

GENERAL NOTES:

- ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CHRISTIANA SCHOOL DISTRICT'S STANDARDS AND SPECIFICATIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY OF HIS OWN PERSONAL AND SURROUNDINGS OF THE WORK AREA. THIS INCLUDES PROVIDING ALL NECESSARY BARRICADES, SIGNS, FIRE EXTINGUISHERS, ETC. ALL APPLICABLE OSHA REGULATIONS SHALL APPLY TO THIS WORK. COMPLY WITH ALL OWNER'S SITE SAFETY CONDITIONS.
- ALL WORK SHALL BE IN CONFORMANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS ADOPTED BY MUNICIPAL, COUNTY, STATE AND FEDERAL AUTHORITIES, UTILITY COMPANIES, INSURANCE AGENCIES AND OTHER AUTHORITIES HAVING JURISDICTION OF AUTHORITIES.
- THE CONTRACTOR SHALL APPLY FOR, SECURE AND PAY FOR ALL PERMITS AND/OR CERTIFICATES OF INSPECTION REQUIRED IN THE PERFORMANCE OF THE WORK BY ALL AUTHORITIES HAVING JURISDICTION.
- THESE DOCUMENTS ARE SHOWN DIAGRAMMATICALLY, CONTRACTOR SHALL VERIFY ALL ROUTING FOR POSSIBLE INTERFERENCES BEFORE FABRICATION AND INSTALLATION, CONTRACTORS BID SHALL INCLUDE LABOR, MATERIAL AND EQUIPMENT TO RESOLVE INTERFERENCES.
- ALL COMPONENTS REQUIRED FOR A COMPLETE INSTALLATION ARE NOT SHOWN ON THE DRAWINGS. REFER TO EQUIPMENT INSTALLATION INSTRUCTIONS FOR ADDITIONAL REQUIREMENTS, INCLUDING REQUIRED CONNECTION LOCATIONS, TYPES, & SIZES.
- ALL WORK SHALL BE SCHEDULED AND COORDINATED WITH THE OWNER SO THAT DISRUPTION TO THE AREAS INVOLVED IS KEPT TO A MINIMUM. CONTRACTOR SHALL GIVE OWNER A MINIMUM OF 5 WORKING DAYS NOTICE OF ANY AND ALL WORK THAT WILL INTERFERE WITH THE OWNER'S OPERATION SO A SCHEDULE SUITABLE TO THE OWNER CAN BE ARRANGED. ANY ACCIDENTAL INTERRUPTIONS TO SERVICES SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNER.
- THE DRAWINGS GENERALLY INDICATE MAJOR ITEMS OF EXISTING MATERIALS AND EQUIPMENT THAT SHALL BE REMOVED, RELOCATED, REROUTED OR ABANDON BY EACH TRADE. IT IS NOT POSSIBLE TO INDICATE ALL RELATED ACCESSORIES, SPECIALTIES AND OTHER MINOR ITEMS; HOWEVER, THEIR REMOVAL, RELOCATIONS, REROUTING OR ABANDONMENT SHALL ALSO BE INCLUDED IN THIS CONTACT AND SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.
- ALL DEMOLITION SHALL BE COMPLETED IN A SAFE AND ORDERLY MANNER. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORTS, BRACING, ETC. AS MAY BE REQUIRED DURING DEMOLITION.
- VERIFY ALL FIELD CONDITIONS, ACCESS WAYS, DIMENSIONS AND DETAILS IN THE FIELD PRIOR TO BID AND PRIOR TO FABRICATION. INCLUDE IN BID ALL WORK NECESSARY TO COVER COSTS RESULTING FROM FIELD CONDITIONS.
- IN ADDITION TO SPECIFICS AS MAY BE DEFINED HEREINAFTER THE CONTRACTOR SHALL PROTECT THE WORK SITE AND ALL HIS WORK AGAINST DAMAGE FROM ANY SOURCE (INCLUDING BUT NOT LIMITED TO WATER, DUST, HEAT, FREEZING ETC.) UNTIL FINAL COMPLETION AND ACCEPTANCE BY THE OWNER.
- EXISTING CONCEALED AND/OR EXPOSED EQUIPMENT AND MATERIALS THAT WILL BECOME ABANDONED DUE TO NEW WORK SHALL BE REMOVED BACK TO ACTIVE RISER OR MAIN, PROPERLY PLUG AND/OR CAP ABANDONED ITEM BEHIND FINISH SURFACES.
- CONTRACTOR SHALL REMOVE ALL DEMOLISHED EQUIPMENT AND MATERIALS NOT DESIRED BY OWNER AND SHALL BECOME PROPERTY OF CONTRACTOR. CONTRACTOR SHALL REMOVE ALL SUCH MATERIAL PROMPTLY FROM SITE TO MAINTAIN A CLEAN AND ORDERLY WORK AREA. EQUIPMENT AND MATERIALS DESIRED BY OWNER SHALL BE DELIVERED BY CONTRACTOR TO AN ON-SITE STORAGE LOCATION DESIGNATED BY OWNER
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AND PERFORM ALL LABOR, MATERIAL, EQUIPMENT, INCIDENTALS, METHODS AND SERVICES REQUIRED TO INSTALL ALL WORK INDICATED COMPLETELY AND IN FULL OPERATION. CONTRACTOR SHALL PROVIDE ALL HANGERS, SUPPORTS, NUTS, BOLTS, AND GASKETS AS REQUIRED FOR PROPER SYSTEM INSTALLATION.
- EACH CONTRACTOR SHALL REVIEW "ALL" PROJECT DOCUMENTS OF "ALL" TRADES REVIEWING ALL OF THE PROJECT REQUIREMENTS PRIOR TO BIDDING. DISCREPANCIES BETWEEN DOCUMENTS SHALL BE REPORTED AT THE TIME OF BID.
- CONTRACTOR SHALL PROVIDE ALL PIPING SPECIALTIES AS INDICATED IN DESIGN DOCUMENTS OR NECESSARY FOR PROPER OPERATION OF SYSTEMS SHOWN ON THE DRAWINGS.

- ### SYMBOL LEGEND:
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| | POINT OF CONNECTION |
| | POINT OF DISCONNECTION |
| | EQUIPMENT DESIGNATION MARK |
| | DEMOLITION WORK |
| | TEMPERATURE SENSOR |
| | THERMOSTAT |
| | PIPING (SERVICES AS INDICATED) |
| | HOT WATER RETURN PIPING - DOMESTIC |
| | HOT WATER PIPING - DOMESTIC |
| | COLD WATER PIPING - DOMESTIC |
| | BALL VALVE |
| | ELBOW TURNED UP |
| | ELBOW TURNED DOWN |
| | TEE DN |
| | DIRECTION OF FLOW |
| | MANUAL AIR VENTS |
| | SPRINKLER HEAD |
| | VOLUME DAMPER (MANUALLY) |
| | SUPPLY CEILING DIFFUSER (CD) |
| | DUCT TRANSITION (SQUARE TO ROUND) |
| | DUCT TRANSITION |
- WHERE REQUIRED FOR CLEARANCE, TO AVOID INTERFERENCE OR EQUIPMENT CONNECTIONS, THE MECHANICAL CONTRACTOR SHALL OFFSET PIPES OR CONDUITS AS NECESSARY. SPECIAL FITTINGS OR ADAPTERS SHALL BE PROVIDED TO MAINTAIN GOOD FLOW CHARACTERISTICS. PROPERLY DRAIN AND DRIP WHERE NECESSARY.
 - ALL WORK, EQUIPMENT AND MATERIALS SHALL BE PROTECTED AT ALL TIMES. ALL PIPE, DUCT AND EQUIPMENT OPENINGS SHALL BE PROPERLY CAPPED OR PLUGGED DURING INSTALLATION.
 - LOCATE CEILING AIR TERMINAL DEVICES (DIFFUSER, GRILLES, REGISTERS) IN CEILING GRID. COORDINATE EXACT LOCATION WITH LIGHTING, FIRE PROTECTION DEVICE, OTHER CEILING MOUNTED DEVICE.
 - PROVIDE STEEL SLEEVES FOR ALL DUCTWORK AND PIPING THAT PASS THROUGH WALLS, FLOORS, CEILING AND ROOF. SEAL PENETRATION WITH AN APPROVED FIRE-STOPPING SYSTEM.
 - CONTRACTOR SHALL BALANCE ALL HVAC SYSTEMS EFFECTED BY THIS PROJECT (WATER AND AIR) TO QUANTITIES INDICATED AND PROVIDE A BALANCING REPORT FOR REVIEW/ APPROVAL.
 - THERMOSTAT LOCATIONS SHOWN ON THE DRAWINGS ARE FOR REFERENCE ONLY. COORDINATE ACTUAL LOCATION WITH CONTROLS CONTRACTOR.
 - ALL EQUIPMENT SHALL HAVE ITS MANUFACTURER'S NAMEPLATE SECURELY ATTACHED GIVING DESIGN AND OPERATING CHARACTERISTICS. NAMEPLATES SHALL NOT BE COVERED OR OBSTRUCTED FROM VIEW. ELECTRICAL PANEL SCHEDULES SHALL BE PROVIDED AND/OR WHERE EXISTING THEY SHALL BE AMENDED TO REFLECT THE NEW WORK. PIPING AND CONDUIT SYSTEMS SHALL BE LABELED AND VALVES SHALL BE TAGGED.
 - UNLESS OTHERWISE NOTED, ALL PARTS, EQUIPMENT AND MATERIALS SHALL BE NEW AND SHALL BE ASME AND/OR UL APPROVED.
 - CONTRACTOR SHALL COMPLETE ALL CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF THE WORK. CUTTING AND PATCHING SHALL BE COMPLETED IN A NEAT AND WORKMANLIKE MANNER. PATCHING MATERIALS SHALL MATCH EXISTING MATERIALS TO THE GREATEST EXTENT POSSIBLE. PROVIDE TOUCH-UP PAINT TO MATCH EXISTING SURROUNDING AREAS OF CUTTING AND PATCHING WORK.
 - PRIOR TO ACCEPTANCE OF THE PROJECT, ALL SYSTEMS SHALL BE TESTED, BALANCED AND OPERATED TO DEMONSTRATE TO THE OWNER OR HIS DESIGNATED REPRESENTATIVE THAT THE INSTALLATION AND PERFORMANCE OF THESE SYSTEMS AND/OR PARTS THEREOF CONFORM TO DESIGN INTENT.
 - THIS CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ANY & ALL CEILING & FLOOR TILES AND GRID-WORK REQUIRED FOR WORK. AFTER INSTALLATION OF WORK IS COMPLETE, GRID AND TILES SHALL BE RE-INSTALLED. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ANY & ALL DAMAGED TILES AND GRID WITHIN THE WORK AREA. CONTRACTOR SHALL INSPECT EXISTING CEILING CONDITION BEFORE WORK AND PROVIDE WRITTEN REPORT OF EXISTING DAMAGE.

