATED PIPING BACK AT NEAREST MAIN.
- STRUCTURE: DO NOT PENETRATE STRUCTURAL MEMBERS. ALL EQUIPMENT SUPPORTS SHALL BE ATTACHED TO THE LOAD BEARING MEMBERS OF STRUCTURAL ELEMENTS. DO NOT OVER-STRESS ANY STRUCTURAL MEMBERS. CONTACT STRUCTURAL ENGINEER FOR ALLOWABLE LOADS
- FOR SPECIFIC MEMBERS. DO NOT UTILIZE POWDER DRIVEN ANCHORS FOR ANY LOCATIONS WHICH REQUIRE THE LOAD TO BE HELD IN TENSION. SEE STRUCTURAL
- DIVISION FOR ADDITIONAL RESTRICTIONS. 3. SEE ALSO STRUCTURAL DIVISION FOR ACCEPTABLE ANCHORING AND SUPPORT MEANS, METHODS, AND LOCATIONS.
- PROVIDE FLEXIBLE CONNECTORS, EXPANSION LOOPS, EXPANSION JOINTS. ADDITIONAL FITTINGS OR EQUIVALENT TO ACCOMMODATE THE THERMAL EXPANSION OF THE BUILDING THROUGH STRUCTURAL EXPANSION JOINTS. PROVIDE SUCH FITTING AT EVERY PIPE, DUCT, CONDUIT, ETC. CROSSING OF A STRUCTURAL EXPANSION JOINT. CONSTRUCTION VENTILATION:
- WHERE EXISTING OR NEW MECHANICAL SYSTEMS ARE USED FOR TEMPORARY VENTILATION OR CLIMATE CONTROL, MECHANICAL EQUIPMENT INSTALLER SHALL PROVIDE CONSTRUCTION FILTERS, MAINTAIN EQUIPMENT, AND CLEAN, ADJUST AND PUT IN NEW CONDITION BEFORE BUILDING OCCUPANCY. PARTS AND LABOR WARRANTY SHALL NOT BE CONSIDERED TO START UNTIL ACCEPTANCE OF SYSTEM BY OWNER.
- 2. PROVIDE CONSTRUCTION FILTERS INSTALLED AT ALL AIR MOVING DEVICES THROUGHOUT THE CONSTRUCTION. REMOVE FILTERS ONL FOR BALANCING AND FINAL TURNOVER. INSPECT ALL NON-CONSTRUCTION FILTERS AND REPLACE ALL THOSE DEEMED NECESSARY BY THE ENGINEER PRIOR TO ACCEPTANCE OF THE SYSTEM BY THE OWNER. FIRE STOPPING:
- FIRE STOPPING REQUIREMENT: PENETRATIONS THROUGH RATED WALLS AND FLOORS SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASSES WHEN SUBJECTED TO THE REQUIREMENTS OF THE TEST STANDARD SPECIFIC FOR FIRE STOPS ASTM-E-814. ACCEPTANCE MATERIALS INCLUDE: DOW CORNING RTV FIRE STOP FOAM FOR BARE PIPE, METAL CONDUIT, AND ELECTRICAL CABLE: 3M FIRE DAM 150 CAULK FOR BARE PIPE. METAL CONDUIT, AND BUILDING CONSTRUCTION; GAPS 3M FS-195 INTUMESCENT STRIPS FOR INSULATED PIPES, PLASTIC PIPE OR CONDUIT, AND ELECTRICAL CABLE. FIRE STOPPING SHALL ADHERE TO SECTION 714 OF THE IBC
- SCOPE CLARIFICATION NOTES:
- 1. THESE DOCUMENTS SERVE TO DEFINE THE NATURE OF THE SYSTEMS, LEVEL OF CONTROL AND FINISH, RELATIONSHIPS WITH OTHER BUILDING SYSTEMS, AND GENERAL DESIGN INTENT OF THIS DIVISION'S WORK. THE CONTRACTOR SHALL EXAMINE THE DOCUMENTS OF ALL TRADES TO COMPLETELY FAMILIARIZE HIM/HERSELF WITH THE VARIOUS CONCEPTS PRESENTED BY OTHER TRADES AND ADAPT THIS WORK AND ANY ASSOCIATED PRICING ACCORDING. WHERE CONFLICTS EXIST BETWEEN THESE DOCUMENTS AND THOSE OF OTHER DIVISIONS, THE MORE STRINGENT (AS DETERMINED BY THE ENGINEER) SHALL TAKE PRECEDENCE. IN PARTICULAR, WHERE ARCHITECTURAL BACKGROUNDS INDICATE PROGRAMMATIC DIFFERENCES IN ROOM LOCATIONS, ROOM FUNCTIONS, PLUMBING FIXTURE COUNTS, CEILING TYPES, RATED CONSTRUCTION, CLEARANCES, OR ROOM RELATIONSHIPS, THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE AND THIS CONTRACTOR SHALL ADAPT HIS/HER WORK ACCORDINGLY WHILE MAINTAINING THE DESIGN INTENT REPRESENTED BY THE DOCUMENTS OF THIS DIVISION.
- REFER TO LIFE SAFETY/CODE REPORT FOR ADDITIONAL SCOPE OF WORK THAT MAY NOT BE REFLECTED ON THE DRAWINGS. REFER TO MECHANICAL SPECIFICATION AND NARRATIVE FOR ADDITIONAL INFORMATION.
- PROVIDE FIRE STOPPING ON ALL EXISTING AND NEW PIPES, DUCTS, DEVICES, ETC. PENETRATING ALL STAIR ENCLOSURES AND FIRE RATED CONSTRUCTION ASSEMBLIES. PENETRATIONS WITH EXISTING FIRE STOPPING AT STAIR ENCLOSURES SHALL BE REPLACED WITH NEW FIRE STOPPING
- 4. ALL OCCUPIED AREAS WILL BE CONDITIONED (HEATING AND COOLING) AND VENTILATED. EQUIPMENT SHOWN IS NOT NECESSARILY TO SCALE.
- 6. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE. THE CONTRACTOR IS RESPONSIBLE FOR ALL OFFSETS, TRANSITIONS, ELBOWS, ETC. AS REQUIRED IN DUCTWORK, PIPING, SUPPORTS, ETC. TO COMPLETE HIS/HER WORK IN A CLEAN, FUNCTIONAL INSTALLATION.
- THIS CONTRACTOR IS RESPONSIBLE FOR ALL SLEEVES FOR PENETRATIONS THROUGH SLABS AND BEAMS REQUIRED BY THE INTENT OF THE SCOPE OF WORK INDICATED ON THE DRAWINGS COORDINATION OF QUANTITY AND LOCATIONS OF ALL PENETRATIONS SHALL BE DONE BY THIS CONTRACTOR DURING THE SHOP DRAWINGS PROCESS FOR REVIEW BY THE STRUCTURAL ENGINEER.
- 8. REFER TO FOOD SERVICE DRAWINGS FOR EQUIPMENT LAYOUT AND CONNECTION REQUIREMENTS FOR ALL FOOD SERVICE AREAS
- THROUGHOUT THE BUILDING. 9. ALL GREASE EXHAUST DUCTWORK (KX) SHALL BE PROVIDED WITH FIRE RATED WRAP (FIRE MASTER 2-HR OR EQUIVALENT.) RATED DUCTWORK WRAP SHALL EXTEND FROM HOOD TO EXTERIOR TERMINATION REGARDLESS OF ANY CHASE CONSTRUCTION THROUGH WHICH DUCT IS ROUTED. PROVIDE RATED ACCESS DOORS IN DUCT WRAP AT ALL CLEANOUT LOCATIONS.
- 10. SLOPE ALL HORIZONTAL GREASE DUCTWORK AT  $\frac{1}{4}$ "/FT UNLESS NOTED THERWISE. PROVIDE CLEANOUTS AT ALL RISERS, LOW POINTS, TRANSITIONS AND OTHER CODE REQUIRED LOCATIONS. MAKE ADEQUATE ALLOWANCES FOR UNFORESEEN TRANSITIONS, TURNS, ETC. WHICH MAY RESULT FROM SYSTEM CONFLICTS.
- 11. ALL COMBINATION FIRE/SMOKE DAMPERS SHALL HAVE END SWITCH PACKAGE FOR REMOTE STATUS MONITORING, REMOTE OVERRIDE CAPABILITY AND HIGH LIMIT TEMPERATURE SENSOR PREVENTING DAMPER REOPENING WHEN DUCT TEMPERATURE IS ABOVE DAMPER'S UL555S LISTING.
- RATED ASSEMBLY DUCT PENETRATIONS:
- AND EXHAUST DUCTS PENETRATING SHAFT ENCLOSURES, FLOOR PENETRATIONS, 1-HR AND 2-HR FIRE BARRIERS, AND SMOKE BARRIERS. REFER TO ARCHITECTURAL PLANS, A-200 SERIES SHEETS, FOR RATED ASSEMBLY TYPES AND LOCATIONS. PHASING AND PREMIUM TIME:
- ALL CONTRACTORS SHALL REVIEW DRAWINGS FOR PHASING PLAN. UNIT REPLACEMENTS SHALL OCCUR ON A ONE BY ONE BASIS, EACH UNIT REPLACEMENT IDENTIFIES A DIFFERENT PHASE OF THIS PROJECT.
- 2. WORK IN THE PRIMARY WORK AREA SHALL BE COMPLETED ON STRAIGHT TIME, UNLESS NOTED OTHERWISE, WITH THE EXCEPTION OF WORK THAT IMPACTS THE OPERATION OF EXISTING FUNCTIONING MEP SYSTEMS.
- WORK REQUIRING SHUTDOWN OF EXISTING SYSTEMS SHALL BE ARRANGED FOR CONTINUOUS PERFORMANCE, WITH MULTIPLE CREWS, TO LIMIT THE DURATION OF THE SHUTDOWN TO THE MINIMUM POSSIBLE PERIOD. ALL PREP-WORK SHALL BE COMPLETED PRIOR TO SYSTEM SHUT-DOWN, ALL MATERIALS SHALL BE ON SITE PRIOR TO THE START OF WORK REQUIRING A SHUT-DOWN OR CLOSING OF A SPACE OUTSIDE THE PRIMARY WORK AREA. ALL WORK REQUIRING A SHUTDOWN SHALL BE COORDINATED WITH THE FACILITY AT LEAST ONE WEEK IN ADVANCE.
- ALL WORK OUTSIDE OF THE PRIMARY WORK AREA ASSOCIATED WITH DEMOLITION AND RESTORATION OF WALLS. CEILINGS, AND FINISHES. REMOVAL AND REPLACEMENT OF CEILING TILE, CLEAN-UP, DEBRIS REMOVAL, SAFETY ISOLATION OF WORK AREA, ETC. SHALL BE THE RESPONSIBILITY OF EACH TRADE CONTRACTOR

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Sheet Number

- M-700.PH2 M-701.PH2 M-702.PH2 M-703.PH2

- PROVIDE COMBINATION FIRE/SMOKE DAMPERS IN ALL SUPPLY, RETURN

MECHANICAL DRAWING LIST - PHASE 2	P12-ISSUED FOR 75% SD       12/11/20         DESCRIPTION       DATE         REVISIONS AND REPORT AND VERIFY ALL DIMENSIONS AND REPORT ANY OMISSIONS OR DISCREPANCIES TO THE ARCHITECT BEFORE DO NOT SCALE THE DRAWINGS!         L       Image: mail of the mai
SCAL	/8" = 1'-0"
	J. NO. 1605 M-000.PH2

										AI	r hand	DLING	UNIT SCHE	DULE																		
					SUPPLY F	FAN		HEATING C	APACITY (STEA	AM)	HEA	TING CAPAC	CITY (HEATING WATER)			COOLI	ING CAPACIT	Y (CHILLED	OWATER)			PRE-FILTER		FINAL F	FILTER	UNIT	DIMENSIONS				ELECTF	RICAL
CODE	MANUFACTURER/	AREA			ESP TSP CLEA	an max fan motof	R MIN. OSA E	EAT LAT CAP	STEAM	APD E	AT LAT AP	D TOTAL	COIL FINS	WPD E	EAT (°F) 🛛 LAT	Г (°F) 🛛 АРС	D TOTAL	SENS	COIL F	INS	WPD	APD ("	W.C.)		APD ("W.C.)	LENGTH	WIDTH HEI	IGHT WE	ight Af	U		
(AHU)	MODEL NO.	SERVED	LOCATION	CFM	TYPE ("W.C) ("W.C) HP BHF	P* BHP RPM RPM	(CFM) (	(°F) (°F) MBH	LBS/HR PS	I ("W.C.) (	°F)   (°F) ("W.	.C.) MBH	ROWS PER IN GPM	1 (FT) D	DB WB DB	WB ("W.C	C.) MBH	MBH	ROWS   PI	ER IN GPM	(FT)   1	YPE INITIAL	FINAL	TYPE IN	IITIAL FINAL	(IN)	(IN)	(IN) (I	BS) CON	FIG VOLT	PH HZ FL	A MCA
AHU-31-8	CARRIER / 39MN SIZE 21W	31 - KITCHEN MAKE UP AIR	LEVEL 48 - MEZZ	10,000	15		10,000						N/A																	460	3 60	
AHU-61-1	CARRIER/ 39MN SIZE 17W	61 - NE TRUMBULL FOOD HALL	LEVEL 61 - MER	9,000	15				N/A																					460	3 60	
AHU-61-2	CARRIER/	61 - MAIN ENTRY	61 - MAIN ENTRY	5,000	15				N/A																					460	3 60	
. PROVIDE 3. INSTALL U	PREMIUM EFFICIENCY MOTORS FOR FACTORY MOUNTED COMBINATION NITS WITH ADEQUATE CLEARANCE	MOTORS 1 HP AND OVER PER NEMA S VFD/DISCONNECT WIRED TO MOTORS A FOR COIL PULL , FILTER REPLACEMENT DE SCHEDULED EXTERNAL STATIC PRE	AND FACTORY COMMISSION FAND TO FULLY OPEN ACCE	ed with Auxili. SS Doors. Pr	ARY CONTACTS AND HOA SWITCH OVIDE A MINIMUM OF 3 FEET CLEAN	RANCE IN FRONT OF DISC	ONNECTS SWITCH	HES AND CONTROL	PANELS. COM	IPLY FULLY WIT	TH NEC.																					

6. CHILLED WATER: EWT=43°F LWT=53°F 0% PROPYLENE GLYCOL, 0.0005 FOULING FACTOR. 7. STEAM COILS: 5 PSI 8. HEATING HOT WATER: EWT=180°F LWT=160°F 0% PROPYLENE GLYCOL, 0.0005 FOULING FACTOR. 9. PROVIDE DUCT SMOKE DETECTORS PER CODE IN THE SUPPLY AND RETURN AIR OF ALL UNITS 2000 CFM OR GREATER. RE: SPECIFICATIONS. INITIALIZATION OF A DUCT SMOKE DETECTOR SHALL STOP RESPECTIVE FANS. 10. PROVIDE MANUAL RESET FREEZE STAT DOWNSTREAM OF HEATING COIL.

11. PROVIDE ANGLED 2" PRE-FILTER AND CARTRIDGE 12" FINAL FILTER RACK.

12. PROVIDE STAINLESS STEEL DRIP PANS AND STAINLESS STEEL COOLING COIL SUPPORTS. 13. ALL FANS SHALL BE DELIVERED IN SECTIONS. ANY FURTHER FIELD DISASSEMBLY AND UNIT REASSEMBLY SHALL BE DONE BY THE CONTRACTOR UNDER THE SUPERVISION OF THE MANUFACTURER. THE LARGEST SECTIONS TO BE OF A SIZE THAT WILL PASS THROUGH A 38" DOORWAY. FANS SHALL BE DYNAMICALLY REBALANCED IN THE FIELD. 14. PROVIDE INTERNAL VIBRATION ISOLATION. SUSPEND UNIT FROM STRUCTURE ABOVE. 15. PROVIDE FACTORY INSTALLED AND WIRED TO AN EXTERIOR MOUNTED SWITCH, 120V POWER CONNECTIONS BY DIVISION 26 MARINE LIGHTS IN FAN AND ACCESS SECTIONS.

16. PROVIDE SINGLE POINT ELECTRICAL CONNECTION. 17. PROVIDE MAGNEHELIC FILTER GAUGES.

18. ESP IS THE SUPPLY PRESSURE AT THE PLENUM DISCHARGE, AFTER THE FINAL FILTERS.

\*BHP VALUE FOR CLEAN FILTER USED FOR ENERGY COMPLIANCE ONLY.

CONFIGURATION:

I. VARIABLE VOLUME HORIZONTAL DRAW THRU UNIT, ANGLED FILTER SECTION, ACCESS SECTION, STEAM HEATING COIL, ACCESS SECTION, COOLING COIL, ACCESS SECTION AND SUPPLY FAN WITH VFD. COILS SHALL BE SIZED FOR 100% OA. II. VARIABLE VOLUME HORIZONTAL DRAW THRU UNIT, ANGLED FILTER SECTION, ACCESS SECTION, HEATING HW HEATING COIL, ACCESS SECTION, ACCESS SECTION AND SUPPLY FAN WITH VFD. COILS SHALL BE SIZED FOR 100% OA.

REMARK NOTES:

### GRILLE REGISTER DIFFUSER SCHEDULE MANUFACTURER/ SERVICE CODE MODEL NO. TYPE ACCESSORIES SUPPLY AIR Α TITUS / OMNI PLAQUE PROVIDE OPPOSED BLADE DAMPER WHERE NOTED В TITUS/ 300RL RETURN GRILLE PROVIDE OPPOSED BLADE DAMPER WHERE NOTED GENERAL NOTES 1. SEE PLANS FOR CFM AND NECK SIZES.

2. MAXIMUM NOISE CRITERIA (NC) SHALL BE 30 UNLESS OTHERWISE NOTED. 3. COLOR TO BE COORDINATED WITH ARCHITECT PRIOR TO ORDERING.

4. MATERIAL IS STEEL UNLESS OTHERWISE NOTED. 5. PROVIDE BALANCING DEVICE FOR ALL GRILLES, REGISTERS, AND DIFFUSERS UNLESS OTHERWISE NOTED.

BALANCING DEVICES SHALL BE LOCATED AS FAR FROM THE GRILLES AS POSSIBLE. 6. CONTRACTOR TO CONFIRM GRILLES BORDER TYPE WITH ARCHITECTURAL REFLECTED CEILING PLANS PRIOR TO ORDERING.

7. CONTRACTOR SHALL PAINT THE INSIDE OF ALL DUCTWORK THAT IS VISIBLE THROUGH THE GRILL.

REMARKS A. ALUMINUM CONSTRUCTION.

B. PROVIDE CONTINUOUS DIFFUSER FACE ACROSS ACTIVE AND BLANK SECTIONS SHOWN ON PLANS. REFER TO ARCHITECTURAL DRAWING FOR TOTAL DIFFUSER LENGTH. PROVIDE DIFFUSER PLENUMS AT ACTIVE SECTIONS PER PLANS. C. PROVIDE END CAPS, END BORDERS, OPEN BORDERS, AND ALIGNMENT CLIPS AS REQUIRED FOR CONTINUOUS DIFFUSER.

D. PROVIDE PLENUMS BEHIND ALL DUCTED LINEAR DIFFUSERS AND RETURNS. E. PROVIDE ADJUSTABLE AIR SCOOP DAMPER FOR ALL SIDEWALL INSTALLATIONS.

		KITCHEN	EXHAUS	Γ FAN	SCHE	EDU
CODE (KX)	MANUFACTURER/ MODEL NO.	SERVICE	LOCATION	TYPE	CFM	ESP "W.C. (ALT.)
KX-1	GREENHECK	LEVEL 31 - FULL SERVICE KITCHEN	ROOF		10,000	(/ (_ 1.)
2. ALL CUF	TYPE: B = BELT-PROVIDE ADJUSTA RBS SHALL BE FACTORY MADE, 14	BLE SHEAVE UNLESS OTHERWISE NOTED. INCH HIGH INSULATED UNLESS OTHERWISE NOTE LIARY CONTACTS AND HOA SWITCH ON ALL THREE			J	
SERVEI 4. PROVID	D FROM MOTOR CONTROL CENTE DE HIGH EFFICIENCY MOTORS. (RE LISTED FOR GREASE EXHAUST.	R.			•	

6. PROVIDE BELT AND MOTOR GUARD.

7. PROVIDE GREASE DRAIN SYSTEM WITH GREASE TRAP. 8. ALL EXTERIOR DISCONNECT SWITCHES SHALL BE NEMA 4X TYPE.

9. REFER TO CONTROL DRAWINGS FOR FAN CONTROL REQUIREMENTS.

REMARKS A. EXTEND KITCHEN EXHAUST DISCHARGE A MINIMUM OF 48" FROM FAN DISCHARGE. DISCHARGE MUST BE A MINIMUM OF 40" ABOVE ANY PART OF THE ROOF WITHIN 10' OF FAN DISCHARGE. MOUNTING (MTG):

1. PROVIDE FACTORY MANUFACTURED ROOF CURB AND ALL ACCESSORIES REQUIRED FOR COMMERCIAL KITCHEN GREASE EXHAUST APPLICATION. ORDER CURB HEIGHT TO MEET MINIMUM REQUIRED EXHAUST OUTLET.

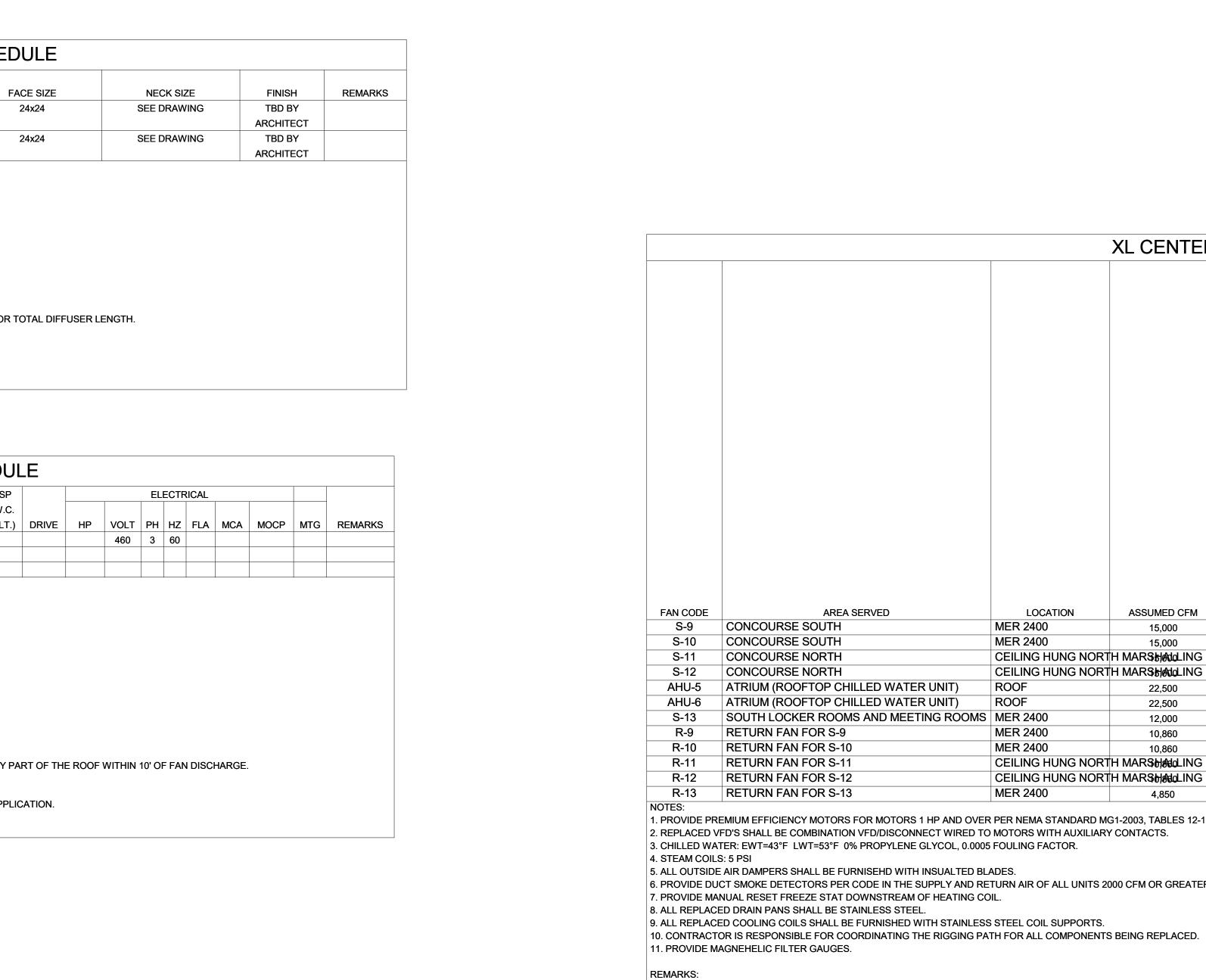
										I	FAN			HEATIN	NG COIL							COO	LING COIL	-		ELECTRICAL	
CODE	MANUFACTURER/				WEIGHT	DIMENSIONS	(IN)	OA SA		MOTOR	MOTOR	CLEAN	ESP	TSP E	AT LAT				APD	EAT (F)	LAT (F)	TOTAL	. SENS		# WPD	APD APD	
(FCU)	MODEL NO.	LOCATION	AREA SERVED	CONFIG	(LBS)	LENGTH WIDTH	HEIGHT	CFM CFM	DRIVE	TYPE	RPM	BHP*	("WC)	("WC) (	F) (F)	мвн	GPM	WPD	(IN)	DB WB	DB WE	B MBH	MBH	GPM	ROWS (FT)	(IN) HP VOLT PH HZ	Z FLA REM
CU-A	CARRIER	SEE PLANS	SEE PLANS					600																		460 3 60	)
-CU-B	CARRIER	SEE PLANS	SEE PLANS					1,000																		460 3 60	)
-CU-C	CARRIER	SEE PLANS	SEE PLANS					1,500																		460 3 60	)
FCU-D	CARRIER	SEE PLANS	SEE PLANS					2,000																		460 3 60	)

1. PROVIDE PREMIUM EFFICIENCY MOTORS FOR MOTORS 1 HP AND OVER PER NEMA STANDARD MG1-2003, TABLES 12-12 AND 12-13. 2. CHILLED WATER: EWT = 43°F, LWT = 53°F,0% PROPYLENE GLYCOL. 3. HEATING HOT WATER: EWT 180 F, LWT 160 F

4. PROVIDE 2" MERVE 8 PRE-FILTER & 4" MERV 13 FINAL FILTER. 5. PROVIDE FLEXIBLE CONNECTION ON INLET AND OUTLET OF EACH UNIT.

6. PROVIDE CONDENSATE PUMP. POWER FROM DEDICATED 120V DUPLEX RECEPTACLE CIRCUIT. COORDINATE WITH ELECTRICAL ENGINEER. \* BHP VALUE IS BASED ON CLEAN FILTERS. THIS VALUE IS REFLECTIVE OF DESIGN CONDITIONS FOR ENERGY COMPLIANCE ONLY.

REMARK NOTES



A. REPLACE EXISTING SMOKE DAMPER & FIRE DAMPER AT THE INLET OF THE FAN WITH FIRE/SMOKE DAMPER. B. PROVIDE A MERV 8 FLAT FILTER UPSTREAM OF EXISTING ANGLE FILTER. INCREASE ANGLE FILTERS TO MERV 13. C. INSTALL A PREHEAT COIL UPSTREAM OF THE CHILLED WATER COIL. D. REPLACE EXISTING OUTSIDE AIR AND RETURN AIR DAMPER WITH DAMPERS INSTALLED IN THE MIXED AIR PLENUM. E. RELACE THE LOCATION OF THE SMOKE DAMPER TO A LOCATION WITHIN THE AIR STREAM.

FAN COIL SCHEDULE	(HYDRONIC)
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XL CENTER - PHASE 2 AIR HANDING UNIT/FAN SCOPE         Image: state s		
) ) ) ) ) ) ) ) ) ) ) ) ) )		
CIAL DAMING       MOTOR SIZE         EXISTING MOTOR SIZE       EXISTING MOTOR SIZE         REPLACE ENAIR PAN(S)       EXISTING MOTOR SIZE         REPLACE CHILED WATER COLL(S)       EXISTING MOTOR SIZE         REPLACE STEAM REHEAT COLL(S)       EXISTING MOTOR SIZE         REPLACE STEAM REHEAT COLL(S)       EXISTING FIXING MOTOR SIZE         REPLACE STEAM REHEAT COLL(S)       EXISTING FIXING         REPLACE STEAM REHEAT COLL PIPING TRIM AND       EXISTING FIXING MOTOR SIZE         REPLACE STEAM REHEAT COLL PIPING TRIM AND       EXISTING FIXING MOTOR SIZE         REPLACE STEAM REHEAT COLL PIPING TRIM AND       EXISTING FIXING MOTOR SIZE         REPLACE EXISTING MOTOR RELEAT COLL PIPING TRIM AND       EXISTING FIXING MOTOR SIZE         REPLACE EXISTING FOR IN KIND       REPLACE EXISTING FOR IN KIND         REPLACE EXISTING FOR IN KIND       REPLACE EXISTING FOR IN KIND         REPLACE EXISTING FOR IN KIND       REPLACE EXISTING FOR IN KIND         REPLACE EXISTING FOR IN KIND       REPLACE EXISTING FOR IN KIND         REPLACE EXISTING FOR IN KIND       REPLACE EXISTING FOR IN KIND         REPLACE EXISTING FOR ANDOTOR SIZE MOTOR SIZE MITH VIBRATION SICURISI A ACTURE	EW SFREEZE STATS EW SMOKE DETECTORS	REMARKS
MER 2400 15,000 BELT 25 EXISTING TO REMAIN X X X X X X X X X X X X X X X X X X X		
MER 2400 15,000 BELT 25 EXISTING TO REMAIN X X X X X X X X X X X X X X X X X X X	X X	
CEILING HUNG NORT       H MARSHADLING       BELT       25       EXISTING TO REMAIN       X	X X	
MER 2400         10,860         BELT         10         EXISTING TO REMAIN         X		
MER 2400         10,860         BELT         10         EXISTING TO REMAIN         X		
CEILING HUNG NORTH MARSHADLING     BELT     5     EXISTING TO REMAIN     X		
CEILING HUNG NORTH MARSHADLING     BELT     8     EXISTING TO REMAIN     X     X     X     X     X     X     X     X		
MER 2400         4,850         BELT         5         REPLACE FAN IN KIND         X		

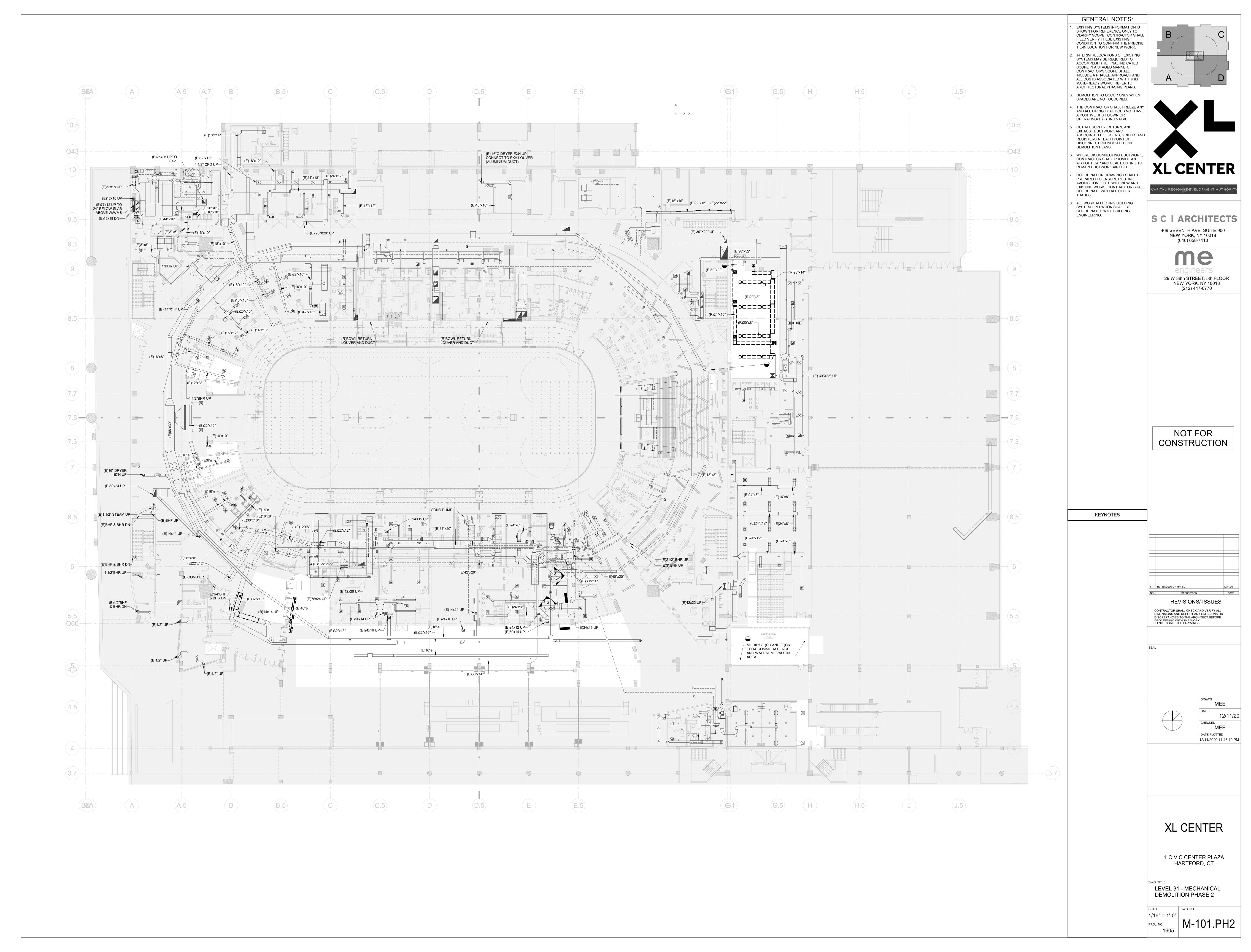
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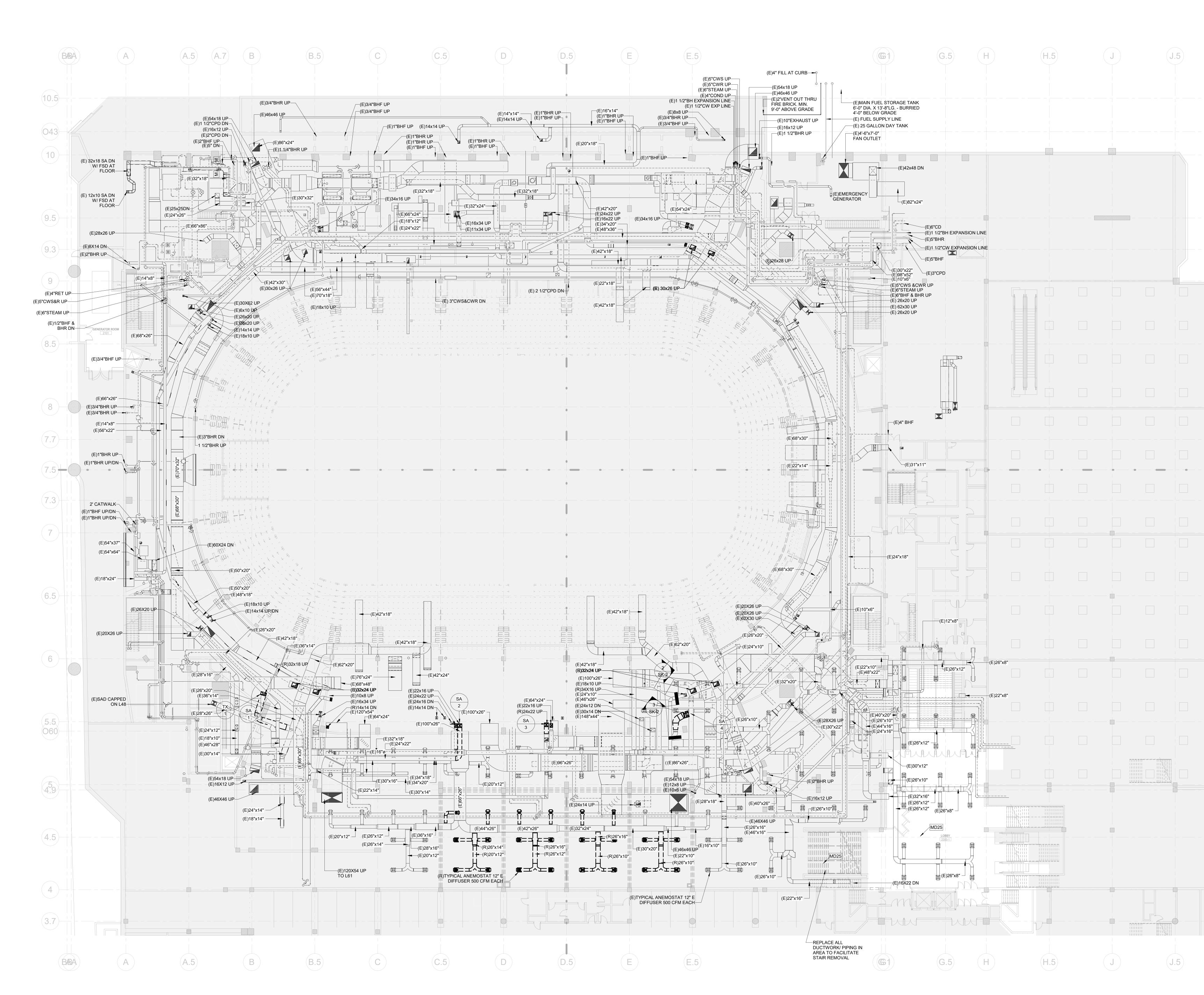
1. PROVIDE PREMIUM EFFICIENCY MOTORS FOR MOTORS 1 HP AND OVER PER NEMA STANDARD MG1-2003, TABLES 12-12 AND 12-13.

