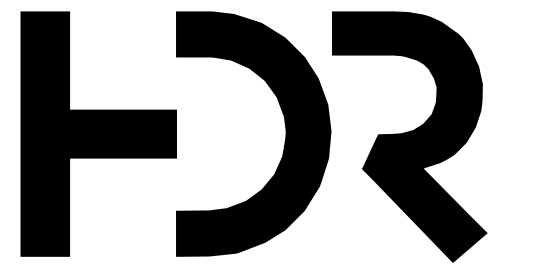


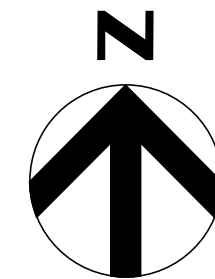
Contract Drawings For

# CEDAR RAPIDS

## KJELDAHL HOOD PROCUREMENT



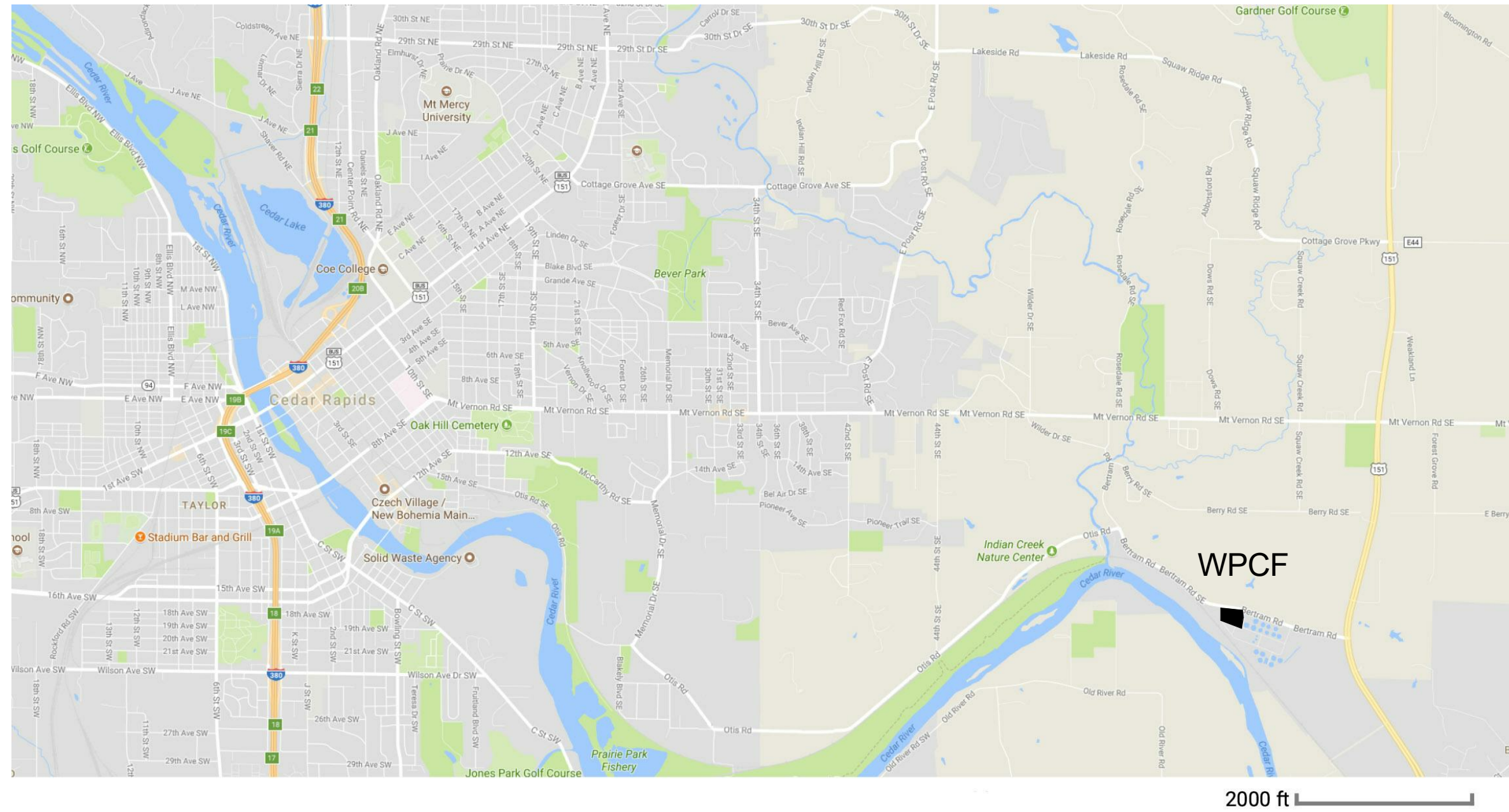
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MAYOR RON CORBETT  
SUSIE WEINACHT  
RALPH RUSSELL  
SCOTT OVERLAND  
SCOTT OLSON  
ANN POE  
KRIS GULICK  
PAT SHEY  
JUSTIN SHIELDS  
**CEDAR RAPIDS**  
City of Five Seasons




Project No. 6150024-02  
Project No. 10058757  
7525 Bertram Rd SE, Cedar Rapids, IA 52403

**04/26/2018**  
**ISSUED FOR BID**

Sheet List Copy 1	
Sheet Number	Sheet Name
00 - GENERAL (G)	
02G001	GENERAL LEGEND
02G002	MECHANICAL LEGEND
02G003	ELECTRICAL LEGEND 1
02G004	ELECTRICAL LEGEND 2
01 - DEMOLITION (X)	
02X101	KJELDAHL HOOD DEMOLITION
07 - UNIVERSAL (U)	
02U101	MECHANICAL AND ELECTRICAL PLANS
09 - ARCHITECTURAL (A)	
02A101	KJELDAHL HOOD REPLACEMENT



**ISSUED FOR BID**

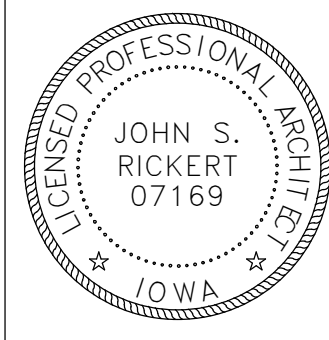


**CERTIFICATION**

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

*Michael C. Butterfield* 4/26/18  
Michael Butterfield  
My license renewal date is December 31, 2018.

Pages or sheets covered by this seal:  
**02G001**

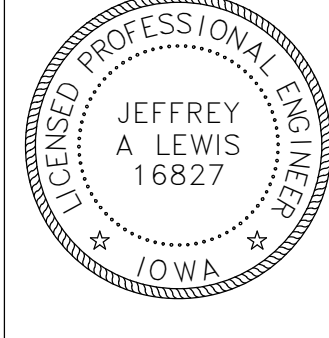


**CERTIFICATION**

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

*John S. Rickert* 4-26-2018  
John S. Rickert  
My license renewal date is December 31, 2018.

Pages or sheets covered by this seal:  
**02X101, 02A101**

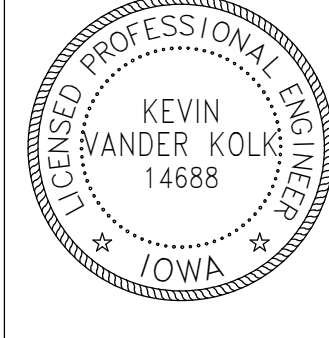


**CERTIFICATION**

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

*Jeffrey A. Lewis* 4/26/18  
Jeff Lewis  
My license renewal date is December 31, 2018.

Pages or sheets covered by this seal:  
**02G002, 02U101**



**CERTIFICATION**

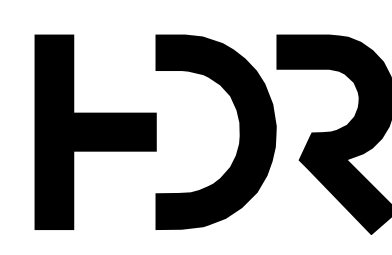
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

*Kevin Vander Kolk* 4-26-18  
Kevin Vander Kolk  
My license renewal date is December 31, 2018.

