

MECHANICAL SYMBOL LEGEND	
SINGLE LINE	DOUBLE LINE

MECHANICAL ABBREVIATIONS			
AD	ACCESS DOOR	N/A	NOT APPLICABLE
AHU	AIR HANDLING UNIT	NIC	NOT IN CONTRACT
BD	BALANCING DAMPER	NTS	NOT TO SCALE
BHP	BRAKE HORSE POWER	NO	NUMBER
BTU	BRITISH THERMAL UNIT	OZ	OUNCE
CFM	CUBIC FEET PER MINUTE	OA	OUTSIDE AIR
COND	CONDENS(ER-,ING-,ATION)	PSF	POUNDS PER SQUARE FT.
CLG	COOLING	PSI	POUNDS PER SQUARE IN.
CW	COLD WATER	PSIA	PSI ABSOLUTE
DP	DEPTH OR DEEP	PSIG	PSI GAUGE
ID	INSIDE DIAMETER	PRESS	PRESSURE
OD	OUTSIDE DIAMETER	PD	PRESSURE DIFFERENCE
DB	DRY BULB TEMPERATURE	SP	STATIC PRESSURE
(D)	EXISTING	RA	RETURN AIR
EFF	EFFICIENCY	RPM	REVOLUTIONS PER MIN.
ELEV	ELEVATION	SF	SAFETY FACTOR
EWT	ENTERING WATER TEMP.	SL	SEA LEVEL
EVAP	EVAPORAT(-E-,ING-,ED-,OR)	SH	SHADEABLE HEAT
(F)	FUTURE	SC	SHADING COEFFICIENT
F	FARENHEIT	SPEC	SPECIFICATION
FC	FLEXIBLE CONNECT(-OR-,ION)	SO	SQUARE
FD	FIRE DAMPER	STD	STANDARD
FFS	FEET PER SECOND	SP	STATIC PRESSURE
FSD	FIRE SMOKE DAMPER	SPLY	SUPPLY
FT	FEET	SA	SUPPLY AIR
GAL	GALLONS	TEMP	TEMPERATURE
GPH	GALLONS PER HOUR	TD	TEMP. DROP OR DIFF.
GPM	GALLONS PER MINUTE	R	THERMAL RESISTANCE
HD	HEAD	TSTAT	THERMOSTAT
HT	HEIGHT	T	TIME
HTG	HEATING	VAC	VACUUM
HP	HORSE POWER	VAU	VARIABLE AIR VOLUME
HW	HOT WATER	VENT	VENT, VENTILATION
LH	LATENT HEAT	VERT	VERTICAL
LAT	LEAVING AIR TEMPERATURE	VOL	VOLUME
LWT	LEAVING WATER TEMP.	WTR	WATER
LG	LENGTH	WT	WEIGHT
MAX	MAXIMUM	WB	WET BULB TEMP.
MIN	MINIMUM	YR	YEAR
NO	NORMALLY OPEN		
NC	NORMALLY CLOSED		

### MECHANICAL SPECIFICATIONS ③

**ROOFTOP AIR CONDITIONERS**

A. PROVIDE AND INSTALL ROOFTOP AIR CONDITIONERS WITH CAPACITIES, FEATURES, AND ACCESSORIES AS SHOWN ON THE EQUIPMENT SCHEDULE. PROVIDE EQUIPMENT FROM THE FOLLOWING APPROVED MANUFACTURERS: CARRIER, TRANE, YORK.

B. PROVIDE A 5 YEAR MINIMUM WARRANTY FOR THE COMPRESSORS AND A 10 YEAR WARRANTY MINIMUM FOR THE HEAT EXCHANGER.

C. PROVIDE AN EXTRA SET OF FAN BELTS FOR EACH FAN AND AN EXTRA SET OF FILTERS FOR EACH UNIT.

D. ROOFTOP UNIT SHALL BE FACTORY ASSEMBLED AND TESTED. UNIT SHALL BE CONSTRUCTED WITH MANUFACTURER'S STANDARD CONSTRUCTION WITH ALL COMPONENTS, EQUIPMENT, AND ACCESSORIES. THE ENCLOSURE SHALL HAVE A CORROSION-PROTECTION COATING AND EXTERIOR FINISH.

E. PROVIDE THE FOLLOWING FEATURES WITH THE ROOFTOP UNIT UNLESS NOTED OTHERWISE ON THE EQUIPMENT SCHEDULE: 100% ECONOMIZER WITH POWER EXHAUST, 2 STAGE GAS HEATING, LOW AMBIENT HEAD-PRESSURE CONTROL TO OPERATE AT 0 DEG. F, 7-DAY PROGRAMMABLE THERMOSTAT WITH AUTOMATIC HEATING AND COOLING CHANGEOVER, VIBRATION ISOLATION SPRINGS WITH SEISMIC RESTRAINTS, MOTOR STARTER, SERVICE DISCONNECT, AND ELECTRICAL CONVENIENCE OUTLET.

F. PROVIDE COMPLETE ROOFTOP UNIT STARTUP AND COMMISSIONING INCLUDING CONTROLS CHECKOUT, LUBRICATION, FAN ROTATION, VIBRATION, REFRIGERATION SYSTEM, CLEANING, TESTING, AND BALANCING.

**COMMISSIONING**

A. PROVIDE SYSTEM COMMISSIONING OF ALL MECHANICAL SYSTEMS CONSISTING OF FIELD VERIFICATION AND CERTIFYING THAT THE MECHANICAL SYSTEM IS PROPERLY INSTALLED AND IS FULLY OPERATIONAL.

B. PROVIDE A SYSTEM COMMISSIONING REPORT TO BE INCLUDED IN THE OPERATION AND MAINTENANCE MANUAL THAT INCLUDES A CHECKLIST OF ALL EQUIPMENT AND SYSTEMS.

**ELECTRIC AND ELECTRONIC CONTROLS**

A. PROVIDE AND INSTALL A COMPLETE AUTOMATIC CONTROL SYSTEM AS DESCRIBED IN THE DRAWINGS. ALL SYSTEM CONTROLS SHALL BE PROVIDED BY A SINGLE MANUFACTURER'S PRODUCTS. APPROVED MANUFACTURERS ARE: BRYANT, CARRIER, HONEYWELL, TRANE.

**TEST AND BALANCE**

A. PROVIDE A COMPLETE AIR SYSTEM BALANCE, TEST, AND REPORT BY A NEBB, OR ASHC CERTIFIED TEST AND BALANCE SUPERVISOR WITH EXPERIENCE IN BALANCING SYSTEMS OF SIMILAR TYPES AND SIZE.

B. PROVIDE ALL NECESSARY TOOLS, EQUIPMENT, SHEAVE CHANGES, BELTS, AND ACCESSORIES TO COMPLETE WORK.

C. PROVIDE A REPORT SHOWING THE REQUIRED AND THE ACTUAL FLOWS. INCLUDE IN THE REPORT A DRAWING SCHEMATIC OF THE SYSTEMS BALANCED, AND SYSTEMS CHECK REPORT. SUBMIT THE BALANCING REPORT FOR REVIEW PRIOR TO THE FINAL INSPECTION. ALL REPORTS SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE MANUAL.

### MECHANICAL SPECIFICATIONS ②

F. PROVIDE AND INSTALL 3/4" FLEXIBLE ELASTOMERIC CELLULAR INSULATION ON ALL REFRIGERANT SUCTION PIPING. USE APPROVED ADHESIVE AND PAINT ALL EXTERIOR INSTALLED PIPE INSULATION WITH A LATEX ENAMEL PAINT COATING AS RECOMMENDED BY THE INSULATION MANUFACTURER.

**METAL DUCTS**

A. PROVIDE AND INSTALL SHEETMETAL DUCTS CONFORMING TO SMACNA, ASHRAE, AND AND NFA 90A STANDARDS AS SHOWN ON THE MECHANICAL PLANS.

B. SHOP FABRICATE SQUARE, RECTANGULAR, ROUND, AND OVAL DUCTS, FITTINGS, HANGERS AND SUPPORTS ACCORDING TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS.

C. FACTORY APPLY DUCT LINER USING APPROVED SMACNA METHODS TO ALL REQUIRED DUCTS AS INDICATED IN THE INSULATION SECTION OF THIS SPECIFICATION.

D. PROVIDE TURNING VANES IN ALL RECTANGULAR DUCT FITTINGS OVER 45° ANGLES. PROVIDE 1.5 RADIUS ELBOWS ON ALL ROUND DUCTS.

E. SEAL ALL LONGITUDINAL AND TRANSVERSE JOINTS, SEAMS, AND CONNECTIONS WITH AN APPROVED SEALANT OR SEALING METHOD.

F. DUCT DIMENSIONS SHOWN ARE SHOWN ARE SHEETMETAL SIZES. NO INCREASE FOR DUCT LINER IS REQUIRED.

G. INSTALL DUCTWORK IN THE MOST EFFICIENT MANNER POSSIBLE, MINIMIZING JOINTS AND CHANGES IN DIRECTION.

H. PROTECT STORED AND INSTALLED DUCTWORK FROM DUST, DIRT, MOISTURE, AND CONSTRUCTION DEBRIS. CLEAN ALL DUCTWORK PRIOR TO OPERATION.

I. ALL ROUND DUCTS SHALL BE CONSTRUCTED OF SPIRAL WOUND SHEET METAL.

J. TYPE I HOODS SHALL BE CONNECTED WITH GREASE DUCTS CONSTRUCTED OF NO. 16 GAGE STEEL OR NO. 18 GAGE STAINLESS STEEL DUCTS.

**DUCT ACCESSORIES**

A. PROVIDE AND INSTALL THE FOLLOWING DUCT ACCESSORIES WHERE INDICATED ON THE DRAWINGS: BACKDRAFT DAMPERS, BALANCING DAMPERS, FIRE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, ACTUATORS, TURNING VANES, ACCESS DOORS, FLEXIBLE DUCTS, AND ACCESSORIES HARDWARE.

B. PROVIDE CONCEALED DAMPER REGULATORS WITH REQUIRED LINKAGES AND COVER PLATES FOR EACH DAMPER LOCATED ABOVE A NON-ACCESSIBLE CEILING.

C. FIRE DAMPERS SHALL BE UL LISTED AND LABELED. FIRE DAMPERS SHALL BE RATED FOR 1-1/2 HOURS FOR FIRE RESISTIVE ASSEMBLIES RATED FOR 2 HOURS OR LESS AND RATED FOR 3 HOURS FOR FIRE RESISTIVE ASSEMBLIES RATED 3 HOURS OR MORE. REPLACEABLE FUSIBLE LINKS RATED FOR 165° F SHALL BE USED. USE TYPE A, B, OR C AS INDICATED ON THE DRAWINGS.

E. PROVIDE TURNING VANES WHERE NOTED IN THE METAL DUCTS SPECIFICATION.

F. PROVIDE DUCT MOUNTED ACCESS DOORS AT ALL FIRE DAMPERS, FIRE/SMOKE DAMPERS, AND MOTORIZED CONTROL DAMPERS. ACCESS DOORS SHALL BE FACTORY CONSTRUCTED OF GALVANIZED SHEET METAL AND HAVE HINGES, GASKETS, SEALS, AND LATCHES.

G. FLEXIBLE DUCTS SHALL BE ROUND INSULATED, FACTORY-FABRICATED OR CORRUGATED ALUMINUM WITH AN OUTER JACKET, AND A SPIN COLLAR. THE MAXIMUM ALLOWABLE LENGTH OF FLEX DUCT SHALL BE 5'-0" AT ALL DIFFUSER TERMINATIONS.

H. PROVIDE INSTRUMENT TEST HOLES AT THE INLET AND OUTLET OF ALL FAN SYSTEMS.

I. INSTALL ALL DUCT ACCESSORIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AND SMACNA STANDARDS.

**EXHAUST FANS**

A. PROVIDE AND INSTALL EXHAUST FANS WITH TYPE, CAPACITIES, FEATURES, AND ACCESSORIES AS SHOWN ON THE EQUIPMENT SCHEDULE. PROVIDE EQUIPMENT FROM THE FOLLOWING APPROVED MANUFACTURERS: AGME, BROAN, GARNES, COOK, GREENHECK, PENN-BARRY.

B. ALL EXHAUST FANS SHALL BE DESIGNED, MANUFACTURED, TESTED, AND LABELED IN ACCORDANCE WITH UL REQUIREMENTS AND AMCA STANDARDS.

C. PROVIDE FACTORY FABRICATED AND ASSEMBLED EXHAUST FANS COMPLETE WITH ALUMINUM HOUSING, ALUMINUM FAN WHEEL, SHAFT, BEARINGS, DIRECT OR BELT DRIVE ASSEMBLY, PAINTED STEEL OR ALUMINUM GRILL, BACKDRAFT DAMPER, MOTOR, DISCONNECT SWITCH, MOUNTING BRACKETS, AND ACCESSORIES AS NOTED.

D. PROVIDE AND INSTALL REMOTE FAN SPEED CONTROL, PROGRAMMABLE TIMER, MANUAL TIMER, ON-OFF SWITCH AS INDICATED IN THE EQUIPMENT SCHEDULE.

E. PROVIDE COMPLETE FAN UNIT STARTUP AND COMMISSIONING INCLUDING CONTROLS CHECKOUT, LUBRICATION, FAN ROTATION, VIBRATION, CLEANING, TESTING, AND BALANCING.

**AIR OUTLETS AND INLETS**

A. PROVIDE FACTORY FABRICATED AND ASSEMBLED CEILING AIR DIFFUSERS AND GRILLES, WALL REGISTERS AND GRILLES, AND LOUVERS COMPLETE WITH ALL FEATURES AND ACCESSORIES AS NOTED IN THE SCHEDULE. PROVIDE EQUIPMENT FROM THE FOLLOWING APPROVED MANUFACTURERS: AIRLOTE, ANEMOSTAT, CARNES, COOLEY & HART, E.H. PRICE, J & J REGISTER, KRUEGER, LOUVERS AND DAMPERS, NAILOR, RUSKIN, TITUS, AND TUTTLE & BAILEY.

B. ALL AIR OUTLETS AND INLETS SHALL BE DESIGN, MANUFACTURED, AND TESTED TO CONFORM TO ARI, ASHRAE, ADC, AND AMCA STANDARDS.

C. CEILING DIFFUSERS AND REGISTERS AND WALL REGISTERS AND GRILLES SHALL BE CONSTRUCTED OF GALVANIZED STEEL OR ALUMINUM AND SHALL HAVE A BAKED ENAMEL FINISH. COLOR SELECTION BY THE ARCHITECT OR OWNER.

D. LOUVERS SHALL BE CONSTRUCTED OF ALUMINUM EXTRUSIONS WITH WELDED CONNECTIONS OR STAINLESS STEEL FASTENERS. PROVIDE 1/2" ANODIZED ALUMINUM WIRE BIRD SCREEN. LOUVER FINISH SHALL BE ANODIZED ALUMINUM IN COLOR AS SELECTED BY THE ARCHITECT OR OWNER.

