**P000** 

INGLE LINE	DOUBLE LINE		SINGLE LINE	DOUBLE LINE	
		FLANGE			ELBOW DOWN
——————————————————————————————————————		UNION			ELBOW UP
×		ANCHOR			TEE DOWN
		PIPE GUIDE	<del></del>		TEE UP
					45° PIPE RISE /DROP
		PIPE SLEEVE ECCENTRIC REDUCER			PIPE CAP
		CONCENTRIC REDUCER			SOIL, STORM, OR WASTE PLUG
		OONOLIVITIIO NEDUOLII	I		PIPE CLEANOUT

		,,		OLL/ III OO I
	PIPE VALVES AND SPI	ECIALTIES		
SINGLE LINE DOUBLE LINE		SINGLE LINE	DOUBLE LINE	
	GAS SHUT OFF VALVE			PIPE FLEXIBLE CONNECTION
	GATE VALVE	<del></del>		EXPANSION JOINT
	DIAPHRAGM VALVE		(Ø	FLOW SENSING DEVICE
	BALL VALVE		_	
	BUTTERFLY VALVE		(e)(e)	PRESSURE OR VACUUM SWITCH
	BALANCING VALVE		Щ	
	CHECK VALVE	<u> </u>		THERMOMETER
	PRESSURE REDUCING VALVE			PRESSURE GAUGE (WITH VALVE)
	SOLENOID VALVE	T		FILTER
	PRESSURE RELIEF VALVE	-+		WALL HYDRANT
	THERMOSTATIC MIXING VALVE		- ●	HOSE BIBB  MECHANICAL SHOCKSTOP
	BACKWATER VALVE			GAS REGULATOR VALVE
——————————————————————————————————————	VALVE IN VERTICAL	ZVB		ZONE VALVE BOX LABEL IS SHOWN ON FRONT OF VALVE BOX TO INDICATE ORIENTATION
	REDUCED PRESSURE BACKFLOW PREVENTER  DOUBLE CHECK	AAP	OR MAP	AREA OR MASTER ALARM PAN LABEL IS SHOWN ON FRONT OF PANEL TO INDICATE ORIENTATION
	BACKFLOW PREVENTER			

# DRAINS AND CLEANOUTS

	FLOOR DRAIN/FLOOR SINK	$\bigcirc$ —	FIXTURE WASTE TRAP
<b>©</b> (*)	ROOF DRAIN	$\circ$ $\longrightarrow$	CLEANOUT
0	HUB DRAIN		FLOOR CLEANOUT

PIPELINE STRAINER

# FIXTURE INSTALLATION

<u>FIXTURE</u> WATER CLOSET	BARRIER FREE DESIGN FLOOR TO RIM 17"	NON-BARRIER FREE FLOOR TO RIM 15"
URINAL	FLOOR TO RIM 17" MIN. ONE PER ROOM	FLOOR TO RIM 24"
LAVATORY	FLOOR TO RIM 34" MAX. FLOOR TO UNDER APRON 27"	FLOOR TO RIM 31"
DRINKING FOUNTAIN	FLOOR TO SPOUT 36" MAX. FLOOR TO UNDER APRON 27"	FLOOR TO SPOUT 43" MAX
SHOWER VALVE	FLOOR TO VALVE 42"	FLOOR TO VALVE 48"
SHOWER HEAD	FLOOR TO HEAD 60" ON HOSE ADJ. 48"	FLOOR TO HEAD 78" VARIES

SHOCK A	SHOCK ARRESTOR SCHEDULE						
PDI SIZE	N.P.T.	FIXTURE UNITS					
Α	1/2"	1-11					
В	3/4"	12-32					
С	1"	33-60					
D	1-1/4"	61-113					
E	1-1/2"	114-154					
F	2"	155-330					

DOMESTIC WATER SI	JPPLY FIXTI	URE UNITS	
FIXTURE	QUANTITY	SFU'S PER FIXTURE	TOTAL SFU'S
WATER CLOSET	18	10	180
URINAL	6	5	30
LAVATORY	17	2	34
MOP BASIN	3	3	9
DRINKING FOUNTAIN	3	0.25	0.75
HOSE BIBB	1	2.5	2.5
HOSE BIBB EACH ADDITION	AL 10	1.0	10
SINK	5	4	20
EMERGENCY EYE WASH	1	4	4
		TOTAL	290.25

SANITARY DRAINAGE FIXTURE UNITS						
FIXTURE	QUANTITY	DFU'S PER FIXTURE	TOTAL DFU'S			
WATER CLOSET	18	4	72			
URINAL	6	2	12			
LAVATORY	17	1	17			
MOP BASIN	3	2	6			
DRINKING FOUNTAIN	3	0.5	1.5			
FLOOR DRAIN	15	2	30			
FLOOR SINK	11	6	66			
SINKS	5	2	10			
		TOTAL	214.5			

# PIPING SYSTEM LABELS

<u>NEW</u>	<b>EXISTING</b>	DOUBLE LINE	<u>NEW</u>	<b>EXISTING</b>	DOUBLE LINE	
—DCW—	—X-DCW—	DCW DOMESTIC COLD WATER	SAN	—X-SAN—	□ SAN □	SANITARY
—DHW—	—X-DHW—	DHW DOMESTIC HOT WATER	——SD——	——X-SD——	SD	SUBSOIL DRAIN LINE
—DHR—	—X-DHR—	DHR DOMESTIC HOT WATER RETURN	——s—	——X-S——	S	STORM
cs	——X-CS——	CS COLD SOFT WATER	——OD——	——X-OD——	OD	OVERFLOW DRAIN LINE
——НТ——	——X-HT——	HEAT TRACE HOT WATER	FM	——X-FM——	FM	FORCE MAIN
NP	——X-NP——	NP NON-POTABLE WATER	CWW	—X-CWW—	CWW	CLEARWATER WASTE
——DI——	—— X-DI ——	DEIONIZED WATER	IW	—— X-IW ——	IW	INDIRECT WASTE
ROS	—X-ROS—	ROS REVERSE OSMOSIS WATER SUPPLY	CRW	—X-CRW—	CRW	CORROSION RESISTANT WASTE
ROR	—X-ROR—	ROR REVERSE OSMOSIS WATER RETURN	—— GW ——	— X-GW —	$\square$ GW $\square$	GREASE WASTE
PUW	—X-PUW—	PUW PURE WATER	LW	——X-LW——	LW	LAB WASTE
PCW	—X-PCW—	PCW PROCESS COLD WATER	PW	——X-PW——	PW	PROCESS WASTE
PHW	—X-PHW—	PHW PROCESS HOT WATER				UNDERFLOOR FOR WASTE OR SOIL, SUBSOIL, STORM & FORCE MAIN
—PHR——	—X-PHR—	PHR PROCESS HOT WATER RETURN	—— v ——	—— X-V ——		SANITARY VENT
—LCW——	—X-LCW—	LAB COLD WATER	CMA	X-CWV	□	CLEARWATER VENT
—LHW——	—X-LHW—	LAB HOT WATER	CRV	X-CRV	□□ CRV □□	CORROSION RESISTANT VENT
—LHR——	—X-LHR —	LHR LAB HOT WATER RETURN	GWV	X-GWV	□ = GWV = □	GREASE WASTE VENT
TF	—X-TF—	TF TRAP FILLER LINE	PV	X-PV	□	PROCESS VENT
——W——	—— X-W ——	W WATER MAIN	LWV	X-LWV	_ = =LWV= = =	LAB WASTE VENT
WGE	—X-WGE—	WGE WASTE GAS EVACUATION	RCW	—X-RCW—	□ RCW □	RECLAIMED WATER
——LA——	——X-LA——	LAB COMPRESSED AIR	VC	X-VC	VC	VACUUM CLEANING
MA	——X-MA——	MA MEDICAL COMPRESSED AIR	——Н2 ——	—X-H2—	□□H2 □□	HYDROGEN
——CA——	——X-CA——	CA PROCESS COMPRESSED AIR	——O2——	—X-O2—	O2	OXYGEN
LVAC	—X-LVAC—	LAB VACUUM	N2	—X-N2—	N2	NITROGEN
MV	——X-MV——	MEDICAL VACUUM	NG	——X-NG——	□□NG □□	NATURAL GAS
			sgs	— X-SGS —	□ SGS □	SOLAR GLYCOL SUPPLY
			SGR	— X-SGR —	□ SGR □	SOLAR GLYCOL RETURN

## REFERENCE SYMBOLS

REFER SHT #	GENERAL REFERENCE DESIGNATES SHEET NUMBER	NAME #
# X0.0	DETAIL REFERENCE TOP DESIGNATES SECTION NUMBER BOTTOM DESIGNATES SHEET NUMBER	#
# X0.0	SHEET REFERENCE TOP DESIGNATES SECTION NUMBER BOTTOM DESIGNATES SHEET NUMBER	

**ELEVATION SYMBOL** 

NEW CONNECTION TO EXISTING

# **EQUIPMENT NAME AND NUMBER**

#	SHEET KEYNOTE NUM
<b>/#</b> \	REVISION NUMBER

# **GENERAL NOTES**

- 1. THE PIPING CONTRACTOR SHALL PROVIDE ALL NECESSARY OFFSETS, RISERS OR DROPS AS REQUIRED BY BUILDING CONDITIONS AND SHALL COORDINATE THE INSTALLATION WITH ALL OTHER TRADES.
- 2. OFFSET PIPING WHERE REQUIRED TO ALLOW ADEQUATE ACCESSIBILITY TO EQUIPMENT PROVIDED BY THIS CONTRACTOR AND ALL OTHER TRADES.
- 3. REFER TO ARCHITECTURAL DRAWINGS FOR ALL MILLWORK AND DETAILS SHOWING EXACT LOCATIONS AND TYPE OF ALL FIXTURES AND TRIM.
- 4. EACH DISCIPLINE SHALL COORDINATE EXACT LOCATIONS OF THEIR WORK WITH ALL OTHER DISCIPLINES PRIOR TO AND DURING INSTALLATION OF ALL SERVICES. ALL SYSTEMS SHALL BE INSTALLED IN COMPLIANCE WITH DESIGN INTENT WHILE MEETING ALL CODE REQUIREMENTS, EQUIPMENT CLEARANCE REQUIREMENTS, ACCESS SPACE REQUIREMENTS NECESSARY FOR MANUFACTURER SPECIFIED EQUIPMENT OPERATION, AND OSHA COMPLIANCE FOR NORMAL BUILDING MAINTENANCE.
- 5. COORDINATE AND SEAL AROUND ALL PIPING PENETRATIONS THROUGH WALLS BASED ON THE REQUIRED SPECIFICATION FOR EACH WALL TYPE. REFER TO ARCHITECTURAL PLANS FOR WALL TYPES AND DETAILS.
- 6. THE CONTRACTOR SHALL VERIFY EXACT LOCATION AND INVERT ELEVATION OF EXISTING SANITARY/STORM PIPING PRIOR TO CONSTRUCTION AND ENSURE THAT SANITARY/STORM PIPING CAN BE PROPERLY CONNECTED AND INSTALLED WITH MIN. SLOPE AS REQUIRED BY NC PLUMBING CODE.
- 7. PLUMBING CONTRACTOR TO INSTALL THE ISOLATION VALVES NO MORE THAN 2'-0" ABOVE THE CEILING AND IN ACCESSIBLE LOCATIONS. THE CONTRACTOR SHALL INSTALL ACCESS DOORS FOR SHUT OFF VALVES LOCATED ABOVE HARD CEILING. REFER TO ERCHITECTURAL DRAWINGS FOR LOCATIONS.
- 8. THE CONTRACTOR SHALL COORDINATE SINKS DIMENSIONS AND SPACE REQUIREMENTS WITH ARCHITECTURAL CABINETS, AND OBTAIN WRITTEN APPROVAL FROM CABINET FABRICATOR THAT SINKS WILL FIT INTO
- CABINETS, PRIOR TO ORDERING SINKS. 9. MECHANICAL ROOM FLOOR SHALL SLOPE TO THE FLOOR
- 10. PROVIDE A CLEANOUT AT BASE OF ALL SANITARY/STORM RISER STACKS.
- 11. REFER TO UNCW DESIGN AND CONSTRUCTION GUIDLINES FOR MORE REQUIREMENTS.

