## DEMOLITION NOTES

### 1. PROJECT CONDITIONS

a. THE CONTRACTOR SHALL COMPLETELY FAMILIARIZE HIMSELF WITH ALL EXISTING BUILDING AND SITE CONDITIONS AND LIMITATIONS WHICH MAY HAVE A BEARING ON THE OPERATIONS HEREIN SPECIFIED, AND SHALL INCLUDE ALL WORK REQUIRED TO COMPLETE THE PROJECT AS SHOWN ON THE DRAWINGS. NO EXTRA COMPENSATION WILL BE ALLOWED FOR UNFORESEEN CONDITIONS THAT CAN BE DETERMINED FROM A CAREFUL EXAMINATION OF THE SITE AND AREAS TO BE RENOVATED.

b. ITEMS OF VALUE WHICH ARE NOT INDICATED TO BE RETURNED TO THE OWNER, SHALL BECOME THE PROPERTY OF THE CONTRACTOR. STORAGE OR SALE OF ITEMS ON THE PROJECT SITE IS PROHIBITED.

c. PROTECTION: ENSURE THE SAFE PASSAGE OF PERSONS IN AND AROUND THE BUILDING DURING DEMOLITION. PREVENT INJURY TO PERSONS AND DAMAGE TO PROPERTY. PROVIDE ADEQUATE SHORING AND BRACING TO PREVENT COLLAPSE. IMMEDIATELY REPAIR DAMAGED PROPERTY TO THE CONDITION BEFORE BEING DAMAGED. TAKE EFFECTIVE MEASURES TO PREVENT DUST MIGRATION.

d. UTILITIES: MAINTAIN ALL UTILITIES EXCEPT THOSE REQUIRING REMOVAL OR RELOCATION. KEEP UTILITIES IN SERVICE AND PROTECT FROM DAMAGE. DO NOT INTERRUPT UTILITIES SERVING USED AREAS WITHOUT FIRST OBTAINING PERMISSION FROM THE OWNER. PROVIDE TEMPORARY SERVICES AS REQUIRED. COORDINATE ALL WORK WITH OWNER.

e. ALL WORK MUST BE COORDINATED W/ OWNER PRIOR TO ANY COMMENCEMENT OF WORK.

#### 2. SCOPE OF WORK

a. PERFORM WORK AND PROVIDE MATERIAL AND EQUIPMENT AS SHOWN ON DRAWINGS AND AS SPECIFIED IN THIS SECTION OF SPECIFICATIONS. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS FROM AUTHORITIES THAT HAVE JURISDICTION AS REQUIRED TO PERFORM WORK IN ACCORDANCE WITH ALL LEGAL REQUIREMENTS AND WITH SPECIFICATIONS AND DRAWINGS.

## 3. REGULATORS REQUIREMENTS

a. STRICTLY COMPLY WITH APPLICABLE CODES, REGULATIONS AND REQUIREMENTS OF AUTHORITY HAVING JURISDICTION.

## 4. HANDLING OF MATERIALS

a. REMOVE ALL MATERIAL DEBRIS FROM THE SITE AS IT ACCUMULATES. DO NOT STORE, SELL, BURN, OR OTHERWISE DISPOSE OF DEBRIS ON SITE. REMOVE ALL MATERIALS IN SUCH MANNER AS TO PREVENT SPILLAGE. KEEP ALL PAVEMENTS AND AREAS ADJACENT TO AND LEADING FROM THE SITE, CLEAN AND FREE OF MUD, DIRT, AND DEBRIS AT ALL TIMES.

## 5. TRANSFER OF RESPONSIBILITY AND DISPOSITION OF MATERIALS

a. UPON RECEIPT OF NOTICE TO PROCEED WITH THE WORK, THE TITLE TO ALL MATERIALS FOR DEMOLITION SHALL BE VESTED IN THE CONTRACTOR WHEREUPON THE OWNER WILL NOT BE RESPONSIBLE FOR THE CONDITION, LOSS, OR DAMAGE TO SAID PROPERTY. ALL SUCH ITEMS SHALL BE REMOVED FROM THE OWNER'S PROPERTY.

### 6. CLEAN-UP AND REPAIR

a. UPON COMPLETION OF DEMOLITION WORK, REMOVE TOOLS, EQUIPMENT AND DEMOLISHED MATERIALS FROM SITE. REMOVE PROTECTION AND LEAVE INTERIOR AREAS BROOM CLEAN.

b. REPAIR DEMOLITION PERFORMED IN EXCESS OF THAT REQUIRED. RETURN STRUCTURES AND SURFACES TO EXISTING CONDITION PRIOR TO COMMENCEMENT OF SELECTIVE DEMOLITION WORK. REPAIR ADJACENT CONSTRUCTION OR SURFACES SOILED OR DAMAGED BY SELECTIVE DEMOLITION WORK.

## GENERAL NOTES

- 1. GENERAL NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE TO ALL DRAWINGS MARKED P
- 2. DRAWINGS ARE DIAGRAMMATIC: DETERMINE LOCATIONS OF SYSTEMS AND COMPONENTS IN
- 3. DIMENSIONS SHOWN ON PLAN ARE HORIZONTAL. DIMENSIONS SHOWN IN ELEVATION ARE
- 4. DETERMINE EXACT LOCATIONS OF EXISTING UTILITIES IN FIELD, WHETHER OR NOT SHOWN ON DRAWINGS. EXERCISE CAUTION AND IDENTIFY LOCATIONS OF UNMARKED UTILITY LINES AS NECESSARY TO PERFORM WORK OF THIS SECTION.
- 5. ALL PLUMBING WORK SHALL BE IN ACCORDANCE WITH THE LATEST PLUMBING CODE AND ALL APPLICABLE LOCAL CODES.
- 6. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMITED TO, ELECTRICAL, HVAC, PROCESS PIPING,
- ANY INTERFERENCE SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE, AND SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF THE WORK.

SPRINKLER, PLUMBING STRUCTURAL AND GENERAL ARCHITECTURE.

- 8. ALL PIPING PENETRATING CEILINGS AND WALLS SHALL BE INSTALLED WITH ESCUTCHEONS AT THE PENETRATION. ALL PIPING PENETRATING EXTERIOR WALLS AND ROOFS SHALL BE FLASHED IN AN APPROVED MANNER AND SHALL BE SEALED WATERTIGHT. PIPING PENETRATING FIRE RATED PARTITIONS SHALL BE PROVIDED WITH FIRE RATED SEALS AS REQUIRED BY LOCAL CODE AUTHORITY. (SEE DETAILS)
- 9. MANUFACTURERS' MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
- 10. INSTALLATION SHALL ADHERE TO MANUFACTURERS' RECOMMENDATIONS.
- 11. PROVIDE ACCESS PANELS TO SYSTEM COMPONENTS THAT ARE CONCEALED AND REQUIRE PERIODIC SERVICE.
- 12. TOPS OF ALL FLOOR DRAINS SHALL BE SET FLUSH WITH FINISHED FLOOR. ALL PIPING ABOVE GRADE SHALL BE PROPERLY SUPPORTED BY THE BUILDING STRUCTURE AND SHALL NOT REST ON CEILING STRUCTURE OR COMPONENTS.
- 13. ALL PLUMBING EQUIPMENT, PIPING, INSULATION, ETC., INSTALLED IN HVAC PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND COMBUSTIBILITY.
- 14. PROVIDE SHUTOFF VALVES ON ALL BRANCH PIPING AND ON ALL SUPPLIES TO INDIVIDUAL FIXTURES AND EQUIPMENT. PROVIDE BALL VALVES ON ALL WATER MAIN BRANCHES IN CORRIDORS AND WHERE INDICATED ON DRAWINGS.
- 15. PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY TO
- PREVENT STRESS ON PIPING. 16. PROVIDE VENTS AT HIGH POINTS IN PIPING SYSTEMS AND DRAIN VALVES AT LOW POINTS.
- 17. PROVIDE GAUGE FITTINGS AND THERMOMETER WELLS AT HOT WATER SUPPLY AND RETURN BRANCHES AND AT PUMP INLETS AND OUTLETS.
- 18. PITCH GRAVITY PIPING IN DIRECTION OF FLOW.

MFGR

ZURN

ZURN

SYMBOL

FD-1

FS-1

TYPE

FLOOR DRAIN

FLOOR SINK

2. DRAIN SIZES ARE INDICATED ON THE DRAWINGS.

19. VERIFY EXACT SIZES, LOCATIONS, INVERTS AND ELEVATIONS PRIOR TO RUNNING ANY PIPING. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL FIXTURES AND EQUIPMENT.

MODEL

ZN-1970

ZN-1910-2-23

OUTLET

CAULK, NO HUB

CAULK, NO HUB

1. BEFORE SETTING DRAINS, OBTAIN EXACT INFORMATION RELATIVE TO FINISH FLOOR LEVEL AT TOP OF DRAINS AND TYPE OF ROOF CONSTRUCTION FOR ROOF DRAIN INSTALLATION.

NICKEL BRONZE

## ABBREVIATIONS

	BV	BALL VALVE
	BLDG	BUILDING
	CFM	CUBIC FEET PER MINUTE
	CTE	CONNECT TO EXISTING
	DN	DOWN
	DWG	DRAWING
	EWH	ELECTRIC WATER HEATER
	ETBR	EXISTING TO BE REMOVED
	ETR	EXISTING TO REMAIN
	GPM	GALLON PER MINUTE
GENERAL	IN	INCHES
	IW	INDIRECT WASTE
ENE	MV	MIXING VALVE
0	NTS	NOT TO SCALE
	PC	PLUMBING CONTRACTOR
	PSI	POUNDS PER SQUARE INCH
	PRV	PRESSURE REDUCING VALVE
	PVB	PRESSURE VACUUM BREAKER
	RPBP	REDUCED PRESSURE BACKFLOW PREVENTOR
	TP	TRAP PRIMER
	WHA	WATER HAMMER ARRESTOR
		<del></del>

	CO	CLEANOUT
	FCO	FLOOR CLEANOUT
	FD	FLOOR DRAIN
	FS	FLOOR SINK
	GW	GREASE WASTE
Ш	IW	INDIRECT WASTE
DRAINAGE	OED	OPEN END DRAIN
	SAN	SANITARY
	V	VENT
	WCO	WALL CLEANOUT
	W	WASTE
	W & T	WASTE & TRAP
	W & V	WASTE & VENT

W/ WITH

ER	CW	COLD WATER
WATER	HW	HOT WATER
	HWR	HOT WATER RETURN
DOMESTIC	140HW	140 HOT WATER
DO	140HWR	140 HOT WATER RETURN
٠.		

