

ADDENDUM NO. 5**DATE: July 21, 2026**

PROJECT: HARMONY SCIENCE ACADEMY BRIDGELAND PHASE II MIDDLE-HIGH SCHOOL

ARCHITECT: LDDBLUELINE, INC.
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Houston, TX 77094
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**ARCHITECT'S PROJECT
NUMBER:** 06-22-014

OWNER: HARMONY PUBLIC SCHOOLS
1255 Enclave Parkway
Houston, TX 77077

THIS ADDENDUM IS ISSUED TO ALERT ALL PARTIES OF CHANGES AND/OR SUPPLEMENTARY CLARIFICATION INFORMATION TO THE CONTRACT DOCUMENTS AS OUTLINED BELOW. THE FOLLOWING ITEMS TAKE PRECEDENCE OVER REFERENCED PORTIONS OF THE CONTRACT DOCUMENTS AND IN EXECUTING A CONTRACT, SHALL BECOME A PART THEREOF. WHERE ANY ITEM CALLED FOR IN THE DOCUMENTS IS SUPPLEMENTED HEREBY, THE ORIGINAL REQUIREMENTS SHALL REMAIN IN EFFECT. ALL SUPPLEMENTED CONDITIONS SHALL BE CONSIDERED AS ADDED TO THERETO. WHERE ANY ORIGINAL ITEM IS AMENDED, VOIDED OR SUPERSEDED HEREBY, THE PROVISIONS OF SUCH ITEMS NOT SO SPECIFICALLY AMENDED, VOIDED OR SUPERSEDED SHALL REMAIN IN EFFECT.

Summary:

The following addendum includes drawing changes related to structural and architectural scope (see below), substitution request responses, and responses to bidders questions.

Drawing Revisions:

1. Please note that the Owner is including replacement of a water heater in the adjacent Elementary School building in the scope of work for this Phase II project. The salvaged equipment will be used in Phase II.

Substitution Requests:

None

Bidders' Questions & Responses:

None

Specifications:

None

Drawings:

1. Drawing P-301
 - a. **REVISE** Use salvaged water heater and circulation pump
2. Drawing P-001
 - a. **REVISE** Plumbing Schedules
3. Drawing SKP-0
 - a. **REVISE** Plumbing Schedules
4. Drawing SKP-1

- a. **ADD** Remove water heater and circulation pump for reuse
- 5. Drawing SKP-2
 - a. **ADD** Replace pipe
- 6. Drawing SKE-1
 - a. **ADD** New Disconnect, see notes
- 7. Drawing SKE-2
 - a. **REVISE** Panel Diagrams

Documents:

None

END OF ADDENDUM NO. 5

PLUMBING LEGEND	
SYMBOL	DESCRIPTION
	SANITARY OR WASTE PIPING ABOVE GRADE (SAN)
	SANITARY OR WASTE PIPING BELOW GRADE (SAN)
	VENT PIPING ABOVE OR BELOW GRADE (V)
	STORM PIPING ABOVE GRADE (SD)
	STORM PIPING BELOW GRADE (SD)
	OVERFLOW STORM PIPING ABOVE GRADE (OFD)
	COLD WATER PIPING (CW)
	HOT WATER PIPING (HW)
	HOT WATER RETURN PIPING (HWR)
	GAS PIPING
	FIRE PROTECTION WATER PIPING (FIRE)
	COMPRESSED AIR PIPING (AIR)
	NITROGEN PIPING (N2)
	HYDROGEN PIPING (H)
	HELIUM PIPING (HE)
	ARGON PIPING (AR)
	HIGH PRESSURE HELIUM PIPING (HPHE)
	FLOW DIRECTIONAL ARROW
	SHUT-OFF VALVE
	BALANCING VALVE (BV)
	SOLENOID VALVE (SV)
	BALL VALVE (BV)
	BUTTERFLY VALVE
	GAS PLUG VALVE (GPV)
	HORIZONTAL SWING CHECK
	UNION
	Y-STRAINER
	REDUCER OR INCREASER
	ECCENTRIC REDUCER
	REDUCED PRESSURE BACKFLOW PREVENTER (RPZ)
	PIPING DOWN
	RISE OR DROP PIPING
	PIPING UP –OR– PIPING UP & DOWN
	CAP ON END OF PIPE
	CLEANOUT (WALL OR CEILING) (CO)
	FLOOR CLEANOUT (FOO)
	EXTERIOR CLEANOUT WITH 18"x18"x4" CONCRETE PAD (ECO)
	TWO-WAY CLEANOUT (PROVIDE 18"x24"x4" CONCRETE PAD OUTSIDE)
	PRESSURE REDUCING VALVE (PRV)
	BRANCH CONNECTION OUT OF TOP
	BRANCH CONNECTION OUT OF BOTTOM
	BRANCH CONNECTION OUT OF SIDE
	WYE & 1/8TH BEND BRANCH CONNECTION
	WYE BRANCH CONNECTION
	HOSE BIBB
	PRESSURE GAUGE WITH COCK
	THERMOMETER
	GAS PRESSURE REGULATOR
	TEST COCK
	GAS METER
	WALL HYDRANT
	VALVE IN RISE
	ASME TEMPERATURE & PRESSURE RELIEF VALVE
	VACUUM RELIEF VALVE
	ANGLE VALVE
	REFER TO KEYED NOTE
	FLOOR SINK (FS)
	FLOOR DRAIN (FD)
	FLOOR DRAIN WITH P-TRAP (FD)
	HUB DRAIN (HD)
	ACCESS PANEL FOR TRAP PRIMER
	ACCESS PANEL LOCATION SYMBOL
	SHOCK ABSORBER WITH ACCESS PANEL
	AIR CHAMBER
	EXISTING
	CONNECT NEW TO EXISTING
	INVERT ELEVATION
	QUARTER OF AN INCH SLOPE
	1/8TH OF AN INCH SLOPE
	1/16TH OF AN INCH SLOPE
	DELTA CHANGE SYMBOL
	RISER FLAG

NOTE: NOT ALL SYMBOLS MAY APPLY TO THIS PROJECT.