CONTINUITY OF EXISTING SYSTEMS AND SERVICES

- ALL WORK SHALL BE PERFORMED AT SUCH TIME AND IN SUCH MANNER AS WILL LEAST INTERFERE WITH MAINTENANCE AND OPERATION OF OWNER'S ACTIVITIES. PROVISIONS SHALL BE MADE TO PERMIT OWNER'S USE OF ALL THE BUILDING AND OF EXISTING SYSTEMS AT ALL TIMES. PROVIDE TEMPORARY FACILITIES TO SECURE THESE CONDITIONS. REMOVE TEMPORARY FACILITIES WHEN PERMANENT WORK HAS BEEN PLACED INTO SERVICE.
- FULLY COORDINATE WITH OWNER AND ALL OTHER TRADES, ALL WORK INVOLVING SHUT-DOWN AND INTERRUPTION OF EXISTING SYSTEMS AND SERVICE.
- SHUT-DOWN OF EXISTING SERVICES WHERE REQUIRED TO INSTALL NEW SYSTEMS OR ALTER EXISTING, SHALL BE PERFORMED DURING HOURS THAT THE BUILDING IS NOT BEING USED BY OWNER. ALL COSTS FOR PERFORMING THIS WORK SHALL BE BORNE BY THE CONTRACTOR AND WITHOUT "EXTRA" COST TO THE OWNER.
- EXISTING SYSTEMS AND SERVICES THAT ARE TEMPORARILY DISCONNECTED, BUT ARE TO REMAIN IN USE, SHALL BE PERMANENTLY RECONNECTED AND RETURNED TO PROPER OPERATION.
- FULLY COORDINATE WITH ARCHITECT, OWNER AND OTHER TRADES TO INSURE COMPLETE CONTINUITY OF ALL SYSTEMS AND SERVICES.
- CONTRACTOR SHALL FIELD VERIFY EXISTING DUCT TIE POINTS BEFORE BEGINNING NEW WORK.
- THE CONTRACTOR SHALL ISOLATE SYSTEM IN BOILER ROOM AND DRAIN DOWN SYSTEM PRIOR TO DEMOLITION. CONTRACTOR SHALL DISPOSE OF SYSTEM WATER PROPERLY TO MEET ALL CODES AND REGULATIONS.

ABBREVIATIONS:

ABV	ABOVE	GPM	GALLONS PER MINUTE
AD	ACCESS DOOR	H	HIGH
AFF	ABOVE FINISHED FLOOR	HW	HOT WATER - DOMESTIC
AV	AIR VENT	HWR	HOT WATER RETURN
BLW	BELOW	HWS	HOT WATER SUPPLY
BTU	BRITISH THERMAL UNITS	IN	INCHES
BTUH	BRITISH THERMAL UNITS PER HOUR	IN.WC	INCH WATER COLUMN
C	CONDENSATE (DRAIN)	IN.WG	INCH WATER GAUGE
CFM	CUBIC FEET PER MINUTE	LBS	POUNDS (WEIGHT)
CLG	CEILING	MAX	MAXIMUM
CO	CLEAN OUT	MBH	1000 x BTUH
CV	CONTROL VALVE	MIN	MINIMUM
CW	COLD WATER - DOMESTIC	MOD	MOTOR OPERATED DAMPER
(D)	DEMOLISH AND REMOVE	(N)	NEW
DIFF	DIFFUSER	NIC	NOT IN CONTRACT
DWHR	DOMESTIC HOT WATER RETURN	OA	OUTSIDE AIR
DN	DOWN	PSI	POUNDS PER INCH
(E)	EXISTING TO REMAIN	TS	TEMPERATURE SENSOR
ELEC	ELECTRICAL	TSP	TOTAL STATIC PRESSURE
ELEV	ELEVATION	TYP	TYPICAL
ESP	EXTERNAL STATIC PRESSURE	W/	WITH
FLR	FLOOR	VD	VOLUME DAMPER
FD	FLOOR DRAIN	W/	WITH
FT	FEET		

SYMBOL LEGEND:

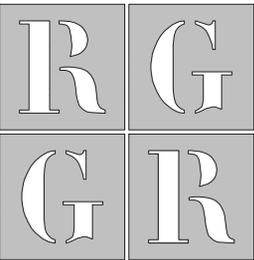
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| | SUPPLY CEILING DIFFUSER (CD) |
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| | DUCT TRANSITION |

SPECIFICATION:

- DUCTWORK:**
 - DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET METAL G90 GRADE PER SMACNA. PROVIDE ALL NECESSARY CROSS-BREAKING AND DUCT REINFORCING AS REQUIRED PER SMACNA RECOMMENDATIONS. DUCTWORK SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED PER SMACNA STANDARDS.
 - ALL DUCTWORK SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED PER SMACNA STANDARDS AND FOR PRESSURES OF 2" E.S.P. SEAL ALL LONGITUDINAL SEAMS AND TRANSVERSE JOINTS WITH FIREPROOF SEALANT FOR "AIR-TIGHT" APPLICATION.
- DUCT INSULATION:**
 - INSULATION MUST BE FIRE RATED FOR FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPED FOR 50 OR LESS.
 - INSULATION SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - DUCT WRAP: ALL CONCEALED DUCTWORK SHALL BE WRAPPED WITH 2" THICK FIBERGLASS DUCT INSULATION HAVING A CONDUCTIVITY OF 0.29 AT MEAN TEMPERATURE OF 75°F AND A DENSITY OF 0.75 PCF. INSULATION SHALL HAVE A 25% COMPRESSION R-VALUE OF GREATER THAN 5.
 - INSULATION SHALL BE KNAUF DUCT-WRAP WITH FOIL FACE ALL-SERVICE JACKET OR APPROVED EQUAL.
 - INSULATION SHALL BE KNAUF INSULATION BROAD WITH ALL-SERVICE JACKET OR APPROVED EQUAL.
- FLEXIBLE DUCT:**
 - FLEXIBLE DUCT SHALL BE INSULATED HIGH PRESSURE MULTI-PLY METALIZED POLYESTER CORE TYPE.
 - INSULATED SHALL HAVE AN R-9 VALVE WITH A FIBERGLASS SCRM TO PREVENT TEARING.
 - DUCT SHALL HAVE BE PRESSURE TESTED FOR 10" W.C. POSITIVE & 1" W.C. NEGATIVE.
 - DUCT SHALL BE UL-181 LISTED.
 - FLEXIBLE DUCTWORK SHALL BE CONNECTED TO BRANCHES AND MAINS USING CONICAL FITTINGS AND SHALL NOT EXCEED 5'-0" IN LENGTH INCLUDING ONE ELBOW.
 - FLEXIBLE DUCTWORK SHALL NOT BE USE AS EXHAUST DUCTWORK.
 - ACCEPTABLE MANUFACTURERS: HART & COOLEY, FLEXMASTER, THERMAFLEX, OWEN CORNING.
- VOLUME DAMPERS:**
 - PROVIDE VOLUME DAMPERS AT ALL DUCT BRANCHES, RUN-OUTS AND FOR EACH OUTLET. PROVIDE OPPOSED BLADE VOLUME DAMPERS AT ALL REGISTERS, AND GRILLES IN GENERAL ROOM EXHAUST ONLY WHERE INDICATED ON PLANS.
 - MANUAL VOLUME DAMPERS
 - ROUND TYPE: 20 GAGE GALVANIZED FRAME AND BLADE, LOCKING HAND QUADRANT AXLE SHAFT EXTENDING BEYOND FRAME, MOLDED SYNTHIC BEARINGS.
 - RECTANGLE TYPE: 16 GAGE GALVANIZED FRAME AND BLADE WITH STOP, LOCKING HAND QUADRANT AXLE SHAFT EXTENDING BEYOND FRAME, MOLDED SYNTHIC BEARINGS.
 - DUCTS UP TO 10-INCHES - SINGLE BLADE TYPE.
 - DUCTS 12-INCHES AND LARGER - MULTI-BLADE TYPE.
 - ALL DAMPERS SHALL HAVE 2" STANDOFF HAND QUADRANT MOUNTING BRACKET.
 - BASIS OF DESIGN: RECTANGULAR, RUSKIN MODEL 'M80-35' ROUND, RUSKIN MODEL 'M8RS-25'
 - ACCEPTABLE MANUFACTURERS: RUSKIN, NAILER-HEART, POTTORFF, LOUVERS & DAMPERS
- HYDRONIC PIPING:**
 - PIPING SHALL BE TYPE "L" HARD DRAWN COPPER UP TO 2" DIAMETER AND SCHEDULE 40 BLACK STEEL FOR 2 1/2" DIAMETER AND LARGER.
 - COPPER TUBING: ASTM B88 (ASTM B 88M) TYPE "L" HARD DRAWN.
 - SOLDER JOINTS: ASME B16.18 CAST BRASS/BRONZE OR ASME B16.22 SOLDER WROUGHT COPPER FITTINGS.
 - SOLDER: ASTM B 32 LEAD-FREE SOLDER, TIN AND SILVER, JOINED USING 95-5 TIN/ANTIMONY SOLDER.
 - BRAZING: AWS A5.3/ A5.8M BCuP COPPER/ SILVER ALLOY.
 - STEEL PIPING: ASTM A53/ A 53M, SCHEDULE 40 BLACK STEEL
 - WELDED JOINTS: ASTM A 234/A 234M, WROUGHT STEEL WELDING TYPE FITTINGS; AWS D11.1 WELDED.
 - THREADED JOINTS: ASTM B 16.3, MALLEABLE IRON FITTINGS.
 - UNIONS, FLANGES & COUPLINGS:
 - UNIONS FOR 2" AND UNDER COPPER PIPING. UNIONS SHALL BE BRONZE WITH SOLDERED JOINTS.
 - FLANGES FOR 2 1/2" AND OVER PIPING. FLANGES SHALL BE 150 PSIG FORGED STEEL, SLIP-ON WITH A 1/16" THICK PERFORMED NEOPRENE GASKETS
 - D. VALVES:
 - HOT WATER
 - BALL VALVES: FOR PIPING 2" AND SMALLER, 600 PSI CWP CAST BRASS BODY, STAINLESS STEEL BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE WITH BALANCING STOPS AND SOLDER ENDS WITH UNIONS.
 - GATE VALVES: FOR PIPING 2 1/2" AND LARGER, CLASS 150, IRON, BRONZE MOUNTED W/ BODY AND BONNET CONFORMING TO ASTM-A-126 CLASS B CAST IRON, RISING STEM, HAND WHEEL, TEFLON-IMPREGNATED PACKING AND TWO-PIECE PACKING ASSEMBLY, FLANGED ENDS.
 - ACCEPTABLE MANUFACTURERS: NIBCO, MILWAUKEE, APOLLO (FOR BALL & GATE VALVES ONLY)
 - PIPING SHALL BE RIGIDLY SUPPORTED AT INTERVALS OF NOT MORE THAN 10 FEET.
 - CONTRACTOR TO PROVIDE MANUAL AIR VENT AT ALL HIGH POINTS IN ALL MODIFIED OR NEW PIPING SYSTEMS.
 - ALL PIPING CONDUCTING LIQUIDS SHALL BE INSTALLED ON "WARM" SIDE OF BUILDING INSULATION.
 - PROVIDE DIELECTRIC UNIONS IN PIPING WHERE DISSIMILAR METALS ARE JOINED TOGETHER.
 - THE SIZE OF ALL PIPING SHALL BE AS SHOWN ON THE DRAWINGS, OR WHERE NOT SHOWN, AS REQUIRED.
 - CHANGE OF PIPE SIZES ON HORIZONTAL RUNS SHALL BE MADE WITH ECCENTRIC REDUCERS WITH TOP OF PIPE LEVEL.
 - PROVIDE A MINIMUM THREE (3)-ELBOW SWING FOR ALL PIPE TAKE-OFFS.
 - PROVIDE BALANCING COCKS AT SYSTEM LOOP RETURNS AND AT RETURN RISERS. PROVIDE SHUT-OFF VALVES AT SYSTEM LOOP SUPPLIES AND SUPPLY RISERS.
 - PRIOR TO INSULATING, PIPING SHALL BE HYDROSTATICALLY TESTED AT 100 PSIG WITH NO LOSS OF PRESSURE FOR 3 HOURS.
 - ALL HORIZONTAL LINES SHALL BE RUN LEVEL WITHOUT POCKETS. WHERE VERTICAL, DROP IN DIRECTION OF FLOW.
 - WATER PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE SO THERE WILL BE COUNTER FLOW BETWEEN WATER AND AIR.
 - PROVIDE PIPE SLEEVES FOR ALL PIPING PENETRATING THROUGH WALLS, FLOORS AND PARTITIONS. IF PENETRATION IS THROUGH FIRE RATED ASSEMBLY, SEAL ALL ANNULAR SPACE BETWEEN SLEEVES PIPING WITH A FIRE BARRIER MATERIAL EQUAL TO 3M "PENETRATION SEALING SYSTEM".
- CONDENSATE DRAIN PIPING:**
 - CONDENSATE DRAINAGE PIPING SHALL BE TYPE DWV HARD DRAWN SEAMLESS COPPER WITH NO-LEAD SOLDER JOINTS.
 - HORIZONTAL DRAIN PIPING SHALL BE INSTALLED AT UNIFORM SLOPE NOT LESS THAN 1/4" PER FOOT FOR 3" AND SMALLER AND NOT LESS THAN 1/8" PER FOOT.
- SPRINKLER PIPING:**
 - ALL MATERIAL SHALL BE SCHEDULE 40 BLACK STEEL PIPING.
 - ALL MATERIAL SHALL BE CONFORMING TO NFPA STANDARD.
 - INSTALLATION OF ALL MATERIAL SHALL CONFORM TO NFPA-13 AND AUTHORITIES HAVING JURISDICTION.
 - PROVIDE PIPE SLEEVES FOR ALL PIPING PENETRATING THROUGH WALLS, FLOORS AND PARTITIONS. IF PENETRATION IS THROUGH FIRE RATED ASSEMBLY, SEAL ALL ANNULAR SPACE BETWEEN SLEEVES PIPING WITH A FIRE BARRIER MATERIAL EQUAL TO 3M "PENETRATION SEALING SYSTEM".
- PIPE INSULATION:**
 - ALL HOT WATER PIPING AND HORIZONTAL CONDENSATE DRAINAGE PIPING SHALL BE INSULATED.
 - PRIOR TO INSULATING, PIPING SHALL BE HYDROSTATICALLY TESTED AT 100 PSIG WITH NO LOSS OF PRESSURE FOR THREE HOURS.
 - INSULATION SHALL CARRY THROUGH ALL PENETRATIONS AND PIPE SUPPORTS.
 - PROVIDE GALVANIZED METAL SHIELDS FORMED TO FIT THE INSULATION BETWEEN SUPPORT AND FINISHED INSULATIONS.
 - FIBERGLASS PIPE INSULATION SHALL HAVE FACTORY APPLIED PAPER FREE ALL SERVICE JACKET AND SSL II ADHESIVE CLOSURE SYSTEM, RATED FOR A MAXIMUM SERVICE TEMPERATURE OF 850 °F, WITH A CONDUCTIVITY LESS THAN 0.27 BTU-IN./H.-FT.-°F AT A 75°F MEAN TEMPERATURE WHEN TESTED IN ACCORDANCE WITH ASTM C 177 OR ASTM C 518, LATEST REVISIONS. CIRCUMFERENTIAL JOINTS SHALL BE SEALED WITH PAPER FREE BUTT STRIPS THAT ARE COMPATIBLE FACING, ACCEPTABLE MANUFACTURERS: KAUF, OWENS-CORNING.
 - CLOSED-CELL ELASTOMERIC PIPE INSULATION SHALL REQUIREMENTS AS DEFINED IN ASTM C 534. INSULATION MATERIAL SHALL BE MANUFACTURED WITHOUT THE USE OF CPC'S, HFC'S OR HCFC'S. IT IS ALSO FORMALDEHYDE FREE, LOW VOC'S, FIBER FREE, DUST FREE AND RESISTS MOLD AND MILDEW. MATERIALS SHALL HAVE A MAXIMUM WATER VAPOR TRANSMISSION OF 0.08 PER-INCHES WHEN TESTED IN ACCORDANCE WITH ASTM E 96, PROCEDURE A, LATEST REVISION. INSULATION SHALL BE SIMILAR TO K-FLEX 'INSUL-TUBE'. ACCEPTABLE MANUFACTURERS: ARMCCELL, K-FLEX AND NOMACO.
 - INSULATION THICKNESS:
 - HOT WATER:
 - CLOSED-CELL ELASTOMERIC - 1 1/2" THICK ALL PIPING.
 - 1 1/2" THICK FOR PIPING 1-1/2" & BELOW
 - FIBERGLASS - 2" THICK FOR PIPING 2" & ABOVE
 - CONDENSATE:
 - CLOSED-CELL ELASTOMERIC - 1/2" THICK ALL PIPING.
 - INSULATION SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - INSULATION MUST BE FIRE RATED FOR FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPED OF 50 OR LESS.
 - ALL VALVES, INCLUDING BUT NOT LIMITED TO STRAINERS, CIRCUIT SETTERS, BALL VALVES, BALANCING VALVES AND COMBINATION VALVES, ETC., IN HEATING HOT WATER SYSTEMS, SHALL BE INSULATED WITH A FACTORY FABRICATED REMOVABLE AND REUSABLE COVER. INSULATION SHALL HAVE A MINIMUM K-FACTOR OF 0.26, USING FIBERGLASS BLANKET, FLAME AND SMOKE SPREAD SHALL BE 25/50 PER ASTM E-84. OUTER JACKET SHALL BE MADE OF MATERIAL EQUAL TO DUPONT-TYCHEMA 'OC', OVERLAPPING AND COMPLETELY COVERING THE INSULATION WITH SEAMS JOINED BY TABS MADE FROM HOOK AND LOOP FASTENERS (VELCRO). BUTT ENDS SHALL HAVE SEWN-IN-PLACE ELASTIC. OUTER JACKET SHALL OVERLAP ADJOINING SECTIONS OF PIPE INSULATION. INSTALLATION SHALL NOT REQUIRE THE USE OF ANY SPECIAL HAND TOOLS. MANUFACTURERS: NO SWEAT VALVE WRAPS, INC., OR APPROVED EQUAL.
- LABELING & IDENTIFICATION:**
 - ALL HVAC EQUIPMENT SHALL BE PERMANENT LABELED WITH A BLACK LAMINATED MICARTA WHITE CORE LABELS WITH 3/8 INCH LETTERS. THIS SHALL ALSO APPLY TO ALL CONTROLLERS, REMOTE START/STOP PUSHBUTTONS AND EQUIPMENT CABINETS.
 - IDENTIFY EACH VALVE IN ALL SYSTEMS WITH BLACK, NUMBERED AND STAMPED 1 1/2" BRASS OR ALUMINUM TAGS FASTENED TO VALVE BY BRASS CHAIN AND S-HOOK.
 - PROVIDE 1/8" SCALE DIAGRAMS SHOWING LOCATION, NUMBER AND SERVICE OR FUNCTION OF EACH TAGGED ITEM IN THE OPERATION AND MAINTENANCE MANUALS.
 - PIPE IDENTIFICATION: IDENTIFY PIPING WITH SETON "SEMARK" OR BRIMAR, SEMI-RIGID PLASTIC, WRAPAROUND PIPE MARKERS WITH FLOW ARROWS AND CONFORMING TO ANSI A13.1. LOCATE MARKER AT EACH VALVE, CHANGES IN DIRECTION, WHERE PIPES PASS THRU BARRIERS AND EVERY 25' OF HORIZONTAL RUNS. LETTERING ON BACKGROUND SHALL BE IN ACCORDANCE WITH THE FOLLOWING COLORS:
 - BACKGROUND: YELLOW
 - LETTING: BLACK
 - HEATING SUPPLY & RETURN
- SYSTEM BALANCING & CLOSEOUT:**
 - ALL EQUIPMENT ASSOCIATED THE THIS PROJECT SHALL BE BALANCED TO AIR AND WATER QUANTITIES INDICATED ON DESIGN DOCUMENTS. BALANCING CONTRACTOR SHALL BE CERTIFIED BY NEBB. NEBB FORMS SHALL BE USED FOR THE BALANCING REPORT. SUBMIT THREE (3) COPIES OF REPORT FOR REVIEW AND APPROVAL.
 - UPON COMPLETION OF THE CONTRACT THE CONTRACTOR SHALL PROVIDE THE OWNER WITH (3) COMPLETE SETS OF MANUFACTURERS' OPERATING, MAINTENANCE AND PREVENTIVE MAINTENANCE INSTRUCTIONS (IN BOUND BOOK FORM) INCLUDING PARTS LISTS AND COMPLETE PROCUREMENT INFORMATION INCLUDING EQUIPMENT NUMBERS AND DESCRIPTIONS. OPERATING STAFF PERSONS SHALL BE INSTRUCTED IN PROPER OPERATING AND SERVICE REQUIREMENTS OF THE SYSTEMS AND EQUIPMENT.