### MECHANICAL SPECIFICATIONS ①

**BASIC MECHANICAL REQUIREMENTS**

A. COMPLY WITH THE REQUIREMENTS OF THE 2015 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC), INTERNATIONAL MECHANICAL CODE (IMC), UNIFORM PLUMBING CODE (UPC), INTERNATIONAL FUEL GAS CODE (IFGC), AND INTERNATIONAL ENERGY CONSERVATION CODE (IECC), AND THE CURRENT NATIONAL ELECTRIC CODE (NEC) INCLUDING ALL STATE AMENDMENTS. COMPLY WITH THE AUTHORITY HAVING JURISDICTION AND ALL APPLICABLE CITY, COUNTY, STATE, AND FEDERAL CODES AND REGULATIONS IN EFFECT AT THE BID DATE.

B. PREPARE AND SUBMIT FIVE (3) COPIES OF THE SHOP DRAWINGS FOR ALL MECHANICAL EQUIPMENT, VALVES, AND ACCESSORIES INCLUDING MANUFACTURERS NAME, CATALOG NUMBER, DESCRIPTION, SIZE, CAPACITY, ELECTRICAL REQUIREMENTS, OPERATION, AND MAINTENANCE INFORMATION. SHOP DRAWINGS SHALL BE REVIEWED AND STAMPED BY THE MECHANICAL AND GENERAL CONTRACTOR PRIOR TO ENGINEER'S REVIEW. EQUIPMENT SHALL NOT BE ORDERED UNTIL APPROVED SHOP DRAWINGS HAVE BEEN RECEIVED.

C. PREPARE COORDINATION DRAWINGS DETAILING ALL MAJOR EQUIPMENT AND SYSTEMS. INCLUDE EQUIPMENT CONNECTIONS, CLEARANCES, FIRE-RATED WALL OR FLOOR PENETRATIONS, CONCRETE PADS, AND SUPPORT DETAILS IN COORDINATION DRAWINGS. COORDINATION DRAWINGS SHALL BE IN CONJUNCTION WITH THE MECHANICAL, FIRE SPRINKLER (WHERE REQUIRED), ELECTRICAL, REFLECTED CEILING, AND ALL OTHER APPLICABLE TRADES.

D. PREPARE RECORD 'AS BUILT' DOCUMENTS INCLUDING ALL CHANGES FROM THE ORIGINAL BID DOCUMENTS. SUBMIT COMPLETE 'AS BUILT' DOCUMENTS AT THE COMPLETION OF THE PROJECT.

E. PROVIDE 2 SETS OF OPERATION AND MAINTENANCE (O & M) MANUALS CONTAINING INFORMATION FOR ALL MECHANICAL AND PLUMBING SYSTEMS. THE MANUALS SHALL CONTAIN A LIST OF ALL SUB-CRONTACTORS AND SUPPLIERS, EQUIPMENT CUT SHEETS, START-UP INFORMATION, BALANCING REPORTS, AND MAINTENANCE REQUIREMENTS. THE MANUALS SHALL BE HARD BACKED 3-RING BINDERS WITH THE PROJECT LABELED ON THE COVER AND SPLINE.

F. INSTALL ALL MECHANICAL EQUIPMENT AND MATERIALS IN COORDINATION WITH ALL OTHER TRADES. VERIFY ALL ELECTRICAL CONNECTIONS WITH THE ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.

G. PROVIDE AND INSTALL ACCESS DOORS WHERE EQUIPMENT, VALVES OR DAMPERS ARE CONCEALED BEHIND FINISHED SURFACES.

H. PROVIDE FACTORY-AUTHORIZED EQUIPMENT START-UP, COMMISSIONING, AND TRAINING OF ALL MECHANICAL EQUIPMENT.

I. INSTALL ALL SYSTEMS, MATERIALS, AND EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS. INSTALL ALL PIPING FREE FROM SAGS AND BENDS AND AT THE SLOPE INDICATED (WHERE REQUIRED). INSTALL DUCTWORK, PIPING, AND EQUIPMENT TO PROVIDE THE MAXIMUM POSSIBLE HEADROOM.

J. ALL WORK SHALL BE PERFORMED BY CERTIFIED AND SKILLED WORKERS WITH PRIOR EXPERIENCE IN THEIR PARTICULAR TRADE.

K. THE MECHANICAL SUB-CRONTACTOR SHALL PROVIDE WARRANTY THE ENTIRE MECHANICAL SYSTEM FOR A PERIOD OF ONE YEAR. INCLUDE THE WARRANTY AND ALL OTHER GUARANTEES AND WARRANTIES IN THE OPERATION AND MAINTENANCE MANUAL.

L. THE CONTRACTOR SHALL STORE AND PROTECT ALL EQUIPMENT AND MATERIALS DURING CONSTRUCTION AS REQUIRED AND SHALL REPAIR OR REPLACE ALL DAMAGED PIPING, EQUIPMENT, OR OTHER DAMAGE DURING CONSTRUCTION.

M. PROVIDE AND INSTALL ALL MECHANICAL EQUIPMENT, PIPING, FIXTURE, AND ACCESSORIES IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE ALL FITTINGS, VALVES, TRANSITIONS, AND OTHER DEVICES AS REQUIRED FOR A COMPLETE AND OPERATIONAL MECHANICAL SYSTEM.

N. SUBMIT FOR PRIOR APPROVAL FOR EQUIPMENT MANUFACTURERS NOT LISTED IN THE SPECIFICATIONS A MINIMUM OF FIVE PRIOR TO BID.

**BASIC MECHANICAL MATERIALS AND METHODS**

A. ALL PIPE AND PIPE FITTINGS SHALL BE NEW AND SHALL BE AMERICAN MADE WITH APPROVED LABELS. DELIVER, STORE, AND PROTECT DUCTWORK AND PIPING DURING CONSTRUCTION FROM DAMAGE, DIRT, AND MOISTURE.

B. SEAL ALL DUCT AND PIPE PENETRATIONS THROUGH WALLS AND FLOORS AIR TIGHT. CAULK ALL FIRE RATED PIPE PENETRATIONS WITH APPROVED FIRE-STOPPING MATERIAL.

C. CUT, CHANNEL, CHASE, AND DRILL FLOORS, WALLS, PARTITIONS, CEILING, AND OTHER SURFACES NECESSARY FOR PROPER INSTALLATION. REPAIR AS REQUIRED TO MATCH ADJACENT SURFACES.

**HANGERS AND SUPPORTS**

A. PROVIDE AND INSTALL DUCT SUPPORTS AND HANGERS AS REQUIRED FOR ALL DUCTWORK AND EQUIPMENT ACCORDING TO MANUFACTURERS STANDARDIZATION SOCIETY (MSS) AND SMACNA STANDARDS.

**VIBRATION ISOLATION AND SEISMIC CONTROLS**

A. PROVIDE AND INSTALL VIBRATION ISOLATORS, FLEXIBLE CONNECTIONS, ISOLATION PADS, AND OTHER EQUIPMENT TO PREVENT NOISE AND VIBRATION TRANSMISSION.

**DUCTWORK AND EQUIPMENT IDENTIFICATION**

A. PROVIDE DUCT AND EQUIPMENT TAGS, LABELS, AND IDENTIFICATION INDICATING FLOW DIRECTION, AREA SERVED, SYSTEM TYPE AND OTHER IDENTIFYING INFORMATION. COMPLY WITH ASME PIPING EQUIPMENT IDENTIFICATION STANDARDS.

**INSULATION**

A. PROVIDE AND INSTALL GLASS FIBER DUCT INSULATION ACCORDING TO THE FOLLOWING SCHEDULE:

- 1" DUCT LINER: RECTANGULAR SUPPLY AND RETURN DUCTS;
- 1" DUCT LINER: ROUND SUPPLY AND RETURN DUCTS;
- 1-1/2" BLANKET WRAP WITH VAPOR BARRIER; ROUND AND RECTANGULAR EXHAUST DUCTS;
- NO INSULATION UNLESS OTHERWISE NOTED.
- UNLINED SUPPLY, COMBUSTION, AND OUTSIDE AIR DUCTS: 1-1/2" BLANKET WRAP WITH VAPOR BARRIER;
- EXTERIOR INSTALLED SUPPLY AND RETURN DUCTS: 2" BLANKET WRAP WITH VAPOR BARRIER.

B. DUCT LINER SHALL BE 1" THICK, 2 LBS. DENSITY, WITH ASTM C 1071, TYPE II COATED ACRYLIC SURFACE AND PRE-TREATED FOR ANTI-MICROBIAL AGENT TO PREVENT MICROBIAL GROWTH.

C. GLASS FIBER INSULATION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS.

D. SEAL ALL ENDS AND JOINTS TO PROVIDE A COMPLETELY SEALED INSULATION SYSTEM.

E. SEAL JOINTS, BREAKS AND PUNCTURES WITH VAPOR BARRIER COMPOUND.

### MECHANICAL GENERAL NOTES

- PROVIDE ALL EQUIPMENT, PIPING, MATERIALS, LABOR, PERMITS, AND FEES TO CONSTRUCT A COMPLETE AND OPERATIONAL MECHANICAL SYSTEM FOR THE ENTIRE PROJECT AS SHOWN ON THE DRAWINGS.
- COORDINATE THE EXACT LOCATION OF ALL CEILING DIFFUSERS AND GRILLES WITH THE ARCHITECTURAL REFLECTED CEILING PLAN.
- COORDINATE ALL WORK WITH THE GENERAL CONTRACTOR, PLUMBING SUB-CRONTACTOR, ELECTRICAL SUB-CRONTACTOR, AND ALL OTHER TRADES IN THE PROJECT.
- ALL MECHANICAL INFORMATION IS NOT SHOWN ON THE ARCHITECTURAL, STRUCTURAL, PLUMBING, CIVIL, AND ELECTRICAL DRAWINGS. COORDINATE ALL WORK WITH THE ARCHITECTURAL DRAWINGS.
- MECHANICAL PLANS ARE SCHEMATIC IN NATURE AND THEREFORE DO NOT SHOW ALL DROPS, RISERS, AND OFFSETS. THE CONTRACTOR SHALL MAKE ALL REQUIRED MODIFICATIONS TO PROVIDE A COMPLETE AND OPERATIONAL MECHANICAL SYSTEM. MAJOR MODIFICATIONS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER.
- DO NOT RUN DUCTWORK ABOVE ELECTRICAL PANELS. PROVIDE 4'-0" DEEP X 6'-6" HIGH CLEAR ACCESS SPACE IN FRONT OF PANELS. DO NOT RUN DUCTWORK IN ELECTRICAL ROOMS.
- INSTALLATION OF ALL DUCTWORK SHALL BE COORDINATED WITH STRUCTURAL GRIDDERS AND JOIST. DUCTWORK SHALL BE RUN WITHIN STRUCTURE SPACE WHERE SHOWN ON THE PLANS.
- COORDINATE ALL FLOOR, CEILING, AND ROOF PENETRATIONS WITH THE STRUCTURAL PLANS. MAINTAIN DUCTWORK TIGHT TO THE STRUCTURE. OFFSET INTO THE JOIST SPACE WHERE SHOWN ON THE PLANS.
- REFER TO CEILING DIFFUSER AND RETURN AIR GRILLE DETAIL 1.M3.
- REFER TO RETURN AIR SOUND BOOT DETAIL 5M-3.
- REFER TO SLOT DIFFUSER DETAIL 6M-3.

PRELIMINARY - NOT FOR CONSTRUCTION

**Mortensen Engineering, Inc.**  
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DATE  
**November 14, 2017**

**PROJECT TITLE**  
**2 4 6 8 BUILDING**  
 A NEW PLAY FACILITY  
 2468 South Main Street, Woods Cross, Utah

**SHEET TITLE**  
**MECHANICAL NOTES, & SYMBOL LEGEND, & SPECIFICATIONS**

**PROJECT NUMBER**

**REVISIONS**

**SHEET NUMBER**  
**M-0**

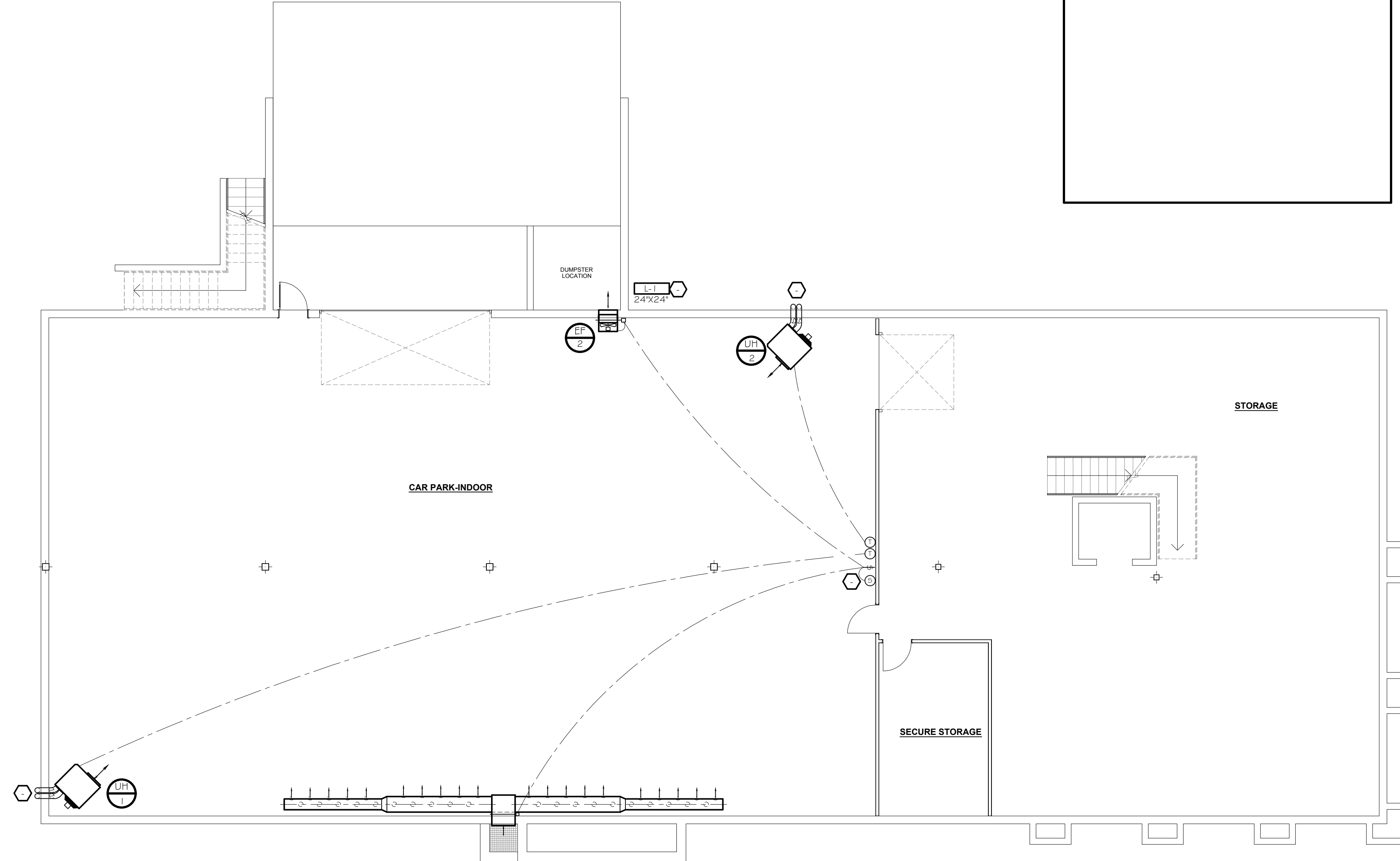
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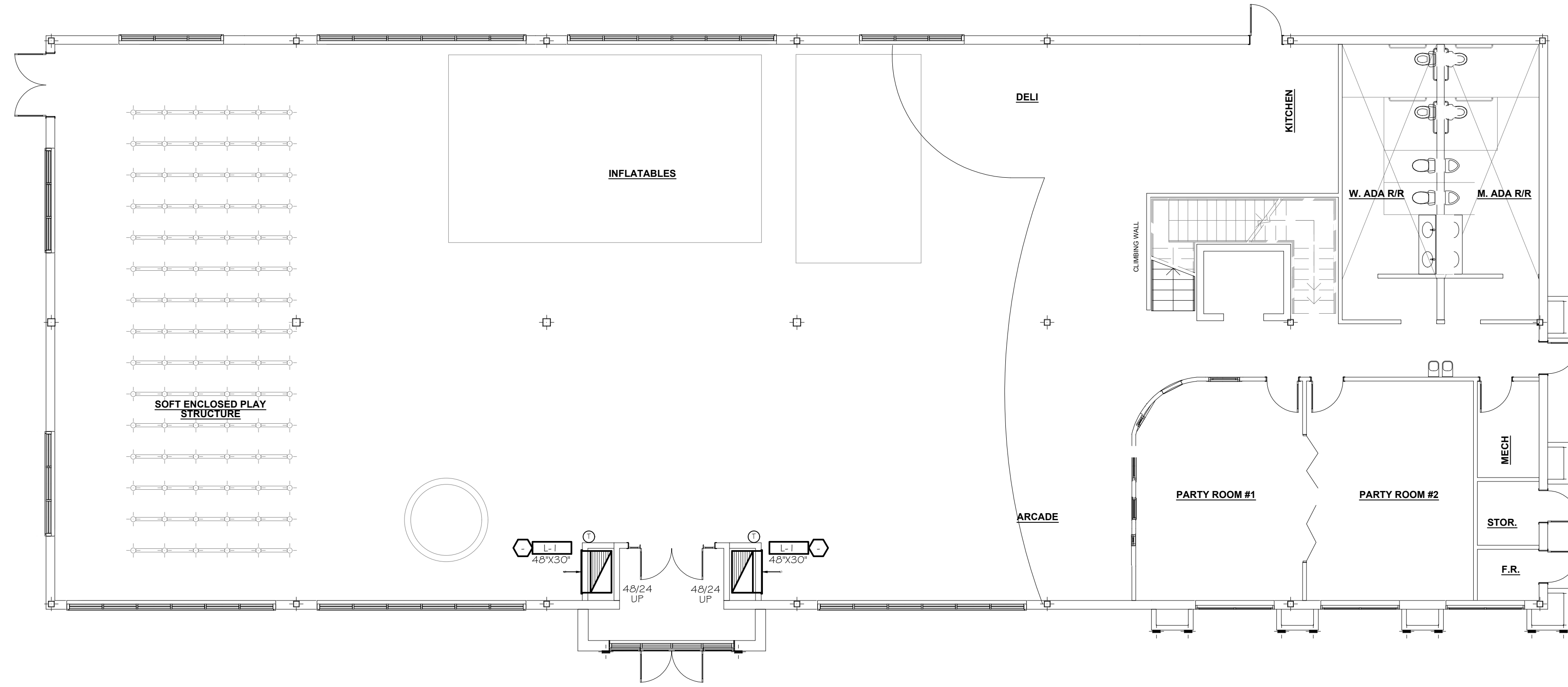
**REFERENCE NOTES**