PLUMBING GENERAL NOTES

- SAWCUT AND REMOVE EXISTING FLOOR SLAB/PAVING AS REQUIRED TO PROVIDE NEW FIXTURES, GREASE TRAP, SAMPLE WELL, CLEANOUTS, AND UNDERSLAB WASTE AND VENT PIPING. PATCH AND RETINISH FLOOR/PAVING TO MATCH EXISTING. ALL SUCH WORK IS TO BE DONE IN ACCORDANCE WITH THE OWNERS REQUIREMENTS.
- BEFORE MAKING ANY CONNECTIONS AND AGAIN UPON COMPLETION OF WORK, THOROUGHLY ROD OUT AND FLUSH SANITARY PIPE TO ENSURE THEY ARE FREE FROM BLOCKAGES.
- ALL INSTALLATION OF PEX PIPING SYSTEM IS TO BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS.
- FIELD VERIFY EXACT LOCATION, SIZE, DEPTH, DIRECTION OF FLOW, CAPACITY, PIPE MATERIAL AND CONDITION OF EXISTING SITE DOMESTIC WATER AND SANITARY WASTE PIPING PRIOR TO BEGINNING CONSTRUCTION TO ENSURE THAT PROPER CONNECTIONS TO AND EXTENSION OF SUCH UTILITIES CAN BE MADE.
- INVERT ELEVATIONS LISTED ARE APPROXIMATE. PRIOR TO CONSTRUCTION, COORDINATE FINAL INVERT ELEVATIONS OF BUILDING SANITARY OUTFALLS AND SITE PIPING WITH SITE UTILITY CONTRACTOR. MAKE ADJUSTMENTS AS REQUIRED TO ENSURE PROPER CONNECTIONS TO SITE UTILITIES.
- PRIOR TO BEGINNING CONSTRUCTION, COORDINATE PLUMBING BACKFLOW PREVENTION REQUIREMENTS WITH THE LOCAL CODE AUTHORITY AND PROVIDE AS DIRECTED.
- CONTRACTOR SHALL COORDINATE ROUTING OF PIPING BELOW SLAB WITH COLUMN FOOTINGS, GRADE BEAMS, UNDERGROUND PLUMBING AND ELECTRICAL UTILITIES, AND OTHER SUB-SURFACE BUILDING ELEMENTS.
- INSULATE ALL PEX PIPING LOCATED IN EXTERIOR WALLS, AND AS REQUIRED BY LOCAL CODE REQUIREMENTS.
- CONTRACTOR SHALL COORDINATE ROUTING OF PIPING IN CEILING SPACES WITH MECHANICAL AND ELECTRICAL EQUIPMENT, DUCTWORK AND CONDUIT. SHOULD A CONFLICT OCCUR THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO INSTALLING AN ALTERNATE PIPING PLAN.
- MAINTAIN MINIMUM 25"–0" DISTANCE BETWEEN VENT TERMINALS THROUGH ROOF AND ALL FRESH AIR INTAKES.
- COORDINATE ALL FIXTURE AND EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS WITH LATEST ARCHITECTURAL DRAWINGS, SPECIFICATIONS, AND MANUFACTURER RECOMMENDATIONS PRIOR TO ANY ROUGH-IN'S.
- CONTRACTOR TO COORDINATE ALL WORK WITH THE WORK OF OTHER TRADES TO AVOID CONFLICTS AND TO MINIMIZE INTERRUPTION OF SERVICES.
- ALL WORK, METHODS AND INSTALLATIONS INVOLVED IN THE PLUMBING DESIGN SHALL BE IN ACCORDANCE WITH THE CITY BUILDING CODE AND INSPECTION REGULATIONS AND ALL OTHER OFFICIALS HAVING JURISDICTION.
- INSULATE ALL PEX PIPING LOCATED IN EXTERIOR WALLS, AND AS REQUIRED BY LOCAL CODE REQUIREMENTS.
- ALL INSTALLATION OF PEX PIPING SYSTEM IS TO BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS.
- WHERE PIPING EQUIPMENT, AND PLUMBING FIXTURES ARE REMOVED, REMOVAL ALL VALVES, SUPPORTS, INSULATION, AND APPURTENANCES. REMOVE PIPING BACK TO WAINS AND CAP. DO NOT LEAVE DEAD LESS LONGER THAN 12".
- REFER TO CIVIL DRAWINGS FOR CONTINUATION OF DOMESTIC WATER AND SANITARY WASTE UTILITIES.
- REFER TO CIVIL DRAWINGS FOR SIZE AND LOCATION OF DOMESTIC WATER METER ON SITE.
- REFER TO ARCHITECTURAL/CIVIL DRAWINGS FOR BUILDING FINISHED FLOOR ELEVATION.
- CONTRACTOR TO FIELD VERIFY AS NECESSARY THE EXACT ROUTING AND SIZES OF ALL PIPING.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A COPY OF THE LANDLORD'S MOST RECENT RULES AND REGULATIONS FOR TENANT FINISHOUT. THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH SUCH RULES AND REGULATIONS.
- AT CONNECTION TO EXISTING COLD WATER MAIN, PROVIDE WATER METER IF REQUIRED PER LANDLORD'S REQUIREMENTS AND/OR TENANT'S LEASE AGREEMENT.
- PRIOR TO COMPLETION OF WORK INSTALLER TO TEST FACILITY MEDICAL SYSTEMS AND ENSURE EACH SYSTEM IS WORKING PROPERLY.
- COORDINATE ALL SPECIAL GAS PIPING WITH OTHER TRADES TO AVOID OBSTRUCTIONS. ROUTE PIPING AS NECESSARY FOR A COMPLETE FUNCTIONING SYSTEM.
- INSTALLATION OF SPECIAL GAS SYSTEM SHALL COMPLY WITH THE LATEST EDITION OF NFPA 99.
- PLUMBING CONTRACTOR TO PRESSURE TEST THE DOMESTIC WATER BEFORE & AFTER THE SITE BACKFLOW PREVENTOR. IF THE PRESSURE AFTER THE BACKFLOW PREVENTION IS LESS THAN 40 PSI PLUMBING CONTRACTOR TO COORDINATE WITH OWNER & ENGINEER TO PROVIDE A DOMESTIC WATER BOOSTER PUMP TO GET 60 PSI MINIMUM.
- ALL FLOOR DRAINS/SINK SHALL BE PROTECTED BY A TRAP PRIMER PER LOCAL PLUMBING CODE.

FIRE SPRINKLER SYSTEM

- DESIGN AND FURNISH LABOR AND MATERIALS FOR THE COMPLETE MODIFICATION OF AN AUTOMATIC FIRE EXTINGUISHING SPRINKLER SYSTEM WITH THE ATTENDANT ACCESSORIES FOR THE ENTIRE AREA.
- STUDY THE GENERAL, STRUCTURAL, ELECTRICAL AND MECHANICAL DRAWINGS AND SPECIFICATIONS, IN ORDER TO BECOME FAMILIAR WITH THE BUILDING AND DETAILS AS THEY APPLY TO THE WORK OF THIS SECTION. COOPERATE WITH OTHERS SO THAT THERE WILL BE NO CONFLICT OF SPACE REQUIRED. DUCTWORK AND ELECTRICAL WORK SHALL TAKE PRECEDENCE OVER OTHER WORK, EXCEPT WHERE IT IS ABSOLUTELY NECESSARY TO MAINTAIN COVERAGE PROTECTION.
- THE INSTALLATION OF THE ENTIRE SPRINKLER SYSTEM SHALL COMPLY WITH ALL RULES AND REGULATIONS OF THE NATIONAL BOARD OF FIRE UNDERWRITERS, THE GOVERNING BUILDING CODE, REQUIREMENTS OF NFPA PAMPHLET 13, AND OTHER LOCAL AUTHORITIES EXERCISING JURISDICTION.
- IT SHALL BE THE FIRE PROTECTION INSTALLER'S RESPONSIBILITY, PRIOR TO BID, TO VERIFY PRESSURE AT THE PROJECT SITE BY PERFORMING A FLOW TEST, DETERMINING IF THE AVAILABLE STATIC AND RESIDUAL PRESSURE WILL ADEQUATELY PROVIDE THE FIRE EXTINGUISHING SYSTEM WITH THE NECESSARY PRESSURE OR IF A FIRE PUMP, BREAK TANK AND NECESSARY APPURTENANCES ARE REQUIRED.
- SCHEDULE 40 BLACK STEEL PIPE IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA FOR APPLICABLE FIRE PROTECTION SYSTEMS. CONFORM TO ASTM A53 AND A120. PROVIDE PIPING WITH MALLEABLE IRON, CAST IRON, STEEL WELDED OR SCREWED FITTINGS. VITALLIC GROOVED FITTINGS MAY BE USED ABOVE GRADE IN ACCESSIBLE LOCATIONS ONLY.
- DESIGN DRAWINGS MUST BE SUBMITTED TO THE LOCAL FIRE DEPARTMENT JURISDICTION FOR REVIEW AND APPROVAL. EVIDENCE OF SUCH REVIEW AND APPROVAL SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE PRIOR TO SYSTEM INSTALLATION.
- NOTIFY THE LANDLORD'S REPRESENTATIVE AT LEAST 24 HOURS PRIOR TO ANY FIRE SPRINKLER WORK. CONTRACTOR WILL BEAR ANY CHARGES ASSOCIATED WITH FALSE ALARMS. THE SYSTEM MUST BE RECHARGED AND OPERATIONAL AT THE END OF THE WORK DAY.