Pages or sheets covered by this seal:  
**02G003, 02G004, 02U101**

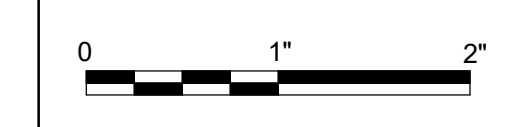


MATERIALS IN PLAN/SECTION	GENERAL SYMBOLOLOGY	IDENTIFICATION SYMBOLOLOGY	SHEET NAMING CONVENTION
<p>ACOUSTICAL CEILING TILE (SECTION)</p> <p>ASPHALT (PLAN OR SMALL-SCALE SECTION)</p> <p>ASPHALT (LARGE-SCALE SECTION)</p> <p>BATT INSULATION (SECTION)</p> <p>BRICK MASONRY (PLAN AND/OR SECTION)</p> <p>CHECKERED PLATE (PLAN)</p> <p>CONCRETE (PLAN AND/OR SECTION)</p> <p>CONCRETE MASONRY (PLAN AND/OR SECTION)</p> <p>DEMOLITION (PLAN AND/OR SECTION)</p> <p>EARTH (SECTION)</p> <p>FILTER POINT MAT (PLAN)</p> <p>FINISHED WOOD (SECTION)</p> <p>GLULAM LUMBER (SECTION)</p> <p>GRANULAR FILL (SECTION)</p> <p>GRATING (SECTION)</p> <p>GRATING (PLAN)</p> <p>GROUT (SECTION)</p> <p>GYPSUM BOARD (SECTION)</p> <p>METAL (SECTION)</p> <p>ORIENTED STRAND BOARD (SECTION)</p> <p>PARTICLE BOARD (SECTION)</p> <p>PLYWOOD (LARGE-SCALE SECTION)</p> <p>PLYWOOD (SMALL-SCALE SECTION)</p> <p>PRECAST CONCRETE (PLAN AND/OR SECTION)</p> <p>RIGID INSULATION (SECTION)</p> <p>RIPRAP (PLAN AND/OR SECTION)</p> <p>SAND (SECTION)</p> <p>SOD (SECTION)</p> <p>WEEP JOINT MORTAR PROTECTION SYSTEM (SECTION)</p> <p>WOOD - CONTINUOUS (SECTION)</p> <p>WOOD - BLOCKING (SECTION)</p>	<p>ARROW INDICATES DIRECTION OF PLAN NORTH</p> <p><b>NORTH ARROW</b></p> <p><b>PLAN</b> 1/4" = 1'-0"</p> <p><b>PLAN TITLE</b></p> <p>ARROW INDICATES DIRECTION OF SECTION CUT</p> <p>SECTION LETTER</p> <p>X XXX SHEET WHERE SECTION IS LOCATED</p> <p><b>FULL BUILDING SECTION CUT MARKER</b></p> <p>SECTION LETTER</p> <p>FLAG INDICATES DIRECTION OF SECTION CUT</p> <p>X XXX SHEET WHERE SECTION IS LOCATED</p> <p><b>SECTION CUT MARKER</b></p> <p>SECTION LETTER</p> <p>X XXX 3/8" = 1'-0"</p> <p>SHEET WHERE SECTION VIEW IS FIRST CUT*</p> <p><b>SECTION</b> SECTION TITLE</p> <p>DETAIL NUMBER</p> <p># XXX SHEET WHERE DETAIL IS LOCATED*</p> <p><b>DETAIL MARKER</b></p> <p>FOR REFERENCING DETAILS INCLUDED IN DRAWING SET.</p> <p>XXXXXX</p> <p><b>DETAIL MARKER</b></p> <p>FOR REFERENCING DETAILS BOUND IN SPECIFICATIONS OR SEPARATE VOLUME.</p> <p>DETAIL NUMBER</p> <p>X XXX 1/4" = 1'-0"</p> <p>SHEET WHERE DETAIL IS LOCATED*</p> <p><b>DETAIL</b> DETAIL TITLE</p> <p>* EXCEPTIONS WHERE THE SHEET NUMBER IS REPLACED BY A DASH (-). 1) FOR COMMON DETAILS, SECTIONS, ELEVATIONS OR DETAILS THAT ARE CUT OR CALLED OUT ON MULTIPLE SHEETS. 2) SECTIONS, ELEVATIONS OR DETAILS THAT ARE LOCATED ON THE SAME SHEET THEY ARE CUT OR CALLED OUT ON.</p>	<p>SINGLE ELEVATION OR PHOTO MARKER</p> <p>ARROW INDICATES POINT OF VIEW</p> <p>ELEVATION NUMBER</p> <p>X XXX INTERIOR EXTERIOR SHEET WHERE ELEVATION IS LOCATED*</p> <p><b>SINGLE ELEVATION OR PHOTO MARKER</b></p> <p>MULTIPLE ELEVATION OR PHOTO MARKER</p> <p>ELEVATION NUMBER</p> <p>ARROW INDICATES POINT OF VIEW</p> <p>ELEVATION</p> <p>X XXX 3" = 1'-0"</p> <p>SHEET WHERE POINT OF VIEW MARKER CAN BE FOUND*</p> <p><b>ELEVATION</b> ELEVATION TITLE</p> <p>TARGET ELEVATION</p> <p><b>ARCHITECTURAL</b></p> <p>ROOM NAME</p> <p>XX-XX ROOM NUMBER</p> <p>XXX X DOOR NUMBER</p> <p>A COLUMN GRID LINE</p> <p>X WALL TYPE</p> <p>X WINDOW TYPE</p> <p>X LOUVER</p> <p>X ACCESSORY, FURNITURE, AND MISCELLANEOUS EQUIPMENT IDENTIFIER</p> <p><b>KEY NOTE DESIGNATION</b></p> <p>KEY NOTE NUMBER</p> <p>#</p> <p><b>GENERAL LINE SYMBOLOLOGY</b></p> <p>4-HOUR FIRE RATED WALL</p> <p>3-HOUR FIRE RATED WALL</p> <p>2-HOUR FIRE RATED WALL</p> <p>1-HOUR FIRE RATED WALL</p> <p>COLUMN GRID LINE/CENTERLINE</p>	<p><b>PIPING</b></p> <p>FIGURE</p> <p>LINE SIZE 36"</p> <p>SERVICE PLANT EFFLUENT</p> <p><b>EQUIPMENT IDENTIFICATION</b></p> <p><b>ALTERNATIVE 1</b></p> <p>FIGURE</p> <p>SERVICE ABBREVIATION INDICATES NON-POTABLE WATER</p> <p>EQUIPMENT ABBREVIATION INDICATES PUMP</p> <p>BUILDING OR STRUCTURE NUMBER BUILDING 20</p> <p>EQUIPMENT NUMBER PUMP 23</p> <p><b>ALTERNATIVE 2</b></p> <p>FIGURE</p> <p>SERVICE ABBREVIATION INDICATES NON-POTABLE WATER</p> <p>EQUIPMENT ABBREVIATION INDICATES PUMP</p> <p>EQUIPMENT NUMBER PUMP 23</p> <p><b>AREA DESIGNATION</b></p> <p>TO BE EDITED ON AN A PROJECT BASIS. TO BE DETERMINED BY THE PROJECT MANAGER, THEN ADDED TO THE GENERAL LEGEND.</p> <p>EXAMPLE:</p> <p>01 BUILDING OR AREA NAME 02 BUILDING OR AREA NAME 03 BUILDING OR AREA NAME</p> <p><b>DISCIPLINE DESIGNATOR &amp; DISCIPLINE ORDER</b></p> <p>G GENERAL V SURVEYING/MAPPING X DEMOLITION C CIVIL U MULTIDISCIPLINE S STRUCTURAL A ARCHITECTURAL D PROCESS M MECHANICAL (HVAC) P PLUMBING E ELECTRICAL Y INSTRUMENTATION</p> <p><b>SHEET TYPE DESIGNATOR</b></p> <p>0 GENERAL (SYMBOLS, LEGENDS) 1 PLANS 2 ELEVATIONS 3 SECTIONS 4 LARGE SCALE VIEWS 5 DETAILS 6 SCHEDULES AND DIAGRAMS 8 PROFILES 9 3D REPRESENTATIONS</p> <p><b>EXAMPLE</b></p> <p>GRAVITY THICKENER ARCHITECTURAL SECTION, DRAWING 01</p> <p>0 2 BUILDING OR AREA DESIGNATION</p> <p>A ARCHITECTURAL</p> <p>3 SECTIONS</p> <p>0 1 SHEET 01</p> <p>0 2 A 3 0 1 EXAMPLE</p> <p><b>GENERAL NOTES:</b></p> <ol style="list-style-type: none"> <li>THIS IS A STANDARD SHEET SHOWING COMMON SYMBOLOLOGY. ALL SYMBOLS ARE NOT NECESSARILY USED ON THIS PROJECT.</li> <li>SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.</li> </ol>



PROJECT MANAGER MICHAEL BUTTERFIELD	
ARCHITECTURAL	JOHN S. RICKERT
ELECTRICAL	KEVIN VANDER KOLK
MECHANICAL	JEFF LEWIS
PROJECT NUMBER	10058757

**CEDAR RAPIDS  
KJELDAHL  
HOOD  
PROCUREMENT**




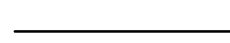
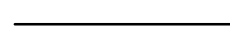
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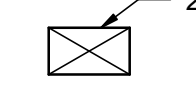
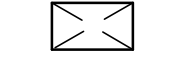
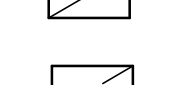
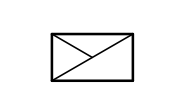

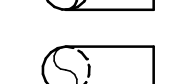
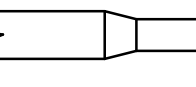
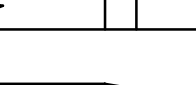

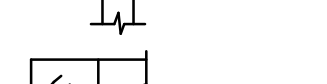
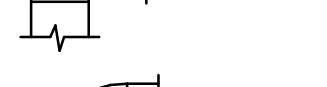
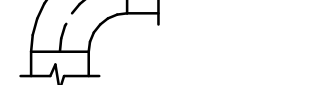

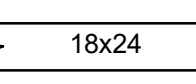
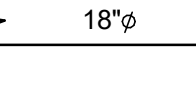
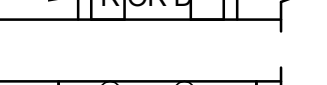
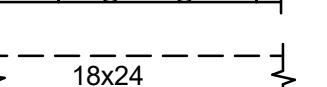
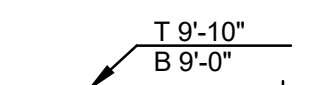
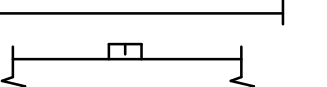
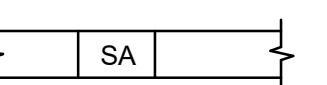
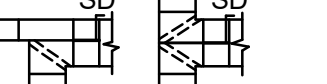
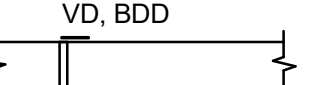
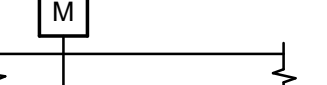
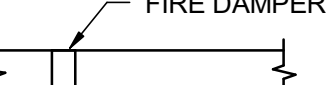
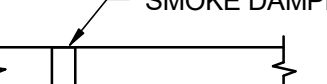
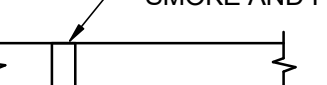
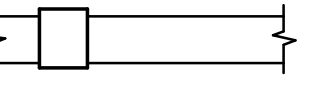


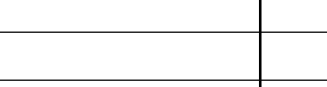
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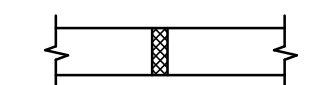
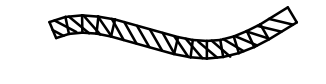


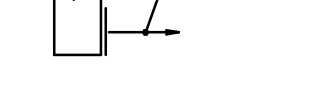
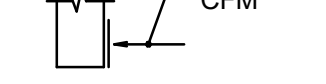
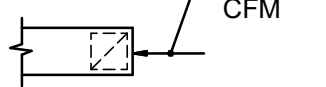
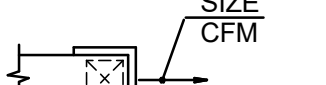
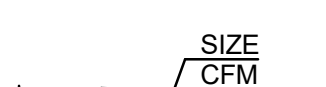

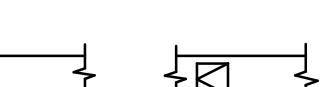
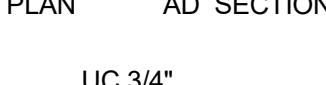

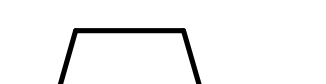





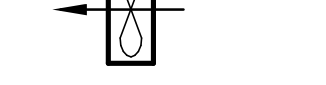
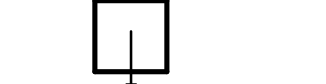


ISSUE	DATE	DESCRIPTION
	04/26/2018	ISSUED FOR BID

**PLUMBING PIPING**




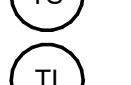

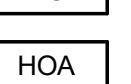
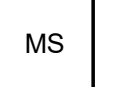
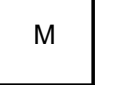
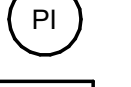

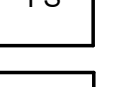



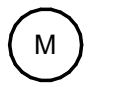



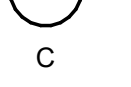
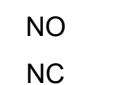
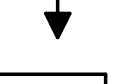

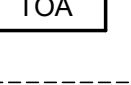
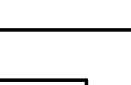

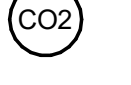
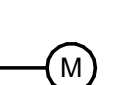





	POTABLE DOMESTIC COLD WATER (PWC)
	COMPRESSED AIR (A)
	VACUUM (VAC)

