

INTRODUCTION TO
BLUEPRINT READING
APPA INSTITUTE FOR FACILITIES MANAGEMENT

AIA
Continuing
Education
Provider



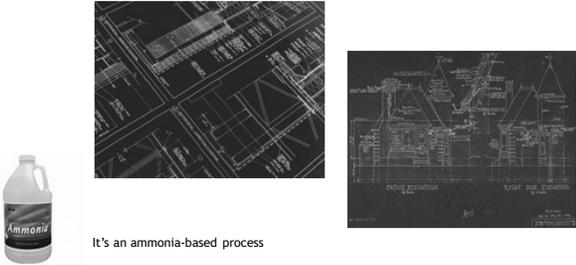
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PRESENTATION OUTLINE

- ▶ DRAWINGS
 - ▶ COVER SHEET
 - ▶ SITE PLANS
 - ▶ ARCHITECTURAL PLANS
 - ▶ ENGINEERING DRAWINGS
 - ▶ DETAILS / SECTIONS / SCHEDULES
- ▶ SPECIFICATIONS
 - ▶ 50 DIVISIONS
- ▶ ADDENDA
- ▶ SUPPLEMENTAL INSTRUCTIONS

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Why are drawings called Blueprints?



It's an ammonia-based process

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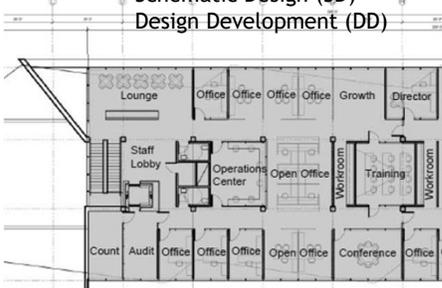
Why are drawings called Blueprints?



We only print blueprints since the 1970s

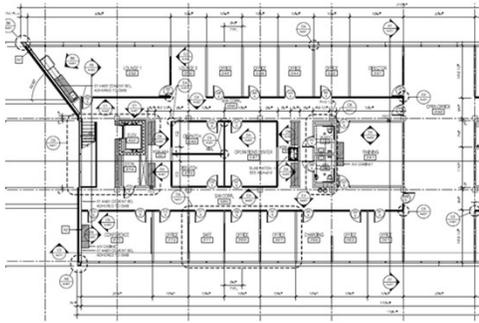
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DRAWING PHASES - Conceptual
Schematic Design (SD)
Design Development (DD)



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Construction Documents (CD's)



What specific documents comprise the construction documents?

1. Drawings
2. Specifications
3. Contract
4. Addendum
5. Change Directives
6. Change Orders
7. Supplemental Instructions

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**UNIVERSITY OF IOWA
FIELD HOUSE - MODIFY
FOR UIHC ENTRY ACCESS**

THE UNIVERSITY OF IOWA
IOWA CITY, IOWA
U.I. PROJECT NO. 0399101

GENERAL NOTES

1. THIS PROJECT IS THE SECOND OF TWO SETS. ANY AND ALL APPROVED SHALL BE RE-INCLUDED AS PART OF THE PROJECT.
2. A REVISION TO THIS PROJECT SHALL BE RE-INCLUDED AS PART OF THE PROJECT.

SHEET INDEX

NO.	DESCRIPTION	DATE
01	GENERAL NOTES	06/04/2012
02	ARCHITECTURAL SYMBOLS	06/04/2012
03	MECHANICAL SYMBOLS	06/04/2012
04	ELECTRICAL SYMBOLS	06/04/2012
05	PLUMBING SYMBOLS	06/04/2012
06	STRUCTURAL SYMBOLS	06/04/2012
07	LANDSCAPE SYMBOLS	06/04/2012
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09	STEEL SYMBOLS	06/04/2012
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12	MECHANICAL EQUIPMENT	06/04/2012
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14	PLUMBING EQUIPMENT	06/04/2012
15	STRUCTURAL EQUIPMENT	06/04/2012
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17	CONCRETE EQUIPMENT	06/04/2012
18	STEEL EQUIPMENT	06/04/2012
19	WOOD EQUIPMENT	06/04/2012
20	GLASS EQUIPMENT	06/04/2012

