CDB - PROJECT NUMBER 822-010-127

REFERENCE DRAWINGS

SHEET NO. SHEET NAME TITLE

C-051-6528 NORTH WALL REMODELING UTILITIES TUNNELS UTILITIES TUNNELS UTILITIES TUNNELS E-203-2295 SHEET 5 VENT NO. 1 \$ 3 \$ DETAILS

CAMPUS BOILER REPLACEMENTS NORTHERN ILLINOIS UNIVERSITY DEKALB, DEKALB COUNTY, ILLINOIS CDB BUILDING INVENTORY NO .:

- WEST HEATING PLANT BUILDING CODE: 051 - EAST HEATING PLANT BUILDING CODE: 001A

FOR:

STATE OF ILLINOIS CAPITAL DEVELOPMENT BOARD

USING AGENCY: NORTHERN ILLINOIS UNIVERSITY DEKALB, ILLINOIS 60115

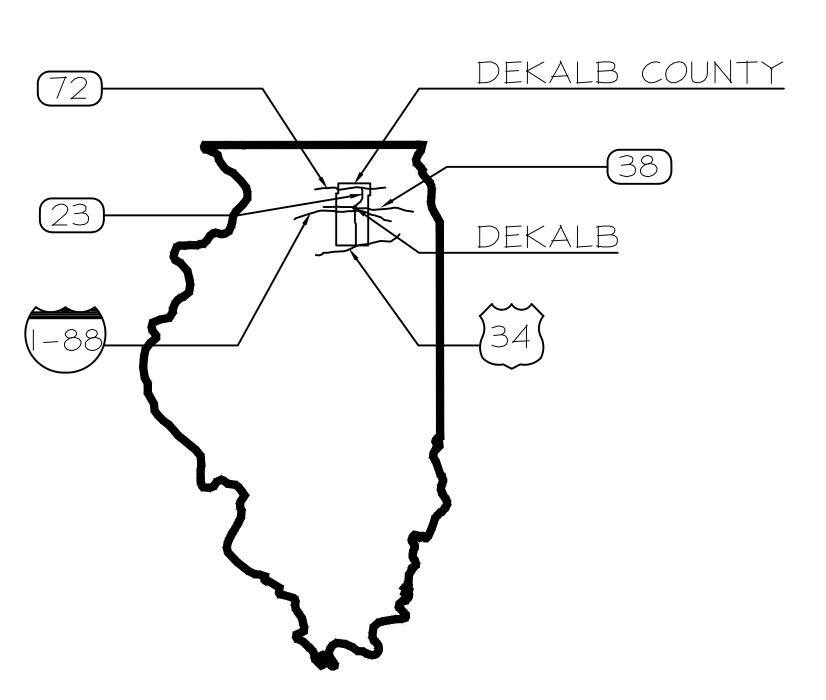
BY:

MIDDOUGH INC. 700 COMMERCE DRIVE SUITE 200 OAK BROOK, ILLINOIS 60523 PHONE: 630-756-7000 FAX: 630-756-7001

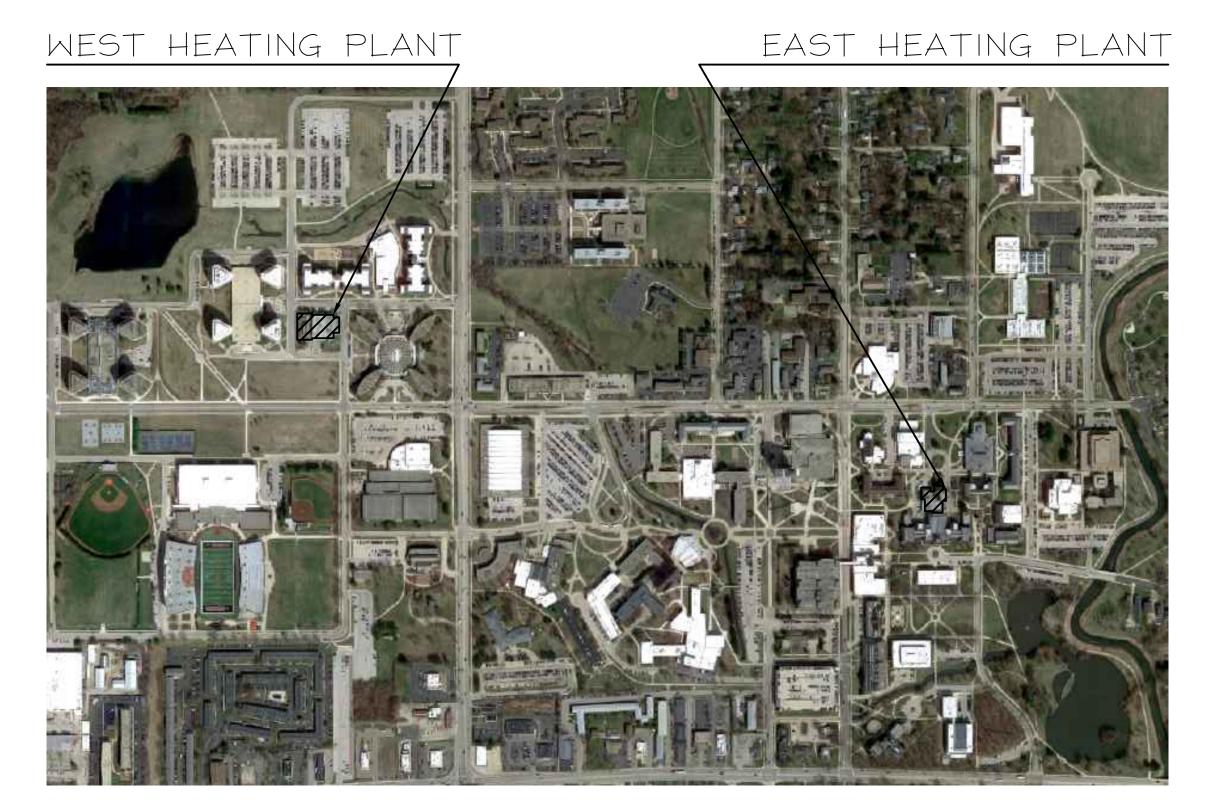


CONSULTANTS: GENERAL ENERGY CORPORATION (GEC) 230 MADISON STREET OAK PARK, ILLINOIS 60302 PHONE: 708-386-6000

MELVIN COHEN AND ASSOCIATES, INC. 223 W. JACKSON, SUITE 820 CHICAGO, ILLINOIS 60606 PHONE: 312-663-3700 FAX: 312-663-4161



STATE LOCATION MAP



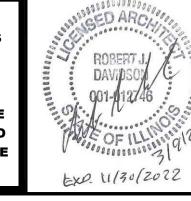
AREA LOCATION PLAN NOT TO SCALE

REVISIONS DAS DATE REMARKS 03/09/2021 REVISED BRIDGING DOCUMENTS 01/10/2020 | FINAL BRIDGING DOCUMENTS APPROVED CHECKED ISSUED FOR FINAL REVIEW/APPROVAL EJM RJD 09/13/2019 ISSUED FOR REVIEW

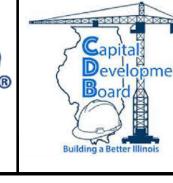
NOTE: DESIGN-BUILD ENTITY SHALL OBTAIN AND **VERIFY ALL AS-BUILT CONDITIONS AND DIMENSIONS** AT PROJECT SITE AND BE FULLY RESPONSIBLE FOR THE SAME. BRIDGING DOCUMENTS, DRAWINGS AND NARRATIVES ARE PROVIDED FOR DESIGN INTENT. THE DESIGN-BUILD ENTITY IS RESPONSIBLE FOR THE COMPLETE DESIGN OF A PROJECT THAT ADHERES TO ALL, SCOPE OF WORK REQUIREMENTS, CODES, STATE AND FEDERAL REGULATIONS AND GUIDELINES.

PLAN

NORTH







State of Illinois JB PRITZKER, GOVERNOR

Illinois Capital Development Board

COVER SHEET 822-010-127 LOCATION MAP & INDEX OF DRAWINGS 03/09/2021 CAMPUS BOILER REPLACEMENTS SHEET NO. NORTHERN ILLINOIS UNIVERSITY G-1 DEKALB, DEKALB COUNTY, ILLINOIS OF (63) SHEETS

REVISED BRIDGING DOCUMENTS - NOT FOR CONSTRUCTION

INDEX OF DRAWINGS

SHEET NAME TITLE

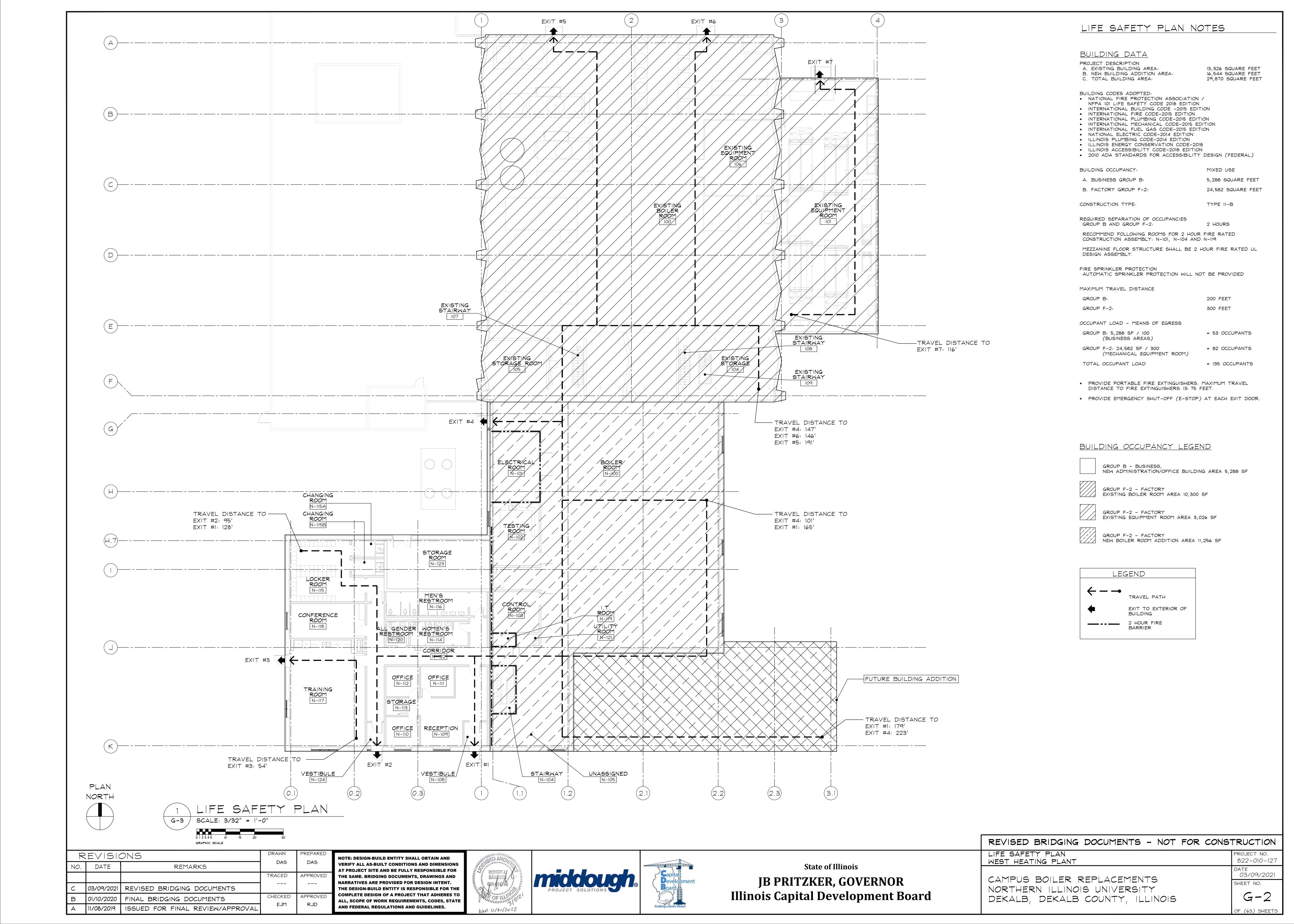
SHEET NO.

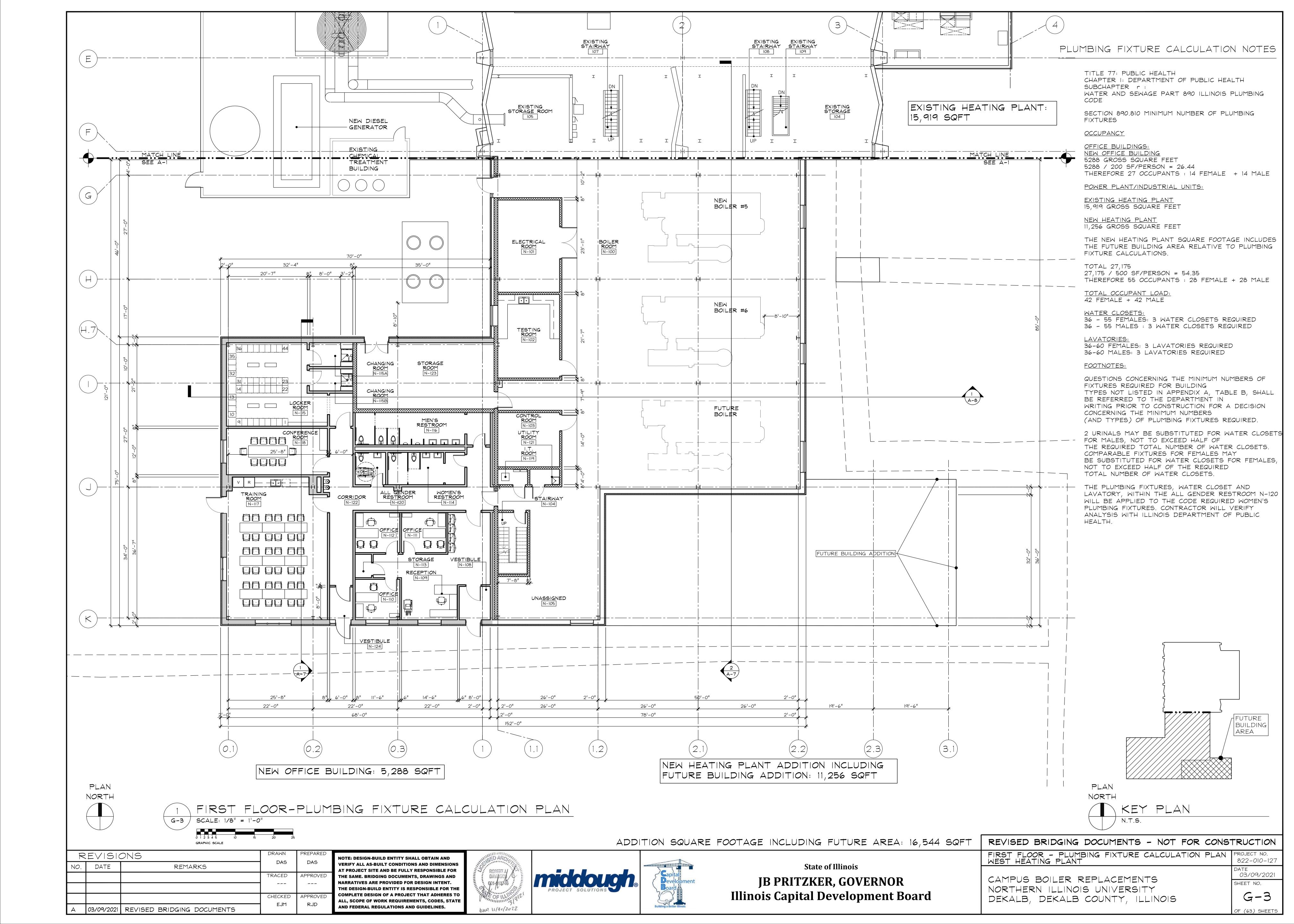
G-2 G-3	LIFE SAFETY PLAN - WEST HEATING PLANT PLUMBING FIXTURE CALCULATIONS
C-0 C-1 C-2 C-3 C-4	TOPOGRAPHIC SURVEY SITE DEMOLITION PLAN CIVIL SITE PLAN UNDERGROUND UTILITY PLAN GRADING PLAN
D-1 D-2	EXISTING WEST PLANT - DEMOLITION PLAN EXISTING EAST PLANT - DEMOLITION PLAN
A-1 A-2 A-3 A-4 A-5 A-6 A-7 A-9	FIRST FLOOR - CONSTRUCTION PLAN FIRST FLOOR - CONSTRUCTION PLAN MEZZANINE LEVEL - CONSTRUCTION PLAN FIRST FLOOR - REFLECTED CEILING PLAN ROOF LEVEL - CONSTRUCTION PLAN BUILDING ELEVATIONS BUILDING AND WALL SECTIONS BUILDING AND WALL SECTIONS ROOM FINISH SCHEDULE / DOOR AND FRAME SCHEDULE
S-1 S-2 S-3	STRUCTURAL GENERAL NOTES CONCEPT FOUNDATION PLAN CONCEPT ROOF FRAMING PLAN
P-0 P-1 P-2 P-3	PLUMBING SYMBOLS, ABBREVIATIONS AND NOTES WATER PIPING PLUMBING FLOOR PLAN WASTE AND VENT PIPING PLUMBING FLOOR PLAN PLUMBING ROOF PLAN
H-0 HD-1 H-1 HD-2 H-2 H-3 HD-4 HD-5 HD-6 HD-7 H-7 H-8 HD-9 H-11 H-13 H-14 H-15 H-17 H-19 H-20	SCHEMATIC DIAGRAM ABBREVIATIONS & SYMBOLS WEST HEATING PLANT GAS PIPING SCHEMATIC DIAGRAM WEST HEATING PLANT GAS PIPING SCHEMATIC DIAGRAM WEST HEATING PLANT HIGH PRESSURE STEAM/CONDENSATE P PING SCHEMATIC DIAGRAM WEST HEATING PLANT HIGH PRESSURE STEAM/CONDENSATE PIPING SCHEMATIC DIAGRAM WEST HEATING PLANT LOW PRESSURE STEAM/CONDENSATE PIPING SCHEMATIC DIAGRAM WEST HEATING PLANT BOILER FEEDWATER PIPING SCHEMATIC DIAGRAM WEST HEATING PLANT WATER TREATMENT PIPING SCHEMATIC DIAGRAM WEST HEATING PLANT WATER TREATMENT PIPING SCHEMATIC DIAGRAM WEST HEATING PLANT WATER TREATMENT DIAGRAM EAST HEATING PLANT GAS PIPING SCHEMATIC DIAGRAM EAST HEATING PLANT GAS PIPING SCHEMATIC DIAGRAM EAST HEATING PLANT HIGH PRESSURE STEAM/CONDENSATE PING SCHEMATIC DIAGRAM EAST HEATING PLANT LOW PRESSURE STEAM/CONDENSATE PING SCHEMATIC DIAGRAM EAST HEATING PLANT BOILER FEEDWATER PIPING SCHEMATIC DIAGRAM EAST HEATING PLANT BOILER FEEDWATER DIAGRAM EAST HEATING PLANT PIPER ROUTING SCHEMATIC DIAGRAM WEST HEATING PLANT INSTRUMENTATION AIR SCHEMATIC DIAGRAM WEST HEATING PLANT INSTRUMENTATION AIR SCHEMATIC BOOTH WEST HEATING PLANT PIPE ROUTING SCHEMATIC EAST HEATING PLANT SCHEMATIC EAST HEATING PLANT SCHEMATIC
H-21 H-22 H-23	SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES FIRST FLOOR HVAC PIPING PLAN MEZZANINE PIPING PLAN AND EQUIPMENT SCHEDULES
V-0 V-1 V-2 V-3 V-4	SYMBOLS, ABBREVIATIONS AND GENERAL NOTES SYMBOLS, ABBREVIATIONS AND GENERAL NOTES FIRST FLOOR VENTILATION PLAN ROOF VENTILATION PLAN MEZZANINE VENTILATION PLAN AND EQUIPMENT SCHEDULES

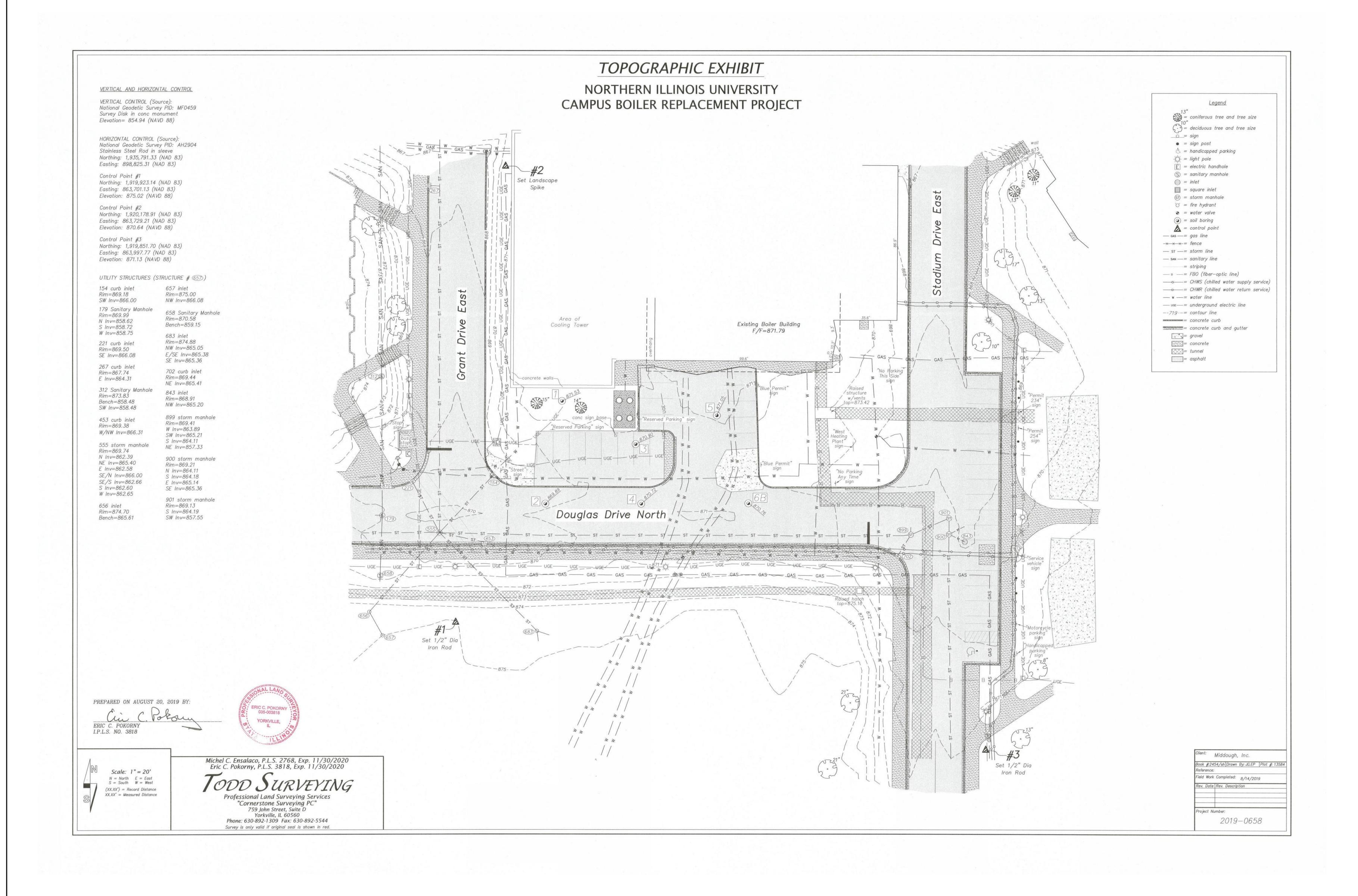
COVER SHEET, LOCATION MAP \$ INDEX OF DRAWINGS

MEZZANINE VENTILATION PLAN AND EQUIPMENT SCHEDULES

ONE LINE DIAGRAM







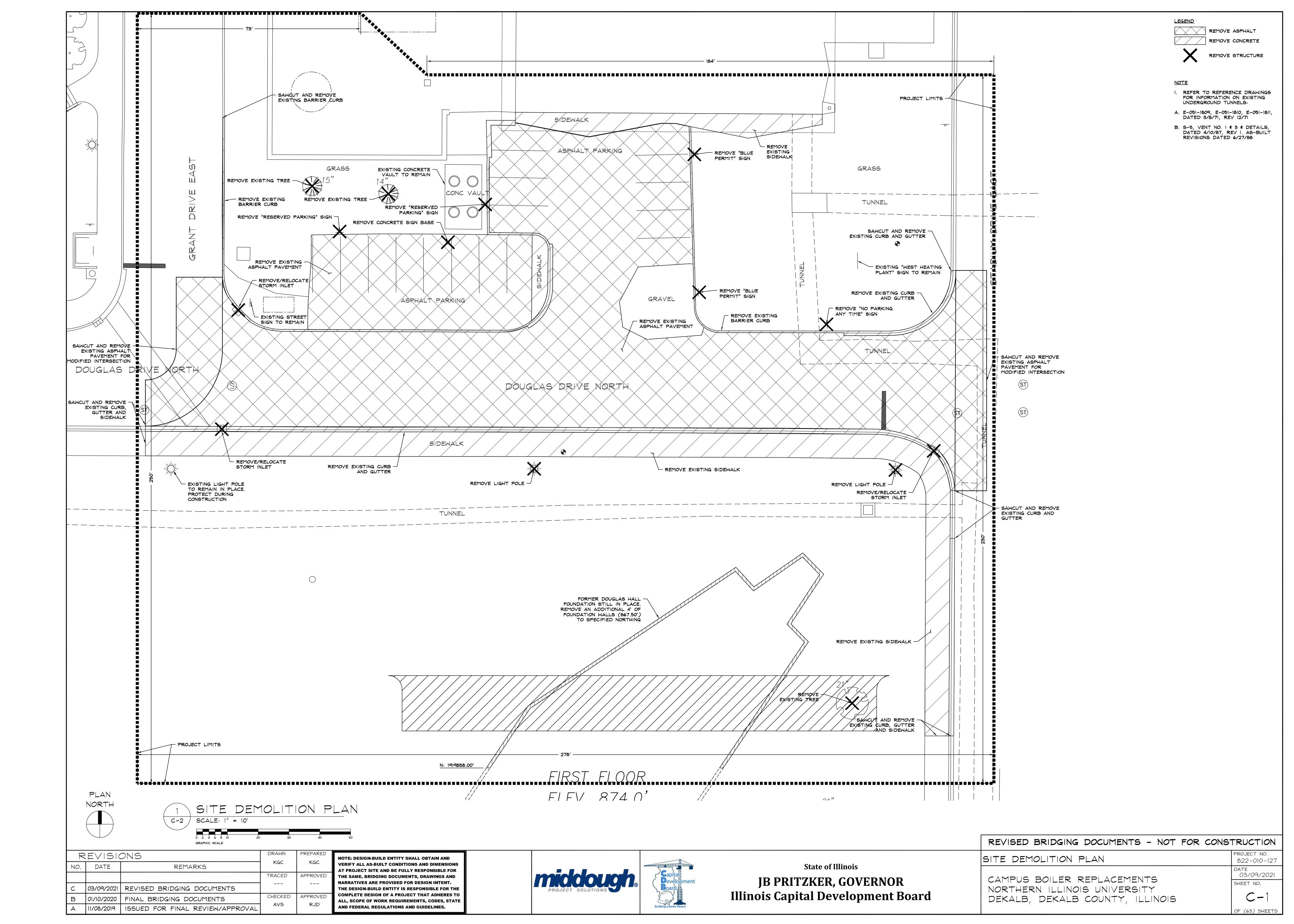
R	EVISI	DRAWN	PREPARED	
NO.	DATE	REMARKS	KGC	KGC
			TRACED	APPROVED
С	03/09/2021	REVISED BRIDGING DOCUMENTS		
В	01/10/2020	FINAL BRIDGING DOCUMENTS	CHECKED	APPROVED
A	11/08/2019	ISSUED FOR FINAL REVIEW/APPROVAL	AVS	RJD