NATURAL GAS (LOW PRESSURE)

NICKEL BRONZE GENERAL KITCHEN AREAS W/ 9" DIA STRAINER, ARE COATING

**FIXTURE** 

SINK

G (X PSI) NATURAL GAS (X PSI)

## SYMBOLS

	<b>₩</b>	CONNECT TO EXISTING
		CAP OR END OF PIPE
		DIRECTION OF FLOW
		DIRECTION OF SLOPE
	$\times$ $\times$	ETBR
RAL	2	PIPE BREAK
GENERAL	C	PIPE FITTING DOWN OR DROP
ਲ	()	PIPE FITTING TEE DOWN
	0	PIPE FITTING UP
ш	-	CLEANOUT
(י)		

Щ	-	CLEANOUT
NAG	$\oslash$	FLOOR OR GRADE CLEANOUT
DRAINAG	0	FLOOR DRAIN
	)0	P TRAP
S	7	BALL VALVE
VALVES	A	BALANCING VALVE
*	<b>9</b>	CHECK VALVE

## PIPE LINETYPES

 PIPE (EXISTING)
PIPE (ABOVE GRADE)
 VENT PIPE (ABOVE GRADE)
PIPE (BELOW GRADE)
 VENT PIPE (BELOW GRADE)

## REFERENCE

	X	X: DETAIL DESIGNATION NUMBER
RENCE	X-#	X-#: DETAIL DESIGNATION DRAWING
REFER	E	HANDICAPPED ACCESSIBLE (HC)

	X	X: DETAIL DESIGNATION NUMBER
RENCE	X-#	X-#: DETAIL DESIGNATION DRAWING
REFE	E	HANDICAPPED ACCESSIBLE (HC)

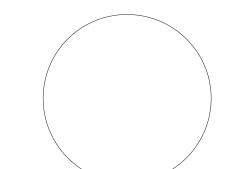
WASTE VENT TRAP COLD HOT

2" 2" 1 1/2" 1/2" 1/2"

## DRAIN SCHEDULE STRAINER LOCATION REMARKS

PLUMBING FIXTURE CONNECTION SCHEDULE

FOOD COUNTERS, PREP SINKS 8" SQ x 6" DEEP, ARE INTERIOR, HALF GRATE, ALUMINUM BUCKET STRAINER



BIDDING &

CONSTRUCTION

**CROCKFORDS** -

**CATSKILLS** 

888 resorts World Dr

Monticello, NY 12701

**RESORTS WORLD** 

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ISSUE	07/06/2022	

JOB 30860.00 DRAWN\_ RD SCALE NTS REVISIONS

LEGEND, SCHEDULES, AND **GENERAL NOTES** 

### PART 1 - GENERAL

1.1 SUMMARY REQUIREMENTS OF THIS SECTION APPLY TO DIVISION 22 SECTIONS FURNISH SERVICES. SKILLED AND COMMON LABOR. AND APPARATUS AND MATERIALS REQUIRED FOR THE COMPLETE INSTALLATION AS SHOWN AND WITHIN THE INTENT OF THE DRAWINGS AND THESE SPECIFICATIONS. AND IN ACCORDANCE WITH REQUISITE LOCAL

- PLUMBING CODES. THE FOLLOWING REQUIREMENTS ARE MINIMUM: PREPARE COORDINATION DRAWINGS, SHOP DRAWINGS, SUBMITTALS, AS-BUILT DRAWINGS, AND OPERATING AND
- MAINTENANCE INSTRUCTIONS. DETERMINE ITEMS AND QUANTITIES REQUIRED.
- PROVIDE COMPLETE, CONTINUOUS, OPERATIONAL, AND 1.2 FUNCTIONING SYSTEMS. 4. FULLY COORDINATE WITH WORK OF OTHER SECTIONS. INCLUDING FIELD VERIFICATION OF ELEVATIONS, DIMENSIONS,
- CLEARANCE, AND ACCESS REPAIR OF ALL DAMAGE DONE TO PREMISES AS A RESULT OF THIS INSTALLATION AND REMOVAL OF DEBRIS LEFT BY THOSE ENGAGED IN THIS INSTALLATION.
- RIGGING, HOISTING, TRANSPORTATION, AND ASSOCIATED WORK NECESSARY FOR PLACEMENT OF EQUIPMENT IN THE
- DISASSEMBLY AND RE-ASSEMBLY OF EQUIPMENT FURNISHED UNDER THIS SECTION. SHOULD THIS BE REQUIRED IN ORDER TO MOVE EQUIPMENT INTO FINAL LOCATION SHOWN ON THE
- TEMPORARY SCAFFOLDING NECESSARY FOR PERFORMANCE OF THE WORK IN THIS DIVISION.
- 9. CUTTING AND CORE DRILLING REQUIRED 10. PIPE SLEEVES FOR ALL HOLES IN WALLS, FLOORS, AND CEILINGS, AND CUTTING OF FLOOR SLABS AND SLABS ON
- 11. WATERPROOFING WHERE NECESSARY FOR INSTALLATION UNDER THIS DIVISION.
- 12. COOPERATION WITH AND ASSISTANCE TO THE BUILDING MANAGEMENT SYSTEM CONTRACTOR AS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL PLUMBING SYSTEM. 13. COUNTERFLASHING OF ROOF PENETRATIONS FOR WORK OF
- DIVISION 22. 14. SIZES, AND LOCATIONS FOR INSTALLATION OF ANY CURBS AND PADS FOR WORK OF DIVISION 22
- TEMPORARY AND PERMANENT STANDS AND SUPPORTS FOR EQUIPMENT REQUIRING THEM INCLUDING VIBRATION
- 16. TEMPORARY PROTECTION OF EXISTING INSTALLATION. 17. PIPING, VALVES AND EQUIPMENT IDENTIFICATION.
- 18. FIRESTOPPING OF PENETRATIONS OF PIPING, THROUGH WALLS, FLOORS, AND CEILING ASSEMBLIES.
- 19. TEMPORARY UTILITIES AS REQUIRED TO INSTALL WORK ON DIVISION 22 INCLUDING LIGHTING, WATER, GAS, ELECTRICITY,
- 20. FEES, PERMITS, INSPECTIONS, TAXES, AND APPROACH FROM AGENCIES THAT HAVE JURISDICTION OVER INSTALLATION OF

a. CLEARANCES FOR INSTALLING AND MAINTAINING

MAINTENANCE.

f. VALVE STEM MOVEMENT.

STRUCTURAL DRAWINGS.

RECORD DOCUMENT REQUIREMENTS.

1.12 <u>RECORD DRAWINGS</u>

AND APPROVAL.

**GENERAL** 

C. PIPE MATERIALS

2.2

2.4

PART 2 - PRODUCTS

PIPE, FITTINGS AND VALVES

MATERIALS AND SUBSTITUTIONS

CLEARANCES FOR SERVICING AND MAINTAINING

c. EQUIPMENT CONNECTIONS AND SUPPORT DETAILS.

e. SIZES AND LOCATION OF REQUIRED CONCRETE PADS

SIZES AND LOCATIONS OF NEW AND EXISTING

SIZES AND LOCATIONS OF NEW OPENINGS, EITHER

MAINTAIN ONE COMPLETE SET OF COMPOSITE COORDINATION

SLEEVED, CUT, OR CORE-DRILLED, IN NEW CONCRETE

CONSTRUCTION UNLESS SPECIFICALLY SHOWN ON THE

EQUIPMENT SUPPORT CURBS ON ROOF.

DRAWINGS AT THE JOB SITE. PERIODICALLY UPDATE

SUBMIT FINAL COORDINATION DRAWINGS AS PART OF

AS WORK PROGRESSES AND FOR DURATION OF CONTRACT, MAINTAIN

COMPLETE AND SEPARATE SET OF PRINTS OF CONTRACT DRAWINGS

AT JOB SITE AT ALL TIMES. RECORD WORK COMPLETED AND ALL

CHANGES FROM ORIGINAL CONTRACT DRAWINGS. SUCH CHANGES

SHALL INCLUDE, BUT NOT BE LIMITED TO, THOSE RESULTING FROM

INCLUDE ACTUAL LOCATION OF EXISTING UTILITIES IF THEY DIFFER

FROM DESIGN DOCUMENTS. AT COMPLETION OF PROJECT

CONTRACTOR SHALL INCORPORATE ALL CHANGES INTO RECORD AS-

BUILT DRAWINGS IN ELECTRONIC FORMAT AND SUBMIT FOR REVIEW

C. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURER'S RECOMMENDATIONS.

A. COMPLY WITH DIVISION 01 SECTION "GENERAL REQUIREMENTS - SPECIFIED ITEMS AND SUBSTITUTES."

REI'S, FIELD CONDITIONS, AND MODIFICATIONS AND ADDITIONS

DRAWINGS BASED ON ACTUAL FIELD CONDITIONS.

d. FIRE-RATED WALL AND FLOOR PENETRATIONS.

EQUIPMENT, INCLUDING SPECIFIC CEILING TILE OR

CEILING ACCESS PANEL ACCESS AND SPACE FOR

EQUIPMENT DISASSEMBLY REQUIRED FOR PERIODIC

DIVISION 22. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES. PAY FEES AND BACK CHARGES. AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION. PERFORM WORK IN ACCORDANCE WITH ALL LEGAL REQUIREMENTS AND WITH SPECIFICATIONS DRAWINGS, ADDENDA AND CHANGE ORDERS, ALL OF WHICH ARE PART OF CONTRACT DOCUMENTS.

- 21. POTABLE WATER DISINFECTION REPORT
- 22. PARTICIPATION IN AND COORDINATION WITH THE COMMISSIONING PROCESS.

## <u>DEFINITIONS</u>

WARRANTY

- A. "PROVIDE" MEANS "FURNISH AND INSTALL." "FURNISH" MEANS "TO PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT,"
- "INSTALL" MEANS "TO UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT.
- 'POS' MEANS PROVIDED UNDER OTHER SPECIFICATION SECTION. "ARCHITECT" MEANS THE "PRIME DESIGN CONSULTANT." IF R.G.
- VANDERWEIL ENGINEERS, LLP IS NOT THE PRIME DESIGN CONSULTANT, THE ARCHITECT MAY AUTHORIZE R.G. VANDERWEIL ENGINEERS. LLP TO ACT ON THE ARCHITECT'S BEHALF IN MATTERS CONCERNING THE ALL SECTIONS OF SPECIFICATIONS. CONTRACT DOCUMENTS
- REFER TO ARCHITECTURAL, FIRE PROTECTION, PLUMBING, HVAC. ELECTRICAL, STRUCTURAL, TELE/DATA AND ALL OTHER DRAWINGS AND OTHER SECTIONS THAT INDICATE TYPES OF CONSTRUCTION IN WHICH WORK SHALL BE INSTALLED AND WORK OF OTHER TRADES WITH WHICH WORK OF THIS SECTION MUST BE COORDINATED
- EXCEPT WHERE MODIFIED BY A SPECIFIC NOTATION TO THE CONTRARY, IT SHALL BE UNDERSTOOD THAT THE INDICATION AND/OR DESCRIPTION OF AN ITEM. IN THE DRAWINGS OR SPECIFICATIONS OR BOTH, CARRIES WITH IT THE INSTRUCTION TO FURNISH AND INSTALL THE ITEM. REGARDLESS OF WHETHER OR NOT THIS INSTRUCTION IS EXPLICITLY STATED AS PART OF THE INDICATION OR DESCRIPTION.
- ITEMS REFERRED TO IN SINGULAR NUMBER IN CONTRACT DOCUMENTS SHALL BE PROVIDED IN QUANTITIES NECESSARY TO COMPLETE WORK. DATA THAT MAY BE FURNISHED ELECTRONICALLY (ON COMPACT DISK (CD), ELECTRONIC MAIL, OR OTHERWISE) IS DIAGRAMMATIC.
- ELECTRONICALLY FURNISHED INFORMATION IS SUBJECT TO THE SAME LIMITATION OF PRECISION DESCRIBED ABOVE. IF FURNISHED, ELECTRONIC DATA IS FOR CONVENIENCE AND GENERALIZED REFERENCE, AND SHALL NOT SUBSTITUTE FOR SEALED OR STAMPED CONSTRUCTION DOCUMENTS.
- ELECTRONIC CAD FILES A. ELECTRONIC CAD FILES FOR PLUMBING DRAWINGS WILL BE FURNISHED BY ENGINEER AT CONTRACTOR'S REQUEST. ENGINEER WILL FORWARD THE 'RELEASE OF LIABILITY' FORM TO CONTRACTOR FOR COMPLETION/SIGNATURE. CONTRACTOR TO RETURN FORM TO

B. THE INSTALLING CONTRACTOR SHALL CERTIFY RECORD DRAWINGS

C. AT COMPLETION OF WORK, PREPARE A COMPLETE SET OF RECORD

FOR ACCURACY. THE ARCHITECT/ENGINEER WILL NOT CERTIFY THE

ACCURACY OF THE RECORD DRAWINGS - THIS IS THE SOLE

DRAWINGS IN ELECTRONIC FORMAT. DELIVER THESE TO THE

DRAWINGS SHALL SHOW RECORD CONDITION OF DETAILS.

SECTIONS, RISER DIAGRAMS, CONTROL CHANGES AND

CORRECTIONS TO SCHEDULES. SCHEDULES SHALL SHOW

ACTUAL MANUFACTURER AND MAKE AND MODEL NUMBERS OF

ORIGINAL (NOT SCANNED) ELECTRONIC VERSION OF

DRAWINGS IN APPROVED FORMAT, NOTATED AS "RECORD

DRAWINGS," AND CONFORMED TO INCORPORATE ALL

CHANGES TO THE ORIGINAL DESIGN NOTED ABOVE. THE

CHANGES SHALL BE CLOUDED AND APPROPRIATELY

DELIVER TO THE OWNER ONE SET OF BLACKLINE RECORD

ELECTRONIC VERSION OF CONTRACT SPECIFICATIONS WITH

PROVIDE ELECTRONICALLY FORMATTED (SEARCHABLE PDF)

FILES OF MANUFACTURER'S OPERATING AND MAINTENANCE

INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT AND SYSTEM.