PROJECT LOCATION

ARCHITECTURAL SYMBOLS

MECHANICAL SYMBOLS

ELECTRICAL SYMBOLS

PLUMBING SYMBOLS

STRUCTURAL SYMBOLS

LANDSCAPE SYMBOLS

CONCRETE SYMBOLS

STEEL SYMBOLS

WOOD SYMBOLS

GLASS SYMBOLS

MECHANICAL EQUIPMENT

ELECTRICAL EQUIPMENT

PLUMBING EQUIPMENT

STRUCTURAL EQUIPMENT

LANDSCAPE EQUIPMENT

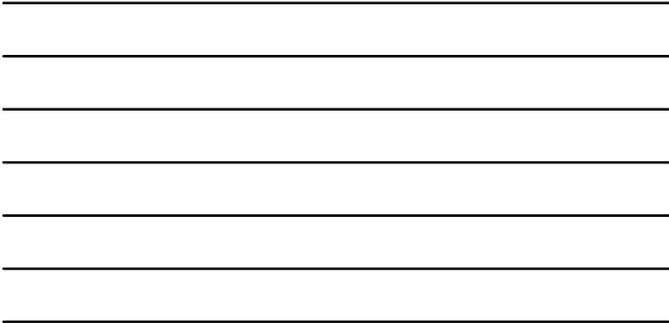
CONCRETE EQUIPMENT

STEEL EQUIPMENT

WOOD EQUIPMENT

GLASS EQUIPMENT

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Library Learning Commons
Renovate First Floor
University of Iowa
125 West Washington Street
Iowa City, IA 52242

U of I # 0318802
U of I # 0402101 Library - Food Service Equipment

125 West Washington Street
Iowa City, IA 52242

BID SET
Issue Date: 06.04.2012

Library Learning Commons - Renovate First Floor

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GENERAL PROJECT NOTES

DESIGN TEAM

SHEET INDEX

LOCATION MAP

ABBREVIATIONS

ARCHITECTURAL SYMBOLS

MECHANICAL SYMBOLS

ELECTRICAL SYMBOLS

PLUMBING SYMBOLS

STRUCTURAL SYMBOLS

LANDSCAPE SYMBOLS

CONCRETE SYMBOLS

STEEL SYMBOLS

WOOD SYMBOLS

GLASS SYMBOLS

MECHANICAL EQUIPMENT

ELECTRICAL EQUIPMENT

PLUMBING EQUIPMENT

STRUCTURAL EQUIPMENT

LANDSCAPE EQUIPMENT

CONCRETE EQUIPMENT

STEEL EQUIPMENT

WOOD EQUIPMENT

GLASS EQUIPMENT

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1101A	COVER PLAN	MD100A	FOURTH FLOOR PIPING DEMO PLAN
AD00A	DEMOLITION FLOOR PLAN	MD100A	FIFTH FLOOR PIPING DEMO PLAN
A101A	FLOOR PLAN	MD200A	FIFTH FLOOR HVAC DEMO PLAN
A102A	REFLECTED CEILING PLAN	M100A	BASEMENT PIPING PLAN
A103A	FINISH PLAN	M101A	FIRST AND SECOND FLOOR FLOOR PIPING PLANS
A104A	FURNITURE PLAN	M104A	FOURTH FLOOR PIPING PLAN
A105A	FIRST FLOOR CIRCULATION DEPARTMENT	M105A	FIFTH FLOOR PIPING PLAN
A106A	FLOOR PLANS - B, 1, 2, 3, 5A	M200A	FIFTH FLOOR & ROOF HVAC PLANS
A107A	ENLARGED PLANS	M301A	MECHANICAL DETAILS
A401A	INTERIOR ELEVATIONS	M302A	MECHANICAL DETAILS
A501A	DETAILS AND CASEWORK	M601A	AIR FLOW SCHEMATIC
A502A	CASEWORK GROUPS (CWG)	M602A	MECHANICAL SCHEDULES
A601A	DOOR SCHEDULE & TYPES	M701A	MECHANICAL CONTROL SEQUENCES
		M702A	MECHANICAL CONTROL SEQUENCES
S301A	PARTIAL ROOF FRAMING PLAN	E001A	ELECTRICAL SYMBOL SCHEDULE
MD01A	MECHANICAL SYMBOLS AND ABBREVIATIONS	EDL100A	FIFTH FLOOR LIGHTING DEMOLITION PLAN
PD100A	THIRD & FIFTH FLOOR PLUMBING DEMO PLANS	ED100A	FIFTH FLOOR ELECTRICAL DEMOLITION PLAN
P100A	BASEMENT PLUMBING PLAN AND FIXTURE SCHEDULE	E101A	FIFTH FLOOR SUITE 1031 ELECTRICAL PLANS
P104A	FOURTH FLOOR PLUMBING PLAN	EL100A	FIFTH FLOOR LIGHTING PLAN
P105A	FIFTH FLOOR PLUMBING PLAN	EP100A	BASEMENT OVERALL ELECTRICAL PLAN
P601A	PLUMBING RISERS	EP100A	FIFTH FLOOR POWER AND SYSTEMS PLAN
P602A	PLUMBING RISERS	ET100A	FIFTH FLOOR TECHNOLOGY PLAN
F100A	FIFTH FLOOR FIRE PROTECTION	E200A	ELECTRICAL SCHEDULES AND DETAILS
		E201A	ELECTRICAL 208V ONE-LINE DIAGRAM