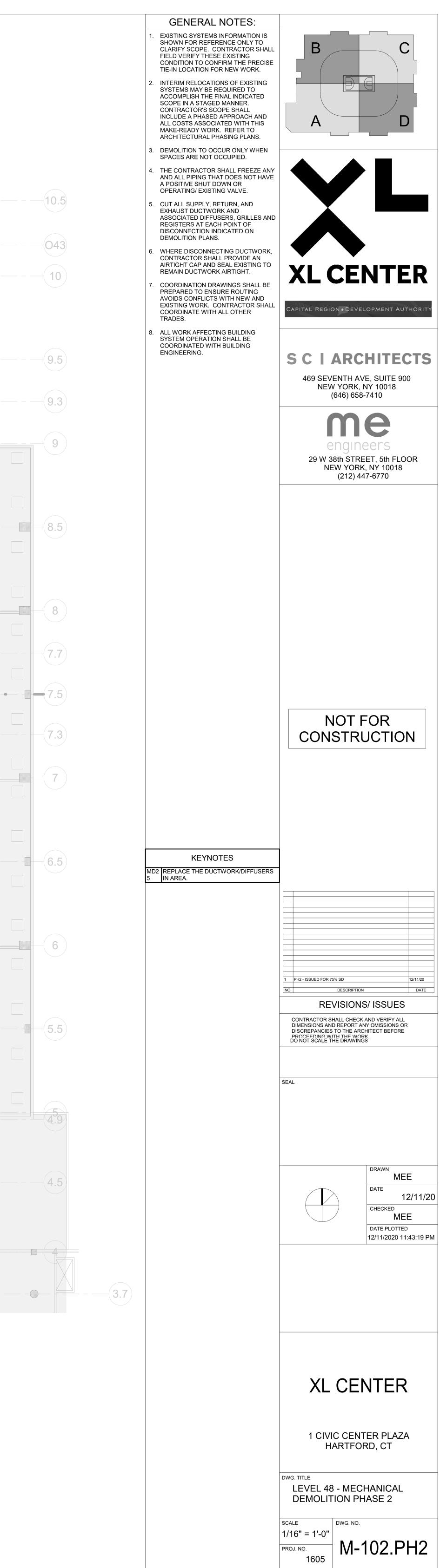
6. PROVIDE DUCT SMOKE DETECTORS PER CODE IN THE SUPPLY AND RETURN AIR OF ALL UNITS 2000 CFM OR GREATER. RE: SPECIFICATIONS. INITIALIZATION OF A DUCT SMOKE DETECTOR SHALL STOP RESPECTIVE FANS.

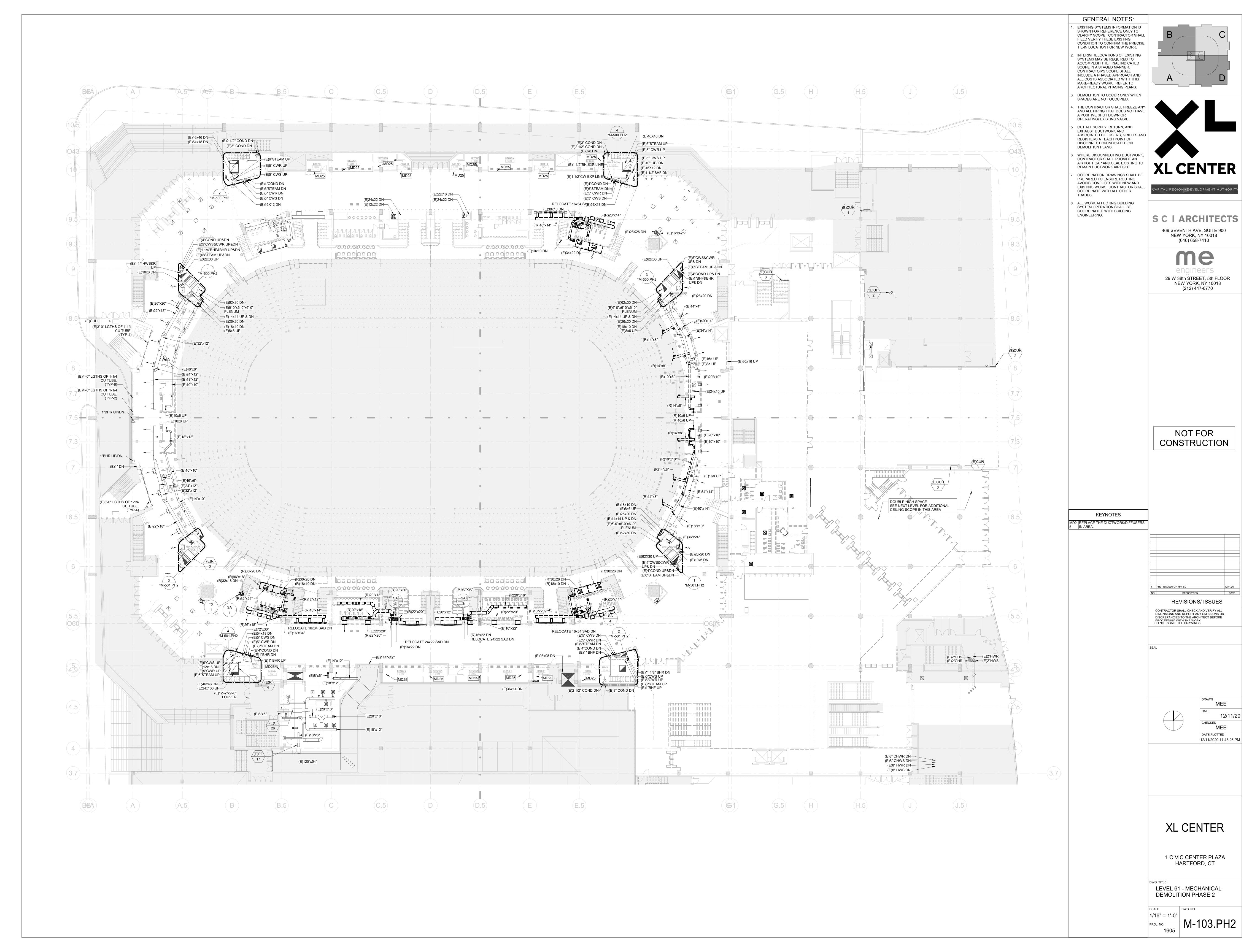
MOCP	REMARKS

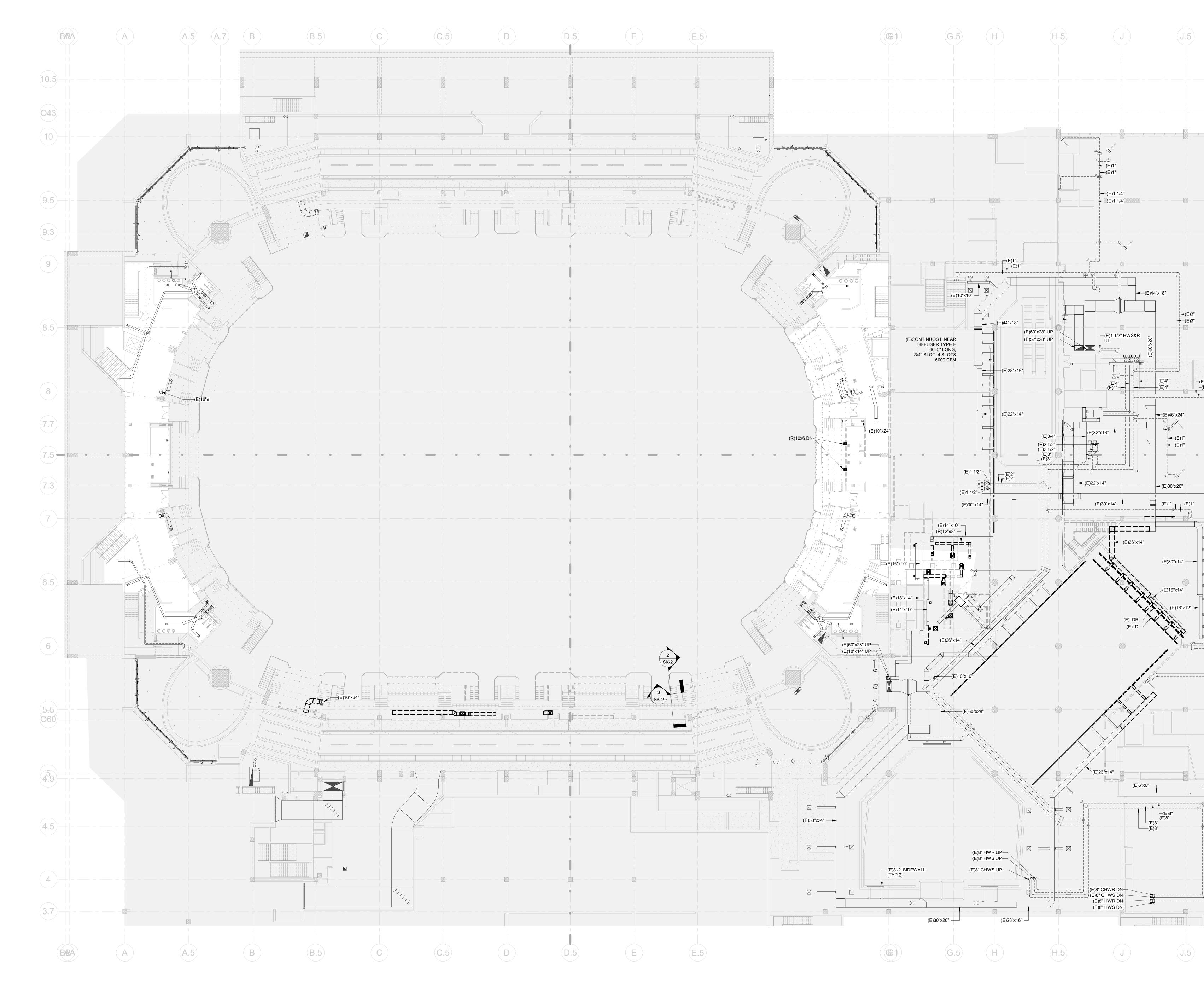
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CAPITAL REGION * DEVELOPMENT AUTHORITY
SCIARCHITECTS 469 SEVENTH AVE, SUITE 900 NEW YORK, NY 10018 (646) 658-7410
29 W 38th STREET, 5th FLOOR NEW YORK, NY 10018 (212) 447-6770
NOT FOR CONSTRUCTION
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CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY OMISSIONS OR DISCREPANCIES TO THE ARCHITECT BEFORE PROCEFDING WITH THE WORK. DO NOT SCALE THE DRAWINGS
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SCALE 1/8" = 1'-0" PROJ. NO. 1605 DWG. NO. <b>M-010.PH2</b>



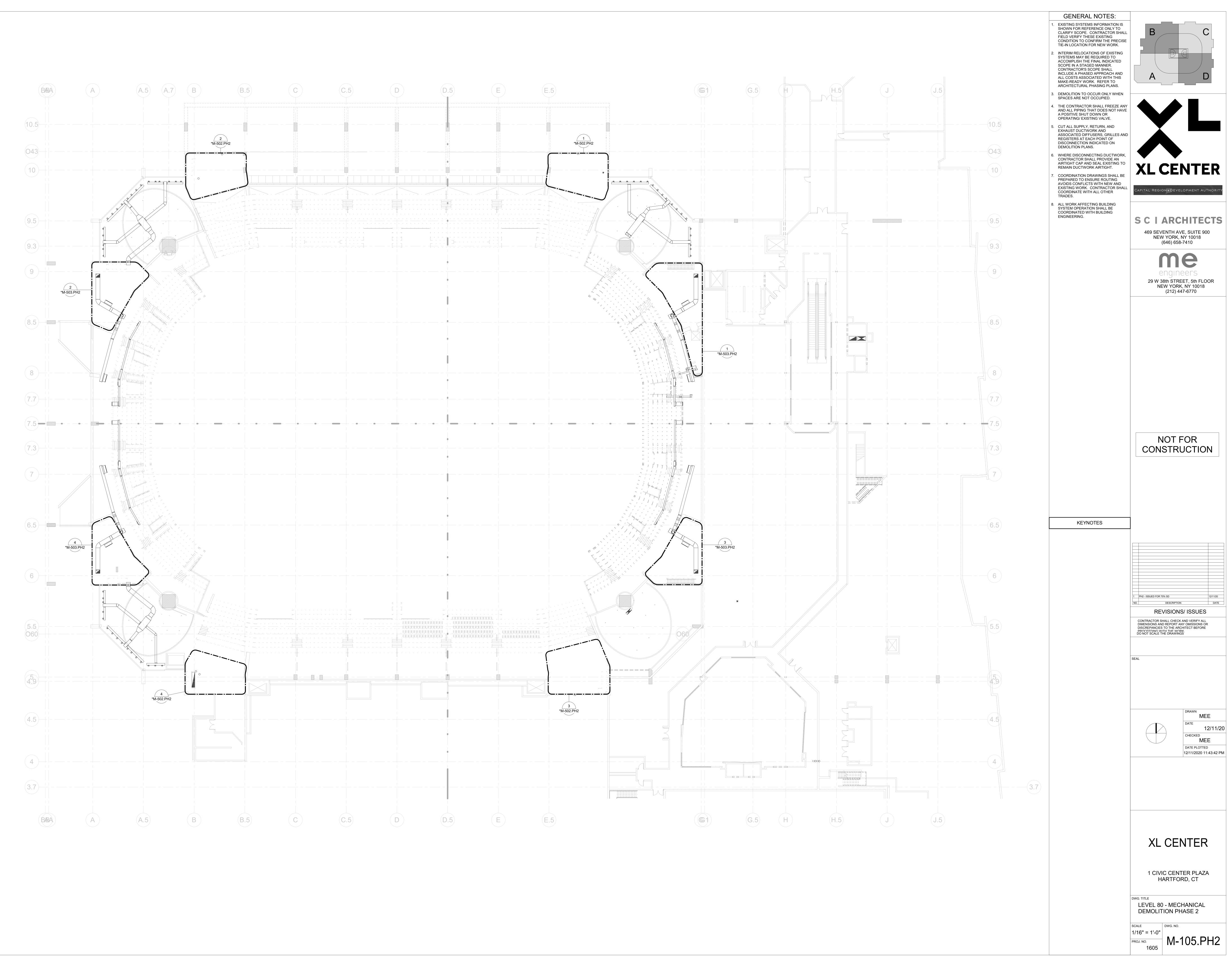




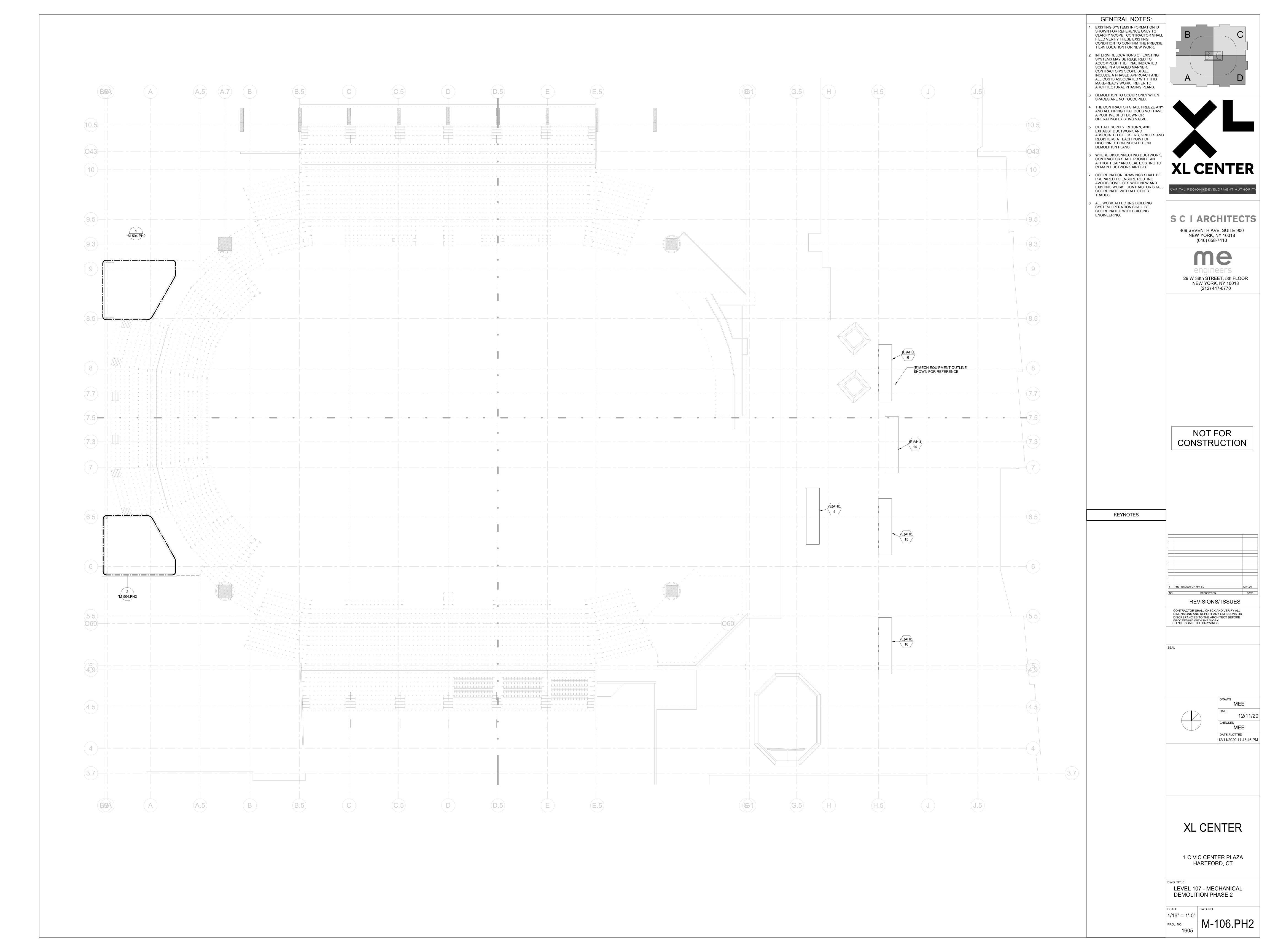


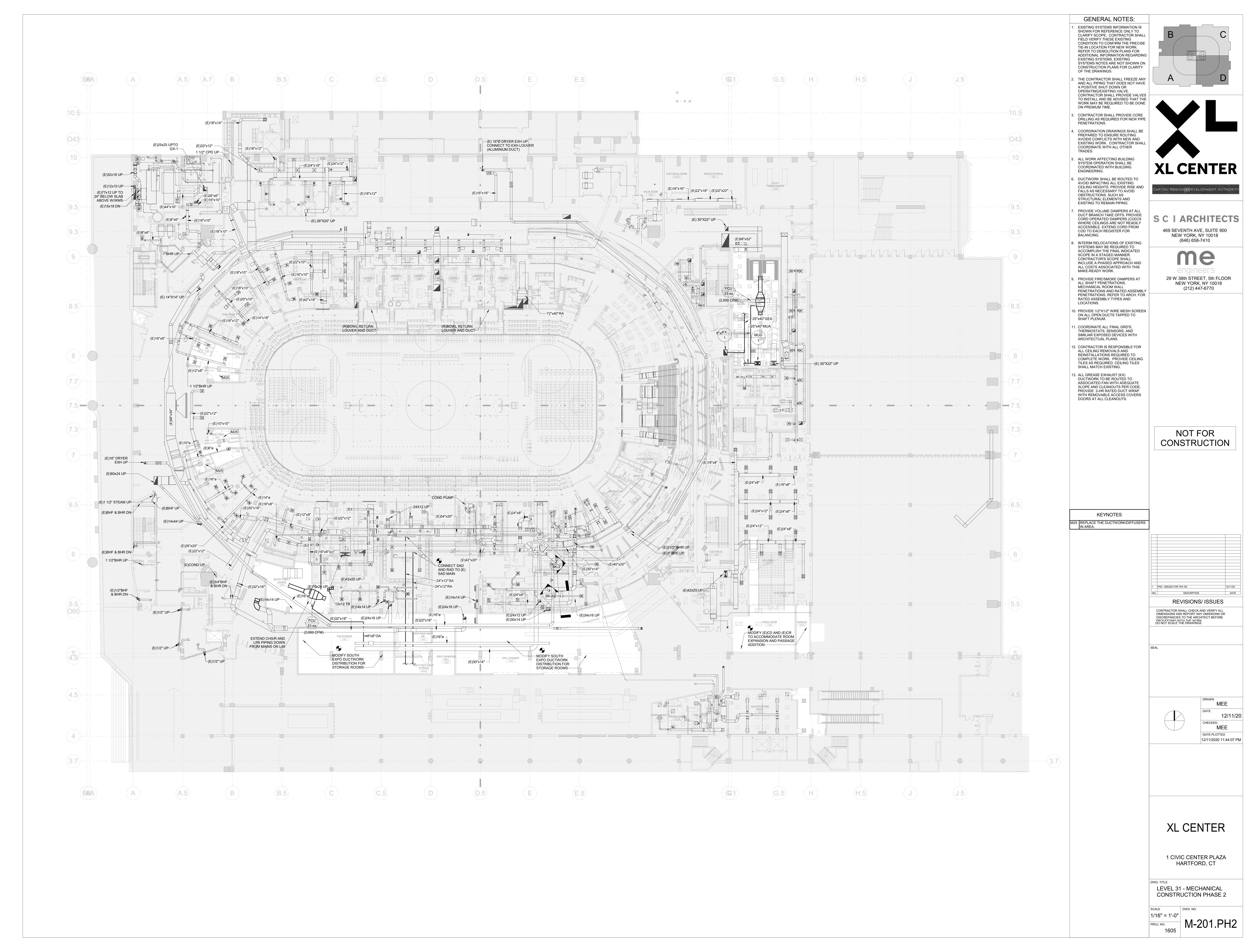


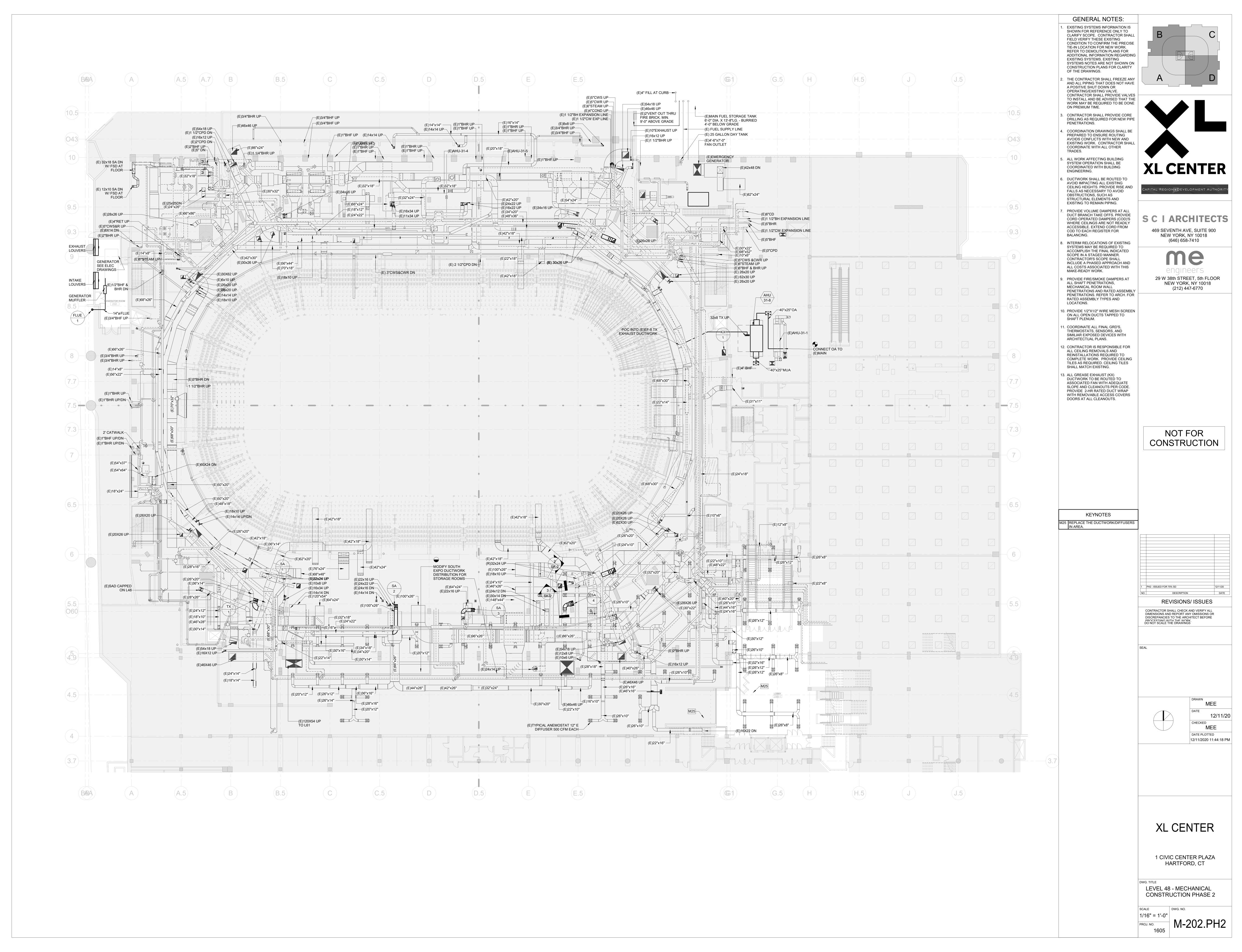
		<ul> <li>GENERAL NOTES:</li> <li>1. EXISTING SYSTEMS INFORMATION IS SHOWN FOR REFERENCE ONLY TO CLARIFY SCOPE. CONTRACTOR SHALL FIELD VERIFY THESE EXISTING CONDITION TO CONFIRM THE PRECISE TIE-IN LOCATION FOR NEW WORK.</li> <li>2. INTERIM RELOCATIONS OF EXISTING SYSTEMS MAY BE REQUIRED TO ACCOMPLISH THE FINAL INDICATED SCOPE IN A STAGED MANNER. CONTRACTOR'S SCOPE SHALL INCLUDE A PHASED APPROACH AND ALL COSTS ASSOCIATED WITH THIS MAKE-READY WORK. REFER TO ARCHITECTURAL PHASING PLANS.</li> <li>3. DEMOLITION TO OCCUR ONLY WHEN SPACES ARE NOT OCCUPIED.</li> <li>4. THE CONTRACTOR SHALL FREEZE ANY AND ALL PIPING THAT DOES NOT HAVE A POSITIVE SHUT DOWN OR OPERATING/ EXISTING VALVE.</li> <li>5. CUT ALL SUPPLY, RETURN, AND EXHAUST DUCTWORK AND ASSOCIATED DIFFUSERS, GRILLES AND REGISTERS AT EACH POINT OF DISCONNECTION INDICATED ON DEMOLITION PLANS.</li> <li>6. WHERE DISCONNECTING DUCTWORK, CONTRACTOR SHALL PROVIDE AN AIRTIGHT CAP AND SEAL EXISTING TO REMAIN DUCTWORK AIRTIGHT.</li> <li>7. COORDINATION DRAWINGS SHALL BE PREPARED TO ENSURE ROUTING AVOIDS CONFLICTS WITH NEW AND EXISTING WORK. CONTRACTOR SHALL</li> </ul>	
		<ul> <li>COORDINATE WITH ALL OTHER TRADES.</li> <li>8. ALL WORK AFFECTING BUILDING SYSTEM OPERATION SHALL BE COORDINATED WITH BUILDING ENGINEERING.</li> </ul>	CAPITAL REGION * DEVELOPMENT AUTHORITY
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	6.5	KEYNOTES	
	6		Image: contractor shall check and verify all         Contractor shall check and verify all         Contractor shall check and verify all
	5.5		DIMENSIONS AND REPORT ANY OMISSIONS OR DISCREPANCIES TO THE ARCHITECT BEFORE PROCEFDING WITH THE WORK. DO NOT SCALE THE DRAWINGS
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			DWG. TITLE LEVEL 71 - MECHANICAL DEMOLITION PHASE 2
			SCALE 1/16" = 1'-0" PROJ. NO. 1605 <b>M-104.PH2</b>
			1605

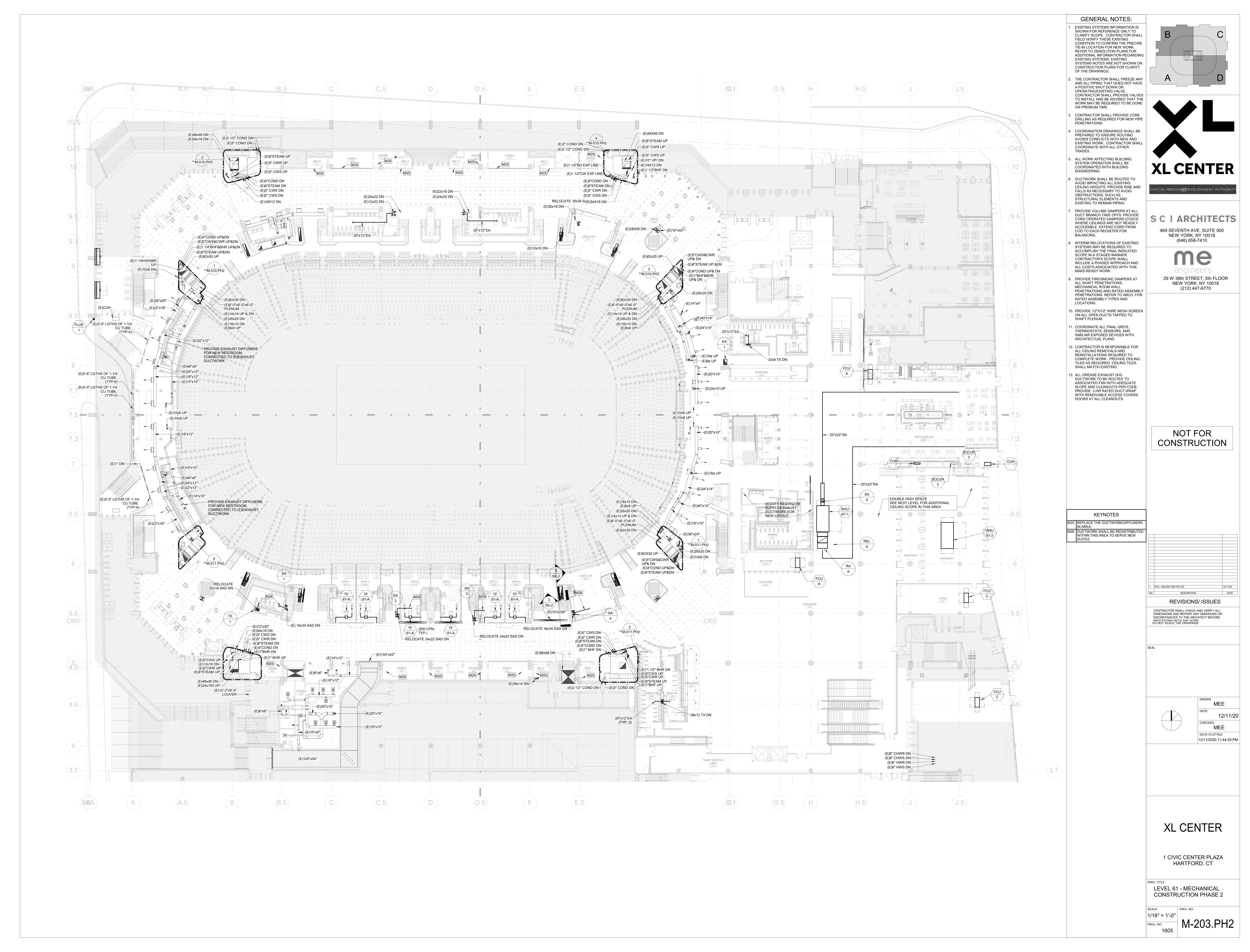


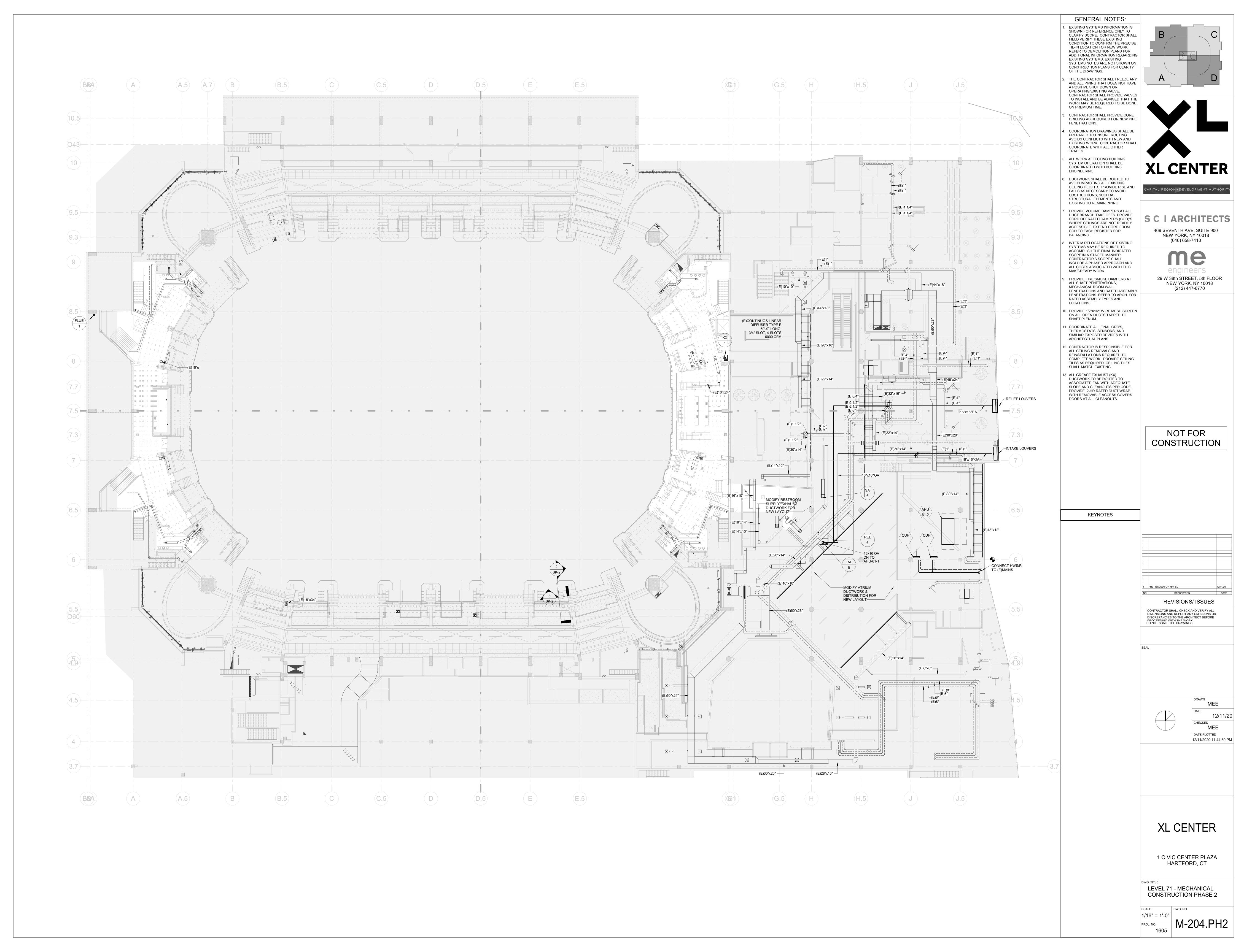
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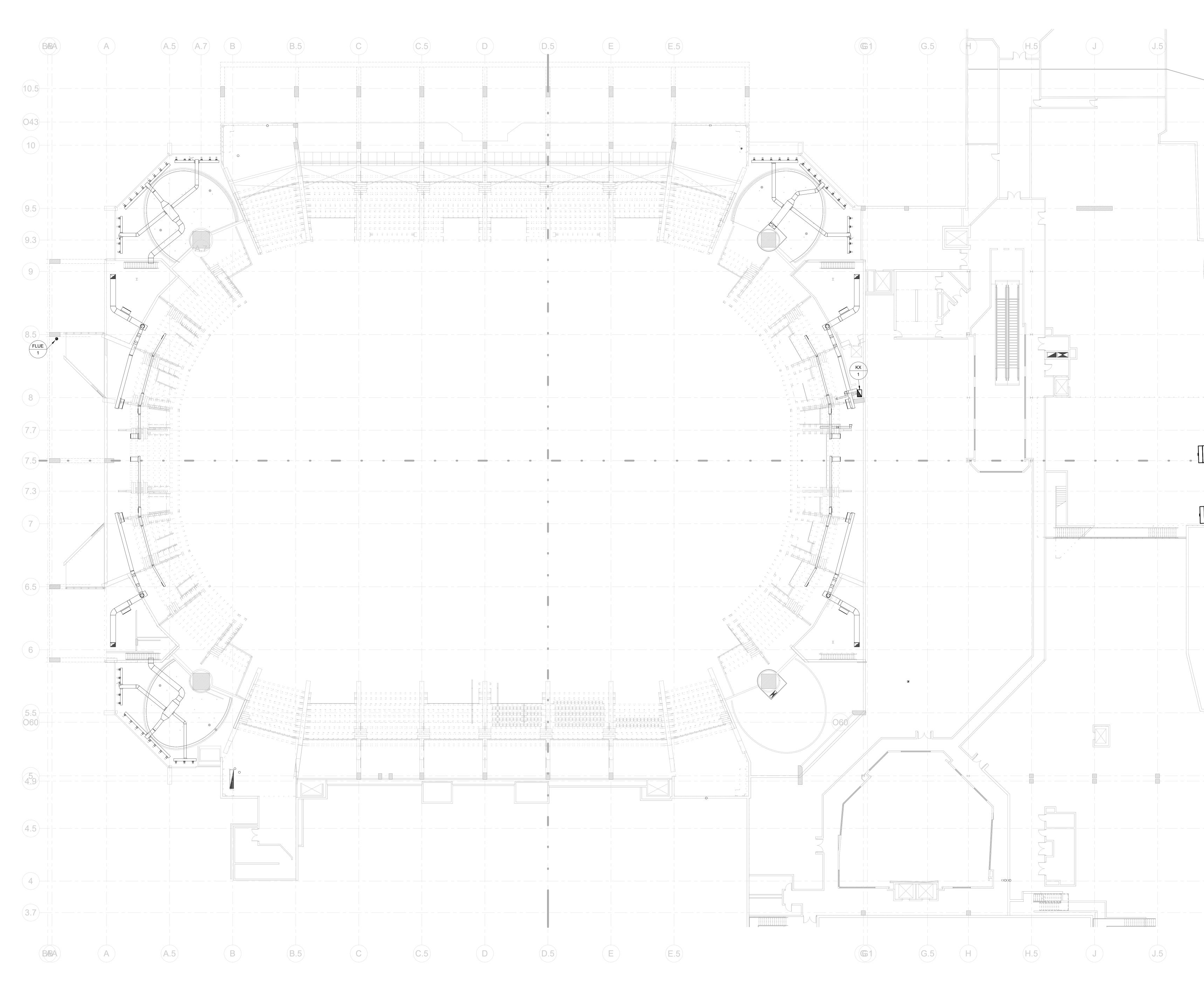