COMPILE RESPECTIVE WORK OF EACH DISCIPLINE INTO A

SINGLE FILE FOR EACH DISCIPLINE. PROVIDE, WITHIN THE

ELECTRONIC FILE, TABLE OF CONTENTS/INDEX LISTING.

PROVIDE VALVE DIRECTORY FOR ALL ISOLATION VALVES

A. IN ADDITION TO MATERIAL AND EQUIPMENT SPECIFIED, PROVIDE INCIDENTAL MATERIALS TO EFFECT A COMPLETE INSTALLATION. SUCH INCIDENTAL MATERIALS INCLUDE SOLDERS, TAPES, CAULKING, MASTICS, GASKETS AND SIMILAR ITEMS.

D. FIXTURE FITTINGS INTENDED TO DELIVER POTABLE WATER FOR HUMAN CONSUMPTION SHALL BE CERTIFIED FOR "LEAD-FREE" AND SHALL COMPLY WITH THE NEW FEDERAL MANDATE KNOWN AS THE "REDUCTION OF LEAD IN DRINKING WATER ACT-

B. MATERIALS AND EQUIPMENT SHALL BE UNIFORM THROUGHOUT THE INSTALLATION. EQUIPMENT OF THE SAME TYPE SHALL BE OF THE SAME MANUFACTURER. MATERIALS AND EQUIPMENT SHALL BE NEW.

A. ALL PIPE, FITTINGS, AND VALVES USED IN POTABLE WATER DISTRIBUTION SYSTEM MUST COMPLY WITH THE NEW FEDERAL MANDATE KNOWN AS THE "REDUCTION OF LEAD IN DRINKING WATER ACT-2014".

B. FIXTURE TRIM, TRAPS, FAUCETS, ESCUTCHEONS AND WASTE PIPES EXPOSED TO VIEW IN FINISHED SPACES SHALL BE I.P.S. BRASS WITH POLISHED CHROMIUM PLATING OVER NICKEL FINISH.

A. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR QUANTITIES, LOCATIONS AND MOUNTING HEIGHTS OF FIXTURES PROVIDED UNDER THIS SECTION

B. PLASTIC PIPING SYSTEMS: <u>DO NOT USE PLASTIC PIPING SYSTEMS IN RETURN AIR PLENUMS. ALL PIPING USED IN PLENUM APPLICATIONS SHALL BE SO RATED.</u>

ADDENDA INCORPORATED, WILL BE PROVIDED BY

DRAWINGS STAMPED "RECORD" AND SIGNED BY THE

CONTRACTOR, OWNER, ARCHITECT, AND ENGINEER.

VANDERWEIL AS THE RECORD SPECIFICATIONS.

BULLETINS, MANUALS, AND OPERATING INSTRUCTIONS - ELECTRONIC

IDENTIFIED. DELIVER ONE COPY EACH TO THE GENERAL

ENGINEER PRIOR TO ENGINEER'S ISSUANCE OF ELECTRONIC CAD

1.5 <u>DISCREPANCIES IN DOCUMENTS</u>

RESPONSIBILITY OF THE CONTRACTOR.

D. AFTER APPROVAL, DELIVER THE FOLLOWING:

FINAL EQUIPMENT INSTALLATION.

APPROPRIATE SUBCONTRACTORS.

ARCHITECT FOR APPROVAL.

WHERE DRAWINGS OR SPECIFICATIONS CONFLICT OR ARE UNCLEAR. SUBMIT CLARIFICATION REQUEST IN WRITING BEFORE AWARD OF CONTRACT. OTHERWISE, ARCHITECT'S INTERPRETATION OF

CLARITIES THUS RESOLVED. WHERE DRAWINGS OR SPECIFICATIONS DO NOT COINCIDE WITH MANUFACTURERS' RECOMMENDATIONS OR WITH APPLICABLE CODES AND STANDARDS, SUBMIT CLARIFICATION REQUEST IN WRITING BEFORE INSTALLATION. OTHERWISE, MAKE CHANGES IN INSTALLED

WORK REQUIRED FOR COMPLIANCE WITH MANUFACTURER

CONTRACT DOCUMENTS SHALL BE FINAL, AND NO ADDITIONAL

COMPENSATION SHALL BE PERMITTED DUE TO DISCREPANCIES OR UN-

- INSTRUCTIONS OR CODES AND STANDARDS WITHIN CONTRACT PRICE. IT IS THE REQUIREMENT OF THESE CONTRACT DOCUMENTS TO REQUIRE PROVISION OF SYSTEMS AND COMPONENTS THAT ARE FULLY COMPLETE AND OPERATIONAL AND FULLY SUITABLE FOR THE INTENDED USE. THERE MAY BE SITUATIONS IN THE DOCUMENTS WHERE INSUFFICIENT INFORMATION EXISTS TO PRECISELY DESCRIBE A CERTAIN COMPONENT OR SUBSYSTEM, OR THE ROUTING OF A COMPONENT OR ITS COORDINATION WITH OTHER BUILDING ELEMENTS. IN THESE CASES, WHERE NOTIFICATION REQUIRED BY PARAGRAPH (A) ABOVE HAS NOT BEEN SUBMITTED. PROVIDE THE SPECIFIC COMPONENT OR SUBSYSTEM WITH ALL PARTS NECESSARY FOR THE INTENDED USE. FULLY COMPLETE AND OPERATIONAL. AND INSTALLED IN WORKMANLIKE MANNER EITHER CONCEALED OR
- EXPOSED IN ACCORDANCE WITH THE DESIGN INTENT. IN CASES COVERED BY PARAGRAPH (C) ABOVE. WHERE THE CONTRACTOR BELIEVES ENGINEERING GUIDANCE IS NEEDED THE CONTRACTOR SHALL, SUBMIT A SKETCH IDENTIFYING PROPOSED SOLUTION, ARCHITECT SHALL REVIEW, NOTE IF NECESSARY, AND APPROVE THE SKETCH.
- WHERE DISCREPANCIES EXIST BETWEEN THE MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL AND TELE/DATA DRAWINGS IN REGARDS TO WHAT TRADE OWNS EQUIPMENT SUCH AS DISCONNECTS, STARTERS, ETC., SUBMIT RFI TO THE ARCHITECT REGARDING SUCH DISCREPANCY.
- MODIFICATIONS IN LAYOUT TO OBTAIN THE INTENDED AESTHETICS IN SPACES USED BY BUILDING OCCUPANTS, PRIOR TO INSTALLATION OF VISIBLE MATERIAL AND EQUIPMENT (INCLUDING ACCESS PANELS), REVIEW ARCHITECTURAL DRAWINGS FOR DESIRED LOCATIONS AND WHERE NOT DEFINITIVELY INDICATED, REQUEST INFORMATION FROM ARCHITECT.
- CHECK CONTRACT DRAWINGS, AS WELL AS SHOP DRAWINGS, TO VERIFY AND COORDINATE SPACES IN WHICH WORK OF THIS SECTION MAINTAIN MAXIMUM HEADROOM AT ALL LOCATIONS. ALL PIPING, DUCT,
- CONDUIT, AND ASSOCIATED COMPONENTS TO BE AS TIGHT TO UNDERSIDE OF STRUCTURE AS POSSIBLE. MAKE REASONABLE MODIFICATIONS IN LAYOUT AND COMPONENTS NEEDED TO PREVENT CONFLICT WITH WORK OF OTHER TRADES.
- SYSTEMS SHALL BE RUN IN A RECTILINEAR FASHION. REQUEST FOR INFORMATION (RFI'S)
- WHERE AN RFI IS A REQUEST TO RESOLVE A CONFLICT OR AN UN-CLARITY, OR A REQUEST FOR ADDITIONAL DETAIL, CONTRACTOR'S RFI SHALL INCLUDED SKETCH OR EQUIVALENT DESCRIPTION OF CONTRACTOR'S PROPOSED SOLUTION, IN ACCORDANCE WITH PARAGRAPHS "DISCREPANCIES IN DOCUMENTS; AND "MODIFICATIONS IN LAYOUT" ABOVE.
- TO EXPEDITE THE PROCESSING OF RFI'S. THE CONTRACTOR SHALL SUBMIT AN ELECTRONIC CORRESPONDENCE WITH THE FOLLOWING

RECORD DOCUMENTS: UPON COMPLETION OF THE WORK COVERED

BY THIS CONTRACT. INCLUDE CHANGES INSTALLED UNDER THIS

CONTRACT WHICH ARE NOT IN ACCORDANCE WITH THE CONTRACT

DRAWINGS. NOTE THAT THESE AS-BUILT DRAWINGS ARE TO BE BASED

ON THE CONTRACT DRAWINGS. IN ADDITION, SUBMIT FINAL COPIES OF

INTENT OF ARCHITECT'S SUBMITTAL REVIEW IS TO CHECK FOR

CAPACITY, RATING, AND CERTAIN CONSTRUCTION FEATURES.

CONTRACTOR SHALL ENSURE THAT WORK MEETS REQUIREMENTS OF

CONTRACT DOCUMENTS REGARDING INFORMATION THAT PERTAINS

TO FABRICATION PROCESSES OR MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION; AND FOR

COORDINATION OF WORK OF THIS AND OTHER SECTIONS. WORK SHALL COMPLY WITH SUBMITTALS MARKED "REVIEWED" TO EXTENT THAT

THEY AGREE WITH CONTRACT DOCUMENTS. SUBMITTAL REVIEW SHALL

NOT DIMINISH RESPONSIBILITY UNDER THIS CONTRACT FOR

DIMENSIONAL COORDINATION, QUANTITIES, INSTALLATION, WIRING,

SUPPORTS AND ACCESS FOR SERVICE NOR SHOP DRAWING ERRORS

OR DEVIATIONS FROM REQUIREMENTS OF CONTRACT DOCUMENTS. NOTING OF SOME ERRORS WHILE OVERLOOKING OTHERS WILL NOT

EXCUSE PROCEEDING IN ERROR. CONTRACT DOCUMENTS

SCHEDULE: INCORPORATE SHOP DRAWING REVIEW PERIOD INTO

CONSTRUCTION SCHEDULE SO THAT WORK IS NOT DELAYED.

CAUSED BY NOT INCORPORATING THE FOLLOWING SHOP DRAWING REVIEW TIME REQUIREMENTS INTO HIS PROJECT SCHEDULE. WORKING

DAYS LISTED REFERENCE THE TIME IN THE ENGINEER'S OFFICE. IT

DOES NOT INCLUDE TRANSMITTAL OR REVIEW TIME OF OTHERS.

PREPARE A FORMAL TRAINING PROGRAM FOR OPERATING STAFF

CONSIST OF THE DESIGN, START-UP, AND OPERATION OF THE

PROVIDE INDEXED BINDER AND TRAINING MATERIALS TO EACH

PRIOR TO THE SCHEDULED START-UP DATE. THE PROGRAM WILL

PLUMBING SYSTEMS. COORDINATE THE TRAINING PROGRAM WITH

THE PRODUCTION OF THE OPERATION AND MAINTENANCE MANUALS.

CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR DELAYS

REQUIREMENTS ARE NOT LIMITED, WAIVED NOR SUPERSEDED BY

THE SHOP DRAWINGS AND COORDINATION DRAWINGS.

RESPONSIBILITY

START-UP TRAINING

PARTICIPANT.