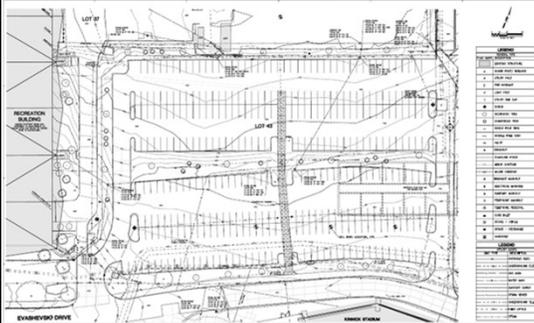
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SITE DRAWINGS

TYPICALLY, "C" SHEETS AND INCLUDE TOPOGRAPHICAL INFORMATION, SOIL BORINGS, SITE DEMOLITION, SITE UTILITY PLANS AND BMP PLANS.

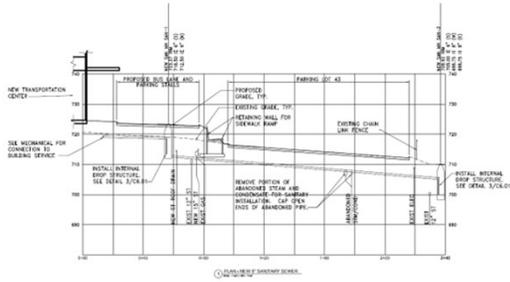
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TOPOGRAPHIC INFORMATION



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CIVIL & UTILITY PLANS



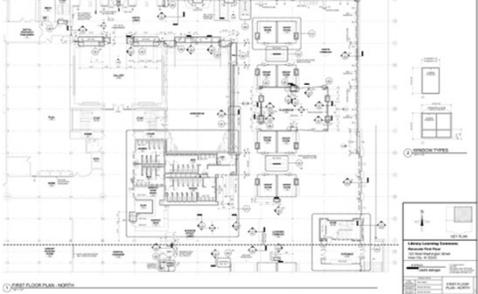
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ARCHITECTURAL DRAWINGS

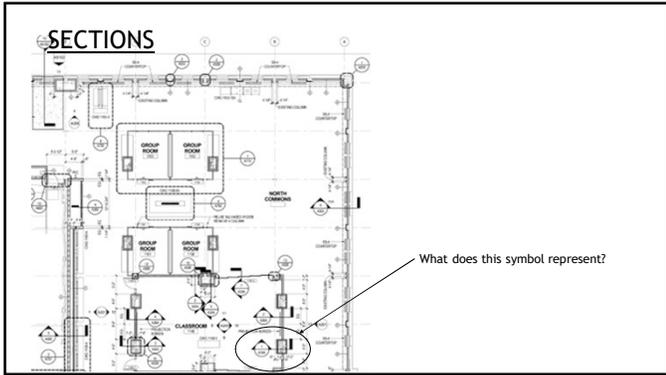
TYPICALLY, "A" SHEETS AND INCLUDE FLOOR PLANS, ELEVATIONS, DETAILS, SCHEDULES AND SECTIONS.

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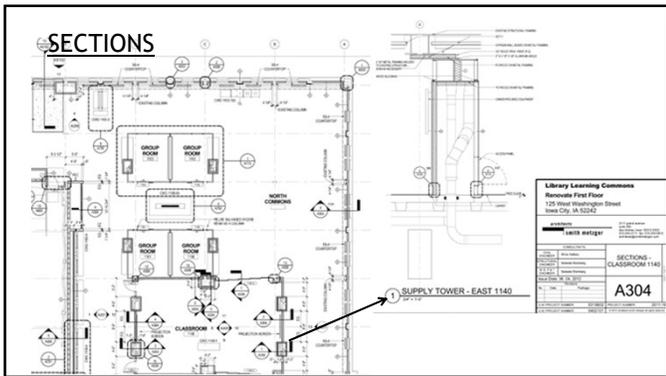
ARCHITECTURAL FLOOR PLANS