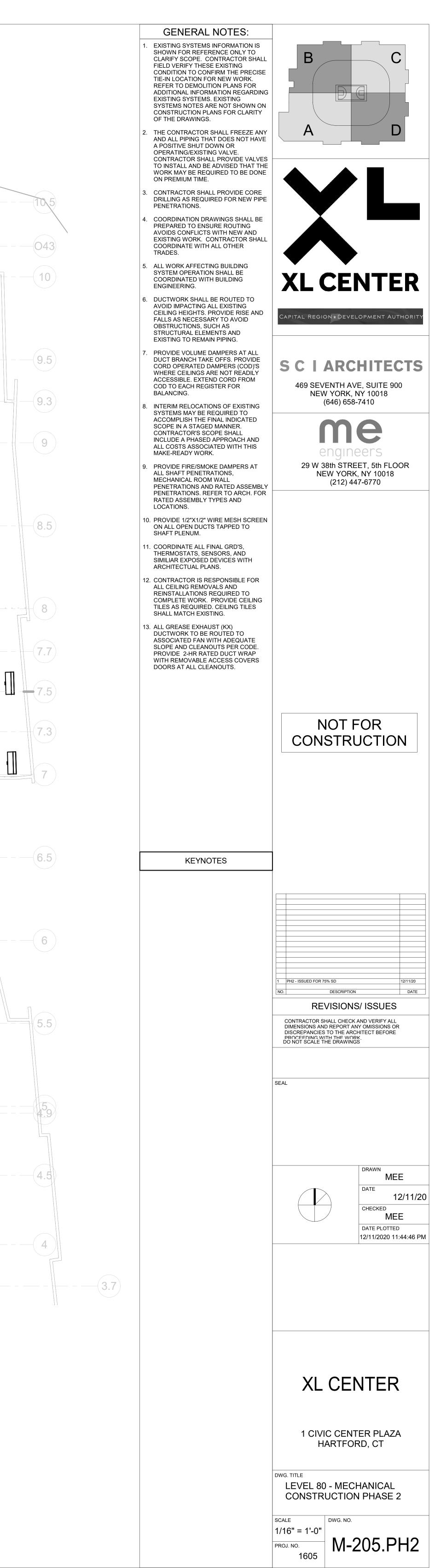


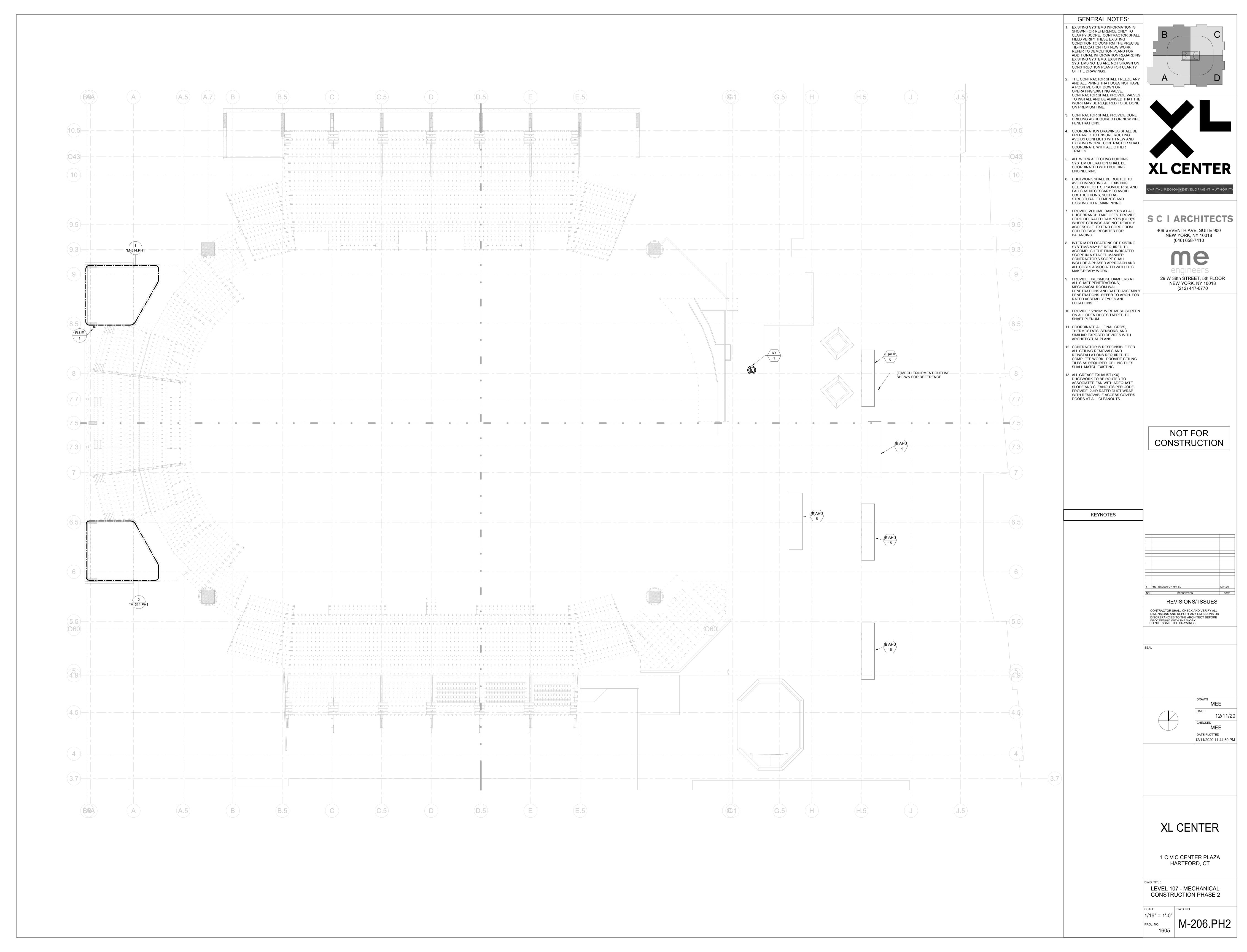


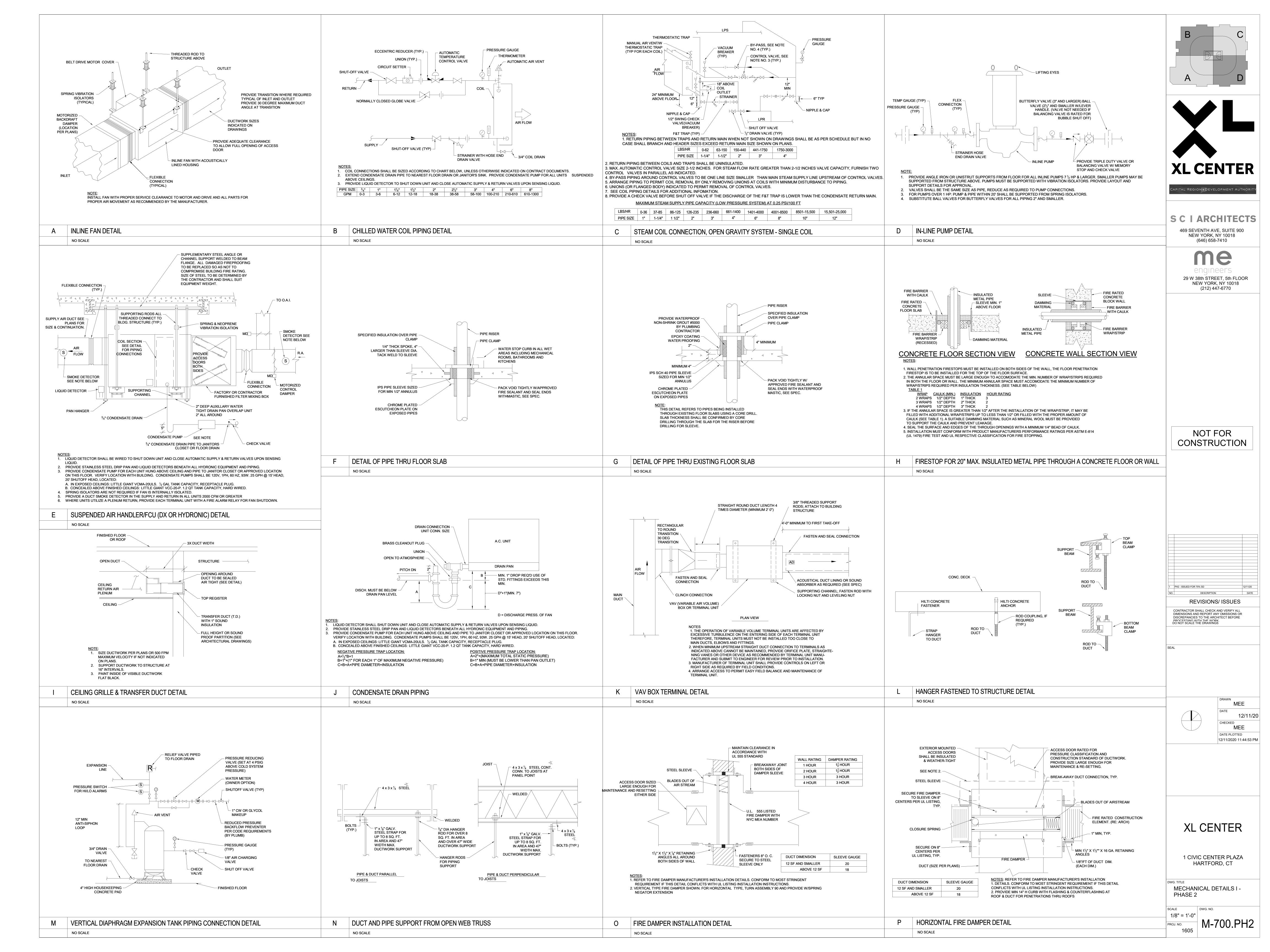


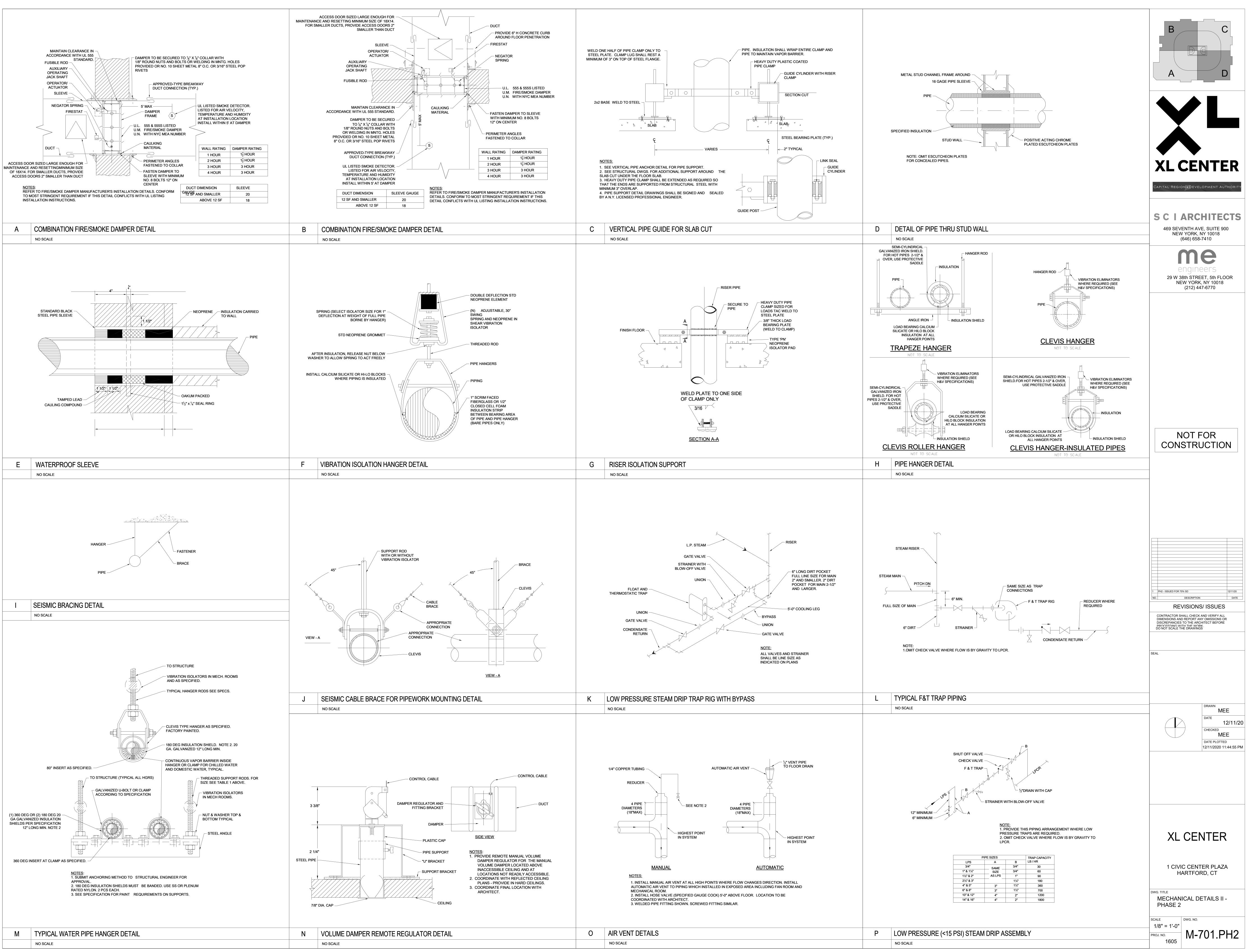


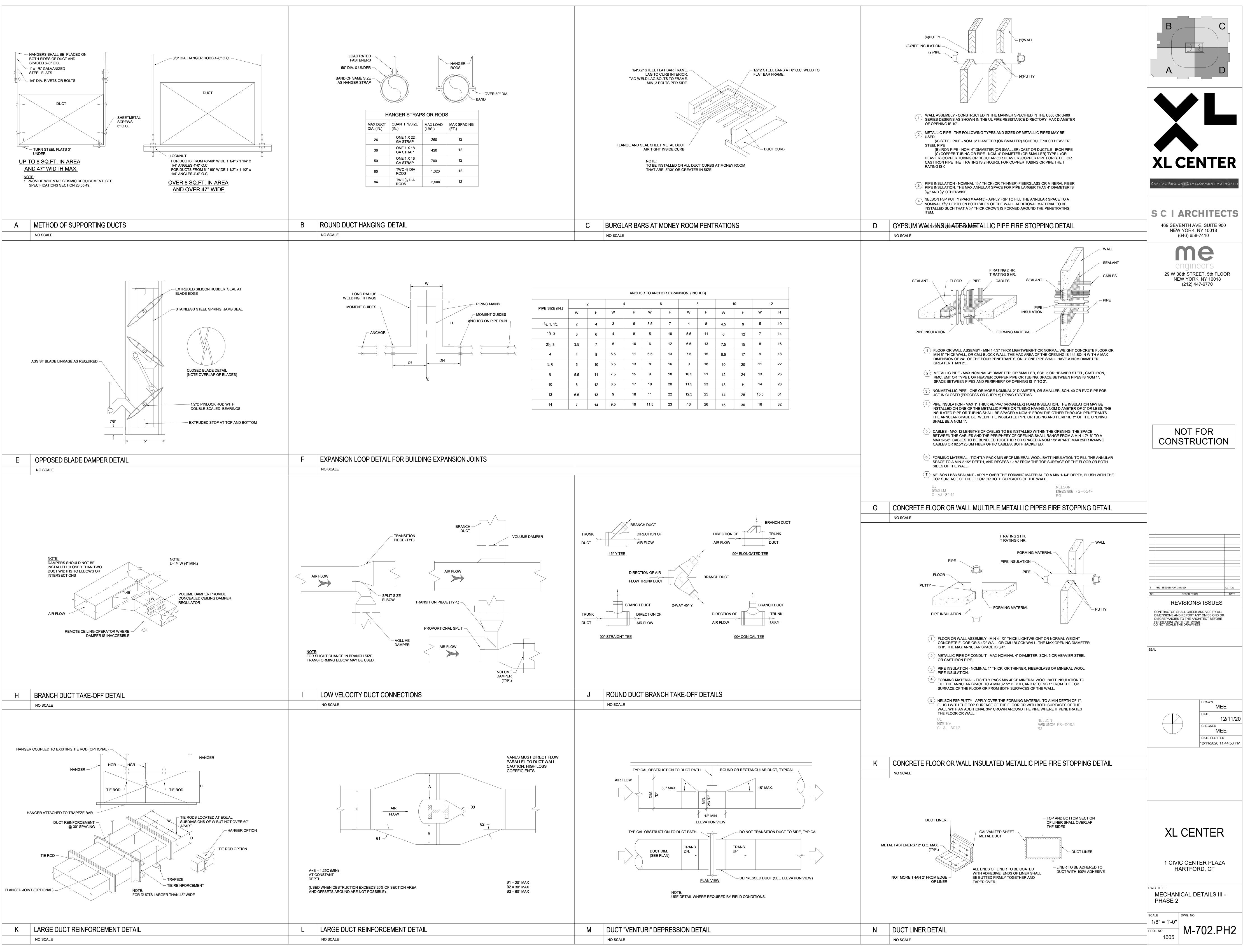




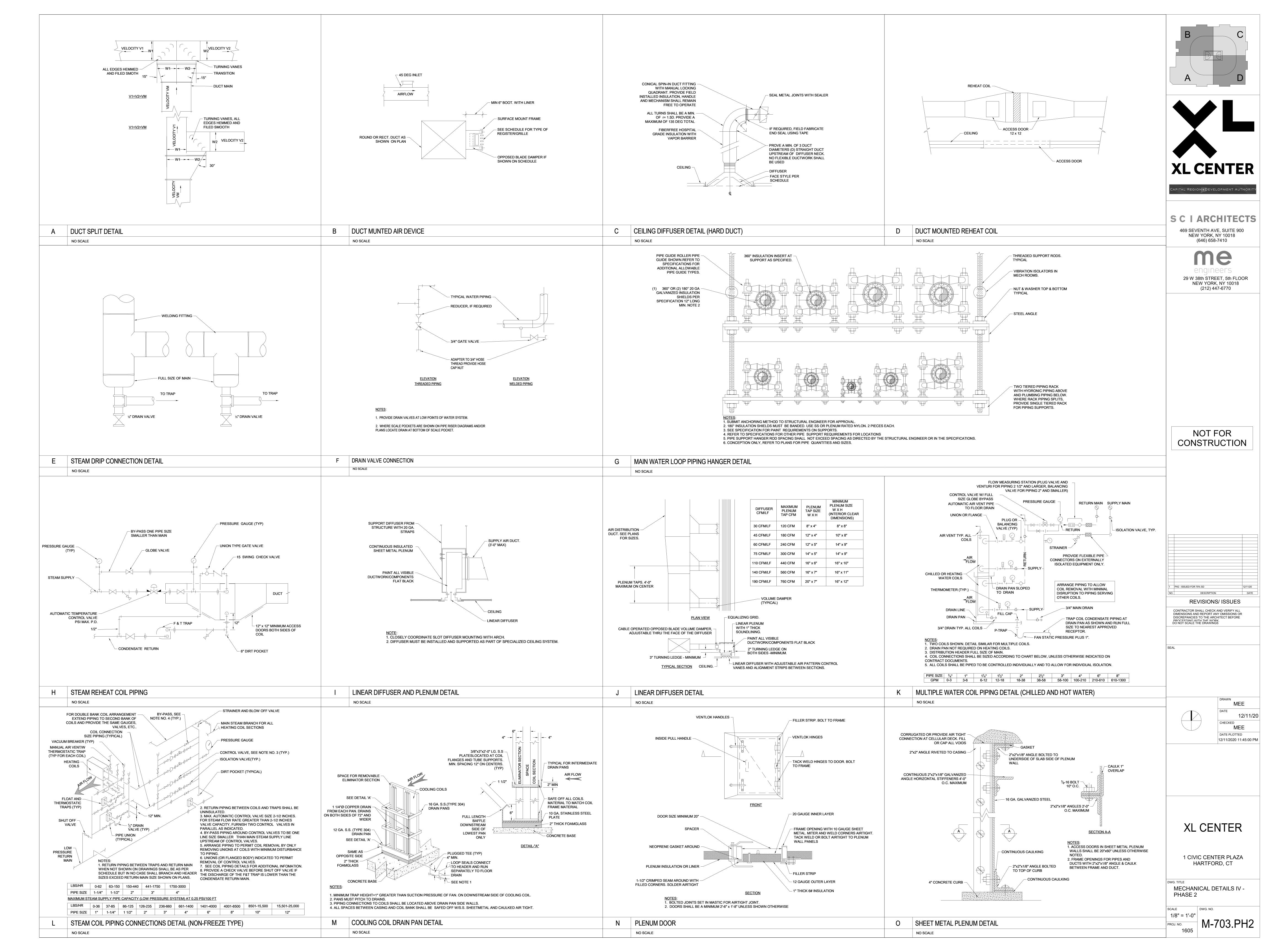


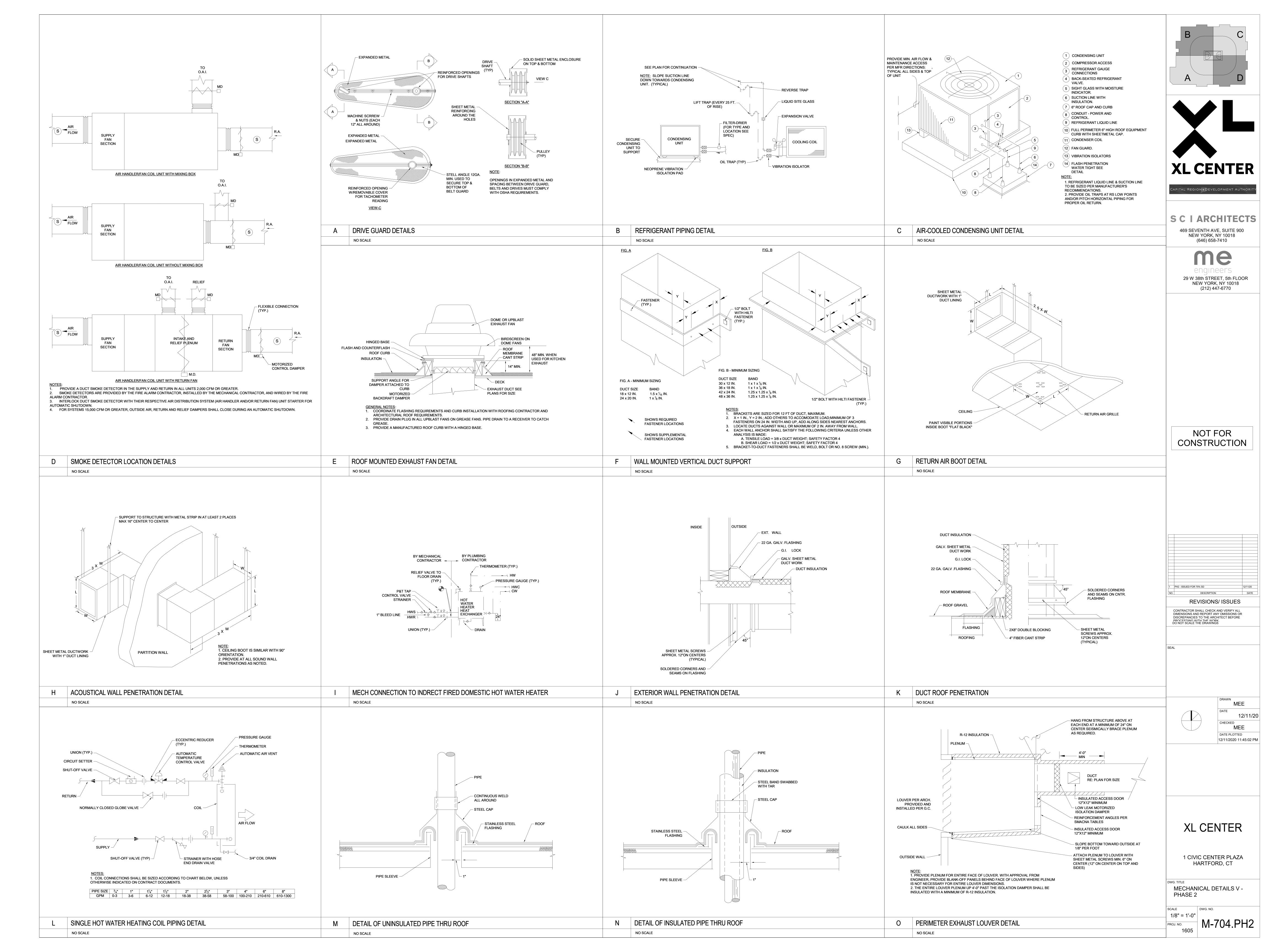


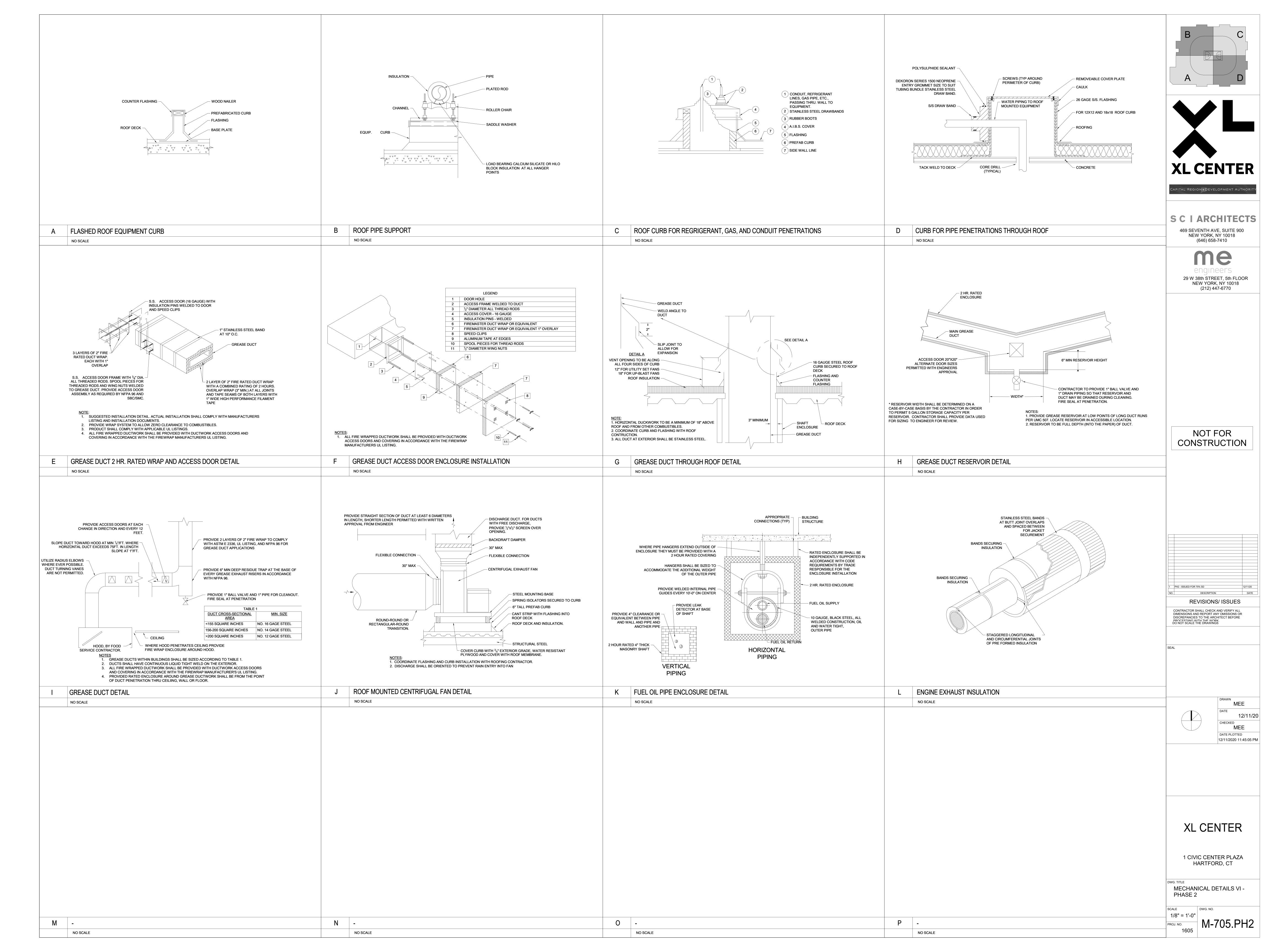




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I CO O CA OND CO SEN CU DI DIG DO DIG DP DIF DPT DIF EA EXI EP ELE	ALOG INPUT ALOG OUTPUT CKDRAFT DAMPER NTROLLER OLING COIL NTROL DAMPER ILLED WATER RETURN ILLED WATER SUPPLY MMUNICATION INTERFACE RBON MONOXIDE SENSOR NDENSATE OVERFLOW RRENT SENSOR SITAL INPUT SITAL OUTPUT FERENTIAL PRESSURE SWITCH FERENTIAL PRESSURE TRANSMITTER HAUST AIR ECTRICAL-PNEUMATIC TRANSDUCER SWITCH ABLE/DISABLE	E/S FCU FAP FS F FT FR HT HC HH HI HWR HWS IR MIN OA OS	FLOW FILTEI FLOW FREEZ HUMIE HEATI HIGH I HARD' HOT V INTER MOTO MINIM OUTS	SWITCI COIL UI ALARM SWITC SWITC SWITCI SWITCI COLLIMIT I WIREI VATEF COCK DRIZEI JUM IDE AI JPANC	H NIT PANEL CH EMBLY ISDUCER T RANSMIT DIL HUMIDITY D INTERF RELAY CONTR R CONTR R	TER SWIT ACE J OL		PE PE PT RA SD SF SD SF SR S/S T TS TT VFE VS WB	F F F S S S S S S S S S S S S S S S S S	PNEUMA PRESSU RETURN RETURN SUPPLY SMOKE I SUPPLY STATIC F SWITCHI START/S THERMC SPACE T TEMPER ALVE (ARIABL (ELOCIT VET BUI	TIC E RE TF AIR FAN AIR DETEO FAN PRESS NG R TOP STAT EMPE ATUR ATUR ATUR E FRE	CTOR SURE ELAY ERATL E TRA E TRA EQUEI NSOR	(BY EI (BY EI TRAN: JRE SE ANSMI ANSMI NCY D	R LECTF SMITT ENSO TTER TTER RIVE	rical Ter R W/AV	'ERAC		ULB
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NO SCALE

	SA >			∘ Bl					N LOOP	AI F	)			AI COD	AI (RH)			
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VAV BOX AIR VALVE I CONTON VAV BOX AIRFLOW FEEDBACK												x	X		10% DEVIATION FROM SETPOINT	X	x	
VAV BOX AIRFLOW SETPOINT																	X	X X
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SPACE OCCUPANCY SENSOR (	S)	<hr/>		X								X	X	X	SPACE TEMPERATURE OUT OF RANGE			X X X X
	VAV BOX AIR VALVE POSITION	POINT DESCRIPTION	POINT DESCRIPTION POINT DESCRIPTION VAVE BOX AIR VALVE POSITION COMMAND VAVE BOX AIR VALVE POSITION CO	ANALOG BI DEDICATED CONTROLLER POINT DESCRIPTION VAV BOX AIR VALVE POSITION COMMAND VAV BOX AIR VALVE POSITION COMMAND	POINT DESCRIPTION	A0 A0 B1 A1 DEDICATED COMMUNICATION LOOP B1 A1 DEDICATED CONTROLLER NPUT N N N N N N N N N N N N N	POINT DESCRIPTION AI POINT DESCRIPTION AUXILIARITION LOOP AI T DEDICATED CONTROLLER ANALOG NPUT N N N N N N N N N N N N N N N N N N N	AO TO BMS COMMUNICATION LOOP AI BI AI DEDICATED CONTROLLER POINT DESCRIPTION POINT DESCRIPTION AVALOG AVALOG BINARY TEMPERATUR ANALOG A	A0 T DEMS COMMUNICATION LOOP A1 B1 A1 DEDICATED CONTROLLER T DENARY T DENARY	AINALOS BI AI DEDICATED CONTROLLER AINALOS DEDICATED CONTROLLER AINALOS DEDICATED CONTROLLER AINALOS DEDICATED CONTROLLER AINALOS DEDICATED CONTROLLER AINALOS DEDICATED CONTROLLER AINALOS DEDICATED CONTROLLER AINALOS DEDICATED CONTROLLER AINALOS DEDICATED CONTROLLER AINALOS DEDICATED CONTROLLER AINALOS DEDICATED CONTROLLER AINALOS DEDICATED CONTROLLER AINALOS DEDICATED CONTROLLER AINALOS AINALOS AINALOS AINALOS DEDICATED CONTROLLER AINALOS AI	A BI AI DEDICATED DEDICATED CONTROLLER AI DEDICATED CONTROLLER AI DEDICATED CONTROLLER AI DEDICATED CONTROLLER AI DEDICATED CONTROLLER AI DEDICATED CONTROLLER AI DEDICATED CONTROLLER AI DEDICATED CONTROLLER AI DEDICATED CONTROLLER AI DEDICATED CONTROLLER AI DEDICATED CONTROLLER AI AI DEDICATED CONTROLLER AI AI AI DEDICATED CONTROLLER AI AI AI AI AI AI AI AI AI AI							

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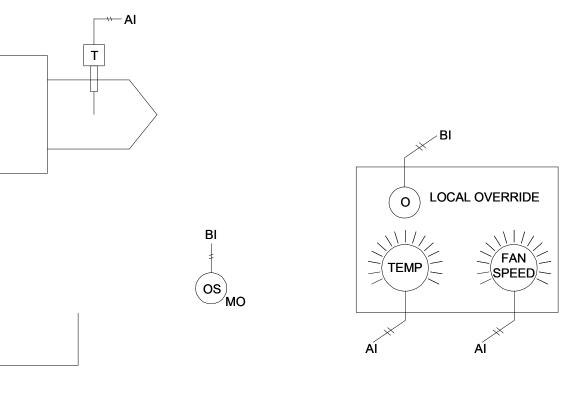
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NOTES:

B. UNOCCUPIED MODE:



						ALARMS				
ENABLE\DISABLE	HIGH ANALOG	LOW ANALOG	BINARY	SENSOR FAIL	COMM FAIL	ALARM LABEL	CALCULATED VALUE	BACNET	TREND	DISPLAY ON GRAPHIC
									Х	X
									Х	Х
									Х	X
									X	X
									X	X
									X	X
	X	Х				SPACE TEMP OUT OF RANGE			X X	X X
									X	X
			X			FAN COIL UNIT TROUBLE (CURRENT SENSOR)			X	X
	X	Х				DISCHARGE AIR TEMPERATURE OUT OF RANGE		-	X	X
									X	X
									X	X
								1		

BY 5%. R SHALL BE PROVIDED IN EACH NCY INPUTS FROM ANY OF THE ZONE TEMPERATURE CONTROL HIGH SPEED AND THE HEATING OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE OCCUPIED PERIOD, THE FAN SET POINT. RN ON AT HIGH SPEED, THE T SHALL OPERATE IN OCCUPIED SET POINTS. S IN OCCUPIED OR OCCUPIED L OVERRIDE SWITCH TO ALLOW SHALL MODULATE TO MAINTAIN SET POINT. CTING TEMPERATURE AND FAN TEM SHALL REVERT BACK TO CUPANCY PERIOD. PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING OW THE LOW LIMIT SPACE VALVE SHALL MODULATE TO MAINTAIN SET POINT. RE FALLS BELOW THE LOW LIMIT IG TEMPERATURE SET POINTS THE SYSTEM IS INDEXED TO

BE INDEXED TO OCCUPIED. THE REVIEW FAN SPEED EVERY 30 SECONDS. IF SET POINT IS NOT REACHED WITHIN 2 MINUTES IS NOT SENSED FOR A PERIOD WITH COIL VALVE AT 100%, THE FAN SPEED SHALL INCREASE BY 5%. IF SPACE TEMPERATURE IS MAINTAINED WITH COIL VALVE LESS THAN 70% (ADJ) OPEN, THEN FAN SPEED SHALL DECREASE

> TEMPERATURE SET POINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND A SPACE OCCUPANCY SENSOR.