INFORMATION CONTAINED WITHIN, AT THE MINIMUM, AS WELL AS THE CONTRACTOR'S PROPOSED SOLUTION, WITH SKETCHES AS REQUIRED:

- PROJECT NAME AND RFI NUMBER DATE OF RFI SUBMISSION / DATE OF REQUIRED RFI RESPONSE (3-DAY MINIMUM)
- NAME OF CONTRACTING COMPANY SUBMITTING RFI AND NAME OF PERSON SUBMITTING REL 4. SPECIFICATION SECTION CITED AND DRAWING NUMBER
- REFERENCED
- CONTRACTOR EMAIL ADDRESS AND FAX NUMBER (FOR
- RESPONSE) CONTRACTOR FIELD QUESTION (PROVIDE A NARRATIVE WITH
- CONTRACTOR PROPOSED SOLUTION (PROVIDE A NARRATIVE WITH SUPPLEMENTAL SKETCH)
- 8. RESPONDENT NARRATIVE BOX (FOR ENGINEER'S RESPONSE) CODES, STANDARDS, AUTHORITIES AND PERMITS
- PERFORM WORK IN ACCORDANCE WITH RULES, REGULATIONS, STANDARDS, CODES, ORDINANCES, AND LAWS OF LOCAL, STATE, AND FEDERAL GOVERNMENTS, AND OTHER AUTHORITIES THAT HAVE LEGAL JURISDICTION OVER THE SITE. PRIOR TO WORK COMMENCEMENT OF WORK, NOTIFY STATE AND
- NOTIFICATIONS FOR CONSTRUCTION, OPERATION AND/OR DEMOLITION. MATERIALS AND EQUIPMENT SHALL BE MANUFACTURED, INSTALLED AND TESTED AS SPECIFIED IN LATEST EDITIONS OF APPLICABLE

APPLICABLE AUTHORITIES AND SUBMIT ALL OF THE APPLICABLE

PUBLICATIONS, STANDARDS, RULINGS AND DETERMINATIONS

SUPPLEMENTAL SKETCH)

A. A. GUARANTEE THE WORK OF THIS SECTION IN WRITING FOR ONE YEAR FOLLOWING THE DATE OF SUBSTANTIAL COMPLETION. IF THE EQUIPMENT IS USED FOR VENTILATION. TEMPORARY HEAT. OR OTHER USE PRIOR TO INITIAL BENEFICIAL OCCUPANCY BY THE OWNER THE BID PRICE SHALL INCLUDE AN EXTENDED PERIOD OF WARRANTY COVERING THE ONE-YEAR OF BENEFICIAL OCCUPANCY BY THE OWNER. THE GUARANTEE SHALL REPAIR OR REPLACE DEFECTIVE MATERIALS. EQUIPMENT. WORKMANSHIP AND INSTALLATION THAT DEVELOP WITHIN THIS PERIOD, PROMPTLY AND TO ARCHITECT'S SATISFACTION AND CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEE WITHIN CONTRACT PRICE.

WATER PIPING SERVICES

POTABLE HOT, COLD, HWR DOMESTIC

1.12 GUARANTEE

- SUBMIT UNDER PROVISIONS OF DIVISION 01 SECTIONS "GENERAL REQUIREMENTS", AND DIVISION 01 SECTION "SPECIAL PROCEDURES."
- PRODUCT DATA: SUBMIT MANUFACTURER'S TECHNICAL PRODUCT SPECIFICATION SHEETS FOR EACH SYSTEM COMPONENT AND DEVICE TO BE PROVIDED THAT INCLUDES DATA NEEDED TO PROVE COMPLIANCE WITH THIS SPECIFICATION. CLEARLY INDICATE THE EXACT MODEL OF EACH COMPONENT TO BE PROVIDED. SHOP DRAWINGS SHALL BE DRAWN TO A SCALE OF 1/4 INCH = 1 FOOT (1:25) OR LARGER. AND SHALL INCLUDE COMPLETE DIMENSIONS. LOCATIONS, ELEVATIONS, AND CLEARANCES FOR PLUMBING, PIPING, DUCTWORK, EQUIPMENT, AND VALVE NUMBERS. IDENTIFY **EQUIPMENT USING DESIGNATIONS SHOWN ON THE CONTRACT** DOCUMENTS

HW

HWR

- ALL SHOP DRAWINGS SHALL CLEARLY CALL OUT IN BOLD LETTERS AND CLOUD SYMBOLS DEVIATIONS FROM THE SPECIFICATIONS AND CONTRACT DOCUMENTS, NO MATTER HOW MINOR.
- SHOP DRAWINGS SHALL BE SUBMITTED WITH A SEPARATE COVER SHEET COMPLETED FOR EACH PRODUCT, RATHER THAN ONE COVER SHEET FOR MULTIPLE PRODUCTS, WHETHER OR NOT SUPPLIED BY ONE MANUFACTURER OR VENDOR

SHOP DRAWING COVER SHEET								
PROJECT: CONTR								
DIVISIO	DIVISION NO.: SECTIO			1 NO.:				
DESCF	RIPTION:		'		•			
CONT	CONTRACT DRAWING REFERENCE NO:							
EQUIP	EQUIPMENT TAG:							
SUBMI	SSION (CIRCLE OF	NE): FIRST, SECOND, THIS	RD, FOURTH	1				
DATE:								
INFOR	MATION AND CHE	CKLIST						
1.	Contractor's Log #	ID						
2.	Name, address, and phone number of supplier.							
3.	Are all specified or scheduled items included and exactly match scheduled/specified items?			Yes	No			
4.	Is this item a substitution?			Yes	No			
5.	Are deviations clearly identified?				No			
6.	Does equipment fit space shown on construction documents, coordination drawings, and actual field conditions?				No			
7.	Has support, erection, weights, and installation been coordinated with all trades?		n	Yes	No			
8.	Does the proposed installation void warranties and/or violate UL or code requirements?			Yes	No			
9.	Does this material/equipment add expense to other trades or project costs?			Yes	No			
10.		ent require interface with other trades? List specifics requiring coordination?		Yes	No			
11.	11. Is control interface coordinated?				No			
12.	List electrical char	acteristics (Voltage/Phase/F	Hz/Amps)					

## SUBMITTAL PROCEDURES, CONTENTS, AND FORMAT

 CONSTRUCTION MANAGER OR GENERAL CONTRACTOR SHALL FIRST REVIEW SUBMITTAL PACKAGES FOR COMPLIANCE WITH CONTRACT DOCUMENTS. UPON REVIEW BY THE G.C. THE SUBMITTALS WILL THEN BE SUBMITTED FOR REVIEW BY ARCHITECT. REVIEW BY CONSTRUCTION MANAGER OR CONTRACTOR IS INTENDED TO ENSURE THAT THE SUBMITTALS INCLUDE THE FOREGOING COVER SHEET, ARE IN THE CORRECT ELECTRONIC FORMAT AS SPECIFIED BELOW. AND THAT THE DEVICES/EQUIPMENT/ITEMS FIT INTO THE SPACE PROVIDED. ALSO, THAT THE SUBMITTAL CONTAINS ADEQUATE INFORMATION TO VERIFY SPECIFICATION REQUIREMENTS AS WELL AS THE PERFORMANCE AND DIMENSIONAL REQUIREMENTS SHOWN ON THE DRAWINGS. IF A SHOP DRAWING IS RETURNED WITH A SUBMITTAL STATUS OF "REJECTED" OR "REVISE AND RESUBMIT", IT INDICATES THE

**FABRICATION OR JOINTING METHOD** 

SHOP DRAWING WAS NOT ADEQUATELY REVIEWED BY THE CONTRACTOR. SUBSEQUENT SUBMITTALS SHALL INCLUDE A WRITTEN RESPONSE TO PREVIOUS ITEMS.

- SUBMITTALS WILL BE PROVIDED TO ENGINEER IN ELECTRONIC (PDF) FORMAT. A SINGLE PDF FILE SHALL BE SUBMITTED FOR EACH RESPECTIVE SUBMITTAL. THE PDF FILE WILL BE FORMATTED IN THE FOLLOWING WAY:
- a. FIRST PAGE: CONTRACTOR TRANSMITTAL SECOND PAGE: SHOP DRAWING COVER SHEET
- (ILLUSTRATED ABOVE) FILLED OUT/COMPLETED BY SUBMITTING CONTRACTOR. c. SUBSEQUENT PAGES: EQUIPMENT/DEVICE SUBMITTAL
- INFORMATION, DIAGRAMS, MANUFACTURER REQUIREMENTS, ETC.
- MECHANICAL/ELECTRICAL TEAM VIA THE ARCHITECT: 1.11 COORDINATION DRAWINGS:

A. A SINGLE SET OF COORDINATION DRAWINGS SHALL BE MUTUALLY

SUBMITTALS WILL BE 'EMAILED' TO THE

- PREPARED BY ALL MECHANICAL, PLUMBING, FP AND ELECTRICAL
- B. THE INITIATION OF THESE DRAWINGS BEGINS WITH THE SHEET METAL SUBCONTRACTOR. C. FABRICATION SHALL NOT START UNTIL COPIES OF COMPLETED
- HAVE BEEN REVIEWED. REVIEW BY ENGINEER OF COORDINATION DRAWINGS IS LIMITED TO CONFIRMING THAT REQUIREMENTS FOR COORDINATION AND PREPARATION OF PLANS HAVE BEEN COMPLIED WITH BY THE CONSTRUCTION MANAGER OR GENERAL CONTRACTOR AND SHALL NOT DIMINISH RESPONSIBILITY UNDER THIS CONTRACT FOR FINAL COORDINATION OF INSTALLATION AND MAINTENANCE CLEARANCES OF ALL SYSTEMS AND EQUIPMENT WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND OTHER RELATED WORK.

COORDINATION DRAWINGS ARE RECEIVED BY THE ARCHITECT AND

- E. HOLD REGULAR COORDINATION SESSIONS WITH TRADES UNTIL COORDINATION ISSUES ARE RESOLVED.
- PREPARE SEPARATE COMPOSITE COORDINATION DRAWINGS TO A SCALE OF 1/4 INCH = 1 FOOT (1:25) OR LARGER, SHOWING WORK OF DIVISIONS TO DEMONSTRATE COORDINATION. CLEARANCE, ACCESS ETC. BETWEEN DUCTWORK, EQUIPMENT, TEMPERATURE CONTROLS, CABLE TRAYS. CONDUITS. LIGHT FIXTURES. PIPING. PLUMBING STRUCTURAL ELEMENTS, ARCHITECTURAL ELEMENTS, ETC. THESE DRAWINGS ARE TO BE THE BASIS FOR THE DETAILED SHOP DRAWINGS AND NEED NOT BE SUBMITTED, BUT ARE TO BE AVAILABLE FOR REVIEW
- PREPARE FLOOR PLANS, ELEVATIONS, AND DETAILS TO INDICATE PENETRATIONS IN FLOORS, WALLS, AND CEILINGS AND THEIR RELATIONSHIP TO OTHER PENETRATIONS AND INSTALLATIONS.
- EACH TRADE IS TO ADJUST THEIR SHOP DRAWINGS BASED ON THE OUTCOME OF COORDINATION SESSIONS.
- INDICATE LOCATIONS WHERE SPACE IS LIMITED FOR INSTALLATION AND ACCESS AND WHERE SEQUENCING AND COORDINATION OF INSTALLATIONS ARE OF IMPORTANCE TO THE EFFICIENT FLOW OF THE WORK.
- INDICATE SCHEDULING, SEQUENCING, MOVEMENT, AND POSITIONING OF LARGE EQUIPMENT INTO THE BUILDING DURING CONSTRUCTION.
- INDICATE THE PROPOSED LOCATIONS, OF PIPING, DUCTWORK, EQUIPMENT, AND MATERIALS. INCLUDE THE FOLLOWING:

#### **VALVES** ASTM SOLDER FILLER MATERIAL SHALL BE LEAD FREE TO COMPLY WITH THE FEDERAL MANDATE OF 2 " AND SMALLER - ALL BRONZE LEAD FREE, 2-PIECE, FULL PORT, 316STST BALL AND STEM, PTFE SEATS, PRESS END CONNECTIONS. 600 PSIG WOG. VIEGA ASTM B-813 LIQUID OR PASTE FLUX. SOLDERING PROCEDURES SHALL COMPLY WITH ASTM B-828. PRESS FITTINGS 1/2" THROUGH 4" SHALL BE JOINED USING CERTIFIED VIEGA PROPRESS TOOLS. 2-1/2" THROUGH 4". INSTALLERS SHALL BE TRAINED AND CERTIFIED BY MANUFACTURER'S REPRESENTATIVE.

1. JOINTS MADE BETWEEN DISSIMILAR MATERIALS SHALL BE JOINED WITH PROPER ADAPTERS AND TRANSITION FITTINGS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

**MATERIAL** 

TUBING, CONFORMING TO ASTM | 2014.