PLUMBING SCOPE & SPECIFICATION

THE WORK OF THIS SECTION SHALL INCLUDE, BUT NOT BE LIMITED TO:

- A. A DOMESTIC HOT AND COLD WATER DISTRIBUTION SYSTEM TO SERVE ALL FIXTURES, AND EQUIPMENT.
 - B. SANITARY SOIL WASTE AND VENT SYSTEMS TO SERVE ALL FIXTURES AND EQUIPMENT. C. NOT USED.
- DRAWINGS ARE DIAGRAMMATIC; CONFIRM DIMENSIONS AND LOCATIONS IN THE FIELD, ADVISE OF MAJOR DISCREPANCIES.
- GUARANTEE LABOR AND MATERIALS FOR ONE YEAR.
- ADHERE TO ALL APPLICABLE LOCAL CODES AND REGULATIONS.
- CONTRACTOR SHALL OBTAIN REQUIRED PERMITS AND PAY ALL FEES.
- VALVES**
- VALVES SHALL BE MANUFACTURED BY NIBCO, HAMMOND, POWELL, STOCKHAM, WAITS OR EQUIVALENT APPROVED BY THE ENGINEER.
- BALL VALVES SHALL HAVE CAST BRONZE BODY, BLOWOUT PROOF STEMS, FULL SIZE PORT, 316 STAINLESS STEEL TRIM, TEFLON SEAT AND SEAL AND THRUST WASHERS. VALVES 2" AND SMALLER SHALL BE NIBCO T-585–70–66 OR APPROVED EQUIVALENT.

UNIONS

UNIONS IN COPPER OR BRASS LINES SHALL BE BRASS, THREADED PATTERN UNIONS.

EXCAVATION

EXCAVATE TRENCHES FOR UNDERGROUND PIPING TO THE REQUIRED DEPTH. CUT THE BOTTOM OF THE TRENCH OR EXCAVATION TO UNIFORM GRADE.

EXCAVATE 6" BELOW GRADE, FILL WITH BEDDING MATERIAL (SAND) AND TAMP WELL.

LAY OUT ALIGNMENT OF PIPING TRENCHES TO AVOID OBSTRUCTIONS. PROVIDE ASSURANCE THAT PROPOSED ROUTE OF PIPE WILL NOT INTERFERE WITH BUILDING FOUNDATION BEFORE ANY CUTTING IS BEGUN. SHOULD INTERFERENCE BE FOUND, CONTACT THE ARCHITECT/ENGINEER BEFORE PROCEEDING.

BACKFILL

BACKFILL SHALL NOT BE PLACED UNTIL THE WORK HAS BEEN INSPECTED, TESTED AND APPROVED. USE SUITABLE FRABLE SOILS AS BACKFILL MATERIAL. DO NOT USE PEAT, SILT, MUCK, DEBRIS OR OTHER ORGANIC MATERIALS. DEPOSIT BACKFILL IN UNIFORM LAYERS. PLACE BACKFILL MATERIAL IN UNIFORM LAYERS, 8" MAXIMUM LOOSE MEASURE. COMPACT TO NOT LESS THAN 95% OF MAXIMUM SOIL DENSITY AS DETERMINED BY ASTM D698 STANDARD PROCTOR.

PLUMBING PIPING HANGER SPACING

MAXIMUM SPACING SHALL BE 10 FOOT.

CLEANING, TESTING AND ADJUSTING

THIS CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, INSTRUCTIONS, AND SUPERVISION REQUIRED FOR THE PERFORMANCE OF ALL TESTING, CLEANING, AND MAKING NECESSARY ADJUSTMENTS TO OPERATION OF ALL FIXTURES AND EQUIPMENT.

PIPING INSULATION

ALL COLD & HOT WATER PIPING, FITTINGS AND VALVES SHALL BE INSULATED WITH NOMINAL 1-1/2" WALL THICKNESS FIBERGLASS PIPE INSULATION, OR AN APPROVED EQUAL, HAVING FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DENSITY OF 50 OR LESS WHEN TESTED BY ASTM E–84 METHOD.

PIPE INSULATION SHALL BE INSTALLED ACCORDING TO THE PROCEDURES OUTLINED BY THE MANUFACTURE.

FITTING COVER INSULATION SHALL BE FABRICATED AND INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDED PROCEDURES. SWEAT FITTINGS SHALL BE INSULATED WITH MITER CUT PIECES OF FIBERGLASS PIPE INSULATION THE SAME SIZE AS ON ADJACENT PIPING. THREADED FITTINGS SHALL BE INSULATED WITH SLEEVED FITTING COVERS FABRICATED FROM MITER CUT PIECES OF FIBERGLASS PIPE INSULATION ACCORDING TO THE MANUFACTURER'S SLEEVE SIZE RECOMMENDATIONS AND SHALL BE OVERLAPPED 2" AND SEALED TO THE ADJACENT PIPE INSULATION. ALL VALVES SHALL BE INSULATED WITH CUT PIECES OF FIBERGLASS PIPE INSULATIONS. ALL JOINTS AND MITER CUT PIECES ARE TO BE SEALED PER MANUFACTURER'S RECOMMENDATIONS.

SUPPORTING HANGERS SHALL BE DESIGNED TO RESIST COMPRESSION; SUPPORTING DEVICES SUCH AS SHORT WOOD DOWELS OR WOOD BLOCKS SHALL BE USED IN COMBINATION WITH GALVANIZED SHEET METAL HANGER SHIELDS. THE WOOD SUPPORTING DEVICES SHALL BE THE SAME THICKNESS AS THE INSULATION AND SEALED TO THE INSULATION WITH FACTORY APPROVED CONTACT ADHESIVE.

INSTALL THERMAL INSULATION ON CLEAN, DRY SURFACES AFTER ALL TESTING AND INSPECTION IS COMPLETED. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THESE SPECIFICATIONS AND WITH MANUFACTURER'S INSTRUCTIONS.

PIPE MATERIAL LIST

DOMESTIC WATER PIPING

ABOVE SLAB INSIDE THE BUILDING SHALL BE SEAMLESS ASTM B 88 TYPE L COPPER WATER TUBE WITH WROUGHT COPPER FITTINGS, ANSI B16.22. SOLDER MATERIAL SHALL BE 99.8% LEAD LEAD FREE AND COMPLIANT WITH THE "SAFE DRINKING WATER ACT". THE USE OF DRILLED–T CONNECTIONS IS NOT PERMITTED. PEX TUBING CONFORMING TO ALL STANDARD APPLICABLE CODE REQUIREMENTS FOR COMMERCIAL APPLICATIONS IS APPROVED AS ALTERNATE TO COPPER.

BELOW SLAB SHALL BE ASTM B 88 TYPE K COPPER WATER TUBE WITH WROUGHT COPPER FITTINGS, ANSI B16.22. ALL JOINTS SHALL BE BRAZED.

CONDENSATE AND INDIRECT DRAIN PIPING SHALL BE

TYPE M COPPER TUBING UP TO 1" ID, TYPE DWV TUBING AND COPPER FITTINGS FOR 1–1/4" AND LARGER SIZES, AND 95–5 SOLDER JOINTS. PEX TUBING CONFORMING TO ALL STANDARD APPLICABLE CODE REQUIREMENTS FOR COMMERCIAL APPLICATIONS IS APPROVED AS ALTERNATE.