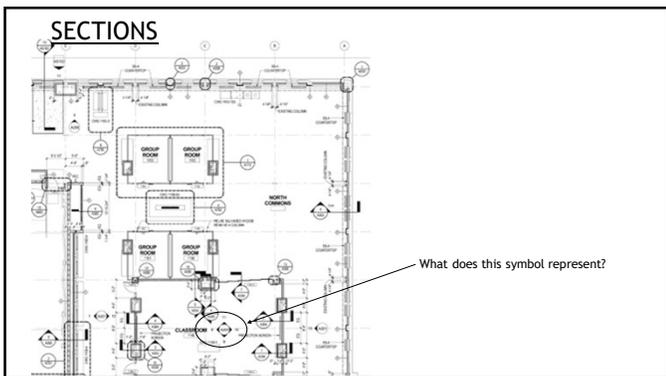
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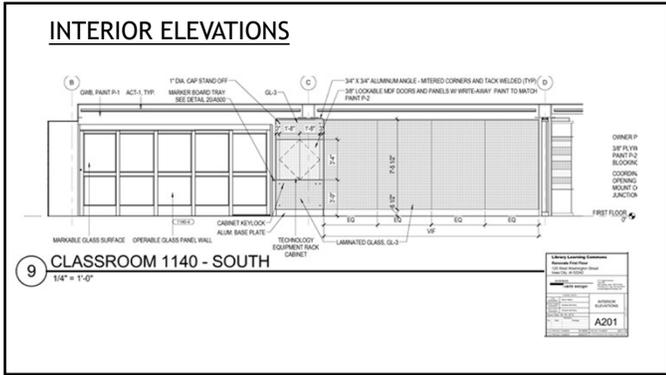
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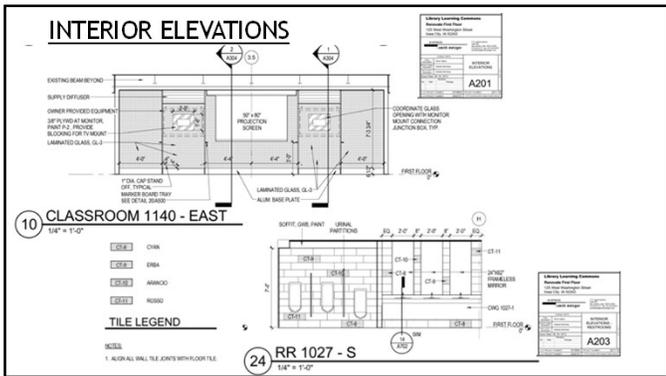
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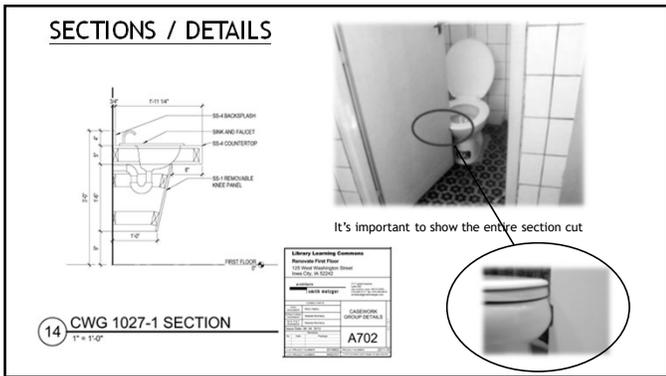
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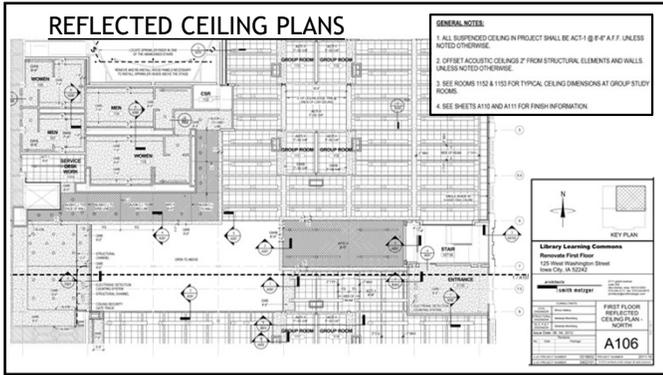
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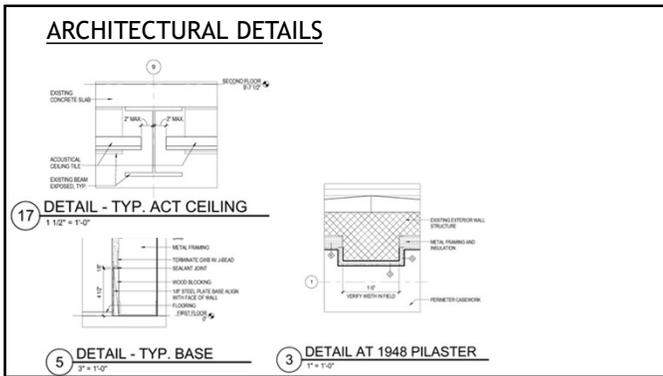
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INTERIOR SIGNS

Color Number	Type	Message	Notes
2098	15	209 Work Area/Storage	Color Scheme B
210	14	210 (frame insert)	window backer
M210	12	M210 Mechanical	Color Scheme B
211	12	211 Corridor	Color Scheme B
212	14	212 (frame insert)	window backer Color Scheme A
220	13	220 Conference	window backer Color Scheme A
221	11	221	Color Scheme B