	ABBREVIA	IATIONS
AAP ACC ACFM ADB ADJ AFF	AIR AREA ALARM PANEL ACCESS ACTUAL CUBIC FEET PER MINUTE ACID DILUTION BASIN ADJUSTABLE ABOVE FINISHED FLOOR ALTERNATE	L - LENGTH LA - LABORATORY AIR LAV - LAVATORY LBS - POUNDS LTG - LIGHTING LV - LABORATORY VACUUM LWT - LEAVING WATER TEMPERATUR
AMPS AP APPROX ARCH ASME ASSY	AMPERES ACCESS PANEL APPROXIMATE ARCHITECTURAL AMERICAN SOCIETY OF MECHANICAL ENGINEERS ASSEMBLY BRAKE HORSEPOWER	MAP - MASTER ALARM PANEL MAX - MAXIMUM MB - MOP BASIN MBH - ONE THOUSAND BTUH MEZZ - MEZZANINE MFR - MANUFACTURER MH - MANHOLE MIN - MINIMUM/MINUTE
BLDG BOP BOT BT	BUILDING BOTTOM OF PIPE ELEVATION BOTTOM BATHTUB	MISC - MISCELLANEOUS MTD - MOUNTED MTG - MOUNTING
BTUH	BRITISH THERMAL UNIT BRITISH THERMAL UNITS PER HOUR BETWEEN  COMPRESSED AIR CONTRACTOR FUNRISHED CONTRACTOR INSTALLED	NC - NORMALLY CLOSED NIC - NOT IN CONTRACT NO - NUMBER NOM - NOMINAL NPSH - NET POSITIVE SUCTION HEAD NPT - NATIONAL PIPE THREAD
	CUBIC FEET PER HOUR CEILING CONCRETE MASONRY UNIT CLEANOUT	NPT - NATIONAL PIPE THREAD NTS - NOT TO SCALE  OC - ON CENTER OD - OUTSIDE DIAMETER / OVERFLO
CONN CONTR CORR		OFCI - OWNER FURNISHED CONTRAC OFOI - OWNER FURNISHED OWNER IN P - PUMP
CTR		PH - PHASE PIV - POST INDICATOR VALVE PLBG - PLUMBING PRESS - PRESSURE PRV - PRESSURE REDUCING VALVE PSF - POUNDS PER SQUARE FOOT
DFU	DEPTH / DRAIN LINE DOMESTIC COLD WATER DETAIL DRAINAGE FIXTURE UNIT	PSI - POUNDS PER SQUARE INCH PSIG - POUNDS PER SQUARE INCH G PW - PURE WATER
DISCH DN DS DWG	DOMESTIC HOT WATER RETURN DOMESTIC HOT WATER DIAMETER DIMENSION DISCHARGE DOWN DOWNSPOUT DRAWING	R - RADIUS RCW - RECLAIMED WATER REC - RECESSED RECPT - RECEPTACLE REF - REFERENCE REQD - REQUIRED RI - ROUGH-IN RPM - REVOLUTIONS PER MINUTE
DIR	DI WATER SUPPLY DI WATER RETURN EACH EMERGENCY EYEWASH	RV - RELIEF VALVE  S - STORM SA - MECHANICAL SHOCK ARRESTO SAN - SANITARY
EFF EJ ELEC ELEV EQUIP	EFFICENCY EXPANSION JOINT ELECTRICAL ELEVATION EQUIPMENT EXPANSION TANK	SCH - SCHEDULE SCFM - STANDARD CUBIC FEET PER M SD - SUBSOIL DRAIN SF - SQUARE FEET SGS - SOLAR GLYCOL SUPPLY SGR - SOLAR GLYCOL RETURN
ETR ES EWC EWT EXP	EXISTING TO REMAIN EMERGENCY SHOWER ELECTRIC WATER COOLER ENTERING WATER TEMPERATURE EXPANSION EXTERIOR	SH - SHOWER SHT - SHEET SPEC - SPECIFICATION SQ - SQUARE SR - SERVICE RECEPTOR S/S - STAINLESS STEEL
	FAHRENHEIT FLOOR CLEANOUT FLOOR DRAIN FULL LOAD AMPERES	STD - STANDARD STRM - STORM STRU - STRUCTURAL/STRUCTURE SUCT - SUCTION
=LR =M =P =PM =T =THD	FLOOR FORCE MAIN FIREPROOF FEET PER MINUTE FEET FEET HEAD	TD - TRENCH DRAIN TDH - TOTAL DYNAMIC HEAD TEMP - TEMPERATURE TMV - THERMOSTATIC MIXING VALVE TOB - TOP OF BEAM TOD - TOP OF DECK
FTG G GA GAL GALV	FOOTING  GAS GAUGE GALLON GALVANIZED	TOJ - TOP OF JOIST TOS - TOP OF SLAB/TOP OF STEEL TF - TRAP FILLER TP - TRAP PRIMER TYP - TYPICAL

RAP FILLER TRAP PRIMER TYP TYPICAL URINAL VENT / VACUUM / VOLTS VAC VEL VFD VACUUM VELOCITY VARIABLE FREQUENCY DRIVE VIB VALVE-IN-BOX VIV VALVE-IN-VERTICAL VOL VTR WASTE / WATER

EXISTING

TER ALARM PANEL WILMINGTON, NORTH CAROLINA 28401 TEL. 910.790.9901 FAX 910.790.3111 THOUSAND BTUH WWW.LS3P.COM MALLY CLOSED IN CONTRACT Tel 919.419.9802 Fax 919.913.4301 POSITIVE SUCTION HEAD

www.aeieng.com IONAL PIPE THREAD TO SCALE NC LIC. NO. C-2982 SIDE DIAMETER / OVERFLOW DRAIN IER FURNISHED CONTRACTOR INSTALLED IER FURNISHED OWNER INSTALLED

INDICATOR VALVE SSURE REDUCING VALVE INDS PER SQUARE FOOT INDS PER SQUARE INCH INDS PER SQUARE INCH GAUGE

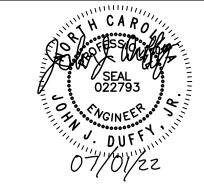
LAIMED WATER EPTACLE ERENCE DUIRED JGH-IN OLUTIONS PER MINUTE EF VALVE

HANICAL SHOCK ARRESTOR NDARD CUBIC FEET PER MINUTE SOIL DRAIN JARE FEET AR GLYCOL SUPPLY AR GLYCOL RETURN CIFICATION VICE RECEPTOR NLESS STEEL JCTURAL / STRUCTURE

NCH DRAIN AL DYNAMIC HEAD PERATURE RMOSTATIC MIXING VALVE OF BEAM OF DECK OF JOIST OF SLAB/TOP OF STEEL

VOLUME VENT THROUGH ROOF W/O WITHOUT WATER CLOSET WALL CLEANOUT WGE WASTE GAS EXHAUST WH WSFU WALL HYDRANT WATER SUPPLY FIXTURE UNIT 101 NORTH THIRD STREET SUITE 500

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S <u>M</u>

△ DATE DESCRIPTION 0 2022.07.01 PACKAGE C - BID DOCUMENTS

**SHEET NAME:** 

PLUMBING SYMBOLS AND **ABBREVIATIONS** 

**ORIG SUBMISSION:** 2022.07.01 2022.07.01 PACKAGE C - BID DOCUMENTS

SHEET:

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GAL GALV GPH GPM GW GWV

HTR HVAC HZ

KW

GALVANIZED

HOSE BIBB **HUB DRAIN** 

HOSE REEL

HEATER

HORSEPOWER

INSIDE DIAMETER

INDIRECT WASTE

KILOWATT

INVERT ELEVATION

INCHES WATER COLUMN

GALLONS PER HOUR

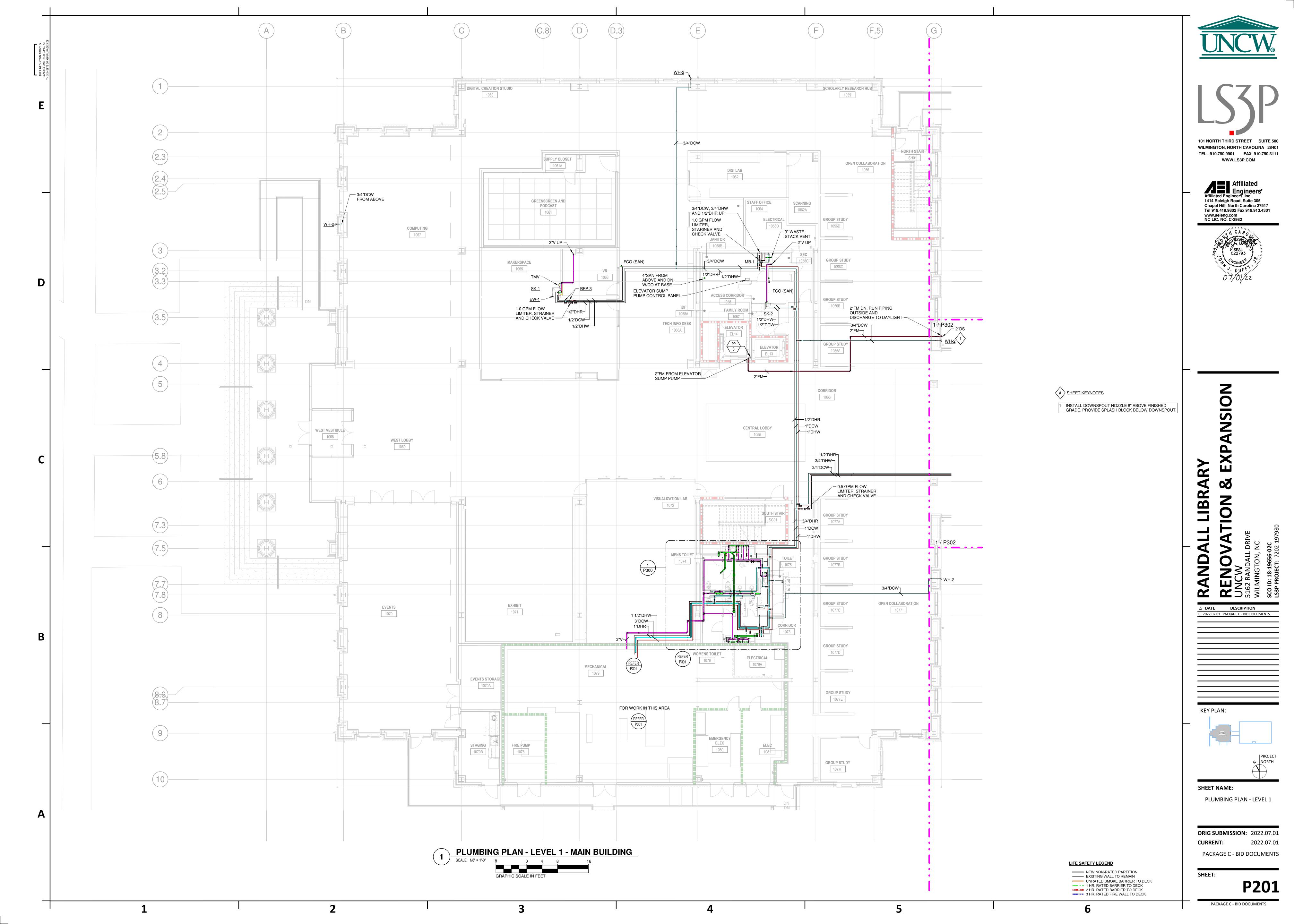
**GREASE WASTE** 

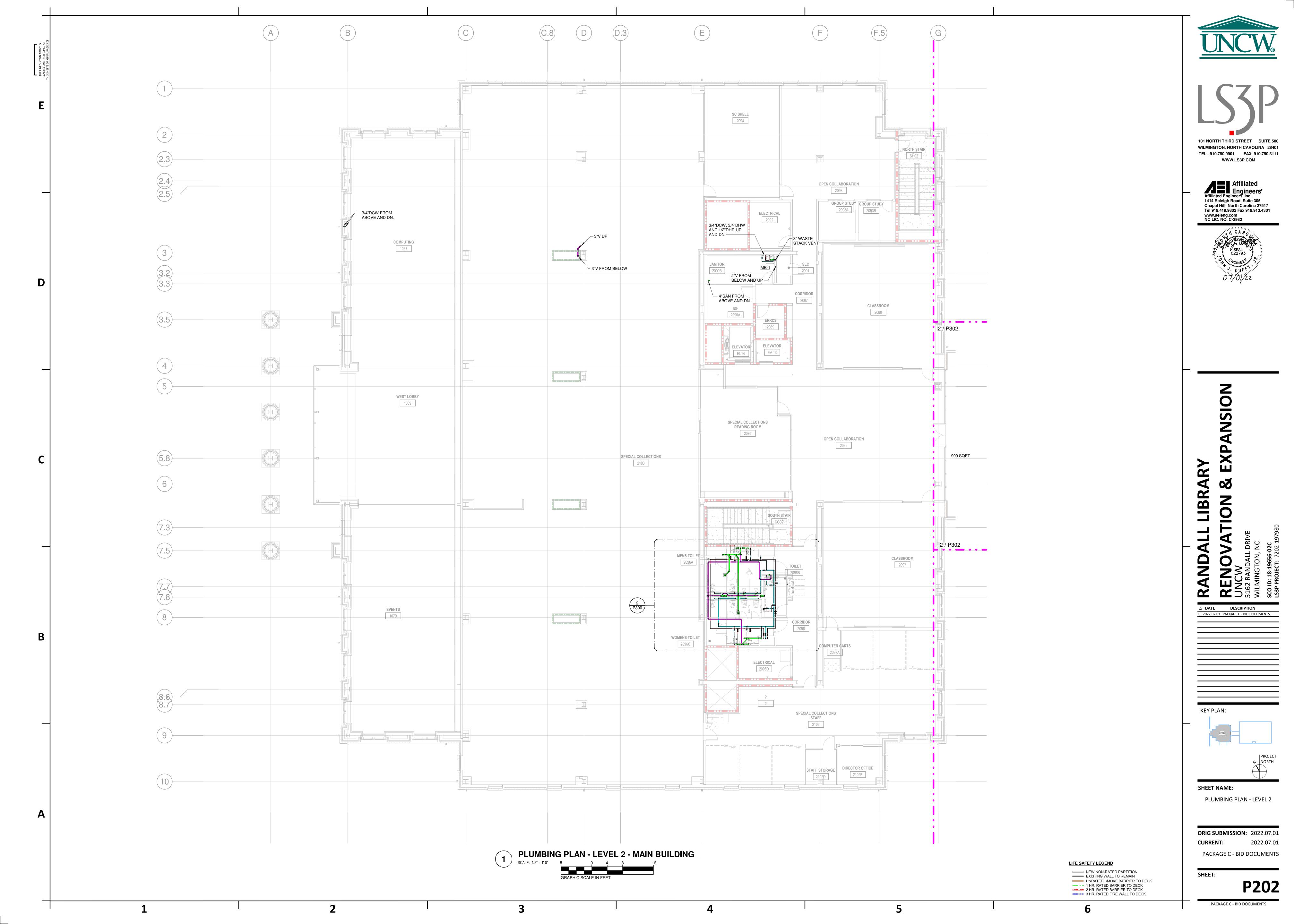
GALLONS PER MINUTE

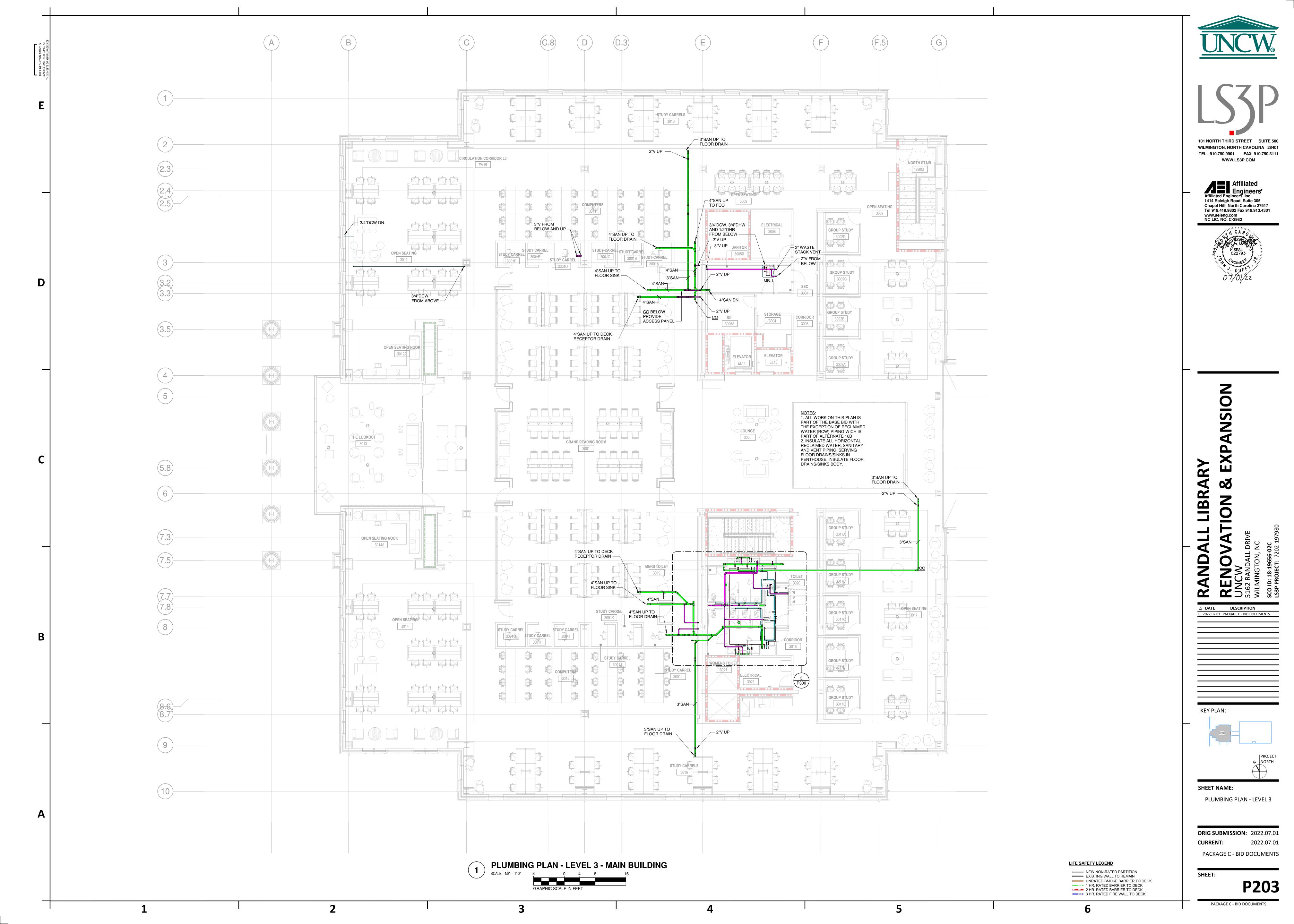
GREASE WASTE VENT

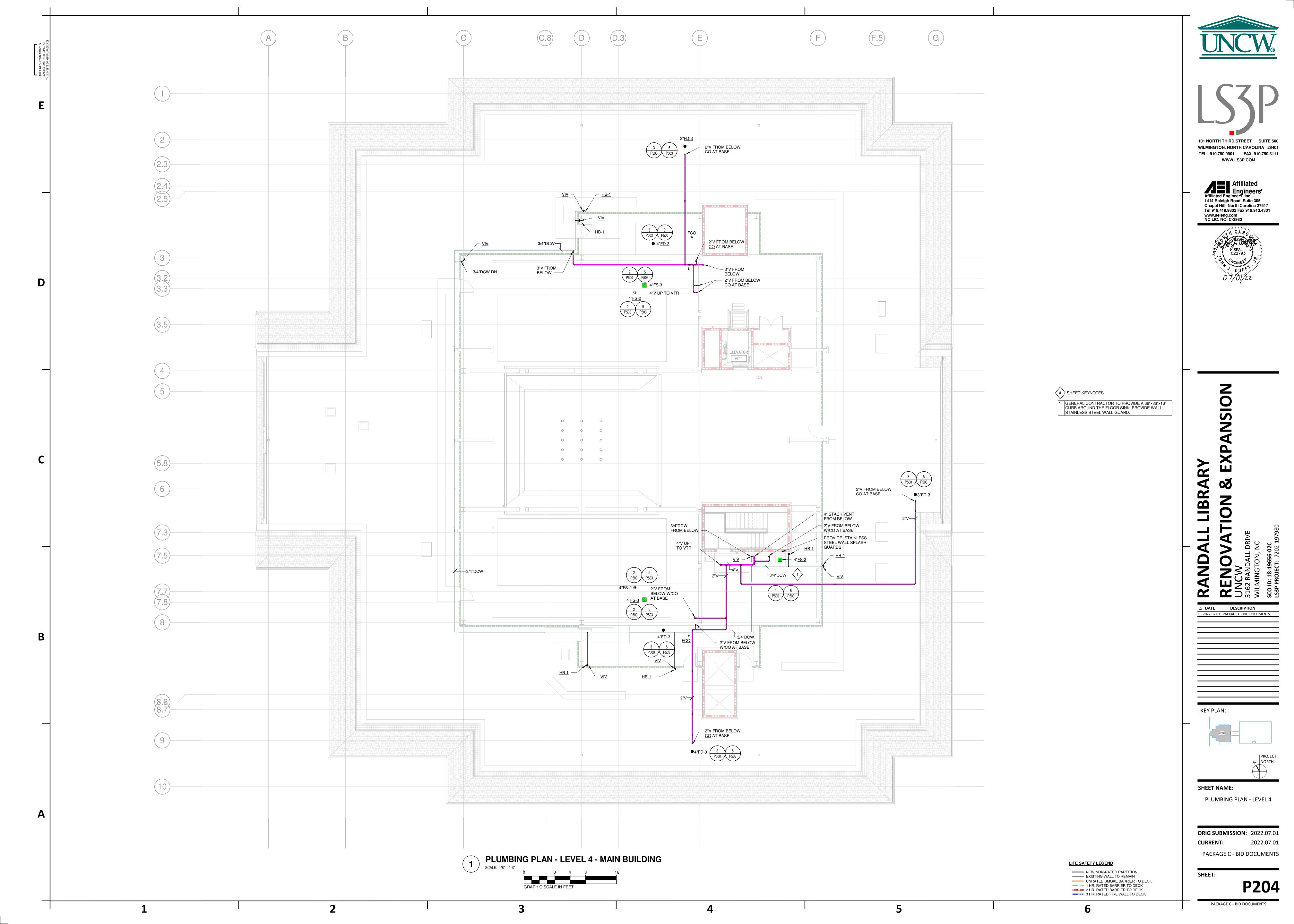
HEAT TRACE HOT WATER

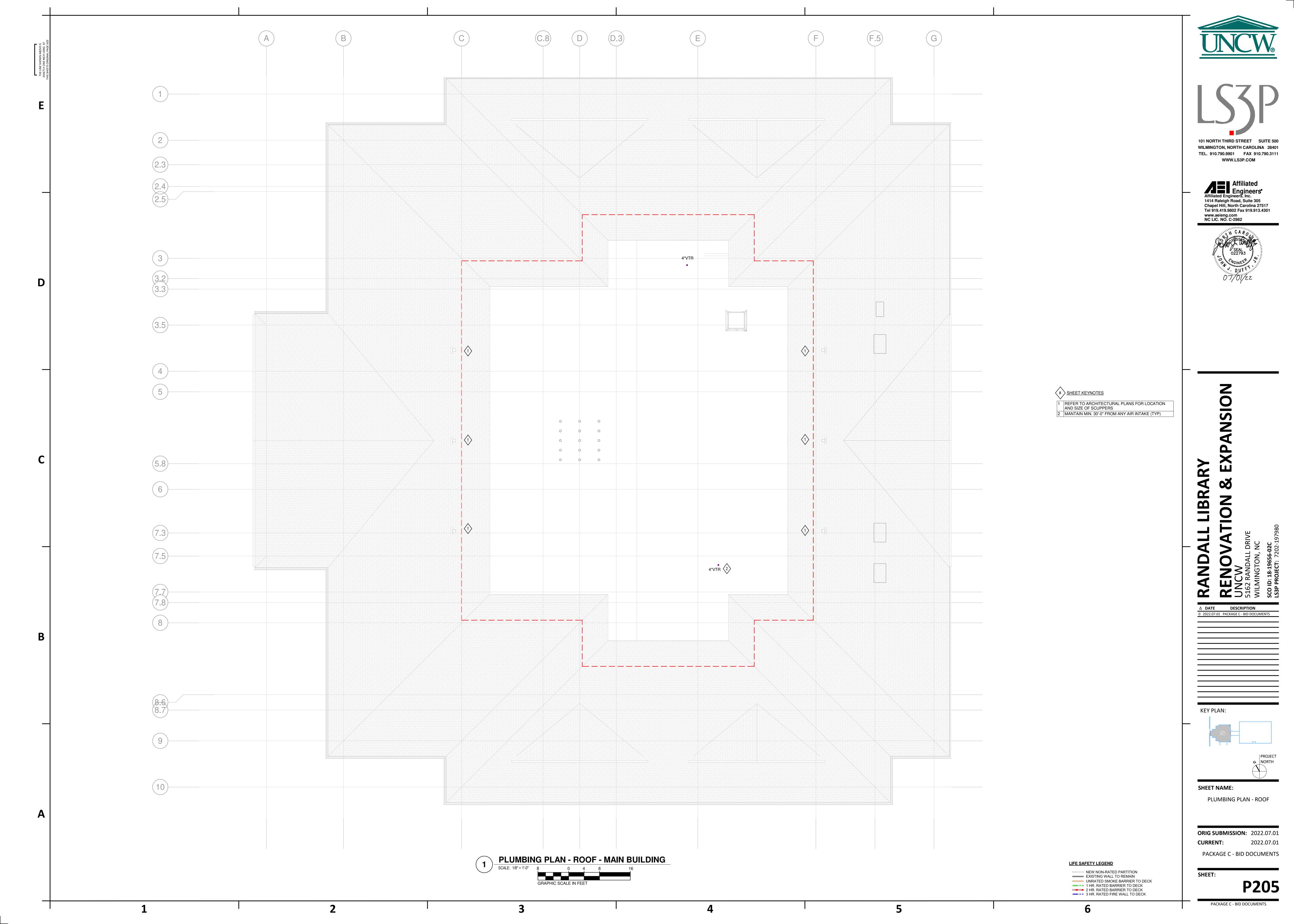
HEATING VENTILATING & AIR CONDITIONING

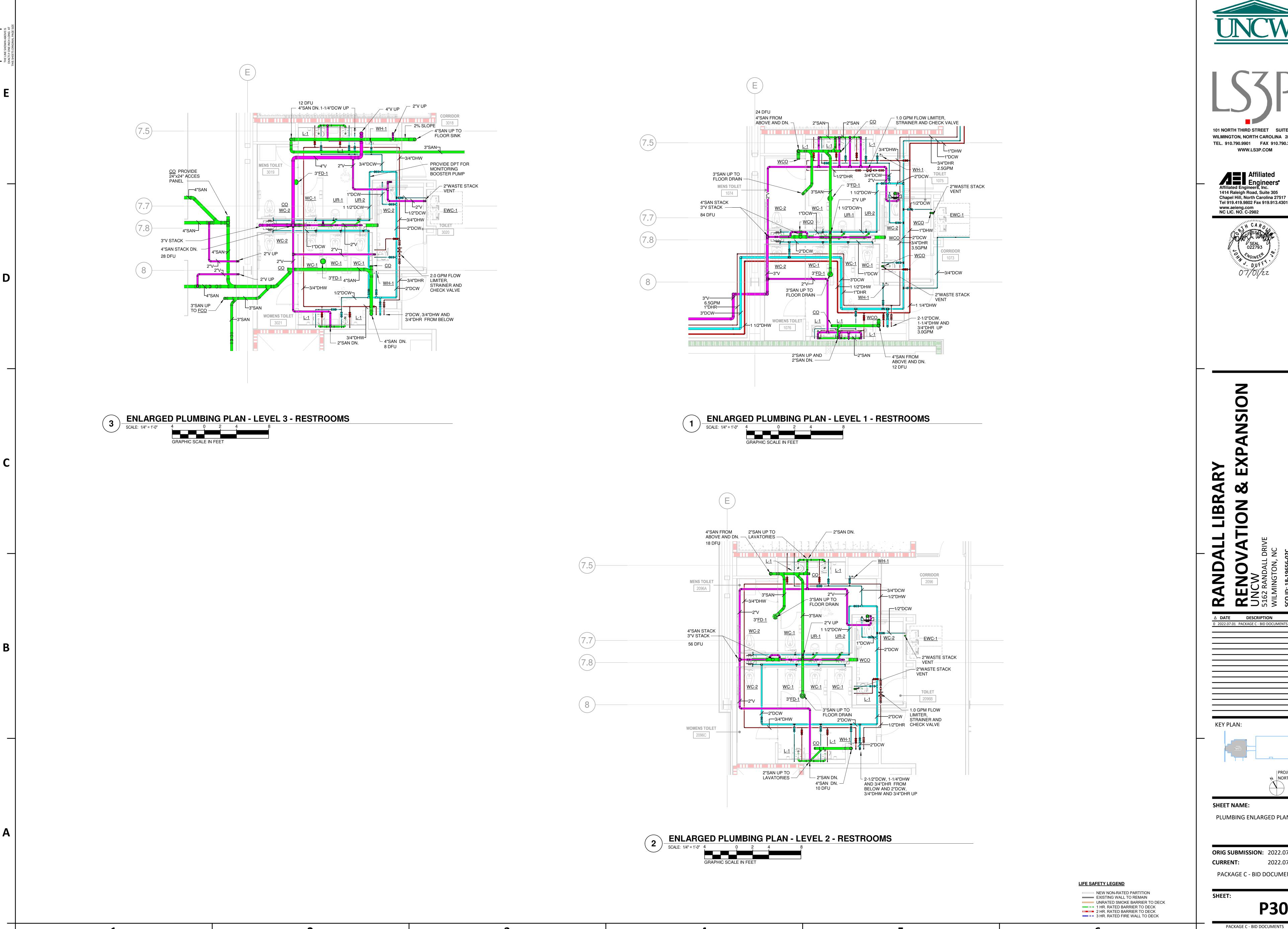












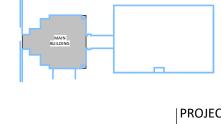
101 NORTH THIRD STREET SUITE 500 WILMINGTON, NORTH CAROLINA 28401 TEL. 910.790.9901 FAX 910.790.3111