**HVAC SYMBOLLOGY**

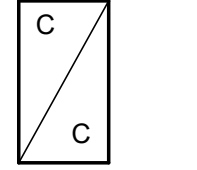
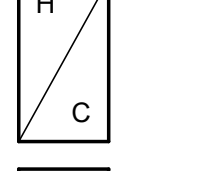
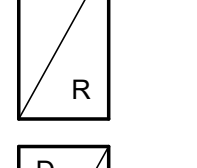
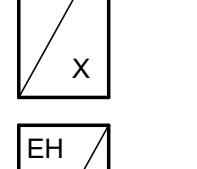
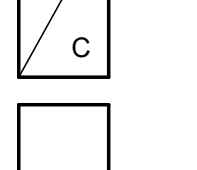
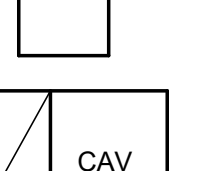
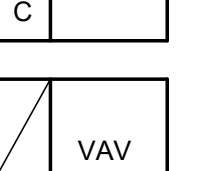
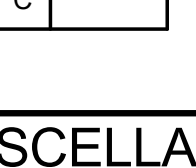
	24x18 SUPPLY AIR OR OUTSIDE AIR DUCT UP (SECTION CUT, FIRST DIMENSION DUCT WIDTH)
	SUPPLY AIR OR OUTSIDE AIR DUCT DOWN (NO SECTION CUT)
	RETURN AIR DUCT UP (SECTION CUT)
	RETURN AIR DUCT DOWN (NO SECTION CUT)
	EXHAUST AIR DUCT UP (NO SECTION CUT)
	EXHAUST AIR DUCT DOWN (NO SECTION CUT)
	ROUND ELBOW UP
	ROUND ELBOW DOWN
	TRANSITION - DOUBLE SIDED
	TRANSITION - ONE SIDED
	TRANSITION - RECTANGULAR TO ROUND DUCT
	STANDARD BRANCH - FOR SUPPLY AIR W/ EXTRACTOR AND RETURN AIR W/O EXTRACTOR
	ELBOW - W/TURNING VANE (RECTANGULAR)
	ELBOW - W/TURNING VANES (RECTANGULAR), SMOOTH RADIUS
	GOOSENECK HOOD (COWL)
	RECTANGULAR DUCT OR OPENING SIZE FIRST NUMBER INDICATES SIZE OF SIDE SHOWN
	ROUND DUCT SIZE
	RECTANGULAR DUCT INCLINE - RISE OR DROP IN RESPECT TO THE AIR FLOW
	ROUND DUCT INCLINE - RISE OR DROP IN RESPECT TO THE AIR FLOW
	HIDDEN DUCT
	DUCT ELEVATION TAG ABOVE FINISH FLOOR
	PRESSURE/TEMPERATURE TEST PLUG (PETE PLUG OR EQUAL)
	SOUND ATTENUATOR
	SPLITTER DAMPER
	VD = VOLUME DAMPER BDD = BACKDRAFT DAMPER
	MOD = MOTOR OPERATED DAMPER
	FIRE DAMPER
	SMOKE DAMPER
	SMOKE AND FIRE DAMPER
	ZD = ZONE DAMPER

	FLEXIBLE CONNECTION
	FLEXIBLE DUCT - TWO LINE
	FLEXIBLE DUCT - ONE LINE
	ACOUSTICAL LINING - DUCT DIMENSIONS FOR NET FREE AREA
	SUPPLY AIR REGISTER OR GRILLE - W/ DUCT-MOUNTED EXTRACTOR
	EXHAUST AIR OR RETURN AIR REGISTER OR GRILLE
	EXHAUST AIR OR RETURN AIR REGISTER OR GRILLE
	SUPPLY AIR ASSEMBLY SQUARE DIFFUSER
	SUPPLY AIR ASSEMBLY ROUND DIFFUSER
	WALL LOUVER
	ACCESS DOOR
	ACCESS DOOR
	UNDERCUT DOOR 3/4"
	ACCESS DOOR OR ACCESS PANEL IN DUCTWORK
	INTAKE OR RELIEF HOOD
	DOOR GRILLE
	BACKDRAFT DAMPER
	EXHAUST ROOF VENTILATOR PROPELLER OR CENTRIFUGAL TYPE
	PROPELLER WALL FAN
	ROOM AIR CONDITIONING UNIT
	INTAKE/EXHAUST LOUVER
	SUPPLY, RETURN OR EXHAUST FAN
	AIR FILTER

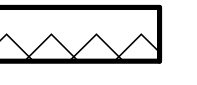
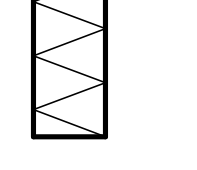
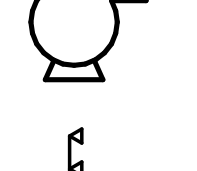

**HVAC CONTROL SYMBOLLOGY**

	TEMPERATURE CONTROLLER
	TEMPERATURE TRANSMITTER
	TEMPERATURE SWITCH
	THERMOSTAT
	TEMPERATURE SENSOR
	TEMPERATURE INDICATOR
	PERCENTAGE TIMER
	RECEIVER CONTROLLER
	HAND-OFF-AUTO
	MOTOR STARTER
	DAMPER ACTUATOR
	PRESSURE INDICATOR
	FREEZE STAT
	FIRE STAT
	DIFFERENTIAL PRESSURE SWITCH
	SMOKE DETECTOR
	FLOW SWITCH
	PRESSURE SWITCH
	TIME DELAY
	MINIMUM POSITION RELAY
	SIGNAL
	ANALOG OUTPUT
	ANALOG INPUT
	DIGITAL OUTPUT
	DIGITAL INPUT
	COMMON PORT
	SIGNAL PORT
	NORMALLY OPEN
	NORMALLY CLOSED
	BALANCING VALVE
	RESISTANCE HEATING CONTACTOR
	TEST-AUTO
	TEST-OFF-AUTO
	ELECTRIC SIGNAL
	PIPING
	BULB-TYPE THERMOSTAT
	DIESEL EXHAUST SENSOR
	CARBON DIOXIDE SENSOR
	VOLUME DAMPER - MANUAL
	VOLUME DAMPER - MOTORIZED

**AIR FLOW SCHEMATIC AND TEMPERATURE CONTROL DIAGRAM SYMBOLLOGY**

	CHILLED WATER COOLING COIL
	HOT WATER HEATING COIL
	DIRECT EVAPORATIVE COOLER
	DIRECT EXPANSION COOLING COIL
	ELECTRIC HEATING COIL
	VFD (VARIABLE FREQUENCY DRIVE)
	CONSTANT AIR VOLUME BOX WITH REHEAT COIL
	VARIABLE AIR VOLUME BOX WITH REHEAT COIL

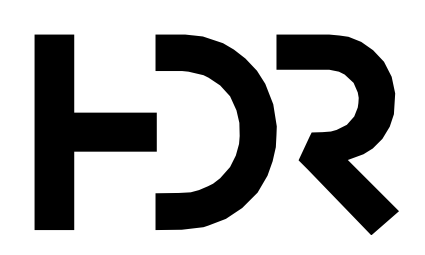
**MISCELLANEOUS SYMBOLLOGY**

	MIST ELIMINATOR
	ACTIVATED CARBON OR CHEMICAL FILTER
	CENTRIFUGAL PUMP
	SPRAY NOZZLE/HUMIDIFIER

**GENERAL NOTES:**

- THIS IS A STANDARD PROCESS, MECHANICAL AND PLUMBING SYMBOLLOGY SHEET. ALL SYMBOLS ARE NOT NECESSARILY USED ON THIS PROJECT.
- SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.
- SEE INSTRUMENTATION LEGEND AND GENERAL SHEETS FOR PROJECT-SPECIFIC EQUIPMENT SYMBOLS, EQUIPMENT ABBREVIATIONS, AND PIPING SYSTEM ABBREVIATIONS.

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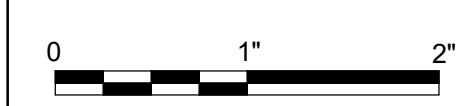


ISSUE	DATE	DESCRIPTION
	04/26/2018	ISSUED FOR BID

<b>PROJECT MANAGER</b> MICHAEL BUTTERFIELD	
ARCHITECTURAL	JOHN S. RICKERT
ELECTRICAL	KEVIN VANDER KOLK
MECHANICAL	JEFF LEWIS
PROJECT NUMBER 10058757	