- ⬡ SUPPLY & RETURN DUCTS TO ROOFTOP AIR CONDITIONER.
- ⬢ DUCTS UP TO UPPER LEVEL. SEE SHEET M-2 FOR CONTINUATION.


**LOWER LEVEL MECHANICAL PLAN**  
 SCALE: 1/8" = 1' - 0"

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<p><small>SHEET TITLE</small>  <b>LOWER LEVEL MECHANICAL PLAN</b></p>	<p><small>PROJECT TITLE</small>  <b>2468 BUILDING          A NEW PLAY FACILITY</b></p>		
<p><small>PROJECT NUMBER</small></p>			
<p><small>REVISIONS</small></p>			
<p><small>SHEET NUMBER</small>  <b>M-1</b></p>			



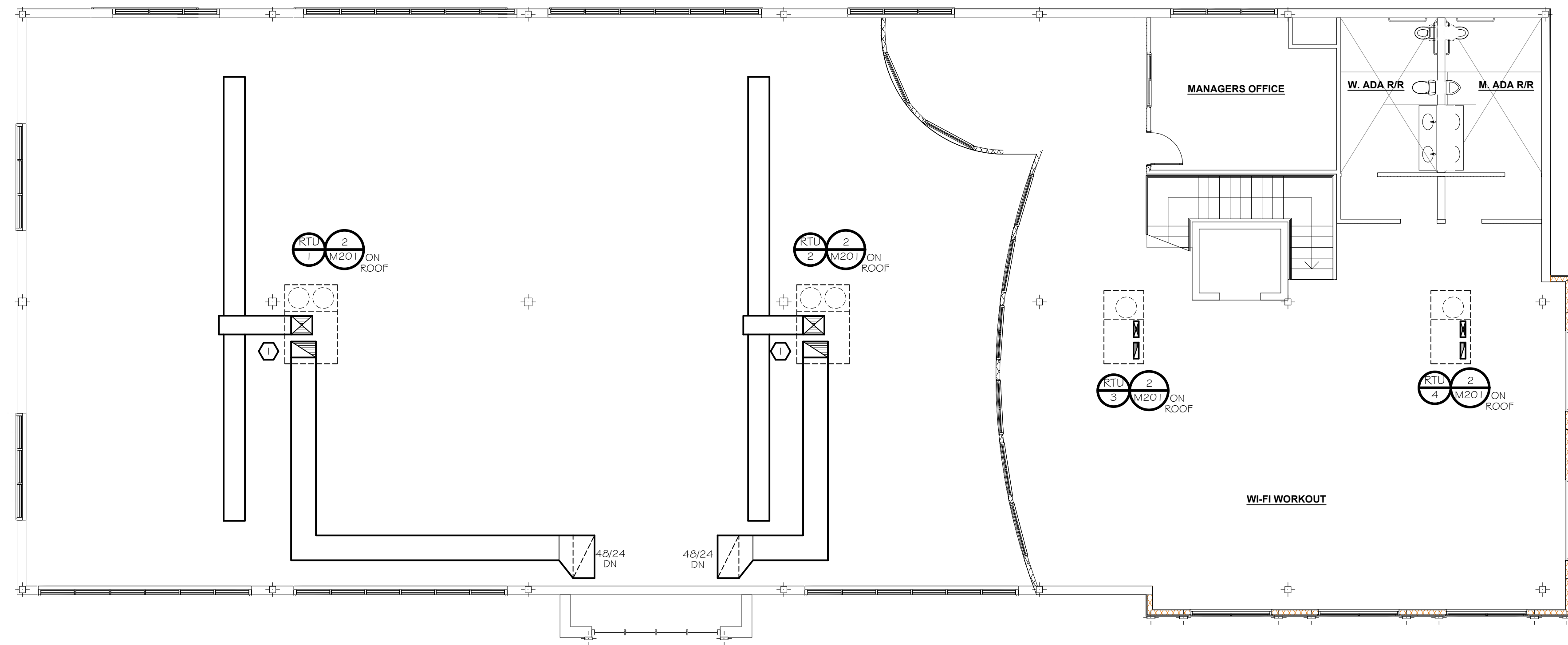

**MAIN FLOOR MECHANICAL PLAN**  
 SCALE: 1/8" = 1' - 0"

**REFERENCE NOTES**

- ① SUPPLY & RETURN DUCTS TO ROOFTOP AIR CONDITIONER.
- ② DUCTS UP TO UPPER LEVEL. SEE SHEET M-2 FOR CONTINUATION.

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<p style="font-size: x-small; margin: 0;">PROJECT TITLE <b>MAIN FLOOR MECHANICAL PLAN</b></p>	<p style="font-size: x-small; margin: 0;">PROJECT NUMBER</p>	<p style="font-size: x-small; margin: 0;">REVISIONS</p>	<p style="font-size: x-small; margin: 0;">SHEET NUMBER <b>M-2</b></p>



UPPER FLOOR MECHANICAL PLAN  
SCALE: 1/8" = 1' - 0"

REFERENCE NOTES

- ① SUPPLY & RETURN DUCTS TO ROOFTOP AIR CONDITIONER.
- ② DUCTS UP TO UPPER LEVEL. SEE SHEET M-2 FOR CONTINUATION.

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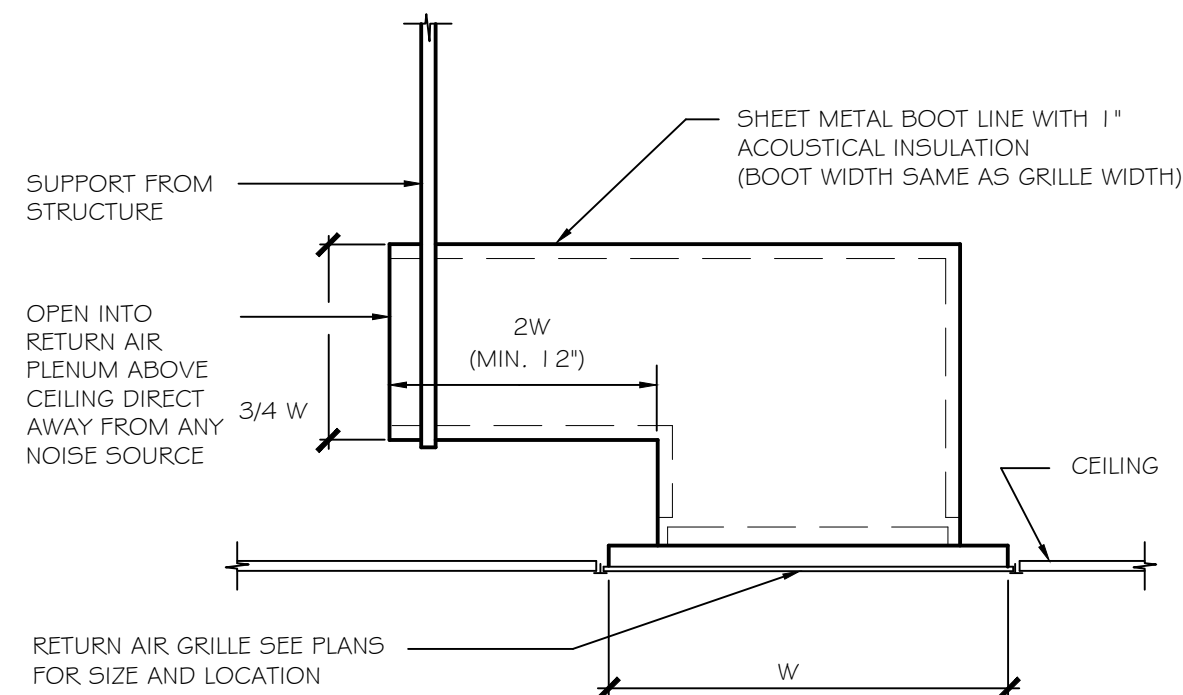
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MECHANICAL PLAN

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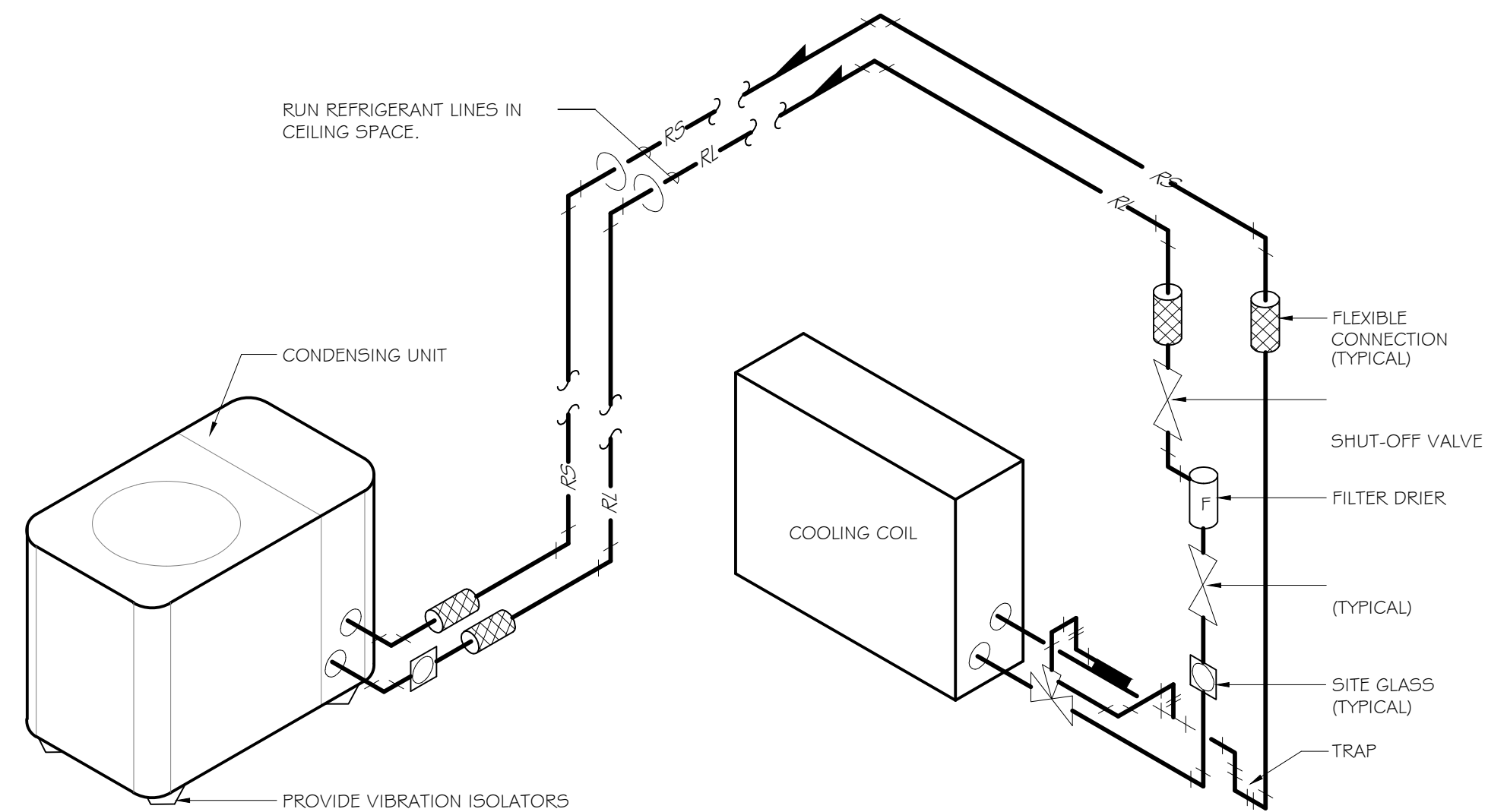
REVISIONS