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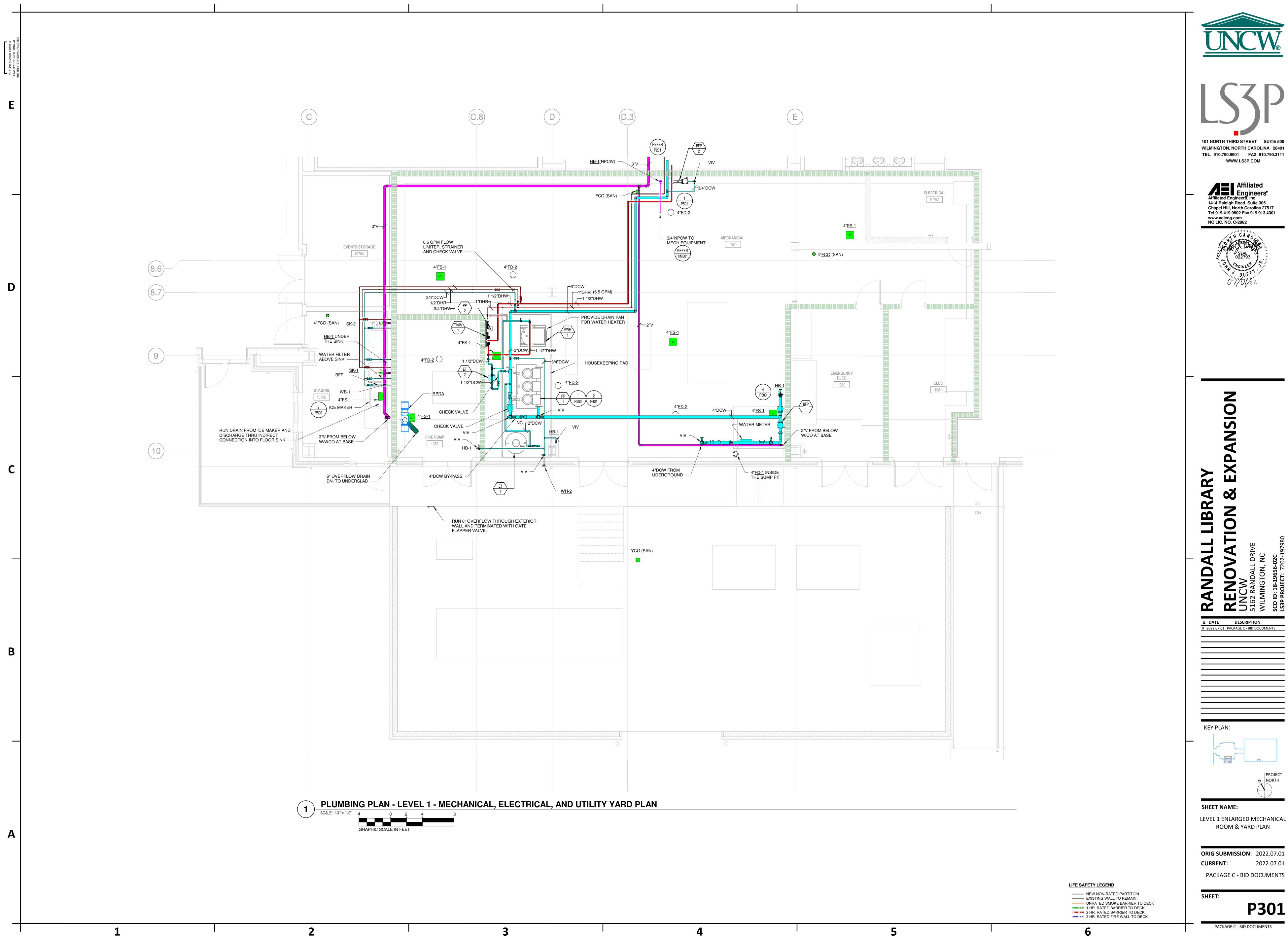


NORTH

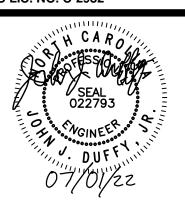
PLUMBING ENLARGED PLANS

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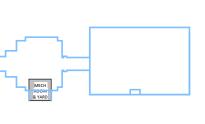
P300

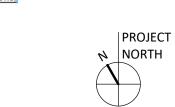


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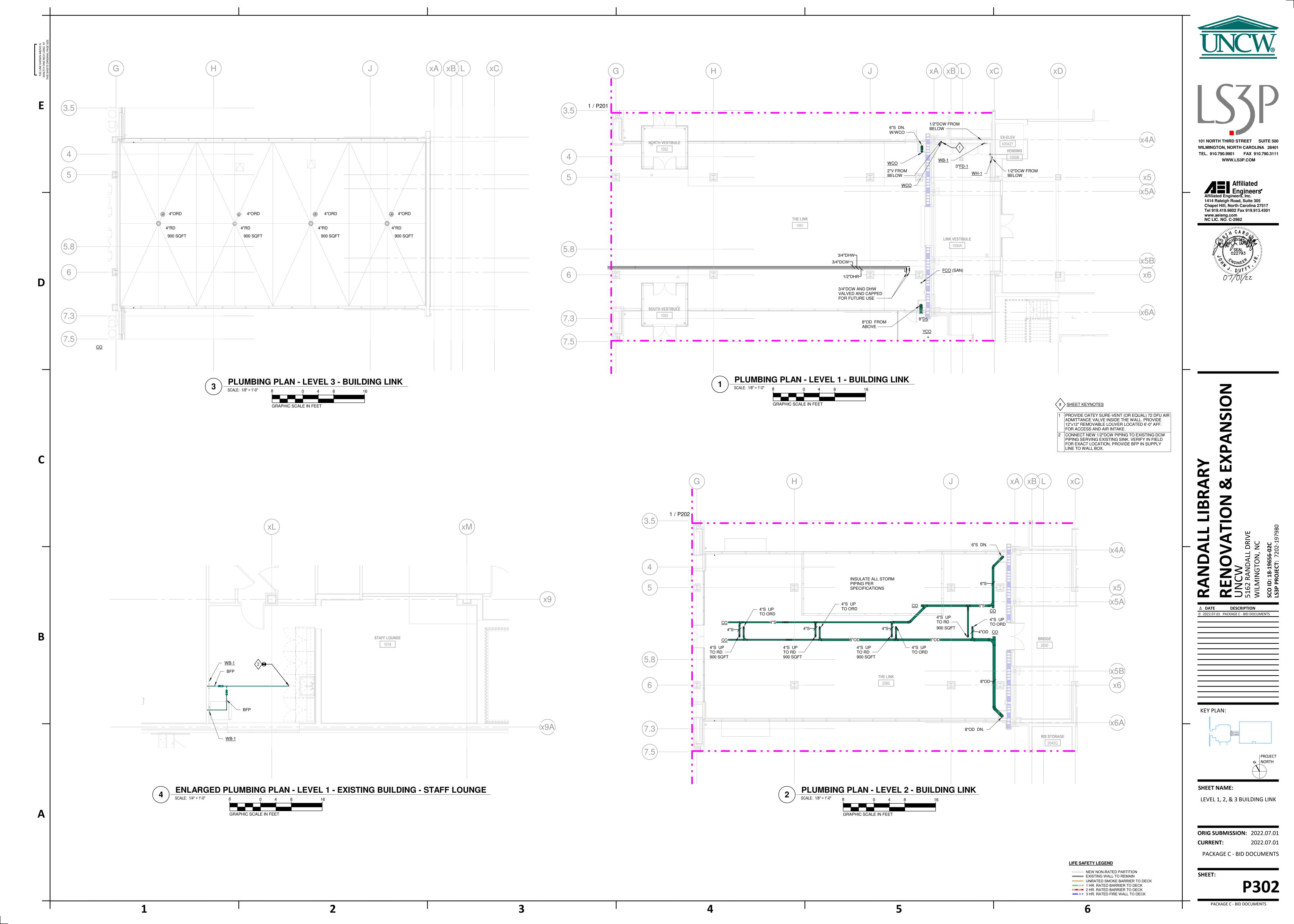


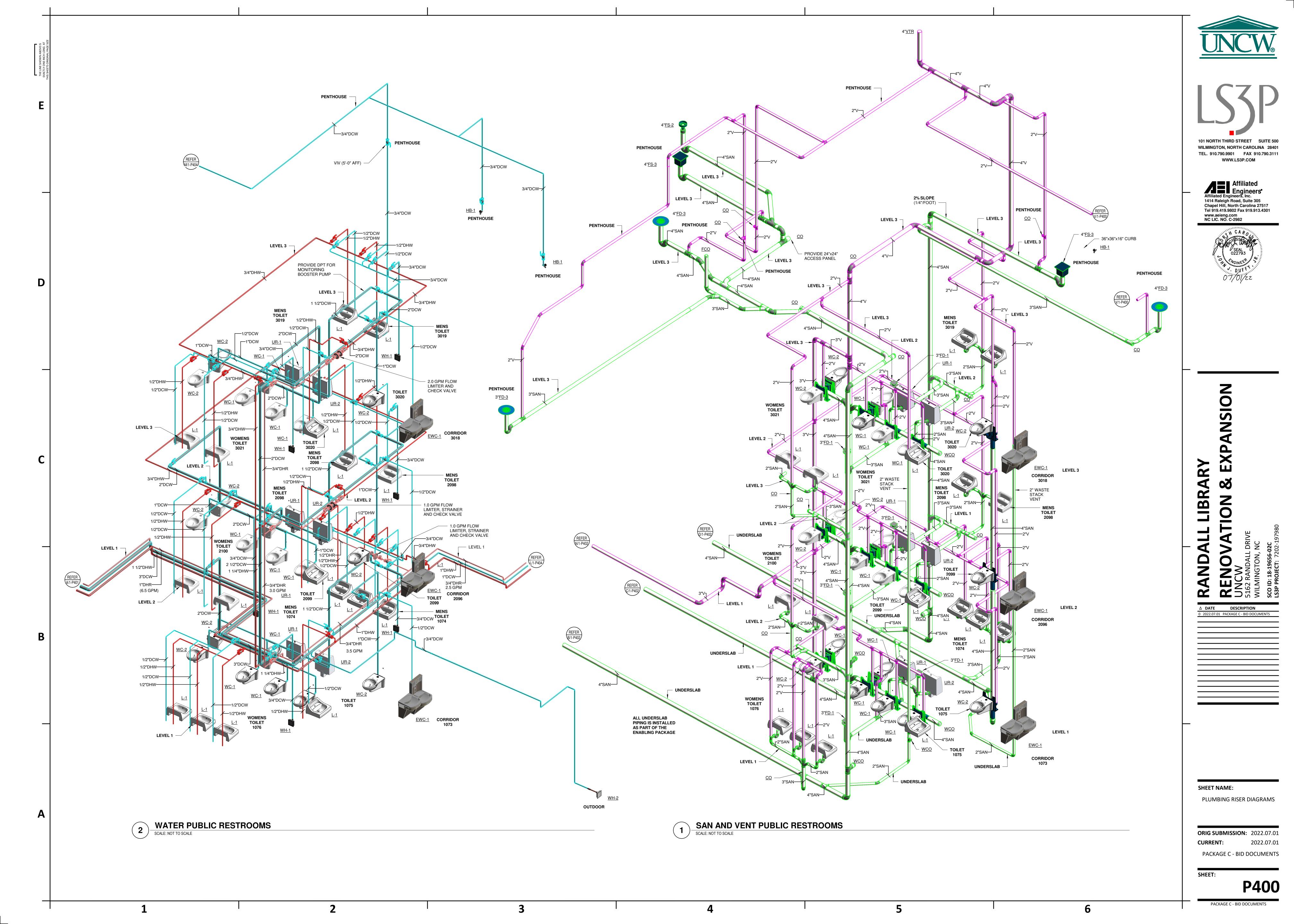


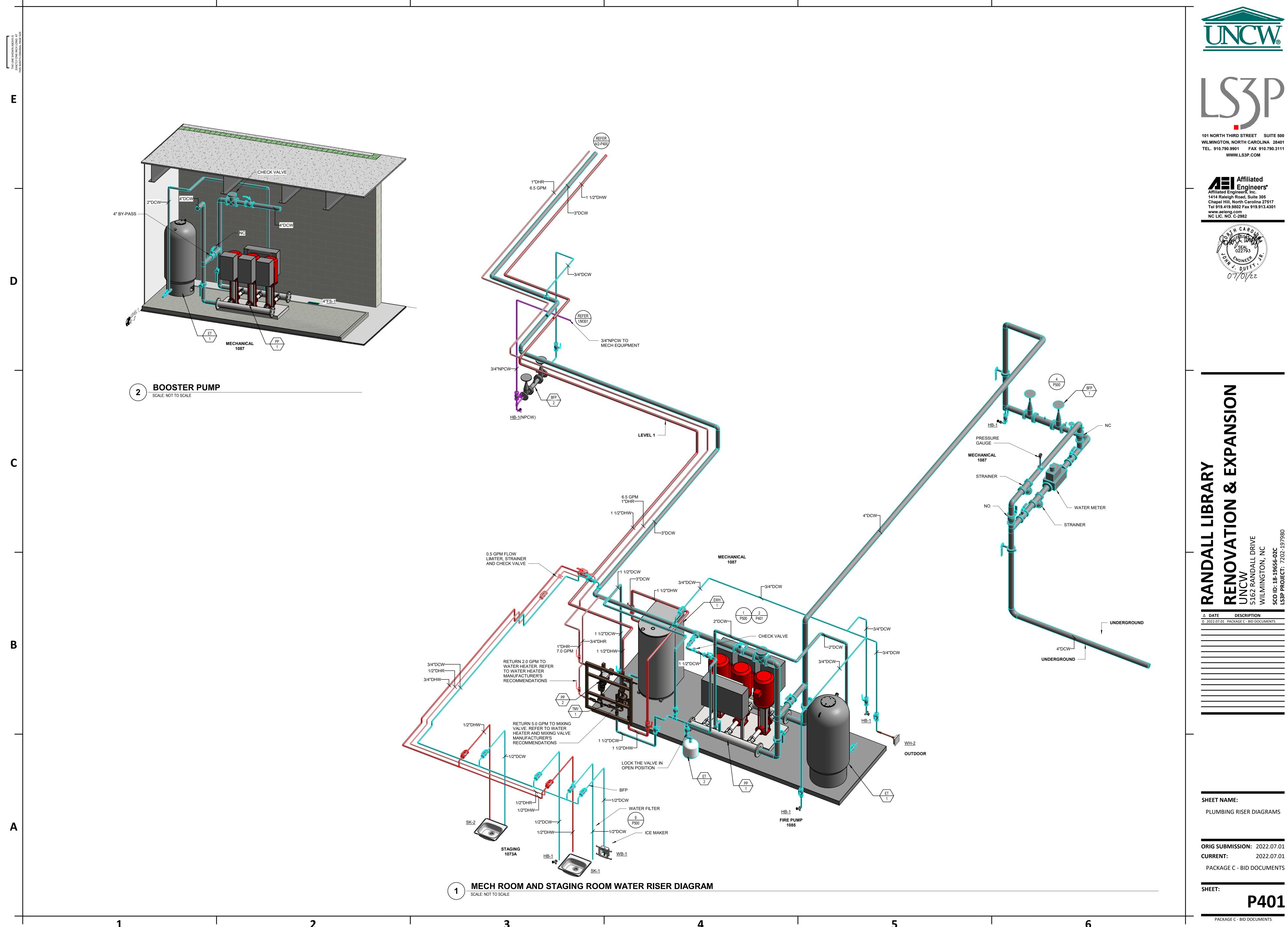
LEVEL 1 ENLARGED MECHANICAL ROOM & YARD PLAN