SANITARY SOIL WASTE AND VENT PIPING SHALL BE

ABOVE SLAB INSIDE BUILDING SHALL BE SCHEDULE 40 DWV POLYVINYL CHLORIDE PIPE AND FITTINGS CONFORMING TO ASTM D–1784–82 WITH SOLVENT WELDED JOINTS.

IN AIR SUPPLY OR RETURN PLENUMS, AND/OR WHERE FIRE RATED WALLS, PARTITIONS, OR FLOORS ARE PENETRATED, CONTRACTOR SHALL PROVIDE NO–HUB CAST IRON SYSTEM CONFORMING TO CSPI STANDARD NO. 301–75. NEOPRENE GASKETS SHALL CONFORM TO ASTM STANDARD C564–75.

BELOW SLAB SHALL BE SCHEDULE 40 DWV POLYVINYL CHLORIDE PIPE AND FITTINGS CONFORMING TO ASTM D–1784–82 WITH SOLVENT WELDED JOINTS.

NATURAL GAS PIPING SHALL BE

ABOVE GRADE SHALL BE SCHEDULE 40 BLACK STEEL, SEAMLESS, OR ELECTRIC RESISTANCE WELDED, ASTM A–53 WITH WELDED JOINTS AND STEEL FITTINGS OF THE SAME THICKNESS AS PIPE. PIPING 2 INCHES AND SMALLER MAY BE SCHEDULE 40 BLACK STEEL PIPE WITH MALLEABLE IRON 150 PSI CLASS FITTINGS ANSI B16.3, BANNED AIR TESTED, AND SCREWED JOINTS. ALL GAS PIPING AND FITTINGS OUTDOORS SHALL BE PAINTED WITH TWO COATS OF BRUSHED ON RUST PREVENTATIVE SILVER PAINT. ONE COAT OF RUST PREVENTATIVE PRIMER SHALL BE APPLIED TO THE PIPE IMMEDIATELY AFTER INSTALLATION.

BELOW GRADE OUTSIDE BUILDING SHALL BE MEDIUM DENSITY POLYETHYLENE MANUFACTURED BY POLY PIPE INDUSTRIES, INC. OR PERFORMANCE PIPE, POLYETHYLENE PIPE SHALL BE ASTM D3550 GRADE PE24 CELL CLASSIFICATION AND ASTM D1248 CLASS B MATERIAL CLASSIFICATION.

STORM PIPING

ABOVE SLAB INSIDE BUILDING SHALL BE SERVICE WEIGHT CAST IRON BELL AND SPIGOT SOIL PIPE AND FITTINGS WITH TYSER RUBBER GASKETS. PIPE AND FITTINGS SHALL MEET THE REQUIREMENTS OF ASTM A 74.

BELOW SLAB SHALL BE SCHEDULE 40 DWV POLYVINYL CHLORIDE PIPE AND FITTINGS CONFORMING TO ASTM D–1784–82 WITH SOLVENT WELDED JOINTS.

TANK TYPE ELECTRIC WATER HEATER

ITEM NO.	TOTAL KW INPUT	GALS. PER HR. RECOVERY RATE @0°F RISE	STORAGE CAPACITY (GALLONS)	ELECTRICAL REQUIRED	STORED WATER TEMP	MANUFACTURER COMMENT
(E)EWH–1	4.5	23.0	50.0	208V, 1ø	140°	EXISTING WATER HEATER FROM ELEMENTARY SCHOOL RHEEM ELD52–TB
EWH–2	4.5	23.0	50.0	208V, 1ø	140°	RHEEM ELD52–TB
EWH–3	12.1	23.0	119.0	480V, 3ø	140°	RHEEM ELD120–TB
EWH–4	12.1	23.0	119.0	480V, 3ø	140°	RHEEM ELD120–TB

NOTES:

- PROVIDE HOT WATER EXPANSION TANK DOWNSTREAM OF CHECK VALVE ON COLD WATER SUPPLY. THERM-X-TRO, ST–5.
- (E)EWH–1 – EXISTING WATER HEATER REMOVED FROM ELEMENTARY SCHOOL. REFER TO SKETCH SKP–0, SKP–1 & SKP–2 FOR MORE INFORMATION.

TANKLESS ELECTRIC WATER HEATER

ITEM NO.	TOTAL INPUT (KW)	MAXIMUM GPM DELIVERED AT 50°F RISE	MINIMUM FLOW RATE (GPM)	ELECTRICAL REQUIRED	TEMPERATURE SETTING (°F)	MANUFACTURER MODEL
TEWH–1	4.1	0.50	0.2	208V/1ø/60HZ	110°	EEMAX #SPEX4208
TEWH–2	4.1	0.50	0.2	208V/1ø/60HZ	110°	EEMAX #SPEX4208

NOTES:

- INSTALL PER MANUFACTURER'S RECOMMENDATIONS. FOLLOW ALL LOCAL CODE REQUIREMENTS.
- ENSURE TEMPERATURE IS SET TO 110°.

THERMOSTATIC MIXING VALVES

ITEM NO.	INLET HOT WATER TEMP (°F)	OUTLET MIXED WATER TEMP (°F)	MINIMUM FLOW RATE (GPM)	DESIGN FLOW (GPM)	PRESSURE DROP @ DESIGN FLOW (PSI)	VALVE FINISH	MANUFACTURER / MODEL NO.
TMV–1	140°	110°	0.5	4	5.0	ROUGH BRONZE	WATTS LTMV SERIES

NOTES:

- MAKE WATER CONNECTIONS TO THERMOSTATIC MIXING VALVE(S) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE PIPE INCREASERS AND/OR VALVES AS REQUIRED.

HOT WATER CIRCULATION PUMP

ITEM NO.	PUMP TYPE	FLOW RATE (GPM)	HEAD (FT)	ELECTRICAL REQUIRED	MOTOR (HP)	MANUFACTURER / MODEL
(E)HWCP–1	IN–LINE	10	35.0	120V, 1ø	1/8	EXISTING HOT WATER CIRC. PUMP FROM ELEMENTARY SCHOOL TACO / 009–SFS–IFC
HWCP–2	IN–LINE	10	35.0	120V, 1ø	1/8	TACO / 009–SFS–IFC
HWCP–3	IN–LINE	33	32.0	120V, 1ø	1/6	TACO / 0013–SFS–IFC
HWCP–4	IN–LINE	33	32.0	120V, 1ø	1/6	TACO / 0013–SFS–IFC

NOTES:

- PUMP SHALL BE LEAD–FREE AND COMPLIANT WITH THE "SAFE DRINKING WATER ACT".
- MOUNT PUMP IN AN ACCESSIBLE LOCATION.
- PUMP SHALL RUN ONLY DURING OCCUPIED HOURS. PLUMBING CONTRACTOR SHALL PROVIDE TIME–CLOCK FOR INSTALLATION BY ELECTRICAL CONTRACTOR.
- PROVIDE AQUASTAT ON HOT WATER RETURN LINE, WIRED TO START CIRCULATING PUMP WHEN LINE WATER TEMPERATURE DROPS 10°F BELOW DESIRED HOT WATER LOOP TEMPERATURE.
- PROVIDE AQUASTAT ON HOT WATER RETURN LINE, WIRED TO START CIRCULATING PUMP WHEN LINE WATER TEMPERATURE DROPS 10°F BELOW DESIRED HOT
- (E)HWCP–1 – EXISTING CIRCULATION PUMP REMOVED FROM ELEMENTARY SCHOOL. REFER TO SKETCH SKP–0, SKP–1 & SKP–2 FOR MORE INFORMATION.