**CEDAR RAPIDS  
KJELDAHL  
HOOD  
PROCUREMENT**

**MECHANICAL LEGEND**

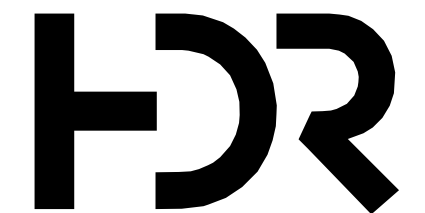


FILENAME	HDRE_ALL_DISCIPLINES.rvt	SHEET	02G002
SCALE	NONE		

ONE-LINE, POWER, AND LIGHTING SYMBOLOGY

<p><b>LOW - VOLTAGE CIRCUIT BREAKER (CB), RATING AND NO. OF POLES AS SHOWN. WHEN SPECIFIC TYPE, OTHER THAN MCCB, IS REQUIRED, X INDICATES TYPE.</b></p> <p><b>TYPES:</b>                  MCCB - MOLDED CASE                  ICCB - INSULATED CASE                  LVP - LOW VOLTAGE POWER                  MCP - MOTOR CIRCUIT PROTECTOR (RATING PER CONNECTED LOAD)</p> <p><b>TRIP UNIT:</b>                  L - LONG TIME PICKUP                  S - SHORT TIME PICKUP                  I - INSTANTANEOUS PICKUP                  G - GROUND FAULT PICKUP                  A - ARC FLASH MAINTENANCE</p> <p><b>GROUND FAULT PROTECTION</b></p> <p><b>MEDIUM - VOLTAGE CIRCUIT BREAKER</b></p> <p><b>FUSE, SIZE, AND NUMBER OF FUSES AS NOTED</b></p> <p><b>FUSED CUTOUT, CURRENT RATING, FUSE SIZE, AND NUMBER OF POLES AS NOTED</b></p> <p><b>FUSIBLE SWITCH, CURRENT RATING, FUSE SIZE, AND QUANTITY AS NOTED</b></p> <p><b>NON-FUSED SWITCH, CURRENT RATING, AND NUMBER OF POLES AS NOTED</b></p> <p><b>DISCONNECT OR DRAWOUT CONNECTION</b></p> <p><b>MAGNETIC MOTOR STARTER AND SEPARATELY MOUNTED COMBINATION MAGNETIC MOTOR STARTER</b></p> <p><b>MOTOR CONTROLLER AND SEPARATELY MOUNTED MOTOR CONTROLLER WITH SHORT CIRCUIT PROTECTION AND DISCONNECT</b></p> <p><b>MOTOR STARTER AND CONTROLLER SUBSCRIPTS:</b>                  A - MAGNETIC STARTER NEMA SIZE                  B - STARTER TYPE                  NONE - FULL VOLTAGE NON-REVERSING (FVNR)                  FVR - FULL VOLTAGE REVERSING                  2S - TWO SPEED                  RVAT - REDUCED VOLTAGE AUTO TRANSFORMER</p> <p><b>C - CONTROL DIAGRAM OR CONTROLS SCHEDULE NUMBER (IF REQUIRED)</b></p> <p><b>D - CONTROLLER TYPE</b>                  VFD - VARIABLE FREQUENCY DRIVE                  SS - SOLID STATE                  CONT - CONTACTOR</p> <p><b>SEPARATELY MOUNTED COMBINATION MOTOR STARTER OR CONTROLLER; SEE ELECTRICAL ONE - LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION</b></p> <p><b>SEPARATELY MOUNTED MOTOR STARTER OR CONTROLLER; SEE ELECTRICAL ONE-LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION.</b></p> <p><b>DISCONNECT OR SAFETY SWITCH, 30A, 3P, X INDICATES AMP RATING GREATER THAN 30A, NON-FUSED UNLESS OTHERWISE NOTED</b></p> <p><b>FUSED DISCONNECT OR SAFETY SWITCH, 3P, X INDICATES AMP RATING GREATER THAN 30A, Y INDICATES FUSE SIZE</b></p> <p><b>SEPARATELY MOUNTED CIRCUIT BREAKER; SEE ELECTRICAL ONE - LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION</b></p> <p><b>MOTOR WITH DESIGN HORSEPOWER (WHEN INDICATED)</b></p>	<p><b>GENERATOR</b></p> <p><b>TRANSFER SWITCH, CURRENT RATING, AND NUMBER OF POLES AS NOTED</b>                  ATS - AUTOMATIC                  MTS - MANUAL</p> <p><b>TRANSFORMER</b>                  Δ 3-PHASE, 3-WIRE DELTA CONNECTION                  ⚡ 3-PHASE, 4-WIRE GROUNDED WYE CONNECTION</p> <p><b>SWITCHBOARD OR PANELBOARD; NAME, VOLTAGE, PHASE, NUMBER OF WIRES WHEN INDICATED</b>                  LP100 208/120V 3Ø 4W</p> <p><b>NON-MOTOR LOAD WITH DESIGN KVA, KW, OR AMP</b>                  100 KVA</p> <p><b>VOLTAGE TRANSFORMER (VT OR PT)</b></p> <p><b>CURRENT TRANSFORMER (CT)</b></p> <p><b>UTILITY WATT-HOUR METER PER UTILITY REQUIREMENTS</b></p> <p><b>DIGITAL METERING PACKAGE</b></p> <p><b>GROUND</b></p> <p><b>LIGHTNING ARRESTER</b></p> <p><b>LOW VOLTAGE SURGE PROTECTIVE DEVICE</b></p> <p><b>SELECTOR SWITCH</b></p> <p><b>PUSHBUTTON</b></p> <p><b>INSTRUMENTATION/CONTROL DEVICE</b></p> <p><b>CONTROL PANEL INTEGRAL OR PROVIDED WITH ASSOCIATED EQUIPMENT</b></p> <p><b>CONTROL PANEL WITH DISCONNECT SWITCH INTEGRAL OR PROVIDED WITH ASSOCIATED EQUIPMENT</b></p> <p><b>JUNCTION OR PULL BOX</b></p> <p><b>PANELBOARD (250V TO 600V)</b></p> <p><b>PANELBOARD (LESS THAN 250V)</b></p> <p><b>ELECTRICAL EQUIPMENT ENCLOSURE: SWITCHBOARD, MOTOR CONTROL CENTER, CONTROL PANEL, TRANSFORMER OR OTHER EQUIPMENT AS INDICATED. ESTIMATED SIZE AS INDICATED. WHEN USED X INDICATES EQUIPMENT TYPE.</b></p> <p><b>EQUIPMENT TYPES:</b>                  ATS - AUTOMATIC TRANSFER SWITCH                  CP - CONTROL PANEL                  MTS - MANUAL TRANSFER SWITCH                  MCC - MOTOR CONTROL CENTER                  UPS - UNINTERRUPTIBLE POWER SUPPLY                  VFD - VARIABLE FREQUENCY DRIVE                  SB - SWITCHBOARD                  SG - SWITCHGEAR                  T - TRANSFORMER</p>	<p><b>CEILING/PENDANT/BOLLARD MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED</b></p> <p><b>CEILING/PENDANT/BOLLARD MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)</b></p> <p><b>WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED</b></p> <p><b>WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)</b></p> <p><b>WALL MOUNTED FLOOD LUMINAIRE, LAMP TYPE AS SPECIFIED</b></p> <p><b>POLE/STANCHION MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED</b></p> <p><b>POLE/STANCHION MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)</b></p> <p><b>POLE/STANCHION MOUNTED FLOOR LUMINAIRE, LAMP TYPE AS SPECIFIED</b></p> <p><b>CEILING/PENDANT MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED</b></p> <p><b>WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED</b></p> <p><b>CEILING/PENDANT MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, ALL OR PARTIAL EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)</b></p> <p><b>WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, ALL OR PARTIAL EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)</b></p> <p><b>EMERGENCY LIGHT, 2 ATTACHED HEADS AS SHOWN</b></p> <p><b>EMERGENCY LIGHT, REMOTE MOUNTED HEAD</b></p> <p><b>DOUBLE-FACED CEILING OR WALL MOUNTED EXIT LIGHT; DIRECTIONAL ARROWS (IF REQUIRED) AS INDICATED ON PLANS</b></p> <p><b>SINGLE-FACED CEILING OR WALL MOUNTED EXIT LIGHT; DIRECTIONAL ARROWS (IF REQUIRED) AS INDICATED ON PLANS</b></p> <p><b>LIGHTING FIXTURE SUBSCRIPTS:</b>                  X - INDICATES LUMINAIRE TYPE PER LUMINAIRE SCHEDULE                  Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD                  Z - INDICATES CONTROLLING SWITCH (IF REQUIRED)                  NL - NIGHT LIGHT UNSWITCHED</p> <p><b>WALL SWITCH</b>  <b>SUBSCRIPTS:</b>                  X - INDICATES TYPE                  NONE - SINGLE POLE                  2 - DOUBLE POLE                  3 - THREE-WAY                  4 - FOUR-WAY                  K - KEY SWITCH                  P - PILOT LIGHT                  L - LIGHTED HANDLE                  DM - DIMMING                  MC - MOMENTARY CONTACT                  T - TIMER</p> <p><b>Y - INDICATES CONTROLLING SWITCH (IF REQUIRED)</b></p> <p><b>MANUAL MOTOR STARTER</b>  <b>SUBSCRIPTS:</b>                  X - INDICATES TYPE                  HP - HORSEPOWER RATED                  TE - HORSEPOWER RATED WITH THERMAL ELEMENT                  FT - HORSEPOWER RATED WITH FUSE/THERM FUSE</p> <p><b>Y - INDICATES SWITCH TYPE</b>                  NONE - TOGGLE SWITCH TYPE                  R - ROTARY SWITCH TYPE</p> <p><b>PHOTOCELL</b></p> <p><b>TIME CLOCK</b></p> <p><b>LIGHTING CONTROL OCCUPANCY SENSOR, WALL MOUNTED, X INDICATES SPECIFIC TYPE AS SPECIFIED</b></p> <p><b>LIGHTING CONTROL OCCUPANCY SENSOR, CEILING MOUNTED, X INDICATES SPECIFIC TYPE AS SPECIFIED</b></p>	<p><b>PLUG-IN RECEPTACLE STRIP, QUANTITY AND SPACING OF RECEPTACLES AS NOTED OR SPECIFIED</b></p> <p><b>SPECIAL-PURPOSE RECEPTACLE AS DEFINED ON PLANS</b></p> <p><b>TWO RECEPTACLES IN 2-GANG BOX UNDER COMMON COVER PLATE</b></p> <p><b>DUPLEX RECEPTACLE</b></p> <p><b>SIMPLEX RECEPTACLE</b></p> <p><b>RECESSED FLOOR MOUNTED BOX, QUANTITY AND TYPE OF RECEPTACLES AS INDICATED</b></p> <p><b>SUBSCRIPTS:</b>                  X - INDICATES TYPE                  GFCI - GROUND FAULT CIRCUIT INTERRUPTER                  IG - ISOLATED GROUND                  TR - TAMPER RESISTANT                  PLH - PLUG LOAD HALF CONTROLLED                  PLD - PLUG LOAD DUAL CONTROLLED                  USB - USB CHARGING STATION                  SPD - SURGE PROTECTIVE DEVICE                  Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD</p> <p><b>CONDUIT TURNING UP</b></p> <p><b>CONDUIT TURNING DOWN</b></p> <p><b>HOMERUN TO PANEL</b>                  SINGLE PHASE: 2 #12, 1 #12G IN 3/4" C                  THREE PHASE: 3 #12, 1 #12G IN 3/4" C UNLESS OTHERWISE NOTED</p> <p><b>CONDUIT CONNECTION TO EQUIPMENT</b></p> <p><b>CIRCUIT RUN BETWEEN DEVICES EXPOSED IN NON-ARCHITECTURALLY FINISHED AREAS; CONCEALED IN ARCHITECTURALLY FINISHED AREAS. CONDUIT AND CONDUCTOR SIZES SHALL BE THE SAME AS THE HOMERUN FOR THE CIRCUIT.</b></p> <p><b>CONDUIT RUN BETWEEN DEVICES CONCEALED IN NON-ARCHITECTURALLY FINISHED AREAS OR UNDER FLOOR SLAB. CONDUIT AND CONDUCTOR SIZES SHALL BE THE SAME AS THE HOMERUN FOR THE CIRCUIT.</b></p> <p><b>CIRCUIT HASH MARKS (WHEN INDICATED); LONG, SHORT, SINGLE DOT, AND DOUBLE DOT REPRESENT PHASE, NEUTRAL, EQUIPMENT GROUND, AND ISOLATED EQUIPMENT GROUND, RESPECTIVELY. #12 IN 3/4" CONDUIT UNLESS OTHERWISE INDICATED.</b></p> <p><b>CIRCUIT CONTINUATION</b></p> <p><b>CONDUIT STUBBED OUT AND CAPPED</b></p> <p><b>CORD AND PLUG CONNECTION</b></p> <p><b>CONDUIT TAG OR CIRCUIT NUMBER - WIRE AND CONDUIT SIZE AS SPECIFIED IN CIRCUIT SCHEDULE ON THE SHEETS</b></p> <p><b>GROUND CABLE</b></p> <p><b>GROUND ROD</b></p> <p><b>GENERAL NOTES:</b></p> <ol style="list-style-type: none"> <li>THIS IS A STANDARD ELECTRICAL SYMBOLOGY SHEET. NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT.</li> <li>SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.</li> <li>SEE P&amp;ID LEGEND SHEET FOR PROJECT SPECIFIC EQUIPMENT SYMBOLS, EQUIPMENT ABBREVIATIONS, AND PIPING SYSTEM ABBREVIATIONS.</li> </ol>
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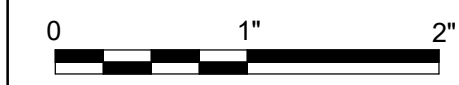
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ISSUE	DATE	DESCRIPTION
	04/26/2018	ISSUED FOR BID

PROJECT MANAGER MICHAEL BUTTERFIELD	
ARCHITECTURAL	JOHN S. RICKERT
ELECTRICAL	KEVIN VANDER KOLK
MECHANICAL	JEFF LEWIS
PROJECT NUMBER	10058757

**CEDAR RAPIDS  
 KJELDAHL  
 HOOD  
 PROCUREMENT**



**ELECTRICAL LEGEND 1**

FILENAME HDRE\_ALL\_DISCIPLINES.rvt  
 SCALE NONE

SHEET  
**02G003**

### COMMUNICATION SYMBOLOGY

	WALL MOUNTED TELEPHONE OUTLET
	WALL MOUNTED DATA OUTLET
	WALL MOUNTED COMBINATION TELEPHONE AND DATA OUTLET
	RECESSED FLOOR MOUNTED TELEPHONE OUTLET
	RECESSED FLOOR MOUNTED DATA OUTLET
	RECESSED FLOOR MOUNTED COMBINATION TELEPHONE AND DATA OUTLET