DW THE LOW LIMIT SETPOINT, THE OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE OCCUPIED PERIOD, THE HEATING LL CLOSE THE FAN SHALL SHUT COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN SET POINT, IF THE FAN IS OFF, AND THE TEMPERATURE FALLS BELOW THE SPACE LOW LIMIT TEMPERATURE, THE BACS SHALL INDEX THE UNIT TO AUTOMATIC MODE. THE UNIT FAN SHALL START, AND THE HEATING COIL CONTROL VALVE SHALL MODULATE AS NEEDED TO MAINTAIN SET POINT.

HES THE HEATING SETPOINT, THE SHALL START AND THE COOLING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN SET POINT. IF THE FAN IS OFF AND THE TEMPERATURE RISES ABOVE THE SPACE HIGH LIMIT TEMPERATURE, THE BACS SHALL INDEX THE UNIT TO AUTOMATIC MODE. THE UNIT SHALL START, AND THE COOLING COIL CONTROL VALVE SHALL MODULATE AS NEEDED TO MAINTAIN

SHALL FULLY CLOSE. WHEN THE OCCUPIED SETBACK: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY. IF THE SPACE IS NOT OCCUPIED THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE

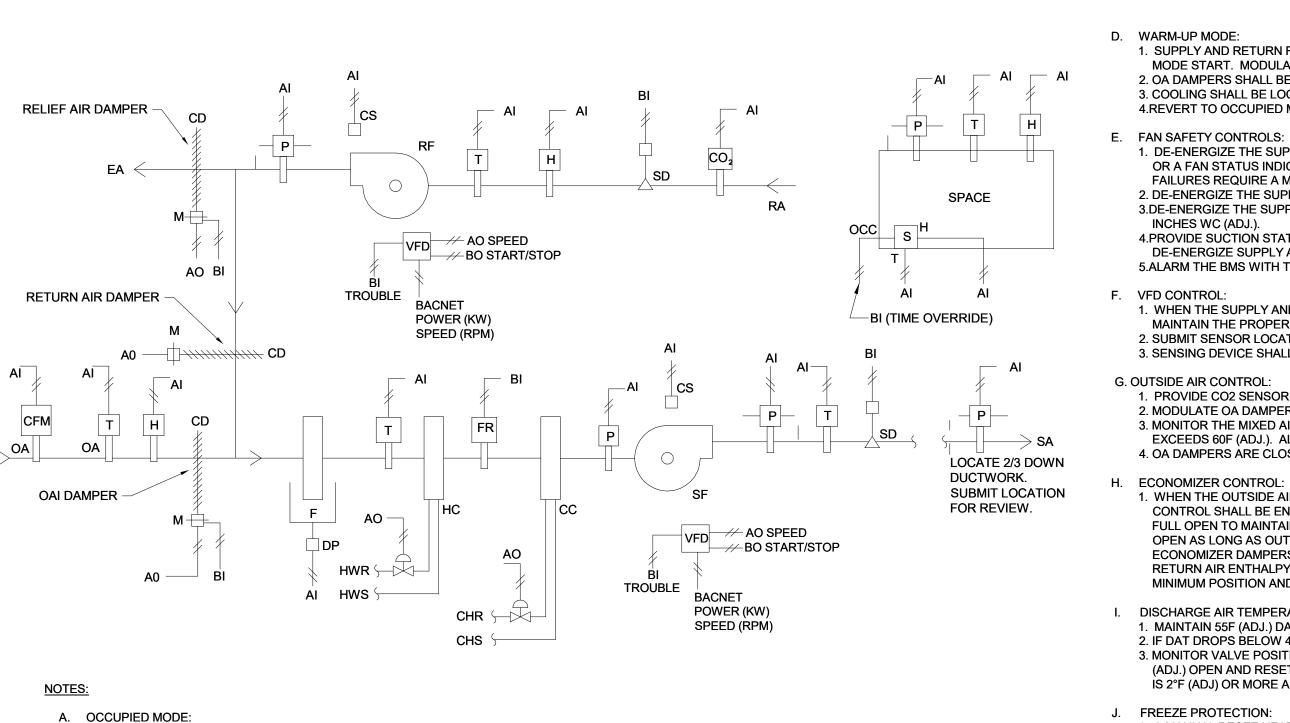
> UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE ZONE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SET POINT, THE BACS SHALL INDEX THE UNIT TO AUTOMATIC MODE IF IT HAS BEEN PLACED IN MANUAL, THE UNIT FAN SHALL BE ON, AND THE HEATING COIL CONTROL VALVE UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED

TEMPERATURE SET POINT, THE BACS SHALL INDEX THE UNIT TO AUTOMATIC MODE IF IT HAS ONDITIONS RISE ABOVE THE HIGH BEEN PLACED IN MANUAL, THE UNIT FAN SHALL START, AND THE COOLING COIL CONTROL IF AT ANY TIME THE FAN COIL UNIT DISCHARGE AIR TEMPERATURE FALLS BELOW THE LOW

LIMIT TEMPERATURE SET POINT, THE BACS SHALL INDEX THE UNIT TO AUTOMATIC MODE IF IT UNOCCUPIED MODE WHEN IT IS HAS BEEN PLACED IN MANUAL MODE, THE UNIT FAN SHALL START, AND THE HEATING CONTROL VALVE SHALL OPEN. THE SYSTEM SHALL RUN FOR A PERIOD OF AT LEAST 30 MINUTES, AFTER WHICH THE SYSTEM SHALL REVERT BACK TO NORMAL CONTROL. THE COIL CONTROL VALVES SHALL BE CLOSED WHEN THE FAN COIL UNIT FAN IS OFF.

ED TO SERVICE THE LOAD.

NO SCALE



3. COOLING SHALL BE LOCKED OUT.

INCHES WC (ADJ.).

1. MAINTAIN 55F (ADJ.) DAT.

K. TIMED OVERRIDE:

ARE OFF.

N. HUMIDITY CONTROL:

L. HEATING VALVE CONTROL:

M. COOLING VALVE CONTROL:

IS BELOW ITS SETPOINT (35 ADJ.).

1. WHEN THE AHU IS IN THE OCCUPIED MODE, THE SUPPLY AND RETURN FANS SHALL OPERATE CONTINUOUSLY. THE SUPPLY FAN VFD SHALL MODULATE TO MAINTAIN THE DUCT STATIC PRESSURE. THE RETURN FAN VFD SHALL TRACK WITH THE SUPPLY FAN VFD TO MAINTAIN RETURN STATIC PRESSURE OF 0.1 INCHES WC (ADJ). THE COOLING VALVES, HEATING VALVES, AND ECONOMIZER DAMPERS SHALL MODULATE IN SEQUENCE TO MAINTAIN DISCHARGE AIR TEMPERATURE (DAT) OF 55F (ADJ.). THE EA (RELIEF) AND RA DAMPERS SHALL MODULATE IN SEQUENCE TO MAINTAIN A SPACE POSITIVE PRESSURE OF 0.05" WC.

1. WHEN THE AHU IS IN THE UNOCCUPIED MODE, THE SUPPLY AND RETURN FAN SHALL BE OFF. THE OUTSIDE AIR DAMPER AND COOLING VALVE SHALL BE CLOSED, AND THE HEATING VALVE SHALL BE CLOSED, UNLESS THE FREEZE STAT OR NIGHT SETBACK OVERRIDES THE VALVE POSITION. THE EA IS CLOSED AND THE RA DAMPERS ARE OPEN.

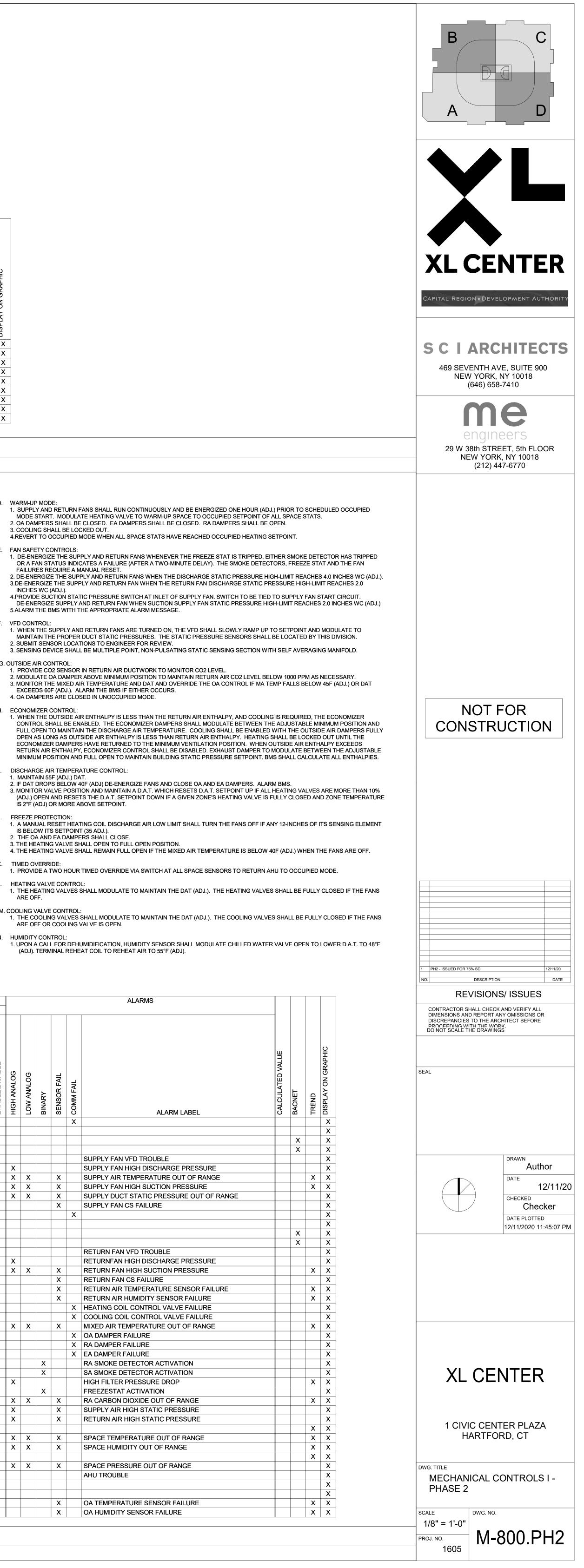
C. NIGHT SETBACK MODE: 1. CYCLE SUPPLY AND RETURN FANS TO MAINTAIN SETBACK SPACE TEMPERATURE SETPOINT OF ALL SPACE T-STATS. 2. OA DAMPERS SHALL BE CLOSED. EA DAMPERS SHALL BE CLOSED. RETURN AIR DAMPERS SHALL BE OPEN.

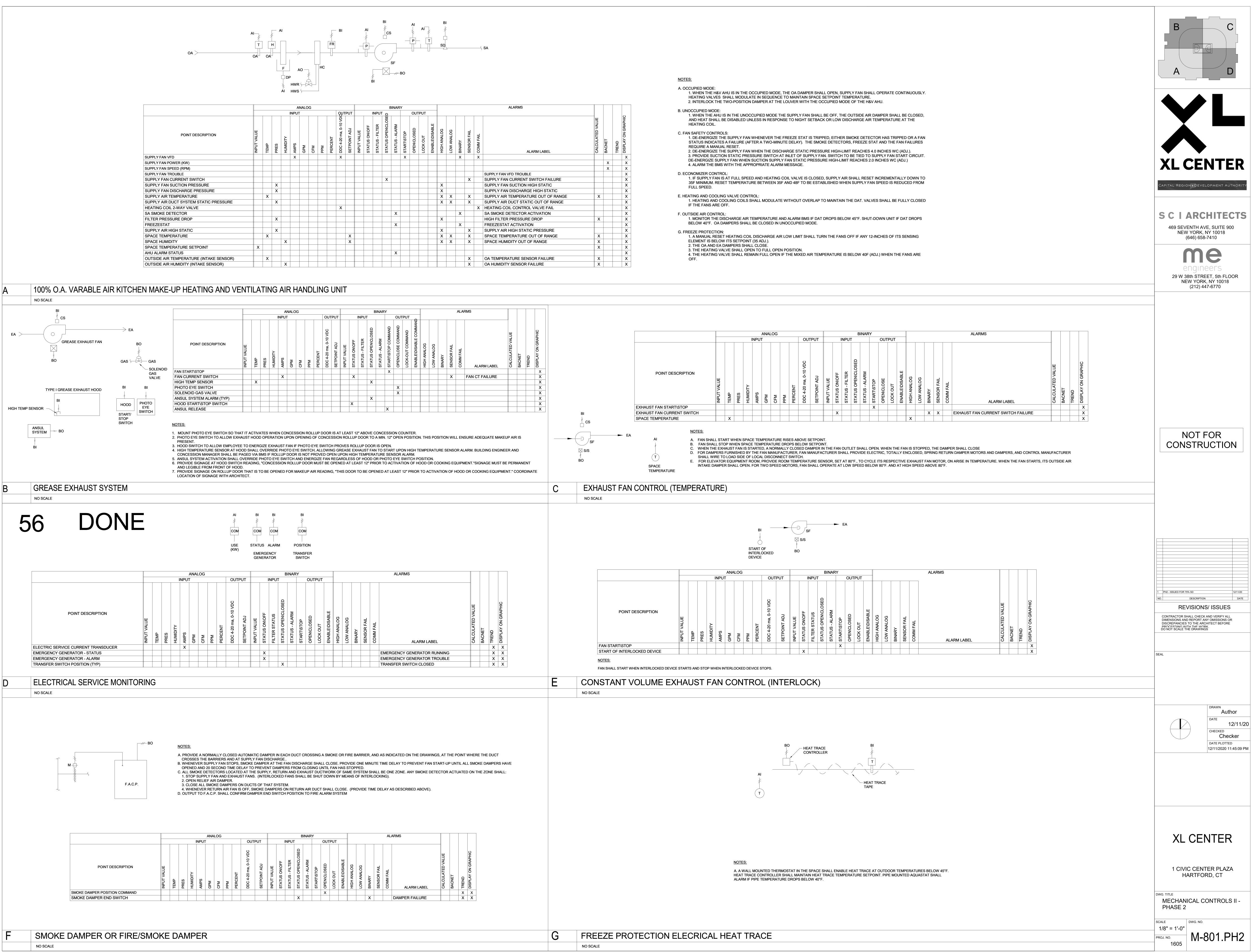
3. COOLING SHALL BE LOCKED OUT. 4. MAINTAIN A 6F (ADJ.) OFFSET TO SETPOINT. 5. OPEN HEATING VALVE FULLY AND ENERGIZE FAN AT OFFSET. RUN UNTIL SETPOINT OF COLDEST T-STAT IS REACHED, THEN DE-ENERGIZE FAN.

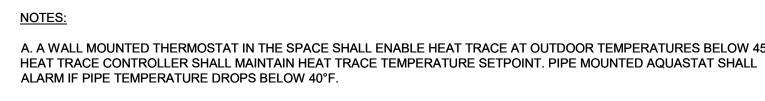
6. ASSOCIATED VAV BOXES TO MODULATE TO ACHIEVE ALL SETBACK SPACE TEMERATURE SETPOINTS. UPON ALL SPACE T-STATS REACHING SETPOINT, AHU TO RETURN TO UNOCCUPIED MODE. VAV HEATING TO REMAIN CLOSED DURING NIGHT SETBACK MODE.

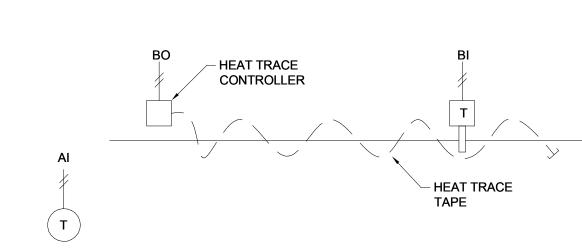
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POINT DESCRIPTION	INPUT VALUE	TEMP	PRES	HUMIDITY	AMPS	GPM	CFM	Mdd	PERCENT	DDC 4-20 ma, 0-10 VDC	SETPOINT ADJ	INPUT VALUE	STATUS ON/OFF	STATUS - FILTER	STATUS OPEN/CLOSED	STATUS - ALARM	START/STOP	OPEN/CLOSED	LOCK OUT	ENABLE\DISABLE	HIGH ANALOG	LOW ANALOG	BINARY	SENSOR FAIL	COMM FAIL	
SUPPLY FAN VFD SPEED COMMAND										Х															X	
SUPPLY FAN START\STOP																	X									
SUPPLY FAN POWER (KW)																										
SUPPLY FAN SPEED (RPM)																										
SUPPLY FAN VFD TROUBLE															Х											SUPPLY FAN
SUPPLY FAN DISCHARGE PRESSURE			X																		X					SUPPLY FAN
SUPPLY AIR TEMPERATURE		X																			X	X		X		SUPPLY AIR 1
SUPPLY FAN SUCTION PRESSURE			x																		X	X		X		SUPPLY FAN
SUPPLY AIR DUCT SYSTEM STATIC PRESSURE			X																		X	X		X		SUPPLY DUC
SUPPLY FAN CURRENT SWITCH															X									X		SUPPLY FAN
RETURN FAN VFD SPEED COMMAND										X					~										X	
RETURN FAN START\STOP										^							X									
RETURN FAN POWER (KW)																										
RETURN FAN SPEED (RPM)															V											
															X											RETURN FAN
RETURN FAN DISCHARGE PRESSURE			X																		X					RETURNFAN
RETURN FAN SUCTION PRESSURE			X																		X	X		X		RETURN FAN
RETURN FAN CURRENT SWITCH							_								X									X		RETURN FAN
		X																						X		RETURN AIR
RETURN AIR HUMIDITY				X																				X		RETURN AIR
HEATING COIL 2-WAY VALVE							_			X															X	HEATING COI
COOLING COIL 2-WAY VALVE										X															X	COOLING CO
MIXED AIR TEMPERATURE		X																			X	X		X		MIXED AIR TE
OA DAMPER										X					X										X	OA DAMPER I
RA DAMPER										X					X										X	RA DAMPER F
EA DAMPER										X					X										X	EA DAMPER F
RA SMOKE DETECTOR																X							X			RA SMOKE DI
SA SMOKE DETECTOR																X							X			SA SMOKE DE
FILTER PRESSURE DROP			X																		Х					HIGH FILTER
FREEZESTAT																X							X			FREEZESTAT
RA CARBON DIOXIDE SENSOR								X													X	X		X		RA CARBON I
SUPPLY AIR HIGH STATIC			X																		X			X		SUPPLY AIR H
RETURN AIR HIGH STATIC			x																		X			X		RETURN AIR
SPACE OCCUPANCY SENSOR (S)													X													
SPACE TEMPERATURE		X									X										X	X		X		SPACE TEMP
SPACE HUMIDITY				X							X										X	X		X		SPACE HUMI
SPACE TEMPERATURE SETPOINT	x	-				1											1									
SPACE PRESSURE																					X	X		X		SPACE PRES
AHU ALARM STATUS														-		X									-	AHU TROUBL
																<b>^</b>										
																									-	
						-	X										-								-	
		X															1							X		
OUTSIDE AIR HUMIDITY (INTAKE SENSOR)				X																				X		OA HUMIDITY

# VAV AIR HANDING UNIT WITH RETURN FAN









						ANAL	OG								В	INAR	Y									ALAR
					INPU <sup>-</sup>	T	1		1	OUT	PUT			NPU <sup>-</sup>	T			OUT	PUT			1	1			1
POINT DESCRIPTION	INPUT VALUE	TEMP	PRES	HUMIDITY	AMPS	GPM	CFM	Mdd	PERCENT	DDC 4-20 ma, 0-10 VDC	SETPOINT ADJ	INPUT VALUE	STATUS ON/OFF	STATUS - FILTER	STATUS OPEN/CLOSED	STATUS - ALARM	START/STOP	OPEN/CLOSE	LOCK OUT	ENABLE\DISABLE	HIGH ANALOG	LOW ANALOG	BINARY	SENSOR FAIL	COMM FAIL	
KHAUST FAN START\STOP																	Х									
KHAUST FAN CURRENT SWITCH													X										Х	Х		EXHAUST FAN
PACE TEMPERATURE		X																			X					

( NOT ALL SYMBOLS LISTED BE

GENE	RAL S	YMBOLS/ ABBR.
SYMBOL	ABBR	DESCRIPTION
		- SECTION NO.
F M		- SECTION VIEW SHEET NO.
<b>F</b> 1		EQUIPMENT DESIGNATION
1		SHEET KEY NOTES
	POC	POINT OF CONN. (CONN. NEW TO EXISTING)
	POD	POINT OF DISCONNECTION
		ARROW INDICATES DIRECTION OF FLOW
UP		<b>RISE IN DIRECTION OF FLOW</b>
DN		DROP IN DIRECTION OF FLOW
	AFF	ABOVE FINISHED FLOOR
	AFG	ABOVE FINISHED GRADE
	BOP	BOTTOM OF PIPE (AFF)
	BS	BELOW SLAB
	CL	CENTERLINE
	DN	DOWN
	EL	ELEVATION
	INV	INVERT
	NTS	NOT TO SCALE
	SQ.FT	SQUARE FEET
	TOP	TOP OF PIPE (AFF)
	(E)	EXISTING
	(R)	REMOVE

	$\equiv$
SITE/BLDG INFRASTRUCTURE	

SYMBOL	ABBR	DESCRIPTION
	F	FIRE
	SP	SPRINKLER
	BFP	BACKFLOW PREVENTER
	DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
	DCVA	DOUBLE CHECK VALVE ASSEMBLY
	DCV	DOUBLE CHECK VALVE
	FAI	FRESH AIR INTAKE
	HT	HOUSE TRAP
	I.E.	INVERT ELEVATION
	MOCV	METER OUTLET CONTROL VALVE
	RPZ	REDUCED PRESSURE ZONE ASSEMBLY
	ТВ	THRUST BLOCK
M	М	METER

	GENE	ERAL PIPING
SYMBOL	ABBR	DESCRIPTION
	(E)	EXISTING PIPING (LIGHT SOLID LINE)
	(R)	EXISTING PIPING TO BE REMOVED (DASHED LINE)
	cw	DOMESTIC COLD WATER
	HW	DOMESTIC HOT WATER
	т	TEMPERED WATER
	HWC	DOMESTIC HOT WATER CIRCULATING
	THW	DOMESTIC TEMP. HOT WATER
	SAN	SANITARY WASTE ABOVE FLOOR
	UGS	SANITARY WASTE BELOW FLOOR (UNDER GROUND)
	v	SANITARY VENT
	DR	EQUIP. DRAIN
—2"SAN —		PIPE SIZE/ PIPE TYPE
	ROC	DF/ STORM
SYMBOL	ABBR	DESCRIPTION
	ST	STORM PIPING ABOVE FLOOR
	ST	STORM PIPING BELOW FLOOR
	OD	STORM OVERFLOW ABOVE FLOOR
	OD	STORM OVERFLOW BELOW

$\bigcirc$	OD	OVERFLOW ROOF DRAIN							
$\bigcirc$	DSN	DOWNSPOUT NOZZLE							
_	AD	AREA DRAIN							
KITCHEN/ GAS EQUIPMENT									
KITCH	IEN/ C	GAS EQUIPMENT							
KITCH symbol	IEN/ C	BAS EQUIPMENT							
	ABBR	DESCRIPTION							

GAS COCK

PLUG VALVE

CUBIC FEET PER HOUR

FLOOR

RD ROOF DRAIN

OD

CODE	FIXTURE	CW CONN.	HW CONN.	SAN CONN.	IW CONN.	VENT CONN.	ST CONN.	GAS CONN.	ACCESSORIES / COMMENTS
WC	WATER CLOSET (FLUSH VALVE)	1"	-	4"	-	2"	-	-	
UR	URINAL	3/4"		2"	-	2"	-	-	
LAV	LAVATORY	1/2"	1/2"	1-1/2"	-	1-1/2"	-	-	TMV
DF	DRINKING FOUNTAIN	1/2"	-	1-1/2"	-	1-1/2"	-	-	
SINK	SINK (HAND WASH)	1/2"	1/2"	1-1/2"	-	1-1/2"	-	-	TMV
JSINK	JANITOR'S SINK	1/2"	1/2"	3"	-	2"	-	-	VB
FD-A	FLOOR DRAIN	-	-	SEE	-	2"	-	-	ТР
FS	FLOOR SINK	-	-	SEE	-	2"	-	-	
HB	HOSE BIBB	3/4"	-	-	-	-	-	-	VB
WH	WALL HYDRANT	3/4"		-	-	-	-	-	

1. PLUMBING DESIGN AND SIZES ARE BASED ON THE [2015 UNIFORM PLUMBING CODE].

2. ALL EXPOSED PIPING SERVING PLUMBING FIXTURES THAT MAY BE USED FOR ADA PURPOSES SHALL TRAPS AND SUPPLIES INSULATED PER ADA REQUIREMENTS. 3. FINISH AND TYPE OF ALL FIXTURES AND FAUCETS ARE SUBJECT TO ARCHITECT APPROVAL. 4. EACH PLUMBING FIXTURE SHALL BE PROVIDED WITH A P-TRAP. EXCEPT THOSE WITH INTEGRAL TRAPS. 5. EXTEND INDIRECT WASTE FULL SIZE TO NEAREST FLOOR DRAIN OR FLOOR SINK, UNLESS OTHERWISE NOTED ON PLANS.

6. FAUCET SHALL BE LEAD FREE AS PER COMPLIANCE WITH NSF 61. 7. EXTEND DOMESTIC HOT WATER RECIRCULATION LINE AS REQUIRED TO ALLOW FOR HOT WATER TO BE RECIRCULATED WITHIN 24" OF LAVATORY VALVE STOPS. ACCESSORY CODES

TP = TRAP PRIMER VB = VACUUM BREAKER

FLTR = FILTER TMV = POINT-OF-USE THERMOSTATIC MIXING VALVE, ASSE 1070 COMPLIANT

# PLUMBING LEGEND

	F	ITTINGS
MBOL	ABBR	DESCRIPTION
EJ  ∭ −	EJ	EXPANSION JOINT
	U	UNION
		THERMOMETER W/THERMOWELL
	AV	AIR VENT
∭–	FC	FLEXIBLE PIPE CONNECTOR
FS	FS	FLOW SWITCH
PS	PS	PRESSURE SWITCH
$\bigcirc$	PG	PRESSURE GAUGE W/GAUGE COCK
$\bigcirc$		ELBOW UP
<u> </u>		ELBOW DOWN
0—		TEE UP
$\overline{\bigcirc}$		TEE DOWN
		PIPE CAP OR PLUG
	со	CLEANOUT PLUG
	HB/ WH	HOSE BIBB, WALL HYDRANT
<u> </u>	VB	VACUUM BREAKER
[] \$	SA	SHOCK ARRESTOR W/BALL VALVE
	FD	FLOOR DRAIN
$\overline{)}$	CODP/ FCO	FLOOR CLEANOUT
	FS	FLOOR SINK
>	CR	CONCENTRIC REDUCER
	wco	WALL CLEANOUT
	CR	CONCENTRIC REDUCER
	ER	ECCENTRIC REDUCER
J	VTR	VENT THRU ROOF

	\	VALVES
SYMBOL	ABBR	DESCRIPTION
	DV	DRAIN VALVE W/ HOSE END CONN.
	CV	CHECK VALVE W/ INDICATION OF FLOW DIRECTION
	PRV	PRESSURE REDUCING VALVE
	sv	SOLENOID VALVE
FC	FCV	AUTO FLOW CONTROL VALVE W/ TEST PORTS
	CS,BV	CIRCUIT SETTER OR BALANCING VALVE
	GLV	GLOBE VALVE (STRAIGHT PATTERN)
	GLV	GLOBE VALVE (ANGLE PATTERN)
]	BFV	BUTTERFLY VALVE
-Ö-	BV	BALL VALVE
	TCV	THERMOSTATIC MIXING VALVE, 2-WAY
	TCV	THERMOSTATIC MIXING VALVE, 3-WAY
	TPR	TEMPERATURE/ PRESSURE RELIEF VALVE
$\bigcirc$		VALVE IN RISER
- X	STR	STRAINER W/ BLOW-OFF & CAPPED HOSE-END CONNECTION
$\left \right\rangle$	GV	GATE VALVE
	OS&Y	OUTSIDE STEM AND YOKE

MECHANICAL/PLUMBING/ SPRINKLER/ELECTRICAL COORDINATION REQUIREMENTS

FOR MECHANICAL AND PLUMBING EQUIPMENT AS INDICATED ON THE DIVISION 21, 22, AND 23 DRAWINGS, THE DIVISION 21, 22 AND 23 CONTRACTORS SHALL COORDINATE WITH DIVISION 26 CONTRACTOR TO CONNECT ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON THE MECHANICAL AND PLUMBING DRAWINGS. COORDINATE FOR COMPLETE WIRING, STARTERS, AND DISCONNECTING MEANS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT.

**GENERAL PLUMBING CONTRACT REQUIREMENTS:** 

<u>GENERAL:</u>

- 1. UNLESS OTHERWISE NOTED, THE WORK DESCRIBED ON THE PLANS AND SPECIFICATIONS SHALL INCLUDE THE FURNISHING AND INSTALLATION OF ALL LABOR AND MATERIALS NECESSARY FOR COMPLETE AND OPERATIONAL HVAC, FIRE PROTECTION AND PLUMBING SYSTEMS. CONTRACTOR SHALL FURNISH THESE EVEN IF ITEMS REQUIRED TO ACHIEVE THIS (I.E. OFFSETS, ISOLATION AND BALANCING DEVICES, MAINTENANCE
- CLEARANCES, ETC.) ARE NOT SPECIFICALLY SHOWN. DATA GIVEN ON THE DRAWINGS IS AS EXACT AS COULD BE SECURED. ABSOLUTE ACCURACY IS NOT GUARANTEED AND THE CONTRACTOR SHALL OBTAIN AND VERIFY EXACT LOCATIONS, MEASUREMENTS, LEVELS, SPACE REQUIREMENTS, POTENTIAL CONFLICTS WITH OTHER TRADES, ETC. AT THE SITE AND SHALL SATISFACTORILY ADAPT HIS WORK TO THE ACTUAL CONDITIONS OF THE JOB.
- THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND SHALL NOT BE SCALED. THEY SHOW CERTAIN PHYSICAL RELATIONSHIPS WHICH MUST BE ESTABLISHED WITHIN THE DIVISION 23 WORK AND ITS INTERFACE WITH OTHER WORK. ESTABLISHING THIS RELATIONSHIP IN THE FIELD IS THE EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR. THIS DIVISION SHALL COORDINATE ITS WORK WITH ALL DIVISIONS OF THE WORK AND ADJUST ITS WORK AS REQUIRED BY THE ACTUAL CONDITIONS OF THE PROJECT.
- A. THE CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A BID TO BECOME THOROUGHLY FAMILIAR WITH THE ACTUAL CONDITIONS OF THE PROJECT. NO EXTRAS WILL BE ALLOWED DUE TO LACK OF KNOWLEDGE OF EXISTING CONDITIONS.
- CERTAIN SYSTEMS REQUIRE ENGINEERING OF INSTALLATION DETAILS BY CONTRACTOR. UNLESS FULLY DETAILED IN THE CONTRACT DOCUMENTS, SUCH ENGINEERING IS THE EXCLUSIVE RESPONSIBILITY OF THE 3. CONTRACTOR.
- C. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE GENERAL PLUMBING NOTES: WHERE CLEARANCES ARE LIMITED, AND WHERE INSTALLATION DRAWINGS OR SCHEMATICS, "CONSTRUCTION DRAWINGS", OR COORDINATION DRAWINGS MAY BE REQUIRED IN ACCORDANCE WITH, OR IN EXCESS OF, THOSE REQUIRED BY THE SPECIFICATIONS. THE CONTRACTOR SHALL PREPARE ALL SUCH COORDINATION DRAWINGS AS PART OF THE BASE CONTRACT.
- 4. THESE NOTES ONLY SUPPLEMENT, AND DO NOT REPLACE, THE SPECIFICATIONS. 5. DEFINITIONS AND TERMINOLOGY
- A. THE DEFINITIONS OF DIVISION 1 AND THE GENERAL CONDITIONS OF THIS SPECIFICATION ALSO APPLY TO THE DIVISION 23 CONTRACT DOCUMENTS.
- "CONTRACT DOCUMENTS" CONSTITUTE THE DRAWINGS, SPECIFICATIONS, GENERAL CONDITIONS, PROJECT MANUALS, ETC., PREPARED BY ENGINEER (OR OTHER DESIGN PROFESSIONAL IN ASSOCIATION WITH ENGINEER) FOR CONTRACTOR'S BID OR CONTRACTOR'S **NEGOTIATIONS WITH THE OWNER. THE DIVISION 23** DRAWINGS AND SPECIFICATIONS PREPARED BY THE ENGINEER ARE NOT CONSTRUCTION DOCUMENTS.
- "CONSTRUCTION DOCUMENTS", "CONSTRUCTION DRAWINGS", AND SIMILAR TERMS FOR DIVISION 23 WORK 5. REFER TO INSTALLATION DIAGRAMS, SHOP DRAWINGS AND COORDINATION DRAWINGS PREPARED BY THE CONTRACTOR USING THE DESIGN INTENT INDICATED ON THE ENGINEER'S CONTRACT DOCUMENTS. THESE SPECIFICATIONS DETAIL THE CONTRACTOR'S **RESPONSIBILITY FOR "ENGINEERING BY CONTRACTOR"** AND FOR PREPARATION OF CONSTRUCTION DOCUMENTS.
- "FURNISH" MEANS TO "SUPPLY" AND USUALLY REFERS TO AN ITEM OF EQUIPMENT.
- E. "INSTALL" MEANS TO "SET IN PLACE, CONNECT AND PLACE IN FULL OPERATIONAL ORDER".
- F. "PROVIDE" MEANS TO "FURNISH AND INSTALL".
- G. "EQUIVALENT" MEANS "MEETS THE SPECIFICATIONS OF THE REFERENCE PRODUCT OR ITEM IN ALL SIGNIFICANT ASPECTS." SIGNIFICANT ASPECTS SHALL BE AS DETERMINED BY THE ARCHITECT/ENGINEER.
- H. "WORK BY OTHER(S) DIVISIONS"; "RE: XX DIVISION", AND SIMILAR EXPRESSIONS MEANS WORK TO BE PERFORMED UNDER THE CONTRACT DOCUMENTS, BUT NOT NECESSARILY UNDER THE DIVISION OR SECTION OF THE WORK ON WHICH THE NOTE APPEARS. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE THE WORK OF THE CONTRACT BETWEEN HIS/HER SUPPLIERS, SUBCONTRACTORS AND EMPLOYEES. IF CLARIFICATION IS REQUIRED, CONSULT ARCHITECT/ENGINEER BEFORE SUBMITTING BID.
- I. BY INFERENCE, ANY REFERENCE TO A "CONTRACTOR" OR "SUB-CONTRACTOR" MEANS THE ENTITY WHICH HAS CONTRACTED WITH THE OWNER FOR THE WORK OF THE CONTRACT DOCUMENTS.
- J. "ENGINEER" MEANS THE DESIGN PROFESSIONAL FIRM WHICH HAS PREPARED THESE CONTRACT DOCUMENTS. ALL QUESTIONS, SUBMITTALS, ETC. OF THIS DIVISION SHALL BE ROUTED THROUGH THE ARCHITECT TO THE ENGINEER (THROUGH PROPER CONTRACTUAL CHANNELS).