FAN COIL UNIT SCHEDULE																							
TAG	LOCATION	SA CFM	OA CFM	MOTOR RPM	DUAL TEMPERATURE COIL							GPM	COIL ROWS	WPD FT. WG	ELECTRICAL DATA			TYPE/ DESCRIPTION	PIPING/ ELECTRICAL CONFIGURATION	BASIS OF DESIGN MANUFACTURE & MODEL	WEIGHT LBS.	ACCESSORIES	
					COOLING DATA				HEATING DATA						INPUT WATTS	AMPS	VOLTS/ PH						
					EAT, °F DB/WB	LAT, °F DB/WB	TOTAL MBH	SENS. MBH	EWT/ LWT °F	EAT/ LAT °F	MIN. MBH												EWT °F
(FCU A1)	LOUNGE D185	800	140	1050/HIGH	78/ 65	57/ 56	25.5	19.6	45/ 58	58/ 95	32.4	160	4	4	2.8	200	2.26	120/ 1	FLOOR CABINET SLOPE TOP	PIPING: LEFT ELECT.: RIGHT	RITTLING 'FS-200-10'	180	ALL
(FCU A2)	PARENT D188	330	70	900/HIGH	80/ 65	57/ 56	8.9	6.5	45/ 58	54/ 95	13.3	160	1.6	3	5.3	110	1.05	120/ 1	FLOOR CABINET SLOPE TOP	PIPING: RIGHT ELECT.: LEFT	RITTLING 'FS-200-03'	110	ALL
(FCU A3)	PARENT D189	330	70	900/HIGH	80/ 65	57/ 56	8.9	6.5	45/ 58	54/ 95	13.3	160	1.6	3	5.3	110	1.05	120/ 1	FLOOR CABINET SLOPE TOP	PIPING: LEFT ELECT.: RIGHT	RITTLING 'FS-200-03'	110	ALL
(FCU A4)	CLASSROOM D190	570	150	1150/HIGH	80/ 65	57/ 56	19.2	13.8	45/ 55	54/ 95	26.6	160	3.8	3	6.5	125	1.13	120/ 1	FLOOR CABINET SLOPE TOP	PIPING: RIGHT ELECT.: LEFT	RITTLING 'FS-200-06'	150	ALL
(FCU A5)	CLASSROOM D190	570	150	1150/HIGH	80/ 65	57/ 56	19.2	13.8	45/ 55	54/ 95	26.6	160	3.8	3	6.5	125	1.13	120/ 1	FLOOR CABINET SLOPE TOP	PIPING: RIGHT ELECT.: LEFT	RITTLING 'FS-200-06'	150	ALL
(FCU B2)	PARENT D194	330	70	900/HIGH	80/ 65	57/ 56	8.9	6.5	45/ 58	54/ 95	13.3	160	1.6	3	5.3	110	1.05	120/ 1	FLOOR CABINET SLOPE TOP	PIPING: LEFT ELECT.: RIGHT	RITTLING 'FS-200-03'	110	ALL
(FCU B3)	PARENT D193	330	70	900/HIGH	80/ 65	57/ 56	8.9	6.5	45/ 58	54/ 95	13.3	160	1.6	3	5.3	110	1.05	120/ 1	FLOOR CABINET SLOPE TOP	PIPING: RIGHT ELECT.: LEFT	RITTLING 'FS-200-03'	110	ALL
(FCU B4)	CLASSROOM D191	570	150	1150/HIGH	80/ 65	57/ 56	19.2	13.8	45/ 55	54/ 95	26.6	160	3.8	3	6.5	125	1.13	120/ 1	FLOOR CABINET SLOPE TOP	PIPING: LEFT ELECT.: RIGHT	RITTLING 'FS-200-06'	150	ALL
(FCU B5)	CLASSROOM D191	570	150	1150/HIGH	80/ 65	57/ 56	19.2	13.8	45/ 55	54/ 95	26.6	160	3.8	3	6.5	125	1.13	120/ 1	FLOOR CABINET SLOPE TOP	PIPING: LEFT ELECT.: RIGHT	RITTLING 'FS-200-06'	150	ALL
ACCESSORIES (PROVIDE UNIT WITH):																							
1-DISCONNECT SWITCH 2-ADJUSTABLE LEVELING LEGS 3-UNIT THERMOSTAT (WITH-OUT CHANGEOVER) 4-24volt CONTROL PACKAGE 5-MOTORIZED OA DAMPER 6-ALLEN HEAD ACCESS DOOR																							
7-CONTROL VALVE PACKAGE (3-WAY MODULATING WITH CIRCUIT SETTER, BALL VALVES, UNIONS & STRAINER)																							
ACCEPTABLE MANUFACTURERS: RITTLING, TRANE, MCQUAY.																							



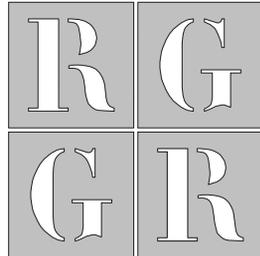
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 PROJECT NO.: 12P051

ISSUED FOR:
 ISSUED FOR BIDDING 1 MAY 2012

PROJECT INFO:
 CHRISTINA SCHOOL DISTRICT
 CHRISTINA EARLY EDUCATION CENTER
 RENOVATIONS
 620 EAST CHESTNUT HILL ROAD
 NEWARK, DE 19713

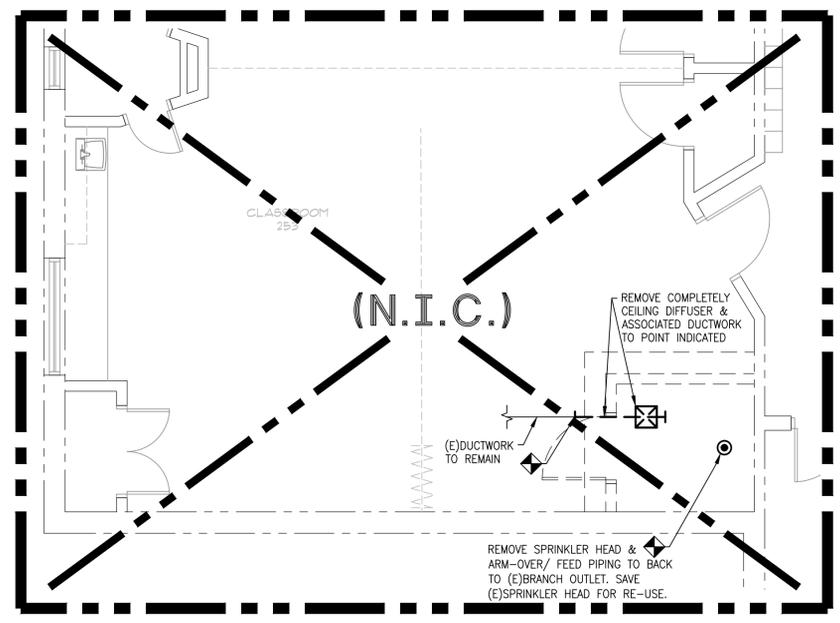
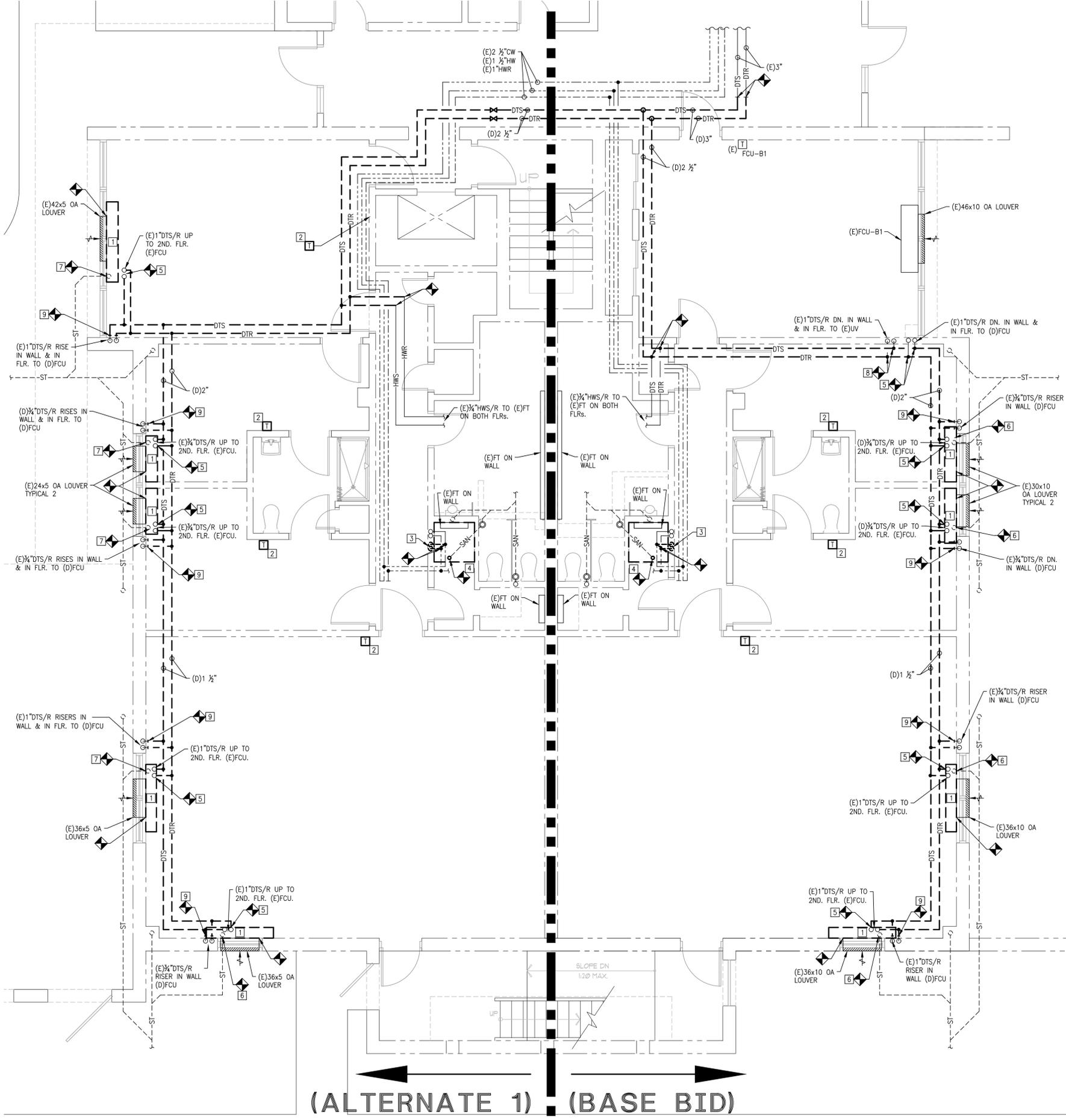
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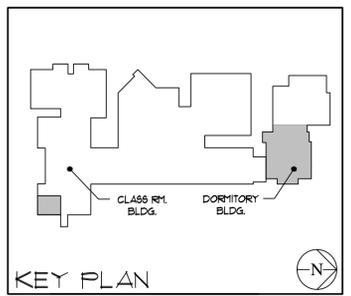
**FLOOR PLANS
 DEMOLITION
 MECHANICAL
 MD-1**

SHEET NOTES:

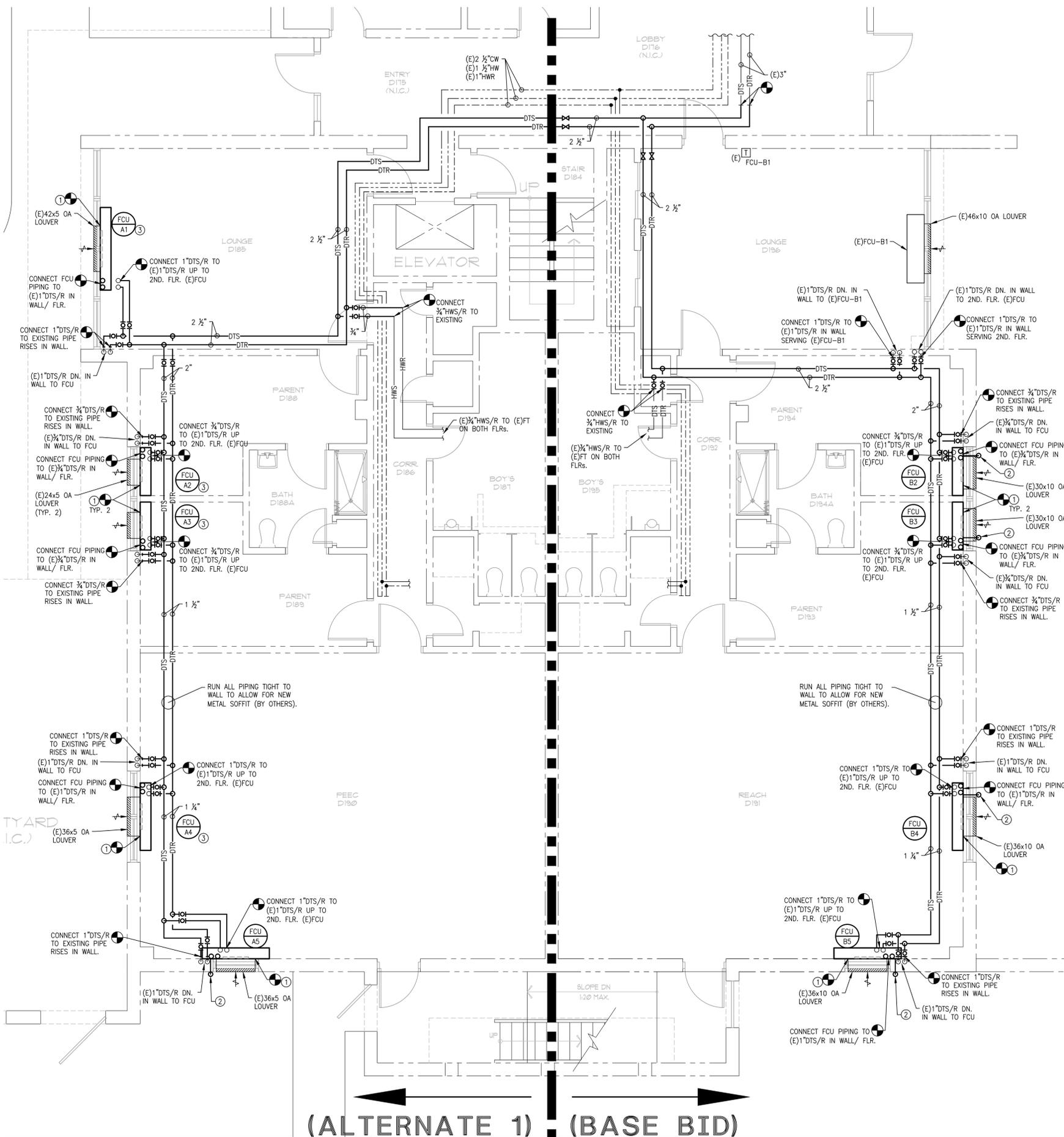
- GENERAL:**
- ANY PIPING AND/OR TUBING BEHIND EXISTING TO REMAIN WALLS AND/OR FLOOR SHALL TO DISCONNECT AT POINTS INDICATED AND ABANDONED IN PLACE. ALL PENETRATIONS FROM DEMOLITION WORK SHALL BE SEALED AND PATCHED TO MATCH EXISTING.
 - NOTE: ALL DOMESTIC WATER PIPING (CW, HW, HWR) SHOWN TO REFERENCE ONLY.
 - CONTRACTOR SHALL OWN ISOLATION THE BOILER ROOM FROM THE REST OF THE BUILDING AND DRAWING THE SYSTEM DOWN FOR ALL DEMOLITION & CONSTRUCTION WORK.
- REMOVE FLOOR FAN-COIL FAN COMPLETELY.
 -REMOVE ALL ASSOCIATED PIPING TO POINT AT WALL OR FLR. EXISTING PIPING IN WALL & FLOOR TO REMAIN FOR RE-USE. COORDINATE WITH CONSTRUCTION WORK.
 -REMOVE ALL ASSOCIATED PNEUMATIC CONTROL TUBING. ALL EXISTING TO REMAIN TUBING SHALL BE SEALED AND CAPPED AIR-TIGHT.
 -DISCONNECT UNIT FROM EXISTING OUTSIDE LOUVER. EXISTING LOUVER AND WALL SLEEVE TO REMAIN FOR RE-USE.
 -SEAL AND CAP CONDENSATE DRAIN OPENING WATER TIGHT BELOW FLOOR. PATCH FLOOR TO MATCH EXISTING.
 -COORDINATE ELECTRICAL DISCONNECT WITH ELECTRICAL CONTRACTOR.
 - REMOVE PNEUMATIC THERMOSTAT COMPLETELY. ALL EXISTING TO REMAIN TUBING SHALL BE SEALED AND CAPPED AIR-TIGHT.
 - REMOVE WALL TUB/ SHOWER FIXTURE COMPLETELY.
 -THIS SHALL INCLUDE TUB SPOUT, SHOWER HEAD, DIVERTING VALVE AND CONTROL VALVE.
 -REMOVE PIPING TO POINTS INDICATED. SEAL AND CAP ALL EXISTING TO REMAIN PIPING.
 -EXISTING PIPING TO ALL OTHER (F) FIXTURES SHALL REMAIN, INCLUDING PIPING TO 2ND FLOOR FIXTURES.
 -SEAL AND PATCH ALL WALL OPENINGS FROM DEMOLITION TO MATCH EXISTING.
 - REMOVE TUB COMPLETELY. COORDINATE DEMOLITION WITH GENERAL CONTRACTOR.
 -DISCONNECT AND REMOVE 2" SAN PIPING AND TRAP TO BELOW FLOOR. SEAL AND CAP (E) 2" SAN.
 -PATCH FLOOR TO MATCH EXISTING.
 - DISCONNECT AT CEILING AND REMOVE HWS/R PIPING TO 2ND FLR. (E)FCU TO POINT INDICATED AND/OR REQUIRED FOR CONSTRUCTION WORK.
 -PIPING THRU FLOOR TO 2ND FLR. (E)FCU TO REMAIN FOR RE-USE.
 - PLUG/ CAP AND SEAL CONDENSATE DRAIN FLOOR OPENING/ PIPING WATER TIGHT.
 -PATCH FLOOR TO MATCH EXISTING.
 - (E) CONDENSATE DRAIN FLOOR OPENING TO REMAIN FOR RE-USE. CONTRACTOR SHALL CLEAN AND SNAKE (E) DRAIN ENSURE PROPER FUNCTION. CONTRACTOR TO REPORT ANY DEFICIENCIES TO OWNER'S REPRESENTATIVE.
 - DISCONNECT AND REMOVE HWS/R PIPING TO 1ST FLR. (E)FCU TO POINT INDICATED AND/OR REQUIRED FOR CONSTRUCTION WORK.
 -PIPING IN WALL TO UNIT SHALL REMAIN FOR RE-USE.
 - DISCONNECT DTS/R PIPING FROM EXISTING PIPE RISES IN WALL. RISES TO REMAIN FOR RE-USE.



2 SECOND FLOOR PLAN - CLASSROOM BLDG.
 MD-1 SCALE: 1/4" = 1'-0"



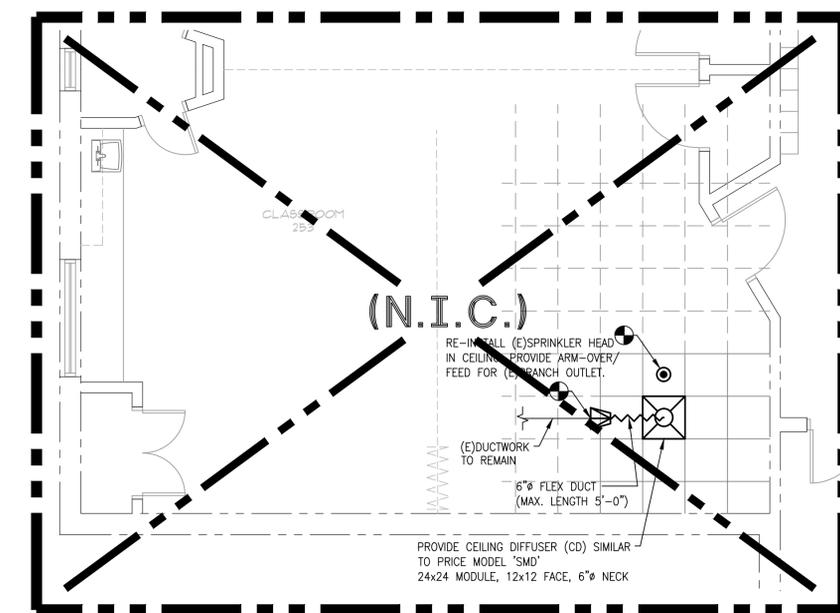
1 FIRST FLOOR PLAN - DORMITORY
 MD-1 SCALE: 1/4" = 1'-0"



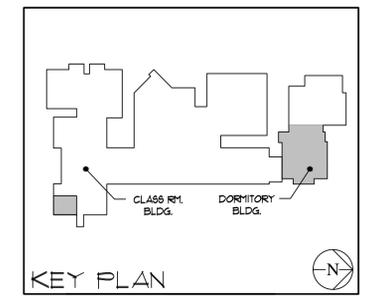
1 FIRST FLOOR PLAN - DORMITORY
M-1 SCALE: 1/4" = 1'-0"

SHEET NOTES:
 GENERAL:
 *NOTE: ALL DOMESTIC WATER PIPING (CW, HW, HWR) SHOWN TO REFERENCE ONLY.
 -ALL PIPING, HANGERS AND PIPING ACCESSORIES SHALL BE INSTALLED IN SOFFIT PROVIDED BY GENERAL CONTRACTOR. COORDINATE WITH SOFFIT LAYOUT ON ARCHITECTURAL PLANS.

- PROVIDE 14-GAUGE ALUMINUM BLANK-OFF PANEL BEHIND (E)LOUVER OPENING. PANEL SHALL SEAL EXISTING OPENING WEATHER TIGHT. PROVIDE OPENING IN PANEL SIZE (SUITABLE) TO CONNECT UNIT OUTSIDE AIR INTAKE. CONNECTION BEHIND PANEL AND UNIT SHALL BE SEAL WEATHER TIGHT.
- PROVIDE 3/4" CONDENSATE DRAIN THRU EXTERIOR WALL. TERMINATE CONDENSATE DRAIN 8" ABV. GRADE WITH TURNED-DOWN ELBOW AND 8x8 SPLASH BLOCK. SEAL WALL PENETRATION WEATHER TIGHT TO MATCH EXISTING.
- EXTEND 3/4" CONDENSATE DRAIN FROM UNIT 2" INTO EXISTING CONDENSATE FLOOR OPENING.