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P301

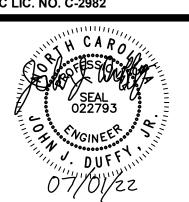






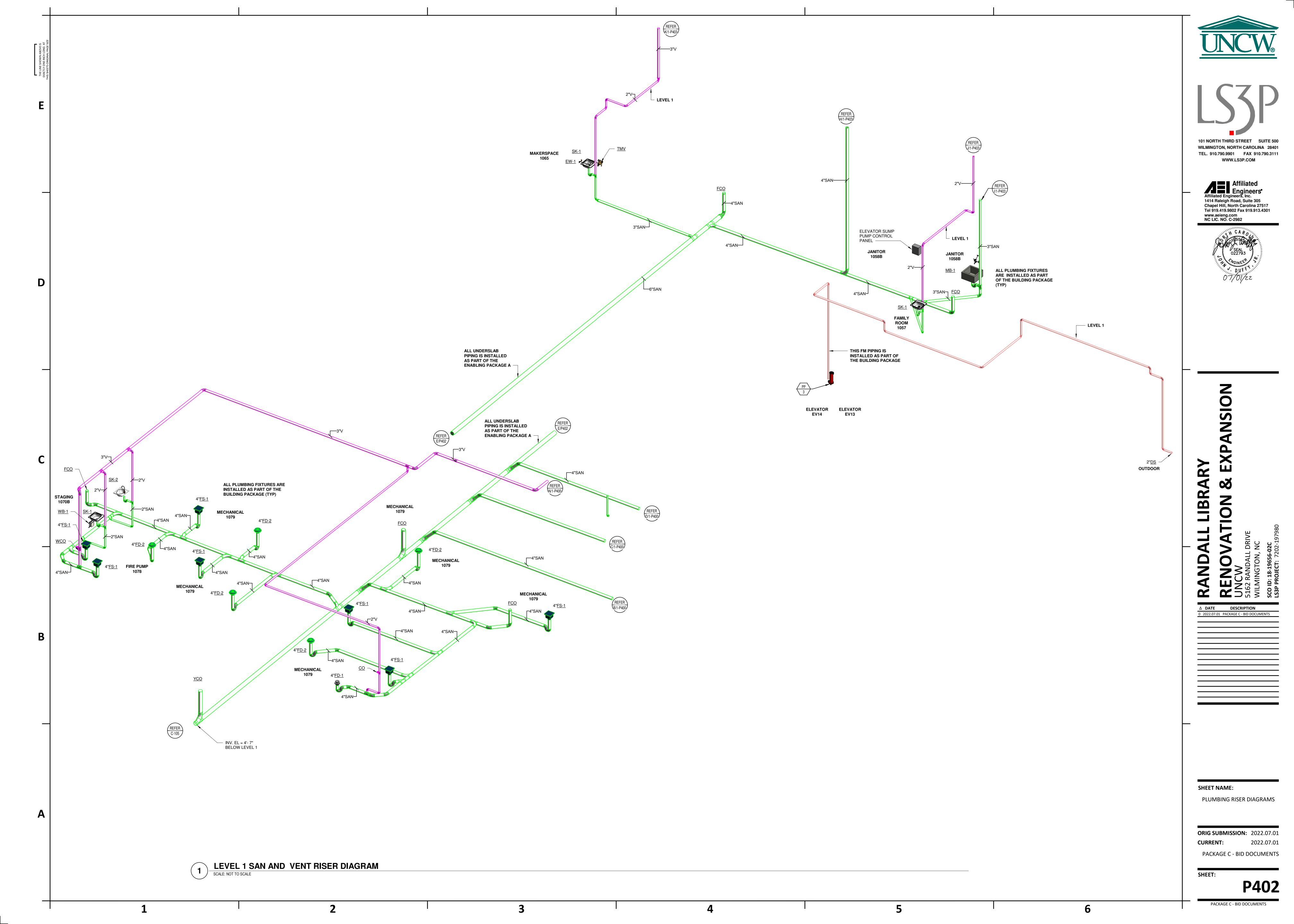


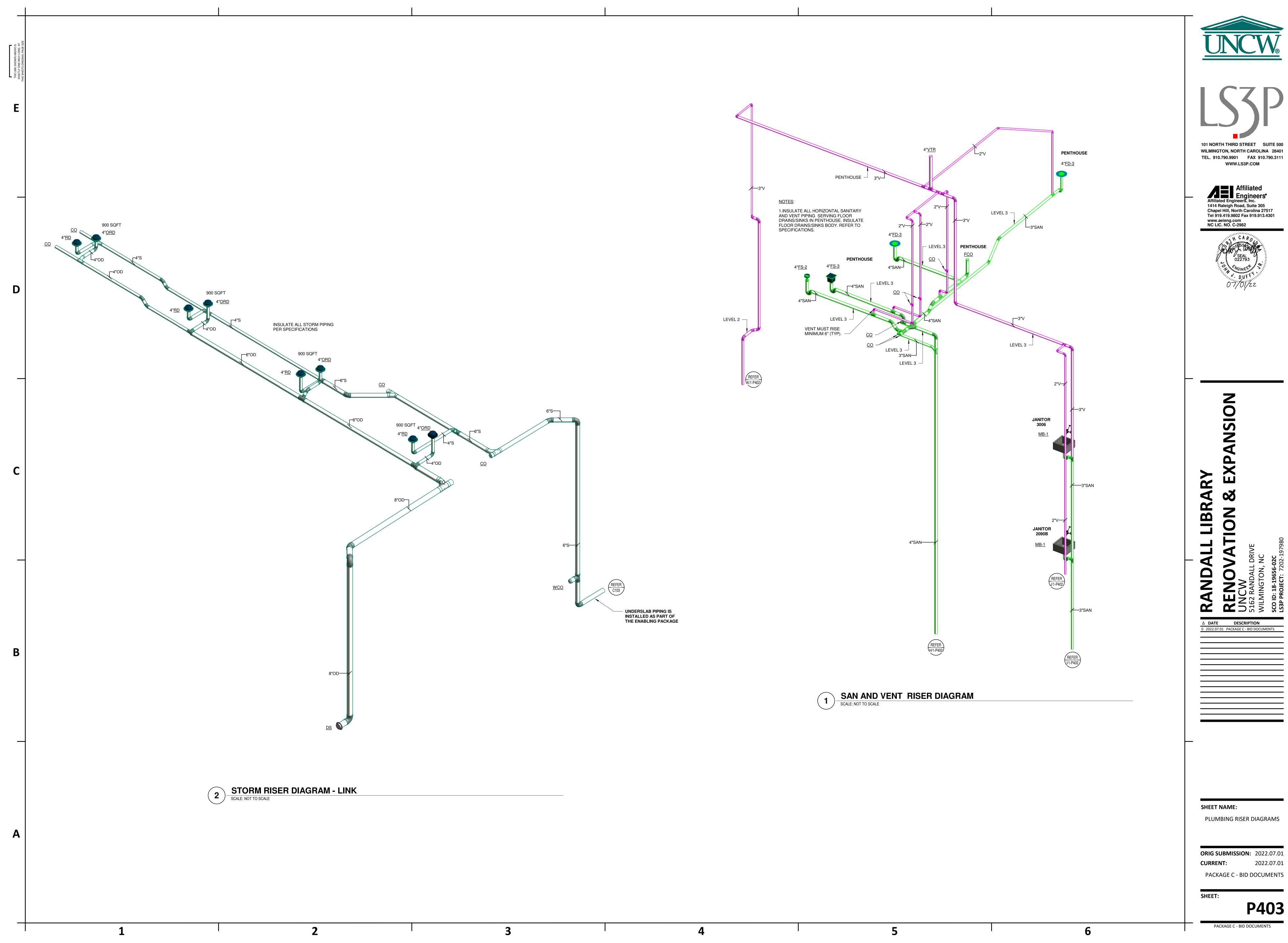
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P401







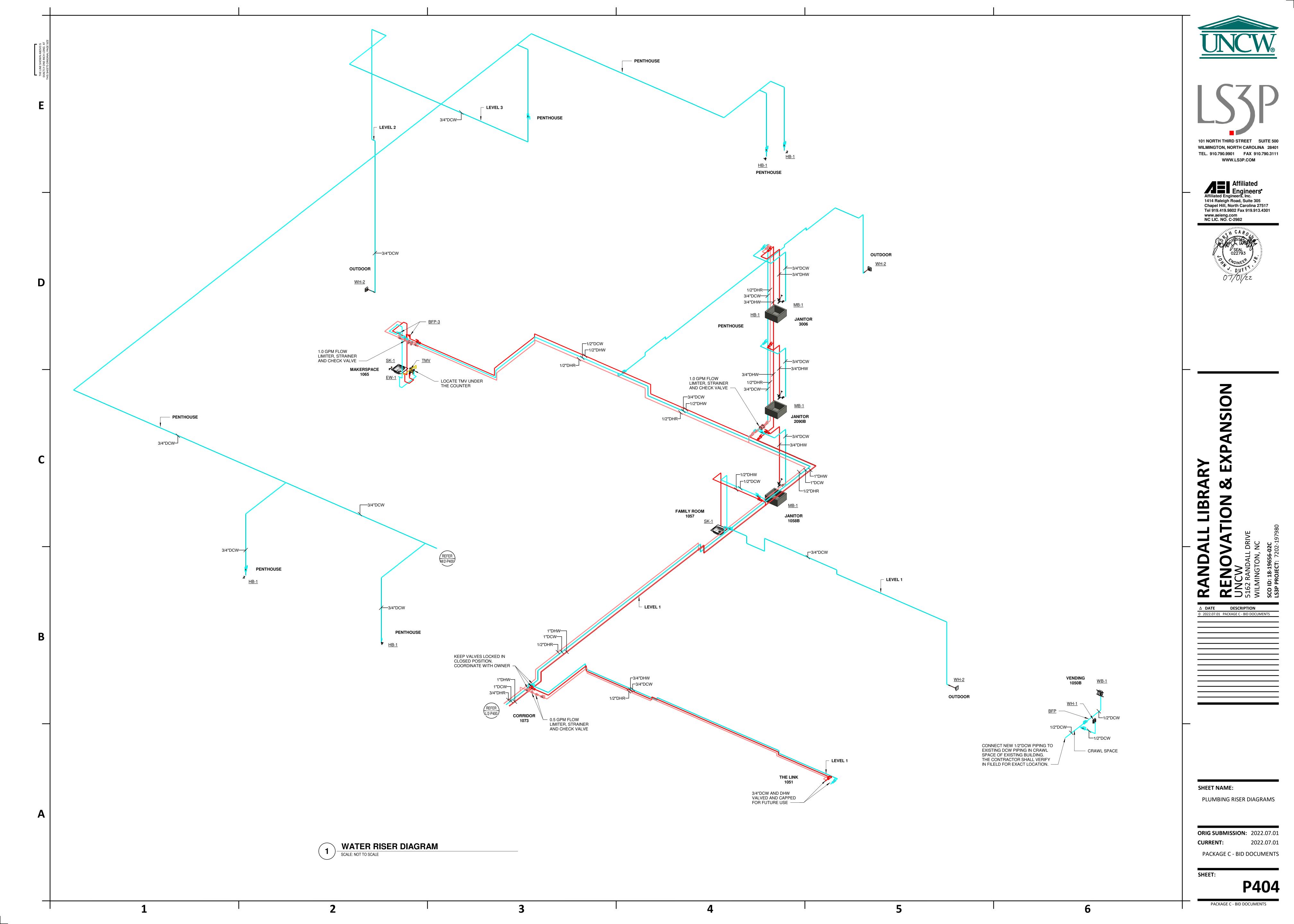
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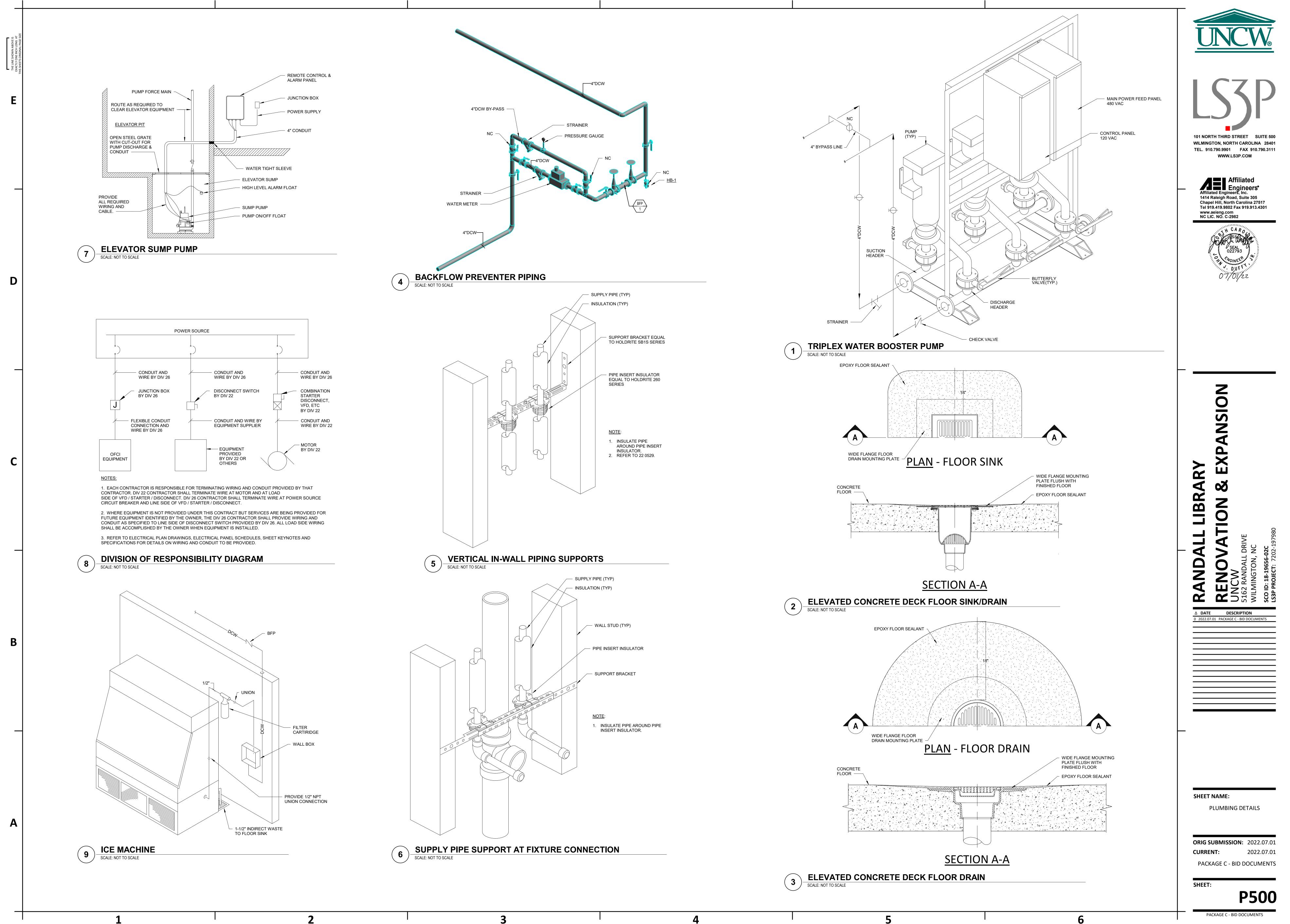