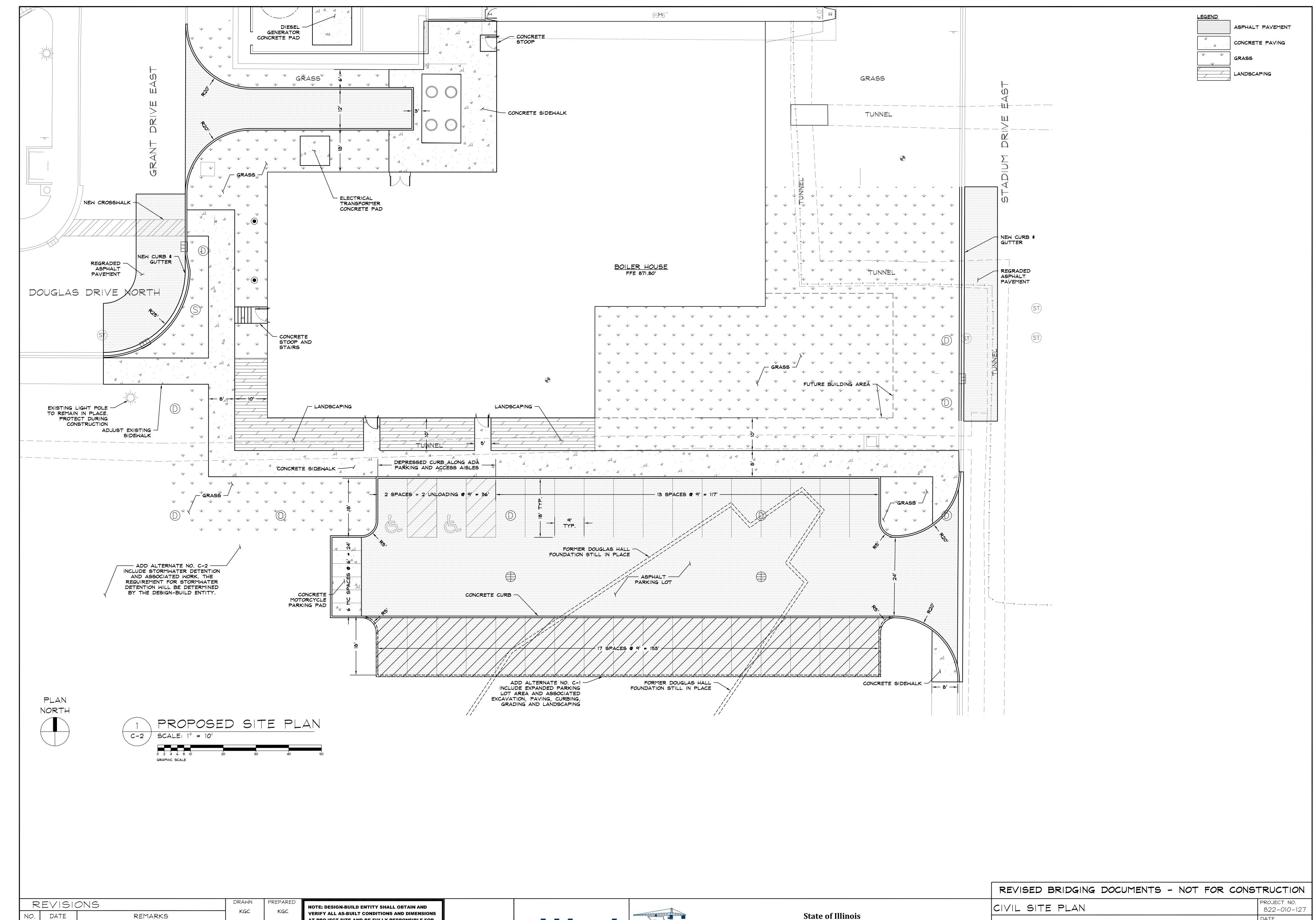
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State of Illinois JB PRITZKER, GOVERNOR Illinois Capital Development Board

REVISED BRIDGING DOCUMENTS - NOT FOR CONS	TRUCTION
TOPOGRAPHIC SURVEY	PROJECT NO. 822-010-127
CAMPUS BOILER REPLACEMENTS	DATE 03/09/2021
NORTHERN ILLINOIS UNIVERSITY	SHEET NO.
DEKALB, DEKALB COUNTY, ILLINOIS	C-0





NO. DATE REMARKS

REMARKS

TRACED APPROVED

C 03/09/2021 REVISED BRIDGING DOCUMENTS

B 01/10/2020 FINAL BRIDGING DOCUMENTS

A 11/08/2019 ISSUED FOR FINAL REVIEW/APPROVAL

A PREPARED

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CHECKED

APPROVED

RJD

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JB PRITZKER, GOVERNOR
Illinois Capital Development Board

REVISED BRIDGING DOCUMENTS - NOT FOR CONSTRUCTION

CIVIL SITE PLAN

CAMPUS BOILER REPLACEMENTS

NORTHERN ILLINOIS UNIVERSITY

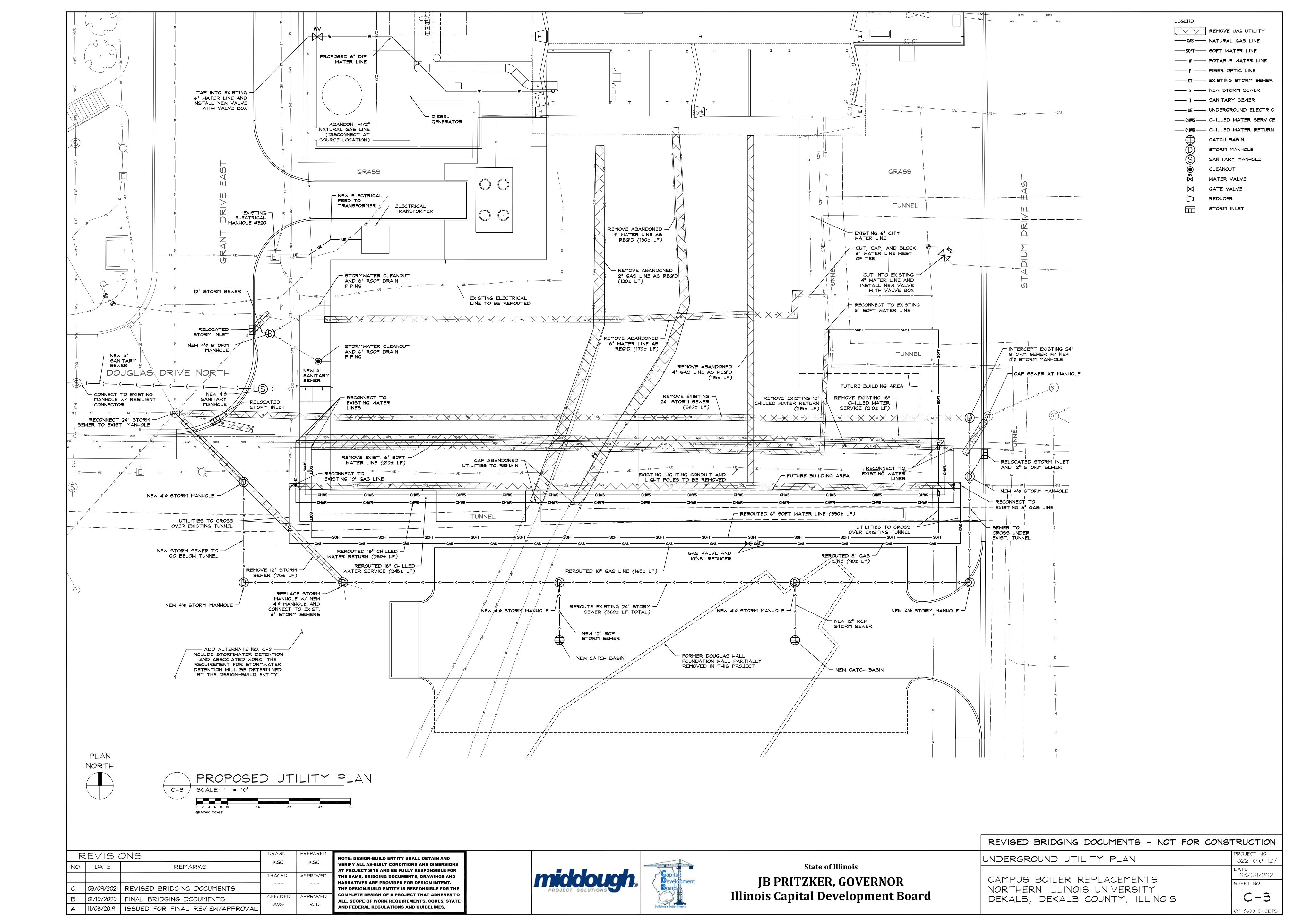
DEKALB, DEKALB COUNTY, ILLINOIS

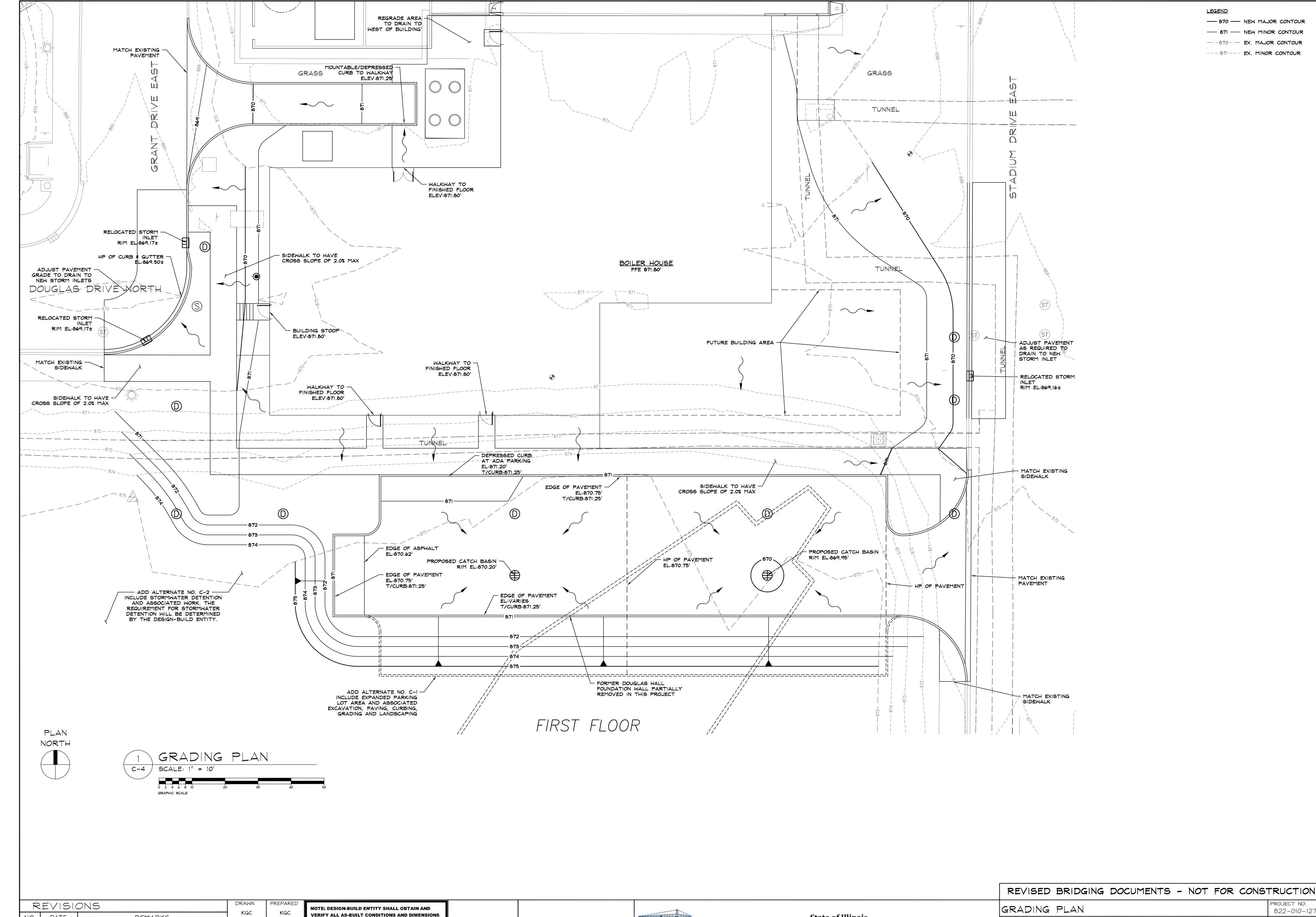
PROJECT NO. 822-010-127

DATE 03/09/2021

SHEET NO.

C-2





NO. DATE REMARKS

REMARKS

TRACED APPROVE

C 03/09/2021 REVISED BRIDGING DOCUMENTS

B 01/10/2020 FINAL BRIDGING DOCUMENTS

A 11/08/2019 ISSUED FOR FINAL REVIEW/APPROVAL

KGC KGC

CHECKED APPROVE

AVS

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State of Illinois

JB PRITZKER, GOVERNOR

Illinois Capital Development Board

REVISED BRIDGING DOCUMENTS - NOT FOR CONSTRUCTION

GRADING PLAN

CAMPUS BOILER REPLACEMENTS

NORTHERN ILLINOIS UNIVERSITY

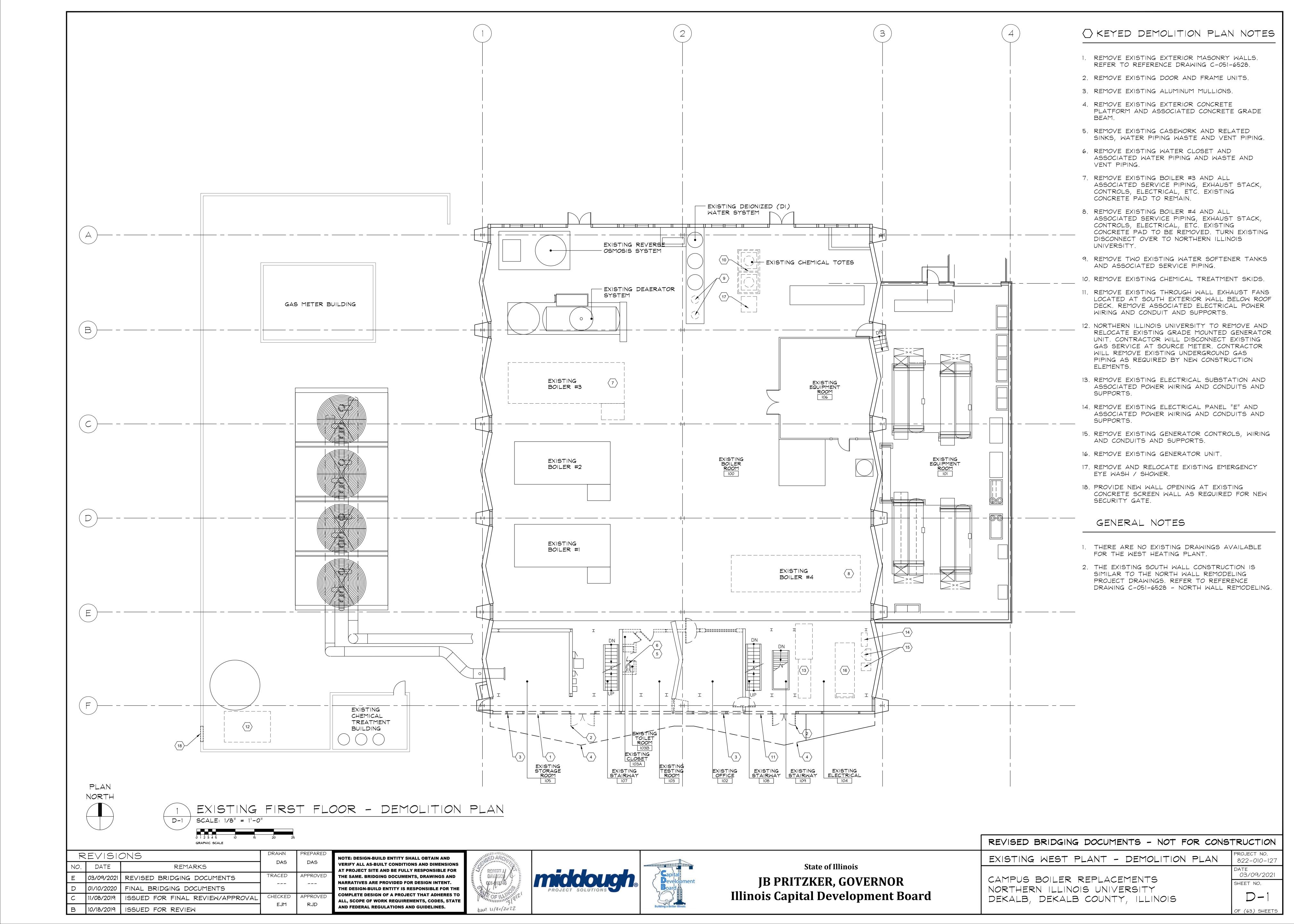
DEKALB, DEKALB COUNTY, ILLINOIS

PROJECT NO.
822-010-127

DATE
03/09/2021

SHEET NO.

C-4



OKEYED DEMOLITION PLAN NOTES

- 1. EXISTING BOILER #5E AND ALL ASSOCIATED SERVICE PIPING, EXHAUST STACK, CONTROLS, ELECTRICAL AND EXISTING CONCRETE PAD TO REMAIN
- 2. REMOVE EXISTING STEAM POWERED CONDENSATE PUMPS IN BASEMENT. SALVAGE FOR REUSE.
- 3. ADD ALTERNATE H-1: INCLUDE REMOVAL OF EXISTING EAST HEATING PLANT BOILER #5E AND ASSOCIATED WORK.

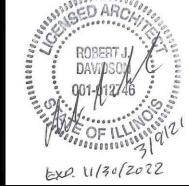


PLAN NORTH

1 EXISTING EAST PLANT - DEMOLITION PLAN D-2 SCALE: 1/8" = 1'-0"

R	EVISIO	DRAWN	PREPARED	N	
NO.	DATE	REMARKS	DAS	DAS	V
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C	03/09/2020	REVISED BRIDGING DOCUMENTS	1		T
B	01/10/2020	FINAL BRIDGING DOCUMENTS	CHECKED	APPROVED	A
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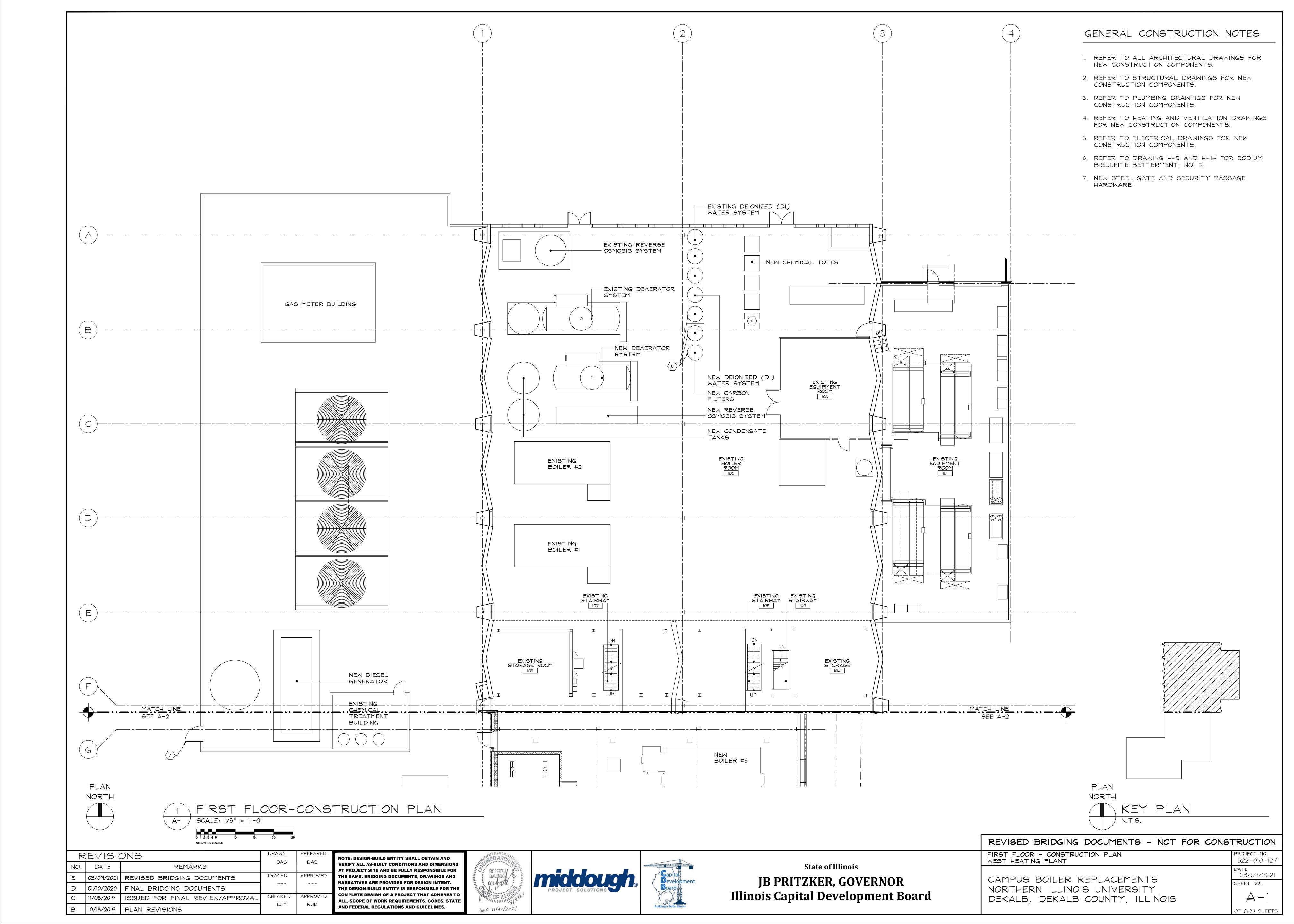