SHEET NUMBER  
**M-3**

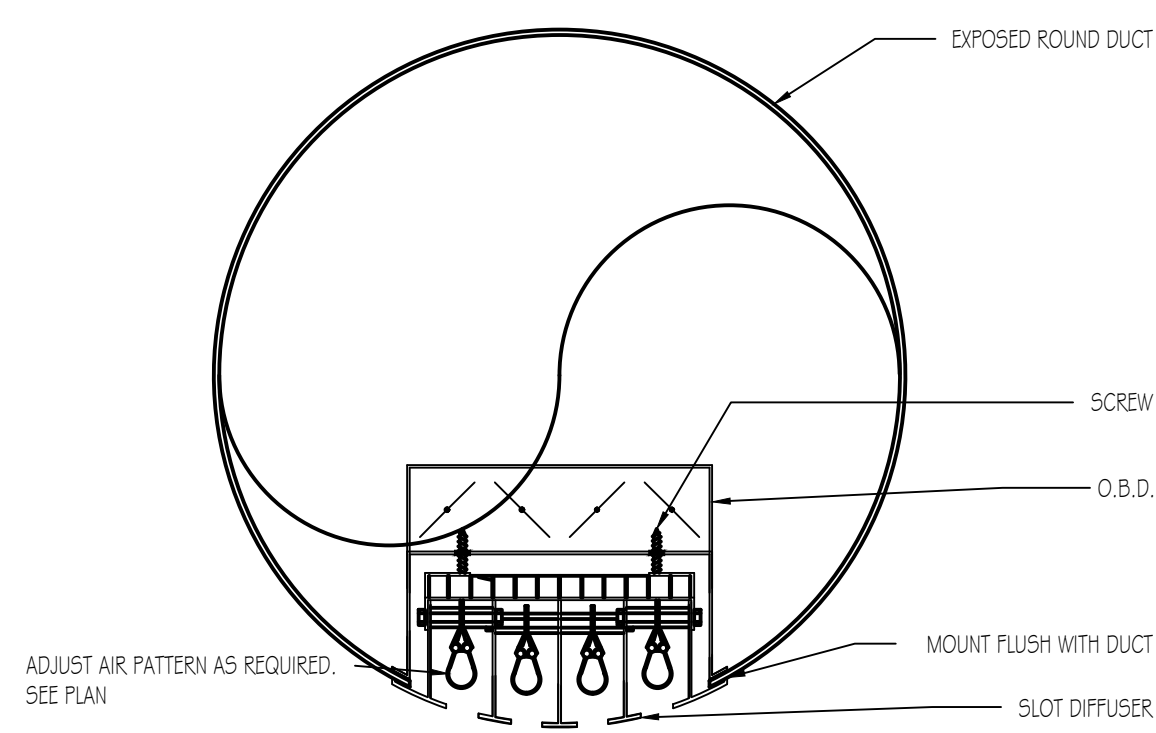
**PRELIMINARY - NOT FOR CONSTRUCTION**



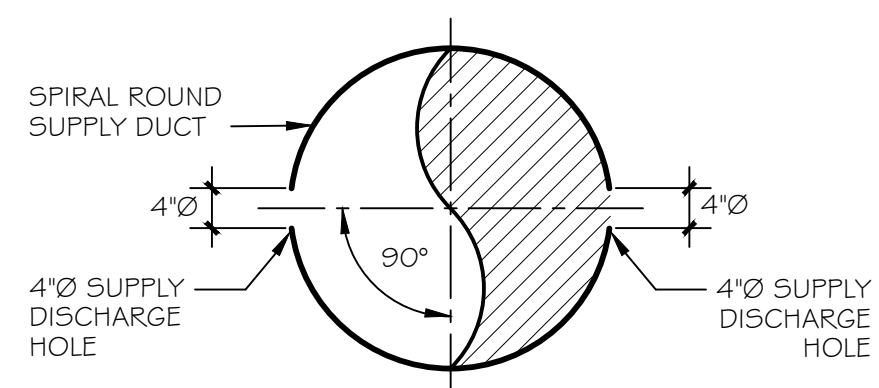
5 RETURN AIR SOUND BOOT DETAIL  
M-3 NOT TO SCALE



4 TYPICAL REFRIGERANT SCHEME  
M-3 NOT TO SCALE



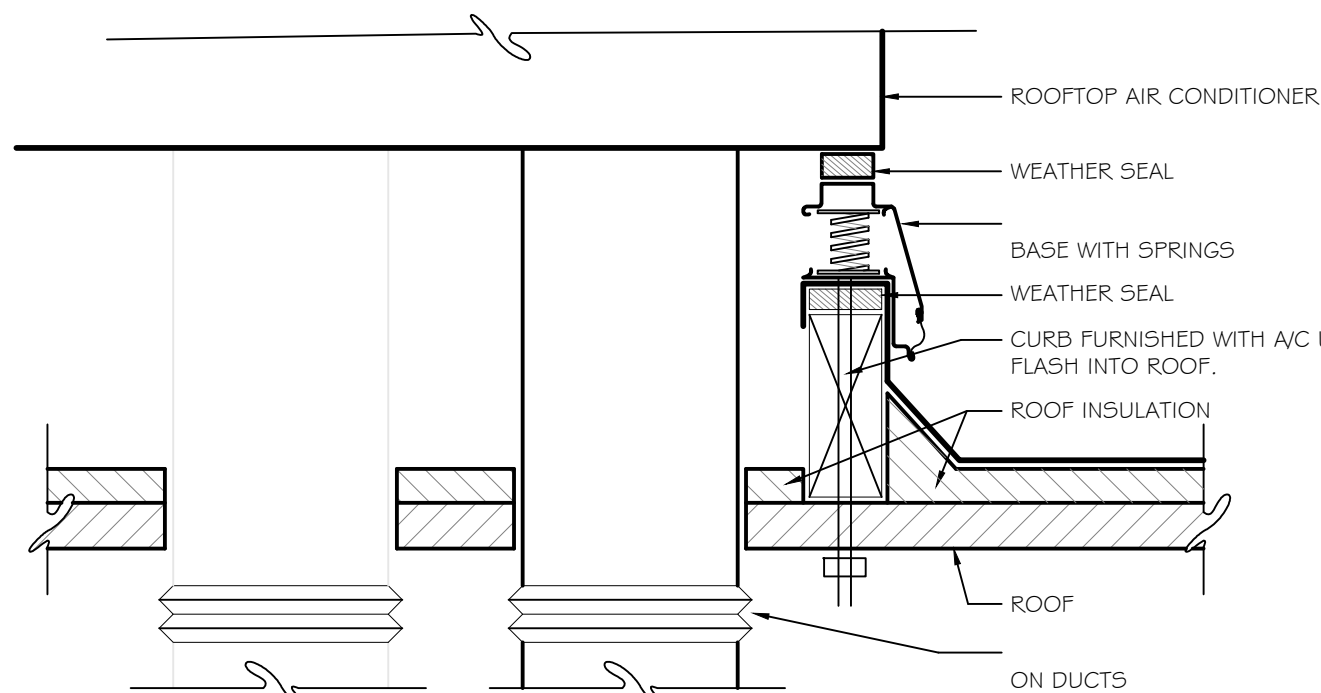
6 DUCT MOUNTED DIFFUSER DETAIL  
M-3 NOT TO SCALE



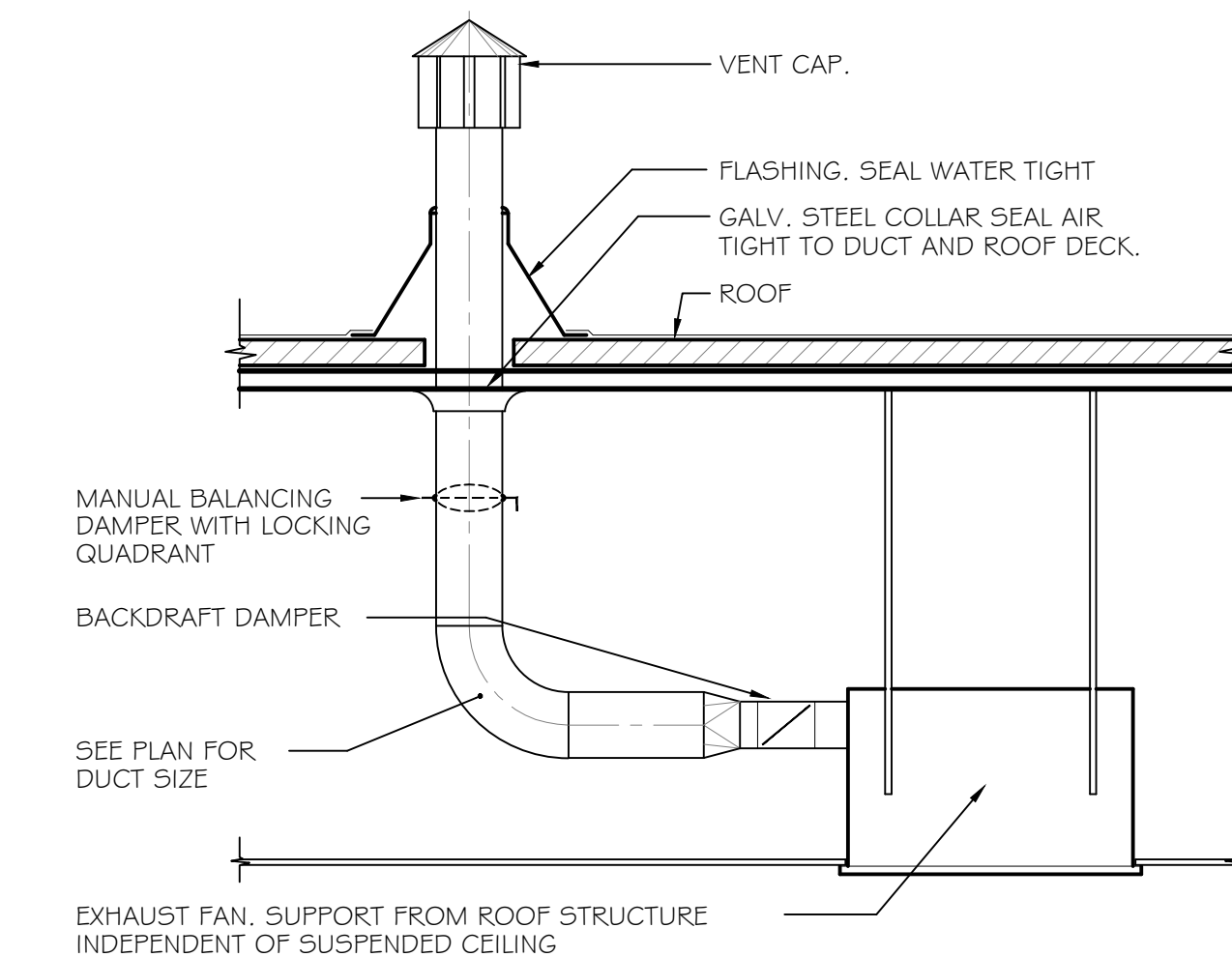
5 SUPPLY DUCT REGISTER DETAIL  
M-4 NOT TO SCALE

UNIT HEATER SCHEDULE (GAS-FIRED)									
SYMBOL	MANUFACTURER # MODEL	FUEL	INPUT BTU/HR.	OUTPUT BTU/HR.	FLUE SIZE	AIR DELIVERY	MOTOR H.P.	VOLTS/PHASE/CYCLES	COMMENTS
UH-1	REZNOR UDAP	N.G.	105,000	87,000	4"	1345	1/4	115/1/60	(1)(2)(3)
UH-2	REZNOR UDAP	N.G.	105,000	87,000	4"	1345	1/4	115/1/60	(1)(2)(3)

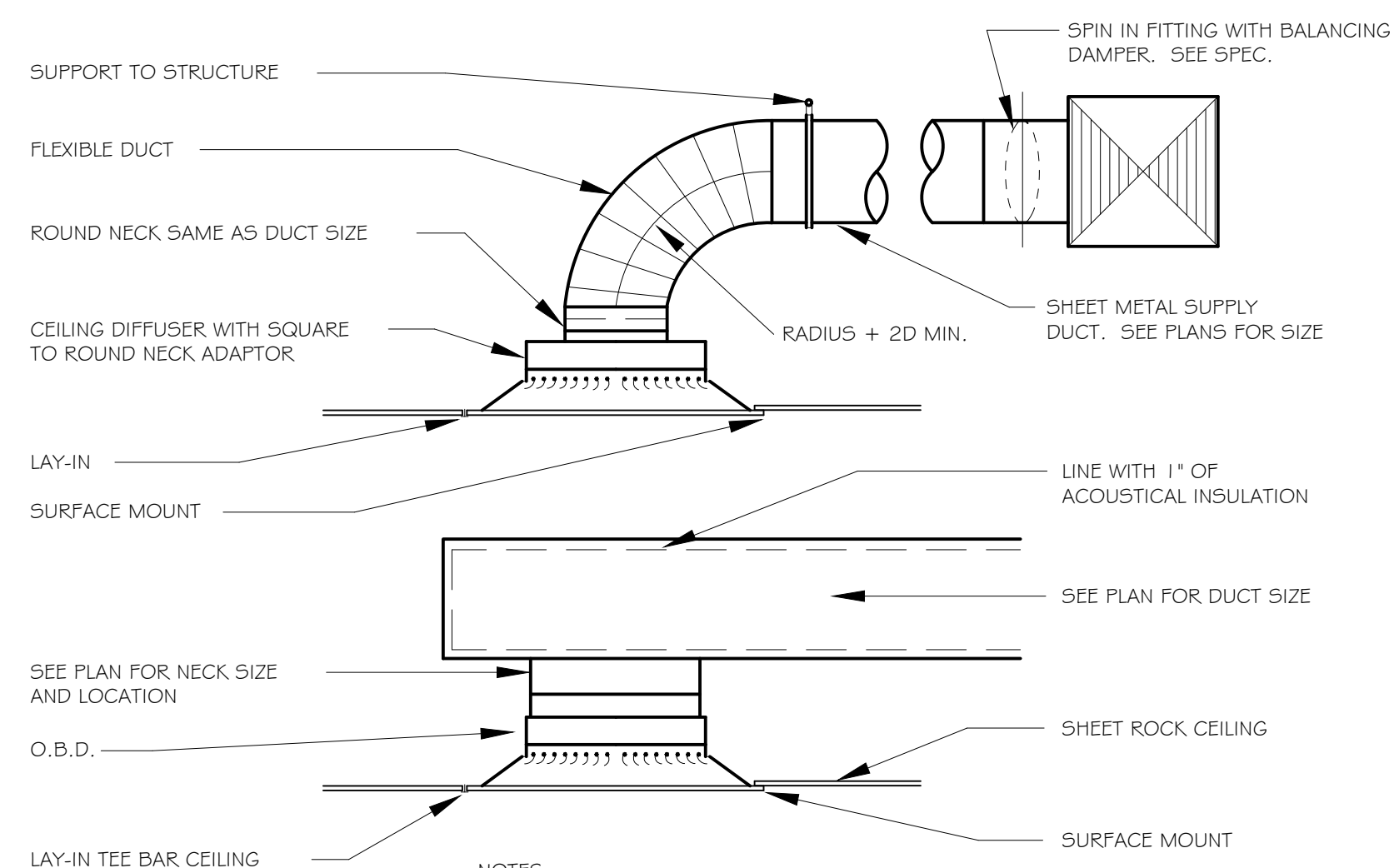
- CONDITIONS AT 6000 FT. ELEVATION.
- COMPLETE WITH THERMOSTAT AND ALL CONTROLS.
- SEA LEVEL DERATED OUTPUT BTUH