TYPE L SEAMLESS COPPER

DRAINAGE PIPING SERVICES	CODE	PIPE MATERIAL	FABRICATION OR JOINTING METHOD	
INDIRECT WASTE	IW	SCHEDULE 40 GALVANIZED STEEL TYPE L COPPER	THREAD SOLDER	
GREASE WASTE	GW	EPOXY COATED CAST IRON NO-HUB PIPE CONFORMING TO CISPI 301, CHARLOTTE EDGE HP.	HEAVY DUTY CISPI APPROVED STAINLESS STEEL NO-HUB PATTERN, TO SUIT PIPE MATERIAL. BAND CLAMPS SHALL BE HUSKY SD4000	COUPLING, NEOPRENE GASKET, STAINLESS STEEL 4-
SANITARY VENT	V	CAST IRON NO-HUB PIPE CONFORMING TO CISPI 301	HEAVY DUTY CISPI APPROVED STAINLESS STEEL NO-HUB PATTERN, TO SUIT PIPE MATERIAL. BAND CLAMPS SHALL BE HUSKY SD4000	COUPLING, NEOPRENE GASKET, STAINLESS STEEL 4-

## PIPE IDENTIFICATION

- PROVIDE COLOR-CODED PIPE IDENTIFICATION MARKERS AT INTERVALS NO LONGER THAN 20'-0". PIPE MARKERS SHALL BE SNAP-ON LAMINATED PLASTIC PROTECTED BY CLEAR ACRYLIC COATING. PIPE MARKERS SHALL BE APPLIED AFTER ARCHITECTURAL PAINTING WHERE SUCH IS REQUIRED.
- PROVIDE ARROW MARKER WITH EACH PIPE IDENTIFICATION MARKER TO INDICATE DIRECTION OF FLOW. IF FLOW CAN BE IN EITHER DIRECTION, USE DOUBLE-HEADED ARROW MARKER.
- PROVIDE PVC JACKETS COVERS OVER ASJ IN ALL FOOD SERVICE AREAS. IN ADDITION, PROVIDE PVC COVERS ON ALL EXPOSED PIPING LOWER THAN 8 FEET THROUGHOUT
- LAMINATED PLASTIC TAGS TO ALL VALVES. TAGS SHALL HAVE BLACK CHARACTERS ON WHITE FACE. CONSECUTIVELY NUMBERED AND PREFIXED WITH LETTER P FOR GENERAL VALVES. TAGS SHALL BE AT LEAST 1" DIAMETER WITH NUMERALS AT LEAST 3/8" HIGH AND ATTACHED BY AN "S" HOOK.

VALVE TAGS: UPON COMPLETION OF WORK, ATTACH ENGRAVED

WHERE VALVES ARE INSTALLED IN AN EXISTING BUILDING, SYNCHRONIZE AND CONTINUE VALVE TAG NUMBERING SYSTEM. COORDINATE WITH OWNER.

## <u>INSULATION</u>

- INSULATE ALL HOT, COLD, AND RE-CIRCULATING PIPING. HOT, COLD, AND RE-CIRCULATING PIPING WITHIN FOOD SERVICE AREAS SHALL BE FLEXIBLE ELASTOMERIC INSULATION CONFORMING TO ASTM C 534 TYPE 1. MATERIALS SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY OF 0.27 BTU-IN./H-FT2-DEG F AT A 75 DEG F MEAN TEMPERATURE WHEN TESTED IN ACCORDANCE WITH ASTM E84.
- INSULATION, JACKETS AND ADHESIVES SHALL BE FLAME RETARDANT AND SHALL HAVE ASTM E-84 FIRE HAZARD RATINGS OF 25 FLAME SPREAD, 50 SMOKE DEVELOPED AND 50 FUEL CONTRIBUTED.
- ALL INSULATED HOT, COLD, AND RE-CIRCULATED PIPING SHALL BE PROVIDED WITH ALL SERVICE JACKETS. ALL INSULATED HOT, COLD,

AND RE-CIRCULATED PIPING BELOW CEILINGS IN FOOD SERVICE AREAS SHALL BE PROVIDED WITH PVC JACKETS. COLD WATER PIPING INSULATION SHALL BE 1/2" THICKNESS. HOT AND RE-CIRCULATED WATER PIPING INSULATION SHALL BE 1" FOR PIPING

#### LESS THAN 1-1/2". HANGERS, ANCHORS, CLAMPS AND INSERTS

- PROVIDE ADJUSTABLE CLEVIS HANGERS FOR PIPING 4" & LARGER, AND CAST BRASS SPLIT-RING HINGED HANGERS FOR SMALLER PIPING. SUPPORT PIPING FROM BUILDING STRUCTURE TO MAINTAIN REQUIRED GRADE AND PITCH OF PIPE LINES, PREVENT VIBRATION, SECURE PIPING IN PLACE. SECURE HANGERS TO INSERTS WHERE PRACTICAL. HANGER RODS SHALL HAVE MACHINE THREADS.
- HANGER RODS SHALL BE CONNECTED TO BEAM CLAMP, UL-APPROVED CONCRETE INSERTS OR PHILLIPS OR APPROVED EQUAL EXPANSION SHIELDS. RAMSET OR POWER DRIVEN INSERTS WILL NOT BE ALLOWED. COVER INSERTS WITH JACKET MATERIAL MATCHING ADJACENT PIPE INSULATION. INSTALL SHIELDS OVER JACKET, ARRANGED TO PROTECT
- JACKET FROM TEAR OR PUNCTURE BY HANGER, SUPPORT, AND PROVIDE SUPPORT MATERIALS: HANGER STRAPS, HANGER RODS, SADDLES, SUPPORT RINGS, AND HIGH DENSITY INSERTS.
- HANGER SPACING SHALL MEET REQUIREMENTS OF STATE AND LOCAL **SLEEVES AND PENETRATIONS**
- PROVIDE SLEEVES FOR ALL PENETRATIONS. PIPE SLEEVES THROUGH FIRE-RATED CONSTRUCTION SHALL BE SCHEDULE 40 STEEL. SLEEVES THROUGH PARTITIONS AND NON-FIRE-RATED CONSTRUCTION SHALL BE 26 GAUGE GALVANIZED STEEL WITH LOCK LONGITUDINAL SEAMS. AS SPECIFIED IN THIS SECTION OF THE SPECIFICATIONS. GIVE NOTICES. FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND

BACK CHARGES, AND OBTAIN NECESSARY APPROVALS

B. FIRE STOP PENETRATION SEALS IN FIRE-RATED CONSTRUCTION SHALL BE CERAMIC FIBER, MINERAL FIBER, OR SILICONE FOAM. PROVIDE MINERAL FIBER BOARD, MATTING OR PUTTY INSTALL NEW ELECTRIC WATER HEATERS, ELECTRIC WATER COOLERS, KITCHEN SINKS, FOR DAMMING AND FORMING. FINISH SEALS FLUSH TO WALL SURFACE AND FILL GAPS WITH SILICONE ADHESIVE SEALANT CAULKING.

C. COORDINATE PROPER FIRE SEAL STOPPING OF THERMOPLASTIC PIPE

- PENETRATIONS: PROVIDE A PROPER ENGINEERED UL FIRESTOPPED PENETRATION PRODUCT EQUAL TO THE WALL OR FLOOR THROUGH WHICH IT PASSES, SUBMIT PROPER HILTI, 3M FOR FIRESPEC UL DETAILS FOR EACH PENETRATION.
- D. PACKING FOR SLEEVES THAT DO NOT REQUIRE MAINTENANCE OF FIRE RATING SHALL BE OAKUM, SILICATE FOAM, CERAMIC FIBER OR MINERAL FIBER WITH APPROVED SEALANT.
- PACK OR FOAM TO WITHIN ONE INCH OF BOTH WALL SURFACES. SEAL PENETRATION PACKING WITH APPROVED CAULKING AND PAINTABLE WATERPROOF MASTIC SURFACE FINISH OR SILICONE CAULKING.

#### PART 3 - EXECUTION EXAMINATION OF SITE

A. VISIT AND EXAMINE THE SITE AND BECOME FAMILIAR WITH CONDITIONS THAT MAY AFFECT THE WORK COVERED BY THIS DIVISION OF THE SPECIFICATIONS. TAKE MEASUREMENTS, EXAMINE AREAS WHERE WORK IS TO BE PERFORMED AND GET SUCH OTHER INFORMATION NECESSARY FOR PROPER EXECUTION OF THE WORK ASCERTAIN AND CHECK CONDITIONS WITH THE DRAWINGS AND SPECIFICATIONS, OTHER TRADES, EXISTING CONDITIONS AND BY

WHAT MEANS THE WORK IS TO BE PERFORMED. NO ALLOWANCE SHALL SUBSEQUENTLY BE MADE FOR EXTRA EXPENSE DUE TO FAILURE OR NEGLECT TO MAKE SUCH EXAMINATION AND CORRELATION. WHERE REVISIONS OR CHANGES IN THE EXISTING WORK ARE REQUIRED TO PERMIT THE INSTALLATION OF NEW WORK, THEY SHALL BE MADE AT NO ADDITIONAL COST NO ALLOWANCE SHALL BE SUBSEQUENTLY MADE FOR ERROR OR OMISSION.

BIDDING &

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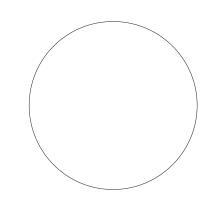
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SCALE

REVISIONS

PLUMBING SPECIFICATIONS

- UNDERSTANDING OF WORK: STUDY, EXAMINE, AND COMPARE OF THE CONTRACT DOCUMENTS, INCLUDING DRAWINGS AND SPECIFICATIONS. THE SUBCONTRACTOR SHALL HAVE A FULL UNDERSTANDING OF HOW THE WORK IN THIS PART IS SCHEDULED, PHASED, AND INSTALLED WITH WORK OF OTHER TRADES.
- INCLUDE IN THIS INSTALLATION PIPING, DUCTWORK, DEVICES, AND EQUIPMENT THAT ARE NECESSARY FOR COMPLETE AND OPERATING SYSTEMS AS SPECIFIED AND AS REQUIRED.
- CONNECT PIPING AND DUCTWORK FROM FIXTURES, OUTLETS, AND DEVICES FULL SIZE TO THE NEAREST SUITABLE MAIN OR CERTAIN INSTALLATIONS MAY BE PRESENTED AS TYPICAL, AND FULL DETAILS ARE NOT REPEATED FOR EACH CASE.
- AS IF FULL DETAILS APPLY TO EACH AND EVERY CASE, AND MAKE ADJUSTMENTS TO TYPICAL DETAILS TO SUIT EACH SPECIFIC INSTALLATION AS PART OF THE BASIC WORK. INSTALLATION OF WORK PRESENTED ON THE DIAGRAMS ARE

SUBCONTRACTOR SHALL PROVIDE COMPLETE INSTALLATION

APPLICABLE TO THE PLANS, AND WORK DEPICTED ON THE

COMPLETE THE INSTALLATION AND OBTAIN CLARIFICATION

PLANS ARE APPLICABLE TO THE DIAGRAMS. IF THERE IS A DISCREPANCY IN THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL FIGURE THE WORK BASED ON THE MOST STRINGENT REQUIREMENTS TO

#### FROM THE ARCHITECT BEFORE INSTALLATION. **ACCURACY OF DATA**

- THE DRAWINGS INDICATE THE GENERAL ARRANGEMENT AND LOCATION OF PIPING, DUCTS, AND EQUIPMENT. SHOULD IT BE NECESSARY TO DEVIATE FROM ARRANGEMENT OR LOCATION INDICATED IN ORDER TO MEET ARCHITECTURAL CONDITIONS OR SITE CONDITIONS, OR DUE TO INTERFERENCE WITH OTHER WORK, MAKE SUCH DEVIATIONS AS OFFSETS, RISES AND DROPS IN PIPING AND DUCTS THAT MAY BE NECESSARY, WHETHER SHOWN OR NOT, WITHOUT EXTRA EXPENSE. EXTREME ACCURACY OF THE DATA GIVEN HEREIN AND ON THE DRAWINGS IS NOT GUARANTEED. THE DRAWINGS AND SPECIFICATIONS ARE FOR THE ASSISTANCE AND GUIDANCE OF THIS SECTION AND EXACT LOCATIONS, DISTANCES,
- AND ELEVATIONS SHALL BE GOVERNED BY ACTUAL SITE CONDITIONS. DRAWINGS ARE DIAGRAMMATIC. THEY INDICATE GENERAL ARRANGEMENTS OF PLUMBING SYSTEMS AND OTHER WORK. THEY DO NOT SHOW ALL OFFSETS REQUIRED FOR COORDINATION NOR DO THEY SHOW THE EXACT ROUTINGS AND LOCATIONS NEEDED TO COORDINATE WITH STRUCTURE AND OTHER TRADES AND TO MEET CEILING HEIGHTS AND OTHER ARCHITECTURAL REQUIREMENTS.
- INFORMATION AND COMPONENTS SHOWN ON SINGLE LINE /SCHEMATIC DIAGRAMS BUT NOT SHOWN ON PLANS, AND VICE VERSA, SHALL APPLY OR BE PROVIDED AS IF EXPRESSLY REQUIRED ON

### **COORDINATION ITEMS**

- COORDINATE MECHANICAL WORK WITH THAT OF OTHER TRADES IN ORDER TO: AVOID INTERFERENCES BETWEEN GENERAL CONSTRUCTION, MECHANICAL, ELECTRICAL, STRUCTURAL AND OTHER SPECIALTY TRADES. MAINTAIN CLEARANCES AND ADVISE OTHER TRADES OF CLEARANCE REQUIREMENTS FOR OPERATION, REPAIR, REMOVAL AND TESTING OF MECHANICAL EQUIPMENT.
- INDICATE AISLE WAYS AND ACCESS WAYS REQUIRED ON COORDINATED SHOP DRAWINGS FOR ROOF EQUIPMENT AREA. MECHANICAL EQUIPMENT ROOMS, DATA AND TELECOMM ROOMS. CEILING SPACES, SHAFTS, CORRIDORS, LABORATORIES, ETC.