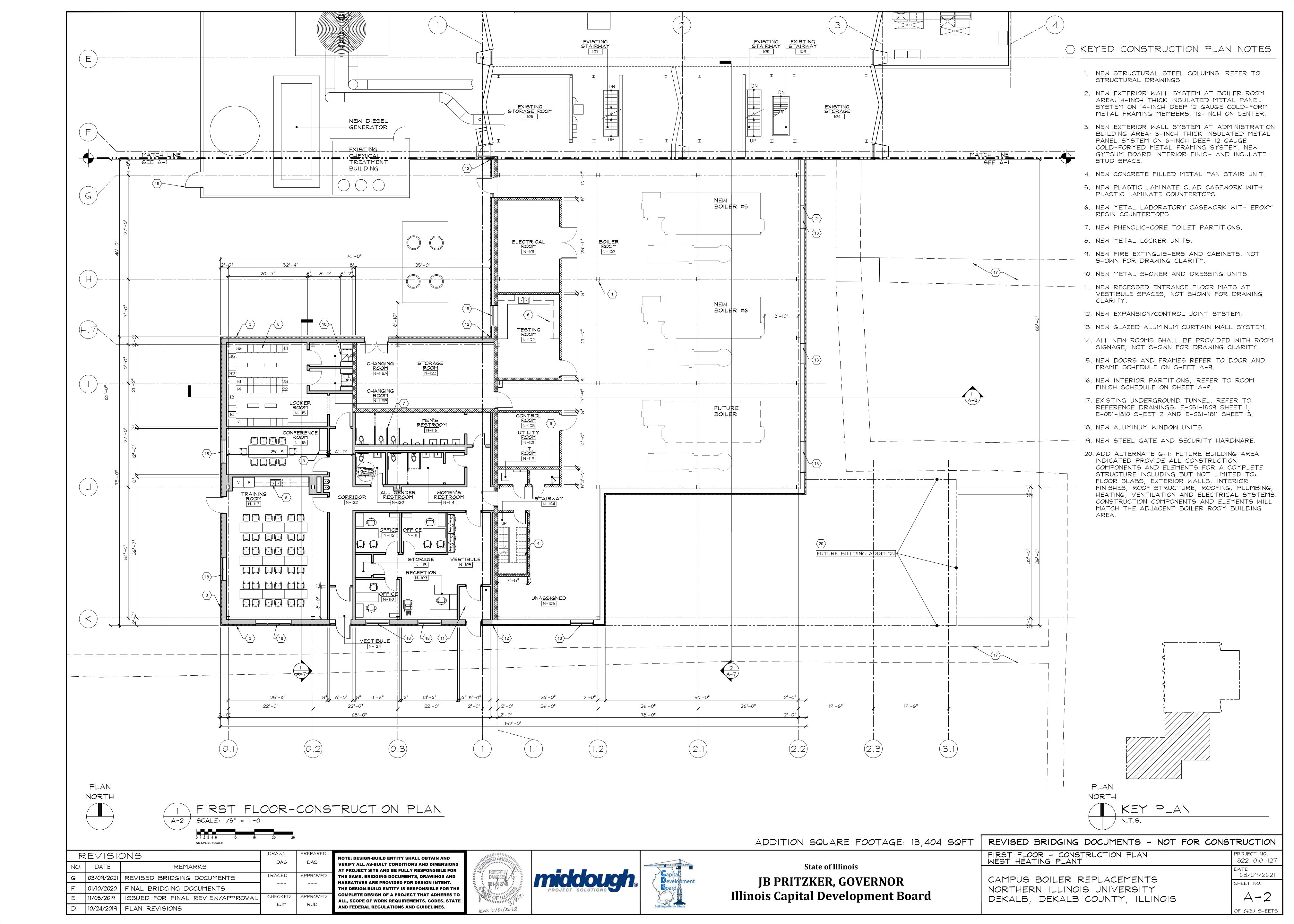


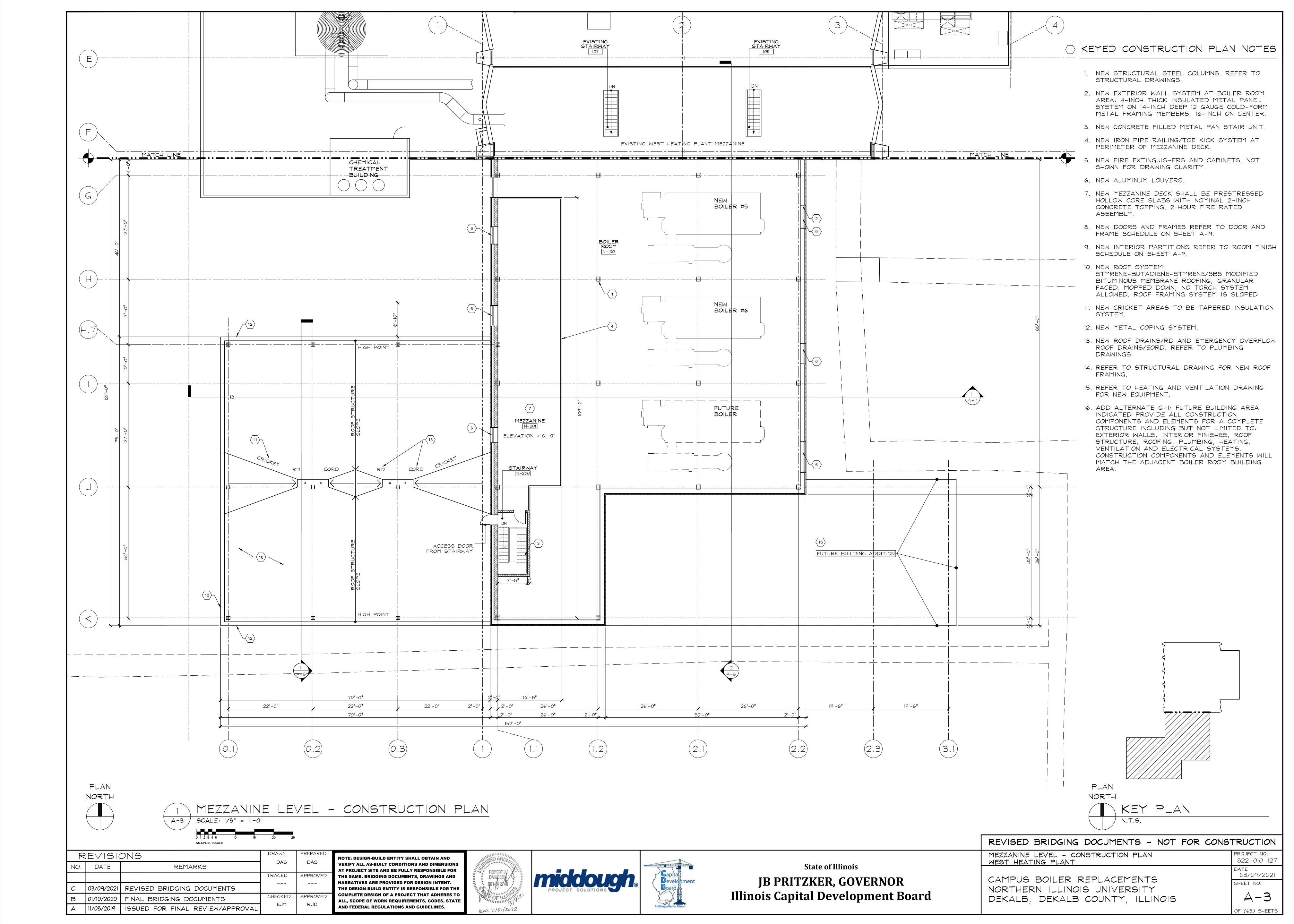


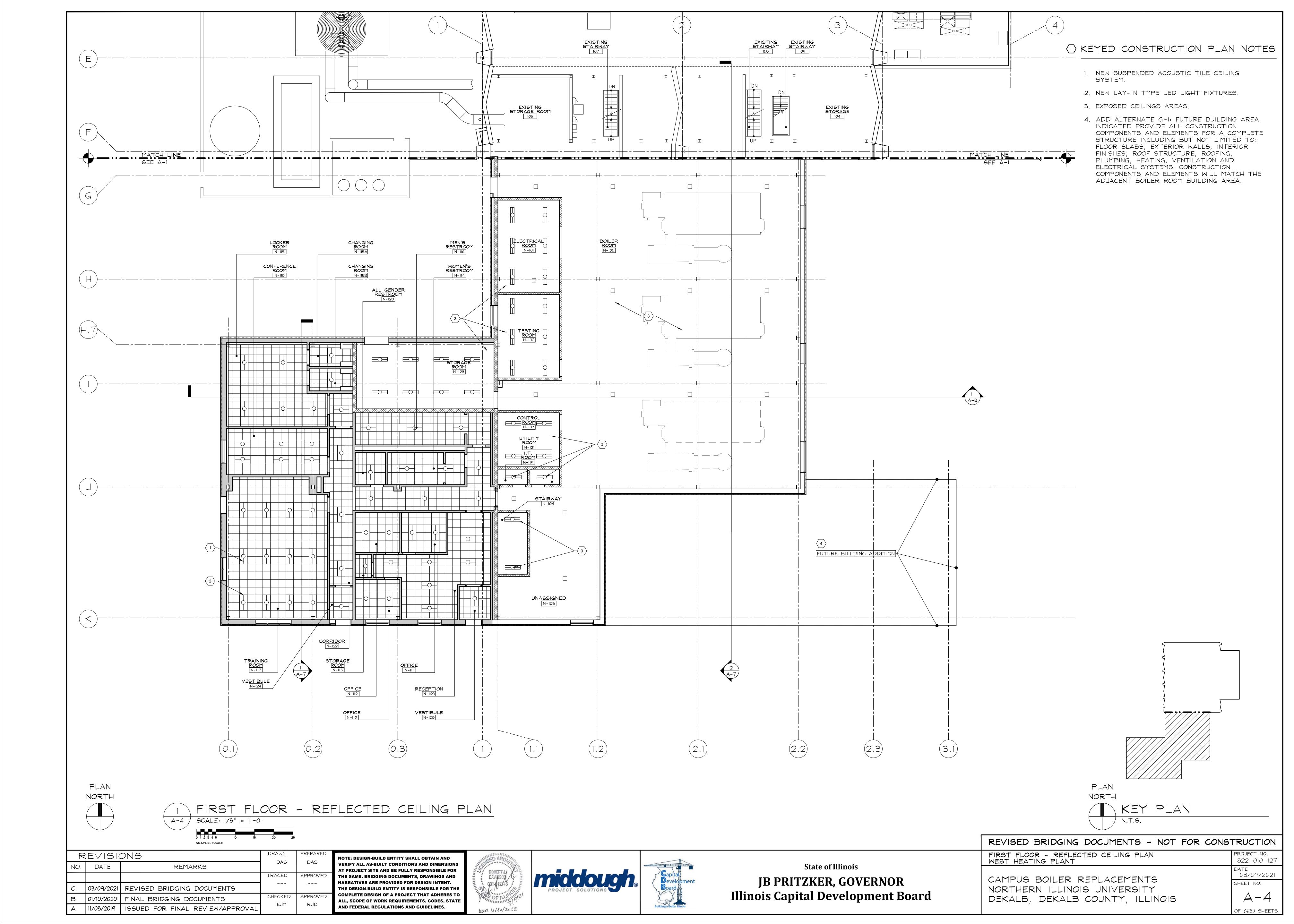
State of Illinois JB PRITZKER, GOVERNOR Illinois Capital Development Board

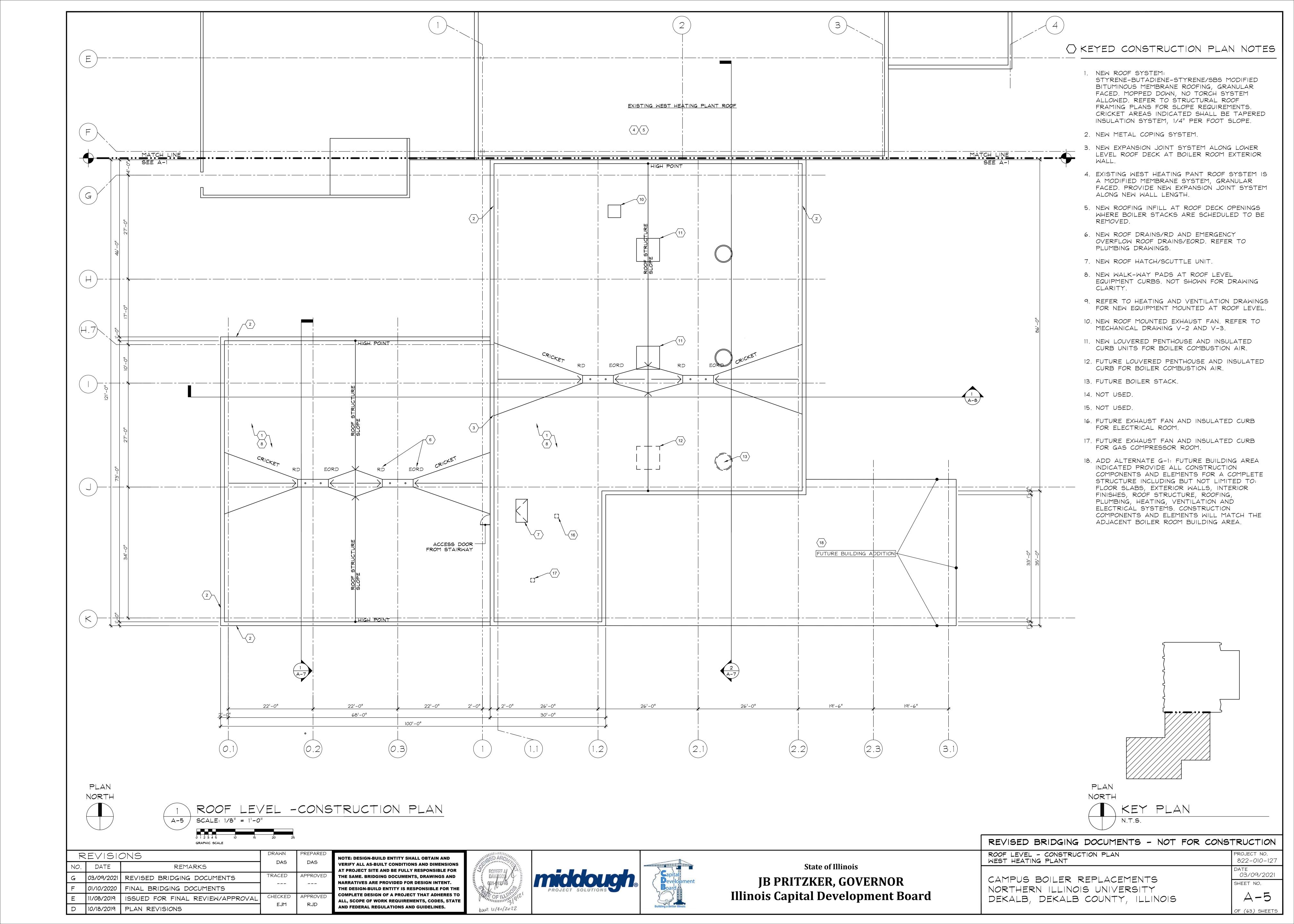
REVISED BRIDGING DOCUMENTS - NOT FOR CONST	TRUCTION
EXISTING EAST PLANT - DEMOLITION PLAN	PROJECT NO. 822-010-127
CAMPUS BOILER REPLACEMENTS	DATE 03/09/2021
NORTHERN ILLINOIS UNIVERSITY DEKALB, DEKALB COUNTY, ILLINOIS	SHEET NO. D-2
DENALD, DENALD COUNTY, TELINOTS	

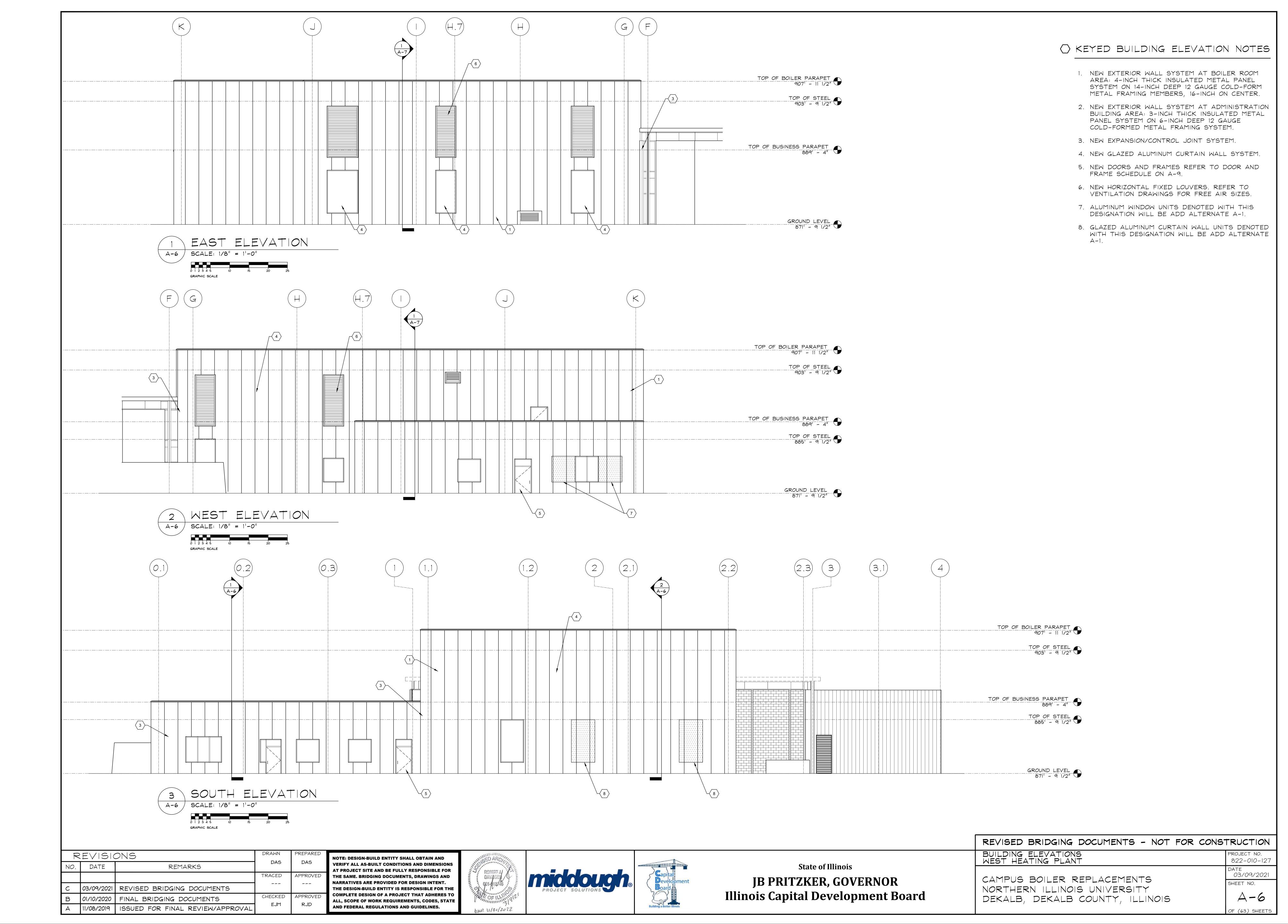


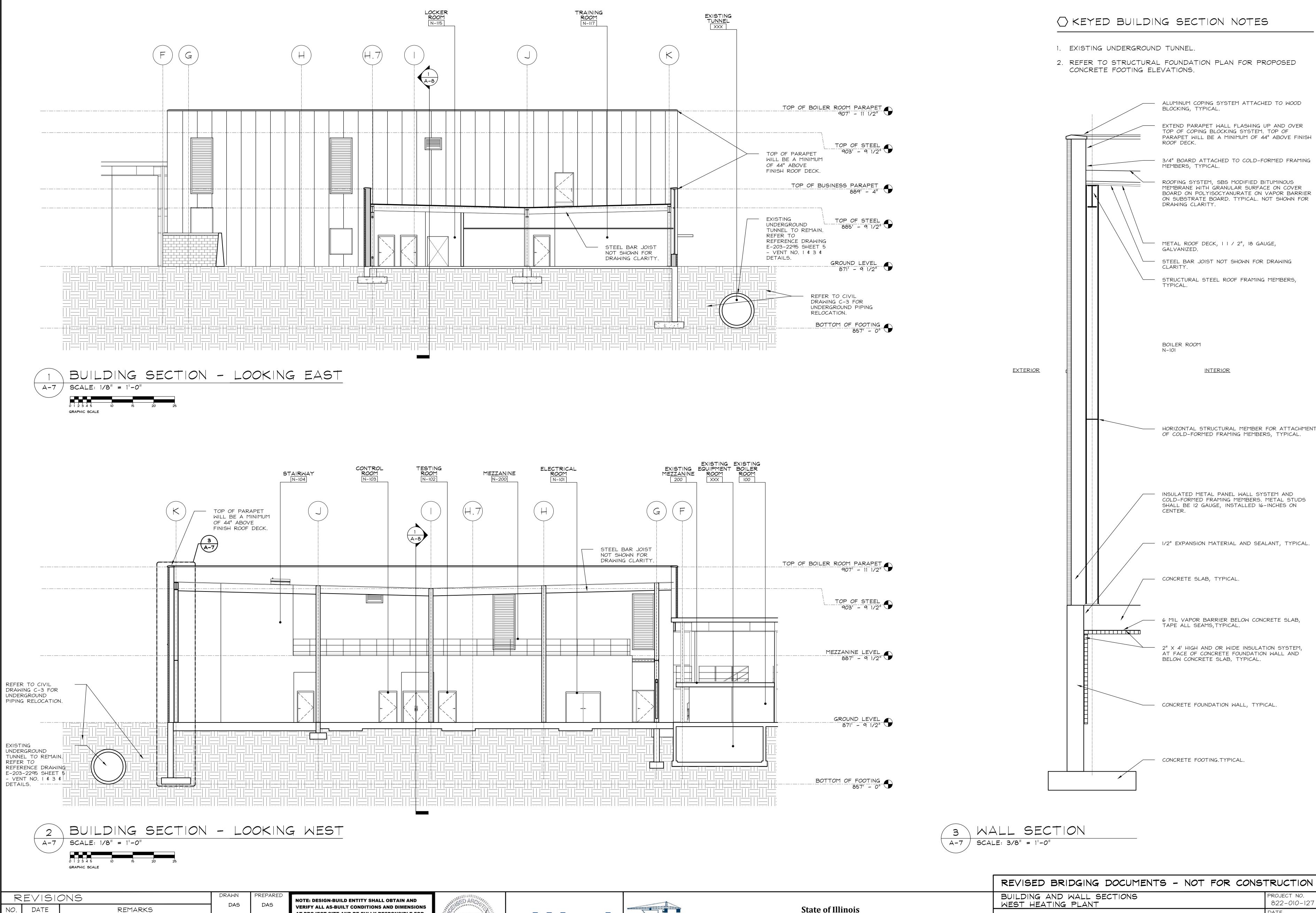




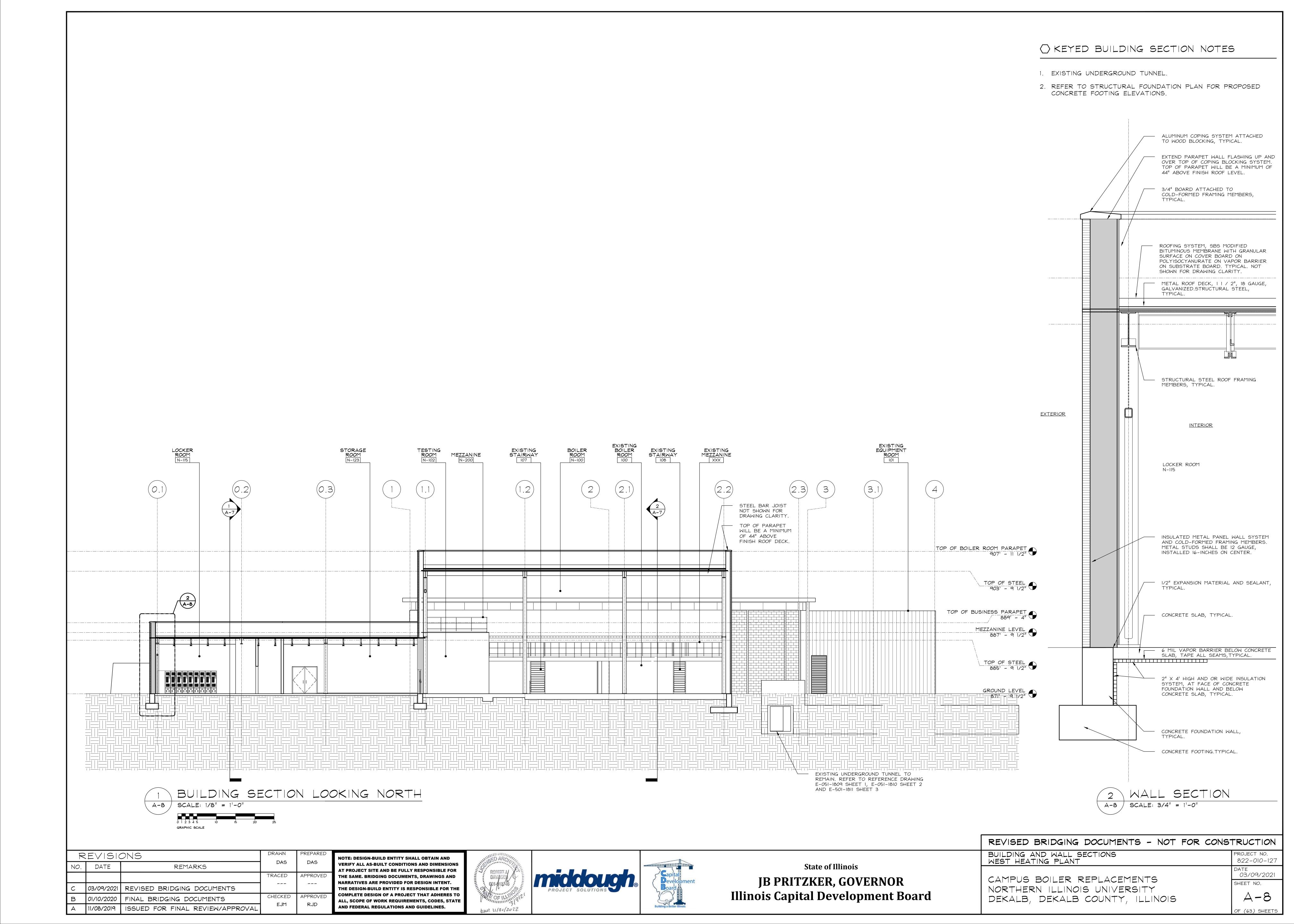








State of Illinois AT PROJECT SITE AND BE FULLY RESPONSIBLE FOR ROBERT J. 03/09/2021 THE SAME. BRIDGING DOCUMENTS, DRAWINGS AND CAMPUS BOILER REPLACEMENTS JB PRITZKER, GOVERNOR NARRATIVES ARE PROVIDED FOR DESIGN INTENT. SHEET NO. 03/09/2021 REVISED BRIDGING DOCUMENTS NORTHERN ILLINOIS UNIVERSITY THE DESIGN-BUILD ENTITY IS RESPONSIBLE FOR THE Illinois Capital Development Board **△**-7 **COMPLETE DESIGN OF A PROJECT THAT ADHERES TO** 01/10/2020 | FINAL BRIDGING DOCUMENTS CHECKED APPROVED DEKALB, DEKALB COUNTY, ILLINOIS ALL, SCOPE OF WORK REQUIREMENTS, CODES, STATE EJM 1/08/2019 ISSUED FOR FINAL REVIEW/APPROVAL AND FEDERAL REGULATIONS AND GUIDELINES. Exp. 11/30/2022 OF (63) SHEETS



		•				ROOT		+ SCHE				ı		•
								ALLS				CEILINGS		
ROOM NO.	ROOM NAME	FLOOR	WALL BASE	NOR MATERIAL	RTH FINISH	EA MATERIAL	ST FINISH	SOI MATERIAL	JTH FINISH	MATERIAL MES	ST FINISH	MATERIAL	HEIGHT	REMARKS
N-100	BOILER ROOM	CONC	N/A	_	_	IMP	-	IMP	1	CMU	PAINT	EXP <i>O</i> SED	N/A	
I-101	ELECTRICAL ROOM	CONC	N/A	CMU	PAINT	CMU	PAINT	CMU	PAINT	CMU	PAINT	EXP <i>O</i> SED	N/A	
l-102	TESTING ROOM	ERF	ICB	CMU	PAINT	CMU	PAINT	CMU	PAINT	CMU	PAINT	EXP <i>O</i> SED	N/A	
l-103	CONTROL ROOM	ERF	ICB	CMU	PAINT	CMU	PAINT	CMU	PAINT	CMU	PAINT	EXPOSED	N/A	
V-104	STAIRWAY	CONC	N/A	CMU	PAINT	CMU	PAINT	CMU	PAINT	CMU	PAINT	EXPOSED	N/A	
V-105	UNASSIGNED	CONC	N/A	-	-	IMP	-	IMP	-	CMU	PAINT	EXP <i>O</i> SED	N/A	
V-108	VESTIBULE	CT-3	RB	GWB	PAINT	GWB	PAINT	GWB	PAINT	GWB	PAINT	ACT-1	9'-0"	
l-109	RECEPTION	CT-1	RB	GWB	PAINT	GWB	PAINT	GWB	PAINT	GWB	PAINT	ACT-1	9'-0"	
N-110	OFFICE	CT-1	RB	GWB	PAINT	GWB	PAINT	GWB	PAINT	GWB	PAINT	ACT-1	9'-0"	
N-111	OFFICE	CT-1	RB	GWB	PAINT	GWB	PAINT	GWB	PAINT	GWB	PAINT	ACT-1	9'-0"	
N-112	OFFICE	CT-1	RB	GWB	PAINT	GWB	PAINT	GWB	PAINT	GWB	PAINT	ACT-1	9'-0"	
l-113	STORAGE ROOM	CT-1	RB	GWB	PAINT	GWB	PAINT	GWB	PAINT	GWB	PAINT	ACT-1	9'-0"	
l-114	WOMEN'S RESTROOM	CT-2	CT-2	GWB/CT-3	N/A	GWB/CT-3	N/A	GWB/CT-3	N/A	GWB/CT-3	N/A	ACT-1	9'-0"	
V-115	LOCKER ROOM	ERF	RB	GWB	PAINT	GWB	PAINT	GWB	PAINT	GWB	PAINT	ACT-1	9'-0"	
I-115A	CHANGING ROOM	CT-2	CT-2	GWB/CT-3	N/A	GWB/CT-3	N/A	GWB/CT-3	N/A	GWB/CT-3	N/A	ACT-2	9'-0"	
-115B	CHANGING ROOM	CT-2	CT-2	GWB/CT-3	N/A	GWB/CT-3	N/A	GWB/CT-3	N/A	GWB/CT-3	N/A	ACT-2	9'-0"	
l-116	MEN'S RESTROOM	CT-2	CT-2	GWB/CT-3	N/A	GWB/CT-3	N/A	GWB/CT-3	N/A	GWB/CT-3	N/A	ACT-1	9'-0"	
l-117	TRAINING ROOM	VCT	RB	GWB	PAINT	GWB	PAINT	GWB	PAINT	GWB	PAINT	ACT-1	9'-0"	
l-118	CONFERENCE ROOM	CT-1	RB	GWB	PAINT	GWB	PAINT	GWB	PAINT	GWB	PAINT	ACT-1	9'-0"	
N-119	I.T. ROOM	ERF	ICB	GWB	PAINT	GWB	PAINT	GWB	PAINT	GWB	PAINT	EXPOSED	9'-0"	
l-120	ALL GENDER RESTROOM	CT-2	CT-2	GWB/CT-3	N/A	GWB/CT-3	N/A	GWB/CT-3	N/A	GWB/CT-3	N/A	ACT-1	9'-0"	
l-121	UTILITY ROOM	ERF	ICB	GWB	PAINT	GWB	PAINT	GWB	PAINT	GWB	PAINT	EXPOSED	9'-0"	
l-122	CORRIDOR	ERF	RB	GWB	PAINT	GWB	PAINT	GWB	PAINT	GWB	PAINT	ACT-1	9'-0"	
N-123	STORAGE ROOM	CONC	N/A	CMU	PAINT	GWB	PAINT	GMB	PAINT	GWB	PAINT	EXPOSED	9'-0"	
N-124	VESTIBULE	CT-3	RB	GWB	PAINT	GMB	PAINT	GWB	PAINT	GWB	PAINT	ACT-1	9'-0"	
l-200	STAIRWAY	CONC	N/A	CMU	PAINT	CMU	PAINT	CMU	PAINT	CMU	PAINT	EXPOSED	N/A	
N-200	MEZZANINE	CONC	N/A	N/A		N/A		N/A		CMU	PAINT	EXPOSED	N/A	
1-201	TIEZZANINE	CONC	IN/A	IN/A		IVA	-	IN/A	-	CINU	PAINT	EXPOSED	IN/A	
00	EXISTING BOILER ROOM	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	
01	EXISTING EQUIPMENT ROOM	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	
04	EXISTING STORAGE ROOM	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	
05	EXISTING STORAGE ROOM	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	1
06	EXISTING EQUIPMENT ROOM	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	+
07	EXISTING STAIRWAY	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	+
08	EXISTING STAIRWAY	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	+
09	EXISTING STAIRWAY	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	
		FVICTIVIC	FVICTING	EVICTIVIS	EVICTUS.	F)40THC	EVICTIVE	F)/ICTUIC	EVICTOR	Ductivia	EVICTIVA	F)/ICTUIC	EVICTUS.	+
200	EXISTING MEZZANINE	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	+
			1											

ROOM FINISH SCHEDULE REMARKS

- 1. BOTTOM OF METAL ROOF DECK AT LOW POINT WITHIN BOILER ROOM ADDITION IS APPROXIMATELY 32 FEET ABOVE FINISH FLOOR.
- 2. BOTTOM OF METAL ROOF DECK AT LOW POINT WITHIN ADMINISTRATION/OFFICE BUILDING ADDITION IS APPROXIMATELY 14 FEET ABOVE FINISH FLOOR.