3 ROOFTOP A/C ON SPRING BASE DETAIL  
M-3 NOT TO SCALE



3 CEILING EXHAUST FAN DETAIL  
M-3 NOT TO SCALE



1 CEILING DIFFUSER DETAIL  
M-3 NOT TO SCALE

- NOTES:  
1. EXHAUST AND RETURN GRILLES ARE SIMILAR.  
2. EITHER METHOD IS ACCEPTABLE

REGISTER AND GRILLE SCHEDULE						
SYMBOL	MANUFACTURER	MODEL	DESCRIPTION	MAX. NC	NECK SIZE	MAX. CFM
CG-1	PRICE	SCD	LOUVERED FACE CEILING DIFFUSERS REMOVABLE FACE & CORE. W/O B.D. FRAME SHALL BE FOR SURFACE OR LAY-IN MOUNTING AS REQUIRED BY CEILING TYPE. LAY-IN FRAMES SHALL BE 24" X 24", 24" X 12", OR 12" X 12" AS REQD. TO FIT CEILING TILE SPACE AVAILABLE. PROVIDE ROUND NECK ADAPTER.	30	6 x 6 8 x 8 9 x 9 10 x 10 6 x 18 12 x 12 15 x 15 18 x 18	125 220 250 320 350 425 625 900
RG-1	PRICE	535	LOUVERED FACE CEILING RETURN AIR UNIT, REMOVABLE FACE & CORE. FRAME SHALL BE FOR SURFACE OR LAY-IN MOUNTING AS REQUIRED BY CEILING TYPE. LAY-IN FRAMES SHALL BE 24" X 24", 24" X 12" OR 12" X 12" AS REQUIRED TO FIT CEILING TILE SPACE AVAILABLE. AIR QUANTITY SHALL MATCH ROOM SUPPLY OR EXHAUST AIR QUANTITY.	30	10 x 10 12 x 12 14 x 14 10 x 22 16 x 16 18 x 18 24 x 24 36 x 24	500 550 625 725 900 1300 2200
L-1	AIRROUTE	K6774	WALL LOUVER, STATIONARY 4" THICK 45 BLADE STATIONARY HORIZONTAL DEFLECTION VANES SPACED AT 1/2" O.C. 1-1/4" FLANGE. INSTALL INTERMEDIATE SUPPORT CHANNELS. FRAME TO BE MADE OF 16 GAUGE STEEL.	30	SEE PLANS	
SWR-1	PRICE	91L	HEAVY DUTY SIDEWALL RETURN AIR GRILLE. STATIONARY HORIZONTAL DEFLECTION VANES SPACED AT 1/2" O.C. 1-1/4" FLANGE. INSTALL INTERMEDIATE SUPPORT CHANNELS. FRAME TO BE MADE OF 16 GAUGE STEEL.	30	SEE PLANS	
SD-1	PRICE	SDS100	3-SLOT LINEAR DIFFUSER, 1" SLOTS FULLY ADJUSTABLE THROUGH FACE OF DIFFUSER. UNIT COMPLETE WITH CURVED FACE TO MATCH DUCT RADIUS. FRAME SHALL BE FOR CURVED FACE DUCT MOUNTING.	30	36" x 48"	300 400

ROOFTOP PACKAGE AIR CONDITIONING UNIT SCHEDULE (GAS)															
SYMBOL	MFR. # MODEL	CFM	EXT. S.P. (1)	SUPPLY FAN H.P.	NATURAL GAS HEATING (BTU)		MIN. OUTSIDE AIR SETTING	MAX WEIGHT LBS.	ARI SEER/ EER	ELECTRICAL			COMMENTS AREA SERVED		
					INPUT	OUTPUT (1)				SENSIBLE	TOTAL	VOLTS/ PHASE/ CYCLE		MIN. CIRCUIT AMP.	FLA
RTLU-1	YORK ZH0G1	2000	0.7	2	80	60	52	58	400	1200	14/11.8	208/3/60	42.1	-	(1)(2)(3)(4)(5)(6)(7)
RTLU-2	YORK ZH0G1	2000	0.7	2	80	60	52	58	400	1200	14/11.8	208/3/60	42.1	-	(1)(2)(3)(4)(5)(6)(7)
RTLU-3	YORK ZH090	3000	0.8	3	120	89	81	90	600	1200	-/11.7	208/3/60	55.3	-	(1)(2)(3)(4)(5)(6)(7)
RTLU-4	YORK ZH090	3000	0.8	3	120	89	81	90	600	1200	-/11.7	208/3/60	55.3	-	(1)(2)(3)(4)(5)(6)(7)

- CAPACITY AT 4200 FEET ELEVATION.
- BASED ON 95°F DB, 65°F WB AMBIENT TEMPERATURE.
- BASED ON 55°F DB, 54°F WB LAT, 80°F DB, 63°F WB EAT.
- COMPLETE WITH 2 STAGE NATURAL GAS HEAT.
- COMPLETE WITH 100% ECONOMIZER, AND 100% POWER RELIEF.
- UNIT COMPLETE WITH VIBRATION ISOLATED ROOF CURB.
- UNIT COMPLETE WITH STARTER, SERVICE DISCONNECT, AND CONVENIENCE OUTLET.

EXHAUST FAN SCHEDULE								
SYMBOL	MANUFACTURER	MODEL	CFM	STATIC PRESSURE IN. WG.	H.P.	RPM	VOLTS/PHASE/CYCLE	COMMENTS
EF-1	GREENHECK	CEILING SP-B200	200	0.375	172 WATTS	1100	115/1/60	(1)(2)(3)
EF-2	GREENHECK	CEILING SP-B200	200	0.375	172 WATTS	1100	115/1/60	(1)(2)(3)
EF-3	GREENHECK	CEILING SP-B200	200	0.375	172 WATTS	1100	115/1/60	(1)(2)(3)
EF-4	GREENHECK	CEILING SP-B200	200	0.375	172 WATTS	1100	115/1/60	(1)(2)(3)

- ALL CAPACITIES AT 4200 FT. ELEVATION.
- CEILING EXHAUST FAN PROVIDE GRAVITY BACKDRAFT DAMPER, INTEGRAL THERMAL OVERLOAD PROTECTION, WALL LOUVER, AND VARIABLE SPEED CONTROL.
- ON-OFF SWITCH BY ELECTRICAL

HEAT PUMP SCHEDULE							
SYMBOL	MANUFACTURER # MODEL	BTU CAPACITY	REFRIGERANT TYPE	VOLTS/PHASE/CYCLES	FLA	SEER	COMMENTS
HP-1	SANYO CH2672R	24,000	R410A	208/1/60Hz	15.0	14.0	(1)(2)(3)(4)(5)(6)(7) FC-1

- ALL CONDITIONS AT 4400' ELEVATION.
- 95°F AMBIENT - 40 SEER.
- COMPLETE WITH EQUIPMENT BASE AND LOW AMBIENT KIT.
- FAN COIL AND HEAT PUMP UNIT SHALL BE FROM THE SAME MANUFACTURER.
- VERIFY VOLTAGE AND PHASE AVAILABLE WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING OF ANY EQUIPMENT.
- SIZE REFRIGERANT PIPING AS PER MANUFACTURER'S RECOMMENDATIONS.
- UNIT COMPLETE WITH STARTER

SPLIT SYSTEM AIR CONDITIONER SCHEDULE								
SYMBOL	MANUFACTURER # MODEL	MOUNTING TYPE	HEATING CAPACITY BTU/HR.	COOLING CAPACITY BTU/HR.	AIR DELIVERY	SEER	VOLTS/ PHASE/ CYCLES	COMMENTS
FC-1	SANYO UHW2672R	DUCTED	28,600	24,000	670	14.0	230/1/60	(1)(2)

- CONDITIONS AT 4400 FEET ELEVATION.
- COMPLETE WITH WALL MOUNTED CONTROLLER.

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DATE  
November 14, 2017

PROJECT TITLE  
**2 4 6 8 BUILDING**  
A NEW PLAY FACILITY  
2468 South Main Street, Woods Cross, Utah

SHEET TITLE  
**MECHANICAL DETAILS & SCHEDULES**

PROJECT NUMBER

REVISIONS

SHEET NUMBER

**M-4**

PRELIMINARY - NOT FOR CONSTRUCTION

Angie & Chris Amundsen  
Nielson Architecture Planning, Inc.

PLUMBING SYMBOL LEGEND	
SOIL, WASTE-ABOVE GRADE	---
SOIL, WASTE-BELOW GRADE	---
VENT	---
COLD WATER	---
HOT WATER	---
HOT WATER CIRCULATE	---
GAS	---
RAIN WATER-ABOVE GRADE	---
RAIN WATER-BELOW GRADE	---
OVERFLOW RAIN WATER-ABOVE GRADE	---
DRAIN LINE	---
WALL HYDRANT	W.H.
HOSE BIBB	H.B.
CLEANOUT TO GRADE	C.O.T.G.
FLOOR CLEANOUT	F.C.O.
WALL CLEANOUT	W.C.O.
SHUT OFF VALVE	
CHECK VALVE	
ANGLE VALVE	
VENTURI	
BALANCING OR PLUG COCK	
FLOW SETTER	
GAS COCK	
BUTTERFLY VALVE	
BALL VALVE	
RELIEF VALVE	
PRESSURE REDUCING VALVE	
GAUGE COCK	
STRAINER	
FLEXIBLE CONNECTION	
PRESSURE GAUGE	
THERMOMETER	
REDUCER CONCENTRIC	
REDUCER ECCENTRIC	
90° ELBOW UP	
90° ELBOW DOWN	
90° TEE UP	
90° TEE DOWN	
UNION	
CAPPED PIPE	
ANCHOR	

PLUMBING ABBREVIATIONS			
BHP	BRAKE HORSE POWER	NTS	NOT TO SCALE
BTU	BRITISH THERMAL UNIT	NO	NUMBER
C/G	COOLING	OZ	OUNCE
CW	COLD WATER	PSI	POUNDS PER SQUARE INCH
DP	DEPTH OR DEEP	PSIA	PSI ABSOLUTE
ID	INSIDE DIAMETER	PSIG	PSI GAUGE
OD	OUTSIDE DIAMETER	PRES	PRESSURE
EE	EXISTING	PD	PRESSURE DROP
EFF	EFFICIENCY	RECIRC	RE-CIRCULATE
ELEV	ELEVATION	RPM	REVOLUTIONS PER MINUTE
(F)	FUTURE	RW	RAIN WATER
F	FARENHEIT	SCW	SOFT COLD WATER
FC	FLEXIBLE CONNECTION	SF	SAFETY FACTOR
FT	FEET	SL	SEA LEVEL
GAL	GALLONS	SPEC	SPECIFICATIONS(S)
GPH	GALLONS PER HOUR	SO	SQUARE
GPM	GALLONS PER MINUTE	STD	STANDARD
HD	HEAD	SPLY	SUPPLY
HT	HEIGHT	TEMP	TEMPERATURE
HTG	HEATING	TD	TEMP. DROP OR DIFF.
HP	HORSE POWER	R	THERMAL RESISTANCE
HW	HOT WATER	T	TIME
LG	LENGTH	VAC	VACUUM
MAX	MAXIMUM	VENT	VENT, VENTILATION
MIN	MINIMUM	VERT	VERTICAL
NO	NORMALLY OPEN	VOL	VOLUME
NC	NORMALLY CLOSED	WTR	WATER
NA	NOT APPLICABLE	WT	WEIGHT
NIC	NOT IN CONTRACT	YR	YEAR

PLUMBING SPECIFICATIONS ③	
<u>FIRE SPRINKLER SYSTEM</u>	
A. NOT INCLUDED IN THIS CONTRACT.	
<u>PLUMBING SPECIALTIES</u>	
A. PROVIDE AND INSTALL WATER PRESSURE REGULATING VALVE RATED FOR INITIAL WORKING PRESSURE OF 150 PSIG WITH INLET AND OUTLET SHUTOFF VALVES, PRESSURE GAUGE, AND DRAIN VALVE.	
B. PROVIDE AND INSTALL CLEANOUTS AND COVER PLATES WHERE INDICATED ON THE DRAWINGS. INSTALL A CLEANOUT AT EACH PLUMBING FIXTURE. CLEANOUT FLOOR COVER PLATES SHALL BE MOUNTED FLUSH WITH THE FLOOR. COORDINATE CLEANOUT COVER PLATES WITH WALL OR FLOOR SURFACE FINISH.	
<u>WATER HEATERS</u>	
A. PROVIDE A WATER HEATER AS SHOWN ON THE DRAWINGS THAT COMPLIES WITH ASME BOILER AND PRESSURE VESSEL CODE, UL LISTING, AGA STANDARDS, AND ASHRAE ENERGY STANDARDS.	
B. SUBMIT MANUFACTURERS CUTSHEET FOR REVIEW AND APPROVAL INCLUDING MANUFACTURER, TYPE, MODEL NUMBER, CAPACITY, ELECTRICAL REQUIREMENTS, AND OPTIONS.	
C. INSTALL WATER HEATER LEVEL AND PLUMB ON CONCRETE EQUIPMENT PAD UNLESS OTHERWISE NOTED. INSTALL WATER HEATER ACCORDING TO THE MANUFACTURERS INSTALLATION INSTRUCTIONS. ANCHOR WATER HEATER TO EQUIPMENT PAD. INSTALL EARTHQUAKE BRACING SECURE TO STRUCTURAL MEMBERS.	
D. INSTALL WATER HEATER WITH RELIEF VALVE, SHUTOFF VALVES, UNIONS, THERMOMETERS, DRAIN LINE, GAS CONNECTION, VENT AND RECIRCULATION SYSTEM AS INDICATED ON THE DRAWINGS.	