- COOPERATE AND COORDINATE WITH WORK OF OTHER SECTIONS IN EXECUTING WORK OF THIS SECTION. 2. PERFORM WORK SO THAT PROGRESS OF ENTIRE PROJECT INCLUDING WORK OF OTHER SECTIONS SHALL NOT BE
- INTERFERED WITH OR DELAYED. PROVIDE INFORMATION AS REQUESTED ON ITEMS FURNISHED UNDER ONE SECTION WHICH SHALL BE INSTALLED UNDER
- 4. FOR EQUIPMENT PROVIDED UNDER ANY DIVISION OR SECTION WHICH HAS CONNECTION MADE UNDER THE MECHANICAL OR ELECTRICAL SECTIONS, OBTAIN DETAILED INSTALLATION AND HOOKUP INFORMATION FROM THE EQUIPMENT MANUFACTURERS.
- 5. OBTAIN FINAL ROUGHING DIMENSIONS OR OTHER INFORMATION AS NEEDED FOR COMPLETE INSTALLATION OF ITEMS FURNISHED UNDER OTHER SECTIONS OR BY OWNER.
- 6. KEEP FULLY INFORMED AS TO SHAPE, SIZE AND POSITION OF OPENINGS REQUIRED FOR MATERIAL OR EQUIPMENT TO BE PROVIDED UNDER ALL SECTIONS. GIVE FULL INFORMATION SO THAT OPENINGS REQUIRED BY WORK OF THIS SECTION MAY BE COORDINATED WITH OTHER WORK AND OTHER OPENINGS AND MAY BE PROVIDED FOR IN ADVANCE. IN CASE OF FAILURE TO PROVIDE SUFFICIENT INFORMATION IN PROPER TIME, PROVIDE CUTTING AND PATCHING OR HAVE SAME DONE, AT OWN
- EXPENSE AND TO FULL SATISFACTION OF ARCHITECT. 7. NOTIFY ARCHITECT OF LOCATION AND EXTENT OF EXISTING PIPING, CONDUIT, DUCTWORK AND EQUIPMENT THAT INTERFERES WITH NEW CONSTRUCTION. IN COORDINATION WITH AND WITH APPROVAL OF ARCHITECT, RELOCATE PIPING, DUCTWORK AND EQUIPMENT TO PERMIT NEW WORK TO BE PROVIDED. REMOVE NONFUNCTIONING AND ABANDONED PIPING, DUCTWORK AND EQUIPMENT. DISPOSE OF OR STORE

#### SEQUENCE, COORDINATE, AND INTEGRATE THE VARIOUS ELEMENTS OF MECHANICAL SYSTEMS, MATERIALS, AND EQUIPMENT. COMPLY WITH THE FOLLOWING REQUIREMENTS:

- COORDINATE MECHANICAL SYSTEMS, EQUIPMENT, AND MATERIALS INSTALLATION WITH OTHER BUILDING COMPONENTS.
- VERIFY DIMENSIONS BY FIELD MEASUREMENTS. ARRANGE FOR CHASES, SLOTS, AND OPENINGS IN OTHER BUILDING
- COMPONENTS DURING PROGRESS OF CONSTRUCTION, TO ALLOW FOR MECHANICAL INSTALLATIONS. COORDINATE THE INSTALLATION OF REQUIRED SUPPORTING DEVICES
- AND SLEEVES TO BE SET IN POURED-IN-PLACE CONCRETE AND OTHER STRUCTURAL COMPONENTS, AS THEY ARE CONSTRUCTED. SEQUENCE, COORDINATE, AND INTEGRATE INSTALLATIONS OF
- MECHANICAL MATERIALS AND EQUIPMENT FOR EFFICIENT FLOW OF THE WORK. GIVE PARTICULAR ATTENTION TO LARGE EQUIPMENT REQUIRING POSITIONING PRIOR TO CLOSING IN THE BUILDING. WHERE MOUNTING HEIGHTS ARE NOT DETAILED OR DIMENSIONED
- INSTALL SYSTEMS, MATERIALS AND EQUIPMENT TO PROVIDE THE MAXIMUM HEADROOM POSSIBLE. WORK SHALL BE ABOVE CEILINGS OR CEILING LINE. COORDINATE INSTALLATION AND CONNECTION OF MECHANICAL SYSTEMS WITH EXTERIOR UNDERGROUND AND OVERHEAD UTILITIES
- AND SERVICES. COMPLY WITH REQUIREMENTS OF GOVERNING REGULATIONS, FRANCHISED SERVICE COMPANIES, AND CONTROLLING AGENCIES. PROVIDE REQUIRED CONNECTION FOR EACH SERVICE.
- H. INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT TO CONFORM WITH APPROVED SUBMITTAL DATA, INCLUDING COORDINATION DRAWINGS,

TO GREATEST EXTENT POSSIBLE. CONFORM TO ARRANGEMENTS INDICATED BY THE CONTRACT DOCUMENTS, RECOGNIZING THAT PORTIONS OF THE WORK ARE SHOWN ONLY IN DIAGRAMMATIC FORM.

- INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS, WHERE INSTALLED EXPOSED IN FINISHED SPACES. INSTALL MECHANICAL EQUIPMENT TO FACILITATE SERVICING, MAINTENANCE, AND REPAIR OR REPLACEMENT OF EQUIPMENT COMPONENTS. AS MUCH AS IS PRACTICAL, CONNECT EQUIPMENT FOR
- K. INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT GIVING RIGHT-OF-WAY PRIORITY TO SYSTEMS REQUIRED TO BE INSTALLED AT A SPECIFIED SLOPE

COORDINATE WITH INDIVIDUAL SYSTEM REQUIREMENTS.

COORDINATE WITH THE LOCATIONS OF ELECTRICAL PANELS AND AVOID INSTALLING PIPING AND DUCTWORK OVER THEM. ELECTRICAL PANELS ARE PURPOSELY LOCATED AND HAVE PRIORITY FOR LOCATION. THE CONTRACTOR IS RESPONSIBLE FOR REQUIRED PIPING AND DUCTWORK OFFSETS TO ENSURE THAT THE PANELS ARE LOCATED AS DESIGNED AND FOR OTHER CONDITIONS.

EASE OF DISCONNECTING. WITH MINIMUM OF INTERFERENCE WITH

OTHER INSTALLATIONS. EXTEND GREASE FITTINGS TO AN ACCESSIBLE

## **BUILDING EXPANSION JOINTS AND FIREWALLS**

- A. PLUMBING PIPING AND OTHER HORIZONTAL DISTRIBUTION SYSTEMS SHALL BE PROVIDED WITH APPROVED EXPANSION PROVISIONS WHEN PASSING BY BUILDING EXPANSION JOINTS. SYSTEMS SHALL BE RUN THROUGH RATED WALLS, PARTITIONS, AND FLOORS VIA APPROVED FIREPROOFED SLEEVES.
- INSTALLATION SHALL PROVIDE ACCESS TO SYSTEMS
- A. INSTALLATION SHALL ALLOW CLEARANCES FOR EASY ACCESS TO SYSTEMS FOR ROUTINE MAINTENANCE, FOR REPAIRS, AND FOR INSTALLING NEW CABLE IN CONDUIT AND CABLE TRAYS.
- B. ACCESS PANELS SHALL BE INSTALLED IN CEILINGS THAT ARE NOT COMPOSED OF REMOVABLE TILES. THESE SHALL BE LOCATED WHEREVER SYSTEMS COMPONENTS EXIST THAT HAVE MOVING PARTS MOTORS. OR OTHER COMPONENTS REQUIRING PERIODIC MAINTENANCE, ADJUSTMENT, OR REPLACEMENT. ACCESS PANELS SHALL BE SHOWN ON COORDINATION DRAWINGS AND SHALL BE OF THE TYPE AND FINISH AS APPROVED BY THE ARCHITECT.

## **INSTALLATION**

- MANUFACTURER'S DIRECTIONS: FOLLOW MANUFACTURER'S DIRECTIONS COVERING POINTS NOT SHOWN ON THE DRAWINGS OR SPECIFIED HEREIN. MANUFACTURER'S DIRECTIONS DO NOT TAKE PRECEDENCE OVER DRAWINGS AND SPECIFICATIONS. WHERE THESE ARE IN CONFLICT WITH THE DRAWINGS AND SPECIFICATIONS, NOTIFY THE PROJECT MANAGER FOR CLARIFICATION BEFORE INSTALLING THE WORK.
- B. CARPENTRY, CUTTING, PATCHING, AND CORE DRILLING: PROVIDE CARPENTRY, CUTTING, PATCHING, AND CORE DRILLING REQUIRED FOR INSTALLATION OF MATERIAL AND EQUIPMENT SPECIFIED IN THIS DIVISION.
- NO PENETRATIONS SHALL BE SLEEVED, CUT, OR CORE DRILLED THROUGH CONCRETE CONSTRUCTION WITHOUT A SUBMITTAL INDICATING EXACT LOCATIONS AND SIZES AND SPECIFIC WRITTEN APPROVAL FROM THE UNIVERSITY OR UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL
- IT IS THE SUBCONTRACTOR'S RESPONSIBILITY TO ACCURATELY SIZE AND LOCATE OPENINGS THROUGH THE STRUCTURE. THE DIMENSIONS SHOWN ON THE STRUCTURAL

#### DRAWINGS ARE FOR GENERAL INFORMATION ONLY. PROVIDE SPECIFIC SIZES, DIMENSIONS, REQUIREMENTS, ETC.

4. COMPLY WITH INDIVIDUAL SECTIONS FOR OTHER EQUIPMENT

REPAIR DAMAGED GALVANIZING, PAINT, OR COATINGS. USE

Z.R.C. (NO KNOWN EQUAL) COLD GALVANIZED COMPOUND

EACH CONTRACTOR SHALL BE RESPONSIBLE FOR WORK AND

CAREFULLY STORE MATERIALS AND EQUIPMENT THAT IS NOT

IMMEDIATELY INSTALLED AFTER DELIVERY TO SITE. CLOSE OPEN

ENDS OF WORK WITH TEMPORARY COVERS OR PLUG DURING

EQUIPMENT UNTIL FINALLY INSPECTED, TESTED, AND ACCEPTED.

MAINTAIN WATERPROOF INTEGRITY OF PENETRATIONS OF MATERIALS INTENDED TO BE WATERPROOF. PROVIDE FLASHINGS AT EXTERIOR ROOF PENETRATIONS. CAULK PENETRATIONS OF FOUNDATION WALLS AND FLOORS WATERTIGHT. PROVIDE MEMBRANE CLAMPS AT

C. WATERPROOF CONSTRUCTION:

TO BE PAINTED.

PROTECTION OF WORK

FOR GALVANIZED REPAIRS.

OVER TO OWNER CLEAN AND IN NEW CONDITION. C. PROTECT THE WORK AND MATERIAL OF OTHER TRADES THAT MIGHT PENETRATIONS OF WATERPROOF MEMBRANES. BE DAMAGED BY WORK OR WORKMEN AND MAKE GOOD ALL DAMAGE PROVIDE WATERPROOF NEMA 3R ENCLOSURES FOR THUS CAUSED. EQUIPMENT OR DEVICES MOUNTED OUTSIDE OR OTHERWISE

COVERS.