## EXISTING BUILDING:

- 1. THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE EXISTING BUILDING WILL BE OCCUPIED BY THE OWNER DURING CONSTRUCTION. CONTINUED OPERATION OF THE FACILITY SHALL NOT BE HINDERED BY THIS WORK. THE CONTRACTOR SHALL ACCOUNT FOR ALL ADDITIONAL COSTS WHICH MAY BE INCURRED BY HIM DUE TO THE DIFFICULTY OF WORKING OVER AND AROUND EMPLOYEES, DESKS, EQUIPMENT, ETC.; AND DUE TO THE HOURS OF THE DAY IN WHICH AN AREA MAY BE AVAILABLE WHEN SUBMITTING HIS BID.
- MAINTAIN A MARK-UP SET OF DRAWINGS WHICH INDICATE VARIATIONS IN THE ACTUAL INSTALLATION FROM THE ORIGINAL DESIGN. SURRENDER DRAWINGS TO OWNER UPON COMPLETION. INCORPORATE THESE NOTES INTO THE AS-BUILT DRAWINGS.
- COORDINATE ALL PENETRATIONS OF THE FLOOR SLAB PRIOR TO COMMENCING WORK. UTILIZE X-RAY AND VISUAL INVESTIGATION OF EXISTING CONDITIONS AS REQUIRED PRIOR TO DRILLING OR CUTTING. COORDINATE ALL NEW PENETRATIONS WITH OTHER DIVISIONS OF THE WORK. ALL CONTRACTORS ARE INDIVIDUALLY RESPONSIBLE FOR ALL PENETRATIONS REQUIRED BY THEIR DIVISIONS.
- THE CONTRACTOR SHALL CAREFULLY INSPECT, REVIEW AND DOCUMENT THE EXISTING BUILDING PLUMBING SYSTEMS WITHIN THE PROJECT WORK AREAS SHOWN TO BE DEMOLISHED. PRIOR DOCUMENTATION OF EXISTING CONDITIONS, CAPACITIES AND PHYSICAL ARRANGEMENTS IS LIMITED. THESE DOCUMENTS ATTEMPT TO DEFINE AREAS BUT

GENERAL PLUMBING DEMOLITION NOTES:

- MAY NOT ACCURATELY SHOW ALL EXISTING CONDITIONS. ALL EXISTING SANITARY AND STORM PIPING BEING REUSED SHALL BE INSPECTED AND VERIFIED TO BE IN GOOD CONDITION 17. PROVIDE DIELECTRIC FITTINGS AT ALL CONNECTIONS BETWEEN PRIOR TO CONNECTION OF ANY NEW PLUMBING SYSTEMS.
- ALL PIPING SYSTEMS NO LONGER IS USE DUE TO RENOVATION 18. ALL TEMPERING VALVES TO BE SET FOR 110 DEGREE WATER SHALL BE REMOVED. NO PIPING WILL BE ABANDONED IN PLACE.
- 1. ALL DRAIN GRATES, CLEANOUT COVERS, AND OTHER FINISHED-EXPOSED COMPONENTS SHALL BE PROTECTED FROM DAMAGE. DAMAGED COMPONENTS SHALL BE REPLACED BY CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.
- COORDINATE ROUTING OF ALL PLUMBING PIPING WITH STRUCTURAL BEAMS, COLUMNS, ETC. ALLOW FOR REROUTING OF PIPING AS REQUIRED.
- PIPING ROUTING ON DRAWINGS IS GENERALLY DIAGRAMMATIC WITH EFFORTS DURING DESIGN TO AVOID STRUCTURAL CONFLICTS. CONTRACTOR SHALL COORDINATE ROUTING OF ALL PIPING THROUGH BUILDING WITH STRUCTURAL CONDITIONS. CONTRACTOR COORDINATION DRAWINGS SHALL REFLECT ALL PIPE ROUTING AND PIPING THAT MAY HAVE TO BE SHIFTED AND/OR MOVED TO AVOID CONFLICTS. SHIFTED OR MOVED PIPING SHALL REFLECT NO ADDITIONAL COST TO THE PROJECT.
- ALL REQUIRED OPENINGS IN STEEL BEAMS AND STRUCTURAL 4 WALLS ARE TO BE ACCOMPLISHED USING SLEEVES/PENETRATIONS PROPERLY SIZED FOR THE PIPE THEY SERVE. ALL BEAM PENETRATIONS SHALL BE APPROVED BY THE ELECTRICAL COORDINATION: STRUCTURAL ENGINEER. CORE DRILLING IN PANS IS ALLOWED UPON PRIOR APPROVAL OF ARCHITECT AND STRUCTURAL ENGINEER.
- ALL HORIZONTAL SANITARY PIPING 3" AND SMALLER WHETHER BELOW OR ABOVE GRADE SHALL SLOPE AT 1/4"/FT. SLOPE. ALL 2. PROVIDE PREMIUM EFFICIENCY MOTORS (NEMA STANDARD OTHERWISE NOTED. ALL STORM AND OVERFLOW PIPING SHALL SLOPE AT 1/8"/FT. SLOPE UNLESS OTHERWISE NOTED. ALL GREASE WASTE PIPING SHALL SLOPE AT 1/4"/FT.
- IN GENERAL THE POINT OF CONNECTION FOR SANITARY AND STORM PIPE IS AT 5 FEET OUTSIDE OF BUILDING FOOTPRINT. CONFORM WORK TO MEET INVERT.
- 7. CAP ALL SANITARY AND STORM TEES FOR FUTURE BRANCH PIPING AND STAKE LOCATION OF PIPING FOR CONNECTION TO FUTURE BRANCH LINES. ALL PIPING TO BE INSTALLED IN CONCEALED AREAS, IF NOT
- POSSIBLE PIPING TO BE PERPENDICULAR AND PARALLEL TIGHT TO STRUCTURE. INSTALL WITHIN WEBBING OF STEEL. REFER TO ARCH. DRAWINGS FOR AREAS WHICH NO PIPING CAN BE INSTALLED, "NO FLY ZONES" OR RESTRICTED AREAS. ALL SHOP DRAWINGS AND COORDINATION DRAWINGS MUST BE SUBMITTED TO OWNER FOR APPROVAL BEFORE INSTALLATION.
- ALL CLEANOUTS FOR HORIZONTAL STORM DRAINAGE SYSTEM SHALL BE PIPE SIZE OR MAXIMUM 6" FOR LARGER PIPE. IN ADDITION TO THE CLEANOUT LOCATIONS SHOWN ON DRAWINGS, CLEANOUTS SHALL BE PROVIDED PROVIDED IN ACCORDANCE WITH THE LOCAL GOVERNING CODE. ADDITIONAL CLEANOUTS SHALL BE PROVIDED AS FOLLOWS;
- A. EACH RUN OF PIPING WHICH IS MORE THAN 75 FEET IN LENGTH OR FRACTION THEREOF
- B. HORIZONTAL LINES 5 FEET OR MORE C. HORIZONTAL LINES FOR EACH AGGREGATE CHANGE OF
- DIRECTION EXCEEDING 45 DEGREES, D. AT THE BASE OF ALL SANITARY AND STORM RISERS. ALL VERTICAL CLEANOUTS SHALL BE SIZED TO ACCOMMODATE THE LARGEST PIPE ON THAT BRANCH LINE, BUT NEVER LARGER THAN 4". ALL GREASE WASTE PIPING SHALL HAVE CLEANOUTS EVERY 50 FEET OR
- FRACTIONS THEREOF AND AS NOTED ABOVE. ALL 10. GAS PIPING IN AIR PLENUMS SHALL BE WELDED.
- 11. PROVIDE ISOLATION VALVES ON ALL PIPING SERVING HOSE

- BIBBS.
- 12. ALL FLOOR DRAINS IN BUILDING, EXCEPT DRAINS IN SHOWERS. SHOWER AREA, AND KITCHEN/ CONCESSION WET AREAS SHALL BE INSTALLED WITH PRIMER TAP AND A 1/2" CW LINE ROUTED FROM FLOOR DRAIN PRIMER TAP AND STUBBED UP AT PLUMBING CHASES +12"AFF FOR CONNECTION TO TRAP PRIMER UNIT.COLD WATER (CW) PIPING IN OR BELOW FLOOR SLAB SHALL BE WRAPPED WITH POLYWRAP OR APPROVED EQUAL MATERIAL TO PROVIDE PROTECTION TO PIPING. ALL PIPING SHALL BE ONE PIECE FROM PRIMER TAP TO STUB UP.
- 13. ALL DOMESTIC WATER PIPING SERVING TOILET/RESTROOM GROUPS SHALL BE INSTALLED WITH ISOLATION VALVES IN ORDER TO ISOLATE THESE AREAS WITHOUT CLOSING DOWN ANY OTHER PORTION OF THE BUILDING WATER SUPPLY SYSTEMS. ALL ISOLATION VALVES SHALL BE ACCESSIBLE WITH ACCESS PANELS. MINIMUM ACCESS PANEL SIZE SHALL BE 12"X12". ACCESS PANELS SHALL BE OF THE SAME RATING AS THE STRUCTURAL ELEMENT IN WHICH THEY ARE INSTALLED.
- 14. EXTEND NEAREST DOMESTIC HOT WATER CIRCULATOR BRANCH TO EACH PUBLIC LAVATORY SINK. CIRCULATOR PIPE SHALL BE INSTALLED SO THAT THERE IS NO MORE THAN 2 FEET BETWEEN THE DOMESTIC HOT WATER CIRCULATED PIPE AND THE SINK ISOLATION VALVE STOP. INSTALL CIRCULATOR CONNECTION TRIM (TWO ISOLATION VALVES, CHECK VALVE, AND CIRCUIT SETTER) IN A SERVICE ABLE LOCATION. PROVIDE ACCESS DOOR AS REQUIRED.
- 15. ALL GAS PRESSURE REDUCING VALVES (PRV'S) SHALL BE PROVIDED WITH VENT PIPING TO ATMOSPHERE. 16. ALL EQUIPMENT AND PIPING SHALL BE BRACED FOR SEISMIC
- REQUIREMENTS APPLICABLE FOR SEISMIC ZONE REQUIREMENTS FOR THIS PROJECT.
- DISSIMILAR METALS AND AS SHOWN ON DRAWINGS.
- TEMPERATURE MAXIMUM UNLESS OTHERWISE NOTED. 19. PROVIDE GAS VENTS EXTENDING CONTINUOUSLY FROM ALL INTERIOR GAS REGULATORS TO THE EXTERIOR OF THE BUILDING. TERMINATE AT AN APPROVED LOCATION. SIZE VENTS SUCH THAT MINIMUM VENT SIZE (FOR VENT WHICH IS 10 4. FLUSH OUT PIPING AND REMOVE CONTROL FEET OR LESS IN LENGTH) EQUALS RELIEF OUTLET PIPE SIZE. INCREASE VENT PIPE SIZE ONE PIPE SIZE FOR EVERY ADDITIONAL TWENTY FEET OF VENT PIPE LENGTH. PROVIDE AN ISOLATION VALVE DOWNSTREAM OF EVERY INTERIOR GAS
- FOOD SERVICE:

REGULATOR.

- 1. REFER TO THE FOOD SERVICE DRAWING FOR ALL FLOOR SINK GRATE OPENINGS AND ORIENTATION.
- . CONTRACTOR TO PROVIDE CONDENSATE LINE FROM COOLER AND FREEZER CONDENSER UNITS TO FLOOR SINK WITH AIR GAP. ALL CONDENSATE LINES FROM FREEZER CONDENSERS TO BE HEAT TRACED AND INSULATED.
- 3. CONTRACTOR SHALL EXTEND ALL DRAINS FROM FOOD SERVICE EQUIPMENT TO NEAREST FLOOR SINK. PROVIDE THE NECESSARY AIR GAP AT ALL DRAIN LOCATIONS.
- VERIFY THE ELECTRICAL SERVICE PROVIDED BY THE ELECTRICAL CONTRACTOR BEFORE ORDERING ANY PLUMBING 8. INSTALL ALL PIPING TO ALLOW FOR EXPAN EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS.
- PIPING 4" AND LARGER SHALL SLOPE AT 1/8"/FT. SLOPE UNLESS MG1-2003. TABLES 12-12 AND 12-13) WITH 1.15 SERVICE FACTOR ON ALL EQUIPMENT, MOTORS SHALL BE CAPABLE OF OPERATING CONTINUOUSLY AT 105°F UNDER JOBSITE CONDITIONS AND ALTITUDE.
  - UNLESS NOTED OTHERWISE, ALL PLUMBING EQUIPMENT SHALL 9. PROVIDE ISOLATION VALVES AT EVERY BRA BE PROVIDED WITH HOA SWITCH AND STARTER COMPATIBLE WITH EQUIPMENT AND BMS SYSTEM. STARTERS SHALL BE PROVIDED BY DIVISION 22 UNLESS IN A MOTOR CONTROL CENTER. ALL DISCONNECTS SHALL BE FURNISHED BY DIVISION
  - 4. THE ELECTRICAL POWER FOR CERTAIN EQUIPMENT PROVIDED UNDER DIVISION 22 HAS NOT BEEN SPECIFICALLY INDICATED ON 2. BE RESPONSIBLE FOR ALL CUTTING AND PA THE ELECTRICAL DRAWINGS AND MUST BE PROVIDED BY AND FIELD COORDINATED BY THE DIVISION 22 TRADE REQUIRING SUCH POWER

INSTALLATION:

- SUSPEND EACH TRADE'S WORK SEPARATELY FROM THE STRUCTURE. DUCTWORK SHALL BE HELD TIGHT TO STRUCTURE EXCEPT WHERE OTHERWISE SHOWN. 2. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH 5. DEMOLISH AND CAP ALL INDICATED PIPING
- MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE. 3. PROVIDE MANUFACTURER'S RECOMMENDED SERVICE
- CLEARANCE AROUND ALL EQUIPMENT REQUIRING SAME. 4. PROVIDE FOR SAFE CONDUCT OF THE WORK, CAREFUL REMOVAL AND DISPOSAL OF MATERIALS AND PROTECTION OF PROPERTY WHICH IS TO REMAIN UNDISTURBED.
- PROVIDE ACCESS DOORS FOR ALL EQUIPMENT, VALVES, CLEANOUTS, ACTUATORS AND CONTROLS WHICH REQUIRE ACCESS FOR ADJUSTMENT OR SERVICING AND WHICH ARE LOCATED IN OTHERWISE INACCESSIBLE LOCATIONS.
- A. FOR EQUIPMENT LOCATED IN "ACCESSIBLE LOCATIONS" SUCH AS LAY-IN CEILINGS: LOCATE EQUIPMENT TO

### PROVIDE ADEQUATE SERVICE CLEAR MAINTENANCE WITHOUT REMOVING ELECTRICAL OR STRUCTURAL ELEME CEILING SUPPORT SYSTEM, ELECTRIC "NORMAL MAINTENANCE" INCLUDES, TO:FILTER CHANGING; GREASING OF PORTS FOR PRESSURE OR TEMPERA MEASUREMENTS; SERVICING CONTROL SERVICING CONTROL PANELS.

- 6. ISOLATE ALL PRESSURIZED PIPE (DOMESTI DOMESTIC HOT WATER, MEDICAL GASES, E BRANCH, PIECE OF EQUIPMENT, AND AREA
- PLUMBING CONTRACTOR IS RESPONSIBLE CONCRETE EQUIPMENT PAD DIMENSIONS, EQUIPMENT SELECTION, TO THE STRUCTUR CONTRACTOR FOR INCLUSION IN THOSE CO AS DESCRIBED BY THE GENERAL CONTRAC
- 8. UNDER THE BASE CONTRACT, THE CONTRA PROVIDE ALL LABOR AND MATERIALS NEC EQUIPMENT INTO MULTIPLE PIECES TO FAC FINAL INSTALLED LOCATION. CONTRACTOR THE EQUIPMENT AND TEST TO CONFIRM PR AND MAINTAIN ALL THE MANUFACTURERS \
- 9. WARRANTY: AT A MINIMUM. THE ENTIRE PL SHALL BE WARRANTED AGAINST DEFECTS WORKMANSHIP FOR A PERIOD OF ONE (1) ACCEPTANCE OF THE SYSTEM BY THE OWN INDIVIDUAL SPECIFICATION SECTIONS FOR REQUIREMENTS.

PIPE INSTALLATION:

- 1. ALL PIPING SHALL BE ADEQUATELY SUPPO BUILDING STRUCTURE TO PREVENT SAGGI SWAYING OR DISPLACEMENT BY MEANS OF SUPPORTS. PIPING IS NOT TO BE SUPPORT 2. PROVIDE DIELECTRIC UNIONS BETWEEN D
- PROVIDE MANUAL AIR VENTS AND CAPPED WITH ISOLATION VALVES AT PIPING HIGH A
- PERFORMING PRESSURE TEST. DO NOT US VALVES TO ISOLATE SECTIONS WHERE PRI AS SPECIFIED IN THE SPECIFICATION OR TO IF LEAKAGE IS OBSERVED OR IF TEMPERAT PRESSURE DROP EXCEEDS 1% OF TEST PR LEAKS AND RETEST.
- 5. PROVIDE SUPPORT UNDER ELBOWS ON PU DISCHARGE LINES.
- 6. ALL STRAINERS SHALL BE FURNISHED WITH SCREEN AND TWO (2) SCREENS FOR NORM INSTALL STRAINER WITH ROUGHING SCREE SYSTEM FOR 24 HOURS MINIMUM (RUN DO SYSTEMS AT MAX FLOW FOR A MINIMUM OF HOUR. REMOVE ROUGHING SCREEN AND I SCREEN, AFTER TWO WEEKS OF NORMAL NEW NORMAL SCREEN.
- 7. PIPING SIZES SHALL BE BASED ON 2' OR LE 100 FEET OF LENGTH. VELOCITIES SHALL N PER SECOND.
- CONTRACTION WITHIN THE PIPING SYSTEM **REQUIRED PIPE EXPANSION WILL OCCUR IN** DIRECTION AND SEGMENT OF PIPE. PROPE SPECIFICATIONS) ALL PIPING REQUIRING EXPANSION/CONTRACTION ISOLATION. C EXPANSION/CONTRACTION TO PREVENT DA ALL BUILDING COMPONENTS.
- INDICATED OR NOT. CUTTING, PATCHING AND DEMOLITION:
- 1. KEEP DEMOLITION & CUTTING TO MINIMUM PROPER EXECUTION OF WORK.
- FOR THE COMPLETION OF THE WORK.
- 3. NO CUTTING (NOT SHOWN ON THE CONTRA SHALL BE DONE WITHOUT THE APPROVAL ( AS TO LOCATIONS, METHOD AND EXTENT O
- 4. REPAIR ALL ACCIDENTAL OR INTENTIONAL EXISTING CONSTRUCTION WITH NO NOTICE CONTINUITY, APPEARANCE OR FUNCTION. MAIN.

STRUCTURE:

- 1. DO NOT PENETRATE STRUCTURAL MEMBER SUPPORTS SHALL BE ATTACHED TO THE LC MEMBERS OF STRUCTURAL ELEMENTS. D ANY STRUCTURAL MEMBERS. CONTACT ST ENGINEER FOR ALLOWABLE LOADS FOR SF
- 2. DO NOT UTILIZE POWDER DRIVEN ANCHOR LOCATIONS WHICH REQUIRE THE LOAD TO SEE STRUCTURAL DIVISION FOR ADDITION 3. SEE ALSO STRUCTURAL DIVISION FOR ACC
- ANCHORING AND SUPPORT MEANS, METHO PROVIDE FLEXIBLE CONNECTORS, EXPANS

P-102.PH2 P-103.PH2 P-104.PH2 P-200.PH2 P-201.PH2 P-202.PH2 P-203.PH2 P-204.PH2 P-700.PH2 P-701.PH2 P-702.PH2

- Sheet Number P-000.PH2 P-100.PH2 P-101.PH2

ARANCE FOR NORMAL G ARCHITECTURAL, MENTS SUCH AS THE RICAL FIXTURES, ETC. S, BUT IS NOT LIMITED OF BEARINGS; USING P/T RATURE TROL VALVES AND	EXPANSION JOINTS, ADDITIONAL FITTINGS OR EQUIVALENT TO ACCOMMODATE THE THERMAL EXPANSION OF THE BUILDING THROUGH STRUCTURAL EXPANSION JOINTS. PROVIDE SUCH FITTING AT EVERY PIPE, DUCT, CONDUIT, ETC. CROSSING OF A STRUCTURAL EXPANSION JOINT. FIRE STOPPING:	BC
ROL VALVES AND STIC COLD WATER, , ETC.) EACH RISER, EA SERVED. LE FOR PROVIDING ALL	1. FIRE STOPPING REQUIREMENT: PENETRATIONS THROUGH RATED WALLS AND FLOORS SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASES WHEN SUBJECTED TO THE REQUIREMENTS OF THE TEST STANDARD SPECIFIC FOR FIRE STOPS ASTM-E-814. ACCEPTANCE MATERIALS INCLUDE: DOW CORNING RTV FIRE STOP FOAM FOR BARE PIPE, METAL CONDUIT, AND ELECTRICAL	
RACTOR SHALL CESSARY TO SPLIT	CABLE; 3M FIRE DAM 150 CAULK FOR BARE PIPE, METAL CONDUIT, AND BUILDING CONSTRUCTION; GAPS 3M FS-195 INTUMESCENT STRIPS FOR INSULATED PIPES, PLASTIC PIPE OR CONDUIT, AND ELECTRICAL CABLE. FIRE STOPPING SHALL ADHERE TO SECTION 714 OF THE IBC. 2.	
ACILITATE RIGGING TO DR SHALL REASSEMBLE PROPER OPERATION S WARRANTEES. PLUMBING SYSTEM	<ul> <li>SCOPE CLARIFICATION NOTES:</li> <li>THESE DOCUMENTS SERVE TO DEFINE THE NATURE OF THE SYSTEMS, LEVEL OF CONTROL AND FINISH, RELATIONSHIPS WITH OTHER BUILDING SYSTEMS, AND GENERAL DESIGN INTENT OF THIS DIVISION'S WORK. THE CONTRACTOR SHALL EXAMINE THE DOCUMENTS OF ALL TRADES TO COMPLETELY FAMILIARIZE</li> </ul>	
) YEAR AFTER WNER. REFER TO OR SPECIFIC WARRANTY PORTED FROM THE	HIM/HERSELF WITH THE VARIOUS CONCEPTS PRESENTED BY OTHER TRADES AND ADAPT THIS WORK AND ANY ASSOCIATED PRICING ACCORDING. WHERE CONFLICTS EXIST BETWEEN THESE DOCUMENTS AND THOSE OF OTHER DIVISIONS, THE MORE STRINGENT (AS DETERMINED BY THE ENGINEER) SHALL TAKE PRECEDENCE. IN PARTICULAR, WHERE ARCHITECTURAL BACKGROUNDS INDICATE PROGRAMMATIC DIFFERENCES IN ROOM LOCATIONS, ROOM FUNCTIONS, PLUMBING FIXTURE	XL CENTER
GING, POCKETING, OF HANGERS AND PRTED BY EQUIPMENT. DISSIMILAR MATERIALS. ED HOSE-END DRAINS	COUNTS, CEILING TYPES, RATED CONSTRUCTION, CLEARANCES, OR ROOM RELATIONSHIPS, THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE AND THIS CONTRACTOR SHALL ADAPT HIS/HER WORK ACCORDINGLY WHILE MAINTAINING THE DESIGN INTENT REPRESENTED BY THE DOCUMENTS OF THIS DIVISION.	CAPITAL REGION * DEVELOPMENT AUTHORITY
AND LOW POINTS. OL DEVICES BEFORE USE PIPING SYSTEM PRESSURIZE PIPING AT TO 100 PSIG MINIMUM. ATURE COMPENSATED PRESSURE, REPAIR	<ol> <li>REFER TO LIFE SAFETY/CODE REPORT FOR ADDITIONAL SCOPE OF WORK THAT MAY NOT BE REFLECTED ON THE DRAWINGS. REFER TO PLUMBING SPECIFICATION AND NARRATIVE FOR ADDITIONAL INFORMATION.</li> <li>PROVIDE FIRE STOPPING ON ALL PIPES, DEVICES, ETC. PENETRATING ALL FIRE RATED CONSTRUCTION ASSEMBLIES.</li> </ol>	<b>SCIARCHITECTS</b> 469 SEVENTH AVE, SUITE 900 NEW YORK, NY 10018
PUMP SUCTION AND ITH A "ROUGHING" RMAL OPERATION.	<ol> <li>EQUIPMENT SHOWN IS NOT NECESSARILY TO SCALE.</li> <li>THE DRAWINGS ARE DIAGRAMMATIC IN NATURE. THE CONTRACTOR IS RESPONSIBLE FOR ALL OFFSETS, TRANSITIONS, ELBOWS, ETC. AS REQUIRED IN DUCTWORK, PIPING, SUPPORTS, ETC. TO COMPLETE HIS/HER WORK IN A CLEAN, FUNCTIONAL INSTALLATION.</li> </ol>	(646) 658-7410
EEN AND OPERATE OMESTIC WATER OF ONE HALF (1/2) D INSTALL NORMAL L OPERATION INSTALL	6. THIS CONTRACTOR IS RESPONSIBLE FOR ALL SLEEVES FOR PENETRATIONS THROUGH SLABS AND BEAMS REQUIRED BY THE INTENT OF THE SCOPE OF WORK INDICATED ON THE DRAWINGS. COORDINATION OF QUANTITY AND LOCATIONS OF ALL PENETRATIONS SHALL BE DONE BY THIS CONTRACTOR DURING THE SHOP DRAWINGS PROCESS FOR REVIEW BY THE	<b>Engineers</b> 29 W 38th STREET, 5th FLOOR NEW YORK, NY 10018 (212) 447-6770
LESS HEAD LOSS PER NOT EXCEED 10 FEET ANSION AND EM. ENSURE ALL IN THE PROPER	<ul> <li>STRUCTURAL ENGINEER.</li> <li>7. REFER TO FOOD SERVICE DRAWINGS FOR EQUIPMENT LAYOUT AND CONNECTION REQUIREMENTS FOR ALL FOOD SERVICE AREAS THROUGHOUT THE BUILDING.</li> <li><u>PHASING AND PREMIUM TIME:</u></li> </ul>	
PERLY ANCHOR (RE: COORDINATE PIPE DAMAGE TO ANY AND BRANCH LINE WHERE	<ol> <li>ALL CONTRACTORS SHALL REVIEW DRAWINGS FOR PHASING PLAN. UNIT REPLACEMENTS SHALL OCCUR ON A ONE BY ONE BASIS, EACH UNIT REPLACEMENT IDENTIFIES A DIFFERENT PHASE OF THIS PROJECT.</li> <li>WORK IN THE PRIMARY WORK AREA (FIRST FLOOR DINING</li> </ol>	
	<ul> <li>AREAS) SHALL BE COMPLETED ON STRAIGHT TIME, UNLESS NOTED OTHERWISE, WITH THE EXCEPTION OF WORK THAT IMPACTS THE OPERATION OF EXISTING FUNCTIONING MEP SYSTEMS.</li> <li>WORK REQUIRING SHUTDOWN OF EXISTING SYSTEMS SHALL BE ARRANGED FOR CONTINUOUS PERFORMANCE, WITH MULTIPLE OPEWOR TO LIMIT THE DUBATION OF THE SUBJECT ON THE SUBJECT OF THE SUBJ</li></ul>	
PATCHING NECESSARY RACT DOCUMENTS) L OF THE ARCHITECT OF THE CUTTING. AL DAMAGE TO MATCH CEABLE DIFFERENCE IN	CREWS, TO LIMIT THE DURATION OF THE SHUTDOWN TO THE MINIMUM POSSIBLE PERIOD. ALL PREP-WORK SHALL BE COMPLETED PRIOR TO SYSTEM SHUT-DOWN, ALL MATERIALS SHALL BE ON SITE PRIOR TO THE START OF WORK REQUIRING A SHUT-DOWN OR CLOSING OF A SPACE OUTSIDE THE PRIMARY WORK AREA. ALL WORK REQUIRING A SHUTDOWN SHALL BE COORDINATED WITH THE FACILITY AT LEAST ONE WEEK IN ADVANCE.	
N. NG BACK AT NEAREST BERS. ALL EQUIPMENT	4. ALL WORK OUTSIDE OF THE PRIMARY WORK AREA ASSOCIATED WITH DEMOLITION AND RESTORATION OF WALLS, CEILINGS, AND FINISHES, REMOVAL AND REPLACEMENT OF CEILING TILE, CLEAN-UP, DEBRIS REMOVAL, SAFETY ISOLATION OF WORK AREA, ETC. SHALL BE THE RESPONSIBILITY OF EACH TRADE CONTRACTOR	NOT FOR CONSTRUCTION
LOAD BEARING DO NOT OVER-STRESS STRUCTURAL SPECIFIC MEMBERS. ORS FOR ANY O BE HELD IN TENSION. NAL RESTRICTIONS.		
CCEPTABLE HODS, AND LOCATIONS. NSION LOOPS,		
		Image: Constraint of the second se
PLUMBING [	DRAWING LIST - PHASE 2 Sheet Name	1     PH2 - ISSUED FOR 75% SD     12/11/20       NO.     DESCRIPTION     DATE         REVISIONS/ ISSUES   CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY OMISSIONS OR DISCREPANCIES TO THE ADCIMENT OF DESCRIPTION
UNDERGROU LEVEL 31 - P LEVEL 48 - P	EGEND & NOTES - PHASE 2 UND - PLUMBING DEMOLITION PHASE 2 LUMBING DEMOLITION PHASE 2 LUMBING DEMOLITION PHASE 2 LUMBING DEMOLITION PHASE 2	DISCREPANCIES TO THE ARCHITECT BEFORE PROCEFDING WITH THE WORK DO NOT SCALE THE DRAWINGS
UNDERGROU LEVEL 31 - P LEVEL 48 - P LEVEL 61 - P	LUMBING DEMOLITION PHASE 2 UND - PLUMBING CONSTRUCTION PHASE 2 LUMBING CONSTRUCTION PHASE 2 LUMBING CONSTRUCTION PHASE 2 LUMBING CONSTRUCTION PHASE 2 LUMBING CONSTRUCTION PHASE 2	
PLUMBING D	DETAILS I - PHASE 2 DETAILS II - PHASE 2 DETAILS III - PHASE 2	DRAWN MEE DATE 12/11/20 CHECKED MEE
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		1 CIVIC CENTER PLAZA HARTFORD, CT
		DWG. TITLE