PLUMBING SPECIFICATIONS ②																																		
<u>VALVES</u>																																		
A. PROVIDE AND INSTALL BALL SHUTOFF VALVES WHERE SHOWN ON PLANS FOR LINES 3" AND SMALLER. BALL VALVES SHALL BE MSS SP-110, CLASS 150 BRONZE BODY AND BONNET AND VINYL-COVERED STEEL HANDLE.																																		
B. PROVIDE AND INSTALL BUTTERFLY VALVES WHERE SHOWN ON PLANS FOR LINES 4" AND LARGER. BUTTERFLY VALVES SHALL BE MSS SP-67, ASTM A 126 CAST-IRON BODY AND BONNET WITH EPDM SEALS.																																		
<u>FUEL GAS PIPING</u>																																		
A. COORDINATE INSTALLATION OF GAS YARD LINE AND GAS METER WITH THE GAS COMPANY. WORK TO BE PERFORMED BY THE GAS COMPANY PAID BY THE CONTRACTOR.																																		
B. COMPLY WITH NFPA 54 "NATIONAL FUEL GAS CODE", LOCAL GAS COMPANY REQUIREMENTS, AND ALL OTHER APPLICABLE CODES FOR GAS PIPING MATERIALS, COMPONENTS, INSTALLATIONS, INSPECTIONS, TESTING, AND PURGING.																																		
C. GAS PIPING SHALL BE SEAMLESS, GRADE B, SCHEDULE 40 BLACK STEEL WITH THREADED FITTINGS.																																		
D. INSTALL SHUTOFF VALVE DOWNSTREAM OF THE GAS METER OUTSIDE OF THE BUILDING.																																		
E. INSTALL 2 PSIG - TO - 4 OZ. GAS PRESSURE REGULATOR WHERE SHOWN ON THE DRAWINGS. INSTALL AND VENT AS REQUIRED BY MANUFACTURERS INSTRUCTIONS.																																		
F. INSTALL GAS SHUTOFF VALVE AT ALL GAS APPLIANCES. CONNECT TO APPLIANCE WITH APPROVED FLEXIBLE CONNECTION. INSTALL TEE FITTING SEDIMENT TRAPS WITHIN 6" OF EACH APPLIANCE.																																		
<u>PLUMBING PIPING</u>																																		
A. WATER DISTRIBUTION PIPING - BELOW GROUND (150 PSIG): 3-1/2" AND SMALLER - USE TYPE K SOFT OR HARD COPPER TUBE WITH CAST COPPER ALLOY BRAZED JOINT PRESSURE FITTINGS.																																		
B. WATER DISTRIBUTION PIPING - ABOVE GROUND (125 PSIG): 3-1/2" AND SMALLER - USE TYPE L HARD COPPER TUBE WITH CAST COPPER ALLOY BRAZED JOINT PRESSURE FITTINGS.																																		
C. WASTE AND VENT PIPING - BELOW GROUND (10-FOOT HEAD OF WATER): 2" TO 6" - USE ACRYLONITRILE-BUTADIENE-STYRENE (ABS) PLASTIC PIPE WITH ABS SOCKET-TYPE DRAIN, WASTE, AND VENT PIPE PATTERN FITTINGS WITH SOLVENT CEMENTED JOINTS.																																		
D. WASTE AND VENT PIPING - ABOVE GROUND (10-FOOT HEAD OF WATER): 2" TO 6" - USE ACRYLONITRILE-BUTADIENE-STYRENE (ABS) PLASTIC PIPE WITH ABS SOCKET-TYPE DRAIN, WASTE, AND VENT PIPE PATTERN FITTINGS WITH SOLVENT CEMENTED JOINTS.																																		
E. STORM DRAINAGE PIPING - ABOVE GROUND (10-FOOT HEAD OF WATER): 2" TO 8" - USE HUB-AND-SPIGOT CAST-IRON SOIL PIPE WITH CAST IRON SOIL PIPE FITTINGS, NEOPRENE RUBBER GASKETS, AND COMPRESSION JOINTS.																																		
F. INSTALL HANGERS FOR HORIZONTAL COPPER AND CAST IRON PIPING WITH THE FOLLOWING MAXIMUM SPACING AND MINIMUM ROD SIZES:																																		
<table border="1"> <thead> <tr> <th>NOM. PIPE SIZE</th> <th>MAX. SPAN</th> <th>MIN. ROD DIA.</th> </tr> </thead> <tbody> <tr><td>3/4"</td><td>6'</td><td>3/8"</td></tr> <tr><td>1"</td><td>6'</td><td>3/8"</td></tr> <tr><td>1-1/2"</td><td>6'</td><td>3/8"</td></tr> <tr><td>2"</td><td>12'</td><td>3/8"</td></tr> <tr><td>2-1/2"</td><td>12'</td><td>1/2"</td></tr> <tr><td>3"</td><td>12'</td><td>1/2"</td></tr> <tr><td>3-1/2"</td><td>12'</td><td>5/8"</td></tr> <tr><td>4"</td><td>12'</td><td>5/8"</td></tr> <tr><td>5"</td><td>12'</td><td>5/8"</td></tr> <tr><td>6"</td><td>12'</td><td>3/4"</td></tr> </tbody> </table>		NOM. PIPE SIZE	MAX. SPAN	MIN. ROD DIA.	3/4"	6'	3/8"	1"	6'	3/8"	1-1/2"	6'	3/8"	2"	12'	3/8"	2-1/2"	12'	1/2"	3"	12'	1/2"	3-1/2"	12'	5/8"	4"	12'	5/8"	5"	12'	5/8"	6"	12'	3/4"
NOM. PIPE SIZE	MAX. SPAN	MIN. ROD DIA.																																
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4"	12'	5/8"																																
5"	12'	5/8"																																
6"	12'	3/4"																																
SUPPORT VERTICAL PIPE AND TUBING AT EACH FLOOR.																																		
G. SUPPORT HORIZONTAL ABS AND PVC PIPING WITH PIPE HANGERS LOCATED AT 4' MAXIMUM SPAN.																																		
H. CLEAN, FLUSH, AND TEST ALL WATER DISTRIBUTION PIPING TO 1-1/2 TIMES THE OPERATING PRESSURE FOR A TIME PERIOD OF 4 HOURS. PURGE AND DISINFECT POTABLE WATER SYSTEMS WITH A WATERCHLORINE SOLUTION IN ACCORDANCE WITH THE LOCAL HEALTH CODE REQUIREMENTS. TEST AND SUBMIT SATISFACTORY REPORT PRIOR TO BUILDING OCCUPANCY.																																		
I. CLEAN, FLUSH, AND TEST THE WASTE AND VENT PIPING SYSTEM TO 10 FEET HEAD OF WATER.																																		
<u>PLUMBING FIXTURES</u>																																		
A. PROVIDE AND INSTALL PLUMBING FIXTURES WHERE INDICATED ON THE DRAWINGS FOR A COMPLETE PLUMBING SYSTEM. PROVIDE ALL REQUIRED CARRIERS, SUPPORTS, EQUIPMENT, HANGERS, FITTINGS, TRIM, STOPS, AND ACCESSORIES ASSOCIATED WITH THE PLUMBING FIXTURES. COORDINATE THE COLOR STYLE, COLOR, AND ACCESSORIES OF EACH FIXTURE WITH THE BUILDING OWNER. ALL FIXTURES NOTED AS ACCESSIBLE SHALL COMPLY WITH A.D.A. REQUIREMENTS. COORDINATE ALL ELECTRICAL REQUIREMENTS WITH THE ELECTRICAL SUB-CONTRACTOR. INSTALL ALL PLUMBING FIXTURES PLUMB, LEVEL, AND ACCORDING TO THE MANUFACTURERS INSTALLATION INSTRUCTIONS. REFER TO THE PLUMBING FIXTURE SCHEDULE.																																		
B. PROVIDE PLUMBING FIXTURES FROM THE FOLLOWING MANUFACTURERS: WATER CLOSETS AND URINALS: AMERICAN STANDARD, BRIGGS, CRANE, ELJER, KOHLER, SLOAN LAVATORIES: ACORN, AMERICAN STANDARD, BRIGGS, CRANE, ELJER, ELKAY, KOHLER, SLOAN SINKS AND SERVICE SINKS: AMERICAN STANDARD, BRIGGS, CRANE, ELJER, ELKAY, KOHLER, SLOAN DRINKING FOUNTAINS AND WATER COOLERS: ELKAY, HALSEY TAYLOR, HAWS, OASIS, SUNROC FLUSHMETERS: SLOAN, ZURN FAUCETS: AMERICAN STANDARD, BRIGGS, CHICAGO, CRANE, DELTA, ELJER, ELKAY, GERBER, KOHLER, MOEN, PRICE PRISTER, SLOAN, SYMMONS, T & S BRASS																																		
C. SUBMIT MANUFACTURERS CUTSHEET FOR REVIEW AND APPROVAL FOR EACH PLUMBING FIXTURE INCLUDING MANUFACTURER, MODEL, STYLE, OPTIONS, AND ACCESSORIES.																																		

PLUMBING SPECIFICATIONS ①	
<u>BASIC PLUMBING REQUIREMENTS</u>	
A. COMPLY WITH THE REQUIREMENTS OF THE 2015 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC), INTERNATIONAL MECHANICAL CODE (IMC), INTERNATIONAL PLUMBING CODE (IPC), INTERNATIONAL FUEL GAS CODE (IFGC), AND INTERNATIONAL ENERGY CONSERVATION CODE (IECC), AND THE CURRENT NATIONAL ELECTRICAL CODE (NEC) INCLUDING ALL STATE AMENDMENTS. COMPLY WITH THE AUTHORITY HAVING JURISDICTION AND ALL APPLICABLE CITY, COUNTY, STATE, AND FEDERAL CODES AND REGULATIONS IN EFFECT AT THE BID DATE.	
B. PREPARE AND SUBMIT FIVE (5) COPIES OF THE SHOP DRAWINGS FOR ALL PLUMBING FIXTURES, EQUIPMENT, VALVES, AND ACCESSORIES INCLUDING MANUFACTURERS NAME, CATALOG NUMBER, DESCRIPTION, SIZE, CAPACITY, ELECTRICAL REQUIREMENTS, OPERATION, AND MAINTENANCE INFORMATION. SHOP DRAWINGS SHALL BE REVIEWED AND STAMPED BY THE PLUMBING AND GENERAL CONTRACTOR PRIOR TO ENGINEERS REVIEW. FIXTURES, EQUIPMENT, ETC. SHALL NOT BE ORDERED UNTIL APPROVED SHOP DRAWINGS HAVE BEEN RECEIVED.	
C. PREPARE COORDINATION DRAWINGS DETAILING ALL MAJOR EQUIPMENT AND SYSTEMS. INCLUDE EQUIPMENT CONNECTIONS, CLEARANCES, FIRE-RATED WALL OR FLOOR PENETRATIONS, CONCRETE PADS, AND SUPPORT DETAILS IN COORDINATION DRAWINGS. COORDINATION DRAWINGS SHALL BE IN CONJUNCTION WITH THE MECHANICAL, FIRE SPRINKLER (WHERE REQUIRED), ELECTRICAL, REFLECTED CEILINGS, AND ALL OTHER APPLICABLE TRADES.	
D. PREPARE RECORD "AS BUILT" DOCUMENTS INCLUDING ALL CHANGES FROM THE ORIGINAL BID DOCUMENTS. SUBMIT COMPLETE "AS BUILT" DOCUMENTS WITHIN 30 DAYS OF PROJECT COMPLETION.	
E. PROVIDE 2 SETS OF OPERATION AND MAINTENANCE (O & M) MANUALS CONTAINING INFORMATION FOR ALL MECHANICAL AND PLUMBING SYSTEMS. THE MANUALS SHALL CONTAIN A LIST OF ALL SUB-CONTRACTORS AND SUPPLIERS, EQUIPMENT CUT SHEETS, START-UP INFORMATION, BALANCING REPORTS, AND MAINTENANCE REQUIREMENTS. THE MANUALS SHALL BE HARD BACKED 3-RING BINDERS WITH THE PROJECT LABELED ON THE COVER AND SPLINE.	
F. INSTALL ALL PLUMBING EQUIPMENT AND MATERIALS IN COORDINATION WITH ALL OTHER TRADES. VERIFY ALL ELECTRICAL CONNECTIONS WITH THE ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.	
G. PROVIDE AND INSTALL ACCESS DOORS WHERE EQUIPMENT OR VALVES ARE CONCEALED BEHIND FINISHED SURFACES.	
H. PROVIDE FACTORY-AUTHORIZED EQUIPMENT START-UP, COMMISSIONING, AND TRAINING OF ALL PLUMBING EQUIPMENT.	
I. INSTALL ALL SYSTEMS, MATERIALS, AND EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS. INSTALL ALL PIPING FREE FROM SAGS AND BENDS AND AT THE SLOPE INDICATED (WHERE REQUIRED). INSTALL PIPING AND EQUIPMENT TO PROVIDE THE MAXIMUM POSSIBLE HEADROOM.	
J. ALL WORK SHALL BE PERFORMED BY CERTIFIED AND SKILLED WORKERS WITH PRIOR EXPERIENCE IN THEIR PARTICULAR TRADE.	
K. THE PLUMBING SUB-CONTRACTOR SHALL PROVIDE WARRANTY OF THE ENTIRE PLUMBING SYSTEM FOR A PERIOD OF ONE YEAR. INCLUDE THE WARRANTY AND ALL OTHER GUARANTEES AND WARRANTIES IN THE OPERATION AND MAINTENANCE MANUAL.	
L. THE CONTRACTOR SHALL REPAIR OR REPLACE ALL DAMAGED PIPING, EQUIPMENT, OR OTHER DAMAGE DURING CONSTRUCTION.	
M. PROVIDE AND INSTALL ALL PLUMBING EQUIPMENT, PIPING, FIXTURE, AND ACCESSORIES IN STRICT ACCORDANCE WITH THE MANUFACTURERS INSTALLATION INSTRUCTIONS. PROVIDE ALL FITTINGS, VALVES, TRANSITIONS, AND OTHER DEVICES AS REQUIRED FOR A COMPLETE AND OPERATIONAL PLUMBING SYSTEM.	
<u>BASIC PLUMBING MATERIALS AND METHODS</u>	
A. ALL PIPE AND PIPE FITTINGS SHALL BE NEW AND SHALL BE AMERICAN MADE WITH APPROVED LABELS. DELIVER, STORE, AND PROTECT PIPING DURING CONSTRUCTION FROM DAMAGE, DIRT, AND MOISTURE.	
B. PROVIDE AND INSTALL DIELECTRIC FITTINGS AND FLEXIBLE CONNECTORS WHERE REQUIRED FOR PROPER SYSTEM FLUID, PRESSURE, AND TEMPERATURE.	
C. PROVIDE PIPE ESCUTCHEONS FOR ALL EXPOSED WALL AND CEILING PENETRATIONS. PROVIDE COVER PLATES FOR ALL FLOOR AND WALL CLEANOUTS.	
D. SEAL ALL PIPE PENETRATIONS THROUGH WALLS AND FLOORS AIR TIGHT. CAULK ALL FIRE RATED PIPE PENETRATIONS WITH APPROVED FIRE-STOPPING MATERIAL.	
E. CUT, CHANNEL, CHASE, AND DRILL FLOORS, WALLS, PARTITIONS, CEILINGS, AND OTHER SURFACES NECESSARY FOR PROPER INSTALLATION. REPAIR AS REQUIRED TO MATCH ADJACENT SURFACES.	
<u>HANGERS AND SUPPORTS</u>	
A. PROVIDE AND INSTALL PIPE SUPPORTS AND HANGERS AS REQUIRED FOR ALL PIPING AND EQUIPMENT ACCORDING TO MANUFACTURERS STANDARDIZATION SOCIETY (MSS) STANDARDS.	
<u>VIBRATION ISOLATION AND SEISMIC CONTROLS</u>	
A. PROVIDE AND INSTALL VIBRATION ISOLATORS, FLEXIBLE CONNECTIONS, ISOLATION PADS, AND OTHER EQUIPMENT TO PREVENT NOISE AND VIBRATION TRANSMISSION.	
<u>PIPING AND EQUIPMENT IDENTIFICATION</u>	
A. PROVIDE EQUIPMENT PIPE AND EQUIPMENT TAGS, LABELS, AND IDENTIFICATION INDICATING FLOW DIRECTION, AREA SERVED, SYSTEM TYPE AND OTHER IDENTIFYING INFORMATION. COMPLY WITH ASME PIPING AND EQUIPMENT IDENTIFICATION STANDARDS.	
<u>INSULATION</u>	
A. PROVIDE AND INSTALL GLASS FIBER PREFORMED PIPE INSULATION WITH VAPOR PROOF COATING ACCORDING TO THE FOLLOWING SCHEDULE: DOMESTIC COLD WATER PIPING: 1/2" TO 2" PIPE SIZE - 3/4" INSULATION 2" AND ABOVE - 1" INSULATION DOMESTIC HOT WATER AND RECIRCULATED HOT WATER PIPING: 1/2" TO 2" PIPE SIZE - 1" INSULATION 2" AND ABOVE - 1-1/2" INSULATION RAIN WATER PIPING AND PLUMBING VENTS (WITHIN 6" OF ROOF): 1/2" TO 2" PIPE SIZE - 3/4" INSULATION 2" AND ABOVE - 1" INSULATION	
B. GLASS FIBER INSULATION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS.	
C. SEAL ALL ENDS AND JOINTS TO PROVIDE A COMPLETELY SEALED INSULATION SYSTEM. PROVIDE COVER HANGER INSERTS AND SHIELDS WITH JACKET MATERIAL MATCHING ADJACENT PIPE INSULATION.	
D. PROVIDE SNAP ON INSULATION KIT ON ALL ADA COMPLIANT LAVATORIES AND SINKS.	