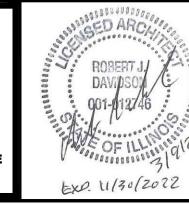
			OOR A	ND FR	AME SO	CHEDU	LE			
				DO	OR			FRAME		
NO.	ROOM NAME					DIMENSIONS				REMARKS
		FIRE RATING	MATERIAL	FINISH	WIDTH	HEIGHT	THICKNESS	MATERIAL	FINISH	
N-100	BOILER ROOM/EXTERIOR	-	HM	PAINT	4'-0"	7'-0"	1 3/4"	HM	PAINT	
N-101	ELECTRICAL ROOM	90 MIN	HM	PAINT	PAIR 4'-0"	7'-0"	1 3/4"	HM	PAINT	
N-102	TESTING ROOM	-	HM	PAINT	4'-0"	7'-0"	1 3/4"	HM	PAINT	
N-103	CONTROL ROOM	-	HM	PAINT	4'-0"	7'-0"	1 3/4"	HM	PAINT	
N-104	STAIRWAY	90 MIN	HM	PAINT	4'-0"	7'-0"	1 3/4"	HM	PAINT	
N-108A	VESTIBULE / EXTERIOR	-	ALUM	-	3'-8"	7'-0"	1 3/4"	ALUM	-	
N-108B	VESTIBULE / INTERIOR	-	ALUM	-	3'-8"	7'-0"	1 3/4"	ALUM	-	
N-109	RECEPTION	-	HM	PAINT	3'-8"	7'-0"	1 3/4"	HM	PAINT	
N-110	OFFICE	-	HM	PAINT	3'-0"	7'-0"	1 3/4"	HM	PAINT	
N-111	OFFICE	-	HM	PAINT	3'-0"	7'-0"	1 3/4"	HM	PAINT	
N-112	OFFICE	-	HM	PAINT	3'-0"	7'-0"	1 3/4"	HM	PAINT	
N-113	STORAGE	-	HM	PAINT	3'-0"	7'-0"	1 3/4"	HM	PAINT	
N-114	WOMEN'S RESTROOM	-	HM	PAINT	3'-0"	7'-0"	1 3/4"	HM	PAINT	
N-115	LOCKER ROOM	-	HM	PAINT	3'-8"	7'-0"	1 3/4"	HM	PAINT	
N-115A	CHANGING ROOM	-	HM	PAINT	3'-8"	7'-0"	1 3/4"	HM	PAINT	
N-115B	CHANGING ROOM	-	HM	PAINT	3'-8"	7'-0"	1 3/4"	HM	PAINT	
N-116	MEN'S RESTROOM	_	HM	PAINT	3'-0"	7'-0"	1 3/4"	HM	PAINT	
N-117A	TRAINING ROOM	-	HM	PAINT	4'-0"	7'-0"	1 3/4"	HM	PAINT	
N-117B	TRAINING ROOM / EXTERIOR	-	ALUM		3'-8"	7'-0"	1 3/4"	ALUM	-	
N-118	CONFERENCE ROOM	-	HM	PAINT	8'-0"	7'-0"	1 3/4"	HM	PAINT	
N-119	I.T. ROOM	90 MIN	HM	PAINT	3'-0"	7'-0"	1 3/4"	HM	PAINT	
N-120	ALL GENDER RESTROOM	-	HM	PAINT	3'-0"	7'-0"	1 3/4"	HM	PAINT	
N-121	UTILITY ROOM		HM	PAINT	3'-0"	7'-0"	1 3/4"	HM	PAINT	
N-122	CORRIDOR	90 MIN	HΜ	PAINT	3'-8"	7'-0"	1 3/4"	HΜ	PAINT	
N-123A	STORAGE ROOM	90 MIN	HΜ	PAINT	4'-0"	7'-0"	1 3/4"	HM	PAINT	
N-123B	STORAGE ROOM / EXTERIOR	1	HM	PAINT	PAIR 3'-0"	7'-0"	1 3/4"	HM	PAINT	
N-124A	VESTIBULE / EXTERIOR	1	ALUM	1	3'-8"	7'-0"	1 3/4"	ALUM	1	
N-124B	VESTIBULE / INTERIOR	-	ALUM	-	3'-8"	7'-0"	1 3/4"	ALUM	-	
N-200	STAIRWAY	90 MIN	HM	PAINT	4'-0"	7'-0"	1 3/4"	HM	PAINT	
N-200	STAIRWAY / EXTERIOR	-	HM	PAINT	4'-0"	7'-0"	1 3/4"	HM	PAINT	

DOOR AND FRAME SCHEDULE REMARKS

- 1. NEW EXTERIOR HOLLOW METAL DOORS AND FRAMES SHALL BE INSULATED. REFER TO SPECIFICATION SECTION 08 11 13.
- 2. NEW INTERIOR HOLLOW METAL DOORS AND FRAMES, REFER TO SPECIFICATION SECTION 08 11 13.
- 3. NEW ALUMINUM FRAMED ENTRANCES AND STOREFRONTS, REFER TO SPECIFICATION SECTION 08 41 13.
- 4. REFER TO NIU DESIGN AND CONSTRUCTION STANDARDS: DIVISION 08 OPENINGS, SECTIONS; 08 11 00-METAL DOORS AND FRAMES, 08 14 16-FLUSH WOOD DOORS, 08 41 13-ALUMINUM FRAMED ENTRANCES AND STOREFRONTS, 08 71 00-DOOR HARDWARE AND 08 74 00-DOOR ACCESS CONTROL FOR ADDITIONAL REQUIREMENTS.

R	EVISIO	DRAWN	PREPARED		
NO.	DATE	REMARKS	DAS	DAS	
			TRACED	APPROVED	
C	03/09/2021	REVISED BRIDGING DOCUMENTS			
В	01/10/2020	FINAL BRIDGING DOCUMENTS	CHECKED	APPROVED	
А	11/08/2019	ISSUED FOR FINAL REVIEW/APPROVAL	MLB	RJD	L

NOTE: DESIGN-BUILD ENTITY SHALL OBTAIN AND VERIFY ALL AS-BUILT CONDITIONS AND DIMENSIONS AT PROJECT SITE AND BE FULLY RESPONSIBLE FOR THE SAME. BRIDGING DOCUMENTS, DRAWINGS AND NARRATIVES ARE PROVIDED FOR DESIGN INTENT. THE DESIGN-BUILD ENTITY IS RESPONSIBLE FOR THE COMPLETE DESIGN OF A PROJECT THAT ADHERES TO ALL, SCOPE OF WORK REQUIREMENTS, CODES, STATE AND FEDERAL REGULATIONS AND GUIDELINES.









	ROUT FIN	ISH LEGEND	
TAG	PRODUCT	MATERIAL DESCRIPTION	SPECIFICATIO SECTION NUMBER
FLOOR			
EXISTING	EXISTING FLOOR FINISH TO REMAIN / NO WORK		
CONC	CONCRETE	EXPOSED CONCRETE SLAB TO BE SEALED	
ERF	EPOXY RESINOUS FLOORING	OVERALL SYSTEM THICKNESS 3/16"	09 67 23
VCT	VINYL COMPOSITION TILE FLOORING	12" X 12" X 1/8"	09 65 19
CT-1	CARPET TILE FLOORING	NOMINAL 24" X 24"	09 68 13
CT-2	CERAMIC TILE FLOORING	NOMINAL 12" X 12"	09 30 13
CT-3	CARPET TILE FLOORING/MODULAR WALK-OFF	NOMINAL 24" X 24"	09 68 13
WALL BASE			
EXISTING	EXISTING WALL BASE TO REMAIN / NO WORK		
N/A	NOT APPLICABLE / NO WORK		
ICB	INTEGRAL COVE BASE	4" HIGH EPXOY RESINOUS COVE WALL BASE	09 67 23
RB	RUBBER WALL BASE	4" HIGH WITH COVE TOE	09 65 13
CT-2	CERAMIC TILE WALL BASE	4" HIGH COVE BASE	09 30 13
WALL MATERI	AL		
EXISTING	EXISTING WALLS TO REMAIN / NO WORK		
CMU	CONCRETE MASONRY UNITS	NOMINAL 16" LONG X 8" HIGH X WALL WIDTH SHOWN	04 22 00
GWB	GYPSUM BOARD PANELS	REFER TO SPECIFICATIONS FOR PANEL TYPES	09 29 00
CT-3	CERAMIC TILE WALL FINISH	NOMINAL 4 1/4" X 4 1/4", FULL HEIGHT	09 30 13
WALL FINISH			
EXISTING	EXISTING WALLS TO REMAIN / NO WORK		
PAINT	PAINT	REFER TO SPECIFICATIONS FOR INTERIOR PAINTING SCHEDULE	09 91 23
CEILING MATERI			
EXISTING	EXISTING EXPOSED CONSTRUCTION		
EXPOSED	EXPOSED NEW CONSTRUCTION	REFER TO SPECIFICATIONS FOR INTERIOR PAINTING SCHEDULE	09 91 23
ACT-1	ACOUSTIC TILE CEILING PANELS	24" × 24" × 3/4"	09 51 23
ACT-2	ACOUSTIC TILE CEILING PANELS	24" X 24" X 1" WITH HUMIDITY/SAG RESISTANCE	09 51 23
		•	

WALL TYPE LEGEND							
TYPE MARK	TYPE	DESCRIPTION					
W−1	INTERIOR GYPSUM BOARD PARTITIONS	5/8" THICK GYPSUM BOARD PANELS EACH SIDE OF 3 5/8" METAL STUD FRAMING, 16" ON CENTER. INSULATE STUD SPACE WITH 3-INCH THICK SOUND ATTENUATION BLANKETS. ALL PARTITIONS TO BE INSTALLED TO UNDERSIDE OF METAL ROOF DECK, UNLESS NOTED OTHERWISE. REFER TO SPECIFICATION SECTION 09 29 00 FOR GYPSUM BOARD TYPES.					
W-2	INTERIOR CONCRETE MASONRY UNITS	ALL CONCRETE MASONRY UNITS SHALL BE HEAVY WEIGHT CLASSIFICATION. NOMINAL UNIT DIMENSIONS SHALL BE 16" LONG X 8" HIGH X WALL WIDTH INDICATED ON FLOOR PLANS. REFER TO SPECIFICATION SECTION 04 22 00.					
W-3	EXTERIOR INSULATED METAL PANEL SYSTEM	PROVIDE THE FOLLOWING AT THE BOILER ROOM ADDITION EXTERIOR WALLS: NOMINAL 4" THICK INSULATED METAL PANEL SYSTEM ATTACHED TO COLD-FORMED METAL FRAMING MEMBERS. METAL FRAMING SHALL BE NOMINAL 14" DEEP X 3" FLANGE, 12 GAUGE STUDS, 16 INCHES ON CENTER, UNLESS NOTED OTHERWISE. REFER TO SPECIFICATION SECTION 05 40 00 AND 07 42 13.19.					
W-4	EXTERIOR INSULATED METAL PANEL SYSTEM	PROVIDE THE FOLLOWING AT THE ADMINISTRATION/OFFICE BUILDING ADDITION EXTERIOR WALLS: NOMINAL 3" THICK INSULATED METAL PANEL SYSTEM ATTACHED TO COLD-FORMED METAL FRAMING MEMBERS. METAL FRAMING SHALL BE NOMINAL 6" DEEP X 2" FLANGE, 12 GAUGE STUDS, 16 INCHES ON CENTER. REFER TO SPECIFICATION SECTION 05 40 00 AND 07 42 13.19.					
W-5	EXTERIOR INSULATED METAL PANEL SYSTEM	PROVIDE THE FOLLOWING AT THE BOILER ROOM WEST EXTERIOR WALL: NOMINAL 4" THICK INSULATED METAL PANEL SYSTEM ATTACHED TO COLD-FORMED METAL FRAMING MEMBERS. METAL FRAMING SHALL BE ATTACHED TO THE NEW CONCRETE MASONRY UNIT WALL. REFER TO SPECIFICATION SECTION 07 42 13.19.					

REVISED BRIDGING DOCUMENTS - NOT FOR CONST	TRUCTION
ROOM FINISH SCHEDULE/DOOR AND FRAME SCHEDULE WEST HEATING PLANT	PROJECT NO. 822-010-12
CAMPUS BOILER REPLACEMENTS	DATE 03/09/2021
NORTHERN ILLINOIS UNIVERSITY DEKALB, DEKALB COUNTY, ILLINOIS	SHEET NO. A - 9

CODES / STANDARDS AND REPORTS

- 2015 INTERNATIONAL BUILDING CODE
- ASCE 7-10
- OSHA REGULATIONS (STANDARDS 29CFR 1910 \$ 1926)
- AISC STEEL CONSTRUCTION MANUAL (14TH EDITION) • ACI 318-14
- . CONTRACTORS TO FOLLOW CLIENT'S SAFETY
- PROCEDURES • GEOTECHNICAL REPORT
 - SOIL DATA FROM GEOTECHNICAL REPORT PREPARED BY TSC TESTING SERVICE CORPORATION, 650 D PEACE ROAD, DEKALB, IL 60115, REPORT OF SOILS EXPLORATION, NIU WEST BOILER HOUSE EXPANSION, L-89,788 DATED AUGUST 27, 2019.

DESIGN LOADS (UNLESS NOTED OTHERWISE)

• APPLICABLE DEAD LOAD (DL)

- EQUIPMENT AND PIPING LOADS APPLIED LOCALLY AND NOT SHOWN HERE .20 PSF LL .100 PSF LL PLATFORMS AND STAIRS...
- ELEVATED CONCRETE FLOORS... • STANDARD RAILING, GUARDRAIL \$ HANDRAIL
- A SINGLE CONCENTRATED LOAD OF 200 LBS APPLIED IN ANY DIRECTION - A UNIFORM LOAD OF 50 PLF APPLIED IN ANY DIRECTION AT TOP RAIL
- SLAB ON GRADE OR MAT MINIMUM PARTITION WALL LOAD...
- SNOW - GROUND SNOW... ..AS REQUIRED PLUS SNOW DRIFT.
- IMPORTANCE FACTOR 1.0 WIND
- ULTIMATE DESIGN WIND SPEED 115 MPH (BASED ON 3 SECOND GUST AT 33 FT ABOVE GRADE) EXPOSURE C, ICE IMPORTANCE FACTOR 1.0
- INTERNAL PRESSURE - PRESSURE ON ALL INTERIOR WALLS 5 PSF
- EARTHQUAKE
- MCE SPECTRAL RESPONSE ACCELERATION VALUES:
- Ss = 0.149 g; Sds = 0.159 g- S1 = 0.064 g; Sd1 = 0.102 g
- SEISMIC SITE CLASS D, IMPORTANCE FACTOR 1.0
- SEISMIC DESIGN CATEGORY B, RISK CATEGORY II

GENERAL STEEL NOTES

• GENERAL

- 1. ALL MATERIAL AND WORK SHALL CONFORM TO THE "AISC" ASD MANUAL OF STEEL CONSTRUCTION, FOURTEENTH EDITION, AND "AISC" CODE OF STANDARD PRACTICE, LATEST EDITION.
- 2. CONTRACTOR SHALL VERIFY JOBSITE CONDITIONS \$ DIMENSIONS IN THE FIELD.
- 3. STEEL FABRICATOR SHALL INCORPORATE OSHA RULES OF JAN 18, 2001 OF THE "SAFETY AND HEALTH STANDARDS FOR THE CONSTRUCTION INDUSTRY," 29 CFR 1926, PART R, SAFETY STANDARDS FOR STEEL ERECTION.
- 4. MILL ALL COLUMNS AT SPLICES AND AT BASE PLATES
- 5 PROVIDE TEMPORARY BRACING AS REQUIRED TO STABILIZE AND SECURE THE STRUCTURAL FRAMES DURING CONSTRUCTION UNTIL THE PERMANENT BRACING IS IN PLACE.

MATERIAL SPECIFICATIONS

- 1. WT \$ WT SHAPES
 - ASTM A992 L, C, MC, S, & PLATES
- STRUCTURAL SHAPED HSS TUBE STRUCTURAL ROUND HSS TUBE STRUCTURAL ROUND PIPE
- ASTM A36 ASTM A500 GRADE B, Fy = 46 KSI ASTM A500 GRADE B, Fy = 42 KSI ASTM A501 OR A53 GRADE B ERECTION BOLTS OR MACHINE BOLTS ASTM A307
- 2. BOLTS FOR STRUCTURAL CONNECTIONS SHALL BE 3/4" MIN DIA. ASTM A325 TC OR ASTM F1852.
- 3. WELDING ELECTRODES: E70XX WITH LOW HYDROGEN COVERINGS.

CONNECTIONS

- 1. DESIGN IN ACCORDANCE WITH "AISC" STANDARDS. CONNECTION DESIGN SHALL BE BY STEEL FABRICATOR (U.N.O.). THE SHOP DETAILER OR HIS HIRE WHO DESIGNS THE CONNECTIONS SHALL BE AN ILLINOIS LICENSED STRUCTURAL ENGINEER. A COMPLETE SET OF "SE" SEALED STRUCTURAL CALCULATIONS SUBSTANTIATING THE CONNECTIONS SHALL BE SUBMITTED FOR RECORD ALONG WITH "SE" SEALED STEEL SHOP AND ERECTION DRAWINGS. SHOP DRAWINGS SUBMITTED WITHOUT SUBSTANTIATING CALCULATIONS WILL BE REJECTED WITHOUT REVIEW.
- 2. CONNECTIONS SHALL HAVE A MINIMUM OF 2 ROWS OF BOLTS OR THE EQUIVALENT WELD UNLESS NOTED OTHERWISE.
- 3. WELDS AND WELDING SHALL CONFORM TO "AWS" STANDARDS AND THE AWS STRUCTURAL WELDING CODE, AWS DI.I.
- 4. JOINTS SHALL CONFORM TO "AWS" PREQUALIFIED JOINTS AND PROCEDURES. ALL EXPOSED WELDS ON MISCELLANEOUS METAL ITEMS SHALL BE GROUND SMOOTH. EASE ALL SHARP EDGES.
- 5. ALL FIELD WELDS TO BE MIN. 3/16" FILLET WELDS (U.N.O.)
- 6. ALL GUSSET PLATES SHALL BE 3/8" MINIMUM THICKNESS (U.N.O.)

- 7. ALL BEAM END CONNECTIONS SHALL BE DESIGNED FOR A SHEAR VALUE OF 10,000 LBS MINIMUM OR 60% OF THE TOTAL ALLOWABLE UNIFORM BEAM LOAD AS DETERMINED FROM THE "ASD MAXIMUM TOTAL UNIFORM LOAD" TABLE OF THE AISC 14TH EDITION MANUAL, WHICHEVER IS GREATER. MEMBERS WITH END REACTIONS THAT EXCEED THESE REQUIREMENTS DUE TO THE PRESENCE OF OTHER BEAMS, COLUMNS, ETC. SHALL BE DESIGNED FOR THE REACTIONS INDICATED ON THE DRAWINGS. ALL CONNECTIONS SHALL BE DOUBLE ANGLE CONNECTIONS UNLESS NOTED OTHERWISE WITH MINIMUM LEG THICKNESS OF 3/1.
- 8. HIGH-STRENGTH BOLTS: PER ASTM A325 PROVIDE 13/16" DIAMETER HOLES FOR 3/4" DIAMETER BOLTS AT CONNECTIONS AS LISTED BELOW (U.N.O.)
 - FOR TYPICAL BEAMS NOT COVERED BELOW, BOLTS TO BE INSTALLED IN TENSION CONTROL CONDITION. - FOR ALL CONNECTIONS WITH OVERSIZED HOLES, OR OTHER CONNECTIONS MARKED SPECIFICALLY WITH (SC) AS SHOWN ON THE DRAWINGS, BOLTS ARE TO BE INSTALLED IN SLIP-CRITICAL CONDITION U.N.
- 9. BRACING FOR WHICH A CALCULATED LOAD IS NOT SHOWN SHALL HAVE A MINIMUM CONNECTION - 2 BOLTS ON ANGLES, 4 BOLTS ON STRUCTURAL TEES OR EQUIVALENT WELD STRENGTH.
- 10. ALL BRACING FORCES ON DRAWINGS ARE SHOWN AS "+" (TENSION) OR "-" (COMPRESSION) ALLOWABLE STRESS SHALL NOT BE INCREASED BY 33% WHEN DESIGNING CONNECTIONS.
- 11. ALL SAG RODS TO BE (ASTM A36) 5/8" DIA.

METAL DECK

- 1. ROOF DECK:1½" GALVANIZED (G90) WIDE RIB 18 GA Fy=33 KSI MINIMUM U.N.O.
- ROOF DECK FASTENER SHALL BE #12 TEK SCREWS, ATTACH ROOF DECK TO SUPPORT STEEL WITH MINIMUM 36/4 LOCATION PATTERN AND THREE SIDELAP FASTENERS PER SPAN OR 21" MAXIMUM C/C OR EQ.
- IF ANY ROOF PENETRATIONS ARE REQUIRED OTHER THAN THAT CURRENTLY SHOWN ON THE DESIGN DRAWINGS, CONTRACTOR SHALL CONTACT EOR TO VERIFY IF ANY ADDITIONAL FRAMING SHALL BE REQUIRED AROUND ROOF OPENING TO SUPPORT ROOF DECKING AND CONCRETE.
- DECK TO HAVE A MINIMUM OF TWO SPANS.

• STRUCTURAL STEEL COATINGS

- 1. OUTDOOR APPLICATION ALL STEEL TO BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123.
- 2. INDOOR APPLICATION ALL STEEL TO BE SHOP PAINTED WITH RED IRON OXIDE-ALKYD PRIMER OR EQUAL.

• STEEL JOISTS

- 1. DETAIL FABRICATE AND ERECT STEEL JOISTS AND JOIST GIRDERS IN ACCORDANCE WITH THE LATEST SJI, AISC, AWS, OTHER CODES OR STANDARDS AND CONTRACT DOCUMENTS.
- 2. PROVIDE BRIDGING IN ACCORDANCE WITH THE LATEST SJI SPECIFICATIONS. END OF BRIDGING LINES SHALL BE ANCHORED TO MASONRY WALLS, CONCRETE WALLS OR STEEL BEAMS. ALL BRIDGING SHALL BE WELDED TO JOISTS IN SUCH A MANNER AS TO NOT IMPAIR THE STRUCTURAL INTEGRITY OF THE JOISTS.
- 3. WELD ALL STEEL JOISTS TO SUPPORTING STRUCTURAL STEEL MEMBERS AS SHOWN ON THE DRAWINGS, AND ACCORDING TO SJI AS A MINIMUM.
- 4. TOP AND BOTTOM CHORDS OF JOISTS SHALL BE CONTINUOUS WITHOUT ANY SPLICES OF MATERIAL.
- 5. ALL JOISTS SHALL HAVE A STANDARD MINIMUM CAMBER IN ACCORDANCE WITH SJI STANDARD SPECIFICATIONS.
- 6. EXTEND ALL JOISTS I" MINIMUM PAST CENTERLINE OF SUPPORTING MEMBER WHEN THERE ARE JOISTS ONLY ON ONE SIDE OF SUPPORTING MEMBER.
- 7. THE JOIST PANEL POINTS FOR THE FULL WIDTH OF EACH BAY MUST LINE UP WITH EACH OTHER WITHIN A TOLERANCE OF +/- 1".
- 8. JOISTS SHALL BE ERECTED STRAIGHT. SWEEPS SHALL BE A MAXIMUM OF 1" MEASURED AT CENTER.
- 9. NO LOADS SHALL BE HUNG FROM THE JOIST BRIDGING.
- 10. A FIELD APPLIED WEB STIFFENER MUST BE INSTALLED IF CONCENTRATED LOADS DO NOT FALL AT PANEL POINTS.
- 11. ANY LOADS SUPPORTED FROM THE JOIST BOTTOM CHORD MUST BE ATTACHED AT THE BOTTOM CHORD PANEL POINT.
- 12. STEEL JOISTS SHALL BE PAINTED WITH MANUFACTURERS STANDARD RUST INHIBITIVE PAINT MEETING FEDERAL SPECIFICATION TT-P-636 (RED OXIDE) PAINT DRY FILM THICKNESS TO BE 2.0 MILS.
- 13. ALL STEEL JOISTS SHALL HAVE CEILING EXTENSIONS PROVIDED IN THE AREAS WHERE CEILINGS ARE HUNG OR DIRECTLY ATTACHED TO THE JOISTS.

CONCRETE AND FOUNDATION NOTES

• GENERAL

- 1. VERIFY ALL UNDERGROUND UTILITIES BEFORE PROCEEDING WITH WORK.
- 2. CONTRACTOR SHALL VERIFY JOBSITE CONDITIONS & DIMENSIONS IN THE FIELD.
- 3. FROST DEPTH IS 3'-6" BELOW GRADE. FOUNDATION SHALL BEAR ON SOILS HAVING A BEARING PRESSURE 2500 PSF. MINIMUM FOUNDATION WALL FOOTING SHOULD BE 24" WIDE. MINIMUM SPREAD FOOTING 36" WIDE.
- 4. A GEOTECHNICAL ENGINEER SHALL VERIFY ALLOWABLE BEARING PRESSURE PRIOR TO CONSTRUCTION.
- 5. ALL ENGINEERED FILL BENEATH SLABS AND FOOTINGS SHOULD BE COMPACTED TO A DRY DENSITY OF AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM-698). ALL EXISTING SUBGRADE SHALL BE RECOMPACTED BEFORE PLACING NEW CONCRETE FOUNDATION.
- 6. COMPACTION SHALL BE ACCOMPLISHED BY PLACING FILL IN APPROXIMATE 8" LIFTS AND MECHANICALLY COMPACTING EACH LIFT TO AT LEAST THE SPECIFIED MINIMUM DRY DENSITY.
- 7. MAXIMUM PLACEMENT TOLERANCE OF ANCHOR BOLTS IS ± 1/8" USE TEMPLATE TO SET ALL COLUMN AND PUMP ANCHOR RODS OR ANCHOR BOLTS.
- 8. MIXING, TRANSPORTING AND PLACING OF CONCRETE SHALL CONFORM TO ACI 301.
- 9. WHERE A ROUGHENED SURFACE CONSTRUCTION JOINT IS REQUIRED, REMOVE THE EXISTING / PREVIOUSLY PLACED CONCRETE SURFACE TO EXPOSE THE COARSE AGGREGATE OR ROUGHEN TO 1/4" AMPLITUDE. THE ROUGHENED EXISTING CONCRETE SHALL BE FREE OF LAITANCE AND LOOSE PARTICLES.
- 10. CONSTRUCTION JOINT LOCATION, IF NOT LOCATED ON THE DRAWINGS IS SUBJECT TO ENGINEERS APPROVAL PRIOR TO JOINT INSTALLATION.
- 11. CONTRACTOR TO SUBMIT CONCRETE REINFORCEMENT SHOP DETAIL DRAWINGS TO ENGINEER OF RECORD FOR REVIEW PRIOR TO START OF CONSTRUCTION.

• CONCRETE # GROUT:

- MIN. SPECIFIED 28-DAY STRENGTH OF CONCRETE f'c = 4,500 PSI U.N.O.
- CEMENT ASTM C150 - AGGREGATE - NO. 57 ASTM C33
- NO CHLORIDES - MAXIMUM WATER / CEMENT RATION = 0.45
- AIR ENTRAINMENT AGENT ASTM C-260 6% +/- 1% BY VOLUME
- SLUMP BEFORE ADDITION OF SUPERPLASTICIZER 3" +/- 1" - SLUMP AFTER ADDITION OF SUPERPLASTICIZER 5" +/- 1"
- GROUT: NON-SHRINK, NON-METALLIC MIN. 7-DAY STRENGTH f'c = 5,000 PSI - CONTROLLED LOW STRENGTH CONCRETE
- (FLOWABLE FILL IN LIEU OF COMPACTED FILL):
- f'c = 1,500 PSI- CEMENT - ASTM C150
- AGGREGATE ASTM C33
- MAXIMUM PLACEMENT HEIGHT = 5'-0" - AIR CONTENT = 0%

REBAR # ANCHORS

- REINFORCING BARS ARE ASTM A615, GRADE 60 MIN.
- WELDED WIRE FABRIC ASTM A1064 (SUPPLIED IN FLAT SHEETS)
- HEADED CONCRETE ANCHORS (HCA) ASTM A 108 - ANCHOR BOLTS OR ANCHOR ROD ASTM F1554, GRADE 36, GALVANIZED.
- WASHERS # NUTS GALVANIZED - ADHESIVE DOWELS HILTI HIT HY200 W/ REBAR

- CONCRETE OVER OR AGAINST PILING ..