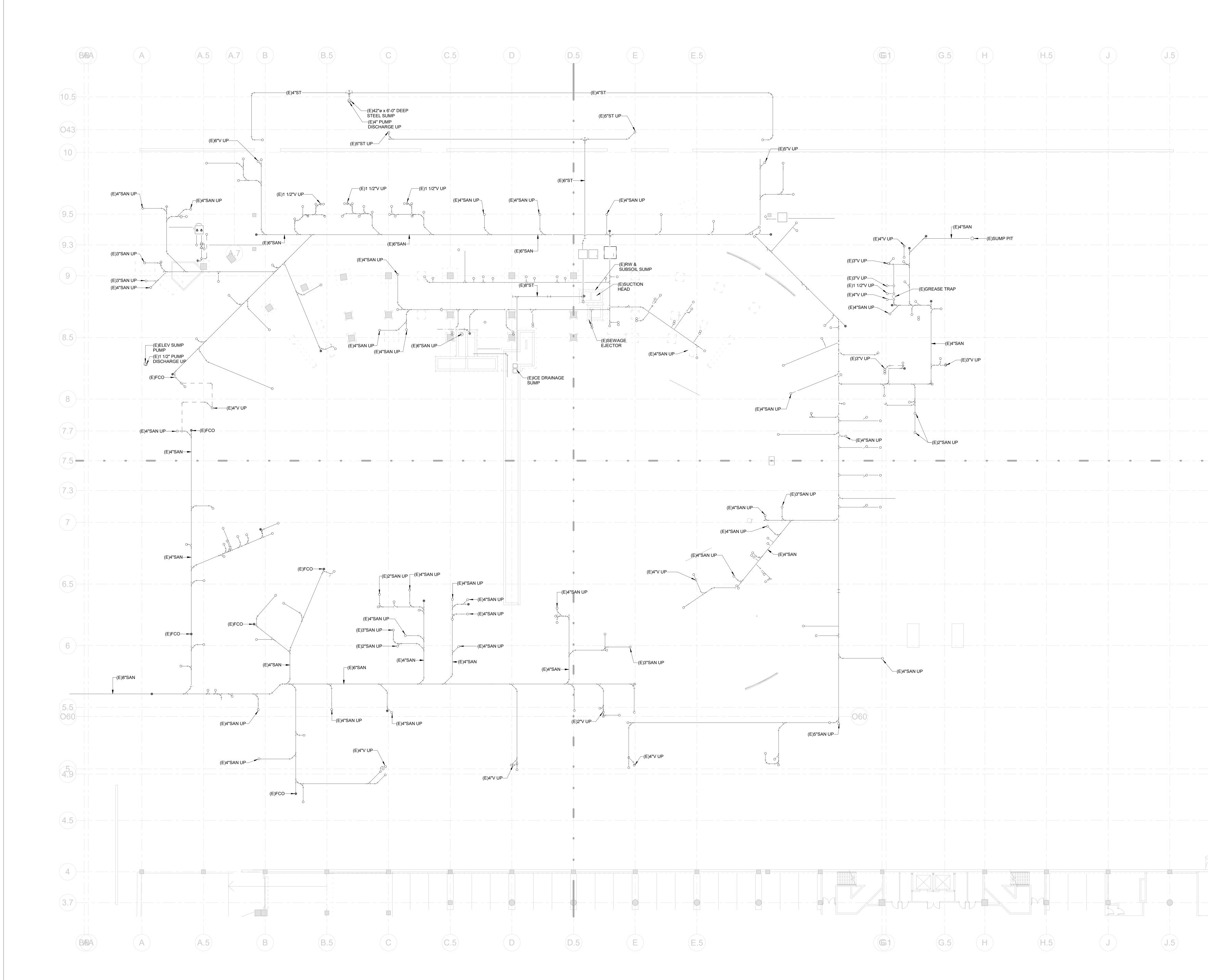
- PHASE 2

1605

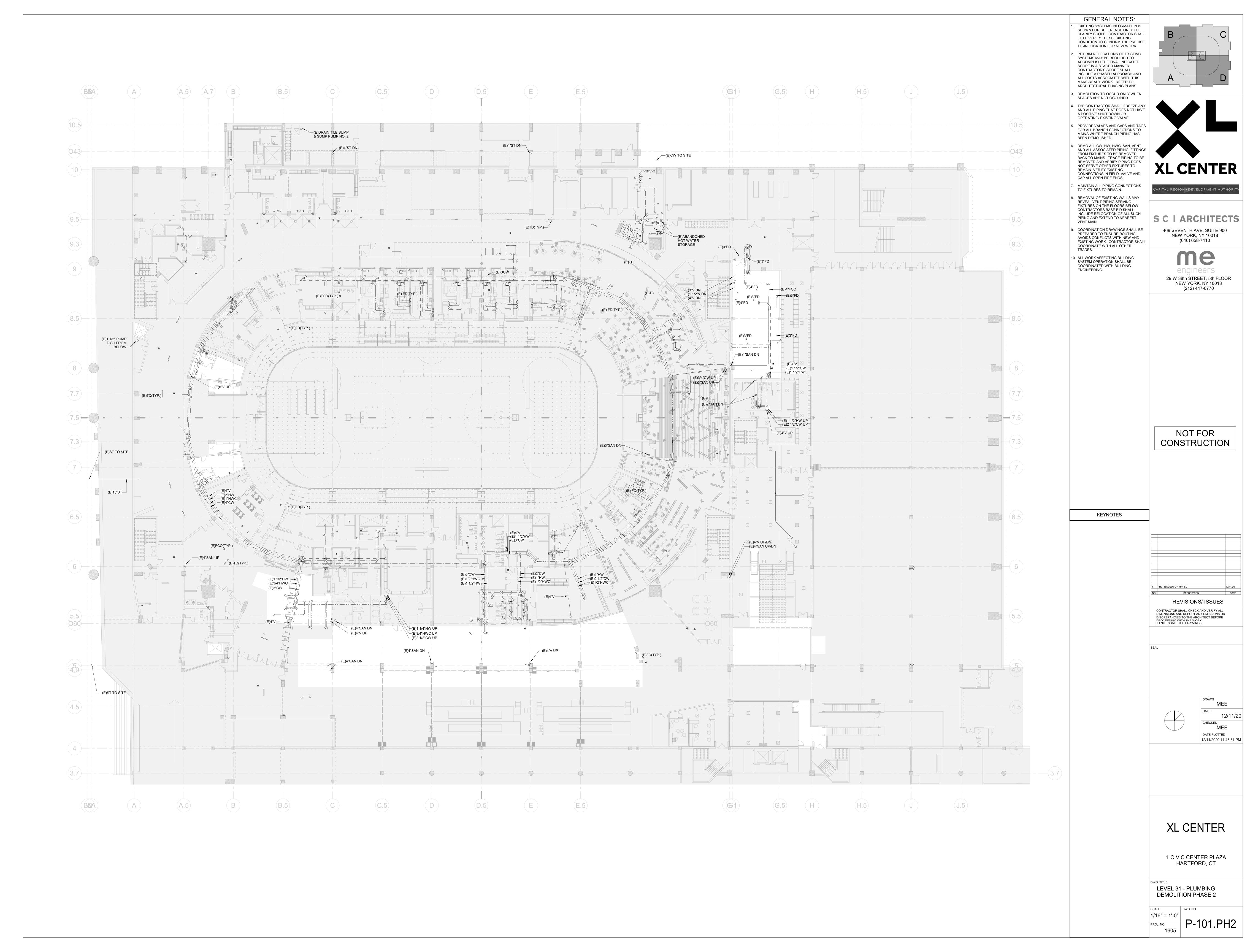
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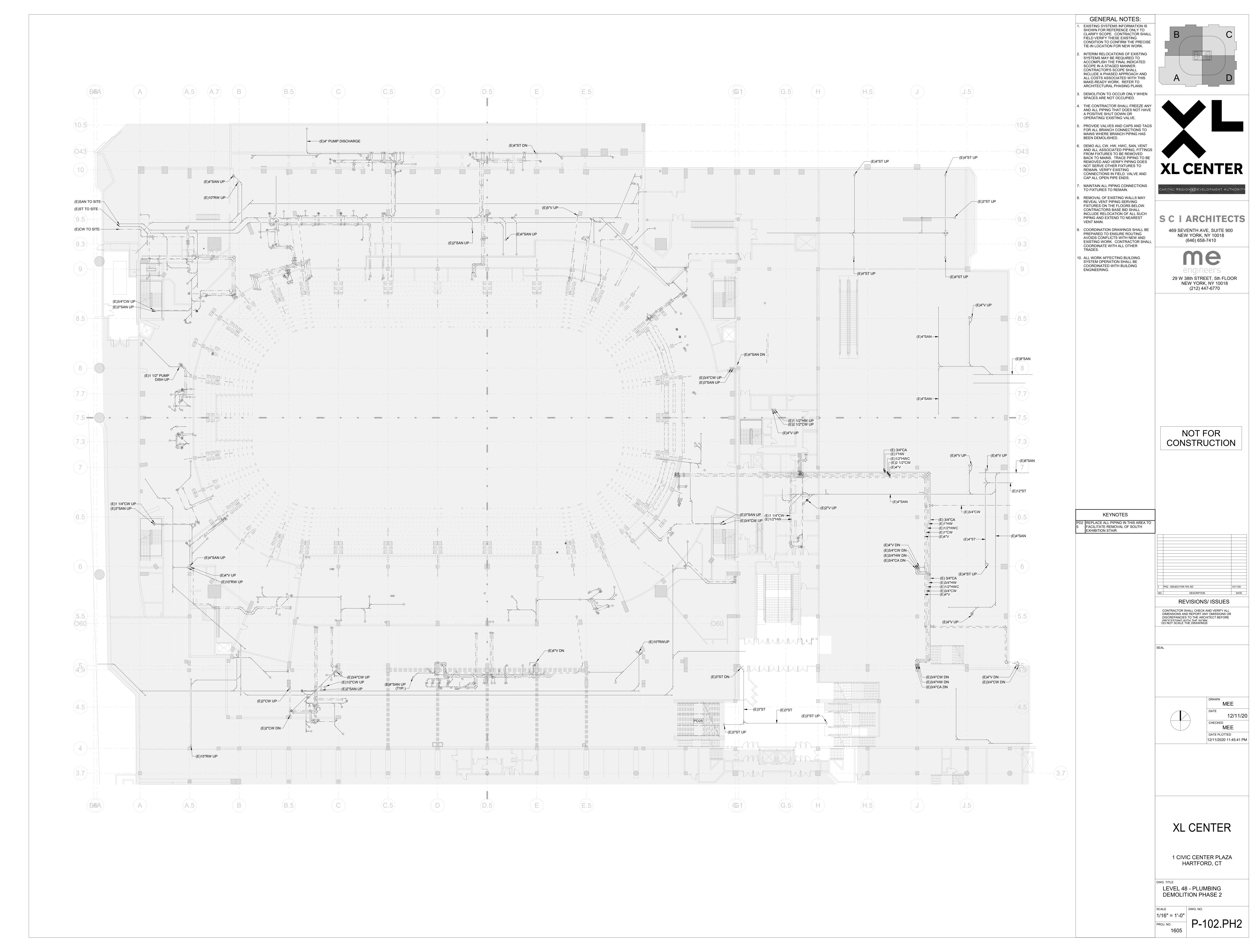
**PLUMBING LEGEND & NOTES** 

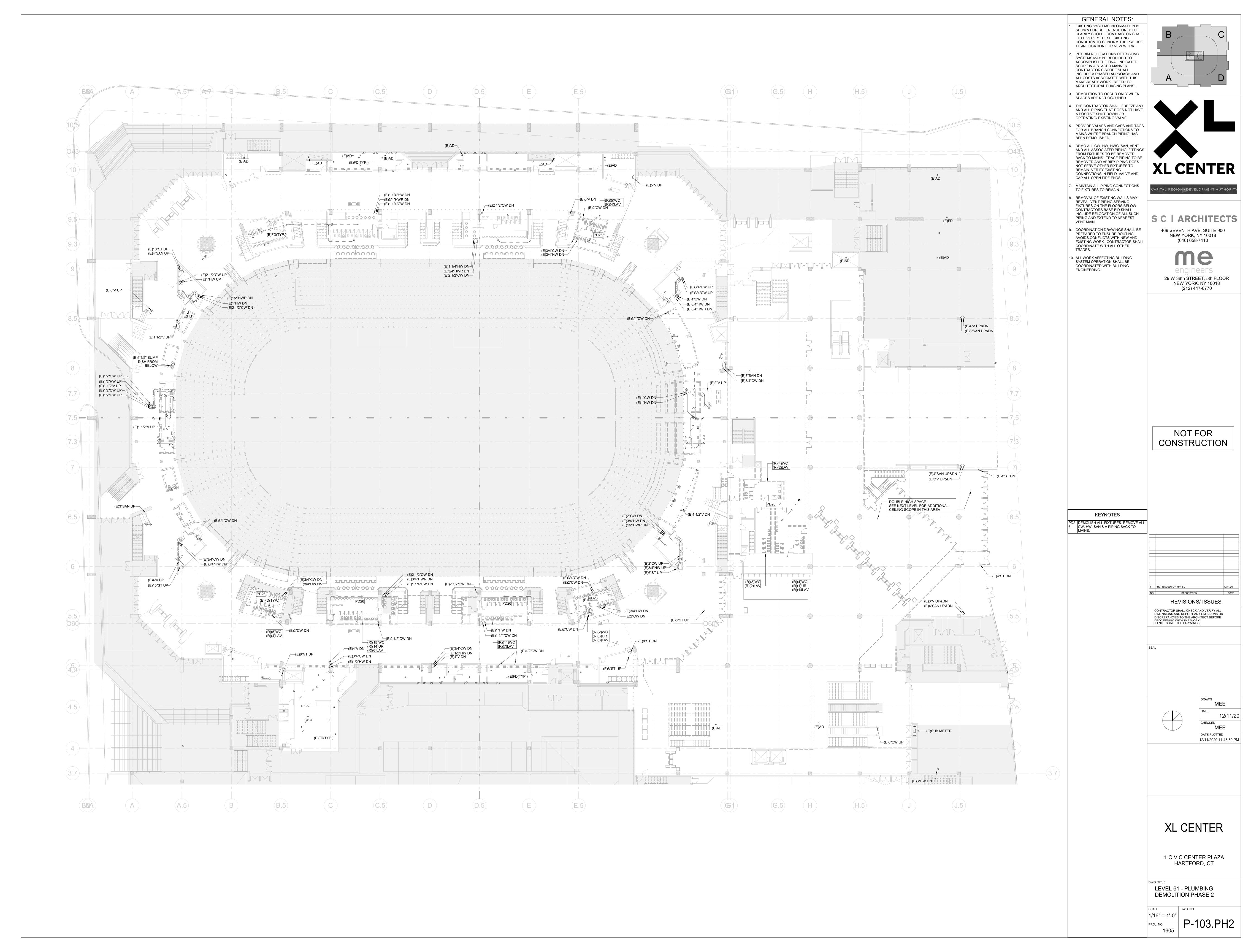
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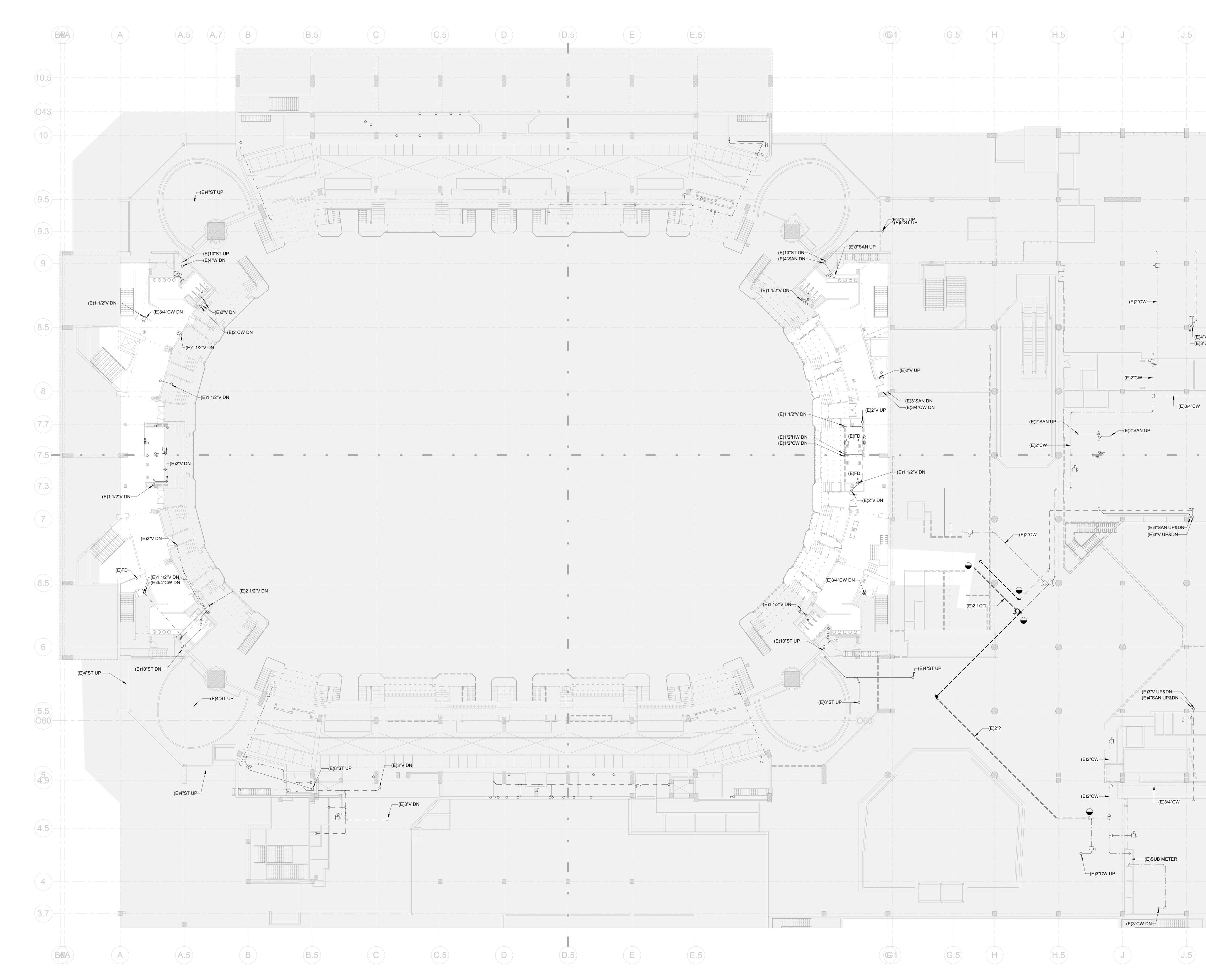


		<ul> <li>GENERAL NOTES:</li> <li>1. EXISTING SYSTEMS INFORMATION IS SHOWN FOR REFERENCE ONLY TO CLARIFY SCOPE. CONTRACTOR SHALL FIELD VERIFY THESE EXISTING CONDITION TO CONFIRM THE PRECISE TIE-IN LOCATION FOR NEW WORK.</li> <li>2. INTERIM RELOCATIONS OF EXISTING SYSTEMS MAY BE REQUIRED TO ACCOMPLISH THE FINAL INDICATED SCOPE IN A STAGED MANNER. CONTRACTOR'S SCOPE SHALL INCLUDE A PHASED APPROACH AND ALL COSTS ASSOCIATED WITH THIS MAKE-READY WORK. REFER TO ARCHITECTURAL PHASING PLANS.</li> <li>3. DEMOLITION TO OCCUR ONLY WHEN SPACES ARE NOT OCCUPIED.</li> <li>4. THE CONTRACTOR SHALL FREEZE ANY AND ALL PIPING THAT DOES NOT HAVE A POSITIVE SHUT DOWN OR OPERATING/ EXISTING VALVE.</li> <li>5. PROVIDE VALVES AND CAPS AND TAGS FOR ALL BRANCH CONNECTIONS TO MAINS WHERE BRANCH PIPING, FITTINGS FROM FIXTURES TO BE REMOVED BACK TO MAINS. TRACE PIPING TO BE REMOVED AND VERIFY PIPING DOES NOT SERVE OTHER FIXTURES TO REMAIN. VERIFY EXISTING CONNECTIONS IN FIELD. VALVE AND CAP ALL OPEN PIPE ENDS.</li> <li>7. MAINTAIN ALL PIPING CONNECTIONS TO FIXTURES TO REMAIN.</li> <li>8. REMOVAL OF EXISTING WALLS MAY REVEAL VENT PIPING SERVING FIXTURES TO REMAIN.</li> <li>8. REMOVAL OF EXISTING WALLS MAY REVEAL VENT PIPING SERVING FIXTURES TO NEMAIN.</li> <li>8. REMOVAL OF EXISTING WALLS MAY REVEAL VENT PIPING SERVING FIXTURES TO NEMAIN.</li> <li>8. REMOVAL OF EXISTING WALLS MAY REVEAL VENT PIPING SERVING FIXTURES TO NEMAILL INCLUDE RELOCATION OF ALL SUCH PIPING AND EXTEND TO NEAREST VENT MAIN.</li> <li>9. COORDINATEON DRAWINGS SHALL BE PREPARED TO ENSURE ROUTING AVOIDS CONFLICTS WITH NEW AND EXISTING WORK. CONTRACTORS SHALL BE COONDINATE WITH ALL OTHER TRADES.</li> <li>10. ALL WORK AFFECTING BUILDING SYSTEM OPERATION SHALL BE COONDINATE WITH ALL OTHER TRADES.</li> <li>10. ALL WORK AFFECTING BUILDING ENGINEERING.</li> </ul>	<image/>
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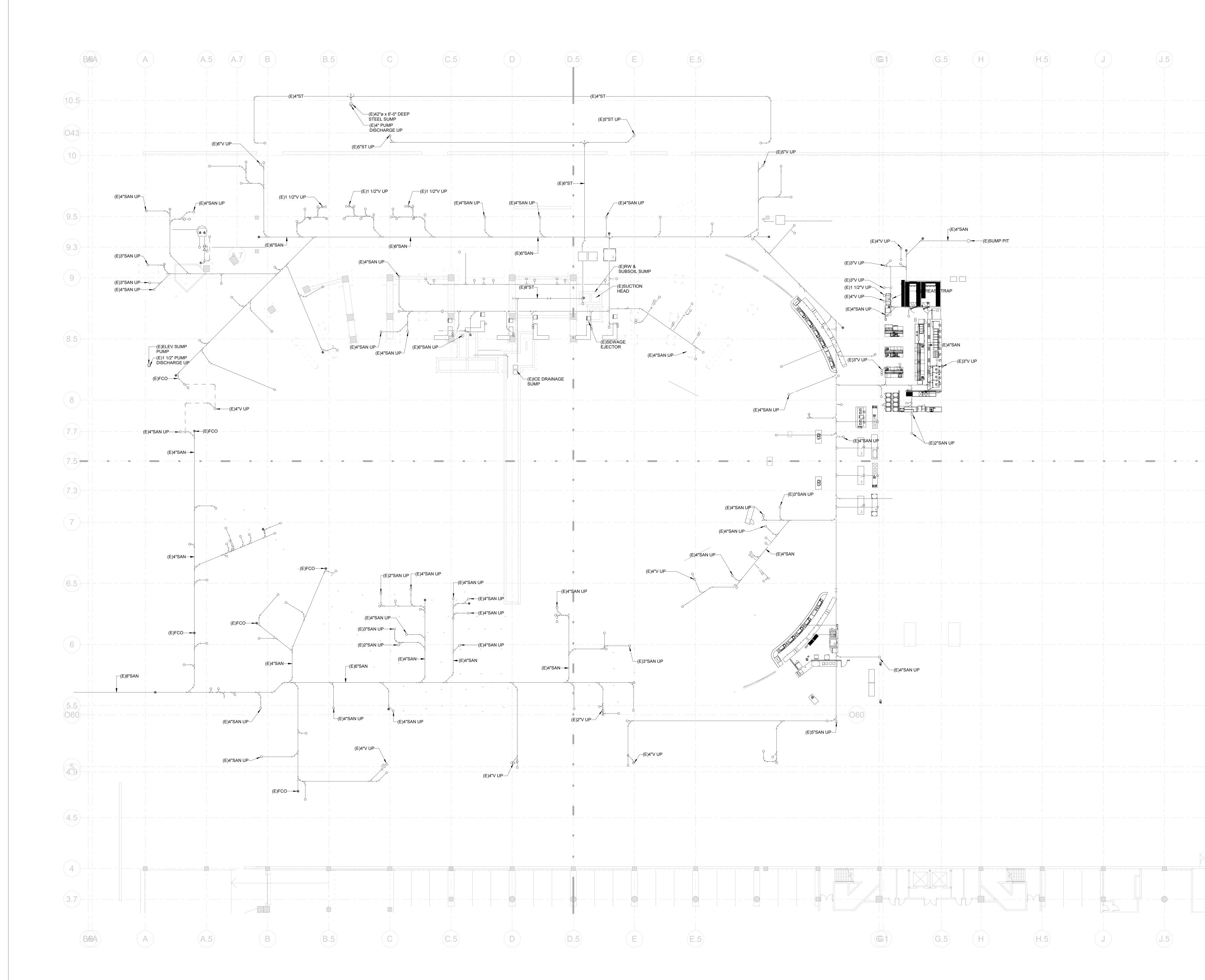




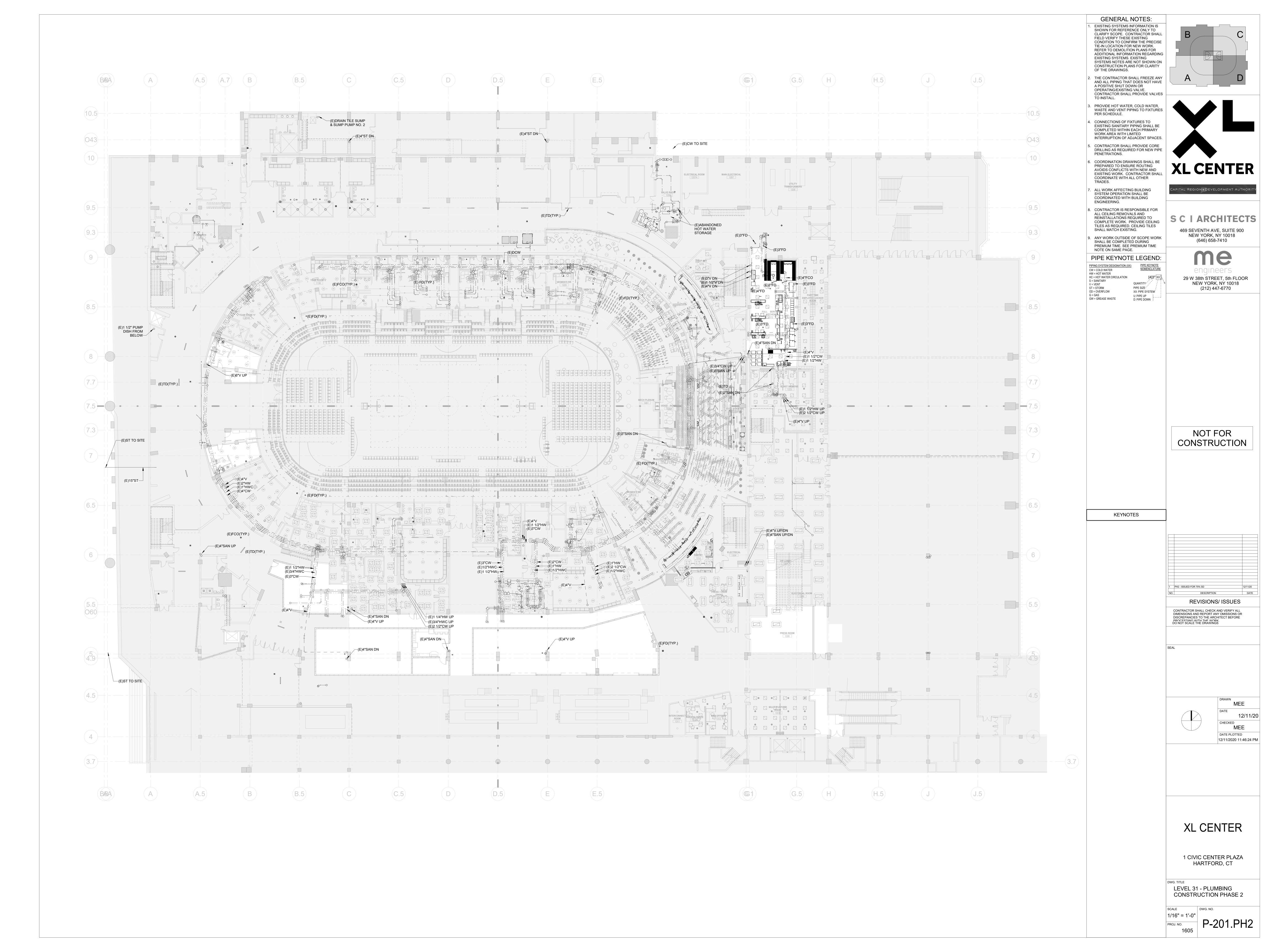


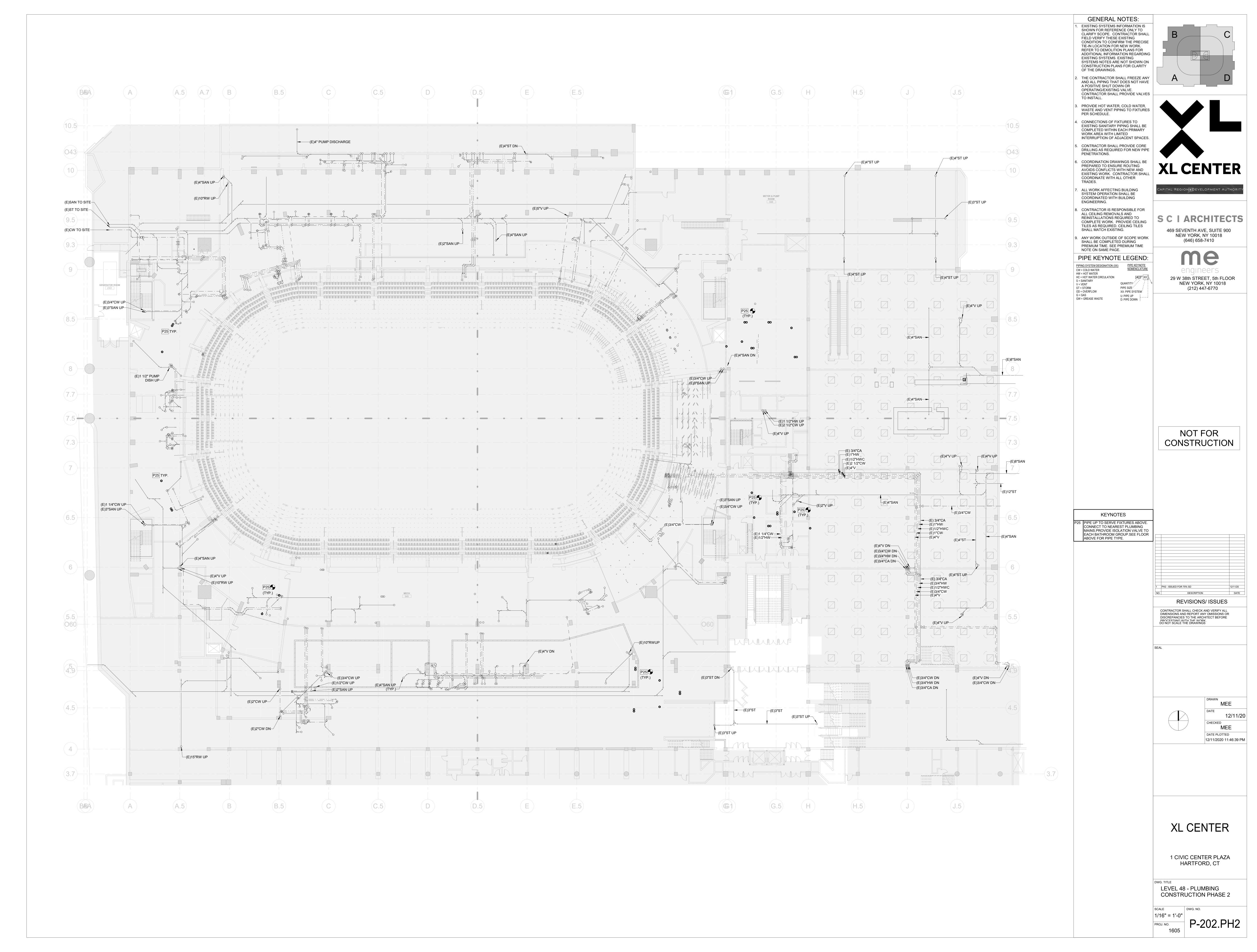


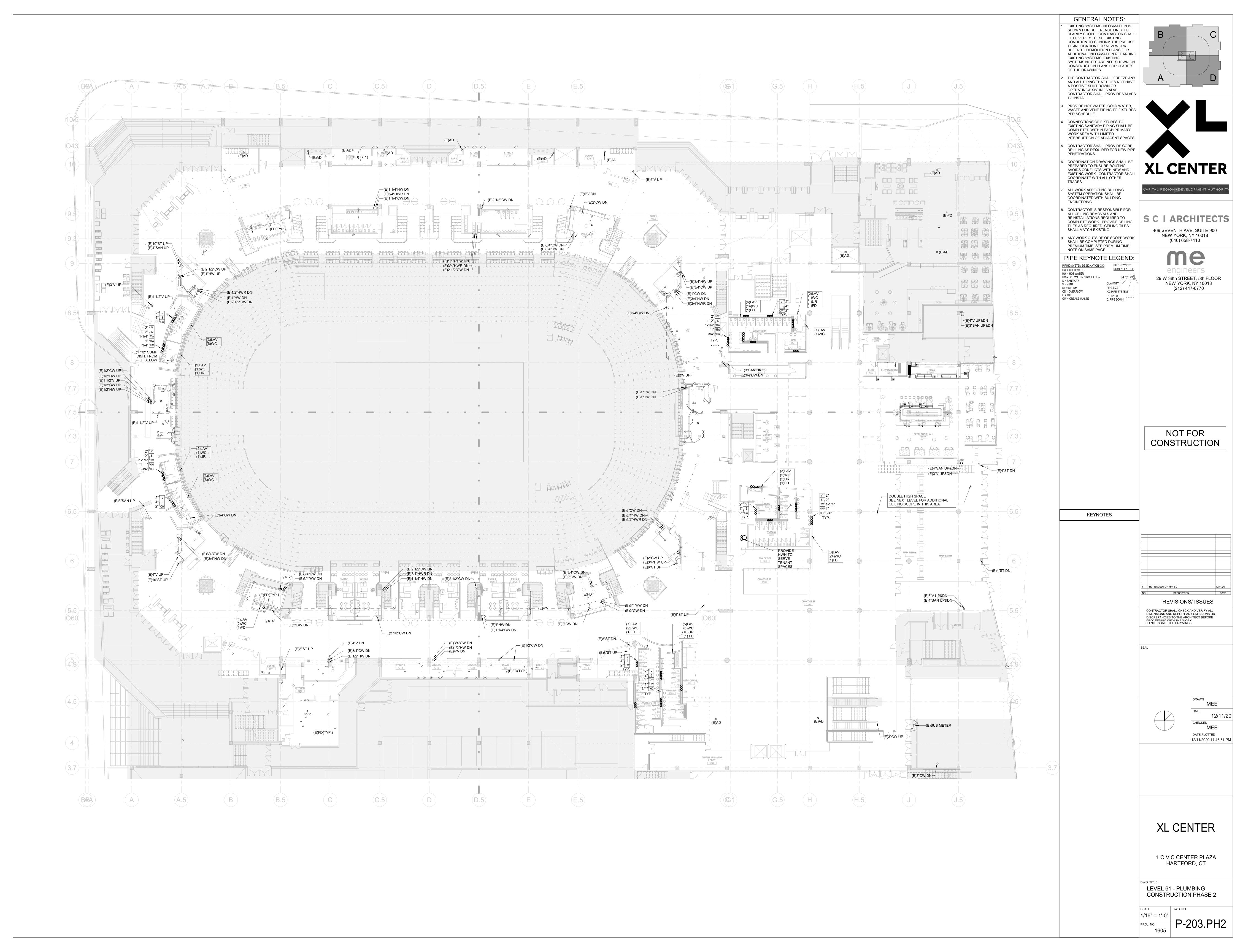
	-10.5 -043 -10 -09.5 -9.5		<ul> <li>SCOPE IN A STAGED MANNER. CONTRACTOR'S SCOPE SHALL INCLUDE A PHASED APPROACH AND ALL COSTS ASSOCIATED WITH THIS MAKE-READY WORK. REFER TO ARCHITECTURAL PHASING PLANS.</li> <li>DEMOLITION TO OCCUR ONLY WHEN SPACES ARE NOT OCCUPIED.</li> <li>THE CONTRACTOR SHALL FREEZE ANY AND ALL PIPING THAT DOES NOT HAVE A POSITIVE SHUT DOWN OR OPERATING/ EXISTING VALVE.</li> <li>PROVIDE VALVES AND CAPS AND TAGS FOR ALL BRANCH CONNECTIONS TO MAINS WHERE BRANCH PIPING HAS BEEN DEMOLISHED.</li> <li>DEMO ALL CW, HW, HWC, SAN, VENT AND ALL ASSOCIATED PIPING, FITTINGS FROM FIXTURES TO BE REMOVED BACK TO MAINS. TRACE PIPING TO BE REMOVED AND VERIFY PIPING DOES NOT SERVE OTHER FIXTURES TO REMAIN. VERIFY EXISTING CONNECTIONS IN FIELD. VALVE AND CAP ALL OPEN PIPE ENDS.</li> <li>MAINTAIN ALL PIPING CONNECTIONS TO FIXTURES TO REMAIN.</li> <li>REMOVAL OF EXISTING WALLS MAY REVEAL VENT PIPING SERVING FIXTURES ON THE FLOORS BELOW. CONTRACTORS BASE BID SHALL INCLUDE RELOCATION OF ALL SUCH PIPING AND EXTEND TO NEAREST VENT MAIN.</li> <li>COORDINATION DRAWINGS SHALL BE PREPARED TO ENSURE ROUTING AVOIDS CONFLICTS WITH NEW AND EXISTING WORK. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.</li> <li>ALL WORK AFFECTING BUILDING</li> </ul>	A D D D D D D D D D D D D D D D D D D D
"V UP&DN "SAN UP&DN	9		SYSTEM OPERATION SHALL BE COORDINATED WITH BUILDING ENGINEERING.	Engineers 29 W 38th STREET, 5th FLOOR NEW YORK, NY 10018 (212) 447-6770
	$-\frac{8}{7.7}$ -7.5 -7.3 -7.3 -7.3			NOT FOR CONSTRUCTION
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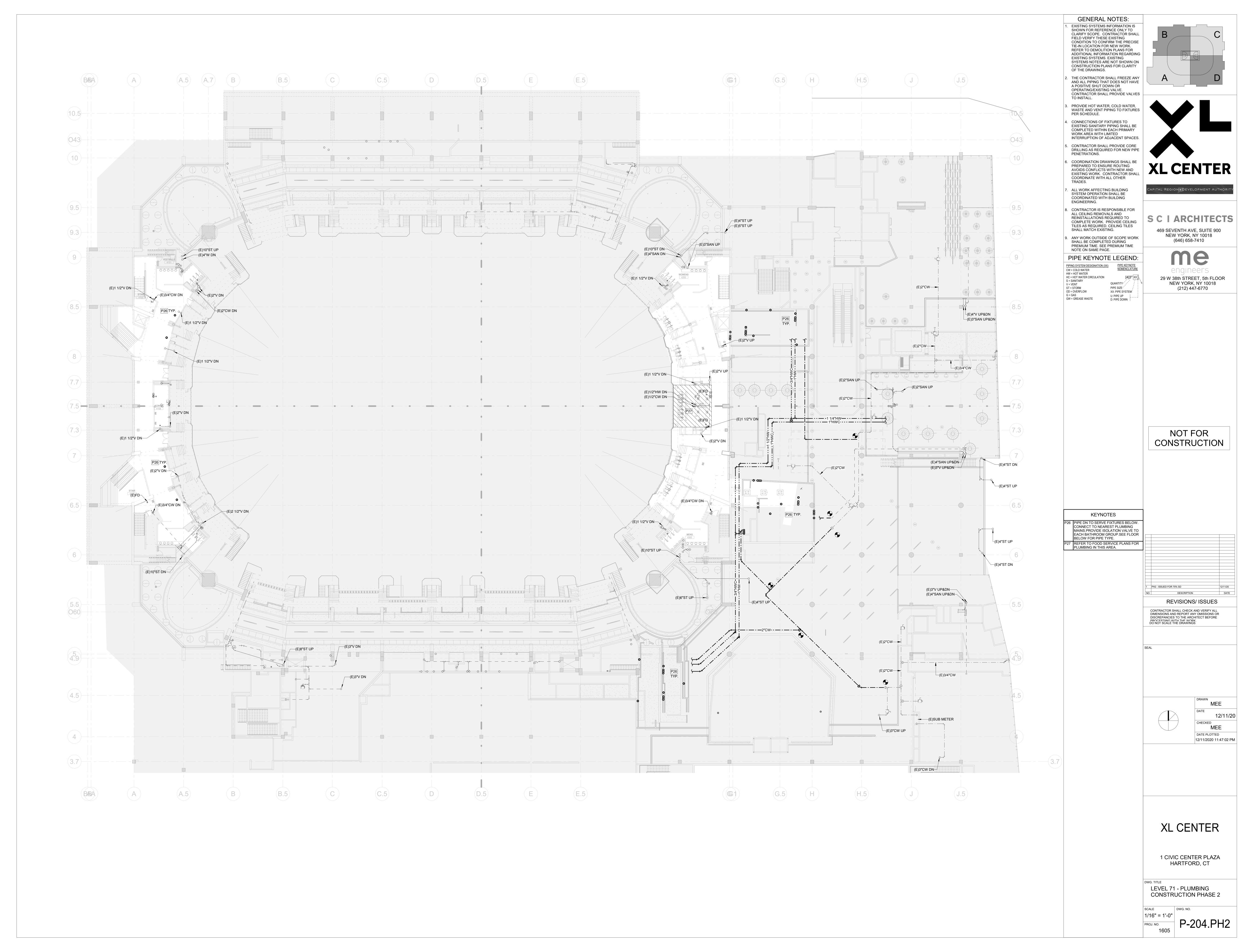