PLUMBING GENERAL NOTES	
1. PROVIDE ALL EQUIPMENT, PIPING, MATERIALS, LABOR, PERMITS, AND FEES TO CONSTRUCT A COMPLETE AND OPERATIONAL PLUMBING SYSTEM FOR THE ENTIRE PROJECT AS SHOWN ON THE DRAWINGS.	
2. COORDINATE THE EXACT LOCATION OF ALL PLUMBING FIXTURES AND DRAINS WITH THE ARCHITECTURAL DRAWINGS AND THE GENERAL CONTRACTOR.	
3. COORDINATE ALL WORK WITH THE GENERAL CONTRACTOR, MECHANICAL SUB-CONTRACTOR, ELECTRICAL SUB-CONTRACTOR, AND ALL OTHER TRADES IN THE PROJECT.	
4. ALL PLUMBING INFORMATION IS NOT SHOWN ON THE PLUMBING DRAWINGS. COORDINATE ALL PLUMBING WORK WITH THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, CIVIL, AND ELECTRICAL DRAWINGS.	
5. PLUMBING PLANS ARE SCHEMATIC IN NATURE AND THEREFORE DO NOT SHOW ALL DROPS, RISERS, AND OFFSETS. THE CONTRACTOR SHALL MAKE ALL REQUIRED MODIFICATIONS TO PROVIDE A COMPLETE AND OPERATIONAL PLUMBING SYSTEM. MAJOR MODIFICATIONS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER.	
6. DO NOT RUN PIPING ABOVE ELECTRICAL PANELS. PROVIDE 4'-0" DEEP X 6'-6" HIGH CLEAR ACCESS SPACE IN FRONT OF PANELS. DO NOT RUN PIPING IN ELECTRICAL ROOMS.	
7. INSTALL ALL PIPING SHOWN IN EXTERIOR WALLS ON THE WARM (ROOM) SIDE OF THE BUILDING INSULATION.	
8. INSTALL WATER, GAS, AND VENT PIPING AS HIGH AS POSSIBLE ABOVE THE CEILING UNLESS NOTED OTHERWISE.	
9. INSTALL WASTE PIPING BELOW THE FLOOR UNLESS NOTED OTHERWISE.	
10. PROVIDE AND INSTALL 2" MINIMUM WASTE PIPE SIZE BELOW GRADE.	
11. INSTALL EXTERIOR PIPING 36" MINIMUM BELOW GRADE.	
12. INSTALL PLUMBING VENTS A MINIMUM OF 3 FEET ABOVE OR 10 FEET AWAY FROM OUTSIDE AIR INTAKES. COORDINATE WITH THE MECHANICAL SUB-CONTRACTOR.	
13. SAW CUT EXISTING FLOOR AS REQUIRED TO INSTALL NEW WASTE LINE.	
14. VERIFY SIZE, LOCATION, AND ELEVATION OF ALL EXISTING SEWER, WATER, AND GAS LINES PRIOR TO START OF CONSTRUCTION.	

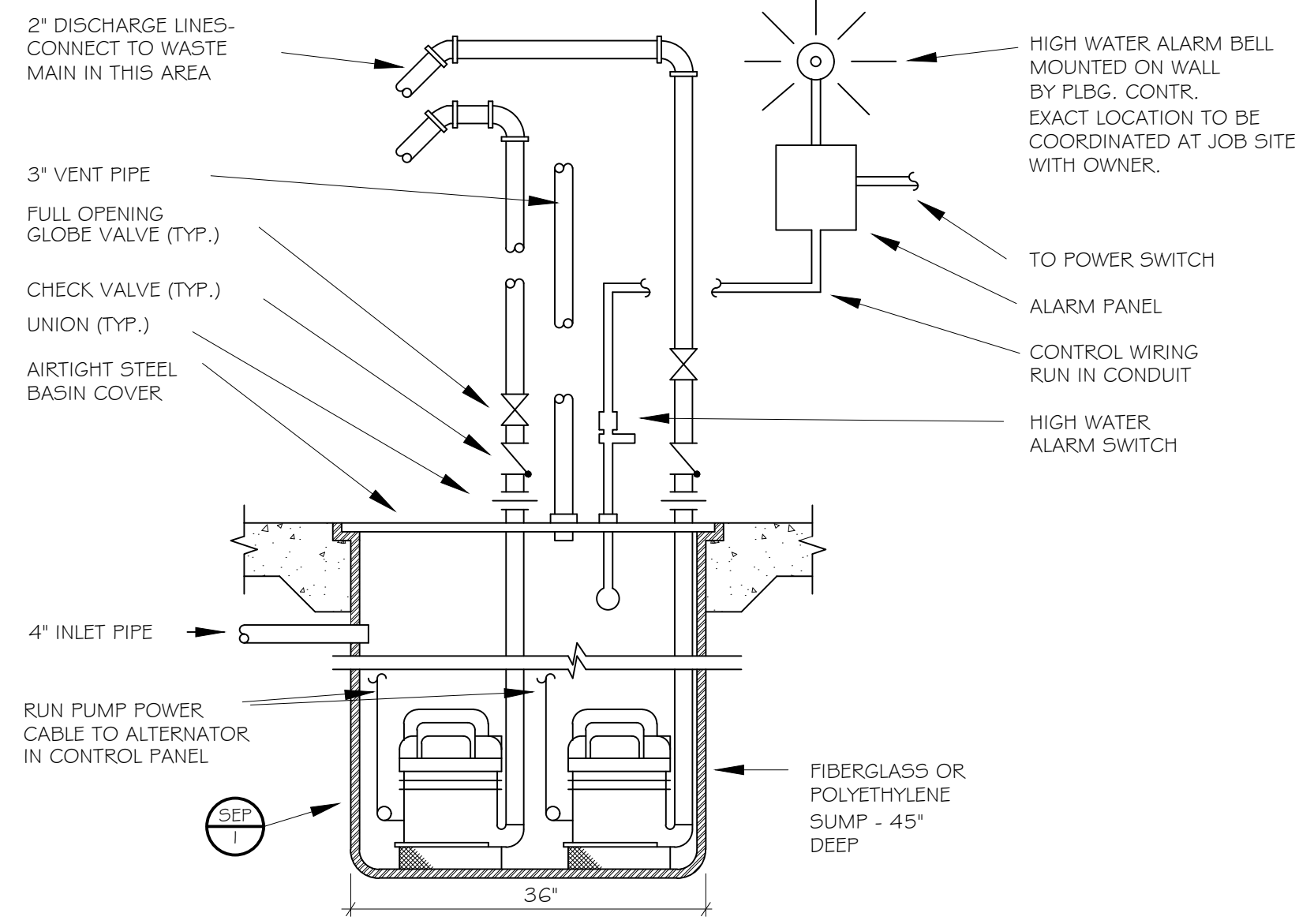
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DATE	November 14, 2017
PROJECT TITLE	2 4 6 8 BUILDING A NEW PLAY FACILITY 2468 South Main Street, Woods Cross, Utah
SHEET TITLE	PLUMBING NOTES, SYMBOL LEGEND, & SPECIFICATIONS
PROJECT NUMBER	
REVISIONS	
SHEET NUMBER	P-0

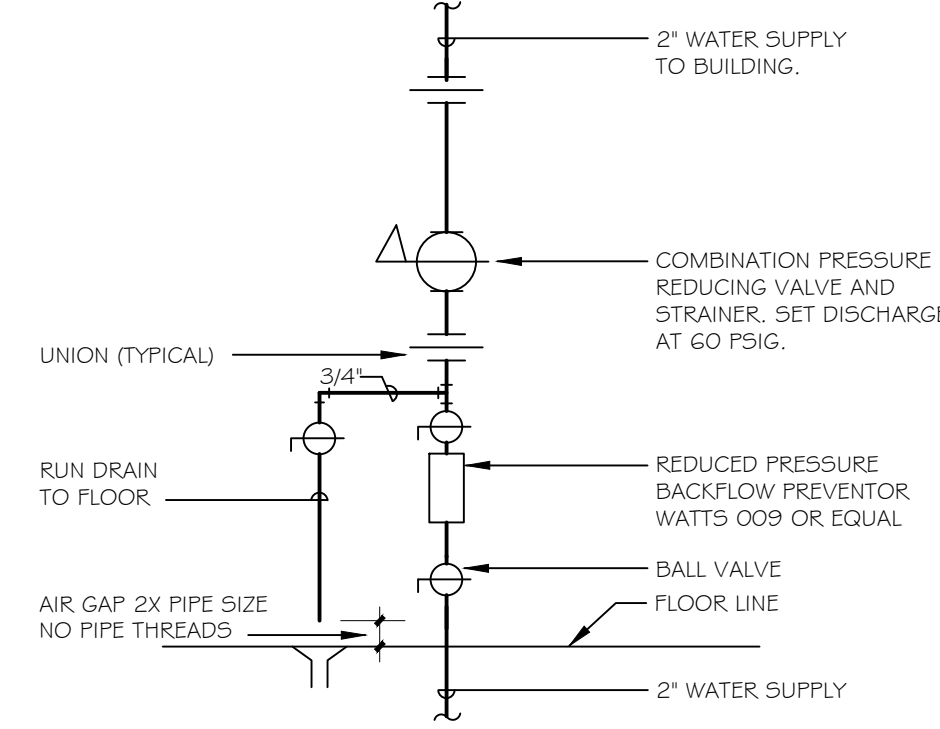
Angie & Chris Amundsen  
Nielson Architecture Planning, Inc.

**SEWAGE EJECTOR SCHEDULE**

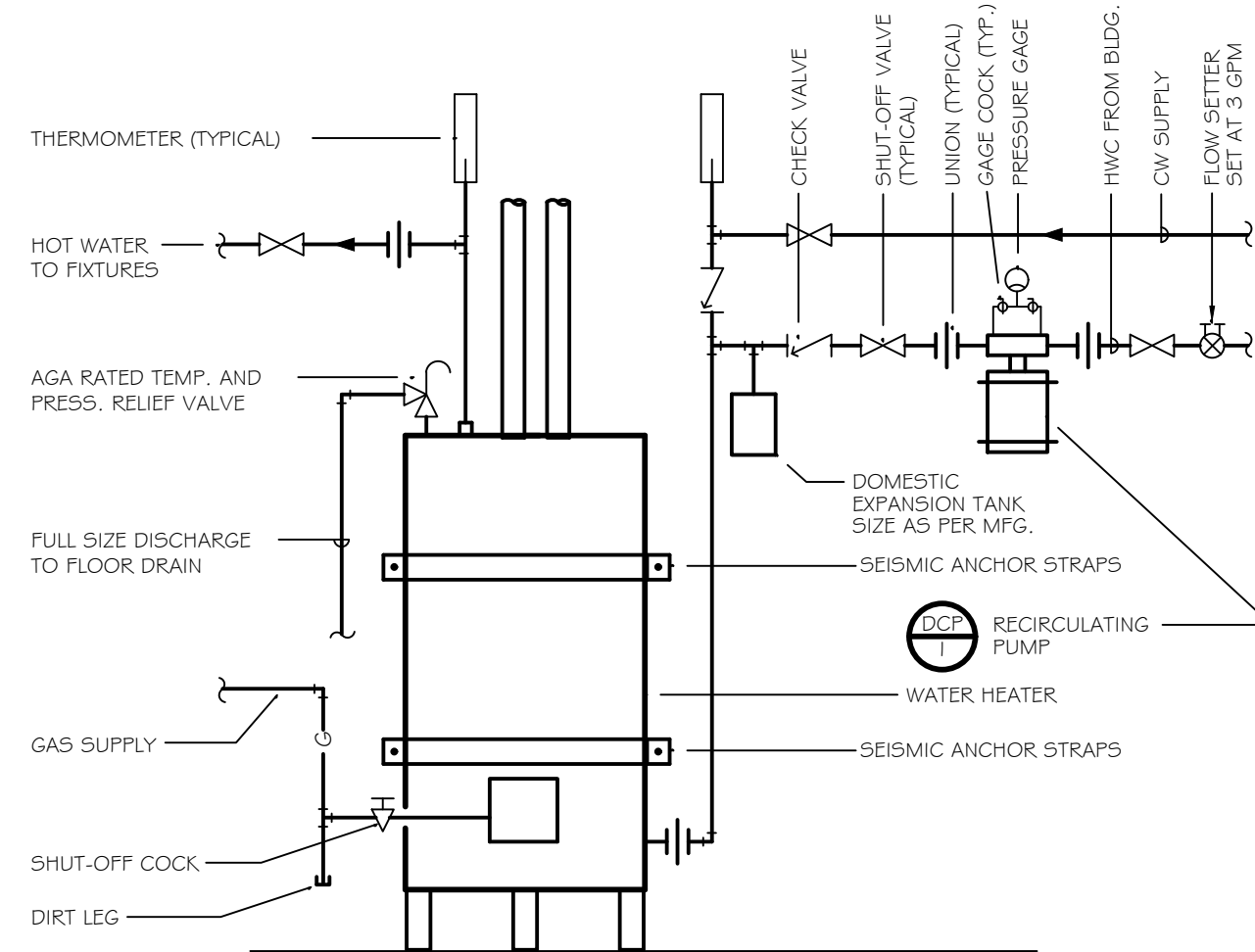
**SEWAGE GRINDER PUMP: DUPLEX SUBMERSIBLE TYPE, 30 GPM @ 60 FT. HEAD CAPACITY, 2 EACH 2 H.P. 208/1160 PUMPS, CAST IRON CONSTRUCTION WITH STAINLESS STEEL HARDWARE, 2" DIA. DISCHARGE CAPABLE OF HANDLING 2" SOLIDS, UL LISTED, 1 G25 RPM. SUMP TO BE FIBERGLASS OR POLYETHYLENE BASIN, 36" DIA. X 48" DEEP, WITH 4" INLET HUB, EXACT ELEVATION OF INLET HUB TO BE DETERMINED AT JOB SITE. COVER TO BE 1/4" STEEL WITH OPENINGS FOR DUPLEX PUMPS, 3" VENT, 2" DISCHARGE LINES, WIRING, ETC. WITH SEALS. PUMPS TO BE CONTROLLED BY DUPLEX PUMP CONTROL AND ALARM SYSTEM CONSISTING OF FLOATS, WALL MOUNTED CONTROL PANEL, ALTERNATING CONTROL, ALARM BELL AND WIRING. SYSTEM SHALL INCLUDE ALTERNATION OF PUMPS, HIGH WATER ALARM AND INDICATION OF PUMP FAILURE TO OPERATE.**  
**LITTLE GIANT MODEL GP-M231-15 PUMPS (2 REQ'D.) CUSTOM FIBERGLASS SUMP BASIN GP-DPLX3648 WITH COVER, MODEL CF55 DUPLEX PUMP CONTROL, FLOATS, AND ALARM SYSTEM.**