- ADHESIVE ANCHORS HILTI HIT HY200 W/ GALVANIZED THREADED RODS U.N.O. - ADHESIVE ANCHORS HILTI HIT HY270 FOR CMU INSTALLATIONS
- LAPS - MINIMUM LAP SPLICE LENGTHS SHALL BE IN ACCORDANCE WITH
- ACI 318 REQUIREMENT.
- MINIMUM CONCRETE COVER OF REINFORCING BARS, PER ACI 318
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH...... 3" - CONCRETE EXPOSED TO EARTH OR WEATHER #5 BARS AND SMALLER.. 1 1/2" OTHER.
 - CONCRETE NOT EXPOSED TO EARTH OR WEATHER BEAM \$ COLUMN BARS INCLUDING TIES, STIRRUPS \$ SPIRALS ..
- FINISHING

- WALLS...

- EXPOSED CONCRETE SURFACES TO HAVE A SMOOTH FINISH, FREE FROM PITS AND HONEYCOMBING. OTHER SURFACES TO HAVE FORM FINISHES. USE A 3/4" - 45 DEGREE CHAMFER ON ALL EXPOSED EDGES (U.N.O.)
- FOR SURFACES EXPOSED TO VIEW, FLOAT SURFACE SMOOTH AND TROWEL WITH LIGHT BROOM FINISH FOR A NON-SLIP FINISH (U.N.O.) - REMOVE FINE PROJECTIONS AND LOOSE MATERIAL. PATCH HONEYCOMBS,

VOIDS AND HOLES WITH PATCHING MORTAR THEN CURE.

R	EVISIO	DRAWN	PREPARED	
NO.	DATE	REMARKS	DJB	GJM/AVS
			TRACED	APPROVED
С	03/09/2021	REVISED BRIDGING DOCUMENTS		
ш	01/10/2020	FINAL BRIDGING DOCUMENTS	CHECKED	APPROVED
А	11/08/2019	ISSUED FOR FINAL REVIEW/APPROVAL	AVS	RJD

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JB PRITZKER, GOVERNOR Illinois Capital Development Board STRUCTURAL GENERAL NOTES

3/4"

REVISED BRIDGING DOCUMENTS - NOT FOR CONSTRUCTION

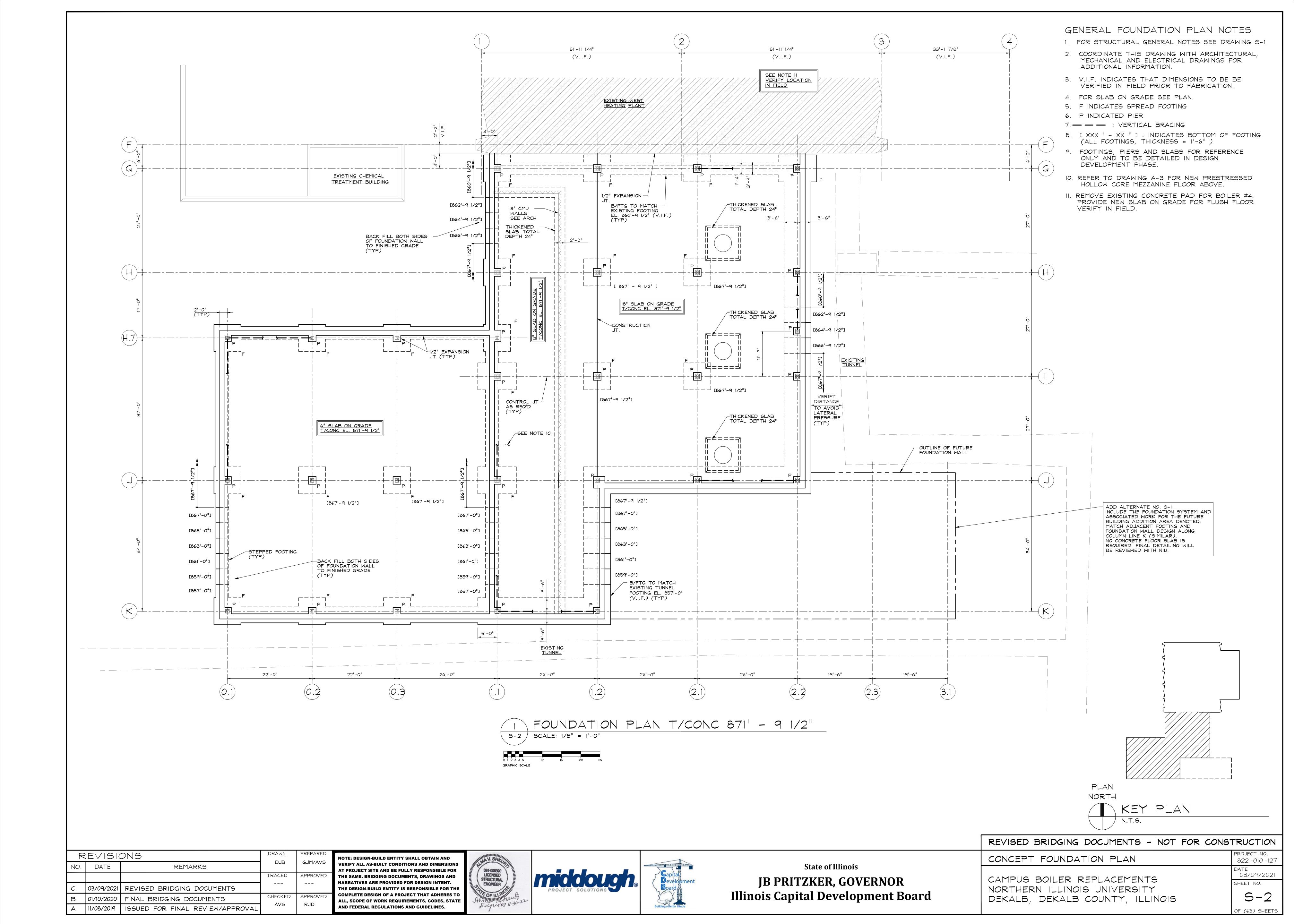
CAMPUS BOILER REPLACEMENTS NORTHERN ILLINOIS UNIVERSITY DEKALB, DEKALB COUNTY, ILLINOIS

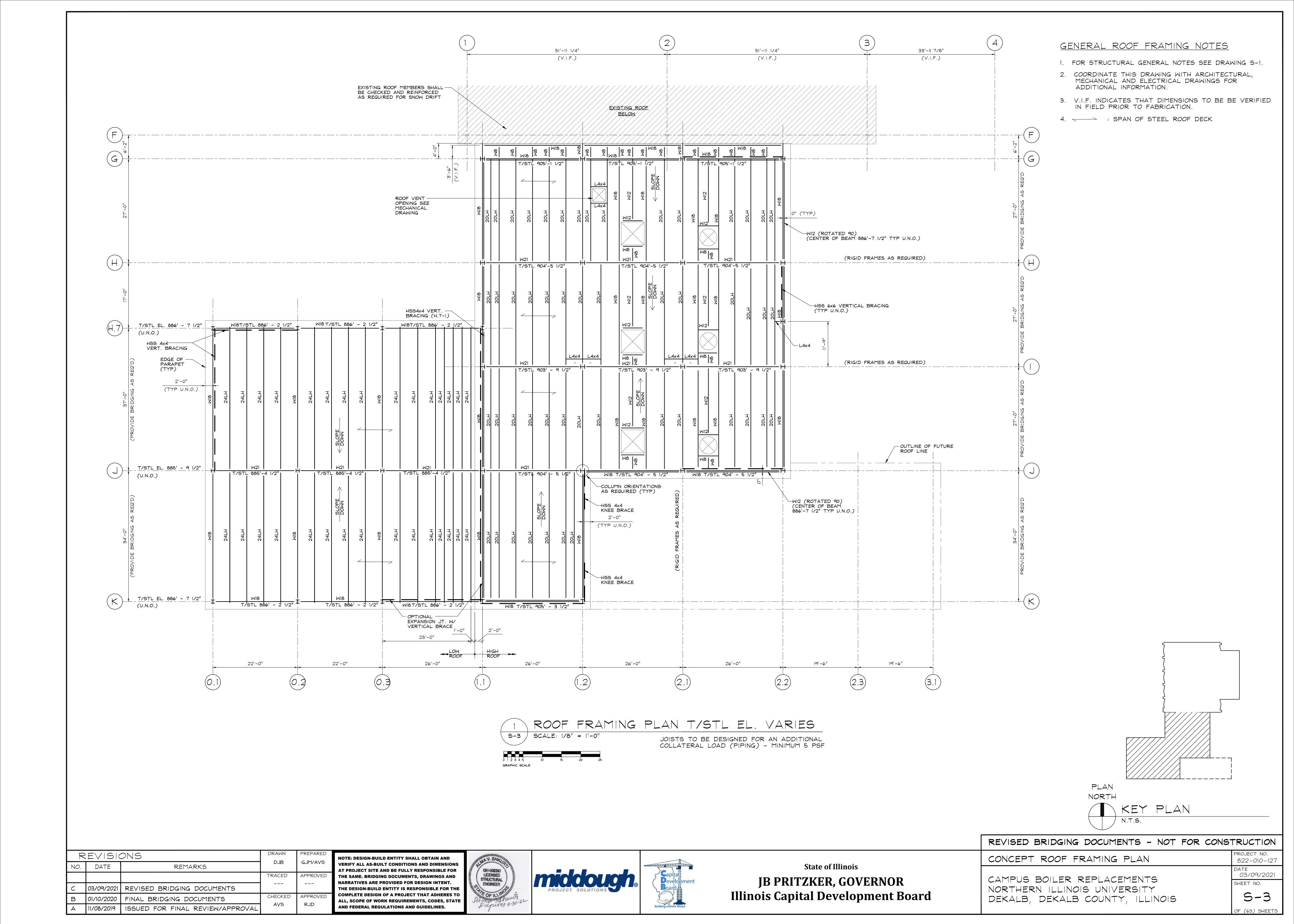
5-1 OF (63) SHEETS

822-010-127

03/09/2021

SHEET NO.





PLUMBING NOTES

- 1. THE GENERAL CONDITIONS AND SUPPLEMENTAL GENERAL CONDITIONS ISSUED BY THE ARCHITECT SHALL GOVERN WHERE APPLICABLE.
- 2. THIS SUB-CONTRACTOR SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE PLANS AND SHALL VERIFY EXISTING SITE CONDITIONS AT THE JOB SITE BEFORE SUBMITTING BID. FAILURE TO RECOGNIZE WORK REQUIRED SHALL BE AT THE EXPENSE OF THIS SUB-CONTRACTOR. NO CONSIDE- RATION SHALL BE GIVEN FOR ADDITIONAL COMPENSATION AFTER THE LETTING OF BIDS.
- 3. ENTIRE INSTALLATION SHALL BE PERFORMED IN A FIRST-CLASS WORK- MANLIKE MANNER. THE COMPLETED SYSTEMS SHALL BE FULLY OPERA- TIONAL, ACCEPTANCE BY THE OWNER SHALL BE A CONDITION OF THE CONTRACT. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCES, PRESERVE MAXIMUM HEADROOM, AND AVOID OMISSIONS.

 4. SUB-CONTRACTOR TO MAKE ALL NECESSARY TAPS, AS CALLED
- FOR ON THE DRAWINGS.

 5. ALL WORK SHOWN OR INDICATED ON THE PLAN SHALL BE LEFT
- CLEAN AND IN FULL OPERATING CONDITION AND FULLY TESTED.

 6. INSULATE ALL HOT AND COLD WATER LINES. PIPE COVERING SHALL BE 1" THICK-2-1/2 LBS. DENSITY FIBERGLASS WITH
- MOLDED FITTINGS AND BUTT JOINTS AND VAPOR BARRIER.

 7. IT SHALL BE THE RESPONSIBILITY OF THIS SUB-CONTRACTOR TO START UP, ADJUST AND CHECK FOR PROPER OPERATION ALL EQUIPMENT INSTALLED UNDER HIS CONTRACT.
- 8. THIS SUB-CONTRACTOR SHALL ALLOW IN HIS INITIAL BID THE COST OF SERVICE ON ALL EQUIPMENT INSTALLED UNDER HIS CONTRACT FOR A PERIOD OF ONE (1) YEAR TO DATE OF FINAL ACCEPTANCE OF THE WORK.
- 9. ALL WATER PIPING SHALL BE TESTED WITH WATER UNDER PRESSURE OF 150 PSI, AND MADE TIGHT AT THIS PRESSURE. MEANS TO TEST ALL NEW WATER PIPING SHALL BE PROVIDED TO TEST TO 100 PSI BY AIR PRESSURE TO ENSURE STATE CODE MINIMUM ARE MEET "LIVE PRESSURE FROM EXISTING MAINS SHALL NOT BE ACCEPTED."
- 10. ALL SOIL, WASTE AND VENT SHALL BE SUBJECTED TO A HYDROSTATIC TEST OF NOT LESS THAN 10 FEET OF WATER COLUMN, AND PROVEN TO BE WATER TIGHT. ALL NEW WASTE AND VENT SHALL HAVE MEANS TO TEST FROM FIRST JOINT BEYOND GROUND CONNECTION OF VENTS AT TERMINAL LEVEL
- HIGHEST COMMON CONNECTION OF VENTS AT TERMINAL LEVEL.

 11. BEFORE TURNING PLUMBING SYSTEM OVER TO THE OWNER, CHLORINATE ALL DOMESTIC WATER PIPING FOR A PERIOD OF 24 HOURS. AFTER CHLORINATION HAS BEEN COMPLETED, FLUSH ALL PIPING UNTIL WATER RUNS CLEAR AND IS RESIDUAL CHLORINE FREE.
- 12. ALL PLUMBING WORK TO CONFORM TO THE LATEST STATE OF ILLINOIS PLUMBING CODE REQUIREMENTS.
- 13. ANY MINOR CHANGES IN LOCATION OF PIPING AND EQUIPMENT FROM THOSE SHOWN ON THE DRAWINGS SHALL BE MADE WITHOUT COST TO THE OWNER IF SO DIRECTED BY THE ARCHITECT/OWNER BEFORE INS- TALLATION.
- 14. PROVIDE DIELECTRIC FITTINGS BETWEEN DISSIMILAR METAL PIPING MATERIALS.
- 15. ALL FIXTURES SHALL BE NEW AND FREE FROM FLAWS OR BLEMISHES. ALL FINISHED SURFACES SHALL BE CLEAR, SMOOTH AND BRIGHT AND GUARANTEED NOT TO CRAZE, DISCOLOR, OR SCALE. ALL FIXTURES, INCLUDING FAUCETS, ESCUTCHEON, WASTES, STRAINERS, TRAPS, SUPPLIES, STOPS, ETC., SHALL BE HEAVILY CHROME PLATED.
- 16. ALL FIXTURES AND EQUIPMENT SHALL BE SUPPLIED AND MANUFACTURED AS NOTED IN THE "PLUMBING FIXTURE AND EQUIPMENT SCHEDULE" NO SUBSTITUTIONS WILL BE ALLOWED TO THE FIXTURES AND EQUIPMENT NOTED UNLESS PRIOR APPROVE IS GIVEN BY ARCHITECT/OWNER.
- 17. BEFORE COMMENCEMENT OF WORK, CONTRACTOR SHALL VERIFY LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF UTILITIES AND PIPING AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
- 18. EXACT LOCATIONS AND MOUNTING HEIGHTS OF PLUMBING FIXTURES SHALL BE OBTAINED FROM ARCHITECTURAL DRAWINGS.
- 19. CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH OWNER FOR WATER, SEWER, SERVICE AND CONNECTIONS AND SHALL PAY FOR ALL FEES, CHARGES, AND
- 20. INSTALL ALL PLUMBING TO AVOID INTERFERENCE WITH ELECTRICAL AND MECHANICAL EQUIPMENT AND STRUCTURAL FRAMING. WATER AND DRAIN LINES ARE NOT PERMITTED OVER OR UNDER ELECTRICAL PANELS.
- 21. PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL FAUCETS, TRAPS, STOPS, GATE VALVES, WATER HAMMER ARRESTERS AND CLEANOUT COVERS. FURNISH \$ INSTALL ALL NECESSARY TRIM FOR A COMPLETELY CONNECTED PLUMBING SYSTEM.
- 22. DURING THE PROCESS OF THE WORK, MAINTAIN AN ACCURATE RE- CORD OF ALL CHANGES MADE IN THE PLUMBING SYSTEMS. THE RECORD DRAWING SHALL SHOW CHANGES IN MANUFACTURER (WITH NUMBERS AND TRADE NAMES). MATERIALS, SIZES, AND HOOK-UP POINTS.

- 23. UPON COMPLETION OF PROJECT, THE PLUMBING CONTRACTOR SHALL INSPECT ALL EXPOSED PORTIONS OF THE PLUMBING FIXTURE INSTALLATION AND COMPLETELY REMOVE ALL EXPOSED SOIL, MARK- INGS AND FOREIGN MATERIAL EXCEPT PRODUCT LABELS AND THOSE REQUIRED BY LAW.
- 24. UNDER NO CIRCUMSTANCES WILL THE CONTRACTOR BE GIVEN CONSIDERATION FOR ADDITIONAL COMPENSATION DUE TO HIS NEGLECT TO COMPLY WITH ALL OF THE FOREGOING REQUIREMENTS.
- 25. WHERE DRAWINGS, SPECIFICATIONS AND NOTES CONFLICT WITH ONE ANOTHER THE CONTRACTOR SHALL IMMEDIATELY ADVISE THE ARCHITECT OF SUCH CONFLICTS. FOR PURPOSE OF BIDDING, AND PENDING UPON WRITTEN RECEIPT OF ANY DIRECTION TO THE CONTRARY, THE CONTRACTOR SHALL INCLUDE IN HIS PROPOSAL THE MORE EXPENSIVE ALTERNATE DESCRIBED.
- 26. ALL PLUMBING, LINES TO BE RUN WITHIN WALL CAVITIES SO AS TO HAVE ONLY SUPPLY AND RETURN STUBS PROTRUDING THROUGH WALL SURFACE. WALL PENETRATIONS ARE TO BE SEALED AND TRIM RINGS APPLIED. SURFACE MOUNTED PLUMBING, LINES ARE NOT TO BE USED UNLESS OTHERWISE SPECIFIED ON KITCHEN EQUIPMENT PLANS.
- 27. FOR CLARITY, THESE DOCUMENTS DO NOT NECESSARILY SHOW EVERY OFFSET, FITTING, CONTROLLER, VALVE, ETC. IT IS THE INTENT OF THESE DOCUMENTS TO INFORM THE CONTRACTOR TO PROVIDE A COMPLETE AND OPERATING SYSTEM IN ALL RESPECTS.
- 28. BUILDING SYSTEMS OPERATIONS AND UTILITY SERVICES SHALL CONTINUE IN SERVICE WITHOUT INTERRUPTION. ANY MANDATORY INTERRUPTION OF ANY SERVICE OR UTILITIES SHALL BE ARRANGED WITH THE OWNER'S ENGINEER. CONTRACTOR SHALL INFORM THE OWNER'S ENGINEER 10 DAYS IN ADVANCE PRIOR TO ANY BUILDINGS SERVICE INTERRUPTION. ANY ADDITIONAL EXPENSE RESULTING FROM TEMPORARY SERVICE INTERRUPTIONS SHALL BE PAID BY THE CONTRACTOR.
- 29. UNLESS INDICATED OTHERWISE, ENGINEER MAKES NO REPRESENTATION AS TO WHETHER OR NOT ANY HAZARDOUS OR CONTAMINATED MATERIALS (INCLUDING BUT NOT LIMITED AS ASBESTOS, PCB'S, CONTAMINATED SOILS, ETC.) ARE PRESENT WITHIN THE EXISTING BUILDING OR ON THE SITE. WORK SHOWN ON THE DRAWINGS AND/OR INDICATED IN THE SPECIFICATIONS SHALL NOT BE CONSTRUED TO CALL FOR CONTACT WITH ANY OF THESE MATERIALS. IF THESE MATERIALS ARE ENCOUNTERED OR SUSPECTED, THE CONTRACTOR SHALL NOT DISTURB THEM AND SHALL CONTACT THE ENGINEER IMMEDIATELY.
- 30. EXISTING ITEMS AND EQUIPMENT TO REMAIN SHALL BE RECONNECTED TO CLOSE SERVICE AS REQUIRED.
- 31. WHERE EXISTING EQUIPMENT PREVENTS PROPER INSTALLATION OF PROPOSED EQUIPMENT, REROUTE OR ALTER EXISTING EQUIPMENT SO AS TO ACCOMMODATE PROPOSED WORK REQUIREMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR RELOCATION OF ANY EXISTING MINOR INTERFERENCE, INCLUDING CONDUIT, HANGERS, ETC., AT NO ADDITIONAL COST.
- 32. IN INSTANCES WHERE EXISTING PIPING INSULATION AT CONNECTION POINTS OR EXISTING AREAS IS DAMAGED DUE TO NEW WORK, THIS CONTRACTOR SHALL REPLACE SAME TO THE SATISFACTION OF THE OWNER AS SPECIFIED FOR NEW WORK.
- 33. PROTECT EXISTING BUILDING STRUCTURE AND GROUNDS FROM ANY DAMAGE WHICH MAY OCCUR DURING INSTALLATION OF NEW WORK. ANY DAMAGE TO EXISTING FACILITIES SHALL BE REPAIRED, REPLACED OR RESTORED TO THE ORIGINAL CONDITION AND SATISFACTION OF THE OWNER.
- 34. ALL PENETRATIONS THROUGH FIRE RATED FLOORS AND WALLS SHALL BE MADE FIRE SAFE IN COMPLIANCE WITH THE LOCAL BUILDING CODE. RATING SHALL MEET OR EXCEED RATING OF FLOOR OR WALL
- 35. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REINSTALLING, REPAIRING AND REPLACING EXISTING ACOUSTICAL, GYPSUM, OR OTHER CEILINGS, WALLS, OR FLOORS AS REQUIRED FOR PERFORMANCE OF WORK.
- 36. CONTRACTOR SHALL VERIFY EXISTING STRUCTURAL CONDITIONS PRIOR TO FLOOR CORING AND WALL CUTTING TO AVOID ANY CONFLICTS.
- 37. PROTECT ALL EXISTING PIPING, EQUIPMENT, AND FIXTURES TO REMAIN DURING DEMOLITION AND NEW WORK CONSTRUCTION PERIOD.
- 38. ROD-OUT OR POWER WASH EXISTING SEWER LINES BEFORE MAKING NEW CONNECTIONS.

PLUME	BING ABBREVIATIONS LIST
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
BSW	DOMESTIC BLENDED SOFT WATER
Cl	CAST IRON
СО	CLEANOUT
CM	DOMESTIC COLD WATER
FD	FLOOR DRAIN
FCO	FLOOR CLEANOUT
FCW	FILTERED COLD WATER
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HM	HOT WATER
IM	INDIRECT WASTE
L	LAVATORY
MB	MOP BASIN
MV	MIXING VALVE
NIC	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
<i>0</i> 5T	OVERFLOW STORM
PLBG	PLUMBING
S,SAN	SANITARY
ST	STORM
SK	SINK
TYP	TYPICAL
V	VENT
М	WASTE
MC	WATER CLOSET

—CM ———	COLD WATER
—HW —	HOT WATER
 5	SUSPENDED SANITARY
<u>—</u> st—	SUSPENDED STORM
—— 5 ——	UNDERGROUND SANITARY
-	UNDERGROUND STORM
V	- VENT PIPING
	EXISTING WASTE PIPE UNDER FLOOR
	EXISTING VENT PIPE
	EXISTING COLD WATER
	EXISTING HOT WATER
 	EXISTING PIPE/EQUIPMENT TO BE REMOVED
// // //	EXISTING PIPE/EQUIPMENT TO BE ABANDONED
—BSW — - —	BLENDED SOFT WATER
—	DIRECTION OF FLOW
 0	PIPE ELBOW UP
	PIPE ELBOW DN.
UP/DN	PITCH PIPE UP OR DN
─ ⋈─	GATE VALVE
	STRAINER
⊸ \∕ <u>►</u>	CHECK VALVE
A —	RELIEF VALVE
 Б	BALL VALVE
	PIPE CAP
——	CLEANOUT
\bigcirc	SCHEDULED EQUIPMENT
•	POINT OF NEW CONNECTION

NOT ALL ABBREVIATIONS ARE USED IN THIS PROJECT. NOT ALL SYMBOLS ARE USED IN THIS PROJECT

PLUMBING FIXTURE SCHEDULES

WC-1 WATER CLOSET

AMERICAN STANDARD, KOHLER OR ZURN - VITREOUS CHINA, 1.6 GPF, WALL MOUNTED, SIPHON JET, TOP SPUD.

FLUSH VALVE BY SLOAN, ZURN OR MOEN - EXPOSED, SENSOR OPERATED, BATTERY POWERED, OVER-RIDE PUSH BUTTON, CHROME.

SEAT BY CHURCH, BEMIS OR ZURN - WHITE, ANTIMICROBIAL PLASTIC, OPEN FRONT.

WATER CLOSET CARRIER BY JAY R. SMITH, WADE OR ZURN.

<u>UR-1</u> <u>URINAL</u>

AMERICAN STANDARD, KOHLER OR ZURN - VITREOUS CHINA, 1.0 GPF, WALL HUNG. FLUSH VALVE BY SLOAN, ZURN OR MOEN - EXPOSED SENSOR OPERATED, BATTERY POWERED, OVER-RIDE PUSH BUTTON, CHROME.

URINAL CARRIER BY JAY R. SMITH, WADE OR ZURN.

<u>L-1</u> <u>LAVATORY</u>

AMERICAN STANDARD, KOHLER OR ZURN - VITREOUS CHINA, WALL HUNG.
FAUCET BY MOEN, CHICAGO FAUCETS OR SLOAN - SENSOR OPERATED, BATTERY
POWERED, SINGLE MOUNT, CHROME FINISH.
PROVIDE POINT OF USE MIXING VALVE.

FAUCET BY KOHLER, CHICAGO FAUCETS OR MOEN - PULL-DOWN, CHROME PLATED.

SK-1 SINK

ELKAY, JUST OR METAL MASTERS - STAINLESS STEEL, EQUAL DOUBLE BOWL, DROP-IN, 33"x22"x6 1/2".

-2 SINK IN TEST

ROOM SINK BOWL - PART OF CASEWORK

FITTING: CHICAGO FAUCETS, KOHLER OR MOEN - RIGID/SWING VACUUM BREAKER GOOSENECK SPOUT, WRIST BLADE HANDLES.

SH-1 SHOWER

MOEN, CHICAGO FAUCETS OR AMERICAN STANDARD - THREE FUNCTION COMMERCIAL SHOWER SYSTEM CONTAINS: SHOWER HEAD, HAND-HELD SHOWER, 69" METAL HOSE, 30" SLIDE BAR, DROP ELL, AND MOUNTING HARDWARE.

MB-1 MOP BASIN

FIAT PRODUCTS, FLORESTONE PRODUCTS OR PRECAST TERRAZZO ENTERPRISES - CURVED, FRONT, 12" DEPTH WITH 6" CURVED DROP FRONT. CHICAGO FAUCET, MOEN OR AMERICAN STANDARD - CONCEALED SERVICE SINK HOT AND COLD WATER SINK FAUCET WITH ELEVATED VACUUM BREAKER ASSEMBLY WITH 3/4" HOSE THREAD OUTLET AND WALL BRACE,

MV-1 MIXING VALVE

WATTS, ZURN OR SYMMONS - POINT OF USE THERMOSTATIC MIXING VALVE, BRONZE BODY, LEAD FREE SET TEMPERATURE @ 110°F

3" CROSS HANDLES ON 8" FIXED CENTERS CHROME PLATED FINISH.