- EXPOSED TO THE WEATHER. FIREPROOFING: A. CLIPS, HANGERS, CLAMPS, SUPPORTS AND OTHER ATTACHMENTS TO D. PAINTING OF MECHANICAL EQUIPMENT AND HARDWARE: SURFACES TO BE FIREPROOFED SHALL BE INSTALLED, INSOFAR AS
  - 1. COMPLY WITH APPLICABLE DIVISION 09 SECTIONS FOR PAINTS POSSIBLE, PRIOR TO START OF SPRAY FIBER WORK. AND COATINGS. B. PIPING AND OTHER ITEMS THAT WOULD INTERFERE WITH PROPER
  - 2. PROVIDE MOISTURE RESISTANT PAINT FOR EXTERIOR APPLICATION OF FIREPROOFING SHALL BE INSTALLED AFTER COMPLETION OF SPRAY FIBER WORK. 3. COLORS SHALL BE AS SHOWN ON THE DRAWINGS UNLESS
    - C. PATCHING AND REPAIRING OF FIREPROOFING DUE TO CUTTING OR DAMAGING TO FIREPROOFING DURING COURSE OF WORK SPECIFIED UNDER THIS SECTION SHALL BE PERFORMED BY INSTALLER OF FIREPROOFING AND PAID FOR BY TRADE RESPONSIBLE FOR DAMAGE AND SHALL NOT CONSTITUTE GROUNDS FOR AN EXTRA TO OWNER.
    - ASSUME RESPONSIBILITY FOR DAMAGE TO OF THE WORK OR PREMISES BEFORE SUBSTANTIAL COMPLETION. SHOULD NEW OR EXISTING EQUIPMENT BECOME DAMAGED, RESTORE IT TO ITS ORIGINAL CONDITION AND FINISH BEFORE FINAL ACCEPTANCE DAMAGE INCURRED TO OWNER PROPERTY OR TO THE WORK OF OTHER DIVISIONS. CAUSED BY THIS DIVISION. SHALL BE REPLACED OR REPAIRED BY, AND AT THE EXPENSE OF, THE SUBCONTRACTOR

CONSTRUCTION TO PREVENT ENTRY OF OBSTRUCTING MATERIAL.

COVER WORK SUBJECT TO FALLING DEBRIS WITH TEMPORARY

PROVIDE ALL MATERIALS. EQUIPMENT AND LABOR TO PROVIDE

ADEQUATE PROTECTION OF ALL EQUIPMENT DURING THE COURSE OF

CONSTRUCTION. THIS INCLUDES PROTECTION FROM MOISTURE AND

FOREIGN MATERIAL. AT COMPLETION, ALL WORK MUST BE TURNED

#### WARRANTY CONTINUITY OF SERVICES

- 3.12 <u>TESTS</u> A. UPON COMPLETION OF THE MECHANICAL CONSTRUCTION WORK, PERFORM TESTS AND PROVIDE TEST REPORTS AS SPECIFIED IN THIS AND OTHER SECTIONS.
- EACH TRADE SHALL ARRANGE THAT AN OFFICER OF THE CONTRACTING COMPANY SHALL CERTIFY THAT EACH AND EVERY SYSTEM HAS BEEN TESTED. AT THE CONCLUSION OF THE TESTS, SUBMIT A LETTER AND ENCLOSED COMMISSIONING FORMS SIGNED BY THE OFFICER STATING:
- ALL TESTS SHALL BE MADE IN THE PRESENCE OF A REPRESENTATIVE OF THE PROJECT MANAGER. THE SUBCONTRACTOR SHALL SUBMIT TO THE PROJECT MANAGER 3 COPIES OF TEST RESULTS, CERTIFIED IN WRITING, WITNESSED, SIGNED AND DATED, IMMEDIATELY UPON COMPLETION OF WORK. UNSATISFACTORY CONDITION REVEALED BY THESE TEST RESULTS, OR UNSATISFACTORY METHODS OF TESTS AND/OR TESTING APPARATUS AND INSTRUMENTS, SHALL BE CORRECTED BY THE SUBCONTRACTOR TO THE SATISFACTION OF THE PROJECT MANAGER.
- THE PROJECT MANAGER RESERVES THE RIGHT TO REQUIRE THAT THE SUBCONTRACTOR PERFORM AND REPEAT TESTS THAT ARE DEEMED NECESSARY TO COMPLETE OR CHECK THE TESTS OR THE CERTIFIED RECORDS OF THE SUBCONTRACTOR DURING THE COURSE OF THE WORK. CORRECT UNSATISFACTORY PORTION OF ITS WORK THAT IS REVEALED BY THE TESTS OR THAT MAY BE DUE TO PROGRESSIVE DETERIORATION DURING THIS PERIOD, UNLESS THE ITEM IN QUESTION WAS A DIRECT SPECIFICATION.

## E. TESTING CRITERIA

SYSTEM	TEST MEDIUM	TEST PRESSURE	TEST DURATION	OTHER
DRAINAGE AND VENT (ALL SYSTEMS)	WATER	10 FEET	30 MINUTES	
WATER (ALL SYSTEMS)	WATER	150 PSIG MIN OR 1.5 OPERATING PRESSURE	1 HOUR	DO NOT SUBMIT THERMOPLASTIC PIPING SYSTEMS TO TEST PRESSURES HIGHER THAN 90 PSIG

- 1. FOR EACH SYSTEM NOTED ABOVE, AT THE END OF THE TEST PERIOD FLUSH THE SYSTEM WITH COMPONENT FLUID AND THE SYSTEM SHALL BE DRAINED COMPLETELY; FILL SYSTEM WITH THE PRODUCT FLUID CONTRACTOR SHALL RETURN THE PIPING SYSTEM TO ITS PRE-TEST CONDITION
- SUBMIT AS PART OF THE CLOSEOUT DOCUMENTS, A TEST REPORT FOR EACH FLUID SYSTEM ABOVE. THE TEST FORM FOR THE SELECTED PIPING SYSTEM SHALL BE FILLED-OUT, SIGNED AND DATED BY THE CONTRACTOR AND OWNER OR ITS REPRESENTATIVE WITNESSING THE TEST AS THE ACCEPTANCE DOCUMENT FOR FILING IN OWNER'S DOCUMENTATION FILE FOR THE PROJECT.
- 3. REPAIR ALL SYSTEMS LEAKS WHERE FOUND DURING TEST PROCEDURES. RETEST SYSTEMS AFTER REPAIRS PER THE ABOVE TABLE.

## 3.13 <u>DISINFECTION OF WATER SYSTEMS</u>

- WATER PIPING SYSTEMS SHALL BE THOROUGHLY DISINFECTED WITH A SOLUTION CONTAINING NO LESS THAN 50 PARTS PER MILLION OF
- B. CHLORINATING MATERIALS SHALL BE EITHER LIQUID CHLORINE OR SODIUM HYPO CHLORITE SOLUTION, SHALL BE INTRODUCED INTO THE SYSTEM AND DRAWN TO ALL POINTS IN THE SYSTEM. DISINFECTION SOLUTION SHALL BE ALLOWED TO REMAIN IN SYSTEM FOR 24 HOURS, DURING THIS TIME, VALVES AND FAUCETS SHALL BE OPENED AND CLOSED SEVERAL TIMES. AFTER DISINFECTION, SOLUTION SHALL BE FLUSHED FROM THE SYSTEM WITH CLEAR WATER UNTIL RESIDUAL CHLORINE CONTENT IS NO GREATER THAN 0.2 PARTS
- SUBMIT A CHLORINATION DISINFECTION REPORT AS RECORD OF PROCEDURE.

## PROJECT PUNCH LIST PROCEDURE

- IF, WHEN THE ENGINEER ARRIVES AT THE SITE CERTAIN AREAS ARE NOT COMPLETE AND READY FOR PUNCH OUT, THE ENGINEER WILL NOT REVIEW THESE AREAS. WHEN A SECOND NOTIFICATION IS ISSUED INDICATING THE INSTALLATION IS COMPLETED AND THE CONTRACTOR
- HAS PLINCHED AND CORRECTED THESE AREAS. THE ENGINEER WILL THEN RE-VISIT THE SITE FOR FINAL OBSERVATIONS AND PUNCH LIST. 1. SYSTEMS SHALL BE OPERATED UNDER ACTUAL OR SIMULATED FULL LOAD CONDITIONS. IDENTIFY THE OPERATING
- CONDITIONS IN THE WORK PLAN. 2. WORK PLAN SHALL INCORPORATE THE "DEMONSTRATION OF
- SUCCESSFUL OPERATION" DESCRIBED BELOW. 3. THE ARCHITECT/OWNER MAY CHECK THE COMPLETED AND COMMISSIONED INSTALLATION EITHER SEQUENTIALLY AS DIFFERENT PARTS ARE COMPLETED, AND/OR WHEN THE ENTIRE INSTALLATION IS COMPLETE, AT THE SOLE OPTION OF

#### 3.15 PROJECT CLOSE-OUT PROCEDURE A. A. PROJECT CLOSE-OUT CHECKLIST

THE ARCHITECT/OWNER.

- 1. REVIEW REQUIREMENTS OF EACH SECTION OF THE SPECIFICATIONS AND SUBMIT FOR APPROVAL TO ARCHITECT THE SIGN-OFF FORMS THAT SHALL BECOME THE PROJECT CLOSE-OUT CHECKLIST, THIS, AT A MINIMUM, SHALL INCLUDE THE FOLLOWING INFORMATION SHOWN IN ATTACHED PROJECT CLOSEOUT CHECKLIST EXAMPLE. THE ARCHITECT AND/OR
- OWNER MAY INCORPORATE ADDITIONAL SPECIFIC ITEMS TO THE FOLLOWING CHECKLIST WHICH SHALL BECOME PART OF THE PROJECT REQUIREMENTS. SUBMIT RECORD DRAWINGS TO OWNER AND
- MAINTENANCE AND OPERATING INSTRUCTIONS AND TRAINING
- A. REFER TO DIVISION 01 SECTION "GENERAL REQUIREMENTS", FOR MAINTENANCE AND OPERATING INSTRUCTIONS, AND TRAINING REQUIREMENTS.

ARCHITECT/ENGINEER

- B. AT TIME OF OCCUPANCY, ARRANGE FOR MANUFACTURER'S REPRESENTATIVES TO INSTRUCT OPERATING AND MAINTENANCE PERSONNEL IN THE USE OF EQUIPMENT REQUIRING OPERATING AND MAINTENANCE. ARRANGE FOR PERSONNEL TO BE INSTRUCTED AT ONE TIME. COSTS FOR THIS SERVICE SHALL BE INCLUDED IN THE SUBCONTRACT.
- MAINTENANCE AND OPERATING INSTRUCTIONS AND TRAINING FOR -FURNISHED EQUIPMENT WILL BE PROVIDED BY THE EQUIPMENT VENDOR. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OTHER EQUIPMENT.

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## **CROCKFORDS** -

A. DO NOT INTERRUPT EXISTING SERVICES WITHOUT OWNER'S

B. SCHEDULE INTERRUPTIONS IN ADVANCE, ACCORDING TO OWNER'S

INSTRUCTIONS. SUBMIT, IN WRITING, WITH REQUEST FOR

INTERRUPTION, METHODS PROPOSED TO MINIMIZE LENGTH OF

INTERRUPTIONS SHALL BE SCHEDULED AT TIMES OF DAY AND WORK

SUBCONTRACTOR SHALL COORDINATE SHUTDOWNS OF EXISTING

1. FURNISH PIPE CLEANING CHEMICALS. CHEMICAL FEED

FITTINGS COMPLETE WITH STOP VALVES.

FLUSHING OPERATION.

DIRT AND PAINT RESIDUE.

EQUIPMENT, MATERIALS AND LABOR NECESSARY TO CLEAN

PERMANENTLY INSTALL NECESSARY CHEMICAL INJECTION

AFTER PIPING SYSTEMS HAVE BEEN PRESSURE TESTED AND

SPECIFIED AND IN ACCORDANCE WITH APPLICABLE CODES.

MAINTAIN CONTINUOUS BLOWDOWN AND MAKE-UP DURING

SURFACE OF EQUIPMENT, INCLUDING CONCRETE RESIDUE,

1. AFTER COMPLETION OF PROJECT, CLEAN THE EXTERIOR

APPROVED FOR TIGHTNESS, CLEAN AND FLUSH PIPING AS

SO THAT THEY HAVE MINIMAL IMPACT ON OWNER'S OPERATIONS.

SYSTEMS.