SHOCK ARRESTORS

P.D.I. SYMBOL	FIXTURE UNITS	CHAMBER LENGTH	SWEAT CONNECTION
[A]	1–11	9–5/8"	1/2"
[B]	12–32	11–3/4"	3/4"
[C]	33–60	14–11/16"	1"
[D]	61–113	12–3/8"	1"
[E]	114–154	15–3/8"	1"
[F]	155–330	17–3/8"	1"

PLUMBING INDEX OF DRAWINGS

MEP–001 M.E.P. PARTIAL SITE PLAN

P–001 PLUMBING SCHEDULES & LEGEND
P–002 PLUMBING FIXTURE SCHEDULES
P–101A PLUMBING 1st FLOOR PLAN – AREA A
P–101B PLUMBING 1st FLOOR PLAN – AREA B
P–101C PLUMBING 1st FLOOR PLAN – AREA C
P–201A PLUMBING 2nd FLOOR PLAN – AREA A
P–201B PLUMBING 2nd FLOOR PLAN – AREA B
P–201C PLUMBING 2nd FLOOR PLAN – AREA C
P–301 PLUMBING ENLARGED PLANS
P–401 PLUMBING WASTE & VENT RISER
P–402 PLUMBING WASTE & VENT RISERS
P–403 PLUMBING WATER RISER
P–404 PLUMBING WATER & GAS RISERS
P–405 PLUMBING STORM RISER DIAGRAMS
P–501 PLUMBING DETAILS
P–502 PLUMBING DETAILS
P–503 PLUMBING DETAILS

WATER HEATER CALC'S - (E)EWH

Fixture	Quantity	GALLONS PER HOUR (GPHs per type of fixture)	Total Gallons per Hour
Lavatory	8	5	40
Mop Sink	1	15	15
Sink	0	5	0
3-Comp Sink	0	20	0
Total GPH Units			55.00
HW Demand =	0.6 x (total GPH) =		33.00
KW Input	(GPH/8078.33)/(0.98/3412)		6.58

WATER HEATER CALC'S - EWH-2

Fixture	Quantity	GALLONS PER HOUR (GPHs per type of fixture)	Total Gallons per Hour
Lavatory	8	5	40
Mop Sink	1	15	15
Sink	1	5	5
3-Comp Sink	0	20	0
Total GPH Units			60.00
HW Demand =	0.6 x (total GPH) =		36.00
KW Input	(GPH/8078.33)/(0.98/3412)		7.17

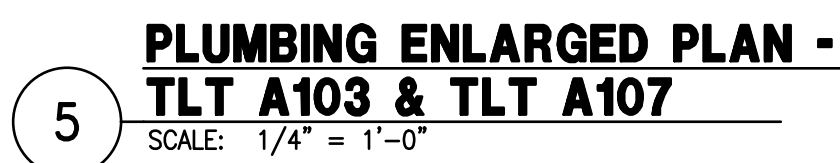
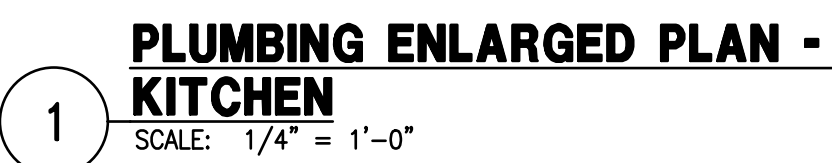
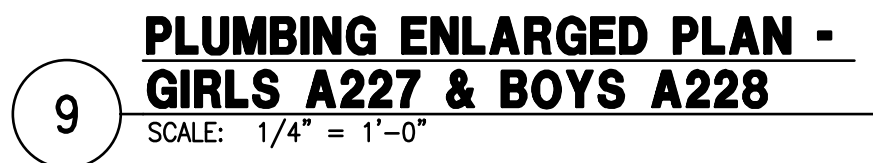
WATER HEATER CALC'S - EWH-3

Fixture	Quantity	GALLONS PER HOUR (GPHs per type of fixture)	Total Gallons per Hour
Lavatory	9	5	45
Mop Sink	1	15	15
Sink	11	5	55
3-Comp Sink	1	20	20
Total GPH Units			135.00
HW Demand =	0.6 x (total GPH) =		81.00
KW Input	(GPH/8078.33)/(0.98/3412)		16.14

WATER HEATER CALC'S - EWH-4

Fixture	Quantity	GALLONS PER HOUR (GPHs per type of fixture)	Total Gallons per Hour
Lavatory	8	5	40
Mop Sink	1	15	15
Sink	25	5	125
3-Comp Sink	0	20	0
Total GPH Units			180.00
HW Demand =	0.6 x (total GPH) =		108.00
KW Input	(GPH/8078.33)/(0.98/3412)		21.52

PLUMBING FOOD SERVICE SCHEDULE						
NO.	SIZE	DESCRIPTION	LOCATION	AFF.	SERVICE TO	REMARKS
F101	---	FLOOR DRAIN	FLOOR	0'	GENERAL	
F102	---	FUNNEL FLOOR DRAIN	FLOOR	0'	GENERAL	
F103	12"	SQ. FLOOR SINK	FLOOR	0'	EQUIPMENT DRAIN	BTC 3/4" GRATE
F104	3/4"	HOT + COLD WATER	WALL	13'	SINK FAUCET	BTC+ RE: NOTE #3
F105	12"	COLD WATER	WALL	72"	STEAMER	BTC THROUGH FILTER
F106	3/4"	HOT + COLD WATER	WALL	36"	SERVICE SINK FAUCET	BTC:
F107	2"	DIRECT DRAIN	FLOOR	6'	MOP SINK	
F108	1/2"	HOT + COLD	FLOOR	6'	SINK FAUCET	
F109	3/4"	HOT + COLD WATER	WALL	42"	RECESSED HOSE BIB	BTC+ RE: NOTE #3



P-301

TANK TYPE ELECTRIC WATER HEATER

ITEM NO.	TOTAL KW INPUT	GALS. PER HR. RECOVERY RATE 80°F RISE	STORAGE CAPACITY (GALLONS)	ELECTRICAL REQUIRED	STORED WATER TEMP	MANUFACTURER COMMENT
20 EWH-1	12.0	23.0	120.0	480V, 1Ø	140°	RHEEM ELD120-TB
EWH-2	4.5	23.0	45.0	208V, 1Ø	140°	RHEEM ELD52-TB
EWH-3	4.5	23.0	43.0	208V, 1Ø	140°	RHEEM ELDS52-TB
NOTES: 1. PROVIDE HOT WATER EXPANSION TANK DOWNSTREAM OF CHECK VALVE ON COLD WATER SUPPLY. THERM-X-TROL ST-5.						

HOT WATER CIRCULATION PUMP

ITEM NO.	PUMP TYPE	FLOW RATE (GPM)	HEAD (FT)	ELECTRICAL REQUIRED	MOTOR (HP)	MANUFACTURER / MODEL
HWCP-1	IN-LINE	10	35.0	120V, 1Ø	1/8	TACO / 009-SF5-IFC
HWCP-2	IN-LINE	10	35.0	120V, 1Ø	1/8	TACO / 009-SF5-IFC
HWCP-3	IN-LINE	10	35.0	120V, 1Ø	1/8	TACO / 009-SF5-IFC
NOTES: 1. PUMP SHALL BE LEAD-FREE AND COMPLIANT WITH THE "SAFE DRINKING WATER ACT". 2. MOUNT PUMP IN AN ACCESSIBLE LOCATION. 3. PUMP SHALL RUN ONLY DURING OCCUPIED HOURS. PLUMBING CONTRACTOR SHALL PROVIDE TIME-CLOCK FOR INSTALLATION BY ELECTRICAL CONTRACTOR. 4. PROVIDE AQUASTAT ON HOT WATER RETURN LINE, WIRED TO START CIRCULATING PUMP WHEN LINE WATER TEMPERATURE DROPS 10°F BELOW DESIRED HOT WATER LOOP TEMPERATURE.						