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P403

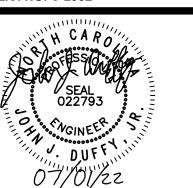
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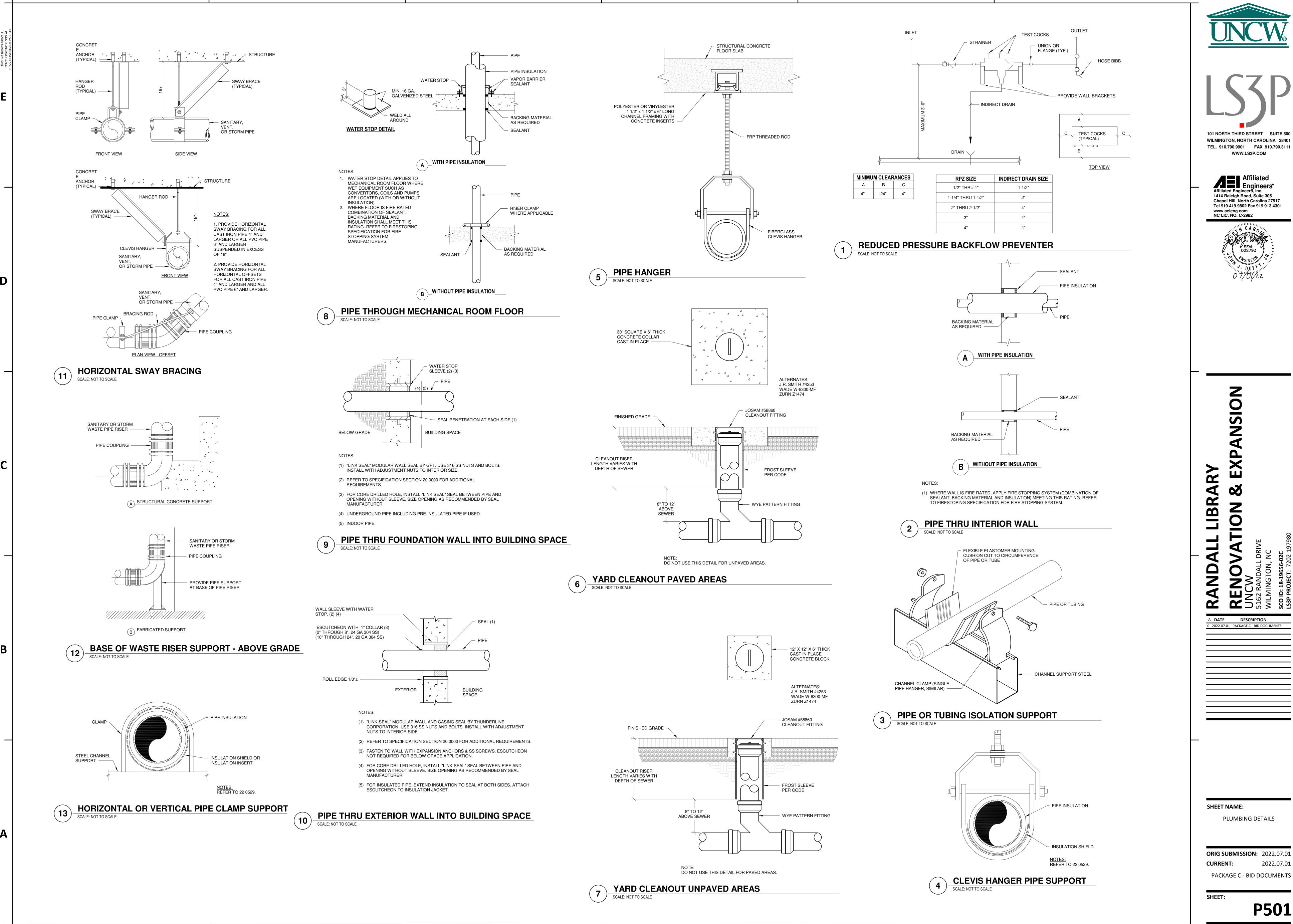
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**SHEET NAME:** 

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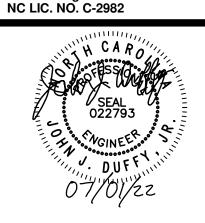
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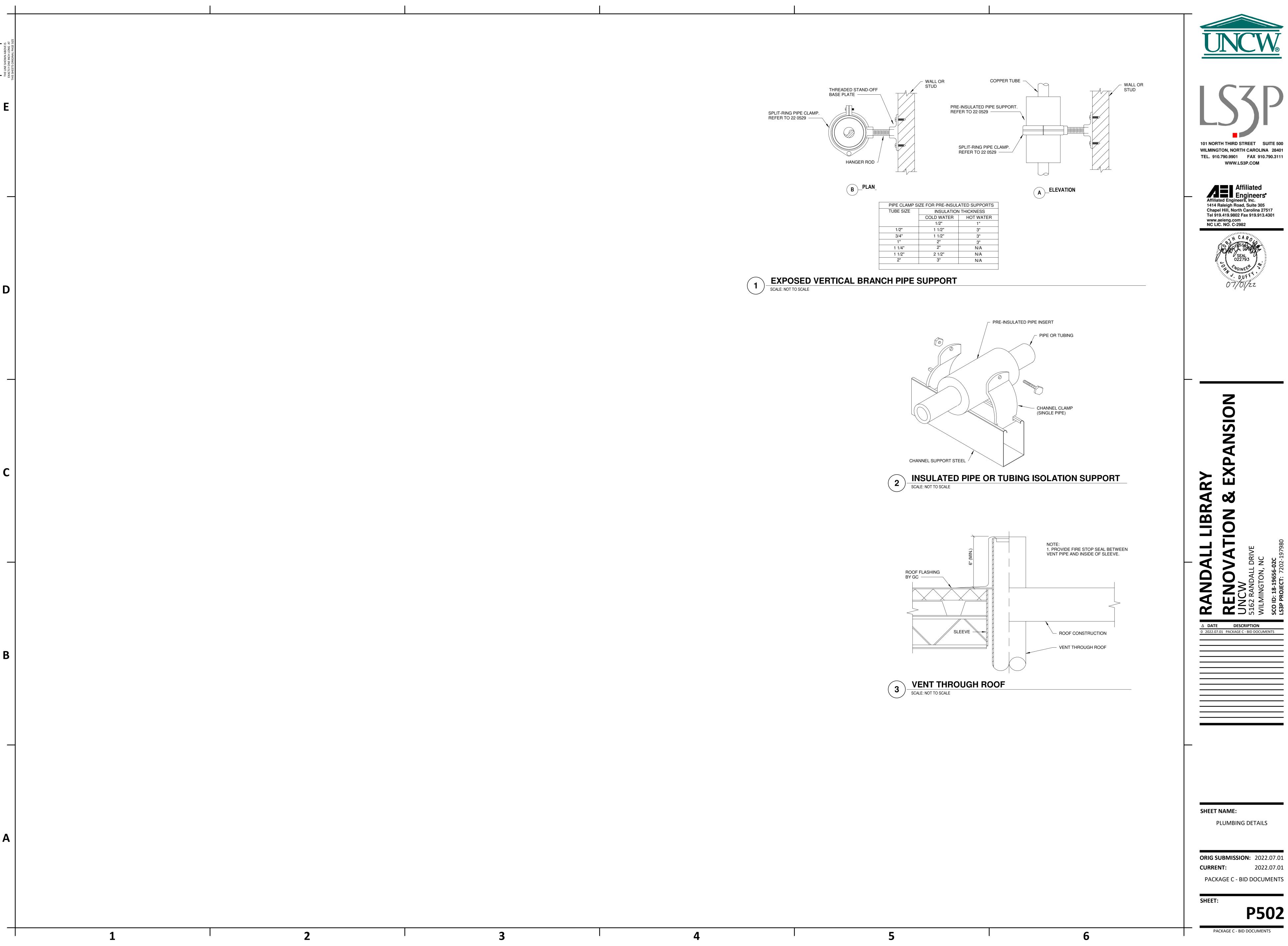
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**SHEET NAME:** PLUMBING DETAILS

**ORIG SUBMISSION:** 2022.07.01 2022.07.01

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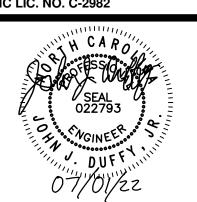
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ORIG SUBMISSION: 2022.07.01 **CURRENT:** 2022.07.01

> **P502** PACKAGE C - BID DOCUMENTS

1. Floor or Wall Assembly — Min 4-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks\*. Max diam of opening is 32 in.

2. Metallic Sleeve — (Optional) Nom 32 in. diam (or smaller) Schedule 40 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush

with floor or wall surfaces or extending a max of 3 in. above floor or beyond both surfaces of wall.

2A. Sheet Metal Sleeve — (Optional) Max 6 in. diam, min 26 ga galv steel provided with a 26 ga galv steel square flange spot welded to the sleeve at approx mid-height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. larger than the sleeve diam. The sleeve is to be cast in place and may extend a max of 4 in. below the bottom of the deck and a max of 1 in. above the top surface of the concrete floor.

2B. Sheet Metal Sleeve — (Optional) - Max 12 in. diam, min 24 ga galv steel provided with a 24 ga galv steel square flange spot welded to the sleeve at approx mid-height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. larger than the sleeve diam. The sleeve is to be cast in place and may extend a max of 4 in. below the bottom of the deck and a max of 1 in. above the top surface of the concrete floor.

3. Through-Penetrant — One metallic pipe, tube or conduit to be installed either concentrically or eccentrically within the firestop system. The

3. Through-Penetrant — One metallic pipe, tube or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between penetrant and periphery of opening shall be min 0 in. (point contact) to max 1-7/8 in. Penetrant may be installed with continuous point contact. Penetrant to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic penetrants may be used:

A. Steel Pipe — Nom 30 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
B. Iron Pipe — Nom 30 in. diam (or smaller) cast or ductile iron pipe.
C. Copper Pipe — Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe.
D. Copper Tubing — Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.

D. Copper Tubing — Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
E. Conduit — Nom 6 in. diam (or smaller) steel conduit.
F. Conduit — Nom 4 in. diam (or smaller) steel electrical metallic tubing (EMT).
4. Firestop System — The firestop system shall consist of the following:

A. Packing Material — Min 4 in. thickness of min 4 pcf mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or sleeve or from both surfaces of wall or sleeve as required to accommodate the required

thickness of fill material.