EWC-1 ELECTRIC WATER COOLER

ELKAY, HALSEY TAYLOR OR HAWS - COOLER WALLMOUNT BI-LEVEL ADA HANDS-FREE FILTERED

8 GPF, STAINLESS STEEL EW-1 EYEWASH STATION

BRADLEY, SPEAKMAN OR WATERSAVER - BARRIER-FREE WALL-MOUNT EYE/FACE WASH UNIT WITH WRAPAROUND SKIRT WITH EMERGENCY THERMOSTATIC MIXING VALVE.

FD-1 FLOOR DRAIN

JAY R. SMITH, ZURN, JOSAM OR WADE - DUCO CAST IRON BODY WITH FLASHING COLLAR AND ADJUSTABLE NICKEL BRONZE STRAINER.

FD-2 FLOOR DRAIN

JAY R. SMITH, ZURN, JOSAM OR WADE - DUCO CAST IRON BODY WITH CAST IRON BAR GRATE, MEDIUM DUTY.

TD-1 TRENCH DRAIN

JOSAM, ZURN, JAY R. SMITH OR WADE - COATED CAST IRON RECTANGULAR SECTIONAL TRENCH DRAIN WITH HEAVY DUTY BODY SECTIONS AND INTEGRAL ANCHOR FLANGE, HEAVY DUTY LOOSE-SET GRATES AND BOTTOM OUTLET INSIDE-CAULK CONNECTION, 12" WIDE.

RD-1 ROOF DRAIN

JAY R. SMITH, ZURN OR JOSAM - DUCO CAST IRON BODY AND COLLAR UNDERDECK CLAMP, COMBINED FLASHING CLAMP AND GRAVEL STOP, ADJUSTABLE EXTENSION SLEEVE, AND CAST IRON DOME.

ORD-1 OVERFLOW ROOF DRAIN

JAY R. SMITH, ZURN OR JOSAM - DUCO CAST IRON BODY AND COLLAR UNDERDECK CLAMP, COMBINED FLASHING CLAMP AND GRAVEL STOP, ADJUSTABLE EXTENSION SLEEVE, AND CAST IRON STAND PIPE AND DOME.

RPZ-1 REDUCED PRESSURE ZONE BACKFLOW PREVENTER

WATTS REGULATOR CO., FEBCO OR WILKINS - REDUCED PRESSURE ZONE BACKFLOW PREVENTER ASSEMBLY SHALL CONSIST OF PRESSURE DIFFERENTIAL RELIEF VALVE, LOCATED IN A ZONE BETWEEN TWO POSITIVE SEATING STAINLESS STEEL CHECK VALVES. THE RELIEF VALVE SHALL BE COMPACT BOTTOM MOUNTED WITH A SINGLE DISCHARGE PORT.

SUPPORT FROM FLOOR MINIMUM HEIGHT OF 1'-6" AND MAXIMUM HEIGHT OF 4'-0" A.F.F.

EWH-1 ELECTRIC WATER HEATER

ELECTRIC WATER HEATER BY A.O.SMITH, LOCHENVAR OR RUUD - 30 GAL CAPACITY TANK, 9 KW, 208 V, THREE PHASE.

DEKALB, DEKALB COUNTY, ILLINOIS

REVISIONS

NO. DATE REMARKS

TRACED APPROVED

TO COS/09/2021 REVISED BRIDGING DOCUMENTS

TRACED APPROVED

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REVISED BRIDGING DOCUMENTS - NOT FOR CONSTRUCTION

PLUMBING SYMBOLS, ABBREVIATIONS, AND NOTES

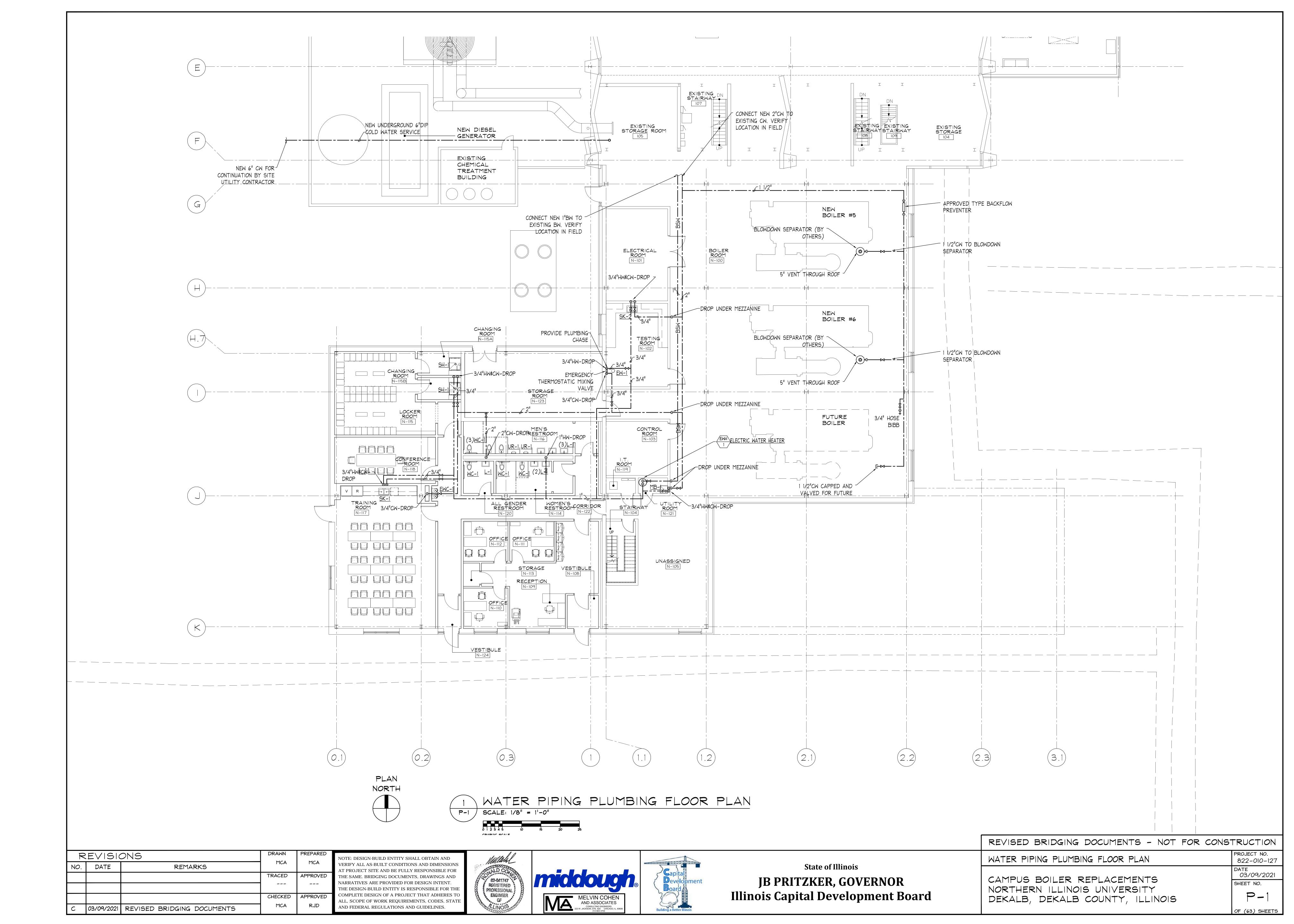
CAMPUS BOILER REPLACEMENTS

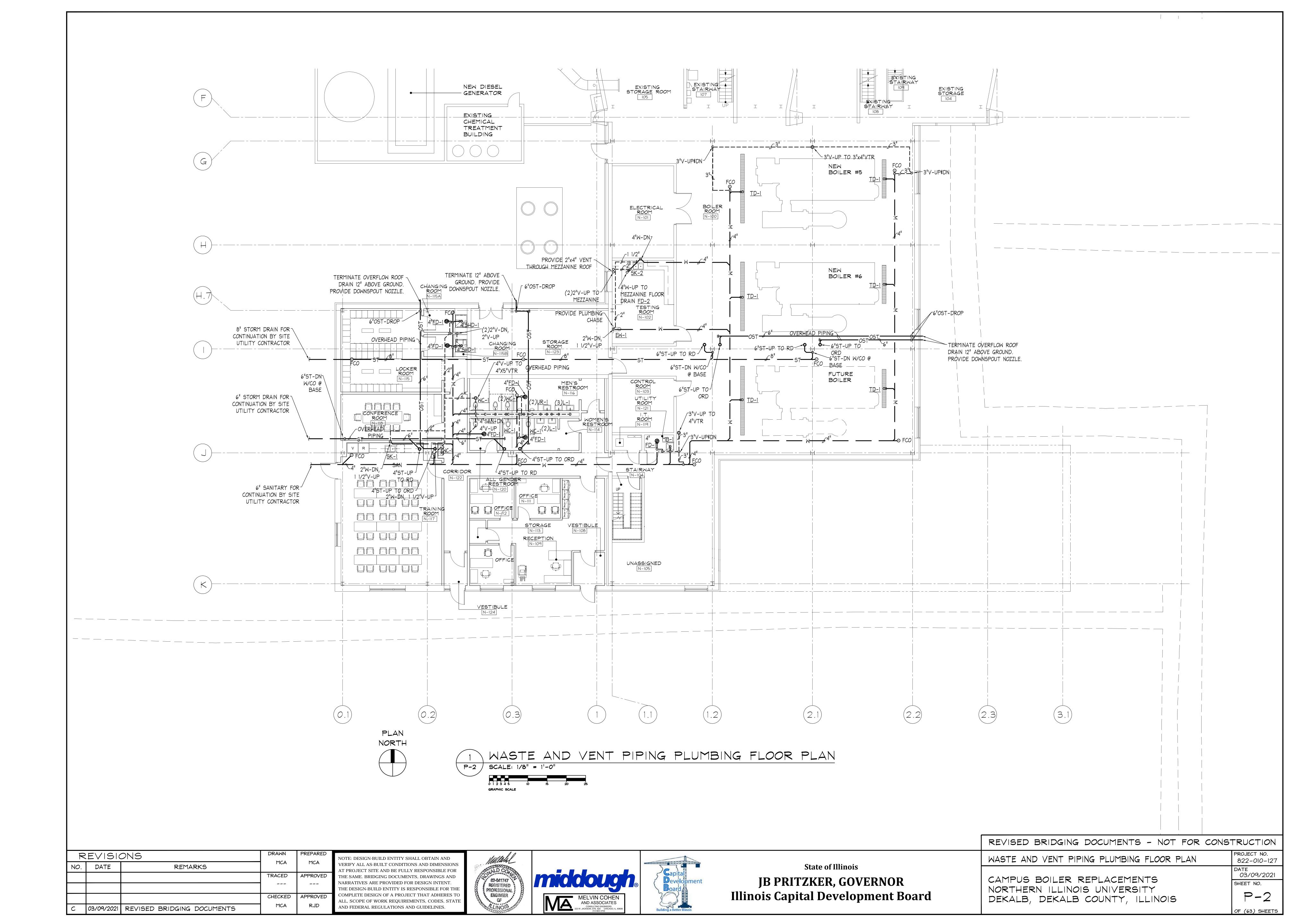
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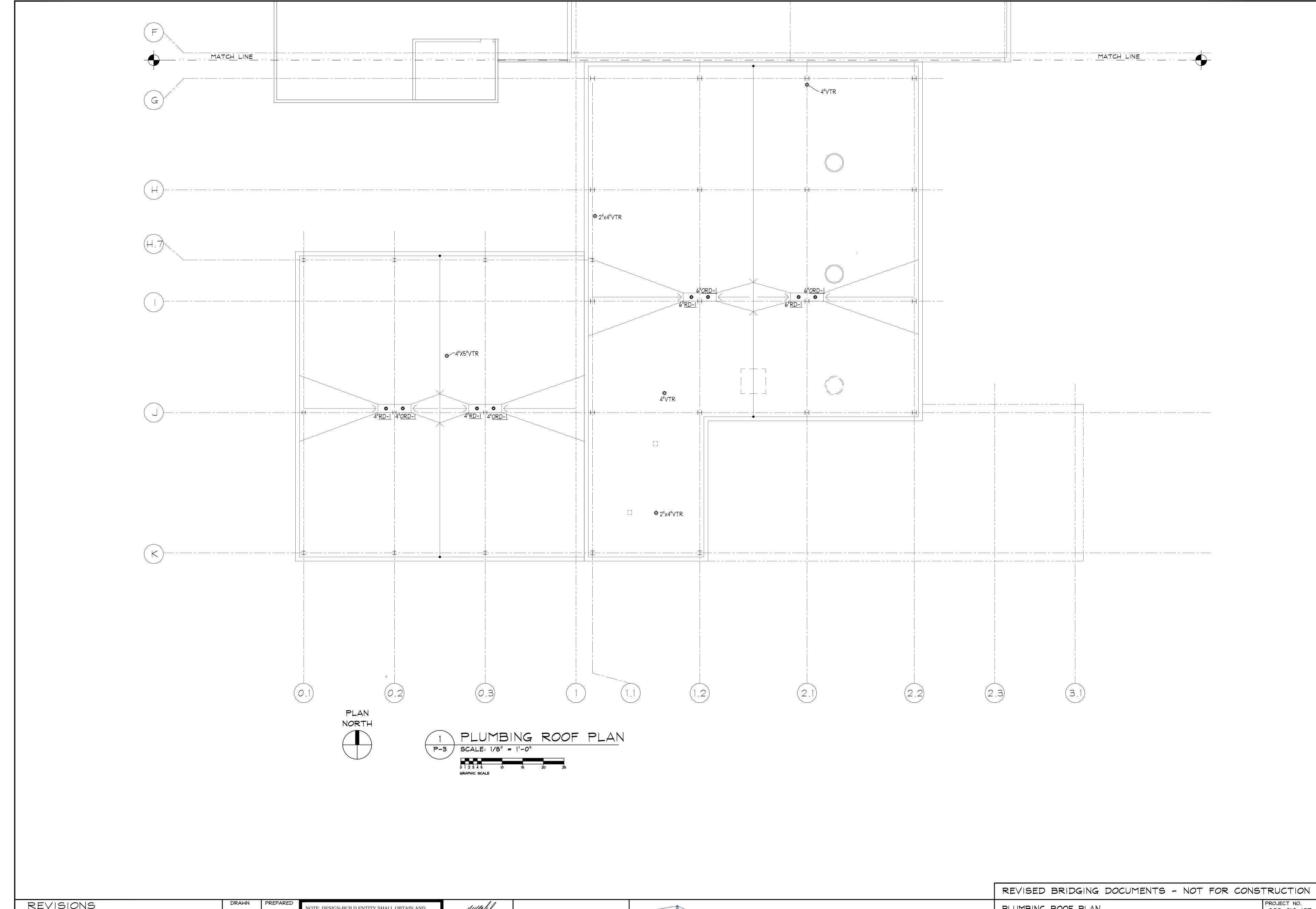
PROJECT NO. 822-010-127

DATE 03/09/2021

SHEET NO.







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State of Illinois

JB PRITZKER, GOVERNOR

Illinois Capital Development Board

PLUMBING ROOF PLAN

CAMPUS BOILER REPLACEMENTS

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DEKALB, DEKALB COUNTY, ILLINOIS

PROJECT NO.
822-010-127

DATE
03/09/2021

SHEET NO.

P-3

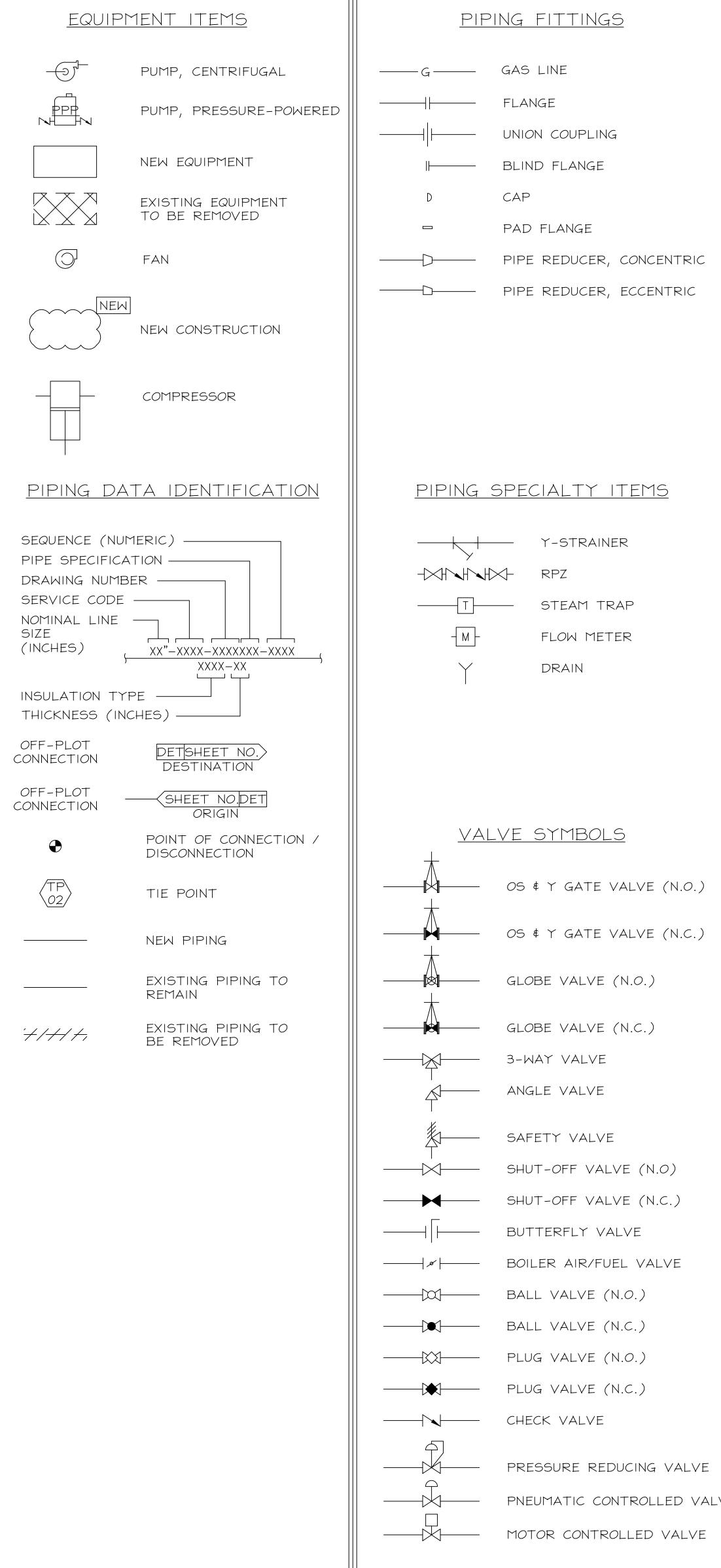
OF (63) SHEETS

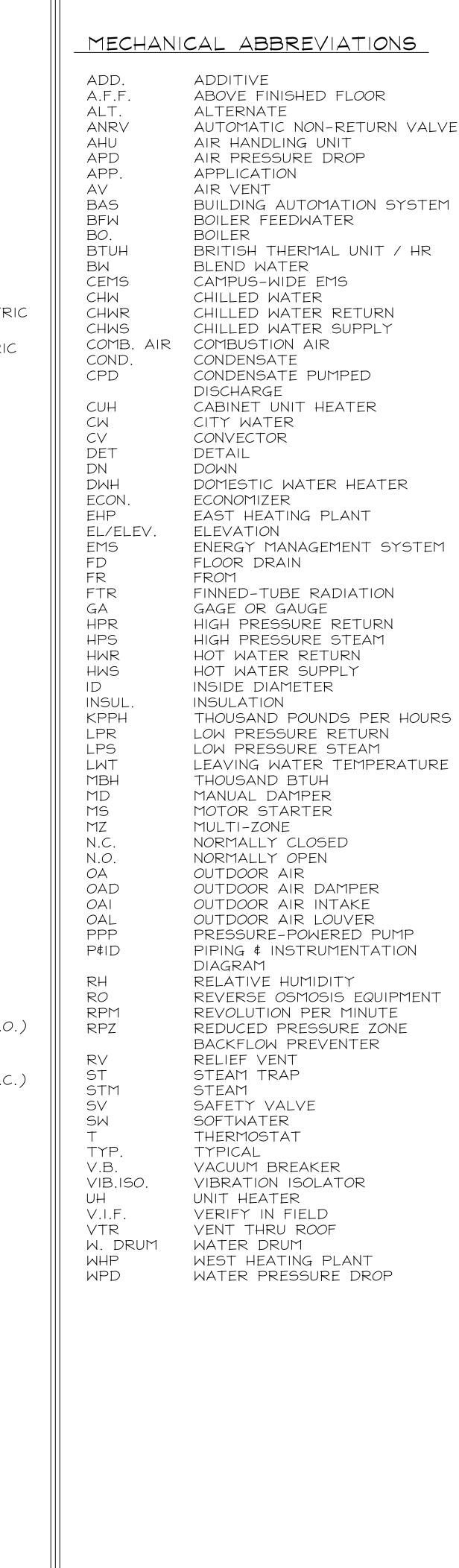
GENERAL INSTRUMENT SYMBOLS

LOCATION/ACCESSIBILITY	DISCRETE INSTRUMENTS	SHARED DISPLAY AND CONTROL (DCS)	PLC	DISCRETE HARDWARE INTERLOCK
FIELD MOUNTED 1. FIELD OR LOCALLY MOUNTED. 2. ACCESSIBLE TO AN OPERATOR AT DEVICE.				
PRIMARY LOCATION NORMALLY ACCESSIBLE TO AN OPERATOR 1. CENTRAL OR MAIN CONTROL ROOM. 2. FRONT OF MAIN PANEL OR CONSOLE MOUNTED. 3. VISIBLE ON VIDEO DISPLAY. 4. ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.				
PRIMARY LOCATION NORMALLY INACCESSIBLE TO AN OPERATOR 1. CENTRAL OR MAIN CONTROL ROOM. 2. REAR OF PANEL OR CABINET MOUNTED. 3. NOT VISIBLE ON VIDEO DISPLAY. 4. NOT NORMALLY ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.				
AUXILIARY LOCATION NORMALLY ACCESSIBLE TO AN OPERATOR 1. SECONDARY OR LOCAL CONTROL ROOM. 2. FIELD OR LOCAL CONTROL PANEL. 3. FRONT OF SECONDARY OR LOCAL PANEL MOUNTED. 4. VISIBLE ON VIDEO DISPLAY. 5. ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.				
AUXILIARY LOCATION NORMALLY INACCESSIBLE TO AN OPERATOR 1. SECONDARY OR LOCAL CONTROL ROOM. 2. FIELD OR LOCAL CONTROL PANEL. 3. REAR OF SECONDARY OR LOCAL PANEL OR CABINET MOUNTED. 4. NOT VISIBLE ON VIDEO DISPLAY. 5. NOT NORMALLY ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.				

INSTRUMENT IDENTIFICATION LETTERS

	FIRST LETTER		SUCCE	EDING LETTERS	
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
А	ANALYSIS		ALARM		
В	BURNER, FLAME, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
С	USER'S CHOICE (TYPICALLY CONDUCTIVITY - ELECTRICAL)			CONTROL	CLOSED
D	USER'S CHOICE (TYPICALLY DENSITY OR SPECIFIC GRAVITY)	DIFFERENTIAL			DIVERT
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE OR GAUGING (DIMENSIONAL)		GLASS, VIEWING DEVICE		
Н	HAND				HIGH
	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW, LOCAL
M	USER'S CHOICE (TYPICALLY MOISTURE OR HUMIDITY)	MOMENTARY			MIDDLE, INTERMEDIAT
Ν	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
0	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
Р	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY OR HEAT DUTY	INTEGRATE , TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
\top	TEMPERATURE			TRANSMIT	THROUGH
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
М	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR UNCLASSIFIED FINAL CONTROL ELEMENT	If





DRAWING LIST ADDITIVE SCHEMATIC DIAGRAM ABBREVIATIONS & SYMBOLS ABOVE FINISHED FLOOR WHP GAS PIPING SCHEMATIC DIAGRAM ALTERNATE WHP GAS PIPING SCHEMATIC DIAGRAM AUTOMATIC NON-RETURN VALVE WHP HP STEAM/CONDENSATE PIPING SCHEMATIC DIAGRAM AIR HANDLING UNIT WHP HP STEAM/CONDENSATE PIPING SCHEMATIC DIAGRAM AIR PRESSURE DROP WHP LP STEAM/CONDENSATE PIPING SCHEMATIC DIAGRAM APPLICATION WHP #1 BO. FEEDWATER PIPING SCHEMATIC DIAGRAM AIR VENT WHP #1 BO. FEEDWATER PIPING SCHEMATIC DIAGRAM BUILDING AUTOMATION SYSTEM WHP WATER TREATMENT PIPING SCHEMATIC DIAGRAM BOILER FEEDWATER WHP WATER TREATMENT PIPING SCHEMATIC DIAGRAM EHP GAS PIPING SCHEMATIC DIAGRAM BRITISH THERMAL UNIT / HR EHP HP STEAM/CONDENSATE PIPING SCHEMATIC DIAGRAM BLEND WATER EHP HP STEAM/CONDENSATE PIPING SCHEMATIC DIAGRAM CAMPUS-WIDE EMS EHP LP STEAM/CONDENSATE PIPING SCHEMATIC DIAGRAM CHILLED WATER EHP BO. FEEDWATER PIPING SCHEMATIC DIAGRAM CHILLED WATER RETURN EHP BO. FEEDWATER PIPING SCHEMATIC DIAGRAM CHILLED WATER SUPPLY EHP SOFTWATER PIPING SCHEMATIC DIAGRAM TUNNEL PIPING SCHEMATIC DIAGRAM (FROM WHP) CONDENSATE TUNNEL PIPING SCHEMATIC DIAGRAM (FROM EHP) CONDENSATE PUMPED H-13 WHP #2 FEEDWATER PIPING SCHEMATIC DIAGRAM DISCHARGE CABINET UNIT HEATER WHP CHEMICAL ADDITIVES SCHEMATIC DIAGRAM CITY WATER WHP BOILERS 5 \$ 6 SCHEMATIC DIAGRAM CONVECTOR WHP INSTRUMENTATION AIR DIAGRAM WHP PFD AND MATERIAL BALANCE NORTH WHP PIPE ROUTING SCHEMATIC DOMESTIC WATER HEATER SOUTH WHP PIPE ROUTING SCHEMATIC ECONOMIZER EHP PIPE ROUTING SCHEMATIC EAST HEATING PLANT SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES ELEVATION ENERGY MANAGEMENT SYSTEM H-22 FIRST FLOOR HVAC PIPING PLAN H-23 SCHEDULES FLOOR DRAIN FINNED-TUBE RADIATION GAGE OR GAUGE HIGH PRESSURE RETURN HIGH PRESSURE STEAM HOT WATER RETURN HOT WATER SUPPLY

REVISIONS				PREPAREI
NO.	DATE	REMARKS	FΤ	FT
D	03/09/2021	REVISED BRIDGING DOCUMENTS	TRACED	APPROVEI
С	01/10/2020	FINAL BRIDGING DOCUMENTS		1
В	11/08/2019	ISSUED FOR FINAL REVIEW/APPROVAL		APPROVE
Α	09/13/2019	ISSUED FOR REVIEW	GD	PM

DESIGN-BUILD ENTITY SHALL OBTAIN AND VERIFY ALL AS-BUILT CONDITIONS AND DIMENSIONS AT PROJECT SITE AND BE FULLY RESPONSIBLE FOR THE SAME. BRIDGING DOCUMENTS, DRAWINGS AND NARRATIVES ARE PROVIDED FOR DESIGN INTENT. THE DESIGN-BUILD ENTITY IS RESPONSIBLE FOR THE COMPLETE DESIGN OF A PROJECT THAT ADHERES TO ALL, SCOPE OF WORK REQUIREMENTS, CODES, STATE AND FEDERAL REGULATIONS AND GUIDELINES