C4 SECOND LEVEL STORAGE PLAN

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INTERIOR SIGNS

Sign Type 11 Room Number
38" x 11"

- Tactile 5/16" W/Brhd P/RO Regular Number, Color B
- GRADE 8 BRASS/LE, CLEAR
- 1/8" CLEAR MATTE PHOTOPOLYMER SUBSTRATE WITH BECHD SURFACE COLOR, COLOR TO MATCH COLOR A

Sign Type 13 Conference Room Number
38" x 11"

- 1/8" THICK/CHG BINDER, COLOR A
- Tactile 5/16" W/Brhd P/RO Regular Number, Color B
- GRADE 8 BRASS/LE, CLEAR
- 5/16" W/Brhd P/RO Regular CORP. PRINTED BRST SURFACE, COLOR B
- 1/8" CLEAR MATTE PHOTOPOLYMER SUBSTRATE WITH BECHD SURFACE COLOR, COLOR TO MATCH COLOR A
- EXTRUSION ALUMINUM ROLLER STYLE
- NOTE CLIP, PAINTED COLOR B
- GLASS WALL

Sign Type 12 Room Identification
38" x 11"

- Tactile 5/16" W/Brhd P/RO Regular Number, Color B
- GRADE 8 BRASS/LE, CLEAR
- 5/16" W/Brhd P/RO Regular CORP. PRINTED BRST SURFACE, COLOR B
- 1/8" CLEAR MATTE PHOTOPOLYMER SUBSTRATE WITH BECHD SURFACE COLOR, COLOR TO MATCH COLOR A

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ENGINEERING DRAWINGS

TYPICALLY, M-E-P or M-E-P-T SHEETS
MECHANICAL, PLUMBING, FIRE SUPPRESSION, HEATING, VENTILATION & AIR CONDITIONING, ELECTRICAL, TELECOM AND AUDIO/VISUAL

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ENGINEERING DRAWINGS - ABBREVIATIONS AND LEGENDS

PIPELINE SYMBOLS		ABBREVIATIONS	
PIPELINE SYMBOL	SERVICE	ABBREVIATION	DESCRIPTION
CA	COMPRESSED AIR	DAW	DOWN SPOT HOLES
IA	INSTRUMENT AIR	DF	DRINKING FOUNTAIN
FOR	FUEL OIL RETURN	DR	DRY RISE
FOS	FUEL OIL SUPPLY	ELEC	ELECTRICAL
FOV	FUEL OIL VENT	EC	ELECTRICAL CONTRACTOR
FRW	REFRIG. FEED WATER	EW	ELECTRIC WIRE/COUPLER
CRS	CHILLED WATER SUPPLY	EL	ELEVATION
CHR	CHILLED WATER RETURN	EAT	ENTERING AIR TEMPERATURE
RS	REFRIGERANT LIQUID	EWT	EXITING WATER TEMPERATURE
RS	REFRIGERANT SUCTON	EQSP	EQUIPMENT
RHS	REFRIGERANT HOT GAS	EP	EXHAUST FAN
CTWS	COOLING TOWER SUPPLY	F	FURNISHES
CTWR	COOLING TOWER RETURN	FFM	FEET PER MINUTE
HWS	HEATING WATER SUPPLY	FPS	FEET PER SECOND
HWR	HEATING WATER RETURN	FE	FIRE EXTINGUISHER
LPS	LOW PRESSURE STEAM (0-15 PSI)	FW	FIRE WYHOIST
LPC	LOW PRESSURE CONDENSATE	FLX	FLEXIBLE
MPS	MEDIUM PRESSURE STEAM (15-75 PSI)	FAT	FLOAT & THERMOSTATIC
MPC	MEDIUM PRESSURE CONDENSATE	FL	FLOOR
HPS	HIGH PRESSURE STEAM (75 PSI & UP)	FOP	FUEL OIL PIP
HPC	HIGH PRESSURE CONDENSATE	FG	FUEL OIL GAUGE
GL	GAS	GM	GALLONS PER HOUR
COND	CONDENSATE	GM	GALLONS PER MINUTE
PC	PUMP CONDENSATE	GV	GALVANIZED
CW	COLD WATER	GA	GAUGE
HW	HOT WATER	GEN	GENERAL
MS	MISCELLANEOUS	IG	INTERNAL GROUNDING

SEBESTA BLONBERG
ARCHITECTS

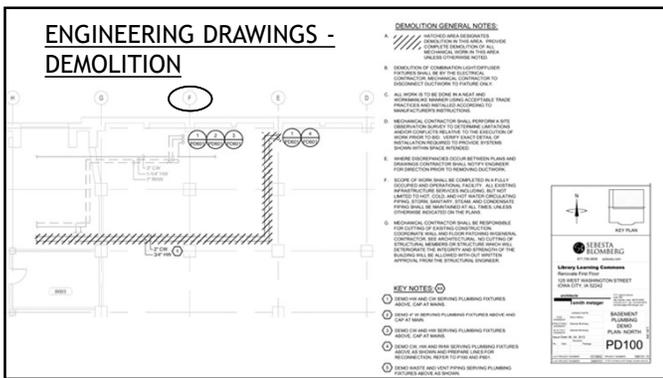
Library Learning Commons
Renovate First Floor
125 WEST WASHINGTON STREET
OSHA CITY, IA 52522