### AUDIOVISUAL SYMBOLOGY

	TELEVISION OUTLET
	CEILING MOUNT SPEAKER
	WALL MOUNT SPEAKER
	SPEAKER SUBSCRIPTS: X - INDICATES HEIGHT
	HORN TYPE TRANSDUCER
	VOLUME CONTROL
	HEAD END EQUIPMENT
	FLOOR MOUNTED MICROPHONE JACK
	WALL MOUNTED MICROPHONE JACK

### SECURITY SYMBOLOGY

	DOOR POSITION SWITCH
	COMBINATION ELECTRIC DOOR STRIKE AND POSITION SWITCH
	PROXIMITY CARD READER
	PROXIMITY CARD READER WITH KEYPAD
	DUAL TECHNOLOGY MOTION DETECTOR
	REQUEST TO EXIT MOTION DETECTOR
	REQUEST TO EXIT PUSH BUTTON
	GLASS BREAK DETECTOR
	CCTV CAMERA PAN/TILT/ZOOM WHEN INDICATED
	SECURITY EQUIPMENT CABINET
	REMOTE KEYPAD/CONTROL STATION

### MASS NOTIFICATION SYMBOLOGY

	EXTERIOR LOCATION HIGH POWER SPEAKER ARRAY (HPSA)
	LOCAL OPERATING CONSOLE
	TEXT MESSAGE DISPLAY UNIT
	MASS NOTIFICATION SYSTEM CONTROL PANEL
	COMBINATION SPEAKER/STROBE NOTIFICATION APPLIANCE
	SPEAKER NOTIFICATION APPLIANCE
	STROBE NOTIFICATION APPLIANCE
	CEILING MOUNTED SPEAKER
	WALL MOUNTED SPEAKER
	COMBINATION MASS NOTIFICATION/FIRE ALARM CONTROL PANEL
	COMBINATION MASS NOTIFICATION/FIRE ALARM SPEAKER NOTIFICATION APPLIANCE
	COMBINATION MASS NOTIFICATION/FIRE ALARM STROBE NOTIFICATION APPLIANCE
	COMBINATION MASS NOTIFICATION/FIRE ALARM STROBE NOTIFICATION APPLIANCE

LENS:  
FIRE ALARM - CLEAR  
MASS NOTIFICATION - AMBER

### EMERGENCY ALARM SYMBOLOGY

	ALARM BELL
	ALARM HORN
	ALARM FLASHING LIGHT
	ALARM BELL AND FLASHING LIGHT COMBINATION UNIT
	ALARM HORN AND FLASHING LIGHT COMBINATION UNIT
	PUSHBUTTON OR PULLSTATION

### SITE SYMBOLOGY

	EXTERIOR PAD MOUNTED TRANSFORMER
	POLE - MOUNTED TRANSFORMER
	ELECTRICAL HANDHOLE OR MANHOLE
	POLE/STANCHION MOUNTED FLOOD LUMINAIRE, LAMP TYPE AS SPECIFIED
	POLE MOUNTED AREA OR ROADWAY LUMINAIRE, LAMP TYPE AS SPECIFIED
	HIGH MAST LIGHTING, NUMBER OF LUMINAIRES AS SPECIFIED

LIGHTING FIXTURE SUBSCRIPTS:  
X - INDICATES LUMINAIRE TYPE PER LUMINAIRE SCHEDULE  
Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD

	POWER POLE
	DOWNGUY
	UNDERGROUND (UNO) ELECTRICAL AND COMMUNICATION SYSTEMS PATHWAY
	OVERHEAD ELECTRICAL AND COMMUNICATION SYSTEMS PATHWAY

### CONTROL SYMBOLOGY

	ELECTRICAL CONNECTION
	NO ELECTRICAL CONNECTION
	SOLENOID VALVE
	CONTROL/RELAY COIL: X-INDICATES TYPE Y-INDICATES LOOP NUMBER, WHEN USED
	TYPES: CR-CONTROL RELAY TC-TIME CLOCK PC-PHOTOCELL LC-LIGHTING CONTACTOR DP-DEFINITE PURPOSE TR-TIMING RELAY M-MOTOR STARTER
	NORMALLY OPEN CONTACT (N.O.)
	NORMALLY CLOSED CONTACT (N.C.)
	NORMALLY OPEN TIME DELAY RELAY CONTACT WITH TIME DELAY ON CLOSING AFTER COIL IS ENERGIZED
	NORMALLY CLOSED TIME DELAY RELAY CONTACT WITH TIME DELAY ON OPENING AFTER COIL IS ENERGIZED
	NORMALLY OPEN TIME DELAY RELAY CONTACT WITH TIME DELAY ON CLOSING AFTER COIL IS DE-ENERGIZED
	NORMALLY CLOSED TIME DELAY RELAY CONTACT WITH TIME DELAY ON OPENING AFTER COIL IS DE-ENERGIZED
	NORMALLY OPEN TEMPERATURE SWITCH; CLOSE ON RISING TEMPERATURE
	NORMALLY CLOSED TEMPERATURE SWITCH; OPEN ON RISING TEMPERATURE
	NORMALLY OPEN FLOW SWITCH; CLOSE ON INCREASING FLOW
	NORMALLY CLOSED FLOW SWITCH; OPEN ON INCREASING FLOW
	NORMALLY OPEN LEVEL SWITCH, CLOSE ON RISING LEVEL
	NORMALLY CLOSED LEVEL SWITCH, OPEN ON RISING LEVEL
	NORMALLY OPEN PRESSURE SWITCH, CLOSE ON INCREASING PRESSURE
	NORMALLY CLOSED PRESSURE SWITCH, OPEN ON INCREASING PRESSURE
	NORMALLY OPEN LIMIT SWITCH, CLOSE ON REACHING LIMIT
	NORMALLY CLOSED LIMIT SWITCH, OPEN ON REACHING LIMIT
	MICROPROCESSOR (PLC, RTU, ETC.) OUTPUT
	MICROPROCESSOR (PLC, RTU, ETC.) INPUT
	FIELD WIRING EXTERNAL TO CONTROL PANEL
	INTERLOCK: X - INDICATES TYPE
	TYPES: E - ELECTRICAL M - MECHANICAL K - KEY
	3 POSITION SELECTOR SWITCH, MAINTAINED CONTACTS, UNLESS OTHERWISE NOTED, 2-POSITION SIMILAR
	NORMALLY OPEN PUSHBUTTON, MOMENTARY CONTACT UNLESS OTHERWISE NOTED
	NORMALLY CLOSED PUSHBUTTON, MOMENTARY CONTACT UNLESS OTHERWISE NOTED

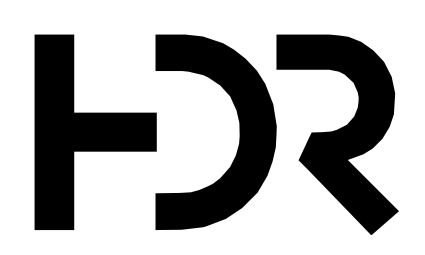
### CONTROL SYMBOLOGY

	INDICATING LIGHT: X INDICATES LENS COLOR
	PUSH TO TEST INDICATING LIGHT: X INDICATES LENS COLOR
	LENS COLORS: R - RED Y - YELLOW G - GREEN W - WHITE B - BLUE A - AMBER
	THERMAL OVERLOAD ELEMENT
	THERMAL OVERLOAD RELAY CONTACT. WHEN SHOWN X INDICATES QUANTITY.
	CONTROL POWER TRANSFORMER (CPT)
	RUN TIME METER

### FIRE ALARM SYMBOLOGY

	FIRE ALARM CONTROL PANEL
	FIRE ALARM ANNUNCIATOR
	FIRE ALARM MANUAL PULL STATION
	FLOW SWITCH
	TAMPER SWITCH
	PRESSURE SWITCH
	SPOT AND DUCT SMOKE DETECTOR: X INDICATES TYPE
	SUBSCRIPT: I - IONIZATION P - PHOTOELECTRIC D - FIRE OR SMOKE DAMPER
	HEAT DETECTOR
	SUBSCRIPT: R/C - RATE COMPENSATION R/F - COMBINATION RATE OF RISE AND FIXED TEMP R - FIXED TEMP F - RATE OF RISE FIXED
	FLAME DETECTOR
	SUBSCRIPT: IR - INFRARED UV - ULTRAVIOLET
	DOOR HOLDER
	BELL
	HORN/SPEAKER
	FLASHING LIGHT
	HORN/SPEAKER AND FLASHING LIGHT COMBINATION UNIT
	BELL/SPEAKER AND FLASHING LIGHT COMBINATION UNIT

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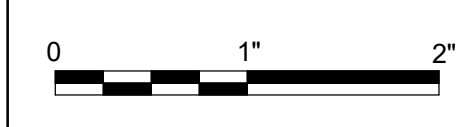


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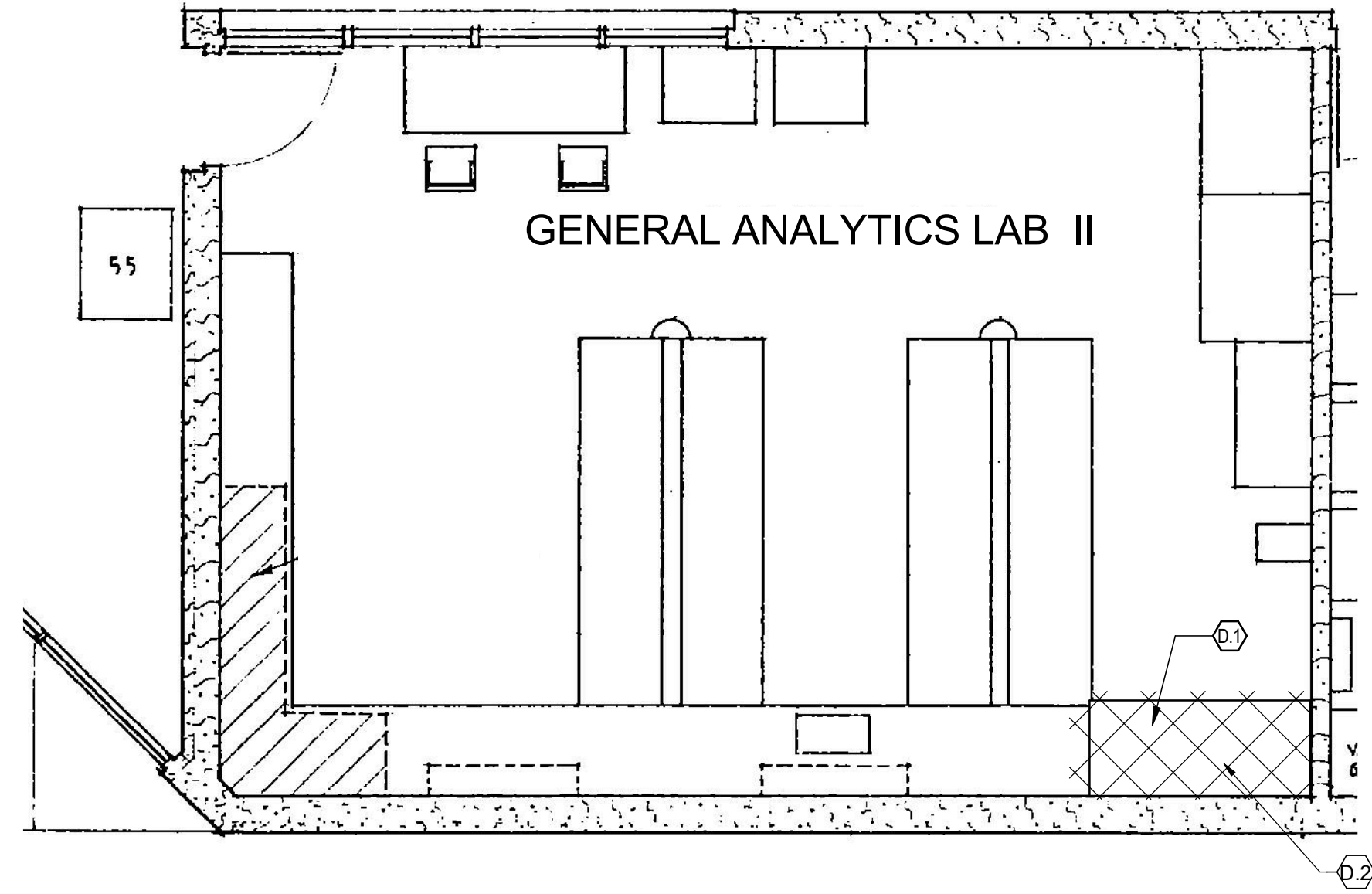
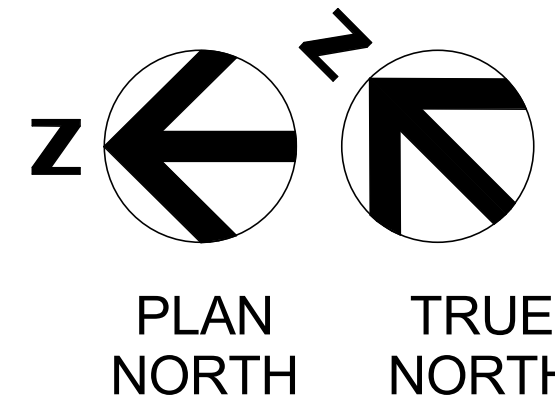
PROJECT MANAGER	MICHAEL BUTTERFIELD
ARCHITECTURAL	JOHN S. RICKERT
ELECTRICAL	KEVIN VANDER KOLK
MECHANICAL	JEFF LEWIS
PROJECT NUMBER	10058757