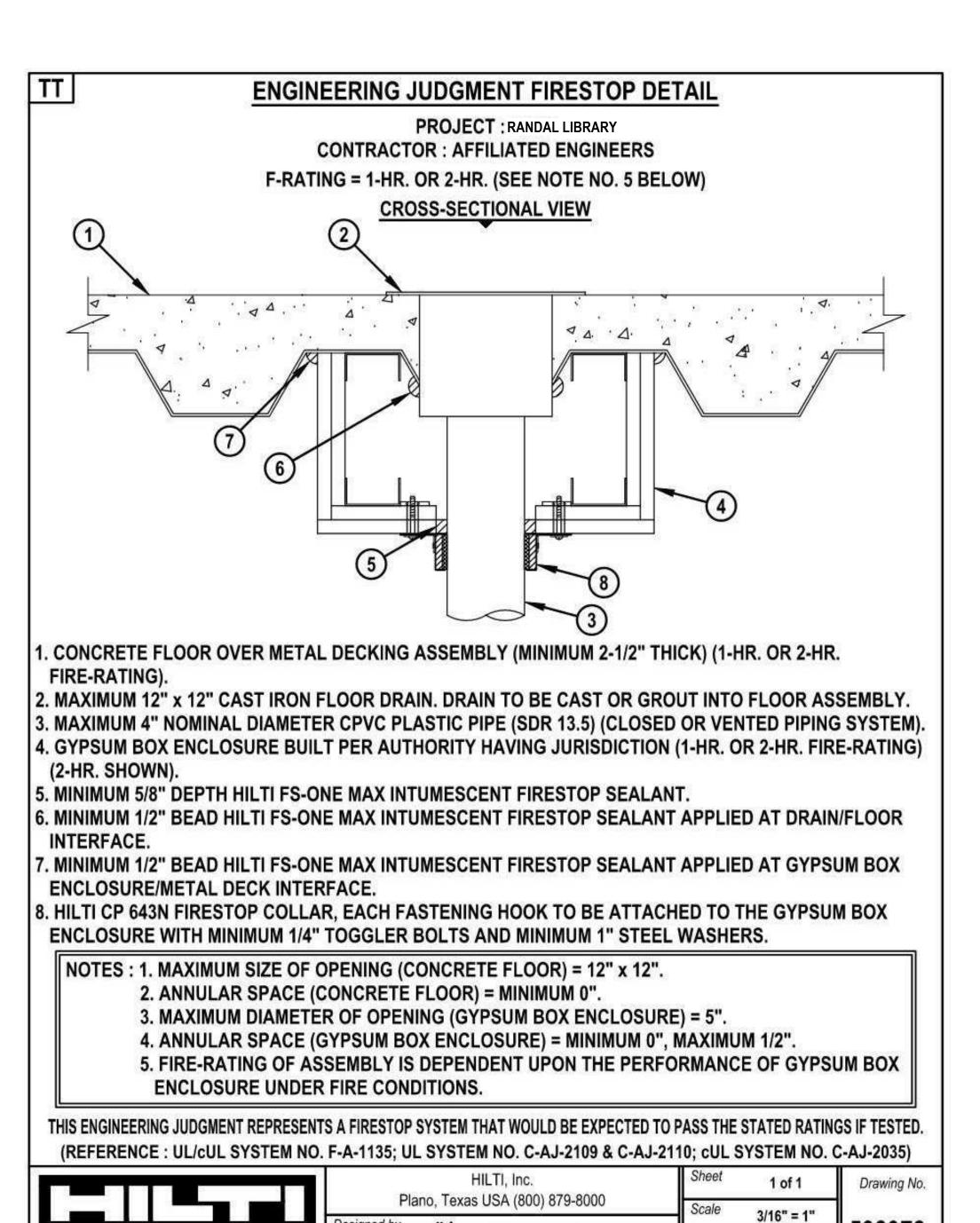
B. Fill, Void or Cavity Material\* — Sealant — Min 1/4 in. thickness of fill material applied within the annulus, flush with top surface of floor or sleeve or with both surfaces of wall or sleeve. At the point or continuous contact locations between penetrant and concrete or sleeve, a min 1/4 in. diam bead of fill material shall be applied at the concrete or sleeve/ pipe penetrant interface on the top surface of floor and on both surfaces of wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant \*Bearing the UL Classification Mark

METAL PIPE THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

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Nov. 15, 2021



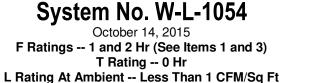
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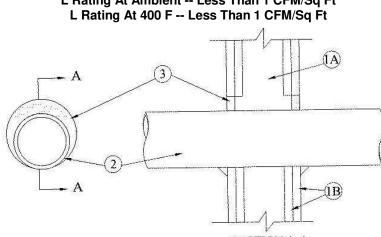
Saving Lives through Innovation and Education

5 ENGINEERING JUDGMENT FIRESTOP DETAIL

SCALE: NOT TO SCALE

**Hilti Firestop Systems** 





1. **Wall Assembly** — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. **Studs** — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wider and 4 to 6 in. (102 to 152 mm) higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. (51 to 76 mm) clearance is present between the penetrating item and the framing on all four sides.

B. **Gypsum Board\*** — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. (819 mm) for steel stud walls. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls.

The F and FH Ratings of the firestop system are equal to the fire rating of the wall assembly.

2. **Through-Penetrants** — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. (57 mm). Pipe may be installed with continuous point contact. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. Steel Pipe — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel

B. Iron Pipe — Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.
C. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or 6 in. (152 mm). diam steel conduit.

D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper

E. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) regular (or heavier) copper

3. **Fill, Void or Cavity Material\*** — **Sealant** — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe wall interface on both

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL

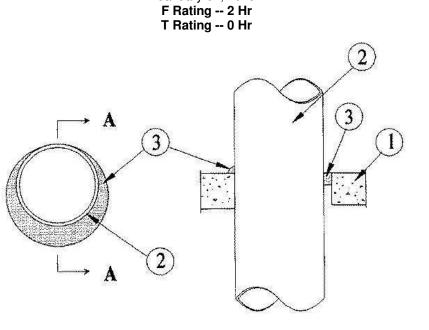
Certification (such as Canada), respectively.

## File Name=XHEZ.W-L-1054

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METAL PIPE THROUGH GYPSUM WALL ASSEMBLY

# System No. C-AJ-1291



SECTION A-A

Floor or Wall Assembly — Min 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified Concrete Blocks\*. Max diam of opening is 30-7/8 in. (784 mm).

See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. Through-Penetrant — One metallic pipe or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between pipe or conduit and periphery o opening shall be min 0 in. to max 7/8 in. (22 mm). Pipe or conduit to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes or conduits may be used:

A. Steel Pipe — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
B. Iron Pipe — Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.

C. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.
D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.

E. Conduit — Nom 6 in. (152 mm) diam (or smaller) steel conduit.

3. Fill, Void or Cavity Material\* — Sealant — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall. At the point contact location between pipe and concrete, a min 1/4 in. (6 mm) diam bead of fill material shall be applied at the concrete/pipe interface on the top surface of floor and on both surfaces of wall.

F. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT).

at the concrete/pipe interface on the top surface of floor and on both surfaces of wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or

cUL Certification (such as Canada), respectively.

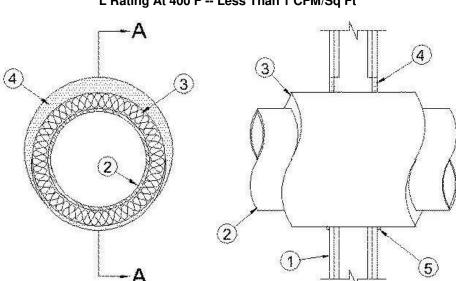
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METAL PIPE THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

System No. W-L-5029

July 17, 2015
F Ratings -- 1, 2 and 3 Hr (See Items 1, 3 and 4)
T Ratings -- 0, 1/2, 1 and 1-1/4 Hr (See Item 3)
L Rating At Ambient -- 4 CFM/Sq Ft
L Rating At 400 F -- Less Than 1 CFM/Sq Ft



1. **Wall Assembly** — The 1, 2 or 3 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. **Studs** — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide for 1 and 2 hr F and FH rating and 3-1/2 in. (89 mm) wide for 3 hr F and FH rating and spaced max 24 in. (610 mm) OC.

Section A-A

B. **Gypsum Board\*** — Min 5/8 in. (16 mm) thick with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 18-5/8 in. (473 mm).

The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.

2. **Through Penetrants** — One metallic pipe or tubing to be installed within the firestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tubing may be used:

A. **Steel Pipe** — Nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pine

B. **Iron Pipe** — Nom 12 in. (305 mm) diam (or smaller) cast or ductile iron pipe.

C. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing. When the hourly F or FH Rating of the firestop system is 3 hr, the nom diam of copper tube shall not exceed 4 in. (102 mm).

D. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe. When the hourly F or FH Rating of the firestop system is 3 hr, the nom diam of copper pipe shall not exceed 4 in. (102 mm).

3. **Pipe Covering\*** — Nom 1, 1-1/2 or 2 in. (25, 38 or 51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m3) glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. For 1 and 2 hr F and FH Ratings, the annular space between insulated penetrant and periphery of opening shall be min 0 in. (point contact) to max 1-7/8 in. (48 mm). For 3 hr F and FH Ratings, the annular space shall be min 0 in. (point contact) to max 1-1/4 in. (32 mm).

See **Pipe and Equipment Covering** — **Materials** (BRGU) category in the Building Material Directory for the names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used

The hourly T, FT, FTH Ratings of the firestop system are 1/2 hr for 1 hr rated walls and 1 hr for 2 h rated walls. For 3 hr rated walls, the hourly T, FT and FTH Ratings when steel and iron pipes are used are 1 hr. For 3 hr rated walls, the hourly T, FT and FTH Ratings when copper penetrants are used are 1-1/4 hr for 2 in. (51 mm) thick pipe covering and 0 hr for pipe covering thickness less than 2 in. (51 mm).

3A. **Pipe Covering\*** — (Not Shown) — As an alternate to Item 3, max 2 in. (51 mm) thick cylindrical calcium silicate (min 14 pcf) units sized to the outside diam of the pipe or tube may be used. Pipe insulation secured with stainless steel bands or min 18 AWG stainless steel wire spaced max 12 in. (305 mm) OC. When the alternate pipe covering is used, the T and FT Rating shall be as specified in item 3 above.

See **Pipe and Equipment Covering** — **Materials** (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

4. Fill, Void or Cavity Material\* — Sealant — For 1 and 2 hr F and FH Rating, min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. For 3 hr F and FH Rating, min 1 in. (25 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point contact location between pipe covering and gypsum board, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe covering/gypsum board interface on both surfaces of wall.

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\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

File Name=XHEZ.W-L-5029

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1 INSULATED METAL PIPE THROUGH GYPSUM WALL ASSEMBLY

SCALE: NOT TO SCALE

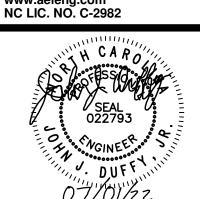
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# RANDALL LIBRARY RENOVATION & EXPANSION UNCW 5162 RANDALL DRIVE

2022.07.01 PACKAGE C - BID DOCUMENTS

**SHEET NAME:** 

PLUMBING DETAILS

ORIG SUBMISSION: 2022.07.01
CURRENT: 2022.07.01

PACKAGE C - BID DOCUMENTS

PACKAGE C - BID DOCUMENTS

SHEET:

P503

2 6

TMV-

SYSTEM USAGE PRESSURE MANUFACTURER (GPM) (GPM) DROP HIGH LOW SYSTEM MIXING VALVE, PUMP - BELL AND GOSSET ecocircXL N 36-45 SERIES, BRONZE BODY DOMESTIC HOT WATER 120 140 120 LEONARD

THERMOSTATIC MIXING VALVES

															22 1100
MARK	LOCATION	SERVICE	TYPE	CAPACITY	CAPACITY	HEAD	SIZE (IN)		MOTOR						BASIS OF DESIGN
PP-				EACH	TOTAL	(FT)	SUCT.	DISCH.	HP	RPM	VOLT	SYSTEM	PH	STANDBY	
				(GPM)	(GPM)	BOOST			(EACH)			FLA		POWER	
				(5)	(6)				(=/ (0.1)			, .			
1	MECH ROOM	DCW	BOOSTER	50	150	80	4"	4"	3.0	3500	460		3		GRUNDFOS TRIPLEX VFD PUMP PACKAGE (3-3HP PUMPS), TOUCH SCREEN, BACNet, HYDRO-PNEUMATIC TANK. CONNECT TO BAS
2	MECH ROOM	DHW	CIRCULATOR	7	7	23	1"	1"	1/6	3100	120	2	1	NO	BELL AND GOSSET ecocircXL N 36-45 SERIES, STAINLESS STEEL. CONNECT TO BAS
3	ELEVATOR	FM	SUMP	50	50	30	-	3"	1	3450	115	12	1	NO	SIMPLEX STANCOR SUBMERSIBLE WITH ALARM. CONNECT TO BAS

**EXPANSION TANKS** 

											22 3314
MARK	SYSTEM	BASIS OF DESIGN	MODEL NO	TANK	MAX. ACCEP.	DIMENSION	IS		MAXIMUM	LINE	
				VOLUME	VOLUME	DIA.	HEIGHT	SYSTEM	PRESSURE	PRESSURE	REMARKS
ET-				(GAL)	(GAL)	(IN)	(IN)	CONN.	(PSI)	(PSI)	
					' '				, ,	, ,	
1	DHW	AMTROL	WX-449C	106	106	24	73	2"	125	70	PRESSURE BOOSTER HYDRO-PNEUMATIC TANK, CHARGE TO LINE PRESSURE
2	DHW	AMTROL	ST-12C	6.4	3.2	12	14	3/4"	150	80	EXPANSION TANK, CHARGE TO LINE PRESSURE

# BACKFLOW PREVENTER (RPZ)

						22 2114
MARK BFP	BASIS OF DESIGN	SERVICE	INLET/ OUTLET SIZE	GPM	MAX PD PSI	REMARKS SYSTEM USAGE
1	ZURN 350AST-OSY	DOMESTIC COLD WATER	4"	100	5	DUAL CHECK VALVE ASSEMBLY, 304L STAINLESS STEEL, LEAD FREE, TYPE "Y" STRAINER
2	ZURN 975XL2	MAKE-UP WATER	3/4"	8	12	BACKFLOW PREVENTER, LEAD FREE, WITH FULL PORT QT BALL VALVES, BRONZE TYPE "Y" STRAINER,
3	ZURN 460XL	DOMESTIC COLD AND HOT WATER	1/2"	4	7	SPILL RESISTANT PRESSURE VACUUM BREAKER ASSEMBLY, LEAD FREE, WITH FULL PORT QT BALL VALVES, BRONZE TYPE "Y" STRAINER,