Project: **Library Learning Commons**
Architect: **Sebesta Blomberg**
Contractor: **1818 Hatzler**

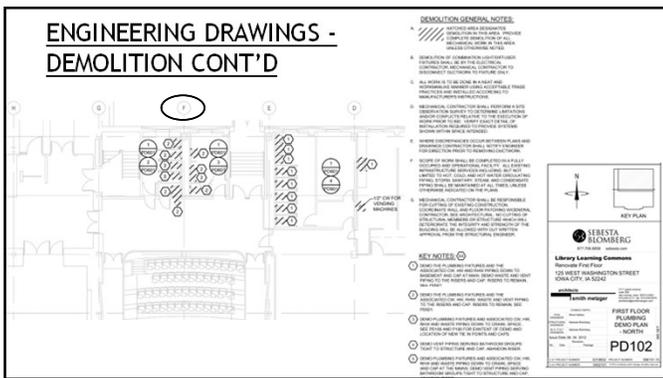
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Date: **08/26/2022**
Sheet: **M001**

MECHANICAL SYMBOLS AND ABBREVIATIONS

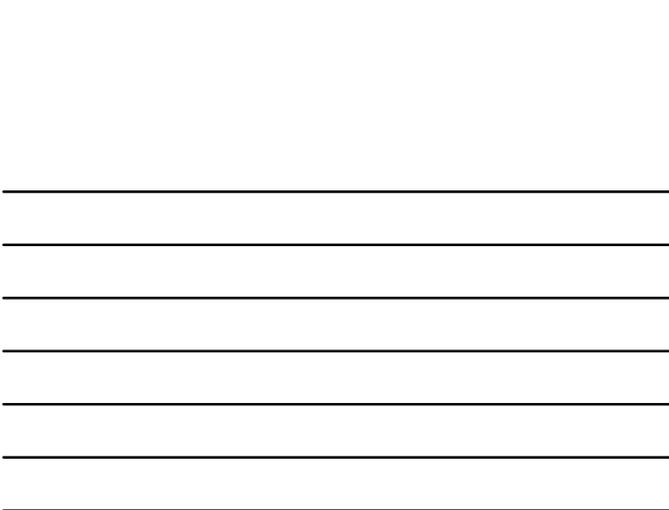
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ENGINEERING DRAWINGS - HVAC

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ENGINEERING DRAWINGS - HVAC - SECTIONS / DETAILS / SCHEDULES

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ENGINEERING DRAWINGS - MECHANICAL CONTROL SEQUENCES

FAN COIL UNIT (INCL. 01)

AREAS SERVED: TELECOM EQUIPMENT ROOMS

GENERAL:

A. PROVIDE A CURRENT SENSOR ON THE FAN MOTOR LEADS TO INDICATE FAN STATUS.

CONTROL SEQUENCE:

A. ZONE TEMPERATURE SETPOINTS

1. FAN COIL UNIT ZONES SHALL HAVE A COOLING SETPOINT OF 62 F (HALL).
2. THE FAN COIL UNIT SUPPLY FAN SHALL OPERATE CONTINUOUSLY REGARDLESS OF BUILDING OCCUPANCY.
3. THE CHILLED WATER VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.

DRAIN PAN OVERFLOW:

A. PROVIDE DRAIN PAN FLOT SWITCH IN FAN COIL UNIT DRAIN PAN.

1. UPON ACTIVATION OF HIGH WATER SWITCH, THE CHILLED WATER VALVE SHALL CLOSE AND AN ALARM SHALL BE DISPATCHED OVER THE BUILDING ENERGY MANAGEMENT SYSTEM.
2. THE CHILLED WATER VALVE SHALL REMAIN CLOSED UNTIL OVERFLOW SWITCH IS MANUALLY RESET.