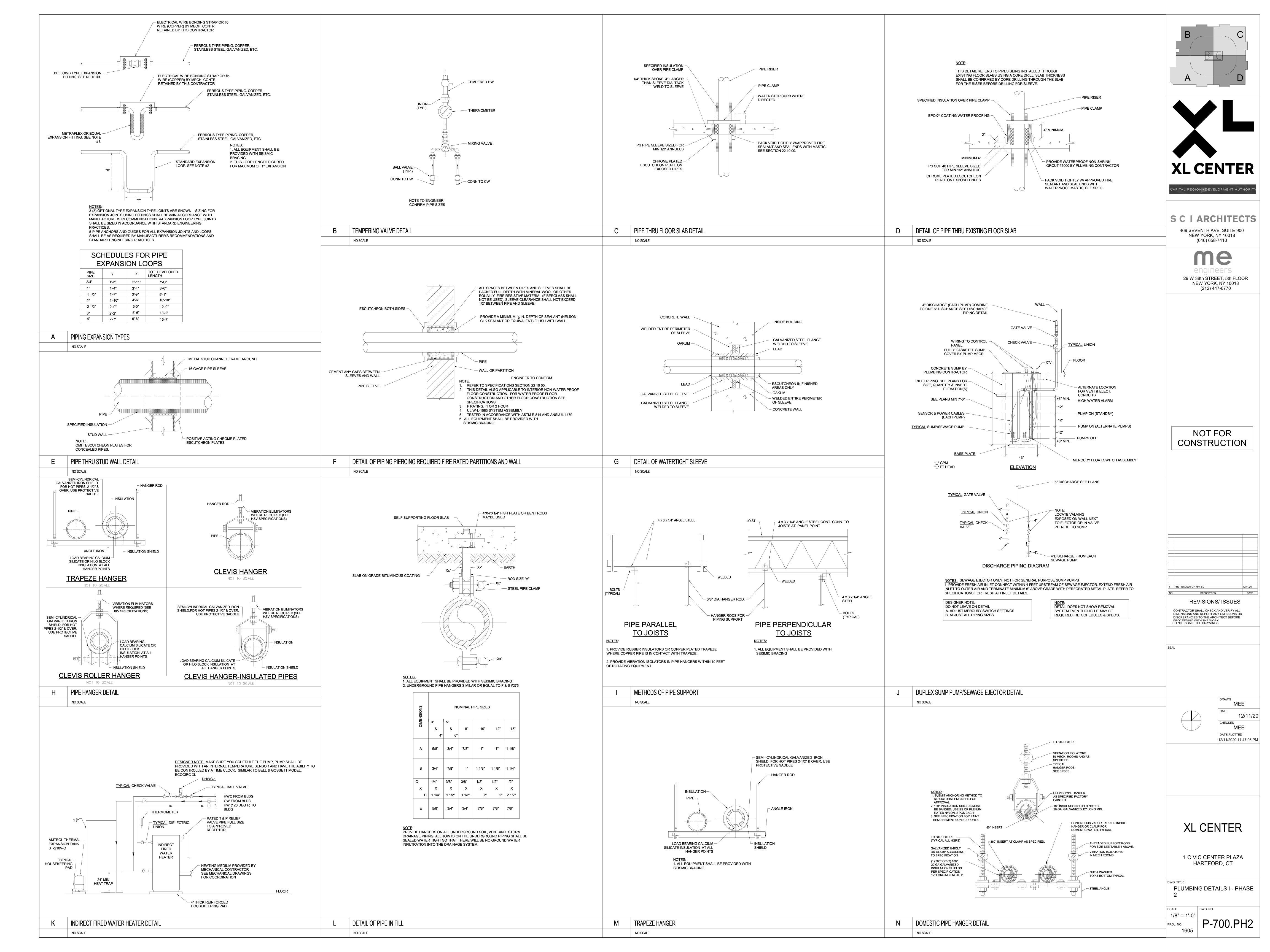
		GENERAL NOTES:         1. EXISTING SYSTEMS INFORMATION IS SHOWN FOR REFERENCE ONLY TO CLARIFY SCOPE. CONTRACTOR SHALL FIELD VERIFY THESE EXISTING CONDITION TO CONFIRM THE PRECISE TIE-IN LOCATION FOR NEW WORK. REFER TO DEMOLITION PLANS FOR ADDITIONAL INFORMATION REGARDING EXISTING SYSTEMS. EXISTING SYSTEMS NOTES ARE NOT SHOWN ON CONSTRUCTION PLANS FOR CLARITY OF THE DRAWINGS.         2. THE CONTRACTOR SHALL FREEZE ANY AND ALL PIPING THAT DOES NOT HAVE A POSITVE SHUT DOWN OR OPERATING/EXISTING VALVE. CONTRACTOR SHALL PROVIDE VALVES TO INSTALL.         3. PROVIDE HOT WATER, COLD WATER, WASTE AND VENT PIPING TO FIXTURES PER SCHEDULE.         4. CONNECTIONS OF FIXTURES TO EXISTING SANITARY PIPING SHALL BE COMPLETED WITHIN EACH PRIMARY WORK AREA WITH LIMITED INTERRUPTION OF ADJACENT SPACES.         5. CONTRACTOR SHALL PROVIDE CORE DRILLING AS REQUIRED FOR NEW PIPE PENETRATIONS.         6. COORDINATION DRAWINGS SHALL BE PREPARED TO ENSURE ROUTING AVOIDS CONFLICTS WITH NEW AND EXISTING WORK. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.         7. ALL WORK AFFECTING BUILDING SYSTEM OPERATIONS REQUIRED FOR ALL CEILING REMOVALS AND REINSTALLATIONS REQUIRED TO COMPLETE WITH BUILDING SYSTEM OPERATION SHALL BE COORDINATED WITH BUILDING SYSTEM OPERATIONS REQUIRED TO COMPLETE WORK. PROVIDE CEILING TILES AS REQUIRED. CEILING TILES SHALL MATCH EXISTING.         8. CONTRACTOR IS RESPONSIBLE FOR ALL CEILING REMOVALS AND REINSTALLATIONS REQUIRED TO COMPLETE WORK. PROVIDE CEILING TILES AS REQUIRED. CEILING TILES SHALL MATCH EXISTING.         9. ANY WORK OUTSIDE OF SCOPE WORK SHALL BE COMPLETED DURING PREMIUM TIME. SEE PREMIUM TIME NOTE ON SAME PAGE.         PIPE KEYNOTE HOBENDERINATION SAME PAGE. <td< th=""><th><image/></th></td<>	<image/>
		KEYNOTES	
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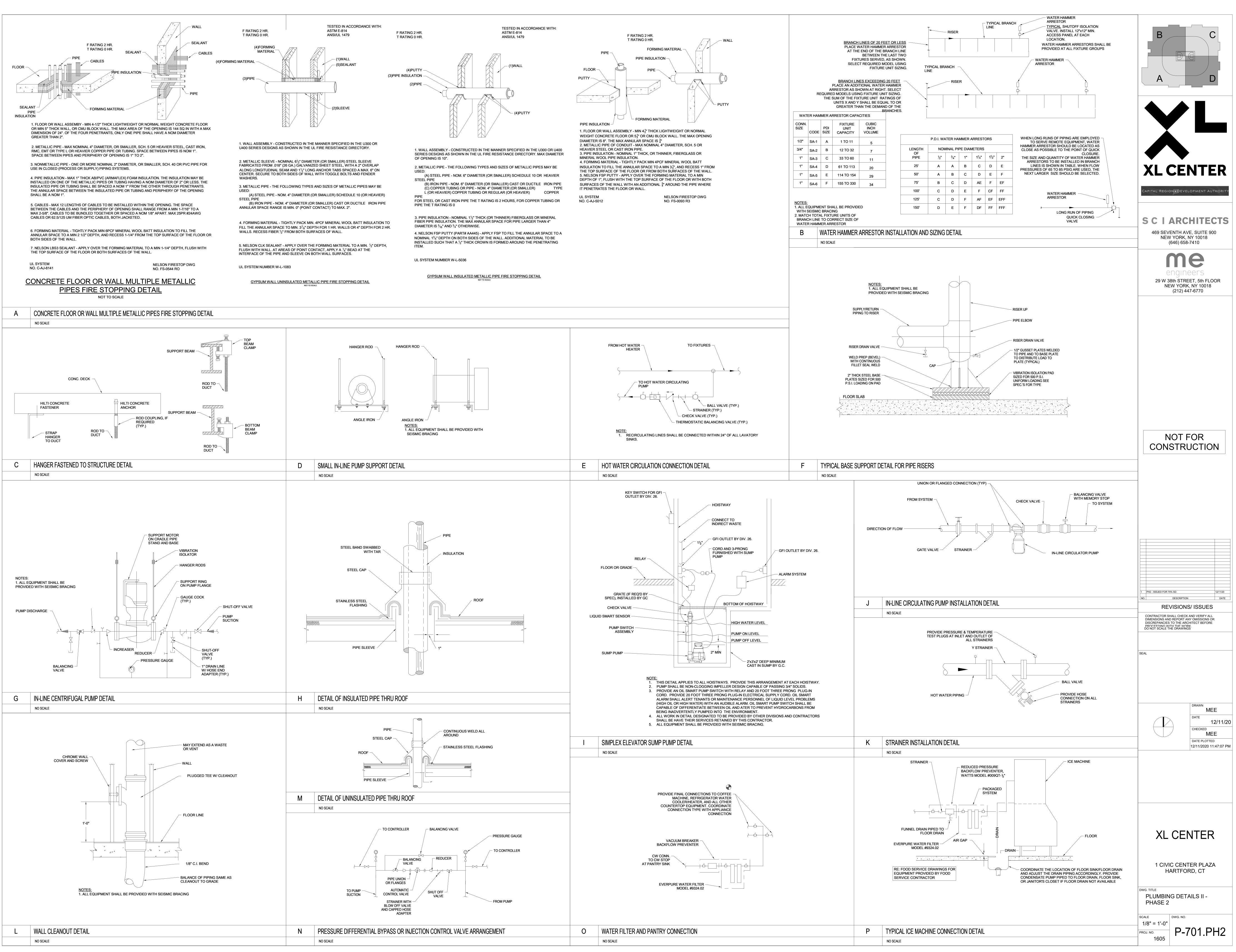


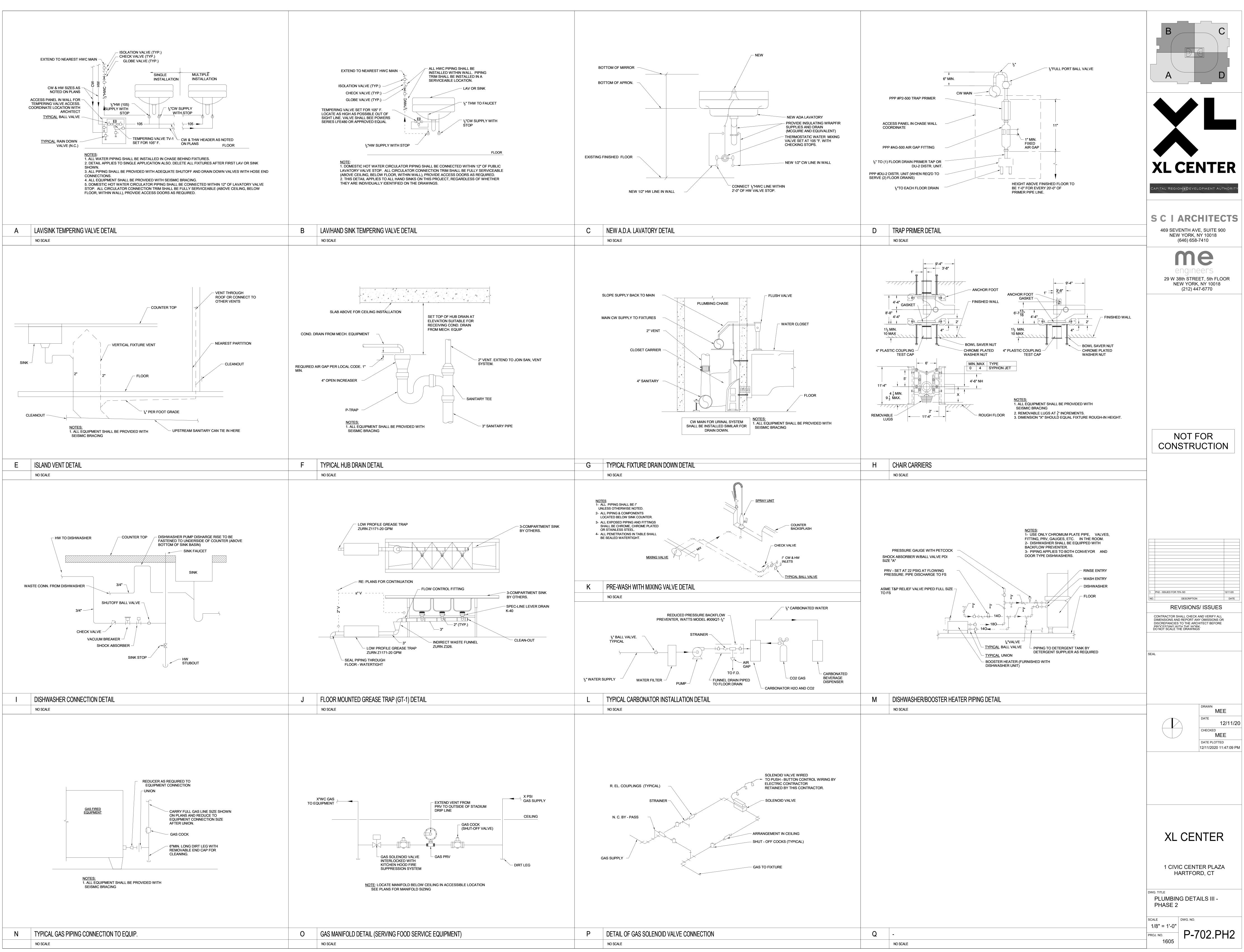












	RAL PIPING	GENE		YMBOLS/ ABBR.	SY	RAL S	GENE
SYMBOL ABBR	DESCRIPTION	ABBR	SYMBOL	DESCRIPTION		ABBR	MBOL
	EXISTING SPRINKLER PIPING	(E)		- SECTION NO.	_		
cv	(LIGHT SOLID LINE) EXISTING SPRINKLER PIPING TO BE REMOVED (DASHED LINE)	(R)		- SECTION VIEW SHEET NO.			F M
PRV	SPRINKLER PIPING	SP		SHEET KEY NOTES			
BFV	STANDPIPE PIPING DRAIN	ST DR		POINT OF CONN. (CONN. NEW TO EXISTING)		POC	
BV	PIPE SIZE		<u> </u>	POINT OF DISCONNECTION		POD	<u> </u>
				ARROW INDICATES DIRECTION OF FLOW			
(PLAN) (ELEV)	KLER HEADS	SPRIN	E State Stat				
	DESCRIPTION	ABBR	SYMBOL	RISE IN DIRECTION OF FLOW			
	EXISTING HEAD TO REMAIN			DROP IN DIRECTION OF FLOW			_
	EXISTING HEAD TO		E			DN	
GV	BE REMOVED	R	R	ABOVE FINISHED FLOOR ABOVE FINISHED GRADE		AFF AFG	
	UPRIGHT	U	0	TOP OF PIPE (AFF)		ТОР	
TS	UPRIGHT UNDER OBSTRUCTION	UO				BOP	
	CONCEALED PENDANT			INVERT ELEVATION NOT TO SCALE		I.E. NTS	
	EXTENDED COVERAGE	EC		EXISTING		(E)	
	CONCEALED PENDANT HEAD	EC	EC	REMOVE		(R)	
SYMBOL ABBR	DRY CONCEALED PENDANT			FLOOR DRAIN		FD	
	HEAD	D	D	ON CENTER SPRINKLER		O.C. SPR.	
–∣‱⊢ <sup>EJ</sup> EJ	DRY UPRIGHT HEAD	D		SQUARE FEET		SPR. SQ.FT	
U U		L.	•	TEMPERATURE		TEMP	
FC	RATED HEAD	IT	П				
FS FS	HIGH TEMPERATURE RATED HEAD	НТ	●нт				
PS PS	SIDEWALL HEAD						
TS TS	EXTENDED COVERAGE SIDEWALL HEAD		► <sub>EC</sub>				
PG	)						
	PUMP ABBR.	FIRE F					
	DESCRIPTION	ABBR	SYMBOL				
	FIRE PUMP	FP					
	JOCKEY PUMP	JP					
	)						
	TION ASSEMBLIES	OTEC	FIRE PR				
ER	DESCRIPTION	ABBR	SYMBOL				
	FIRE DEPARTMENT (SIAMESE) CONNECTION	SIA					
MECHAN	FLOOR CONTROL VALVE ASSEMBLY	FCVA					
SPRINKL COORDINAT	FIRE HOSE CABINET	FHC	FHC				
FOR MECHANICAL, F	FIRE HOSE VALVE	FHV	FHV				
AND 23 DRAWINGS, CONTRACTORS SHA CONTRACTOR TO CO	DOUBLE CHECK DETECTOR	DCDA					

SPRINKLER HEAD SCHEDULE						
DESCRIPTION	MANUFACTURER	MODEL NO.	K-FACTOR	REQ. PRESSURE (PSI)	MEA #	REMARKS
QUICK RESPONSE SIDEWALL	RELIABLE	F1FR	5.6	7	258-93-E	NONE
QUICK RESPONSE CONCEALED PENDANT	RELIABLE	G5-56	5.6	7	258-93-E	NONE
QUICK RESPONSE PENDANT	RELIABLE	F1FR	5.6	7	258-93-E	NONE
QUICK RESPONSE RECESSED PENDANT	RELIABLE	F1FR	5.6	7	258-93-E	NONE
QUICK RESPONSE UPRIGHT	RELIABLE	F1FR	5.6	7	258-93-E	NONE
QUICK RESPONSE DRY HEADS	RELIABLE	F3QR	5.6	7	258-93-E	NONE

# VINGS)

- SCRIPTION /ALVE W/ HOSE END
- VALVE W/ INDICATION DIRECTION
- JRE REDUCING VALVE RFLY VALVE
- RATURE/ PRESSURE VALVE
- N RISER
- ER W/ BLOW-OFF & D HOSE-END -CTION
- E STEM AND YOKE
- WITH TAMPER SWITCH
- **SCRIPTION** SION JOINT
- E PIPE CONNECTOR WITCH
- JRE SWITCH
- SWITCH
- JRE GAUGE W/GAUGE
- DOWN
- AP OR PLUG
- NTRIC REDUCER
- TRIC REDUCER
- LUMBING/ ECTRICAL
- QUIREMENTS AND SPRINKLER
- THE DIVISION 21, 22, ON 21, 22 AND 23 INATE WITH DIVISION 26 L MECHANICAL AND TED ON THE SPRINKLER DRAWINGS. WIRING, STARTERS, FOR ALL MECHANICAL, UIPMENT.

- GENERAL FIRE PROTECTION CONTRACT REQUIREMENTS: <u>GENERAL:</u>
- UNLESS OTHERWISE NOTED, THE WORK DESCRIBED ON THE PLANS AND SPECIFICATIONS SHALL INCLUDE THE FURNISHING AND INSTALLATION OF ALL LABOR AND MATERIALS NECESSARY FOR COMPLETE AND OPERATIONAL HVAC, FIRE PROTECTION AND PLUMBING SYSTEMS. CONTRACTOR SHALL FURNISH THESE EVEN IF ITEMS REQUIRED TO ACHIEVE THIS (I.E. OFFSETS, ISOLATION AND BALANCING DEVICES, MAINTENANCE
- DATA GIVEN ON THE DRAWINGS IS AS EXACT AS COULD BE SECURED. ABSOLUTE ACCURACY IS NOT GUARANTEED AND THE CONTRACTOR SHALL OBTAIN AND VERIFY EXACT LOCATIONS, MEASUREMENTS, LEVELS, SPACE REQUIREMENTS, POTENTIAL CONFLICTS WITH OTHER TRADES, ETC. AT THE SITE AND SHALL SATISFACTORILY ADAPT HIS WORK TO THE ACTUAL CONDITIONS OF THE JOB.

CLEARANCES, ETC.) ARE NOT SPECIFICALLY SHOWN.

- THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND SHALL NOT BE SCALED. THEY SHOW CERTAIN PHYSICAL RELATIONSHIPS WHICH MUST BE ESTABLISHED WITHIN THE DIVISION 23 WORK AND ITS INTERFACE WITH OTHER WORK. ESTABLISHING THIS RELATIONSHIP IN THE FIELD IS THE EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR. THIS DIVISION SHALL COORDINATE ITS WORK WITH ALL DIVISIONS OF THE WORK AND ADJUST ITS WORK AS REQUIRED BY THE ACTUAL CONDITIONS OF THE PROJECT.
- A. THE CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A BID TO BECOME THOROUGHLY FAMILIAR WITH THE ACTUAL CONDITIONS OF THE PROJECT. NO EXTRAS WILL BE ALLOWED DUE TO LACK OF KNOWLEDGE OF EXISTING CONDITIONS.
- B. CERTAIN SYSTEMS REQUIRE ENGINEERING OF INSTALLATION DETAILS BY CONTRACTOR. UNLESS FULLY DETAILED IN THE CONTRACT DOCUMENTS, SUCH ENGINEERING IS THE EXCLUSIVE RESPONSIBILITY OF THE 3. COORDINATE ROUTING OF ALL FIRE PROTECTION PIPING WITH

CONTRACTOR.

- C. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHERE CLEARANCES ARE LIMITED, AND WHERE INSTALLATION DRAWINGS OR SCHEMATICS, "CONSTRUCTION DRAWINGS", OR COORDINATION DRAWINGS MAY BE REQUIRED IN ACCORDANCE WITH, OR IN EXCESS OF, THOSE REQUIRED BY THE SPECIFICATIONS. THE CONTRACTOR SHALL PREPARE ALL SUCH COORDINATION DRAWINGS AS PART OF THE BASE CONTRACT.
- 4. THESE NOTES ONLY SUPPLEMENT, AND DO NOT REPLACE, THE SPECIFICATIONS. 5. DEFINITIONS AND TERMINOLOGY
- A. THE DEFINITIONS OF DIVISION 1 AND THE GENERAL CONDITIONS OF THIS SPECIFICATION ALSO APPLY TO THE DIVISION 23 CONTRACT DOCUMENTS.
- B. "CONTRACT DOCUMENTS" CONSTITUTE THE DRAWINGS, SPECIFICATIONS, GENERAL CONDITIONS, PROJECT MANUALS, ETC., PREPARED BY ENGINEER (OR OTHER DESIGN PROFESSIONAL IN ASSOCIATION WITH ENGINEER) FOR CONTRACTOR'S BID OR CONTRACTOR'S NEGOTIATIONS WITH THE OWNER. THE DIVISION 23 DRAWINGS AND SPECIFICATIONS PREPARED BY THE ENGINEER ARE NOT CONSTRUCTION DOCUMENTS.
- "CONSTRUCTION DOCUMENTS", "CONSTRUCTION REFER TO INSTALLATION DIAGRAMS, SHOP DRAWINGS AND COORDINATION DRAWINGS PREPARED BY THE CONTRACTOR USING THE DESIGN INTENT INDICATED ON THE ENGINEER'S CONTRACT DOCUMENTS. THESE SPECIFICATIONS DETAIL THE CONTRACTOR'S RESPONSIBILITY FOR "ENGINEERING BY CONTRACTOR"
- AND FOR PREPARATION OF CONSTRUCTION DOCUMENTS. D. "FURNISH" MEANS TO "SUPPLY" AND USUALLY REFERS TO AN ITEM OF EQUIPMENT.
- E. "INSTALL" MEANS TO "SET IN PLACE, CONNECT AND PLACE IN FULL OPERATIONAL ORDER". F. "PROVIDE" MEANS TO "FURNISH AND INSTALL".
- G. "EQUIVALENT" MEANS "MEETS THE SPECIFICATIONS OF THE REFERENCE PRODUCT OR ITEM IN ALL SIGNIFICANT ASPECTS." SIGNIFICANT ASPECTS SHALL BE AS DETERMINED BY THE ARCHITECT/ENGINEER.
- H. "WORK BY OTHER(S) DIVISIONS"; "RE: XX DIVISION", AND UNDER THE CONTRACT DOCUMENTS, BUT NOT NECESSARILY UNDER THE DIVISION OR SECTION OF THE WORK ON WHICH THE NOTE APPEARS. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE THE WORK OF THE CONTRACT BETWEEN HIS/HER SUPPLIERS. SUBCONTRACTORS AND EMPLOYEES. IF CLARIFICATION IS REQUIRED, CONSULT
- BY INFERENCE, ANY REFERENCE TO A "CONTRACTOR" OR "SUB-CONTRACTOR" MEANS THE ENTITY WHICH HAS CONTRACTED WITH THE OWNER FOR THE WORK OF THE CONTRACT DOCUMENTS.

ARCHITECT/ENGINEER BEFORE SUBMITTING BID.

J. "ENGINEER" MEANS THE DESIGN PROFESSIONAL FIRM WHICH HAS PREPARED THESE CONTRACT DOCUMENTS. ALL QUESTIONS, SUBMITTALS, ETC. OF THIS DIVISION SHALL BE ROUTED THROUGH THE ARCHITECT TO THE ENGINEER (THROUGH PROPER CONTRACTUAL CHANNELS).

EXISTING BUILDING:

- 1. THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE EXISTING BUILDING WILL BE OCCUPIED BY THE OWNER DURING CONSTRUCTION. CONTINUED OPERATION OF THE FACILITY SHALL NOT BE HINDERED BY THIS WORK. THE CONTRACTOR SHALL ACCOUNT FOR ALL ADDITIONAL COSTS WHICH MAY BE INCURRED BY HIM DUE TO THE DIFFICULTY OF WORKING OVER AND AROUND EMPLOYEES, DESKS, EQUIPMENT ETC.; AND DUE TO THE HOURS OF THE DAY IN WHICH AN AREA MAY BE AVAILABLE WHEN SUBMITTING HIS BID.
- MAINTAIN A MARK-UP SET OF DRAWINGS WHICH INDICATE VARIATIONS IN THE ACTUAL INSTALLATION FROM THE ORIGINAL DESIGN. SURRENDER DRAWINGS TO OWNER UPON COMPLETION. INCORPORATE THESE NOTES INTO THE AS-BUILT DRAWINGS.
- 3. COORDINATE ALL PENETRATIONS OF THE FLOOR SLAB PRIOR <u>CUTTING, PATCHING AND DEMOLITION:</u> TO COMMENCING WORK. UTILIZE X-RAY AND VISUAL

TO DRILLING OR CUTTING. COORDINATE ALL NEW PENETRATIONS WITH OTHER DIVISIONS OF THE WORK. ALL CONTRACTORS ARE INDIVIDUALLY RESPONSIBLE FOR ALL PENETRATIONS REQUIRED BY THEIR DIVISIONS.

- **GENERAL FIRE PROTECTION DEMOLITION NOTES:** 1. THE CONTRACTOR SHALL CAREFULLY INSPECT, REVIEW AND DOCUMENT THE EXISTING BUILDING FIRE PROTECTION SYSTEMS WITHIN THE PROJECT WORK AREAS SHOWN TO BE DEMOLISHED. PRIOR DOCUMENTATION OF EXISTING CONDITIONS, CAPACITIES AND PHYSICAL ARRANGEMENTS IS LIMITED. THESE DOCUMENTS ATTEMPT TO DEFINE AREAS BUT MAY NOT ACCURATELY SHOW ALL EXISTING CONDITIONS.
- 2. ALL EXISTING FIRE PROTECTION PIPING BEING REUSED SHALL BE INSPECTED AND VERIFIED TO BE IN GOOD CONDITION PRIOR SUBMITTAL REQUIREMENTS: TO CONNECTION OF ANY NEW FIRE PROTECTION SYSTEMS. 3. ALL PIPING SYSTEMS NO LONGER IS USE DUE TO RENOVATION SHALL BE REMOVED. NO PIPING WILL BE ABANDONED IN PLACE.
- GENERAL FIRE PROTECTION NOTES: 1. ALL FIRE PROTECTION PIPING SHALL BE SCHEDULE 40 OR
- GREATER. THE USE OF SCHEDULE 10 PIPE WILL NOT BE ACCEPTED FOR ANY REASON. THE CONTRACTOR SHALL BE RESPONSIBLE TO PREPARE AS-BUILT DRAWING AND HYDRAULIC CALCULATIONS AND
- OBTAIN APPROVAL FROM ALL AUTHORITIES HAVING JURISDICTION OVER THE SPRINKLER WORK AND OBTAIN AGENCY APPROVALS FOR DRAWING AND HYDRAULICS PRIOR TO INSTALLATION OF NEW WORK. DRAWING AND HYDRAULIC CALCULATIONS SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER RETAINED BY THE SPRINKLER CONTRACTOR. SPRINKLER CONTRACTOR SHALL PREPARE ALL DOCUMENTS REQUIRED FOR ANY SUBSEQUENT FILING WITH AUTHORITIES HAVING JURISDICTION.
- STRUCTURAL BEAMS, COLUMNS, ETC. ALLOW FOR REROUTING OF PIPING AS REQUIRED. 4. PIPING ROUTING ON DRAWINGS IS GENERALLY DIAGRAMMATIC 1. FIRE STOPPING REQUIREMENT: PENETRATIONS THROUGH
- WITH EFFORTS DURING DESIGN TO AVOID STRUCTURAL CONFLICTS. CONTRACTOR SHALL COORDINATE ROUTING OF ALL PIPING THROUGH BUILDING WITH STRUCTURAL CONDITIONS. CONTRACTOR COORDINATION DRAWINGS SHALL REFLECT ALL PIPE ROUTING AND PIPING THAT MAY HAVE TO BE SHIFTED AND/OR MOVED TO AVOID CONFLICTS. SHIFTED OR MOVED PIPING SHALL REFLECT NO ADDITIONAL COST TO THE PROJECT.
- 5. ALL REQUIRED OPENINGS IN STEEL BEAMS AND STRUCTURAL WALLS ARE TO BE ACCOMPLISHED USING SLEEVES/PENETRATIONS PROPERLY SIZED FOR THE PIPE THEY SERVE. ALL BEAM PENETRATIONS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. CORE DRILLING IN PANS IS ALLOWED <u>SCOPE CLARIFICATION NOTES:</u> UPON PRIOR APPROVAL OF ARCHITECT AND STRUCTURAL ENGINEER.

6. ALL EQUIPMENT AND PIPING SHALL BE BRACED FOR SEISMIC REQUIREMENTS APPLICABLE FOR SEISMIC ZONE REQUIREMENTS FOR THIS PROJECT.

- ELECTRICAL COORDINATION: . VERIFY THE ELECTRICAL SERVICE PROVIDED BY THE
- ELECTRICAL CONTRACTOR BEFORE ORDERING ANY PLUMBING EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS. DRAWINGS", AND SIMILAR TERMS FOR DIVISION 23 WORK 2. THE ELECTRICAL POWER FOR CERTAIN EQUIPMENT PROVIDED UNDER DIVISION 21 HAS NOT BEEN SPECIFICALLY INDICATED ON THE ELECTRICAL DRAWINGS AND MUST BE PROVIDED BY AND FIELD COORDINATED BY THE DIVISION 21 TRADE REQUIRING SUCH POWER.

INSTALLATION: 1. SUSPEND EACH TRADE'S WORK SEPARATELY FROM THE

- STRUCTURE. 2. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH 3. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE. THE MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
- SPRINKLER PIPING SHALL NOT BE IN CONTACT WITH ANY OTHER TRADE.
- 4. PROVIDE FOR SAFE CONDUCT OF THE WORK, CAREFUL REMOVAL AND DISPOSAL OF MATERIALS AND PROTECTION OF PROPERTY WHICH IS TO REMAIN UNDISTURBED.
- SIMILAR EXPRESSIONS MEANS WORK TO BE PERFORMED 5. FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL CONCRETE EQUIPMENT PAD DIMENSIONS, BASED ON THE FINAL EQUIPMENT SELECTION, TO THE STRUCTURAL AND GENERAL CONTRACTOR FOR INCLUSION IN THOSE CONTRACTOR'S WORK AS DESCRIBED BY THE GENERAL 1. ALL CONTRACTORS SHALL REVIEW DRAWINGS FOR PHASING CONTRACTOR.
  - 6. WARRANTY: AT A MINIMUM, THE ENTIRE FIRE PROTECTION SYSTEM SHALL BE WARRANTED AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR 2. AFTER ACCEPTANCE OF THE SYSTEM BY THE OWNER. REFER TO INDIVIDUAL SPECIFICATION SECTIONS FOR SPECIFIC WARRANTY REQUIREMENTS.

PIPE INSTALLATION:

- 1. ALL PIPING SHALL BE ADEQUATELY SUPPORTED FROM THE BUILDING STRUCTURE TO PREVENT SAGGING, POCKETING, SWAYING OR DISPLACEMENT BY MEANS OF HANGERS AND SUPPORTS. PIPING IS NOT TO BE SUPPORTED BY EQUIPMENT.
- 2. FLUSH OUT PIPING AND REMOVE CONTROL DEVICES BEFORE PERFORMING PRESSURE TEST. THE ENTIRE FIRE PROTECTION SYSTEM SHALL BE TESTED HYDROSTATICALLY AT NOT LESS THAN 200 PSI PRESSURE FOR TWO HOURS, OR AT 50 PSI IN EXCESS OF THE MAXIMUM STATIC PRESSURE WHEN THE MAXIMUM STATIC PRESSURE IN EXCESS OF 150 PSI. ANY SYSTEM FAILING TO MEET THE PRESSURE TEST SHALL BE REPAIRED AND RETESTED AT NO ADDITIONAL COST, UNTIL THE TEST REQUIREMENTS ARE MET.
- INSTALL ALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHIN THE PIPING SYSTEM. ENSURE ALL REQUIRED PIPE EXPANSION WILL OCCUR IN THE PROPER DIRECTION AND SEGMENT OF PIPE. PROPERLY ANCHOR (RE: SPECIFICATIONS) ALL PIPING REQUIRING EXPANSION/CONTRACTION ISOLATION. COORDINATE PIPE EXPANSION/CONTRACTION TO PREVENT DAMAGE TO ANY AND ALL BUILDING COMPONENTS.

INVESTIGATION OF EXISTING CONDITIONS AS REQUIRED PRIOR 1. KEEP DEMOLITION & CUTTING TO MINIMUM REQUIRED FOR

## PROPER EXECUTION OF WORK.

2. BE RESPONSIBLE FOR ALL CUTTING AND PATCHING NECESSARY FOR THE COMPLETION OF THE WORK. 3. NO CUTTING (NOT SHOWN ON THE CONTRACT DOCUMENTS)

SHALL BE DONE WITHOUT THE APPROVAL OF THE ARCHITECT AS TO LOCATIONS, METHOD AND EXTENT OF THE CUTTING. REPAIR ALL ACCIDENTAL OR INTENTIONAL DAMAGE TO MATCH

EXISTING CONSTRUCTION WITH NO NOTICEABLE DIFFERENCE IN CONTINUITY, APPEARANCE OR FUNCTION. 5. DEMOLISH AND CAP ALL INDICATED PIPING BACK AT NEAREST

1. AFTER RECEIPT OF NOTICE TO PROCEED, THE CONTRACTOR SHALL SUBMIT A TYPED LIST OF SUBMITTALS AND THE SCHEDULED DATE OF SUBMISSION. LIST SHALL INCLUDE

SUBMITTAL NUMBER, SECTION NUMBER AND SCHEDULED DATE OF SUBMISSION. REFER TO THE SPECIFICATIONS FOR ADDITIONAL SUBMITTAL REQUIREMENTS.