**CLEANING** 

PIPING

EQUIPMENT

3.11

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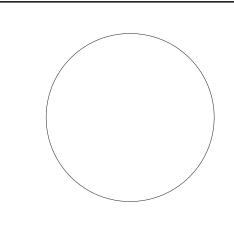
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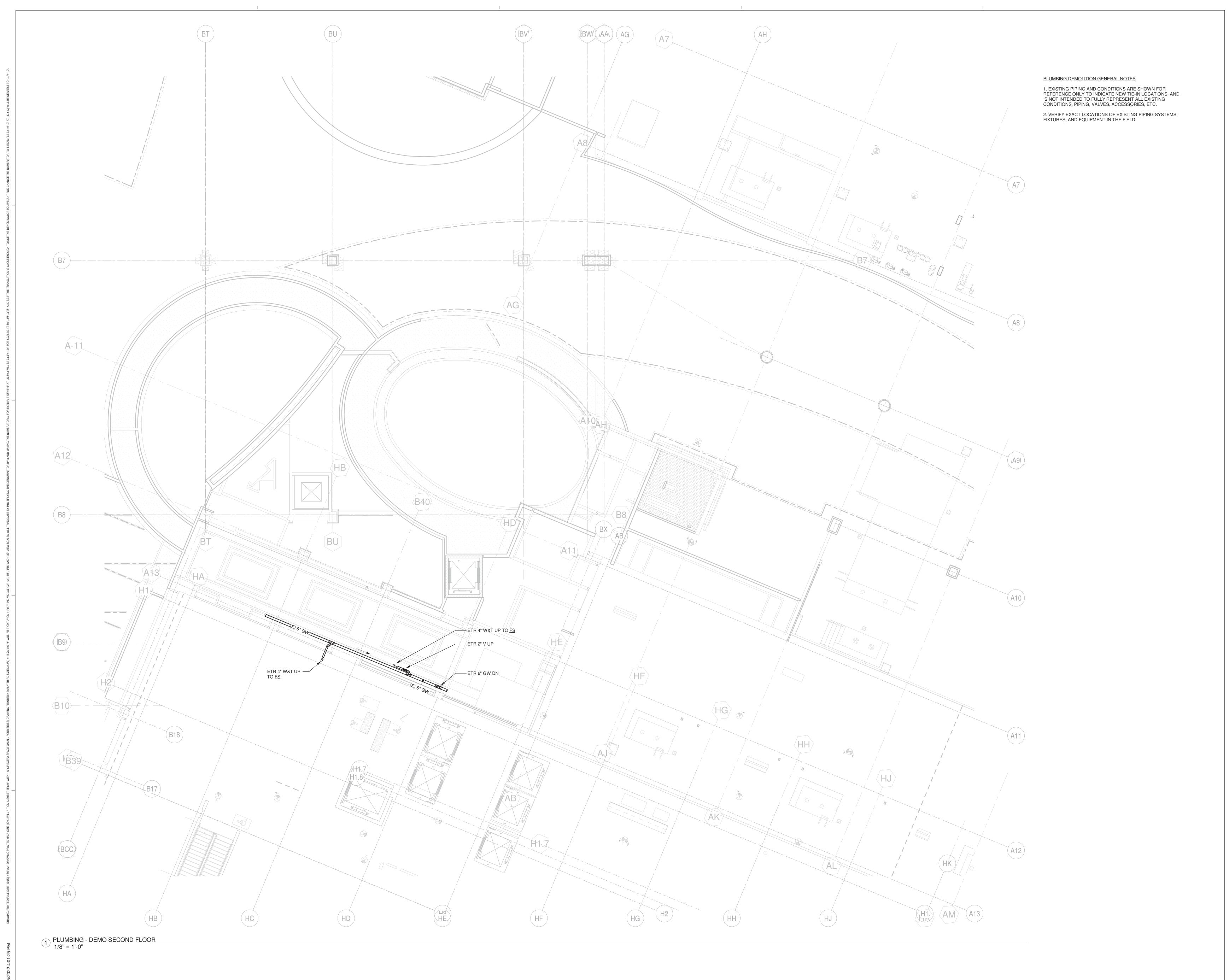
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PLUMBING SPECIFICATIONS



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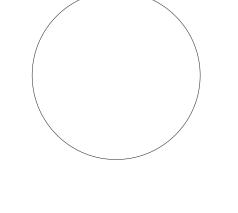
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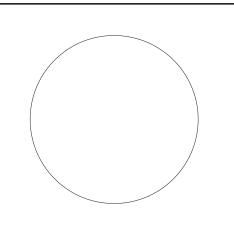
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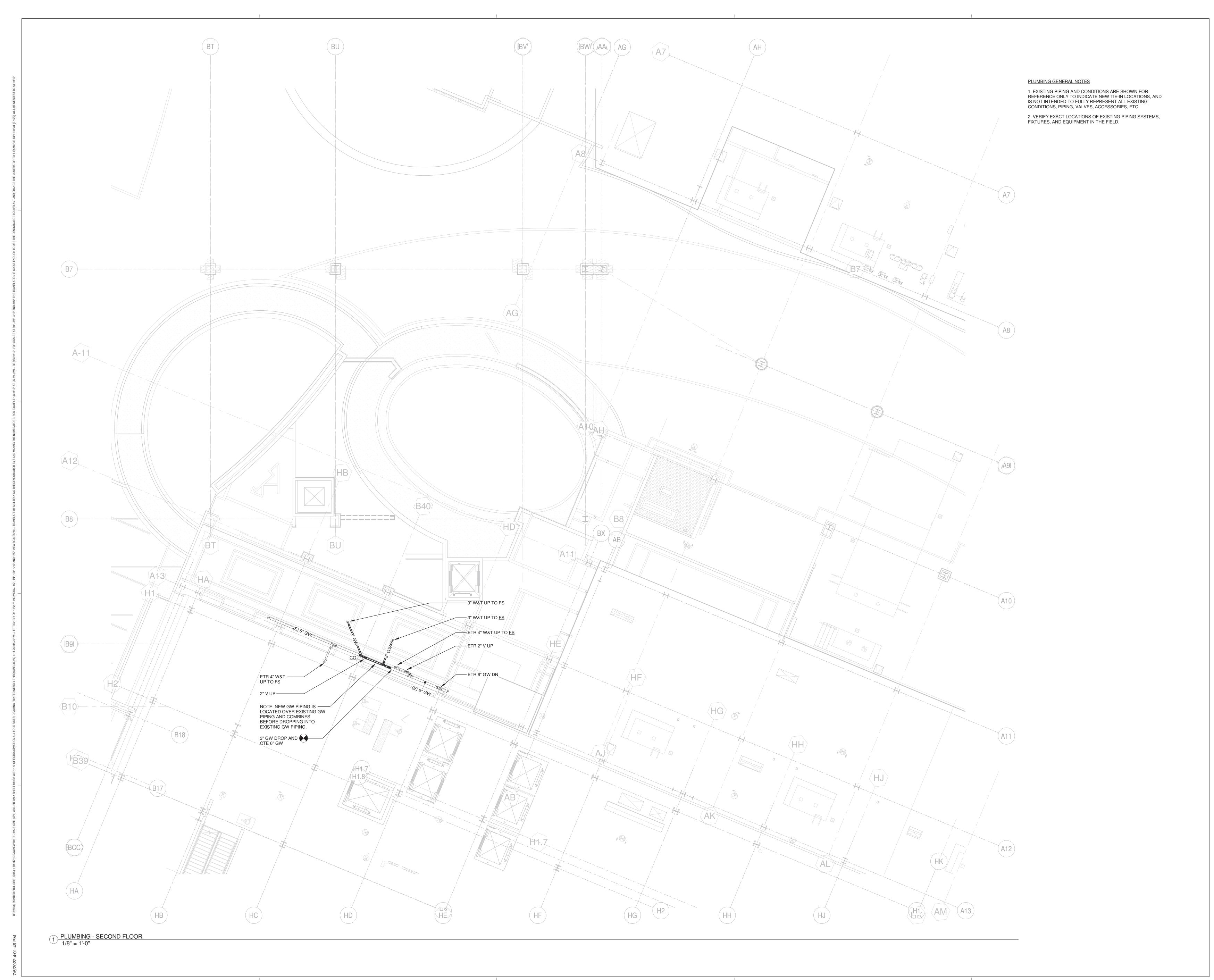
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**DEMO THIRD FLOOR** 

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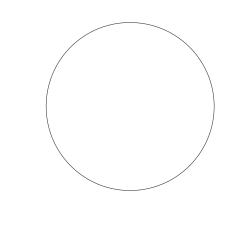
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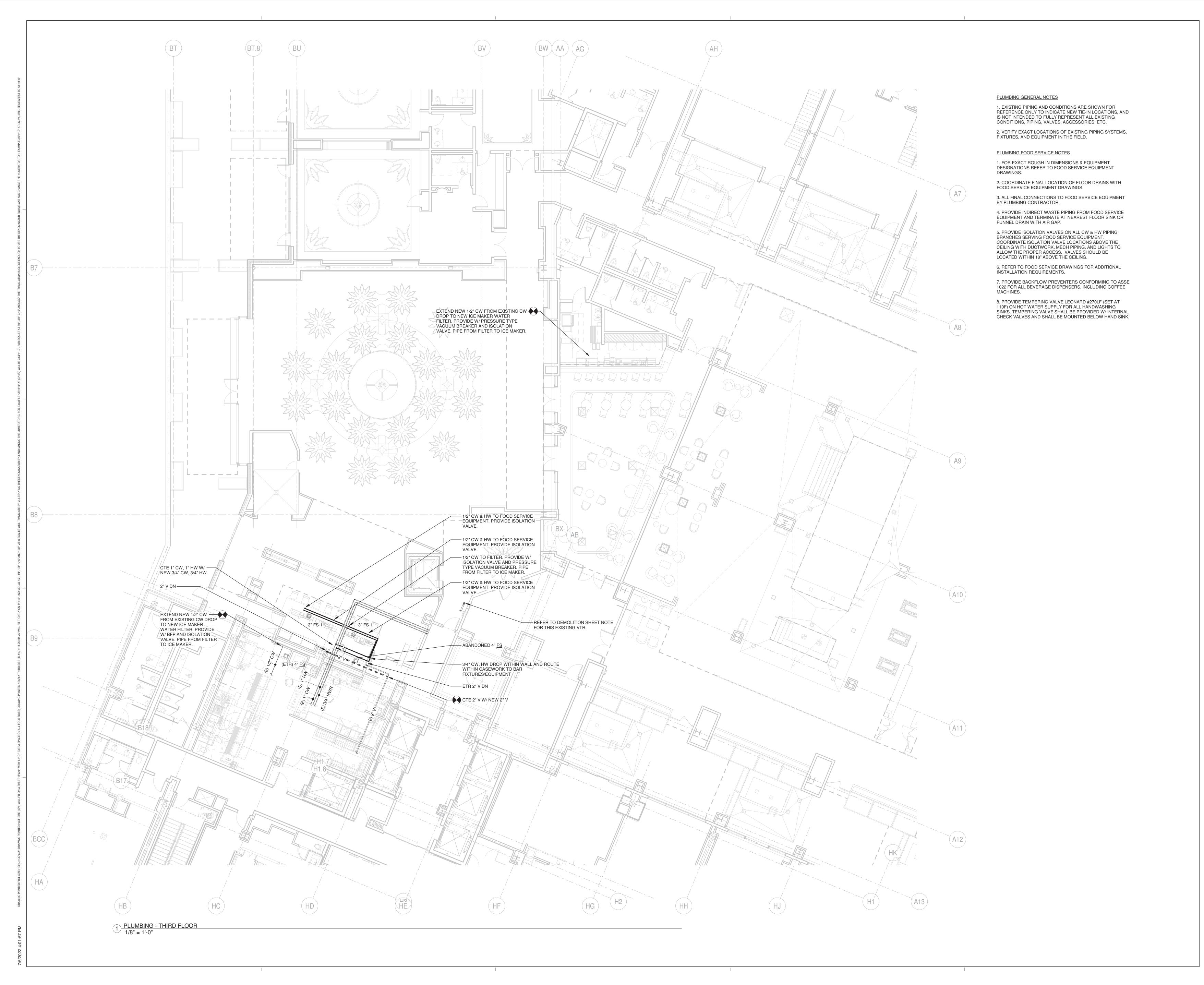
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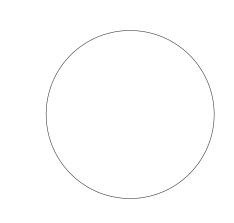
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