**CEDAR RAPIDS  
KJELDAHL  
HOOD  
PROCUREMENT**

**ELECTRICAL LEGEND 2**



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SCALE	NONE		



**DEMOLITION KEYNOTES**

- D.1 REMOVE KJELDAHL HOOD, ITEM IS NOT TO BE SALVAGED.
- D.2 DISCONNECT ELECTRICAL CONDUIT AND WIRE. PREPARE FOR RECONNECTION TO NEW HOOD.

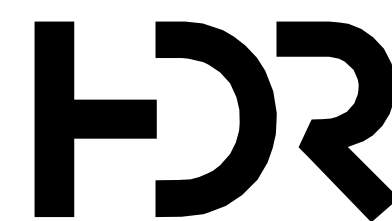
**DEMOLITION NOTES:**

1. REFER TO THE MECHANICAL AND ELECTRICAL PLANS FOR EXTENT OF ASSOCIATED WORK INCLUDING BUT NOT LIMITED TO WIRING, CONDUIT, JUNCTION BOXES, PIPING, DRAINAGE AND EQUIPMENT, DUCT WORK AND FANS.
2. MAINTAIN CLEAR ACCESS TO EXITS THROUGHOUT DEMOLITION AND CONSTRUCTION.
3. CONTRACTOR, AT ALL TIMES, SHALL MAINTAIN THE WEATHERTIGHTNESS OF THE BUILDING.
4. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONSTRUCTION RELATED CONDITIONS AND DIMENSIONS PRIOR TO STARTING DEMOLITION AND CONSTRUCTION.
5. EXISTING ITEMS, EQUIPMENT, FIXTURES, ETC. TO REMAIN SHALL BE PROTECTED FROM DIRT AND DAMAGE DURING DEMOLITION AND CONSTRUCTION.
6. RECONNECT NEW KJELDAHL HOOD TO EXISTING CONNECTIONS.

**DEMOLITION FLOOR PLAN - KJELDAHL**

1/4" = 1'-0"

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MECHANICAL	JEFF LEWIS
<b>PROJECT NUMBER</b>	10058757

**CEDAR RAPIDS  
KJELDAHL  
HOOD  
PROCUREMENT**

**KJELDAHL HOOD DEMOLITION**

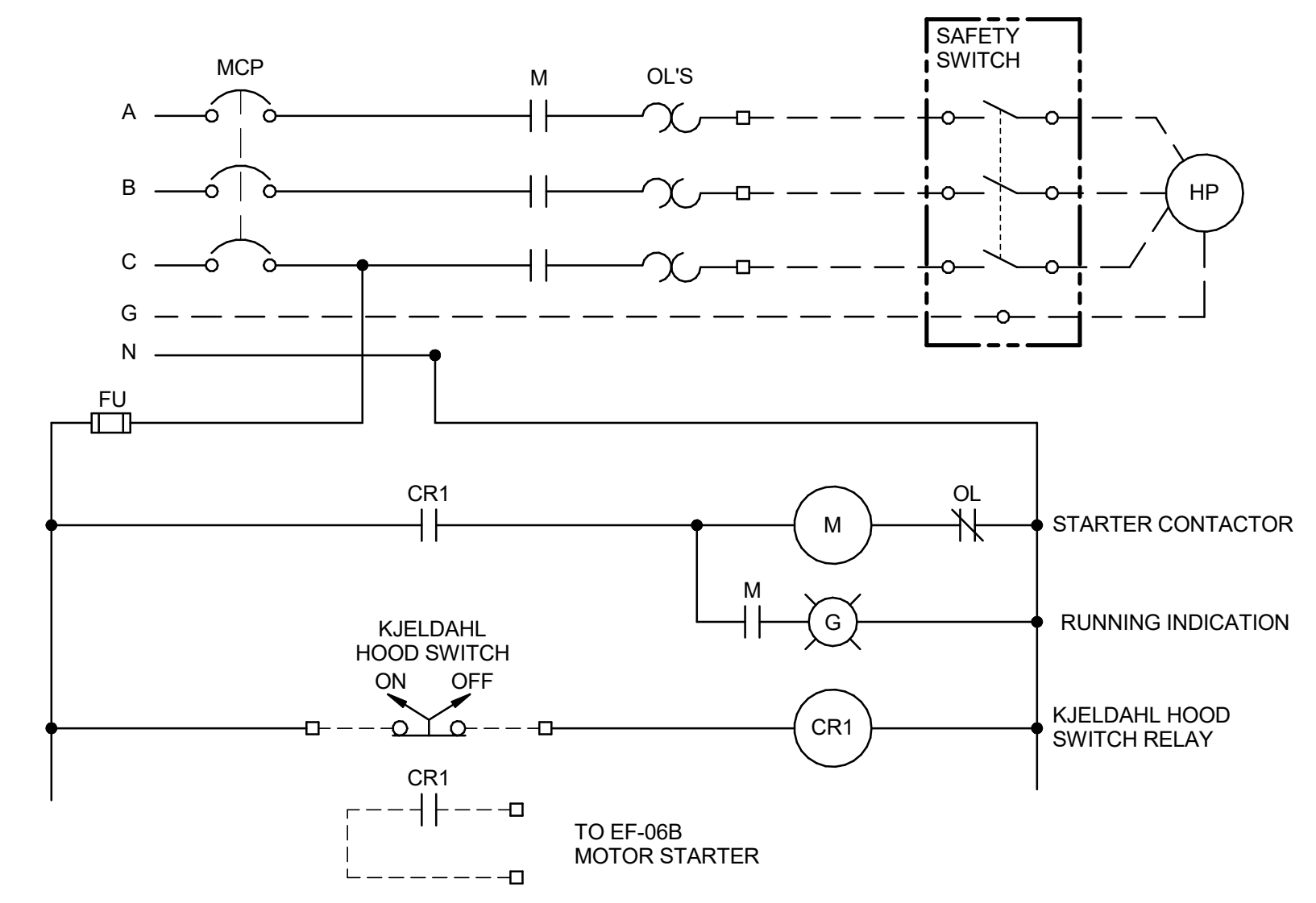


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KEYNOTES (X)



MOTOR DIAGRAM FOR EF-06B IS SIMILAR EXCEPT ON/OFF SWITCH IS REPLACED BY CR1 CONTACT.

3 CONTROL DIAGRAM EF-06A  
NOT TO SCALE

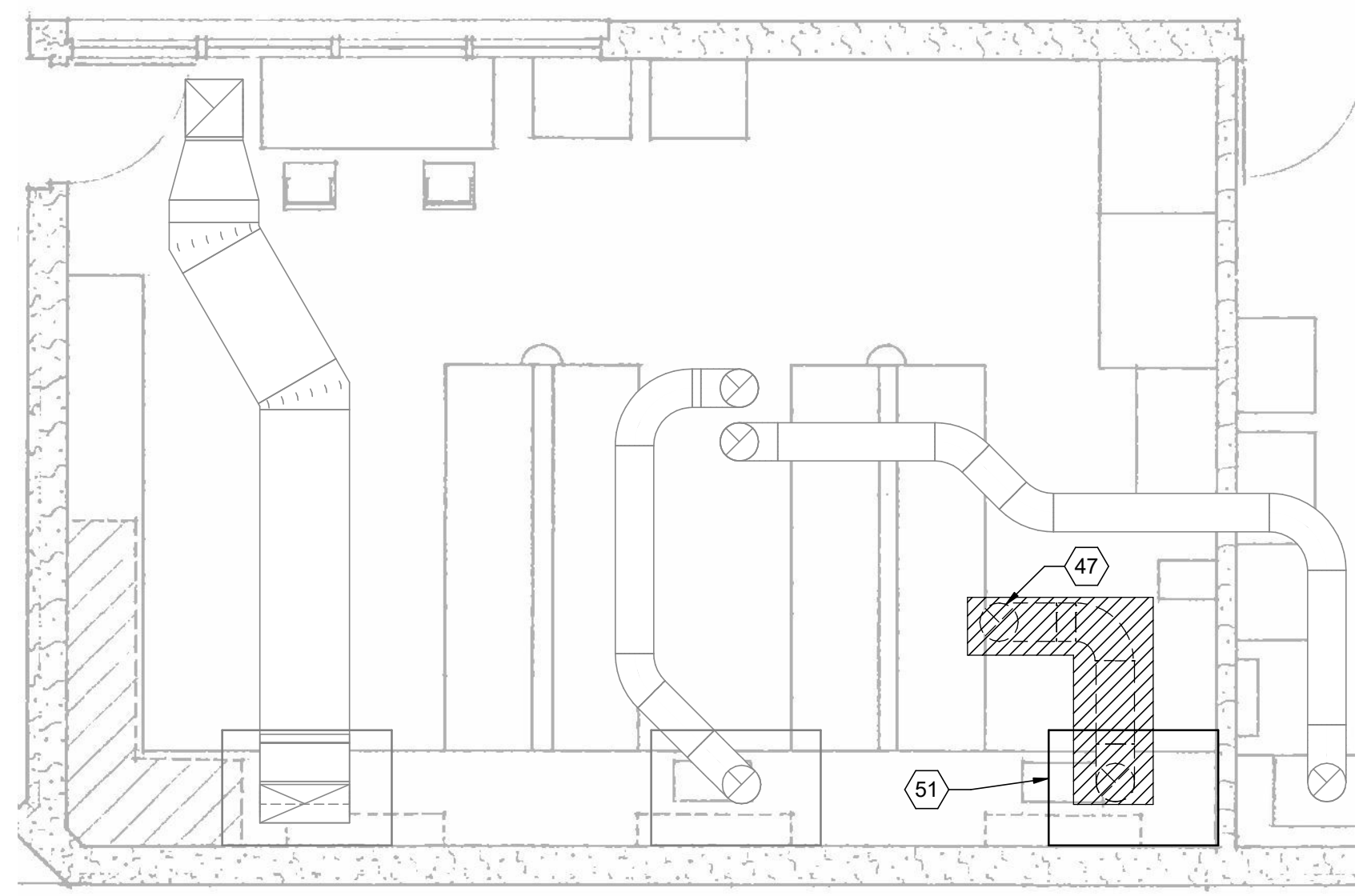
MARK	LOCATION	SERVES	EFFECTIVE PLUME HEIGHT (FT)	FAN DATA				ELECTRICAL DATA				BASIS OF DESIGN	NOTES		
				TYPE	CFM	EXT. S.P. (IN. WG)	DRIVE	RPM	HP	VOLT	PH			HZ	RPM
EF-06A	ROOF	KJELDAHL HOOD (ACID VENT)	15	CENTIFUGAL UPBLAST, HIGH PLUME	500	0.5	BELT	2,815	1-1/2	208	3	60	1,800	MK PLASTICS AXIJET-F 1225	1, 2, 3, 4
EF-06B	ROOF	KJELDAHL HOOD (HOOD EXHAUST)	15	CENTIFUGAL UPBLAST, HIGH PLUME	430	0.5	BELT	2,880	1-1/2	208	3	60	1,800	MK PLASTICS AXIJET-F 1225	1, 2, 3, 4