State of Illinois JB PRITZKER, GOVERNOR Illinois Capital Development Board

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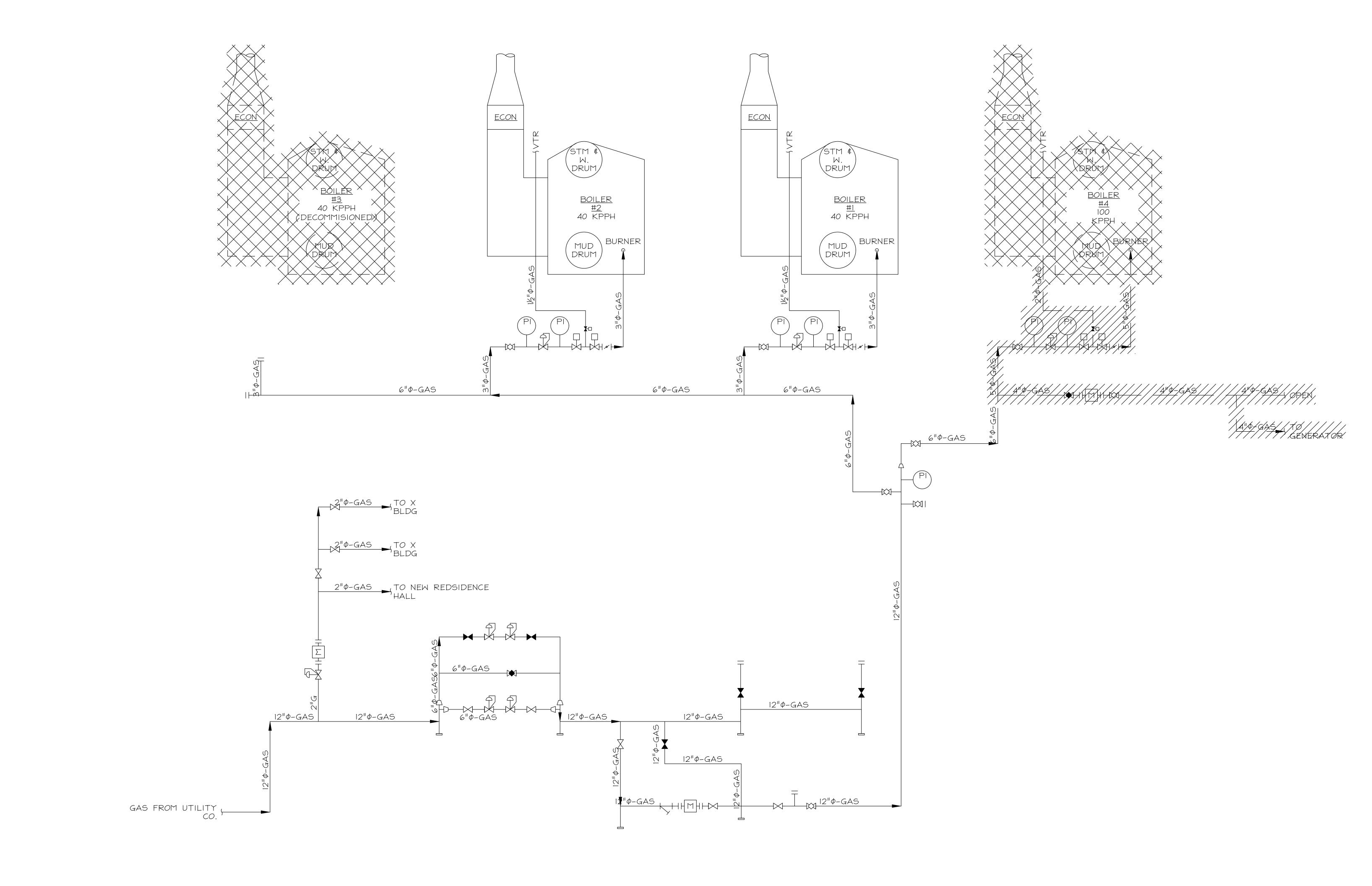
SCHEM. DIAG. ABBREVIATIONS & SYMBOLS

CAMPUS BOILER REPLACEMENTS

NORTHERN ILLINOIS UNIVERSITY

DEKALB, DEKALB COUNTY, ILLINOIS

H-0



1 WEST HEATING PLANT GAS PIPING SCHEMATIC DIAGRAM HD-1 SCALE: NONE

R	REVISIONS			PREPARED	
NO.	DATE	REMARKS	FΤ	FT	
D	03/09/2021	REVISED BRIDGING DOCUMENTS	TRACED	APPROVED	
C	01/10/2020	FINAL BRIDGING DOCUMENTS			
В	11/08/2019	ISSUED FOR FINAL REVIEW/APPROVAL	CHECKED	APPROVED	
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REVISED BRIDGING DOCUMENTS - NOT FOR CONSTRUCTION

WHP GAS PIPING SCHEMATIC DIAGRAM

CAMPUS BOILER REPLACEMENTS

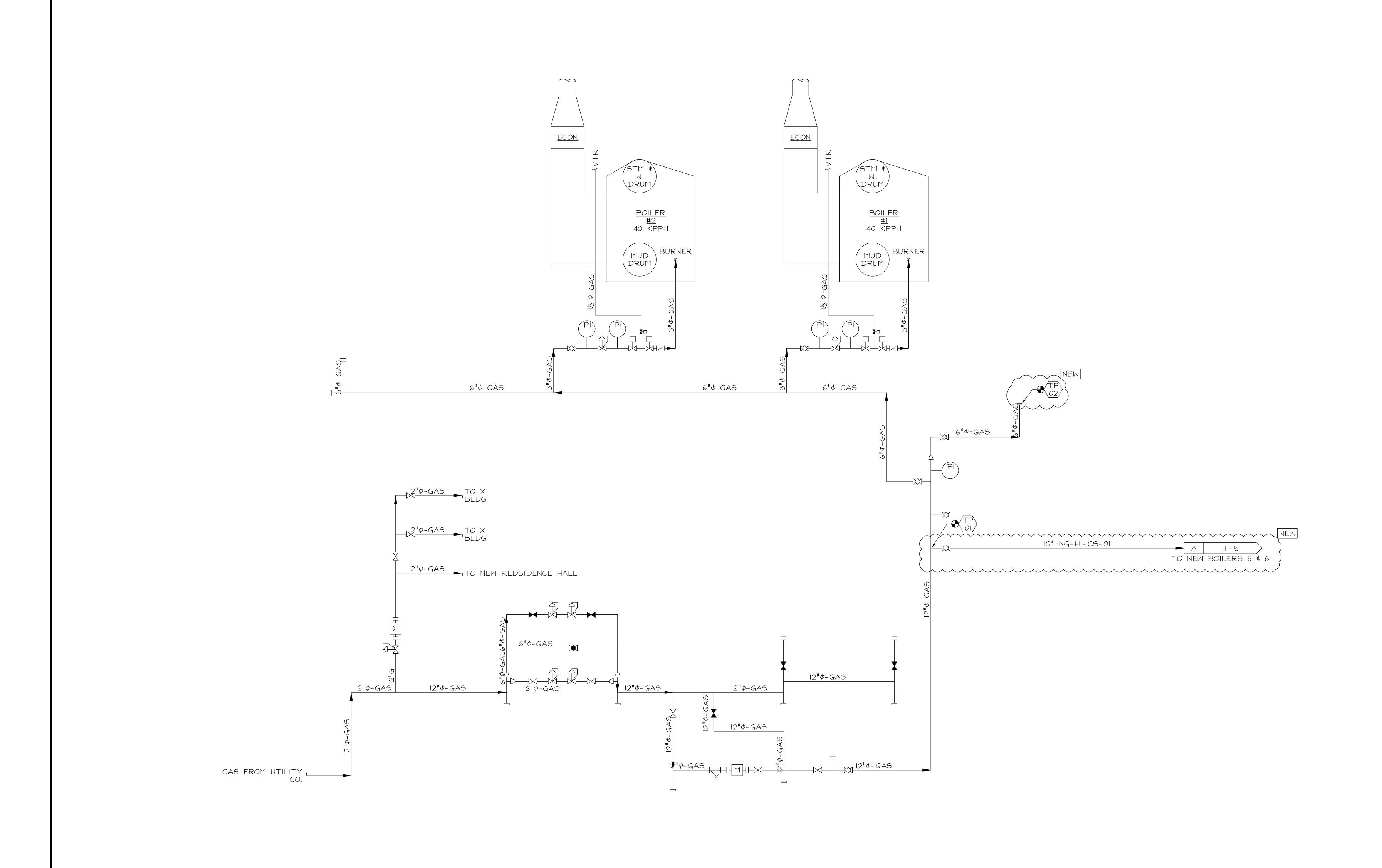
NORTHERN ILLINOIS UNIVERSITY

DEKALB, DEKALB COUNTY, ILLINOIS

PROJECT NO.
822-010-127

SHEET NO.

HD-1



1 WEST HEATING PLANT GAS PIPING SCHEMATIC DIAGRAM
H-1 SCALE: NONE

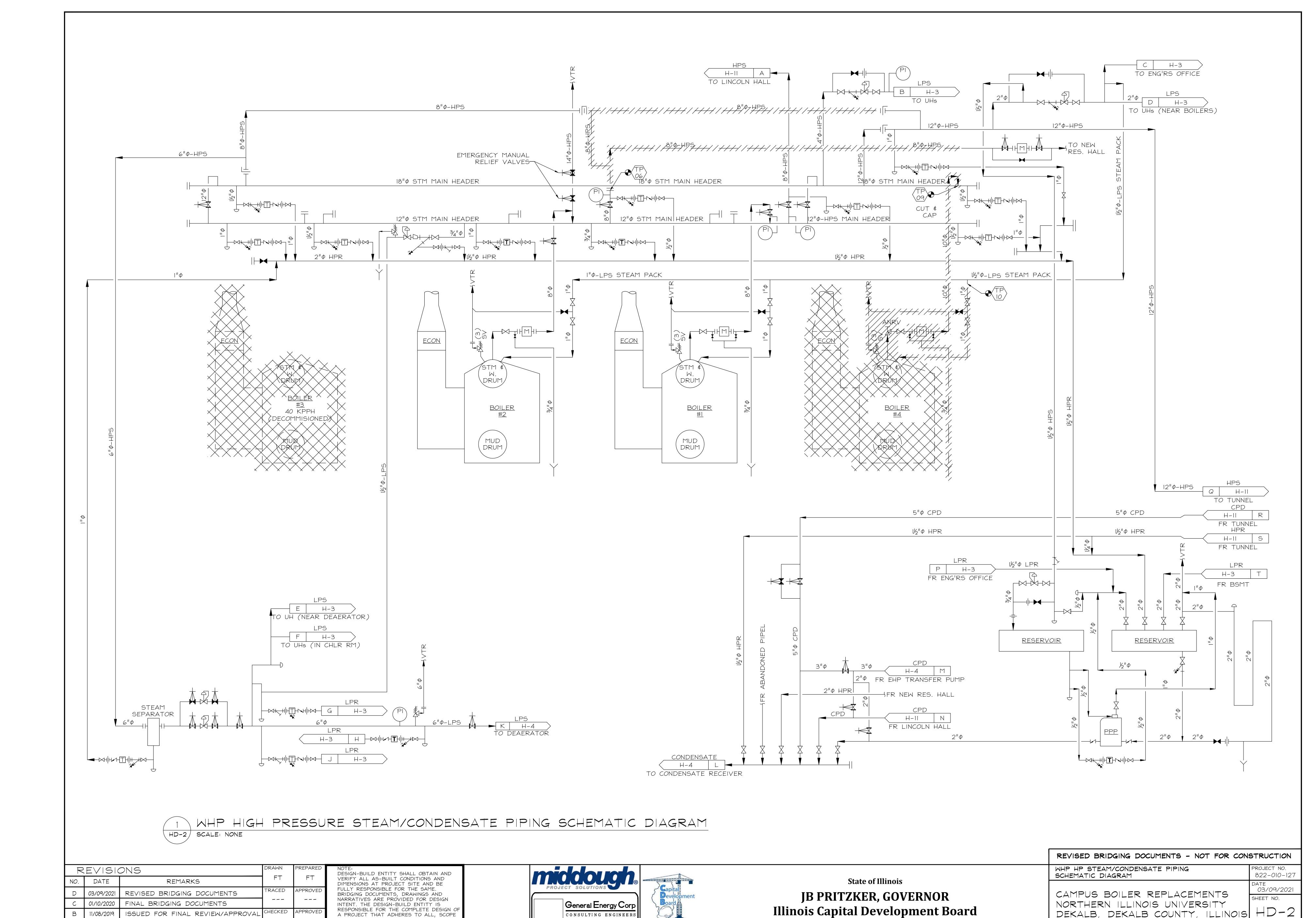
R	REVISIONS			PREPARED	
NO.	DATE	REMARKS	FΤ	FΤ	
D	03/09/2021	REVISED BRIDGING DOCUMENTS	TRACED	APPROVED	
C	01/10/2020	FINAL BRIDGING DOCUMENTS			
Ш	11/08/2019	ISSUED FOR FINAL REVIEW/APPROVAL	CHECKED	APPROVED	
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DESIGN-BUILD ENTITY SHALL OBTAIN AND VERIFY ALL AS-BUILT CONDITIONS AND DIMENSIONS AT PROJECT SITE AND BE FULLY RESPONSIBLE FOR THE SAME. BRIDGING DOCUMENTS, DRAWINGS AND NARRATIVES ARE PROVIDED FOR DESIGN INTENT. THE DESIGN-BUILD ENTITY IS RESPONSIBLE FOR THE COMPLETE DESIGN OF A PROJECT THAT ADHERES TO ALL, SCOPE OF WORK REQUIREMENTS, CODES, STATE AND FEDERAL REGULATIONS AND GUIDELINES.



State of Illinois JB PRITZKER, GOVERNOR Illinois Capital Development Board

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WHP GAS PIPING SCHEMATIC DIAGRAM	PROJECT NO. 822-010-127
CAMPUS BOILER REPLACEMENTS	DATE 03/09/2021
NORTHERN ILLINOIS UNIVERSITY DEKALB, DEKALB COUNTY, ILLINOIS	SHEET NO.



CONSULTING ENGINEERS
25 NORTHWEST PT., ELK GROVE, IL. 60007

CHECKED

A PROJECT THAT ADHERES TO ALL, SCOPE

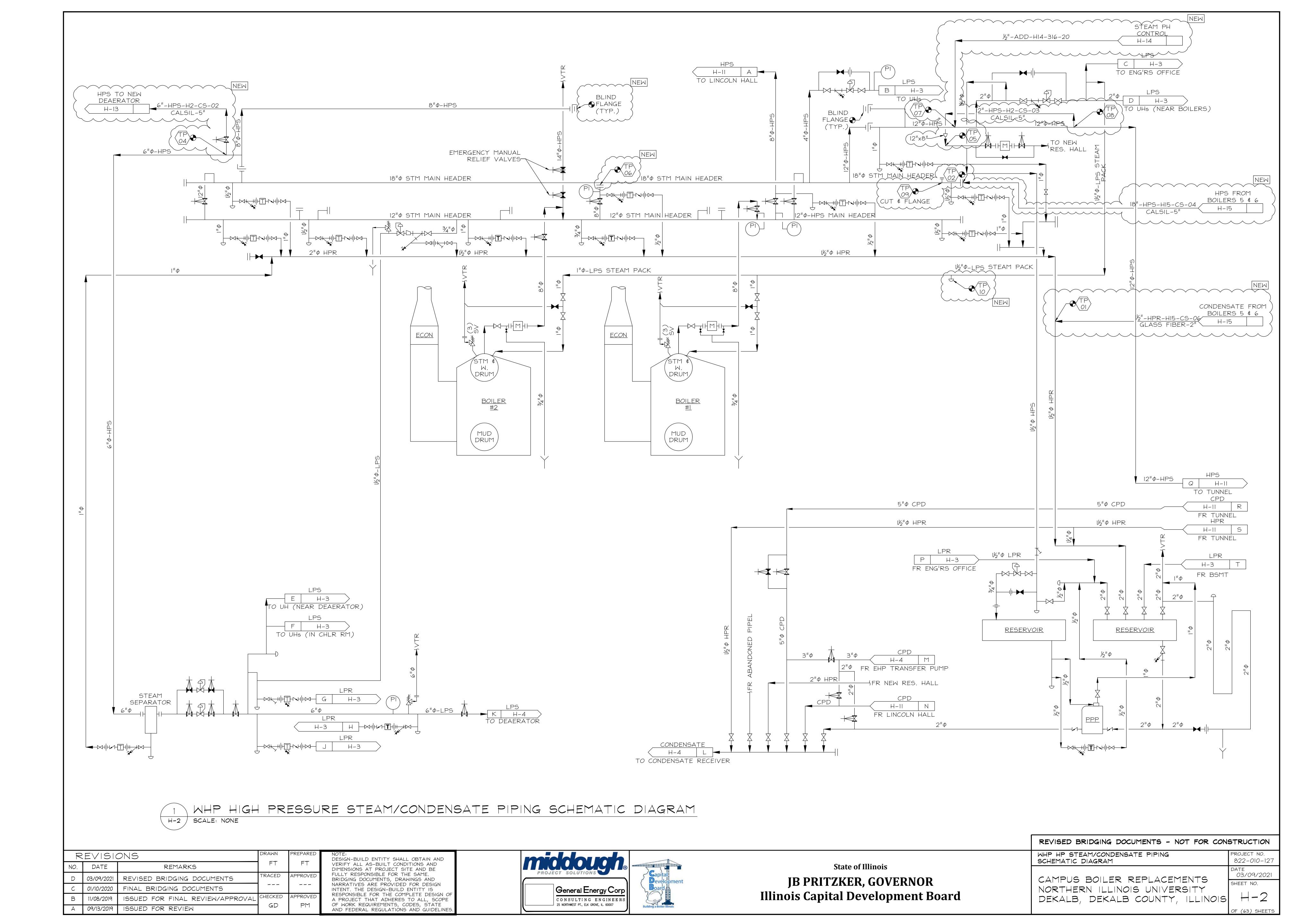
AND FEDERAL REGULATIONS AND GUIDELINES

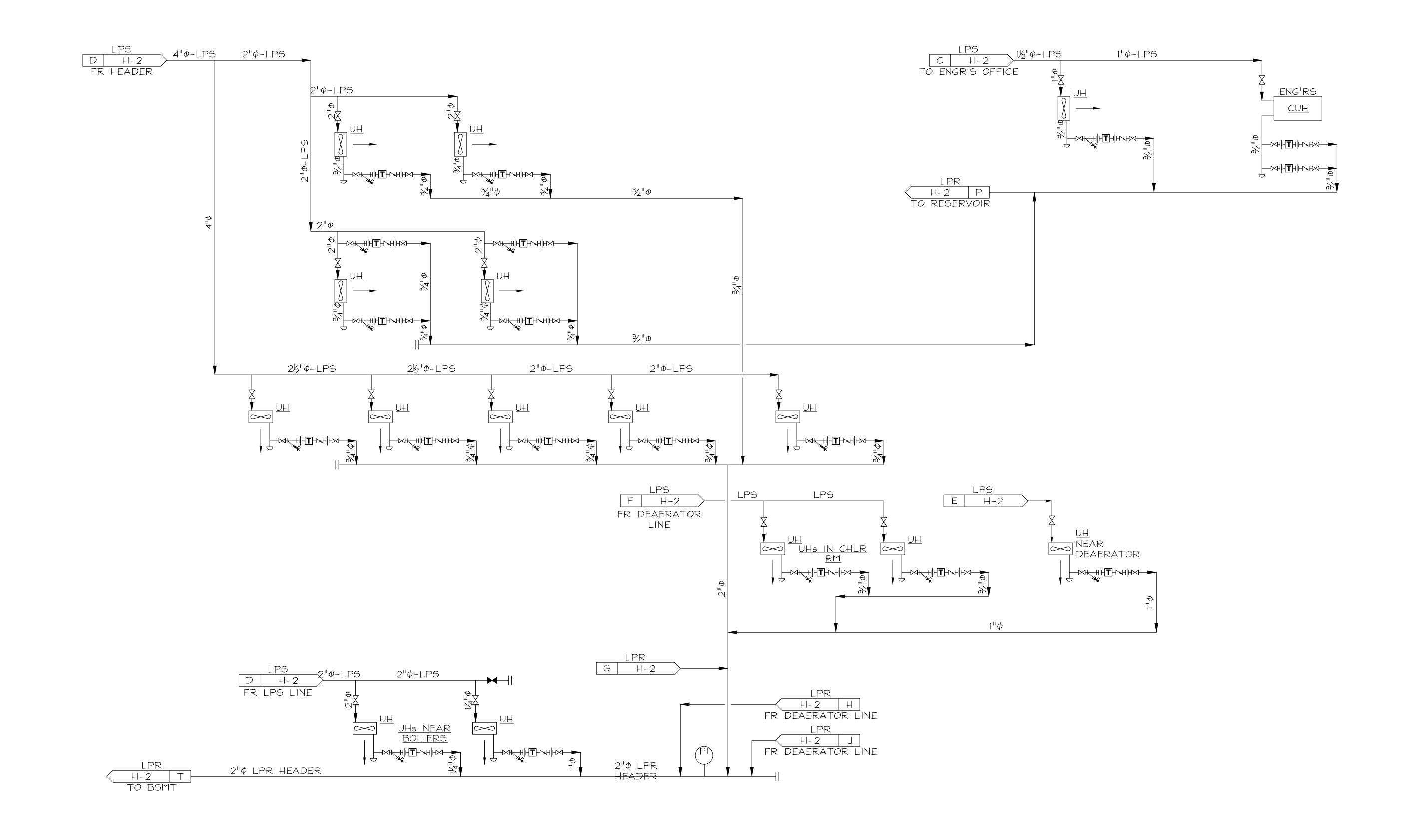
OF WORK REQUIREMENTS, CODES, STATE

ISSUED FOR FINAL REVIEW/APPROVA

ISSUED FOR REVIEW

DEKALB, DEKALB COUNTY, ILLINOIS

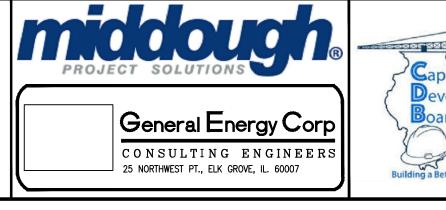




1 WHP LOW PRESSURE STEAM/CONDENSATE PIPING SCHEMATIC DIAGRAM H-3 SCALE: NONE

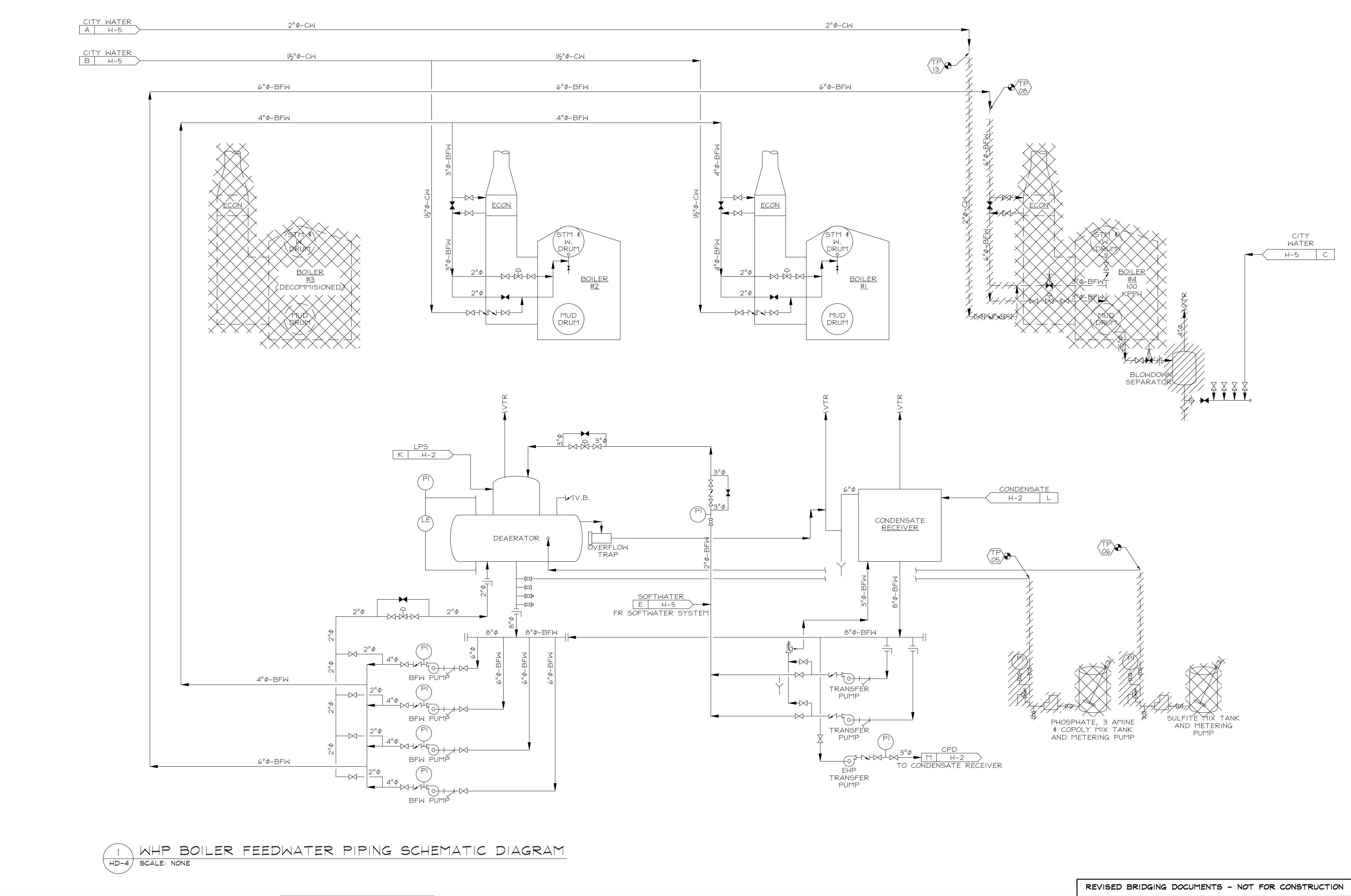
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NO.	DATE	REMARKS	FΤ	FΤ	
О	03/09/2021	REVISED BRIDGING DOCUMENTS	TRACED	APPROVED	1
C	01/10/2020	FINAL BRIDGING DOCUMENTS	1		
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А	09/13/2019	ISSUED FOR REVIEW	D	PM	

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State of Illinois JB PRITZKER, GOVERNOR Illinois Capital Development Board

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	WHP LP STEAM/CONDENSATE PIPING SCHEMATIC DIAG.	PROJECT NO. 822-010-127
CAMPUS BOILER	CAMBUC BOULED DEDUACEMENTO	DATE 03/09/2021
	NORTHERN ILLINOIS UNIVERSITY	SHEET NO.
	DEKALB, DEKALB COUNTY, ILLINOIS	4-3
		OF (63) SUFFTS



REVISIONS

NO. DATE REMARKS

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C 01/10/2020 FINAL BRIDGING DOCUMENTS

B 11/08/2019 ISSUED FOR FINAL REVIEW/APPROVAL APPROVED

A 09/13/2019 ISSUED FOR REVIEW

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GD PM

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State of Illinois JB PRITZKER, GOVERNOR Illinois Capital Development Board