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BRIDGELAND NEW MIDDLE/HIGH SCHOOL



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455 School St.
Suite 46
Tomball, Texas 77375
832.643.0368

DATE:

07/21/2026

JOB NO.

24-1557

SKETCH NO.

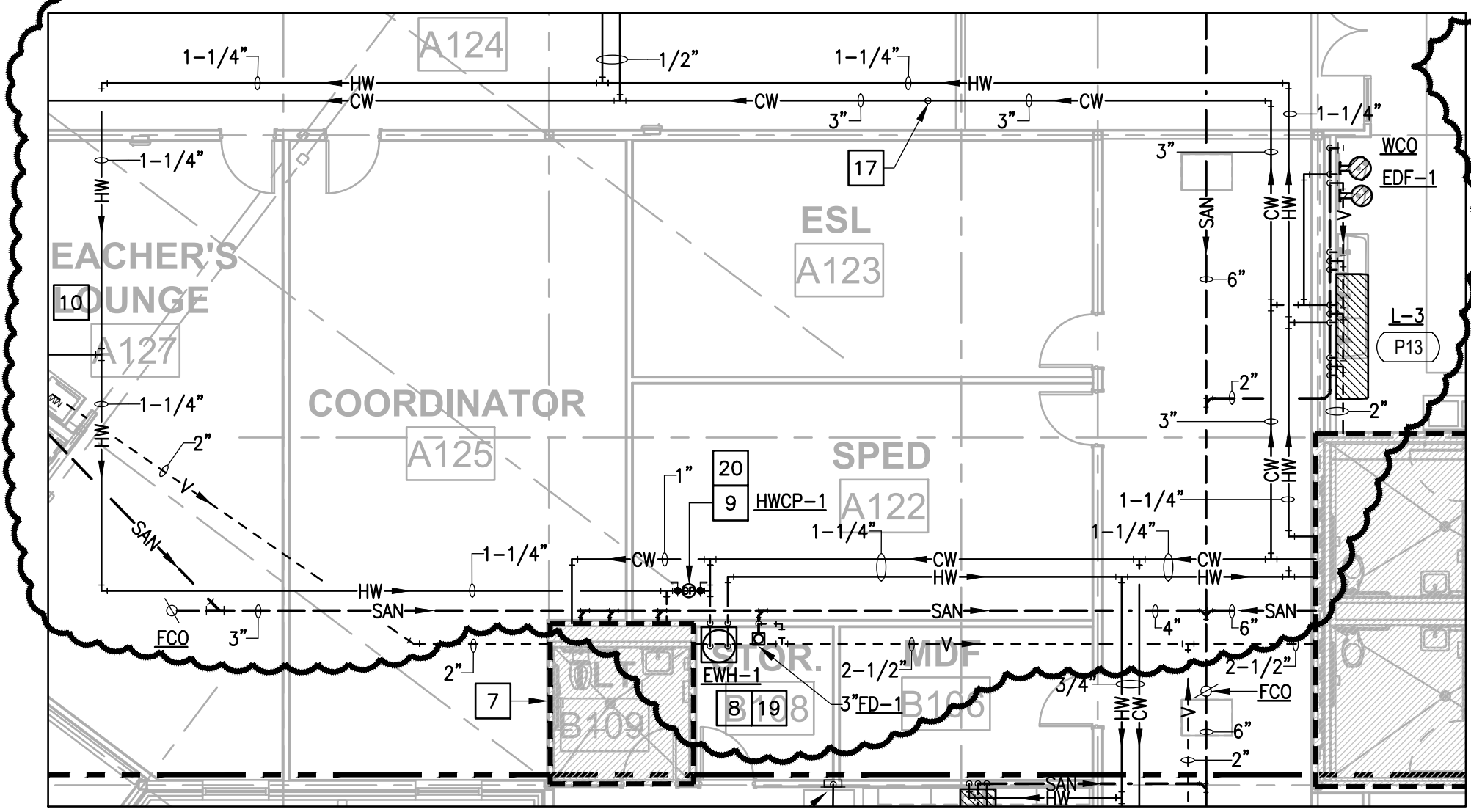
SKP-0

PLUMBING GENERAL NOTES:

1. REFER TO PLUMBING SHEET P-001 FOR GENERAL NOTES THAT APPLY TO THIS SHEET.

PLUMBING KEYED NOTES:

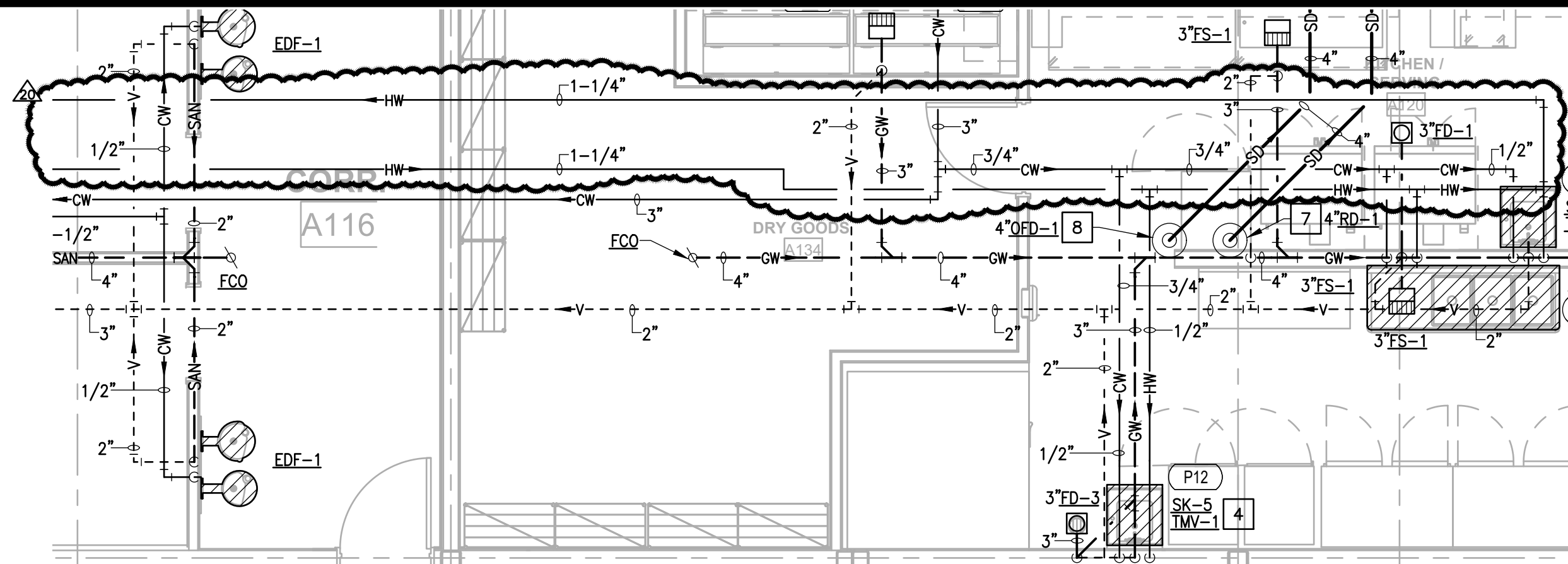
- 19 REMOVE WATER HEATER AND ALL ASSOCIATED 3/4" HOT WATER MAIN LINE PIPING AND STORE IN SAFE LOCATION FOR RE-USE ON PHASE 2 MIDDLE/HIGHSCHOOL. REFER TO SHEET P-201A FOR NEW LOCATION. PROVIDE NEW WATER HEATER EWH-1 IN SAME LOCATION AND EXTEND A NEW 1-1/4" HOT WATER LOOP.
- 20 REMOVE HOT WATER CIRCULATION PUMP AND STORE IN SAFE LOCATION FOR RE-USE ON PHASE 2 MIDDLE/HIGHSCHOOL. REFER TO SHEET P-201A FOR NEW LOCATION. PROVIDE NEW HOT WATER CIRCULATION PUMP HWCP-1 IN SAME LOCATION.