- NOTES:
- 1 PROVIDE FAN AND ALL NECESSARY FAN EXTENSIONS AND ROOF CURBS TO HAVE DISCHARGE OF PLUME 10' ABOVE FINISHED ROOF SURFACE.
  - 2 ALL COMPONENTS EXPOSED TO AIRSTREAM SHALL BE RESISTANT TO HCl AND H<sub>2</sub>SO<sub>4</sub>. ALL COMPONENTS NOT EXPOSED TO AIR STREAM SHALL BE RESISTANT TO H<sub>2</sub>S.
  - 3 COORDINATE CONNECTION AND BALANCING OF FAN WITH KJELDAHL HOOD MANUFACTURER AND ALL REQUIRED INSTALLATION REQUIREMENTS.
  - 4 FAN TO BE PROVIDED WITH A BYPASS DAMPER. AIRFLOW LISTED DOES NOT INCLUDE BYPASS AIRFLOW. MANUFACTURER SHALL PROVIDE BYPASS AIRFLOW TO MEET PLUME HEIGHT LISTED.

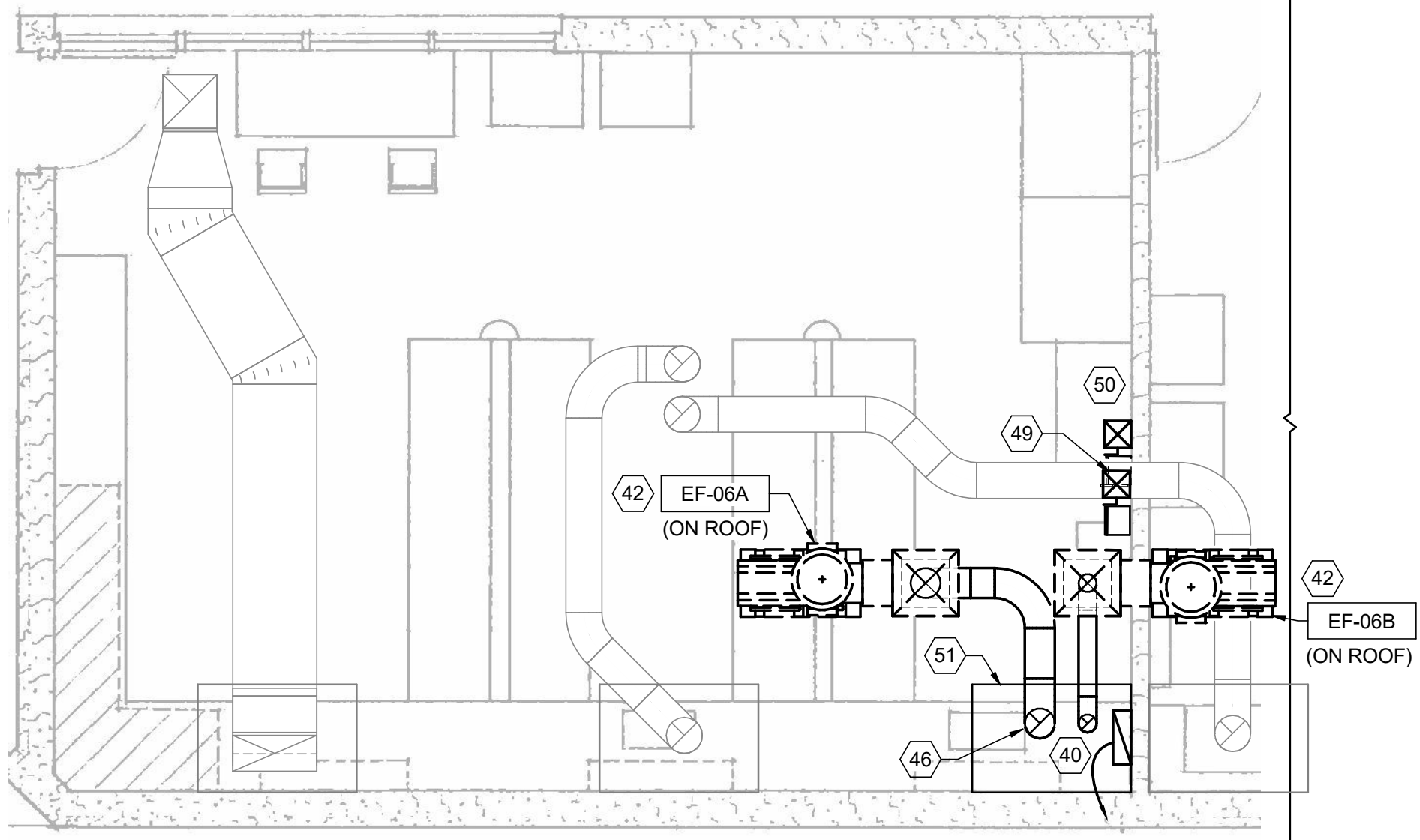
SEQUENCE OF OPERATIONS

- LAB EXHAUST FANS  
A. THE LAB EXHAUST FANS SHALL BE CONTROLLED BY A LOCAL SWITCH AT THE KJELDAHL FUME HOOD.

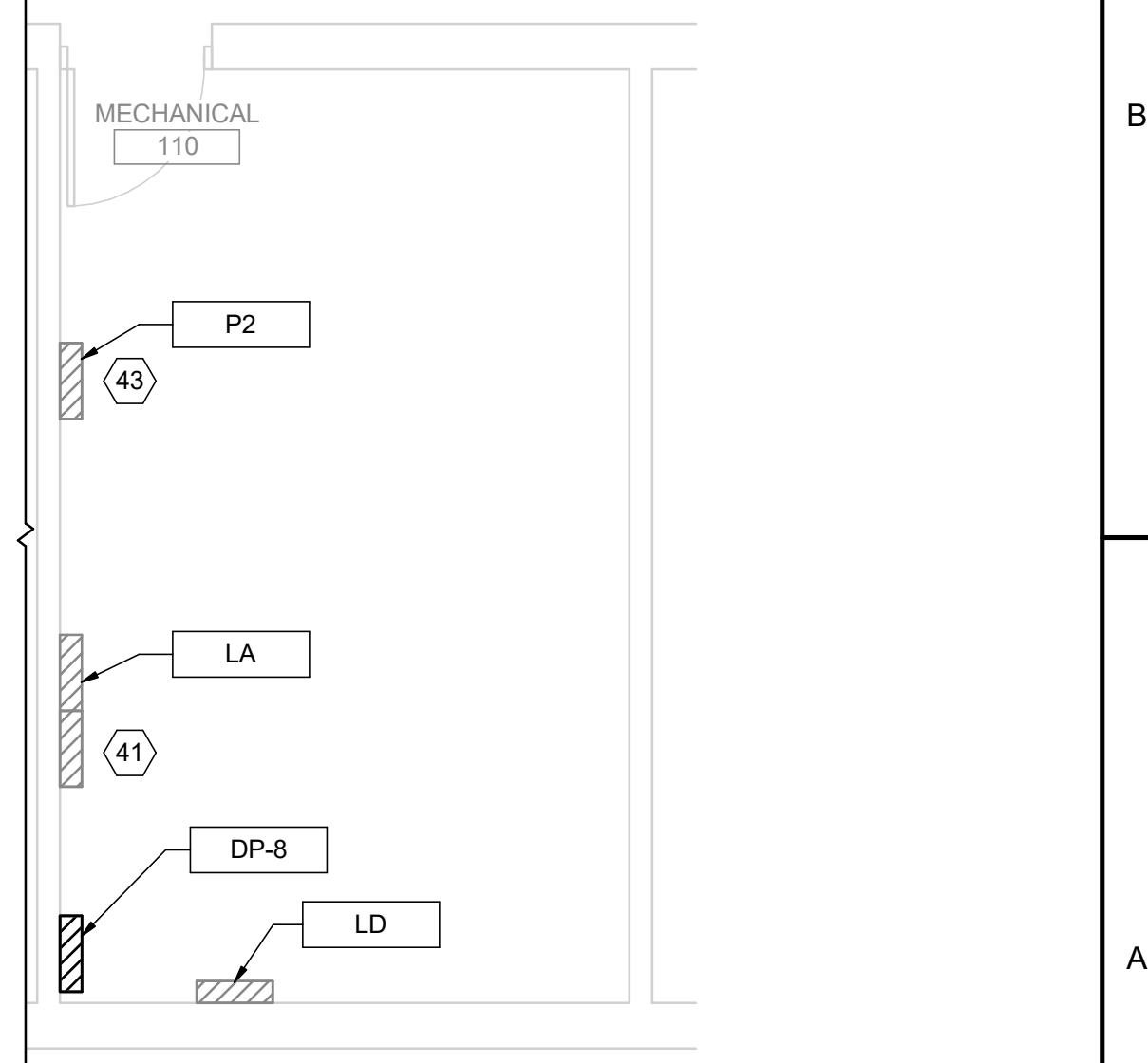
- 40 KJELDAHL HOOD TO BE POWERED WITH A 30A, 120/208V, 3PH, 4W CIRCUIT. REUSE EXISTING CONDUIT AND WIRE. PROVIDE WIRE REDUCTION AS REQUIRED TO FIT TERMINALS.
- 41 REPLACE EXISTING 100A, 3P CIRCUIT BREAKER IN PANEL LA WITH 30A, 3P. PANEL LA IS A WESTINGHOUSE PANELBOARD WITH TYPE BA CIRCUIT BREAKERS.
- 42 NEMA 4X DISCONNECT PROVIDED WITH FAN MOUNT TO FAN ENCLOSURE. PROVIDE 3#12, 1#12G, 1/2" C TO PANEL P2 VIA MOTOR STARTER. SEE CONTROL DIAGRAM THIS SHEET.
- 43 PROVIDE (2) 20A, 3P CIRCUIT BREAKERS FOR EF-06A AND EF-06B IN PANEL P2. PANEL IS A SQUARE D TYPE NF PANELBOARD.
- 44 RECONNECT PWC, VAC AND AIR LINES TO FUME HOOD.
- 46 PROVIDE 10" PVC FROM DUCT COLLAR OF THE KJELDAHL HOOD TO THE EXHAUST FAN EF-06A. TRANSITION AS REQUIRED TO CONNECT TO HOOD AND FAN. PVC DUCT SHALL BE SOLVENT WELDED AIRTIGHT AND SHALL BE ACID RESISTANT.
- 47 DEMO EXISTING DUCTWORK AND EXISTING EXHAUST FAN ON THE ROOF.
- 48 MOTOR STARTER FOR EF-06A.
- 49 MOTOR STARTER FOR EF-06B.
- 50 PROVIDE 2#14, 1#14G, 3/4 BETWEEN MOTOR STARTERS AND BETWEEN MOTOR STARTER EF-06A AND KJELDAHL HOOD CONTROL PANEL.
- 51 KJELDAHL HOOD. SEE SHEET 02X01 AND 02A101 FOR DEMO AND NEW PLANS.