2 SECOND FLOOR PLAN - CLASSROOM BLDG.
M-1 SCALE: 1/4" = 1'-0"

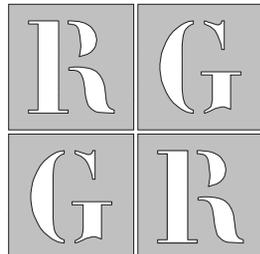


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FLOOR PLANS
CONSTRUCTION
MECHANICAL
M-1



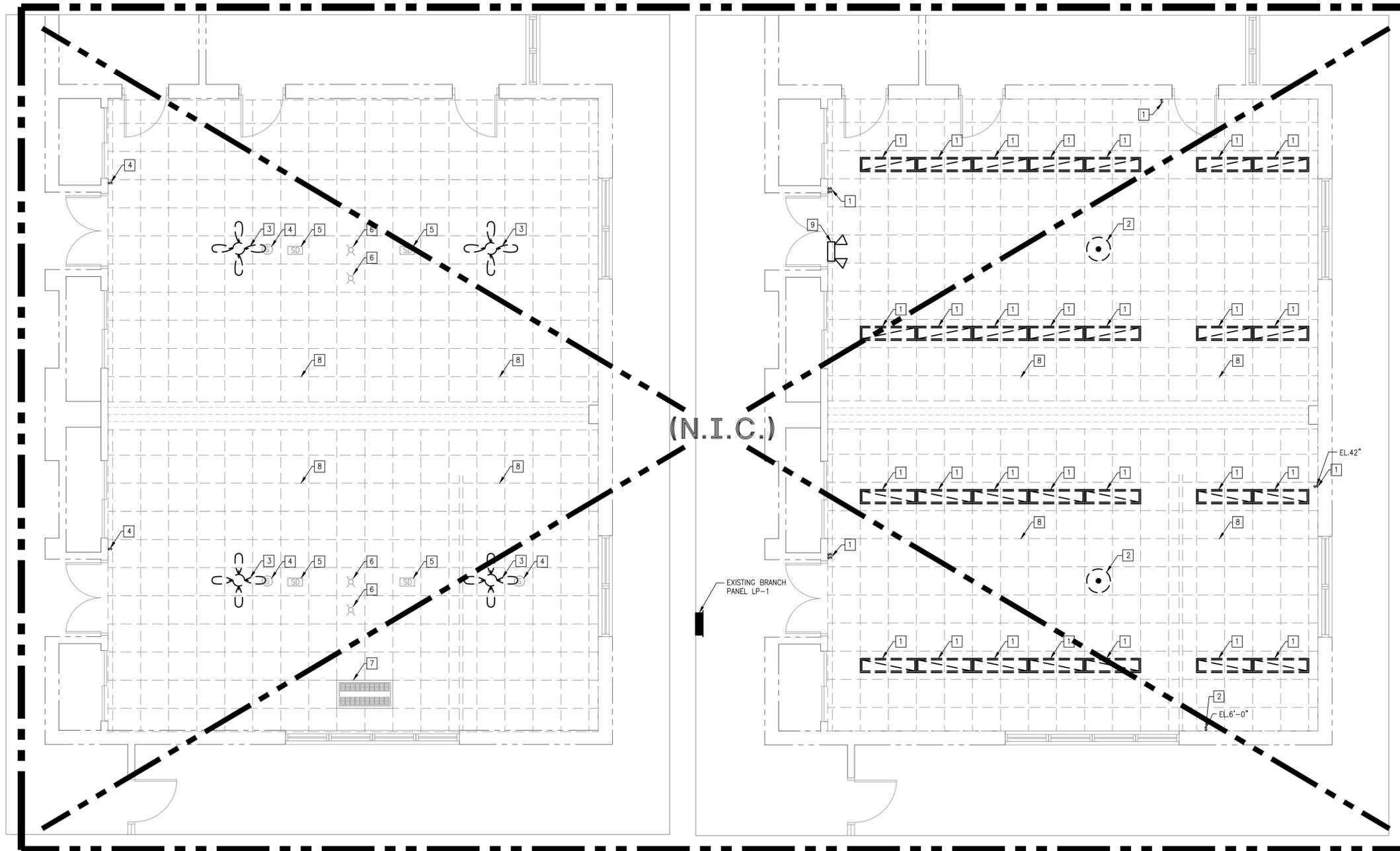
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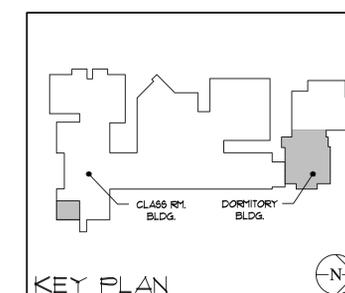
DRAWING NOTES
 (THIS DRAWING ONLY)

- 1 DISCONNECT AND REMOVE LIGHTS AND ASSOCIATED CONTROLS. DISCONNECT AND REMOVE EXISTING BRANCH CIRCUIT WIRING AND CONDUIT BACK TO THE POINT OF ORIGIN. MARK BREAKER AS BEING SPARE.
- 2 DISCONNECT AND REMOVE CHANDELIER AND ASSOCIATED CONTROLS. DISCONNECT AND REMOVE EXISTING BRANCH CIRCUIT WIRING AND CONDUIT BACK TO THE POINT OF ORIGIN. MARK BREAKER AS BEING SPARE.
- 3 DISCONNECT AND REMOVE CEILING FAN AND ASSOCIATED CONTROLS. DISCONNECT AND REMOVE EXISTING BRANCH CIRCUIT WIRING AND CONDUIT BACK TO THE POINT OF ORIGIN. MARK BREAKER AS BEING SPARE.
- 4 EXISTING RECESSED CEILING MOUNTED SPEAKER TO REMAIN.
- 5 EXISTING CEILING MOUNTED FIRE ALARM DEVICE TO REMAIN.
- 6 EXISTING CEILING MOUNTED GREEN STROBE LIGHT TO REMAIN.
- 7 EXISTING CEILING MOUNTED HVAC UNIT'S POWER SOURCE TO REMAIN.
- 8 REFER TO THE ARCHITECT DRAWINGS FOR THE REFLECTIVE CEILING PLAN FOR NEW WORK.
- 9 DISCONNECT AND REMOVE EMERGENCY LIGHT UNIT. DISCONNECT AND REMOVE CIRCUIT WIRING AND CONDUIT BACK TO THE POINT OF ORIGIN.



1 CAFETERIA PLAN - DEMOLITION-POWER
 ED-1 SCALE: 1/4" = 1'-0"

2 CAFETERIA PLAN - DEMOLITION-LIGHTING
 ED-1 SCALE: 1/4" = 1'-0"



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CHRISTINA EARLY EDUCATION CENTER

RENOVATIONS

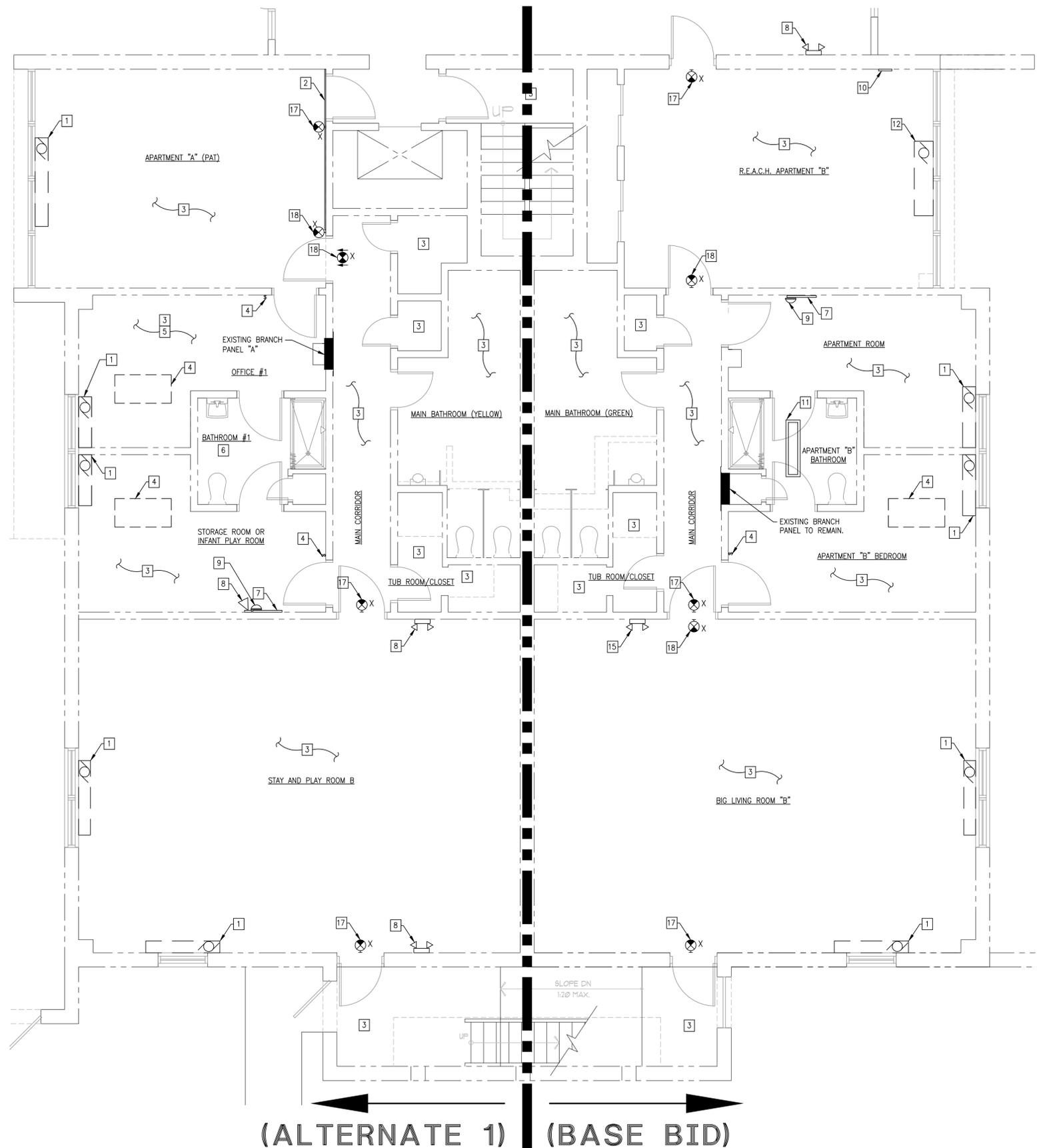
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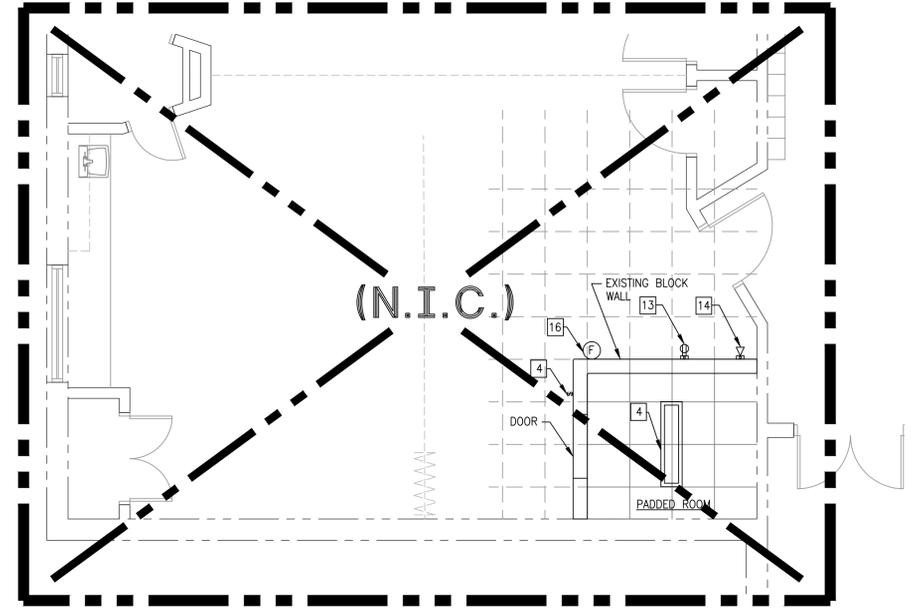
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CAFETERIA CONSTRUCTION
ELECTRICAL DEMOLITION
ED-1