1 PLUMBING 1st FLOOR PLAN - AREA A
SCALE: 1/8" = 1'-0"

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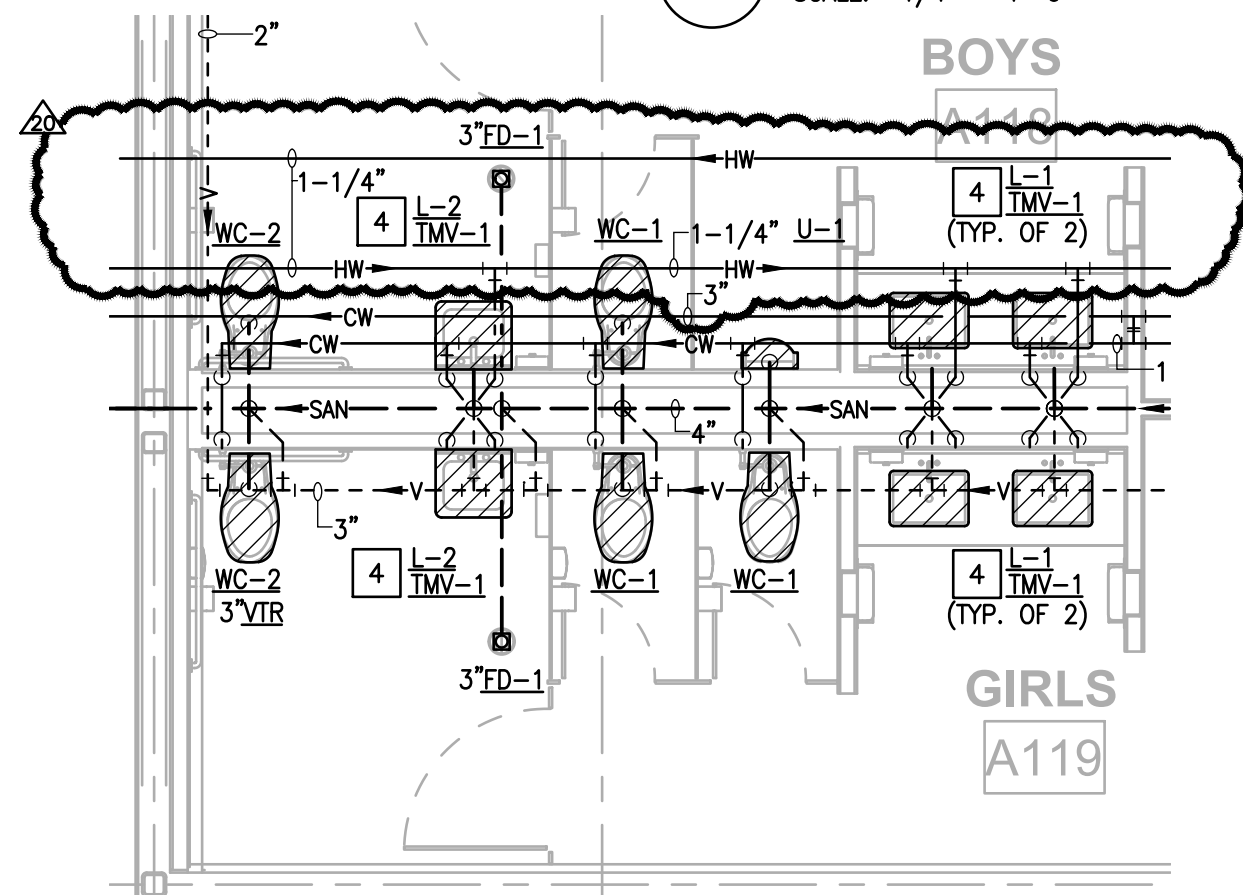
	K O DESIGN GROUP 455 School St. Suite 46 Tomball, Texas 77375 832.643.0368	DATE:	JOB NO.	SKETCH NO.
		07/21/2026	24-1557	SKP-1



1

PLUMBING ENLARGED PLAN - RESTROOMS & KITCHEN

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



1

PLUMBING ENLARGED PLAN - RESTROOMS & KITCHEN

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

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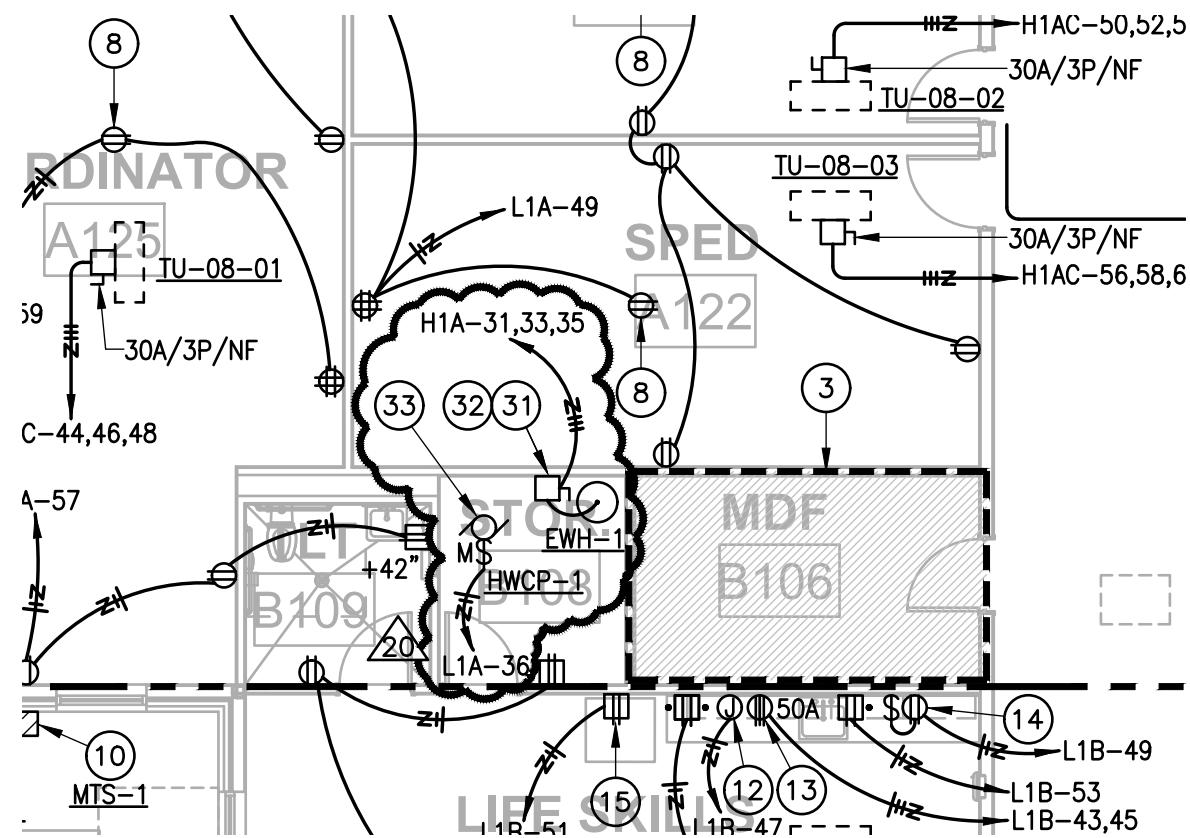
07/21/2026

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24-1557

SKETCH NO.