CONTROL POINTS:

A. PROVIDE, AT A MINIMUM, THE FOLLOWING POINTS:

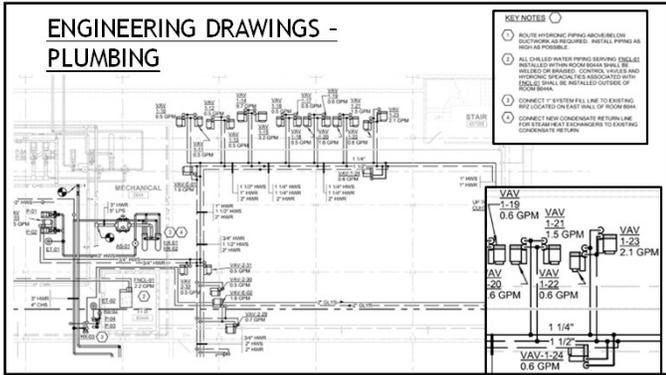
1. FAN START/STOP (DO)
2. FAN STATUS (DI)
3. SPACE TEMPERATURE (AI)
4. CHILLED WATER VALVE (AO)
5. DRAIN PAN OVERFLOW (DI)

ALARMS:

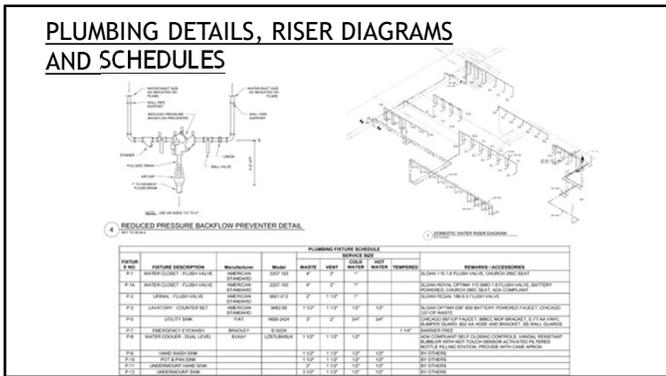
A. ALARMS:

1. FAN FAILURE (ON WHEN COMMANDED OFF OR OFF WHEN COMMANDED ON)
2. SPACE TEMPERATURE ABOVE SETPOINT OF 1.5 MINUTE DELAY (ADD)
3. DRAIN PAN OVERFLOW (MANUAL RESET)

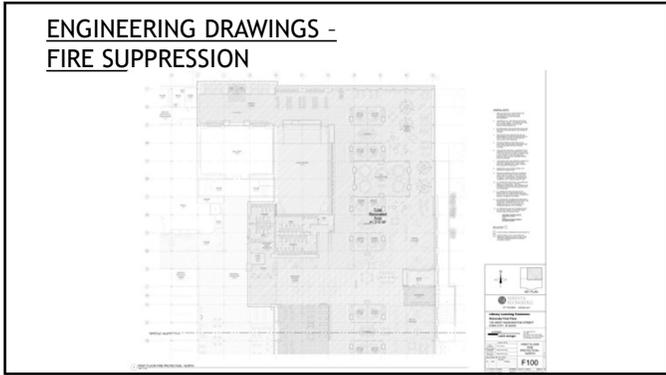
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SPECIFICATIONS

- ▶ FACILITY SERVICES SUBGROUP
 - ▶ DIVISION 21 - FIRE SUPPRESSION
 - ▶ DIVISION 22 - PLUMBING
- ▶ FACILITY SERVICES SUBGROUP CONTINUED
 - ▶ DIVISION 23 - HEATING VENTILATING AND AIR CONDITIONING
 - ▶ DIVISION 25 - INTEGRATED AUTOMATION
 - ▶ DIVISION 26 - ELECTRICAL
 - ▶ DIVISION 27 - COMMUNICATIONS
 - ▶ DIVISION 28 - ELECTRONIC SAFETY AND SECURITY
- ▶ SITE AND INFRASTRUCTURE SUBGROUP
 - ▶ DIVISION 31 - EARTHWORK
 - ▶ DIVISION 32 - EXTERIOR IMPROVEMENTS
 - ▶ DIVISION 33 - UTILITIES
 - ▶ DIVISION 34 - TRANSPORTATION
 - ▶ DIVISION 35 - WATERWAY AND MARINE
- ▶ PROCESS EQUIPMENT SUBGROUP
 - ▶ DIVISION 40 - PROCESS INTEGRATION
 - ▶ DIVISION 41 - MATERIAL PROCESSING AND HANDLING EQUIPMENT
 - ▶ DIVISION 42 - PROCESS HEATING, COOLING AND DRYING EQUIPMENT
 - ▶ DIVISION 43 - PROCESS GAS AND LIQUID HANDLING, PURIFICATION AND STORAGE EQUIPMENT
 - ▶ DIVISION 44 - POLLUTION CONTROL EQUIPMENT
 - ▶ DIVISION 45 - INDUSTRY-SPECIFIC MANUFACTURING EQUIPMENT
 - ▶ DIVISION 48 - ELECTRICAL POWER GENERATION
- ▶ PROCUREMENT AND CONTRACTING REQUIREMENT GROUP
 - ▶ DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS
- ▶ GENERAL REQUIREMENTS SUBGROUP
 - ▶ DIVISION 01 - GENERAL REQUIREMENTS
- ▶ FACILITY CONSTRUCTION SUBGROUP
 - ▶ DIVISION 02 - EXISTING CONDITIONS
 - ▶ DIVISION 03 - CONCRETE
 - ▶ DIVISION 04 - MASONRY
 - ▶ DIVISION 05 - METALS
 - ▶ DIVISION 06 - WOOD AND PLASTICS
 - ▶ DIVISION 07 - THERMAL AND MOISTURE PROTECTION
 - ▶ DIVISION 08 - OPENINGS
 - ▶ DIVISION 09 - FINISHES
 - ▶ DIVISION 10 - SPECIALTIES
 - ▶ DIVISION 11 - EQUIPMENT
 - ▶ DIVISION 12 - FURNITURE
 - ▶ DIVISION 13 - SPECIAL CONSTRUCTION
 - ▶ DIVISION 14 - CONVEYING EQUIPMENT