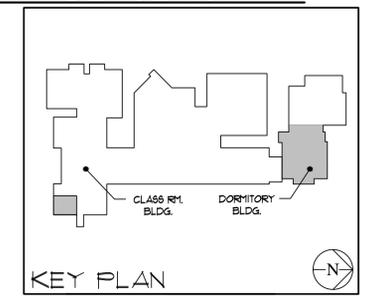


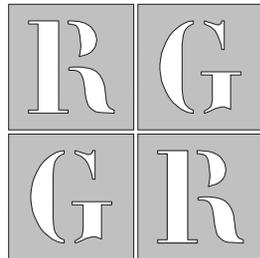
1 1ST. FLOOR PLAN - DORMITORY - DEMOLITION - POWER & LIGHTING
 ED-2 SCALE: 1/4" = 1'-0"

- DRAWING NOTES**
 (THIS DRAWING ONLY)
- 1 DISCONNECT AND REMOVE CIRCUIT WIRING BACK TO THE POINT OF ORIGIN. RETAIN ELECTRICAL CONDUIT FROM THE UNIT VENTILATOR TO THE BRANCH PANEL FOR NEW WORK. COORDINATED WITH DEMOLITION CONTRACTOR FOR THE SAME. MARK BREAKER AS BEING SPARE.
 - 2 NEW COVER PLATE BY OTHERS.
 - 3 EXISTING RECEPTACLES, DATA JACKS, FIRE ALARM DEVICES, EXIT SIGNS, LIGHTING FIXTURES AND OTHER ASSOCIATED ELECTRICAL SYSTEMS IN THIS SPACE REQUIRES NO WORK, UNLESS NOTED OTHERWISE.
 - 4 DISCONNECT AND REMOVE LIGHTING FIXTURE AND ASSOCIATED CONTROLS. DISCONNECT AND REMOVE CIRCUIT WIRING BACK TO THE POINT OF ORIGIN. RETAIN CONDUIT FROM SPACE TO THE BRANCH PANEL FOR NEW WORK. MARK BREAKER AS BEING SPARE.
 - 5 CONTRACTOR TO COORDINATE WITH CHRISTINA SCHOOL DISTRICT FOR REQUIRED BACK BOXES AND CONDUIT LOCATIONS FOR TECHNOLOGY SYSTEMS.
 - 6 SECURE EXISTING LIGHT FIXTURE'S LENS TO LIGHT FIXTURE HOUSING.
 - 7 DISCONNECT AND REMOVE THE EXISTING EDWARD'S PANEL AND ASSOCIATED WIRING AND CONDUIT BACK TO THE POINT OF ORIGIN. IF REMOVAL OF THE SAME AFFECTS REMAINING DEVICES THAT ARE REQUIRED, CONTRACTOR IS RESPONSIBLE FOR RECONNECTION AND THE OPERATION OF THOSE DEVICES.
 - 8 DISCONNECT AND REMOVE EMERGENCY LIGHT. DISCONNECT AND REMOVE CIRCUIT WIRING AND CONDUIT BACK TO THE POINT OF ORIGIN.
 - 9 DISCONNECT AND REMOVE FIRE ALARM BELL AND ASSOCIATED WIRING BACK TO THE POINT OF ORIGIN.
 - 10 DISCONNECT AND REMOVE MISCELLANEOUS CONNECTION PANEL. REMOVE ALL ASSOCIATED WIRING TYPES AND CONDUITS BACK TO THE POINT OF ORIGIN.
 - 11 PROVIDE LENS COVER ON EXISTING LIGHT FIXTURE.
 - 12 EXISTING UNIT VENTILATOR TO REMAIN.
 - 13 DISCONNECT AND REMOVE RECEPTACLE AND SURFACE MOUNTED RACEWAY. RE-WORK CIRCUIT WIRING FOR REMAINING DEVICES ON THE SAME.
 - 14 DISCONNECT AND REMOVE DATA CABLING AND ASSOCIATED SURFACE MOUNTED RACEWAY BACK TO THE POINT OF ORIGIN, UNLESS DIRECTED OTHERWISE.
 - 15 EMERGENCY LIGHT UNIT TO REMAIN.
 - 16 DISCONNECT AND REMOVE THE EXISTING FIRE ALARM DEVICE AND ASSOCIATED WIRING AND CONDUIT BACK TO THE POINT OF ORIGIN. IF REMOVAL OF THE SAME AFFECTS REMAINING DEVICES THAT ARE REQUIRED, CONTRACTOR IS RESPONSIBLE FOR RECONNECTION AND THE OPERATION OF THOSE DEVICES.
 - 17 EXIT SIGN TO REMAIN.
 - 18 DISCONNECT AND REMOVE EXIT SIGN, ASSOCIATED CIRCUIT WIRING AND CONDUIT BACK TO THE POINT OF ORIGIN.



2 2ND. FLOOR PLAN - CLASSROOM - DEMOLITION
 ED-2 SCALE: 1/4" = 1'-0"

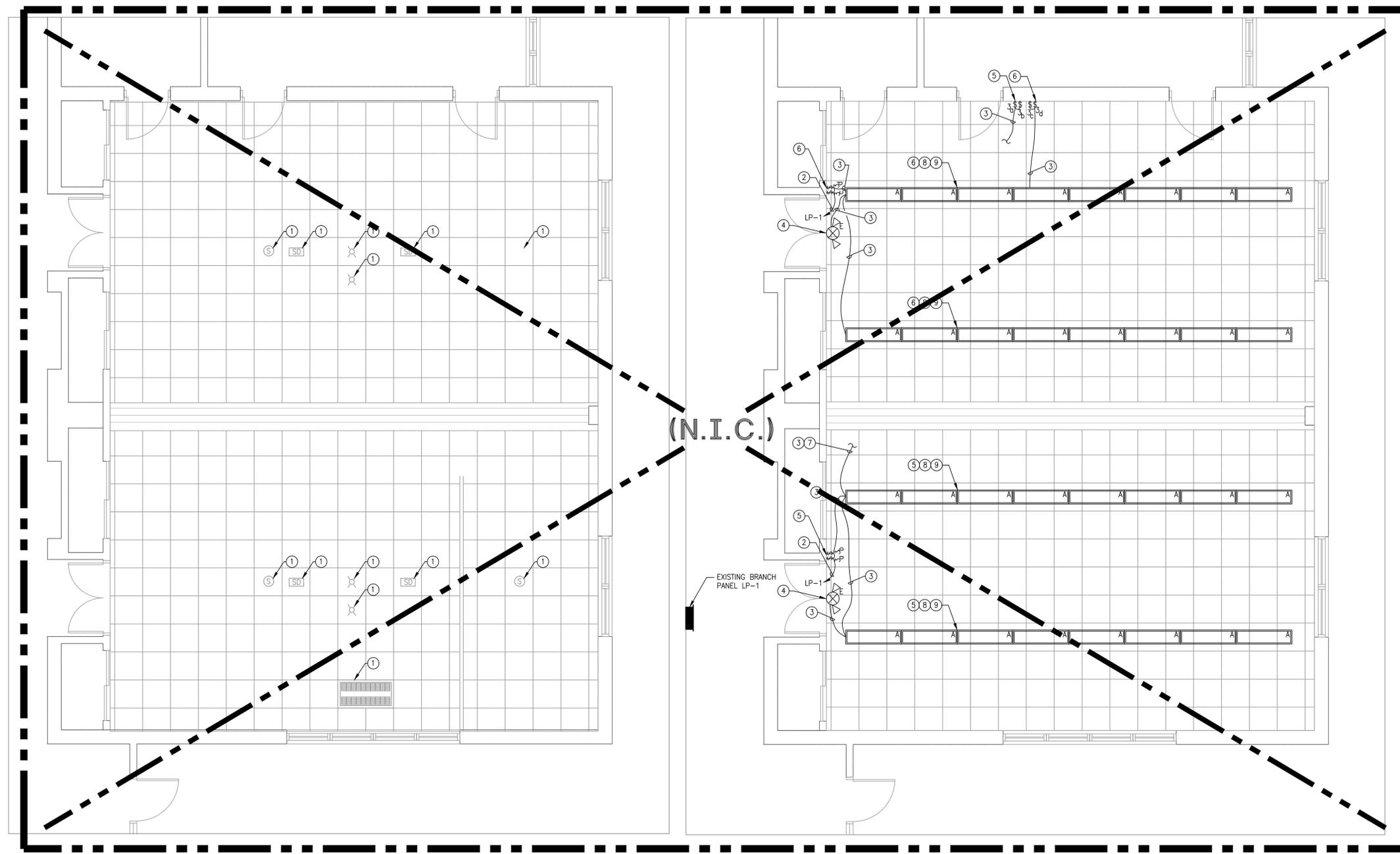




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- DRAWING NOTES**
 (THIS DRAWING ONLY)
- ① EXISTING EQUIPMENT AND DEVICES MOUNTED IN THE EXISTING DROP CEILING TILES TO REMAIN, AS DIRECTED OTHERWISE.
 - ② (2) #12 W/#12 G IN 3/4" CONDUIT TO SPARE 20AMP, SINGLE POLE BREAKER IN EXISTING BRANCH PANEL LP-1.
 - ③ CIRCUIT WIRING SHALL BE NO LESS THAN #12AWG.
 - ④ MOUNT EMERGENCY LIGHT/EXIST SIGN 7'-6" AFF AND CENTERED BETWEEN THE DOOR FRAME.
 - ⑤ LIGHTING FIXTURE SHALL BE WIRED FOR DUAL LEVEL SWITCHING. SWITCH (a) SHALL CONTROL THE (1) CENTER LAMP AND SWITCH (b) SHALL CONTROL THE (2) OUTER LAMPS. TYPICAL IN THIS SPACE.
 - ⑥ LIGHTING FIXTURE SHALL BE WIRED FOR DUAL LEVEL SWITCHING. SWITCH (c) SHALL CONTROL THE (1) CENTER LAMP AND SWITCH (d) SHALL CONTROL THE (2) OUTER LAMPS. TYPICAL IN THIS SPACE.
 - ⑦ CONTINUED TO KITCHEN'S WALL, THIS DRAWING.
 - ⑧ BOTTOM OF LIGHTING FIXTURE SHALL BE 10'-0" AFF. TYPICAL IN BOTH SPACES, COORDINATED FINAL LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION OF THE SAME.
 - ⑨ REFER TO LIGHTING SCHEDULE FOR FIXTURE'S DETAILS AND REQUIREMENTS.