SKP-2



1 ELECTRICAL 1st FLOOR POWER PLAN - AREA A

SCALE: 1/8" = 1'-0"

ELECTRICAL GENERAL NOTES:

(FOR SKETCH SKE-1)

- REFER TO ELECTRICAL POWER FLOOR PLAN SHEETS FOR GENERAL NOTES.

ELECTRICAL KEYED NOTES

(FOR SKETCH SKE-1)

- REMOVE WATER HEATER AND 30A/2P/NF DISCONNECT INCLUDING ALL ASSOCIATED WIRING BACK TO SOURCE. STORE IN SAFE LOCATION AND RE-USE ON THE PHASE 2 MIDDLE/HIGH SCHOOL. REFER TO SHEET EP-101A FOR NEW LOCATION.
- PROVIDE NEW 30A/3P/NF DISCONNECT
- REMOVE HOT WATER CIRCULATION PUMP AND UTILIZE EXISTING WIRING, CONDUIT AND BREAKER FOR NEW HOT WATER CIRCULATION PUMP IN SAME LOCATION.

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SKETCH NO.

SKE-1

PANEL 'H1A'												277/480V, 3Ø, 4W		MOUNTING: SURFACE	
LOCATION: ELECTRICAL ROOM C103												200 AMP MLO		NEMA-1	
												35K ISCA			
CKT	LOAD	*	KVA	WIRE	BKR		BKR	WIRE	KVA	*	LOAD				CKT
1	EXTERIOR BUILDING LTG.	1	2.3	#10	20/1		20/1	#12	2.9		LIGHTING - AREA "C"				2
3	SITE LIGHTING	2	3.6	#10	20/2		20/1	#12	3.3		LIGHTING - AREA "C"				4
5	---		-	-	-		20/1	#12	3.5		LIGHTING - AREA "A"				6
7	(NL) SITE LIGHTING	3	1.6	#10	20/2		20/1	#12	1.8		LIGHTING - AREA "B"				8
9	---		-	-	-		-	-			SPACE				10
11	FLAG POLE LIGHTING	4	0.1	#10	20/1		-	-			SPACE				12
13	EXTERIOR BLDG. SIGNAGE	5	1.0	#12	20/1		-	-			SPACE				14
15	CAFETERIA LIGHTING	6	3.6	#12	20/1		-	-			SPACE				16
17	GYMNASIUM LIGHTING	7	2.4	#12	20/1		-	-			SPACE				18
19	1st FLR. CORRIDOR LTG.	8	2.6	#12	20/1		-	-			SPACE				20
21	2nd FLR. CORRIDOR LTG.	9	1.0	#10	20/1		-	-			SPACE				22
23	LIBRARY LIGHTING	10	1.3	#12	20/1		20/3	#12	2.0		EF-C1-01				24
25	MONUMENT SIGN	11	1.3	#8	20/1		-	-	-		---				26
27	MOTORIZED GATES		1.0	#8	20/1		-	-	-		---				28
29	MOTORIZED GATE		0.5	#8	20/1		20/1	#12	2.5	12	TU-07-02				30
31	EW-1(12.0KW)		12.0	#12	20/3		20/1	#12	1.8	12	TU-07-03				32
33	---		-	-	-		20/1	#12	2.5	12	TU-07-06				34
35	---		-	-	-		20/1	#12	1.2	12	TU-07-08				36
37	SPACE			-	-		20/3	#12	4.9	12	TU-07-09				38
39	SPACE			-	-		-	-	-		---				40
41	SPACE			-	-		-	-	-		---				42
CONTINUOUS (LTG.) LOAD 31.0 x 1.25 = 38.7 MISC. LOAD x 1.0 = 28.2 TOTAL KVA = 66.9															

(SECTION-1)

PANEL 'L1A'												120/208V, 3Ø, 4W		MOUNTING: SURFACE	
LOCATION: ELECTRICAL ROOM A115												300 AMP MCB		NEMA-1	
												W/ FEED-THRU LUGS		10K ISCA	
CKT	LOAD	*	KVA	WIRE	BKR		BKR	WIRE	KVA	*	LOAD				CKT
1	STAGE TRACK LIGHTING		0.3	#12	20/1		20/1	#12	0.7		RECEPTACLES				2
3	STAGE PROJECTOR		0.3	#12	20/1		20/1	#12	0.9		RECEPTACLES				4
5	STAGE PROJ. SCREEN		0.5	#12	20/1		20/1	#12	0.9		RECEPTACLES				6
7	MOTORIZED SHADES		0.8	#12	20/1		20/1	#12	0.7		RECEPTACLES				8
9	O/H COILING GATE		1.2	#12	20/1		20/1	#12	0.9		RECEPTACLES				10
11	O/H COILING GATE		1.2	#12	20/1		20/1	#12	0.7		RECEPTACLES				12
13	O/H COILING GATE		1.2	#12	20/1		20/1	#12	1.1		RECEPTACLES				14
15	MIRCOWAVE		1.0	#12	20/1		20/1	#12	0.7		RECEPTACLES				16
17	MIRCOWAVE		1.0	#12	20/1		20/1	#12	0.5		NURSE'S MISC. EQUIP.				18
19	MIRCOWAVE		1.0	#12	20/1		20/1	#12	0.4		MOTORIZED SHADES				20
21	EDF		0.8	#12	20/1		20/1	#12	0.5		TEACHERS REC'S/PROJ.				22
23	EDF		0.8	#12	20/1		20/1	#12	0.5		EF-A-01				24
25	EDF		0.8	#12	20/1		20/1	#12	0.7		ROOF RECEPTACLES				26
27	SPARE		-	-	30/2		20/1	#12	0.5		LAVATORY SENSOR(S)				28
29	---		-	-	-		20/1	#12	0.5		LAVATORY SENSOR(S)				30
31	RECEPTACLES		0.5	#12	20/1		20/2	#12	2.0	1	COPIER				32
33	RECEPTACLES		0.7	#12	20/1		-	-	-		---				34
35	RECEPTACLES		1.4	#12	20/1		20/1	#12	0.4		HWCP-1				36
37	STAGE RECEPTACLES		0.7	#12	20/1		20/3	#8	-		S.P.D.				38
39	STAGE RECEPTACLES		0.7	#12	20/1		-	-	-		---				40
41	STAGE EQUIPMENT		0.5	#12	20/1		-	-	-		---				42
TOTAL KVA = (SEE SECTION-2)															

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SKETCH NO.
SKE-2

New Public Bid Opening Link

HSA Bridgeland Phase II - Bid Opening

Tuesday, July 28 · 2:00 – 3:00pm

Time zone: America/Chicago

Google Meet joining info

Video call link: <https://meet.google.com/hjz-hquq-umq>

Or dial: (US) +1 435-612-2018 PIN: 341 116 746#

More phone numbers: <https://tel.meet/hjz-hquq-umq?pin=3942605103937>