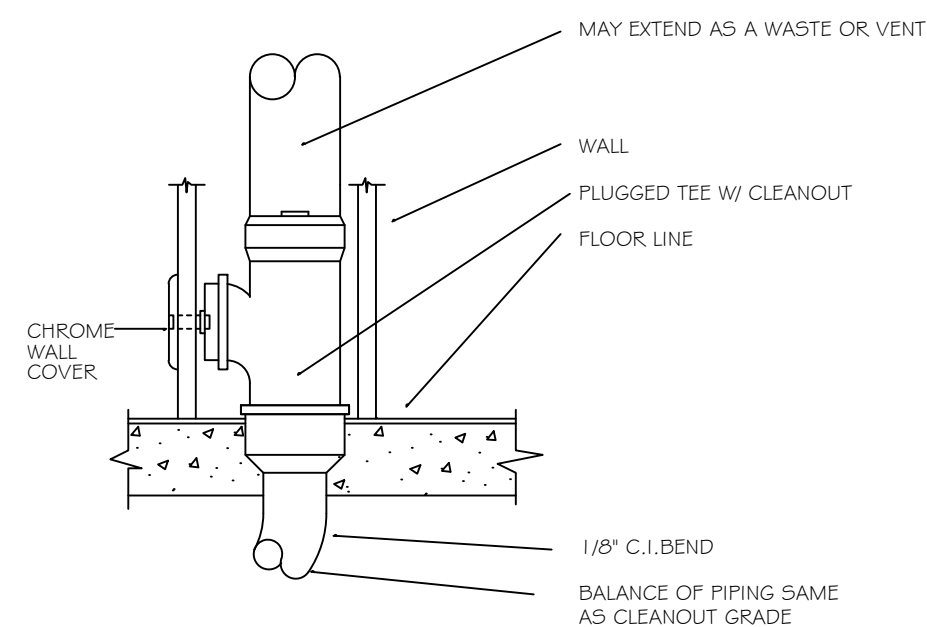
**SEWAGE PUMP DETAIL**  
NOT TO SCALE



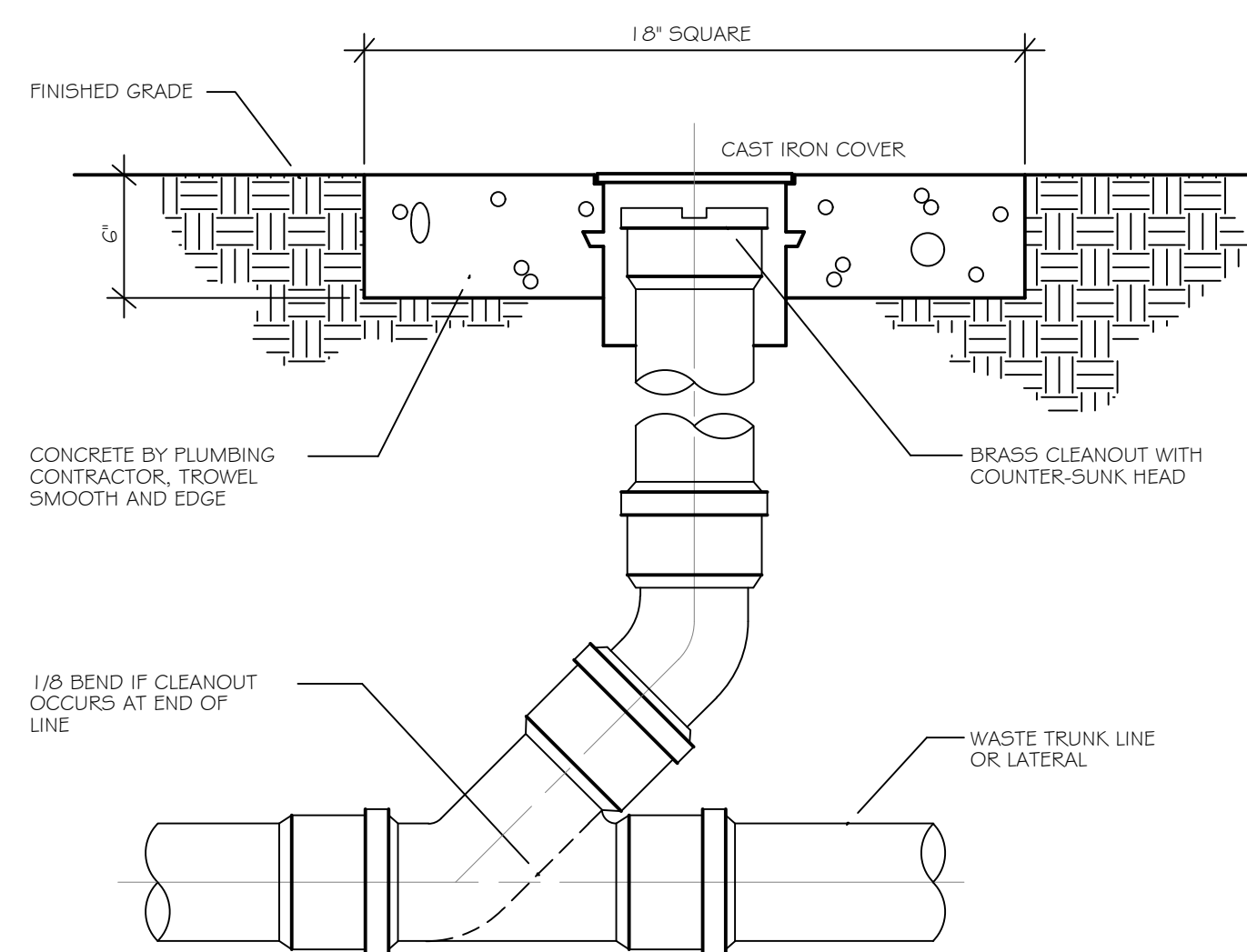
**VERTICAL WATER PRESSURE REDUCING STATION DETAIL**  
NOT TO SCALE



**WATER HEATER DETAIL**  
NOT TO SCALE



**WALL CLEANOUT DETAIL**  
NOT TO SCALE



**CLEAN OUT TO GRADE DETAIL**  
NOT TO SCALE

**PLUMBING FIXTURE SCHEDULE**

FIX. NO.	FIXTURE	TYPE	DESCRIPTION	WASTE	TRAP	VENT	HW	CW
(EWC-1)	ACCESSIBLE ELECTRIC WATER COOLER	ACCESSIBLE BARRIER-FREE	ACORN AQUA A1 11108F WALL MOUNTED BARRIER FREE SINGLE WATER COOLER WITH ONE-PIECE STAINLESS STEEL TOP AND RECEPTOR, WELDED STEEL FRAME, AND STEEL PANELS WITH BAKED ENAMEL COATING, 1/4" HP, 115/1160, FAN COOLED CONDENSER, 9 GPH OF 50°F WATER AT 80°F INLET WATER. COLOR BY ARCH.	1 1/2"	1 1/4"	1 1/4"	-	1/2"
(FD-1)	FLOOR DRAIN	TOILET ROOMS	SMITH FIGURE 2010-BP CAST IRON BODY AND FLASHING COLLAR WITH PROTECTIVE CAP AND ROUND NICKEL BRONZE ADJUSTABLE STRAINER HEAD WITH SECURED SQUARE HOLE GRATE. DEEP SEAL TRAP.	2"	2"	1 1/2"	-	-
(FD-2)	FLOOR DRAIN	CUSTODIAL MECHANICAL	SMITH FIGURE 2010-AP CAST IRON BODY AND FLASHING COLLAR WITH PROTECTIVE CAP AND ROUND NICKEL BRONZE ADJUSTABLE STRAINER HEAD WITH SECURED SQUARE HOLE GRATE. DEEP SEAL TRAP.	3"	3"	1 1/2"	-	-
(HA-1)	WATER HAMMER ARRESTOR	INLINE	JAY R. SMITH HYDROTROL WATER HAMMER ARRESTOR MODEL 5020, PDI SYMBOL "C", 1" THREADED NIPPLE, STAINLESS STEEL CONSTRUCTION, EXPANSION BELLOW TYPE.	-	-	-	-	1"
(HB-1)	HOSE BIBB	WALL MOUNTED	ACORN HOSE VALVE MODEL 8121-CP WITH WHEEL HANDLE, VACUUM BREAKER, POLISHED CHROME FINISH, AND 3/4" HOSE CONNECTION.	-	-	-	-	1/2"
(L-1)	ACCESSIBLE LAVATORY	ACCESSIBLE COUNTER MOUNTED OVAL	AMERICAN STANDARD MODEL 0293 SELF RIMMING VITREOUS CHINA LAVATORY WITH SINGLE FAUCET HOLE, OPEN GRID STRAINER, CLEVELAND CFG MODEL 4771 IL SINGLE HANDLE LAVATORY. PROVIDE ADA INSULATION KIT ON LINES BELOW LAV. SWING SPOUT, 4 E3 AERATOR, AND 1/2 HP DISPOSAL.	1 1/2"	1 1/4"	1 1/4"	1/2"	1/2"
(L-2)	LAVATORY	WALL HUNG RECTANGULAR	KOHLER K-2006 KINGSTON 2 1/4" X 18" VITREOUS CHINA WALL HUNG LAVATORY WITH 8" FAUCET CENTERS AND DRILLING FOR FLOOR MOUNTED CARRIERS WITH CONCEALED ARM BRACKETS; K-7715 OPEN GRID STRAINER, CHICAGO NO. 785-E3 H-LITE QUARTURN FITTING, NO. 317 WESTBLADE HANDLES, ON-LA-E3 SPOUT. (1)	1 1/2"	1 1/4"	1 1/4"	1/2"	1/2"
(S-1)	BREAK ROOM SINK	TWO COMPARTMENT SINK	DAYTON DSEW-3321 GAUGE #300 STAINLESS STEEL COUNTERTOP SELF RIMMING SINK. DIMENSIONS: 33" X 21" X 8" WITH (2) FAUCET HOLES ON 4" CENTERS; STRAINER; CLEVELAND CFG FLAGSTONE MODEL 17511 SINGLE HANDLE FAUCET WITH 8" SWING SPOUT, 4 E3 AERATOR.	2"	1 1/2"	1 1/2"	1/2"	1/2"
(SS-1)	SERVICE SINK	FLOOR MOUNTED SERVICE SINK	CHICAGO MODEL 897-CP WALL MOUNTED FAUCET AND 24"X36"X10" MOLDED STONE BASIN WITH STAINLESS STEEL STRAINER AND WALL GUARD, HOSE, AND MOP HANGER.	3"	3"	1 1/2"	1/2"	1/2"
(U-1)	URINAL	ACCESSIBLE WALL HUNG	KOHLER K-4972-T STANWELL WATER GAUARD VITREOUS CHINA WALL HUNG SIPHON JET URINAL WITH 3/4" TOP SPUD INLET AND 2" N.P.S. OUTLET. SLOAN 8186 OPTIMA BATTERY OPERATED FLUSH VALVE. MOUNT URINAL RIM AT 17" TO MEET ADA REQUIREMENTS.	2"	-	1 1/2"	-	3/4"
(U-2)	URINAL	WALL HUNG	KOHLER K-4972-T STANWELL WATER GAUARD VITREOUS CHINA WALL HUNG SIPHON JET URINAL WITH 3/4" TOP SPUD INLET AND 2" N.P.S. OUTLET. SLOAN 8186 OPTIMA BATTERY OPERATED FLUSH VALVE.	2"	-	1 1/2"	-	3/4"
(WC-1)	WATER CLOSET	ACCESSIBLE FLOOR MOUNTED FLUSH VALVE	KOHLER K-4365 HIGHCLIFF VITREOUS CHINA TOP SPUD FLOOR MOUNTED REVERSE TRAP ELONGATED TOILET WITH 52048 BOLT CAPS; PLASTIC OPEN FRONT SEAT; 12" ROUGHING-IN. ACTUATOR SHALL BE ON THE WIDE SIDE OF STALL. SLOAN MANUAL OPERATED FLUSH VALVE.	3"	-	1 1/2"	-	1"
(WC-2)	WATER CLOSET RESTROOM	FLOOR MOUNTED FLUSH VALVE	KOHLER K-4350 WELCOME VITREOUS CHINA TOP SPUD FLOOR MOUNTED REVERSE TRAP ELONGATED TOILET WITH 52048 BOLT CAPS; PLASTIC OPEN FRONT SEAT; 12" ROUGHING-IN. ACTUATOR SHALL BE ON THE WIDE SIDE OF STALL. SLOAN MANUAL OPERATED FLUSH VALVE.	3"	-	1 1/2"	-	1/2"

(1) PROVIDE SYMMONS THERMIXER MODEL 5-120 THERMOSTATIC MIXING VALVE BELOW LAVATORIES AND SINK. SET OUTLET AT 110°F. CONNECT TO HOT WATER INLET OF FAUCET.

**DOMESTIC WATER CIRCULATE PUMP SCHEDULE**

PUMP NO.	MANUFACTURER AND MODEL NO.	GPM	HEAD FT.	H.P.	RPM	VOLTS/PHASE/CYCLE	EQUIPMENT OR AREA SERVED	COMMENTS
(DCP-1)	BELL & GOSSETT SERIES PR6	3	-	1/4	1750	120/1/60	ALL ROOMS & FIXTURES	(1) (2)

(1) ALL BRONZE CONSTRUCTION.  
(2) EQUIPPED WITH 24 HOUR, 7 DAY PROGRAMMABLE TIMER.

**GAS FIRED DOMESTIC HOT WATER HEATER SCHEDULE**

SYMBOL	MANUFACTURERS AND MODEL NO.	TANK CAPACITY GALLONS	FUEL TYPE	INPUT BTUH (1)	AMP	VOLTS/PHASE/CYCLE	RECOVERY RATE @ 90°F RISE GPH	WATER TEMP IN/OUT	STACK/INTAKE SIZE	COMMENTS
(WH-1)	A.O. SMITH GFDX-50	50	NAT GAS	50,000	3	120/1/60	41	50/140	3"	

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DATE  
November 14, 2017

**2468 BUILDING**  
A NEW PLAY FACILITY  
2468 South Main Street, Woods Cross, Utah  
Angie & Chris Amundsen  
Nielson Architecture Planning, Inc.

PROJECT TITLE  
**PLUMBING DETAILS & SCHEDULES**

PROJECT NUMBER

REVISIONS

SHEET NUMBER

**P-5**