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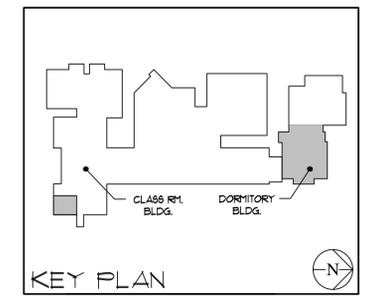
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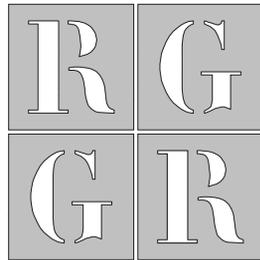
CAFETERIA CONSTRUCTION ELECTRICAL NEW-WORK

E-1

1 CAFETERIA PLAN - NEW WORK - POWER
 E-1 SCALE: 1/4" = 1'-0"

2 CAFETERIA PLAN - NEW WORK - LIGHTING
 E-1 SCALE: 1/4" = 1'-0"





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**DRAWING NOTES
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- ① PROVIDE (2) #10 W/#10G IN EXISTING CONDUIT TO THE PREDEFINED BRANCH PANEL. USE SPARE 20AMP SINGLE POLE BREAKER PREVIOUSLY NOTED UNDER DEMOLITION WORK AS BEING SPARE. COORDINATION WITH MECHANICAL CONTRACTOR PRIOR TO PULLING CIRCUIT WIRING TO ASSURE EXACT ELECTRICAL REQUIREMENTS AND CONNECTION POINT.
- ② MEANS OF DISCONNECTION IS PROVIDED FROM THE MANUFACTURE OF THE FAN COIL UNIT. REFER TO MECHANICAL SPECIFICATIONS FOR THE SAME.
- ③ EXISTING FAN COIL TO REMAIN AS FOUND, NO WORK REQUIRED.
- ④ PROVIDE LIGHTING FIXTURE THAT MATCHES EXISTING AND INTERCEPT AND EXTEND EXISTING CIRCUIT WIRING TO THE SAME.
- ⑤ INTERCEPT AND EXTEND EXISTING CIRCUIT WIRING AND CONDUIT TO NEW LIGHTING FIXTURES AND SWITCHES.
- ⑥ PROVIDE DUAL LEVEL SWITCHING, (a) SWITCH CONTROLS (2) CENTER LAMPS, (b) SWITCH CONTROLS (2) OUTER LAMPS.
- ⑦ THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL WIRING CONNECTIONS TO NEW FCU'S PRIOR TO THE MECHANICAL CONTRACTOR SETTING THE NEW UNITS.

INTERIOR LIGHTING FIXTURE SCHEDULE
 (REFER TO SPECIFICATIONS FOR DETAILS)

TYPE	DESCRIPTION	LAMPS		BALLASTS		INPUT VA	INPUT VOLTAGE	REMARKS
		QTY.	TYPE	QTY.	TYPE			
A	4' INDIRECT/DIRECT FLUORESCENT LUMINAIRE WITH SHIELDING AND WHITE CROSS BLADE BAFFLE MODEL# S12-ID-WCB-4-3T8-DC-91W-ST-0-120-AC-CE-X-	3	32 WATT	2	ELECTRONIC	96	120	NOTE 1,2 & 3 FINELITE SERIES 12-ID OR EQUAL
B	WIDESPREAD, UNIFORM ILLUMINATION MODEL# 10642-32-MVOLT-GE810IS	4	32 WATT	2	ELECTRONIC	128	120	NOTE 1,2 & 3 LITHONIA LIGHTING OR EQUAL SURFACE MOUNTED
X	UNIVERSALLY-MOUNTED LED EXIT SIGN WITH NI-CAD BATTERY AND EMERGENCY LAMPS.	2	5 WATT MR16	--	--	10	120	NOTE 4 DUAL LITE OR EQUAL

- NOTES: 1. FIXTURE TO BE PROVIDED WITH BALLAST DISCONNECTING MEANS IN ACCORDANCE WITH 2011 NEC ARTICLE 410.130(G).
 2. FIXTURE TO BE WIRED FOR INBOARD/OUTBOARD SWITCHING OF LAMPS.
 3. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECT.
 4. CONFIGURE MOUNTING, FACE CONFIGURATIONS AND CHEVRON INDICATORS WITH SYMBOLS ON THE FLOOR PLANS.
 5. FIXTURE MOUNTED ABOVE EXTERIOR BUILDING SIGNAGE. REFER TO FLOORPLANS.

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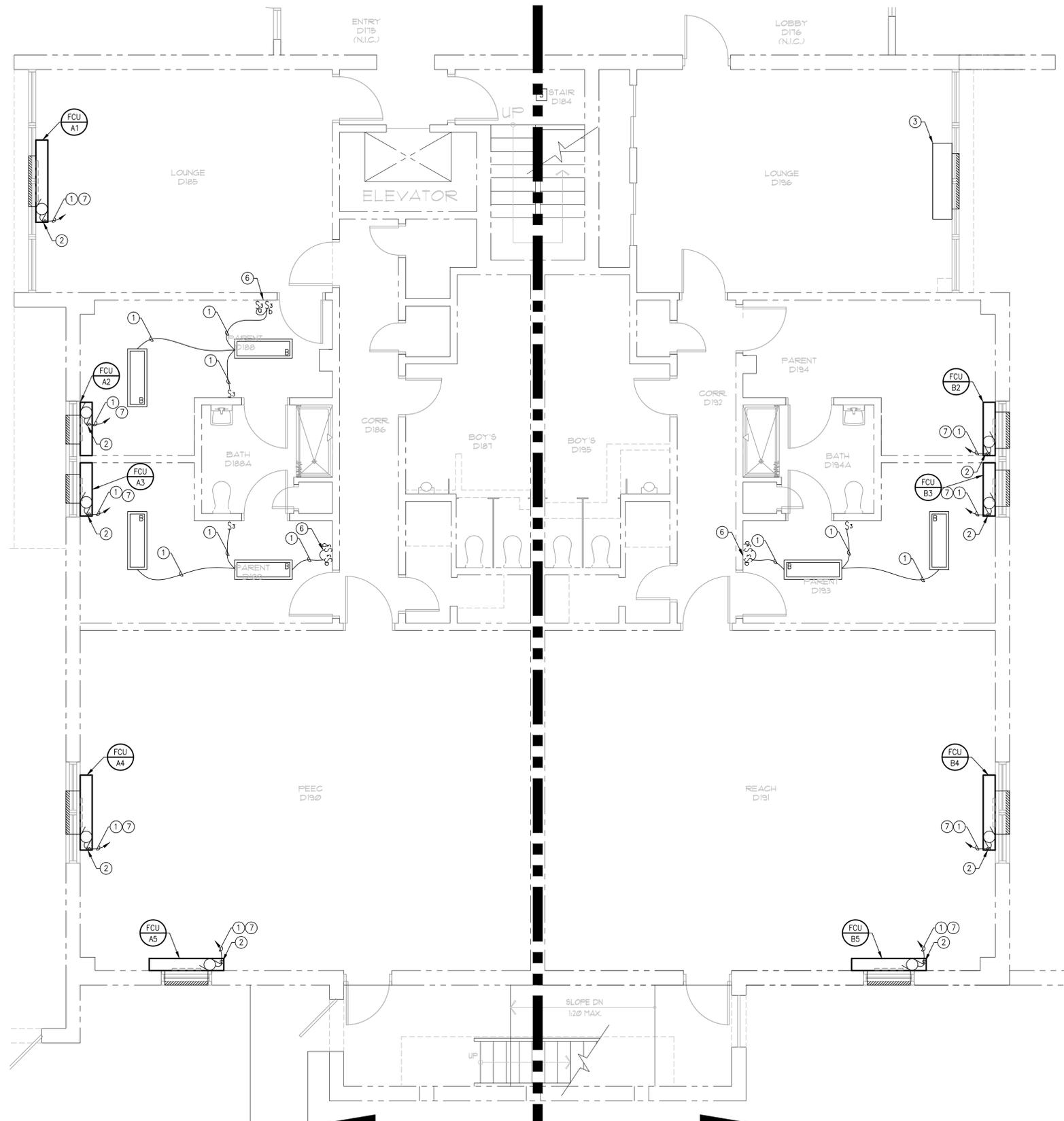
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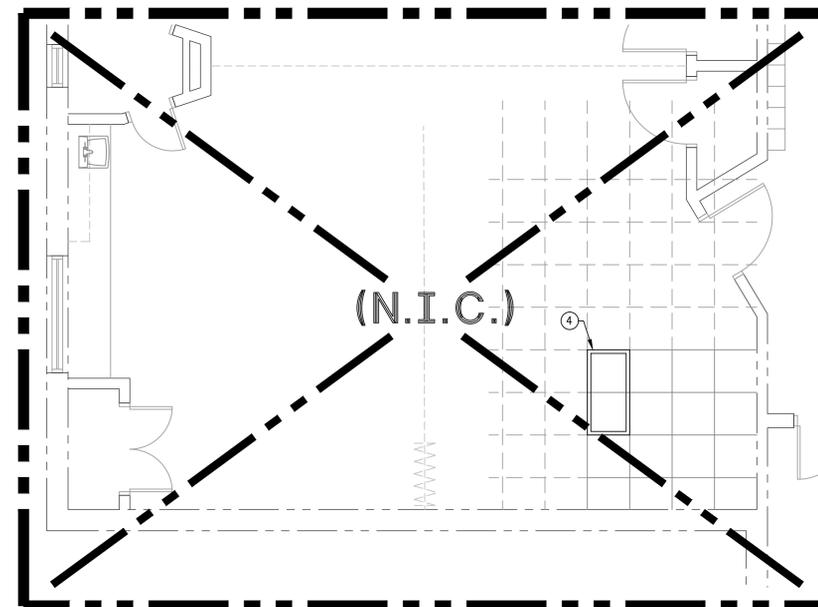
FLOOR PLANS
 CONSTRUCTION
 ELECTRICAL
 NEW-WORK

E-2

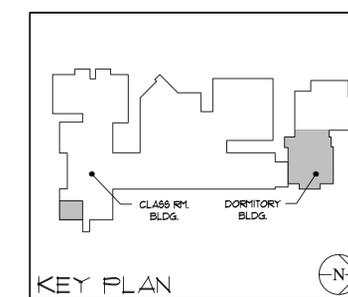


(ALTERNATE 1) (BASE BID)

① 1ST. FLOOR PLAN - DORMITORY - NEW WORK - POWER & LIGHTING
 SCALE: 1/4" = 1'-0"



② 2ND. FLOOR PLAN - LIGHTING - NEW WORK
 SCALE: 1/4" = 1'-0"



KEY PLAN