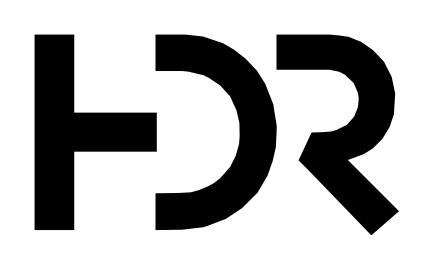
1 GENERAL ANALYTICS LABORATORY II DEMOLITION PLAN  
1/4" = 1'-0"



2 GENERAL ANALYTICS LABORATORY II PLAN  
1/4" = 1'-0"



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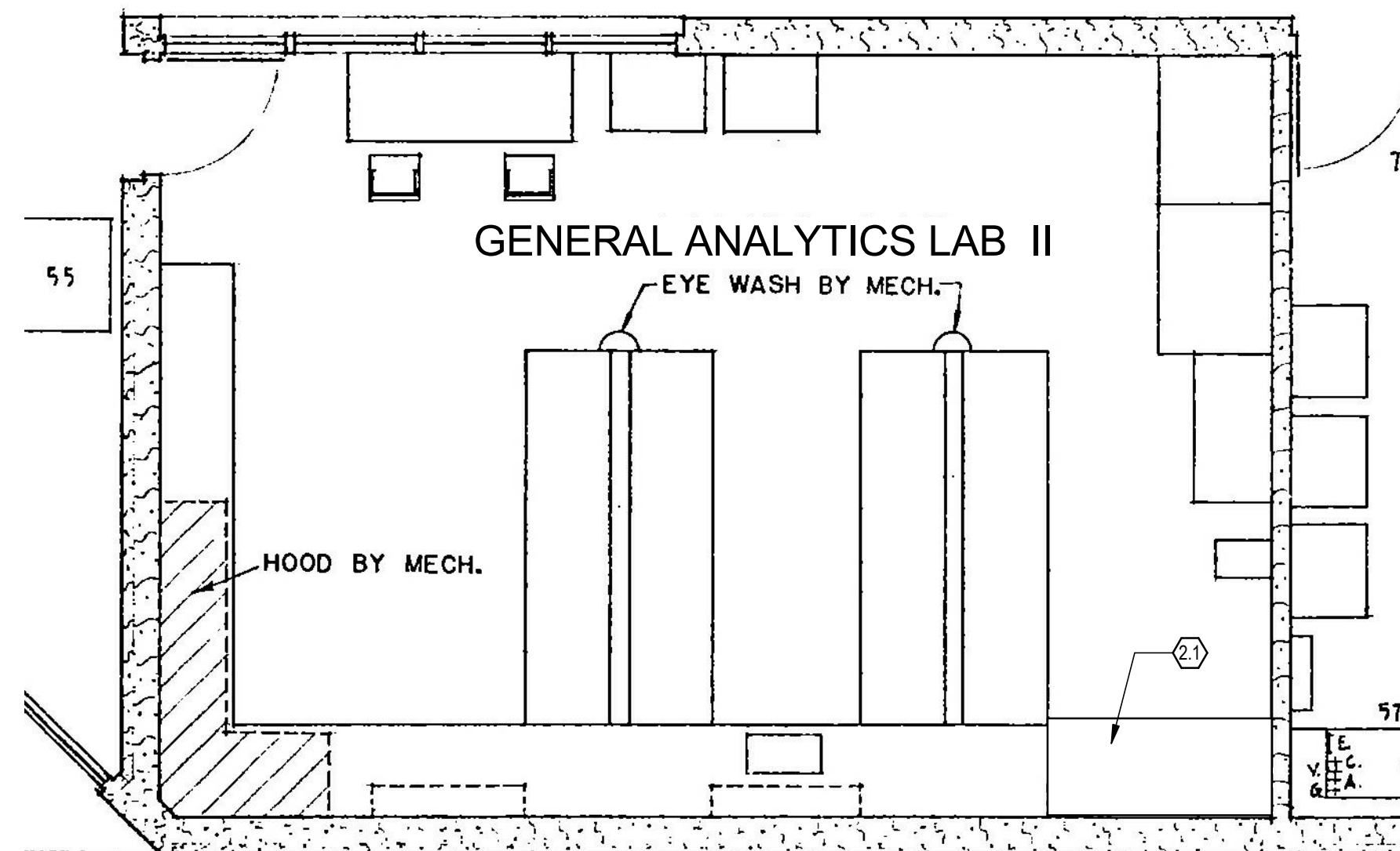
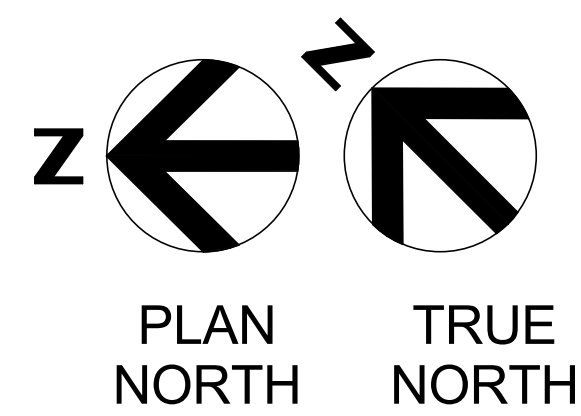
CEDAR RAPIDS  
KJELDAHL  
HOOD  
PROCUREMENT

MECHANICAL AND ELECTRICAL PLANS



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FLOOR PLAN - KJELDAHL

1/4" = 1'-0"

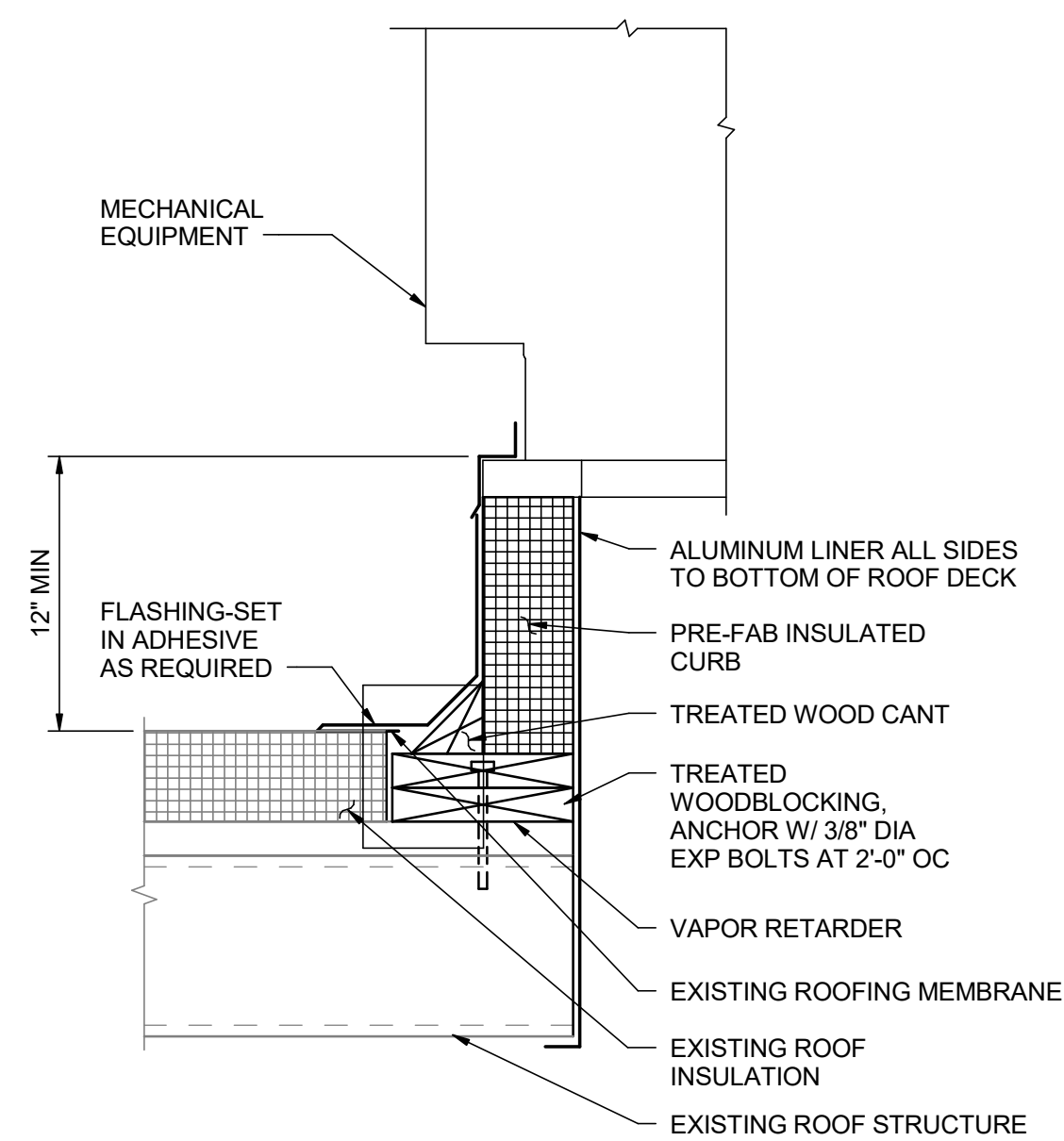


ROOF PLAN

1/8" = 1'-0"

KEYNOTES

- 2.1 KJELDAHL HOOD, CONNECT VIA DUCT TO ROOF MOUNTED EXHAUST SYSTEM. REFERENCE MECHANICAL AND ELECTRICAL PLANS. RECONNECT TO EXISTING SERVICE LINES: WATER, VACUUM, AIR, ELECTRIC. RECONNECT TO EXISTING PLUMBING
- 2.2 NEW MECHANICAL ROOFTOP EQUIPMENT. PROVIDE ROOF CURB, PER DETAIL A/02A101. EXISTING ROOF IS EPDM. CONTRACTOR IS TO PATCH AS REQUIRED FOR A WEATHERTIGHT SYSTEM PER MANUFACTURER'S RECOMMENDATIONS.



ROOF CURB DETAIL

1 1/2" = 1'-0"

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CEDAR RAPIDS  
KJELDAHL  
HOOD  
PROCUREMENT

KJELDAHL HOOD REPLACEMENT



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