# **CLEANOUTS AND DRAINS**

MARK	FIXTURE	BASIS OF DESIGN	REMARKS
WCO	WALL CLEANOUT	ZURN ZS1468-VP	CAST IRON FURRULE, THREADED PLUG, VANDAL PROOF SECURED STAINLESS STEEL ACCESS COVER.
YCO	YARD CLEANOUT	ZURN Z1474-VP-N	DURA-COATED CAST IRON BODY WITH INTEGRAL ANCHOR FLANGE, SECURED SCORIATED COVER WITH LIFTING DEVICE, VANDAL PROOF, WITH INTERNAL CLEANOUT
FCO	FLOOR CLEANOUT	ZURN Z1400-VP-T-BP	CAST IRON BODY, SQUARE, VANDAL PROOF NICKEL BRONZE COVER, WITH TILE OR CARPET RECESS AS REQUIRED.
<u>FD-1</u>	FLOOR DRAIN	ZURN ZN415S-Y	CAST IRON BODY, SQUARE, NICKEL BRONZE STRAINER, SEDIMENT BUCKET, CLAMP COLLAR, TRAP SEAL DEVICE BY PROSET OR EQUAL
<u>FD-2</u>	FLOOR DRAIN	ZURN Z520-G-T-Y-VP	CAST IRON BODY, GALVANIZED, HEAVY DUTY GRATE, SEDIMENT BUCKET, CLAMP COLLAR, TRAP SEAL DEVICE BY PROSET OR EQUAL
<u>FD-3</u>	FLOOR DRAIN	ZURN Z530-G-T-Y	CAST IRON BODY, GALVANIZED, HEAVY DUTY GRATE, SEDIMENT BUCKET, SURFACE FLANGE, TRAP SEAL DEVICE BY PROSET OR EQUAL
<u>FS-1</u>	FLOOR SINK	ZURN Z1901-K-2	CAST IRON BODY, ACID RESISTANT COATED, 1/2 GRATE, ANCHOR FLANGE, LESS DOME STRAINER, TRAP SEAL DEVICE BY PROSET OR EQUAL
FS-2	FLOOR SINK	ZURN Z127-AR-DP-E	8 1/2" DIAMETER, DECK RECEPTOR, DURA-COATED CAST IRON BODY, ACID RESISTANT EPOXY COATED, UNDERDECK CLAMP, STATIC EXTENSION, DOME STRAINER, TRAP SEAL DEVICE BY PROSET OR EQUAL
FS-3	FLOOR SINK	ZURN Z1902-DX-K	CAST IRON BODY, ACID RESISTANT COATED, SURFACE FLANGE, ANCHOR FLANGE, DOME STRAINER, TRAP SEAL DEVICE BY PROSET OR EQUAL
<u>RD</u>	ROOF DRAIN	ZURN Z100-ZC-C-E	CAST IRON BODY, CAST IRON DOME, EXTENTION, CLAMP. PROVIDE STAINLES STEEL HARDWARE PART NO. P100-CC-PARTS-SS
<u>ORD</u>	OVERFLOW ROOF DRAIN	ZURN Z100-ZC-C-E-W2	CAST IRON BODY, CAST IRON DOME, EXTENTION, CLAMP, WEIR. PROVIDE STAINLES STEEL HARDWARE PART NO. P100-CC-PARTS-SS
<u>DS</u>	DOWNSPOUT NOZZLE	ZURN ZS 199-DC-VP	S.S BODY, HINGED PERFORATED GRATE. VANDAL PROOF.

## **PLUMBING FIXTURES**

MARK	ITEM	BASIS OF DESIGN	REMARKS
<u>VC-1</u>	Water Closet	American Standard 3351.101	White vitreous china, wall-mounted siphon jet, top spud, rear outlet, elongated bowl, 1.28 GPF design. MaP score 1,000 grams of miso @ 1. gpf
	Flush Valve	Zurn ZER6000AV-W2-HET-LTE	Polish chrome finish, top spud, single flush, exposed sensor battery operated flushometer, 1.28 gpf, manual override push button, vacuum breaker, 6VDC motor actuator, Zurn plumbSMART web portal and mobile app.
	Seat	Bemis 1955SSTFR	White plastic seat with self-sustaining check hinge, elongated open front, fire retardant material.
	Carrier	Zurn Z1201-N 4, Z1201-ND4	Left or right, horizontal or vertical, adjustable no-hub floor carrier, -JC 2" auxiliary inlet(plug if not used).
C-2	Water Closet	As above, except provide carrier support for barrier free (ADA	A) The height of the water closet shall be 17" to 19" measured to the top of the toilet seat.
R-1	Urinal	American Standard 6590.001	White vitreous china, wall mounted, 0.125 GPF.
	Flush Valve -Sensor	Zurn ZER6003AV-W2-ULF-LTE	Polish chrome finish, top spud, single flush, exposed sensor battery operated flushometer, 0.125 gpf, manual override push button, vacuum breaker, 6VDC motor actuator, Zurn plumbSMART web portal and mobile app.
	Carrier	Zurn Z-1222	Rectangular uprights, bearing plate, barrier free.
R-2	Urinal	As above, rim maximum 17" above the finished floor.	The starting at a supergradient of the starting place, started moor
-1	Lavatory - Public ADA	Kohler K-2007	21-1/4"x1/-1/8", white vitreous china, wall-mount, overflow drain, ADA.
_	Faucet	Zurn Z6913-XL	Polish chrome, single hole, infrared sensor, 0.5 gpm, battery power, deck-mounted, in-line filter, hydro-powered, 4" cover plate, ADA.
	Drain	Zurn Z8743	P.O. perforated grate strainer, 1-1/4" tailpiece.
	Trap	Zurn Z8701	Cast brass, 17 ga with cleanout, size 1-1/4"x1-1/2".
	Stops and Supplies	Zurn Z8808-XL-Q-PC	Chrome plated, quarter turn ball valve with wheel handle, extension and flexible riser.
	Utility Cover	Trubro 2018-KO-K	LAV SHIELD rigid enclosure, ADA
	Thermostatic mixing valve	Powers LFLM495	Thermostatic mixing valve for lavatories, lead free.
K-1	Sink - ADA	Elkay LRAD312265	Single bowl, 31"x 22"x 6 1/2", 304 stainless steel, 18ga.,drop-in, bowl dimensions 28"x 16"x 6 3/8", 3 holes.
<u> </u>	Faucet	Chicago Faucets 786-E36XKABCP	Deck mounted, 8" fixed centers, 5-1/4" rigid/swing gooseneck spout, 1.5 gpm non-aerating laminar outlet, 4" wristblade handle
	Drain	Elkay LKAD35	Perforated S.S. strainer with off-set tail piece.
	Trap	Zurn 28702 Series	1-1/2" chrome plated brass with cleanout plug.
	Stops and Supplies	Zurn Z8808-XL-Q-LK	Chrome plated, quarter turn ball valve with loose key, extension and flexible riser.
<u> </u>	Sink - ADA	Elkay LRAD171665	Single bowl, 17"x 16"x 6 1/2", 304 stainless steel, 18ga.,drop-in, bowl dimensions 14"x 10"x 6 3/8".
<u>\-Z</u>	Faucet	Chicago Faucets 786-E36XKABCP	Deck mounted, 8" fixed centers, 5-1/4" rigid/swing gooseneck spout, 1.5 gpm non-aerating laminar outlet, 4" wristblade handle
	Drain	Elkay LKAD35	Perforated S.S. strainer with off-set tail piece.
	Trap	Zurn 28702 Series	1-1/2" chrome plated brass with cleanout plug.
	Stops and Supplies	Zurn Z8808-XL-Q-LK	Chrome plated, quarter turn ball valve with loose key, extension and flexible riser.
B-1	Mop Basin	Fiat TSB100-MSG	24"x24"x12" precast terrazzo floor basin with rim guards and stainless steel wall guards.
<u>D-1</u>	Faucet	Chicago Faucets 952-1/2CP	Wall mounted sill fittings, atmospheric vacuum breaker, (2) one for DCW and one for DHW.
	Hose	Delta 28T910 and 28T911	Heavy duty reinforce hose and SS mop hanger
	Backflow Preventer	Zurn Wilkins 700XL	In-line check assembly
	Drain	Fiat 1453-BB	Stainless steel strainer.
	Trap	Cast Iron	
2 1	<u>'</u>		3" p-trap to match piping system.
<u>B-1</u>	Hose Bibb	Zurn Z1341XL-P34-PB-VB	Exposed, 3/4 male hose connection, back-flow protected, anti-siphon, with loose key operator, interior locations only.
<u>/H-1</u>	Wall Hydrant - Int	Zurn Z1350-VB	Stainless steel box and door, back-flow protected, loose key operator, interior locations only.
/H-2	Wall Hydrant - Ext	Zurn Z1320XL	Nickel bronze box and door, back-flow protected, anti-siphon, freeze proof with loose key operator, automatic draining, lead free, coordinate varchitect for length before ordering.
<u>NC-1</u>	Electric Water Cooler	Elkay LZSTL8WSLK	Dual high-low bowls, ADA, 120 VAC, bottle filler, filter.
	Stops and Supplies	Zurn Z8808-XL-Q-PC	Chrome plated, quarter turn ball valve with wheel handle, extension and flexible riser.
	Carrier	Zurn Z1225	Bi-Level cooler support
	Trap	Zurn Z8701	Cast brass, 17 ga with cleanout, size 1-1/2".
<u>W-1</u>	Eye Wash - ADA	Guardian GBF1848-TMV	Eye/face wash,wall mounted, stay-open valve, ADA compliant, mixing valve G6020
	Backflow Preventer	Zurn Wilkins 700XL	In-line check assembly
<u>/B-1</u>	Wall Supply Box	Water Tite IPS Corporation - Model no. DW120_HA	MultiBox, Commercial ice maker wall box system with lead free quarter turn arrester valve and drain. For fire rated wall use FRDW120_HA
	Backflow Preventer	Zurn Wilkins 700XL	In-line check assembly

1. ALL FIXTURES SHALL HAVE BALL VALVE ISOLATION VALVES ABOVE CEILING DIRECTLY IN FRONT OF THE FIXTURE. 2. MOP SINK TO BE PROVIDED WITH CHECK VALVE ON HOT AND COLD SUPPLY LINES.

## 3. SINKS SHALL HAVE DROP EAR 90 DEGREE ELBOWS WITH BRASS THREADED NIPPLES FOR ANGLE STOP CONNECTIONS.

# **FIXTURE PIPING**

					COLD	НОТ	SHOCK	
MARK	FIXTURE	WASTE	VENT	TRAP	WATER	WATER	ARRESTER	REMARKS
							SIZE	
								PROVIDE SHOCK ARRESTER
WC-1	WATER CLOSET	4"	2"	INTEGRAL	1"	N/A	"A"	ON DCW SUPPLY
								PROVIDE SHOCK ARRESTER
WC-2	WATER CLOSET	4"	2"	INTEGRAL	1"	N/A	"A"	ON DCW SUPPLY
								PROVIDE SHOCK ARRESTER
UR-1	URINAL	2"	2"	INTEGRAL	3/4"	N/A	"A"	ON DCW SUPPLY
								PROVIDE SHOCK ARRESTER
UR-2	URINAL	2"	2"	INTEGRAL	3/4"	N/A	"A"	ON DCW SUPPLY
								PROVIDE SHOCK ARRESTER
L-1	LAVATORY	2"	2"	1-1/4" x 1-1/2"	1/2"	1/2"	"A"	ON BOTH DHW & DCW SUPPLY
								PROVIDE SHOCK ARRESTER
SK-1	SINK	2"	2"	1-1/2"	1/2"	1/2"	"A"	ON BOTH DHW & DCW SUPPLY
								PROVIDE SHOCK ARRESTER
SK-2	SINK	2"	2"	1-1/2"	1/2"	1/2"	"A"	ON BOTH DHW & DCW SUPPLY
								PROVIDE SHOCK ARRESTER
EWC-1	ELECTRIC WATER COOLER	2"	2"	1-1/4" x 1 1/2"	1/2"	N/A	"A"	ON DCW SUPPLY
								PROVIDE SHOCK ARRESTER
MB-1	MOP BASIN	3"	2"	3"	3/4"	3/4"	"A"	ON BOTH DHW & DCW SUPPLY
HB-1	HOSE BIBB	N/A	N/A	N/A	3/4"	N/A	N/A	
וייטוו	TIOSE BIBB	IN/A	IN/A	IN/A	3/4	IN/A	IN/A	
WH-1	WALL HYDRANT	N/A	N/A	N/A	3/4"	N/A	N/A	
VV □- I	WALL DIDDANI	IN/A	IN/A	IV/A	3/4	IN/A	IN/A	
WH-2	WALL HYDRANT	N/A	N/A	N/A	3/4"	N/A	N/A	
VVI 1-Z	WALLIIIDIANI	I W/A	IN/A	IN/A	3/4	IN/A	IN/A	PROVIDE SHOCK ARRESTER
EW-1	EMERGENCY SHOWER	N/A	N/A	N/A	1/2"	1/2"	"A"	ON BOTH DHW & DCW SUPPLY
- v v - i	LIVILITALINOT SHOWER	I W/A	IN/A	IN/A	1/2	1/2		PROVIDE SHOCK ARRESTER
WB-1	WALL BOX	N/A	N/A	N/A	1/2"	1/2"	"A"	ON BOTH DHW & DCW SUPPLY
4 A D- I	WALL DOX	1 11/7	111/7	IN/A	1/2	1/4		I CIN DO III DIIVV & DOVV GOLLEI

# **HEAT PUMP STORAGE WATER HEATERS**

MARK	LOCATION	SERVICE	TYPE	STORAGE		RECOVERY					ELEMENTS ELEMENT VOLTAGE PHASE FREQ. F.L.A. STANDBY REFRIGERANT					BASIS OF DESIG	REMARKS			
EWH				CAPACITY	TEMP RISE	RATE - EFFICIENCY	RATE - HYBRID	RATE - ELECTRIC		(#)	INPUT	(V)	(Φ)	(HZ)	(AMPS)	POWER		MANUFACTURER	MODEL	
				(GAL)	(F)	(GPH)	(GPH)	(GPH)			VALUE									
											(KW)									
1	MECHANICAL 1079	HOT WATER	HEAT PUMP/ELECTRIC STORAGE	119	100	40	90	50	4.2	2	6	240	1	60		NO	R134	AO SMITH OR EQUAL	CAHP 120	1, 2
1	MECHANICAL 1079	HOT WATER	HEAT PUMP/ELECTRIC STORAGE	119	100	40	90	50	4.2	2	6	240	1	60		NO	R134	AO SMITH OR EQUAL		CAHP 120

(1) SET WATER TEMPERATURE TO 140 F.

(2) PROVIDE PLASTIC PAN UNDER THE WATER HEATER. RUN DRAIN PIPE TO NEAREST FLOOR DRAIN.

**SHEET NAME:** 

PLUMBING SCHEDULES

△ DATE DESCRIPTION

0 2022.07.01 PACKAGE C - BID DOCUMENTS

ORIG SUBMISSION: 2022.07.01 2022.07.01 PACKAGE C - BID DOCUMENTS

SHEET:

P600 PACKAGE C - BID DOCUMENTS

101 NORTH THIRD STREET SUITE 500 WILMINGTON, NORTH CAROLINA 28401



TEL. 910.790.9901 FAX 910.790.3111 WWW.LS3P.COM