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SPECIFICATIONS

The University of Iowa
West Campus Transportation Center - Construct Facility

FACILITIES MAINTENANCE
Planning, Design & Construction

PROJECT MANUAL
FOR
West Campus Transportation Center - Construct Facility
Project #221001

THE UNIVERSITY OF IOWA
IOWA CITY, IOWA

Volume 1 of 2 - Divisions 1 through 14
Bidding Documents

PRE-BID CONFERENCE: 1:30 p.m., Central Time, 08/26/21
Room 202 - University Services Building

SITE TOUR: Innovations, Materials Pre-Bid Conference

BID DATE: 2:00 p.m., Central Time, 09/22/21
204 University of Iowa
Planning, Design & Construction
250 University Services Building
Iowa City, Iowa 52242-1922

DESIGN PROFESSIONAL: Neumann Marston Architects
221 E. College Street, Suite 303
Iowa City, Iowa

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- 00 01 10 TABLE OF CONTENTS
- 00 11 13 ADVERTISEMENT FOR BIDS
- 00 21 13 INSTRUCTIONS TO BIDDERS
- 00 41 13 FORM OF BID FOR CONSTRUCTION CONTRACT
- 00 42 13 BID BOND
- 00 43 25 SUBSTITUTION REQUEST FORM
- 00 43 36 SUBCONTRACTOR LIST
- 00 43 36 ECO DATA REPORTING FORM
- 00 43 37 CERTIFICATE OF REPORTING
- 00 43 40 TARGETED SMALL BUSINESS FORM
- 00 72 13 UNIFORM GENERAL CONDITIONS
- 00 73 13 SUPPLEMENTARY CONDITIONS
- 00 74 13 SPECIAL CONDITIONS

DIVISION 1 - GENERAL REQUIREMENTS

- 01 2023 SUBMITTALS
- 01 2030 INTERFERECTION CONTROL MEASURES
- 01 4000 QUALITY REQUIREMENTS
- 01 5723 20 TEMPORARY STORMWATER POLLUTION CONTROL CERTIFICATION
- 01 5723 20 STORMWATER POLLUTION PREVENTION PLAN
- 01 5723 30 STORMWATER POLLUTION PREVENTION PLAN CONTRACTORS/SUBCONTRACTORS IMPLEMENT MEASURES
- 01 7419 CONSTRUCTION WASTE MANAGEMENT AND DE
- 01 7719 CONTRACT CLOSEOUT
- 01 7823 OPERATION AND MAINTENANCE DATA
- 01 7839 PROJECT RECORD DOCUMENTS
- 01 9113 COMMISSIONING

DIVISION 2 - EXISTING CONDITIONS

- 02 4100 DEMOLITION
- 02 4110 SELECTIVE SITE DEMOLITION

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ADDENDA

ISSUED AFTER PROJECT HAS BEEN ADVERTISED BUT BEFORE BIDS ARE RECEIVED...

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ACTIVITY QUESTIONS

- ▶ **BOYD LAW / ECKSTEIN / CURRIER RESIDENCE / VAN ALLEN**
- ▶ WHAT DOES THE SCOPE OF THE PROJECT COVER?
- ▶ WHAT TYPE OF FLOORING IS GOING BACK IN?
- ▶ DOES THE PROJECT INCLUDE ANY
 - ▶ BID ALLOWANCES?
 - ▶ BID ALTERNATES?
 - ▶ UNIT PRICES?
- ▶ WERE PLANS CHANGED BY ADDENDA?
- ▶ WHAT IS THE PROJECT DURATION?
- ▶ WHAT SPECIALTY ITEMS ARE INCLUDED IN THE PROJECT?
- ▶ IS LIGHTING BEING REPLACED?
- ▶ IS HVAC BEING UPGRADED?
- ▶ ARE DOOR AND DOOR FRAMES BEING REPLACED ALONG WITH ACCESS SECURITY UPGRADES?

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Questions?...
Now let's do an exercise

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