STRUCTURE: 1. DO NOT PENETRATE STRUCTURAL MEMBERS. ALL EQUIPMENT SUPPORTS SHALL BE ATTACHED TO THE LOAD BEARING MEMBERS OF STRUCTURAL ELEMENTS. DO NOT OVER-STRESS ANY STRUCTURAL MEMBERS. CONTACT STRUCTURAL

ENGINEER FOR ALLOWABLE LOADS FOR SPECIFIC MEMBERS. 2. DO NOT UTILIZE POWDER DRIVEN ANCHORS FOR ANY LOCATIONS WHICH REQUIRE THE LOAD TO BE HELD IN TENSION. SEE STRUCTURAL DIVISION FOR ADDITIONAL RESTRICTIONS. 3. SEE ALSO STRUCTURAL DIVISION FOR ACCEPTABLE

ANCHORING AND SUPPORT MEANS, METHODS, AND LOCATIONS. FIRE STOPPING: RATED WALLS AND FLOORS SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES

AND HOT GASES WHEN SUBJECTED TO THE REQUIREMENTS OF THE TEST STANDARD SPECIFIC FOR FIRE STOPS ASTM-E-814. ACCEPTANCE MATERIALS INCLUDE: DOW CORNING RTV FIRE STOP FOAM FOR BARE PIPE, METAL CONDUIT, AND ELECTRICAL CABLE; 3M FIRE DAM 150 CAULK FOR BARE PIPE, METAL CONDUIT, AND BUILDING CONSTRUCTION; GAPS 3M FS-195 INTUMESCENT STRIPS FOR INSULATED PIPES, PLASTIC PIPE OR CONDUIT, AND ELECTRICAL CABLE. FIRE STOPPING SHALL ADHERE TO SECTION 714 OF THE IBC.

THESE DOCUMENTS SERVE TO DEFINE THE NATURE OF THE SYSTEMS, LEVEL OF CONTROL AND FINISH, RELATIONSHIPS WITH OTHER BUILDING SYSTEMS, AND GENERAL DESIGN INTENT OF THIS DIVISION'S WORK. THE CONTRACTOR SHALL EXAMINE THE DOCUMENTS OF ALL TRADES TO COMPLETELY FAMILIARIZE HIM/HERSELF WITH THE VARIOUS CONCEPTS PRESENTED BY OTHER TRADES AND ADAPT THIS WORK AND ANY ASSOCIATED PRICING ACCORDING. WHERE CONFLICTS EXIST BETWEEN THESE DOCUMENTS AND THOSE OF OTHER DIVISIONS. THE MORE STRINGENT (AS DETERMINED BY THE ENGINEER) SHALL TAKE PRECEDENCE. IN PARTICULAR. WHERE ARCHITECTURAL BACKGROUNDS INDICATE PROGRAMMATIC DIFFERENCES IN ROOM LOCATIONS, ROOM FUNCTIONS, PLUMBING FIXTURE COUNTS, CEILING TYPES, RATED CONSTRUCTION, CLEARANCES, OR ROOM RELATIONSHIPS, THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE AND THIS CONTRACTOR SHALL ADAPT HIS/HER WORK ACCORDINGLY WHILE MAINTAINING THE DESIGN INTENT REPRESENTED BY THE DOCUMENTS OF THIS DIVISION.

2. PROVIDE FIRE STOPPING ON ALL PIPES, DEVICES, ETC. PENETRATING ALL FIRE RATED CONSTRUCTION ASSEMBLIES. CONTRACTOR IS RESPONSIBLE FOR ALL OFFSETS, TRANSITIONS, ELBOWS, ETC, AS REQUIRED IN DUCTWORK. PIPING, SUPPORTS, ETC. TO COMPLETE HIS/HER WORK IN A CLEAN, FUNCTIONAL INSTALLATION. 4. THIS CONTRACTOR IS RESPONSIBLE FOR ALL SLEEVES FOR

PENETRATIONS THROUGH SLABS AND BEAMS REQUIRED BY THE INTENT OF THE SCOPE OF WORK INDICATED ON THE DRAWINGS. COORDINATION OF QUANTITY AND LOCATIONS OF ALL PENETRATIONS SHALL BE DONE BY THIS CONTRACTOR DURING THE SHOP DRAWINGS PROCESS FOR REVIEW BY THE STRUCTURAL ENGINEER. PHASING AND PREMIUM TIME:

PLAN. UNIT REPLACEMENTS SHALL OCCUR ON A ONE BY ONE BASIS, EACH UNIT REPLACEMENT IDENTIFIES A DIFFERENT PHASE OF THIS PROJECT.

WORK IN THE PRIMARY WORK AREA (FIRST FLOOR DINING AREAS) SHALL BE COMPLETED ON STRAIGHT TIME. UNLESS NOTED OTHERWISE, WITH THE EXCEPTION OF WORK THAT IMPACTS THE OPERATION OF EXISTING FUNCTIONING MEP SYSTEMS.

3. WORK REQUIRING SHUTDOWN OF EXISTING SYSTEMS SHALL BE ARRANGED FOR CONTINUOUS PERFORMANCE, WITH MULTIPLE CREWS, TO LIMIT THE DURATION OF THE SHUTDOWN TO THE MINIMUM POSSIBLE PERIOD. ALL PREP-WORK SHALL BE COMPLETED PRIOR TO SYSTEM SHUT-DOWN, ALL MATERIALS SHALL BE ON SITE PRIOR TO THE START OF WORK REQUIRING A SHUT-DOWN OR CLOSING OF A SPACE OUTSIDE THE PRIMARY WORK AREA. ALL WORK REQUIRING A SHUTDOWN SHALL BE COORDINATED WITH THE FACILITY AT LEAST ONE WEEK IN

4. ALL WORK OUTSIDE OF THE PRIMARY WORK AREA ASSOCIATED WITH DEMOLITION AND RESTORATION OF WALLS, CEILINGS, AND FINISHES, REMOVAL AND REPLACEMENT OF CEILING TILE, CLEAN-UP, DEBRIS REMOVAL, SAFETY ISOLATION OF WORK AREA, ETC. SHALL BE THE RESPONSIBILITY OF EACH TRADE CONTRACTOR

ADVANCE.

## FIRE PROTECTION NOTES RELATING TO CONSTRUCTION

- 1. CONTRACTOR SHALL INCLUDE DRAWINGS, SPECIFICATIONS, AND CALCULATIONS FOR TEMPORARY SPRINKLER COVER TO INSURE FIRE SAFETY DURING CONSTRUCTION TO COMPLY WITH THE CURRENT CODES AND DOB, FIRE DEPARTMENT (FD), AND OSHA.
- BIDDERS SHALL INCLUDE LINE-ITEM COST FOR FD AND DOB COMPLIANT FIRE PROTECTION SYSTEMS. THIS SHALL INCLUDE ALL REQUIRED TEMPORARY SYSTEMS AS WELL AS MAINTANENCE, ALTERATION AND RELOCATION OF THESE SYSTEMS AS REQUIRED TO ADAPT TO ONGOING CONSTRUCTION.
- 3. OWNER SHALL SUBMIT A LETTER TO THE FD REQUESTING APPROVAL OF FIRE PROTECTION METHOD DURING CONSTRUCTION. THE LETTER SHALL ADDRESS:
- A. SCOPE OF WORK METHOD OF INSTALLATION
- IMPAIRMENT PROCEDURE, INCLUDING:
- SYSTEM OPERATION SHUT-DOWN AND CUT-IN DAILY RETURN OF SERVICE
- FD NOTIFICATIONS FIRE-GUARD AND LOG OF INSPECTIONS
- CONTINUOUS STANDPIPE SERVICE MAINTENANCE OF ACCESSIBILITY OF HOSE STATIONS TENANT ELEVATOR BYPASS
- 9) OPERATION OF MANUAL PULL STATIONS 10) VISIBILITY AND MARKING OF EXITS
- 11) PROTECTION OF ELEVATORS AND STAIRWAYS 12) PROVISION OF PORTABLE FIRE EXTINGUISHERS 13) REMOVAL OF COMBUSTIBLE WASTE ON A DAILY BASIS
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED APPROVALS AND SIGN-OFFS AT COMPLETION OF CONSTRUCTION AND SHALL SUBMIT ALL REQUIRED DOCUMENTS AND CALCULATIONS IN ORDER TO DO SO.

14) ENFORCEMENT OF "NO SMOKING" POLICY

HYDRAULIC SPRINKLER SIZING CRITERIA

SHALL BE AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION BUT SHALL NOT BE SMALLER THAN THE FOLLOWING:

- 1. OCCUPANCY CLASSIFICATION = LIGHT HAZARD 2. DENSITY = 0.10 GPM/SQUARE FEET
- 3. AREA OF APPLICATION = 1500 SQUARE FEET 4. COVERAGE/SPRINKLER = 225 SQUARE FEET/HEAD MAXIMUM

\* 5. STORAGE SPACES SHALL BE CONSIDERED ORDINARY HAZARD. GROUP 1 AND THE COVERAGE PER SPRINKLER SHALL BE 130 SQUARE FEET OR LESS

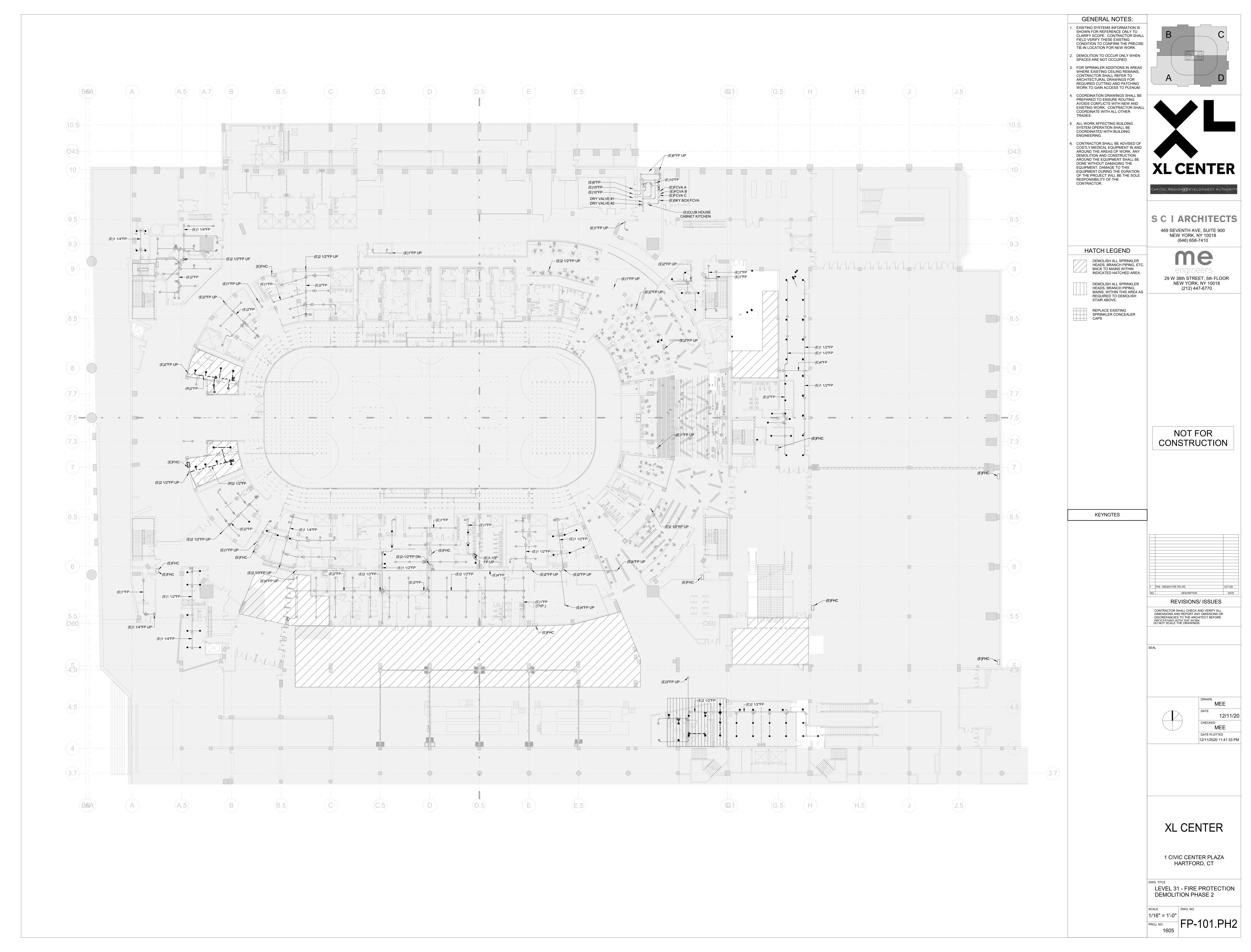
THE CONTRACTOR SHALL BE RESPONSIBLE TO PREPARE HYDRAULIC CALCULATIONS AND OBTAIN APPROVAL FROM ALL AUTHORITIES HAVING JURISDICTION OVER THE SPRINKLER WORK, INCLUDING THE BUILDING DEPARTMENT, THE OWNERS INSURANCE CO., OBTAIN AGENCY APPROVALS FOR HYDRAULICS PRIOR TO INSTALLATION OF NEW WORK.

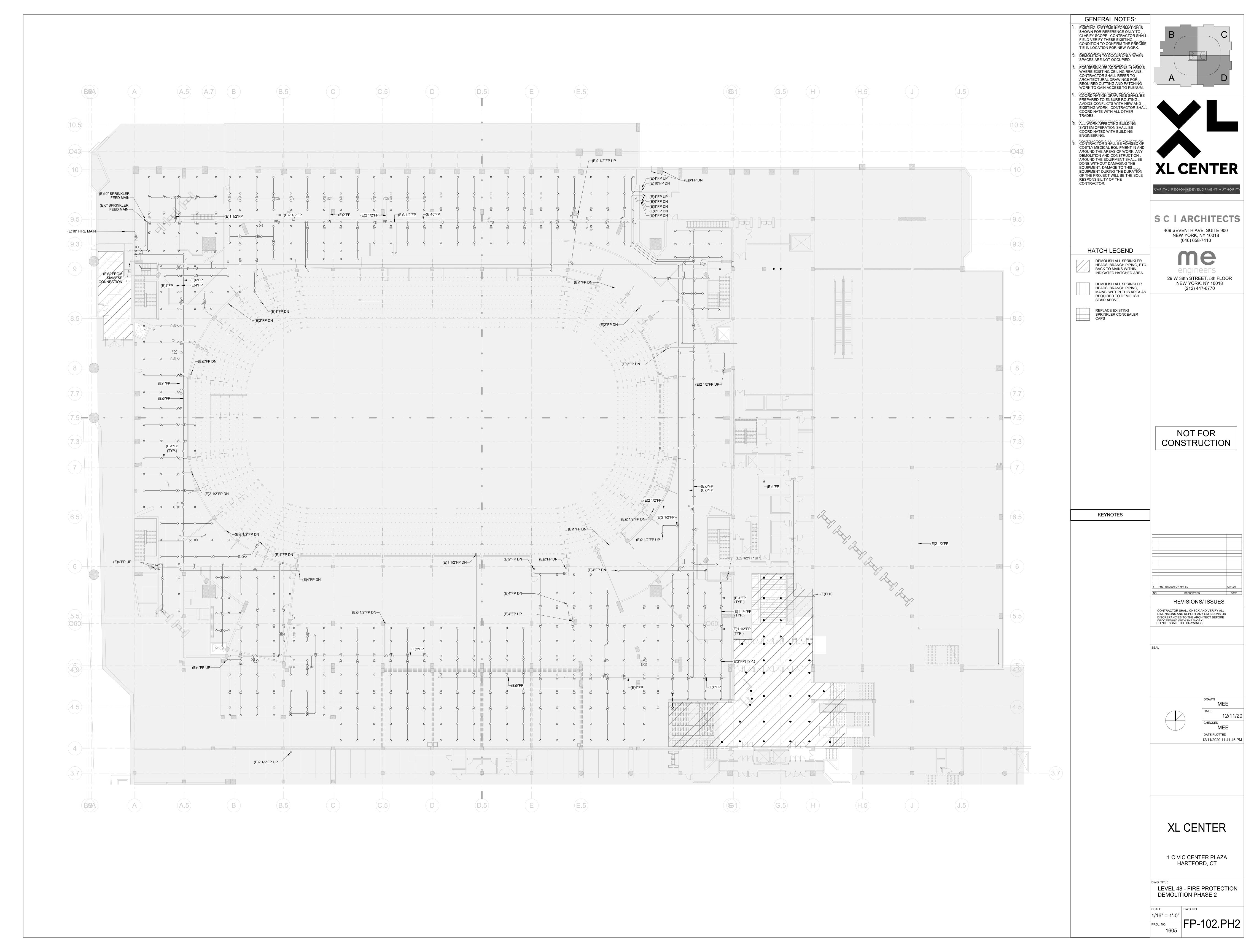
HYDRAULIC CALCULATIONS SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER RETAINED BY THE SPRINKLER CONTRACTOR. SPRINKLER CONTRACTOR SHALL PREPARE ALL DOCUMENTS REQUIRED FOR ANY SUBSEQUENT FILING WITH AUTHORITIES HAVING JURISDICTION

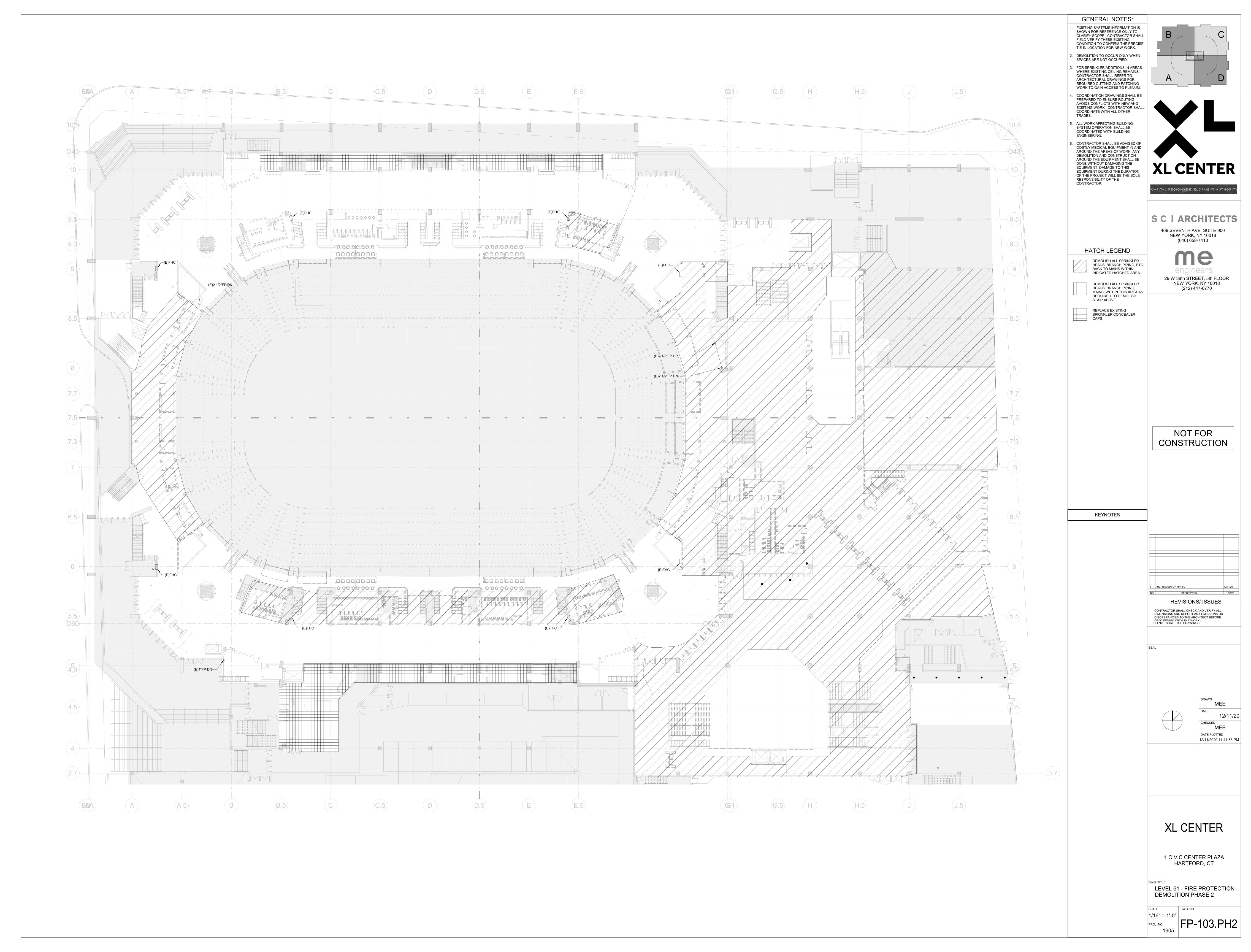
1. ALL EQUIPMENT SHALL BE PROVIDED WITH SEISMIC BRACING

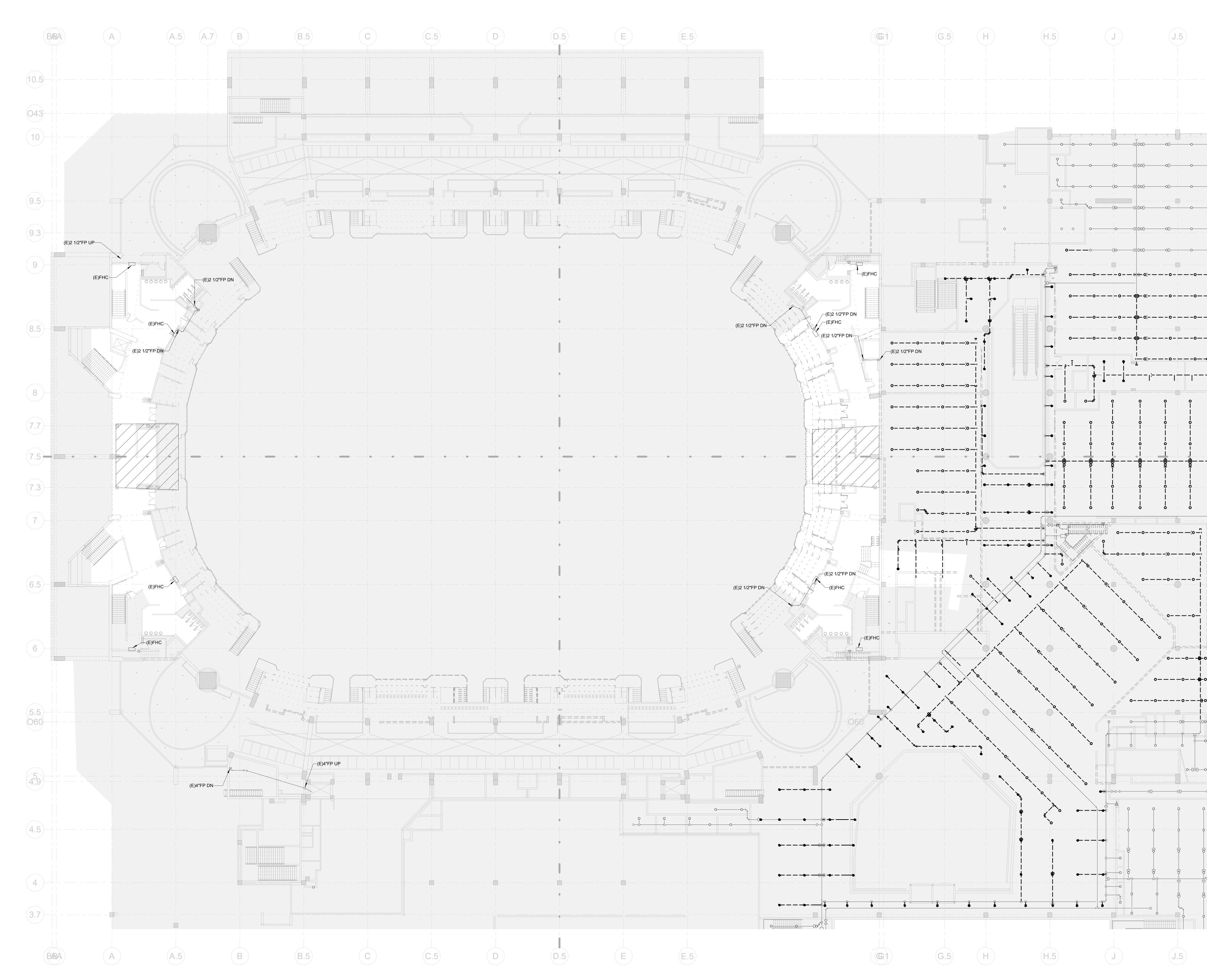
FIRE PROTECTION DRAWING LIST - PHASE 2				
Sheet Number	Sheet Name			
FP-000.PH2	FIRE PROTECTION LEGEND & NOTES - PHASE 2			
FP-101.PH2	LEVEL 31 - FIRE PROTECTION DEMOLITION PHASE 2			
FP-102.PH2	LEVEL 48 - FIRE PROTECTION DEMOLITION PHASE 2			
FP-103.PH2	LEVEL 61 - FIRE PROTECTION DEMOLITION PHASE 2			
FP-104.PH2	LEVEL 71 - FIRE PROTECTION DEMOLITION PHASE 2			
FP-201.PH2	LEVEL 31 - FIRE PROTECTION CONSTRUCTION PHASE 2			
FP-202.PH2	LEVEL 48 - FIRE PROTECTION CONSTRUCTION PHASE 2			
FP-203.PH2	LEVEL 61 - FIRE PROTECTION CONSTRUCTION PHASE 2			
FP-204.PH2	LEVEL 71 - FIRE PROTECTION CONSTRUCTION PHASE 2			
FP-700.PH2	FIRE PROTECTION DETAILS I - PHASE 2			

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SE 2 HASE 2 IN PHASE 2	REVISIONS/ ISSUES         CONTRACTOR SHALL CHECK AND VERIFY ALL         DIMENSIONS AND REPORT ANY OMISSIONS OR         DISCREPANCIES TO THE ARCHITECT BEFORE         PROCEFEDING WITH THE WORK.         DO NOT SCALE THE DRAWINGS             SEAL
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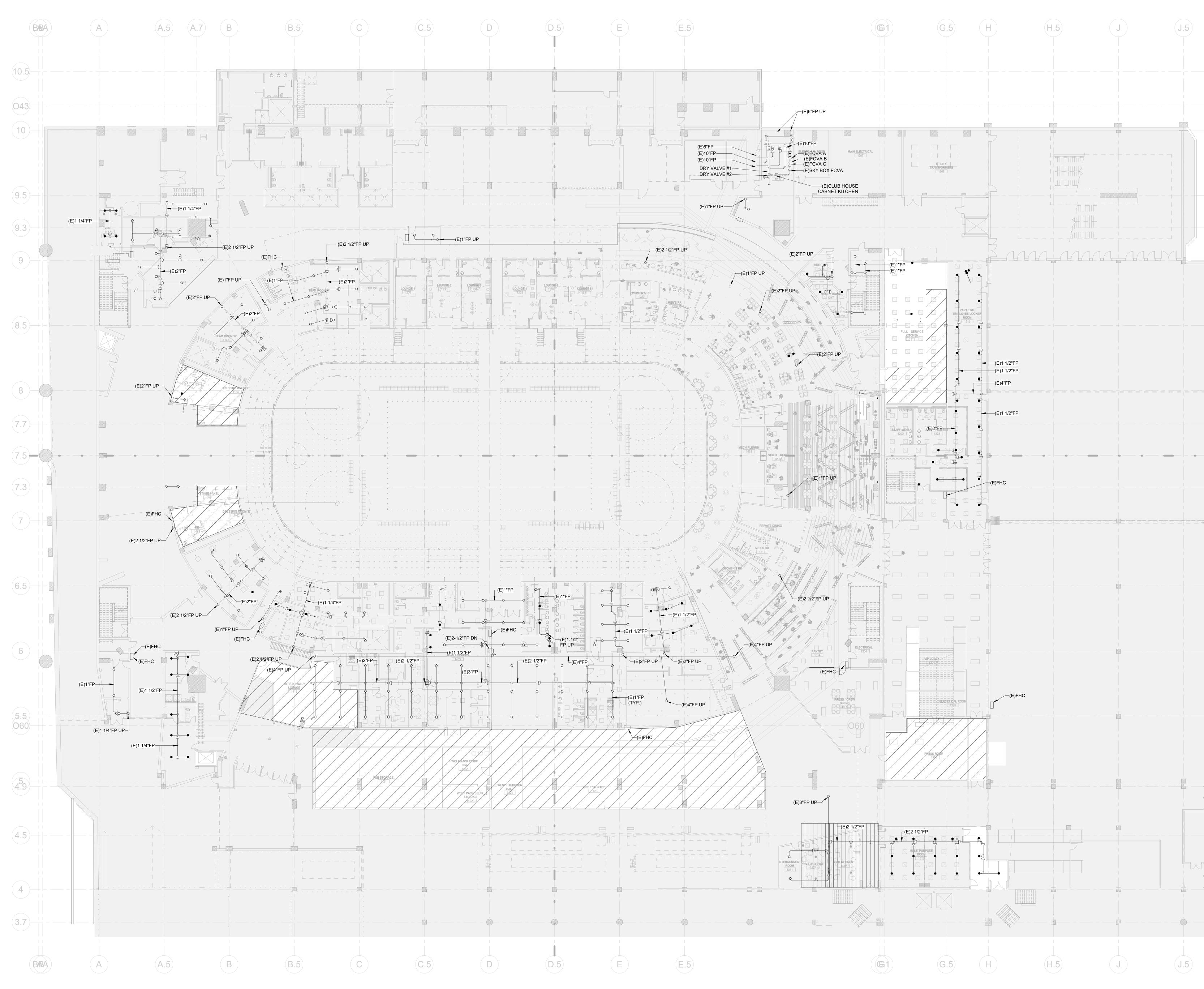








	<ul> <li>GENERAL NOTES:</li> <li>1. EXISTING SYSTEMS INFORMATION IS SHOWN FOR REFERENCE ONLY TO CLARIFY SCOPE. CONTRACTOR SHALL FIELD VERIFY THESE EXISTING CONDITION TO CONFIRM THE PRECISE TIE-IN LOCATION FOR NEW WORK.</li> <li>2. DEMOLITION TO OCCUR ONLY WHEN SPACES ARE NOT OCCUPIED.</li> <li>3. FOR SPRINKLER ADDITIONS IN AREAS WHERE EXISTING CEILING REMAINS, CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED CUTTING AND PATCHING WORK TO GAIN ACCESS TO PLENUM.</li> <li>4. COORDINATION DRAWINGS SHALL BE PREPARED TO ENSURE ROUTING AVOIDS CONFLICTS WITH NEW AND EXISTING WORK. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.</li> <li>5. ALL WORK AFFECTING BUILDING SYSTEM OPERATION SHALL BE COORDINATED WITH BUILDING ENGINEERING.</li> <li>6. CONTRACTOR SHALL BE ADVISED OF COSTLY MEDICAL EQUIPMENT IN AND AROUND THE AREAS OF WORK. ANY DEMOLITION AND CONSTRUCTION AROUND THE EQUIPMENT SHALL BE DONE WITHOUT DAMAGING THE EQUIPMENT. DURING THE DURATION OF THE PROJECT WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.</li> </ul>	<image/>
	HATCH LEGEND DEMOLISH ALL SPRINKLER HEADS, BRANCH PIPING, ETC. BACK TO MAINS WITHIN	SCIARCHITECTS 469 SEVENTH AVE, SUITE 900 NEW YORK, NY 10018 (646) 658-7410
o o o 8.5	INDICATED HATCHED AREA.         Image: Demolish all sprinkler heads, branch piping, mains, within this area as required to demolish stair above.         Image: Replace existing sprinkler concealer caps	29 W 38th STREET, 5th FLOOR NEW YORK, NY 10018 (212) 447-6770
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6.5	KEYNOTES	
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	<ul> <li>GENERAL NOTES:</li> <li>EXISTING SYSTEMS INFORMATION IS SHOWN FOR REFERENCE ONLY TO CLARIFY SCOPE. CONTRACTOR SHALL FIELD VERIFY THESE EXISTING CONDITION TO CONFIRM THE PRECISE TIE-IN LOCATION FOR NEW WORK. REFER TO DEMOLITION PLANS FOR ADDITIONAL INFORMATION REGARDING EXISTING SYSTEMS. EXISTING SYSTEMS NOTES ARE NOT SHOWN ON CONSTRUCTION PLANS FOR CLARITY OF THE DRAWINGS.</li> <li>CONTRACTOR IS RESPONSIBLE FOR ALL CEILING REMOVALS AND REINSTALLATIONS REQUIRED TO COMPLETE WORK. PROVIDE CEILING TILES AS REQUIRED. CEILING TILES SHALL MATCH EXISTING.</li> <li>ANY WORK OUTSIDE OF SCOPE WORK SHALL BE COMPLETED DURING PREMIUM TIME. SEE PREMIUM TIME NOTE ON SAME PAGE.</li> <li>CONTRACTOR SHALL PROVIDE CORE DRILLING AS REQUIRED FOR NEW PIPE PENETRATIONS.</li> <li>COORDINATION DRAWINGS SHALL BE PREPARED TO ENSURE ROUTING AVOIDS CONFLICTS WITH NEW AND EXISTING WORK. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.</li> <li>CONTRACTOR SHALL PERFORM HYDRAULIC CALCULATIONS AND SUBMIT WITH SHOP DRAWINGS, REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.</li> <li>ALL WORK AFFECTING BUILDING SYSTEM OPERATION SHALL BE COORDINATE WITH ALL OTHER TRADES.</li> <li>MINIMUM PIPE SIZE FOR ALL SPRINKLER BRANCH TO SPRINKLER HEADS SHALL BE 1".</li> <li>SPRINKLER HEADS SHALL BE LOCATED CONTRERING.</li> <li>MINIMUM PIPE SIZE FOR ALL SPRINKLER BRANCH TO SPRINKLER HEADS SHALL BE 1".</li> <li>SPRINKLER HEADS SHALL BE LOCATED CONTRERING.</li> <li>MINIMUM PIPE SIZE FOR ALL SPRINKLER BRANCH TO SPRINKLER HEADS SHALL BE 1".</li> <li>SPRINKLER HEADS SHALL BE LOCATED CONTRERING.</li> <li>MINIMUM PIPE SIZE FOR ALL SPRINKLER BRANCH TO SPRINKLER HEADS SHALL BE 1".</li> <li>SPRINKLER HEADS SHALL BE LOCATED CONTRERED ON CEILING WITH RESPECT TO NEW CEILING GRID, AND CENTERED WITH RESPECT TO NEARBY DEVICES IN GWB.</li> <li>NEW AND EXISTING TO REMAIN PIPING SHALL BE RELOCATED TO ALLOW FOR INSTALLATION OF OTHER TRADES.</li> <li>FIRE HOSE VALVE LOCATION IS APPROXIMATE. VALVE SHOULD BE EASILL ACCORDINATE. VALVE SHOULD BE EASIL ACCESSIBLE AND NOT</li></ul>	<image/>
<ul> <li>8.5</li> <li>8.5</li> <li>7.7</li> <li>7.3</li> <li>7.3</li> <li>6.5</li> <li>6.5</li> <li>6.5</li> </ul>	12. COORDINATE COLOR OF CONCEALED HEADS WITH ARCHITECT. 13. THE CONTRACTOR IS RESPONSIBLE TO PREPARE AS-BUILT DRAWING AND HYDRAULIC CALCULATIONS AND OBTAIN APPROVAL FROM ALL AUTHORITIES HAVING JURISDICTION AND OBTAIN AGENCY APPROVALS FOR DRAWING AND HYDRAULICS CALCULATIONS SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER RETAINED BY THE SPRINKLER CONTRACTOR. SPRINKLER CONCEALER COVERAGE IN INDICATED HATCH AREA. PIPE HEADS BACK TO MAINS AS PER PIPE SIZING TABLES ABOVE. REPLACE EXISTING SPRINKLER CONCEALER CAPS	Image:
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