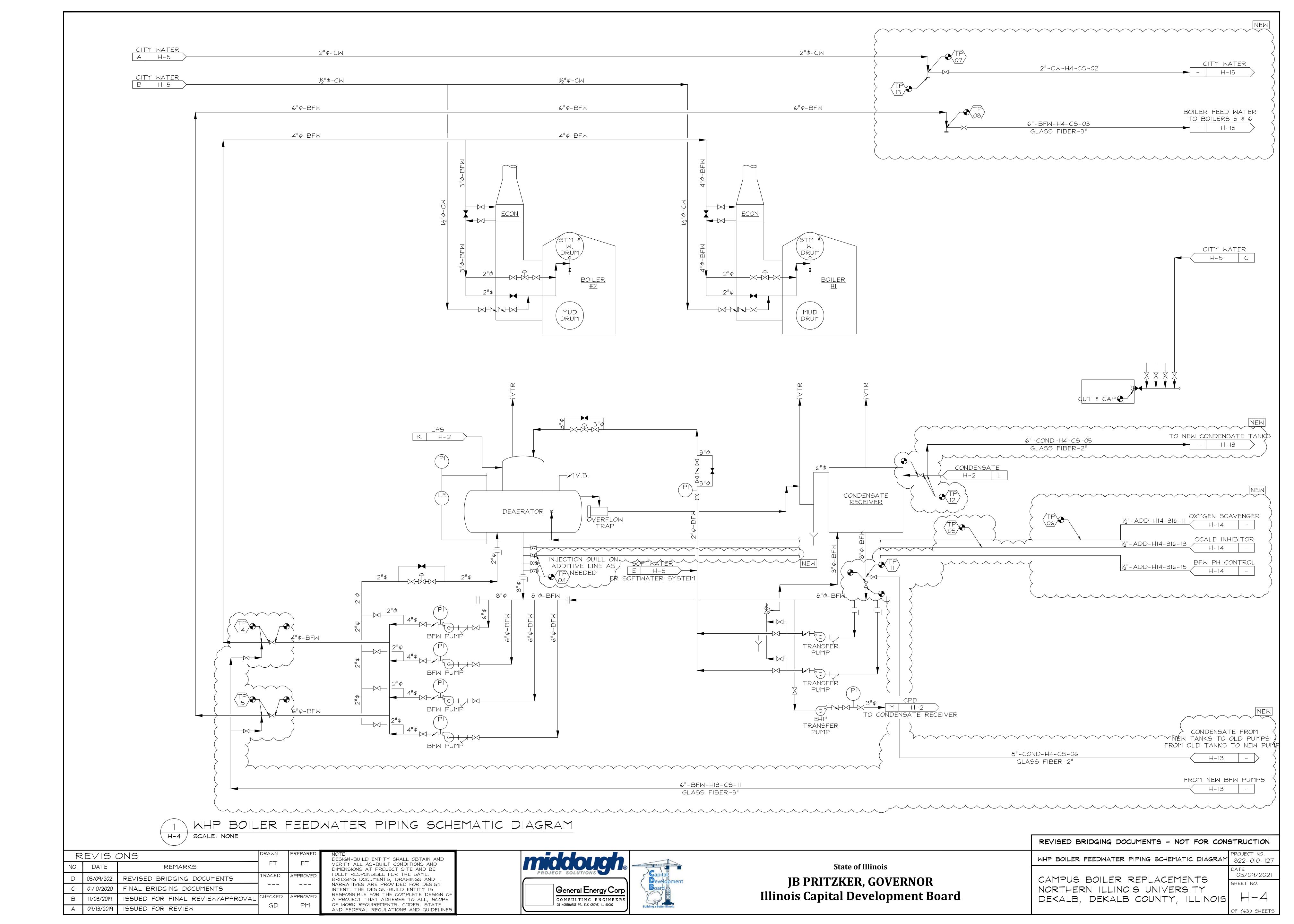
WHP BOILER FEEDWATER PIPING SCHEMATIC DIAGRAM

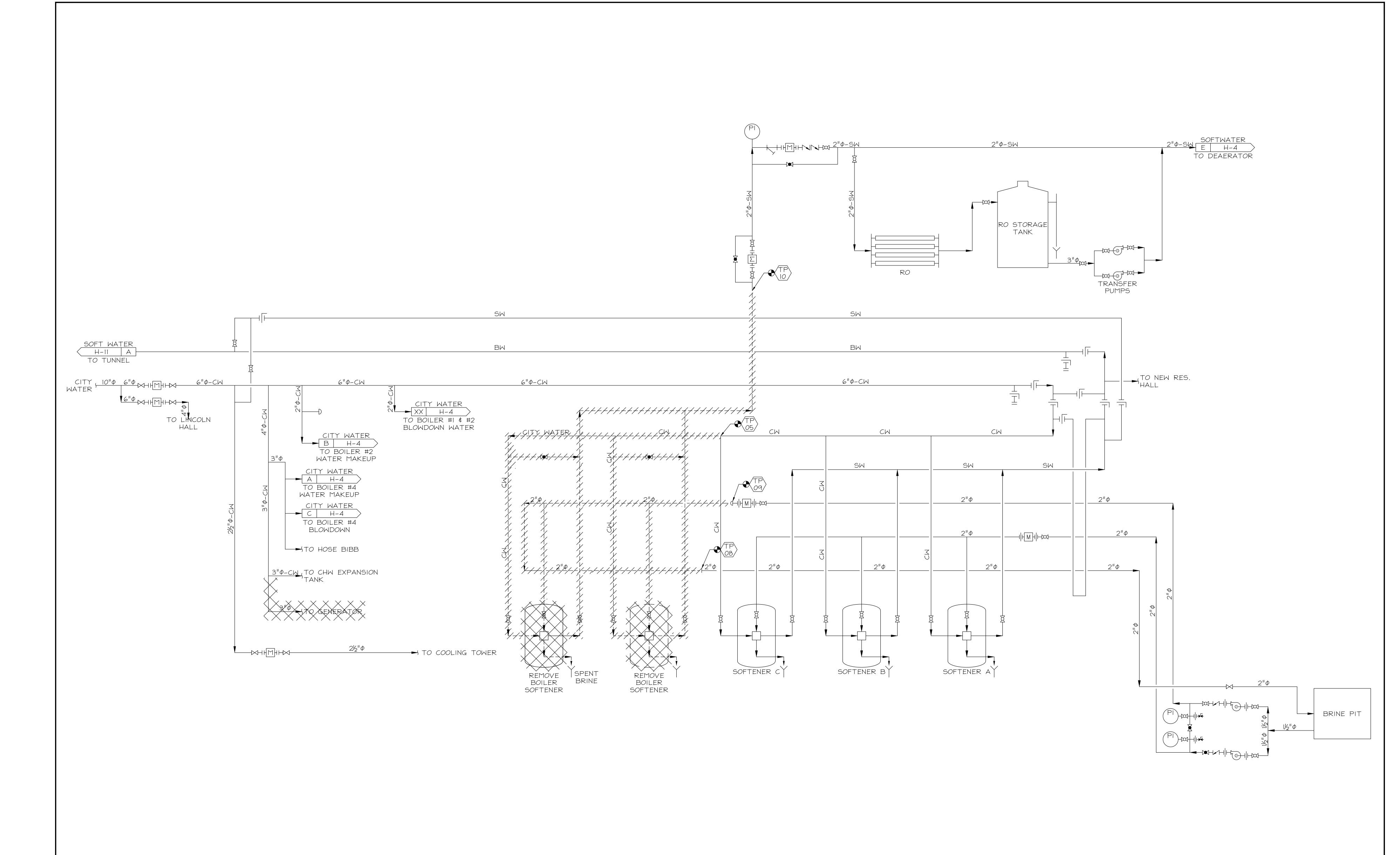
CAMPUS BOILER REPLACEMENTS

NORTHERN ILLINOIS UNIVERSITY

DEKALB, DEKALB COUNTY, ILLINOIS

OF (63) SHEETS





1 WHP WATER TREATMENT PIPING SCHEMATIC DIAGRAM HD-5 SCALE: NONE

R	REVISIONS			PREPARED	1
NO.	DATE	REMARKS	FΤ	FΤ	I
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State of Illinois JB PRITZKER, GOVERNOR Illinois Capital Development Board

REVISED BRIDGING DOCUMENTS - NOT FOR CONSTRUCTION

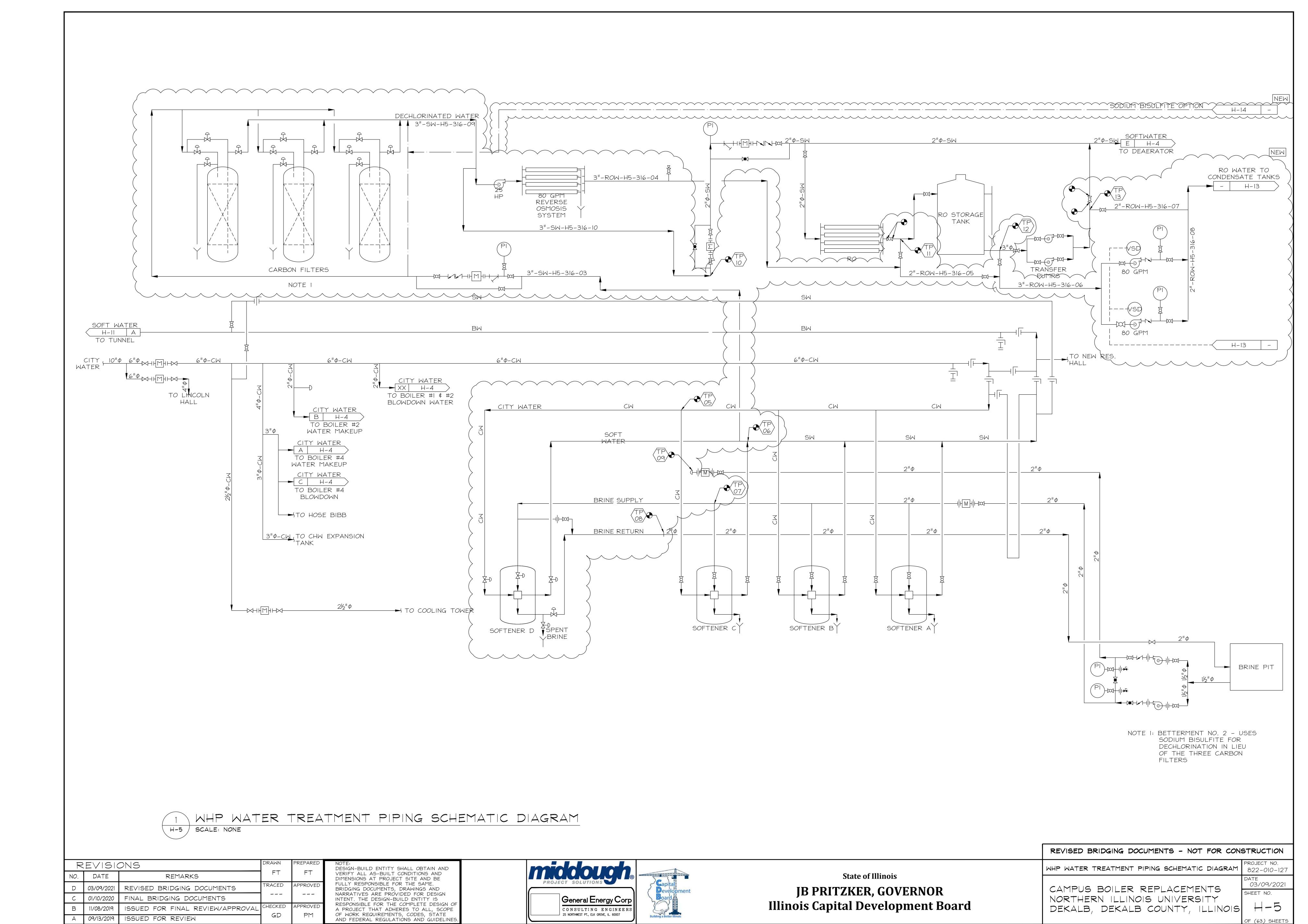
WHP WATER TREATMENT PIPING SCHEMATIC DIAGRAM

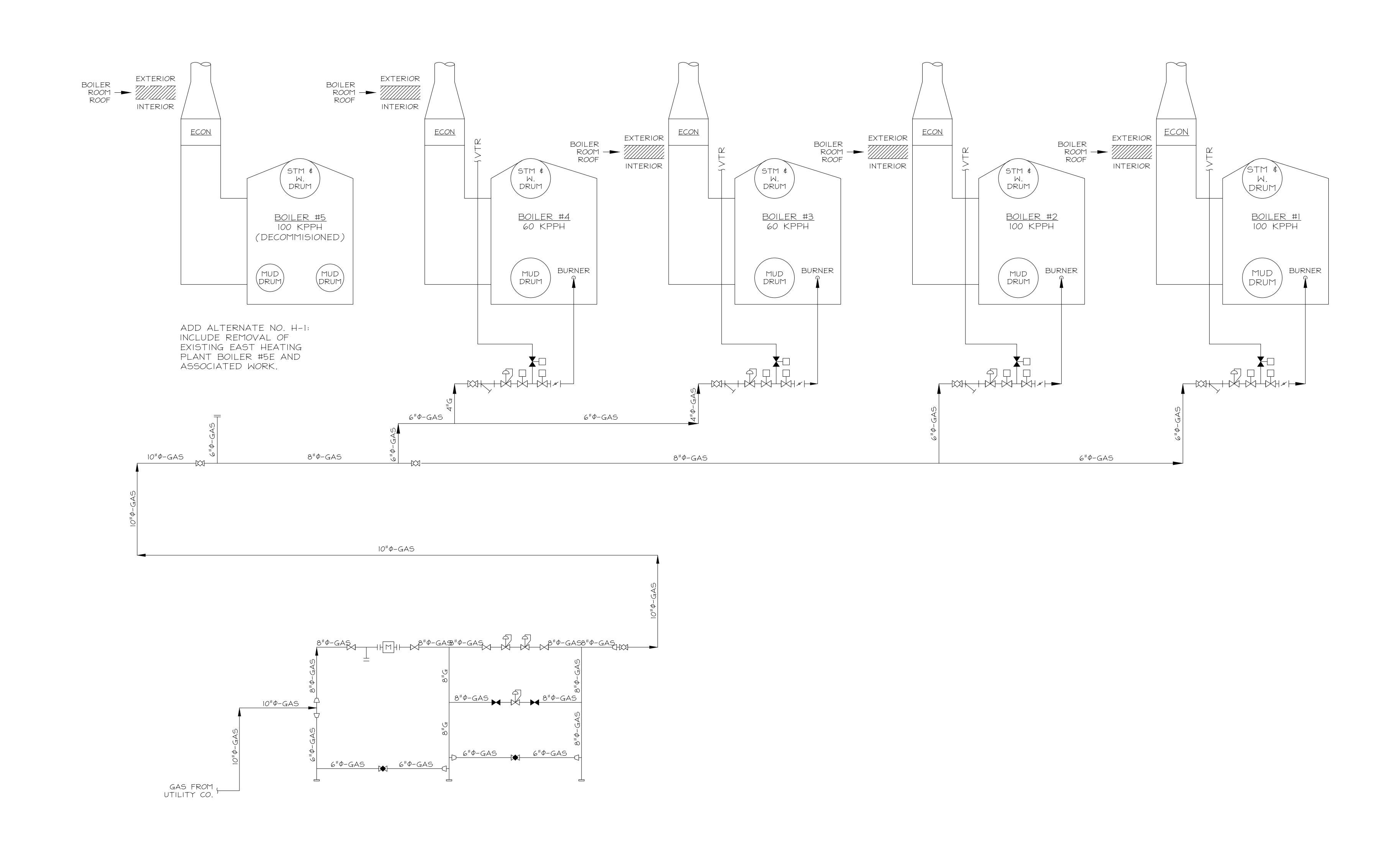
CAMPUS BOILER REPLACEMENTS

NORTHERN ILLINOIS UNIVERSITY

DEKALB, DEKALB COUNTY, ILLINOIS

OF (63) SHEETS





1 EAST HEATING PLANT GAS PIPING SCHEMATIC DIAGRAM HD-6 SCALE: NONE

R	REVISIONS			PREPARED	
NO.	DATE	REMARKS	FΤ	FT	
D	03/09/2021	REVISED BRIDGING DOCUMENTS	TRACED	APPROVED	
C	01/10/2020	FINAL BRIDGING DOCUMENTS			
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JB PRITZKER, GOVERNOR Illinois Capital Development Board

REVISED BRIDGING DOCUMENTS - NOT FOR CONSTRUCTION

EHP GAS PIPING SCHEMATIC DIAGRAM

CAMPUS BOILER REPLACEMENTS

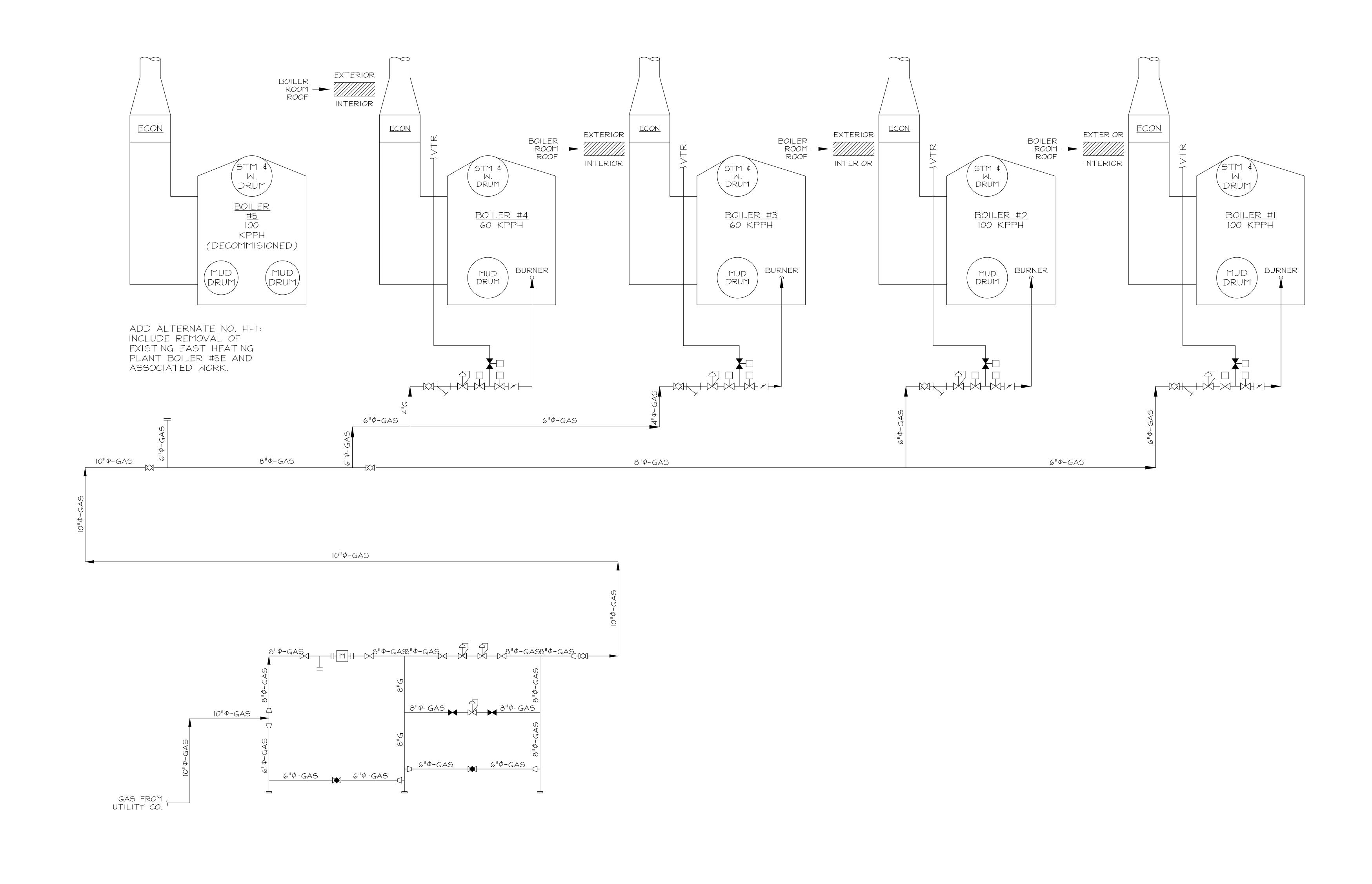
NORTHERN ILLINOIS UNIVERSITY

DEKALB, DEKALB COUNTY, ILLINOIS

PROJECT NO.
822-010-127

SHEET NO.

HD-6



1 EAST HEATING PLANT GAS PIPING SCHEMATIC DIAGRAM H-6 SCALE: NONE

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State of Illinois JB PRITZKER, GOVERNOR Illinois Capital Development Board

REVISED BRIDGING DOCUMENTS - NOT FOR CONSTRUCTION

EHP GAS PIPING SCHEMATIC DIAGRAM

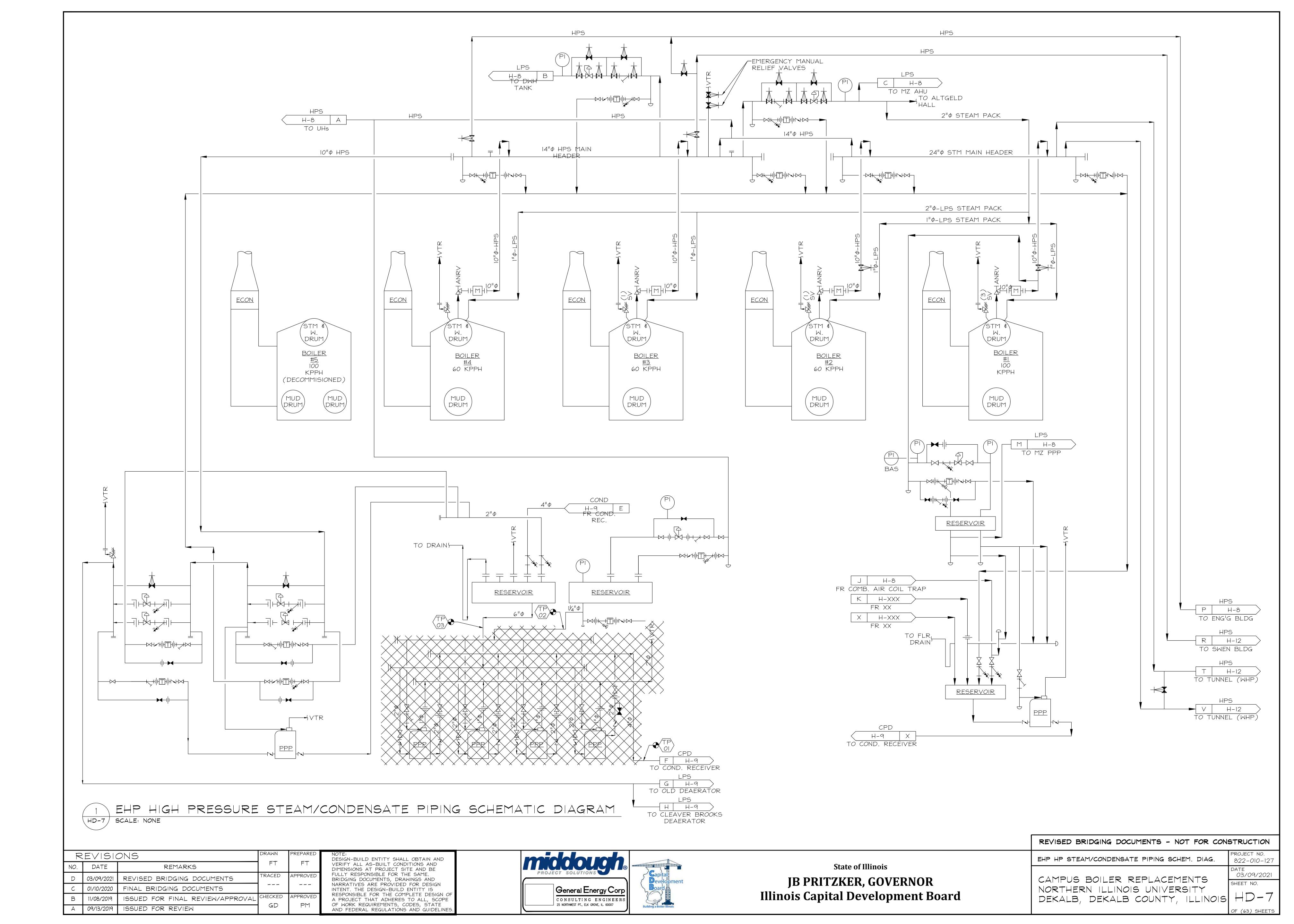
CAMPUS BOILER REPLACEMENTS

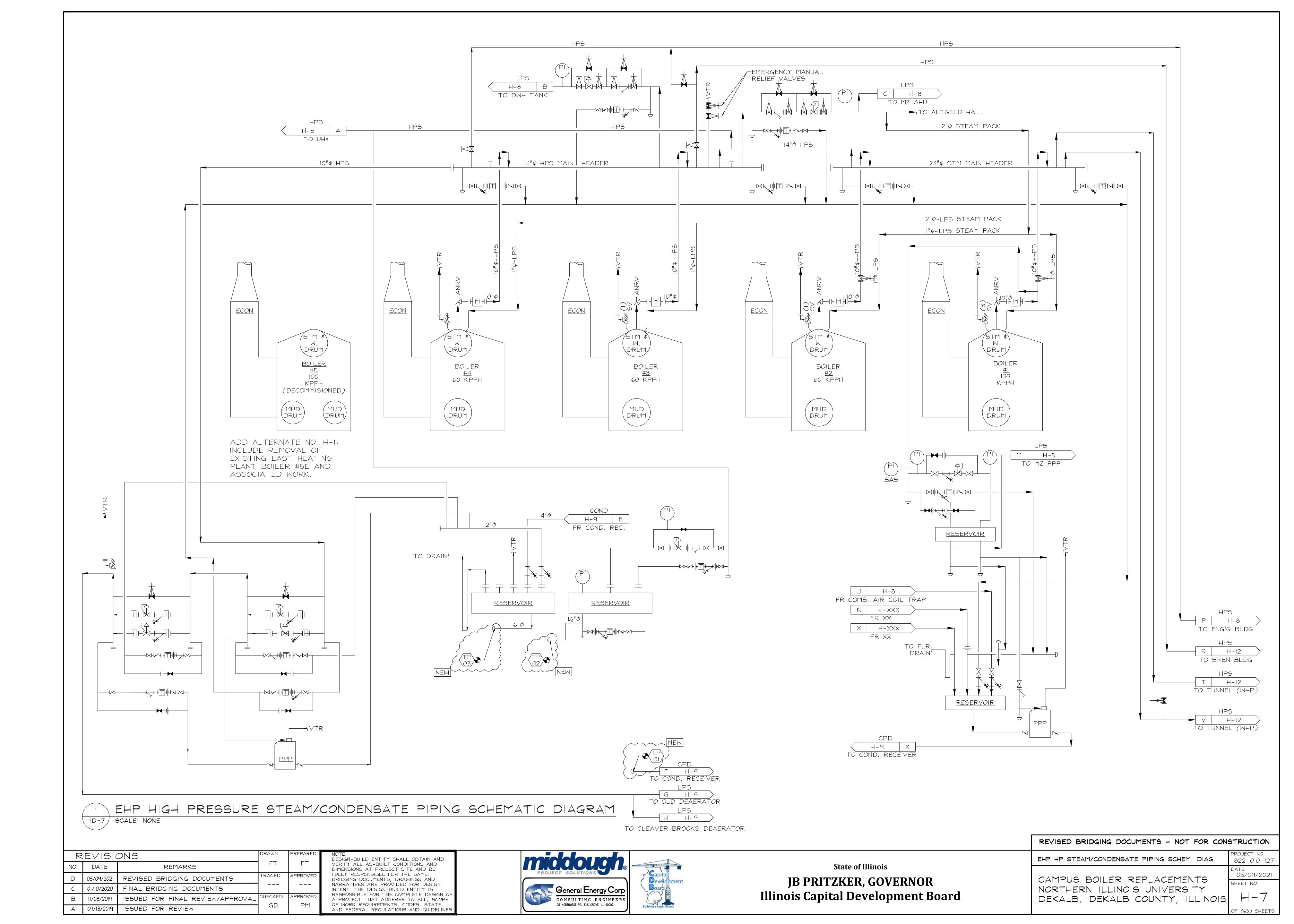
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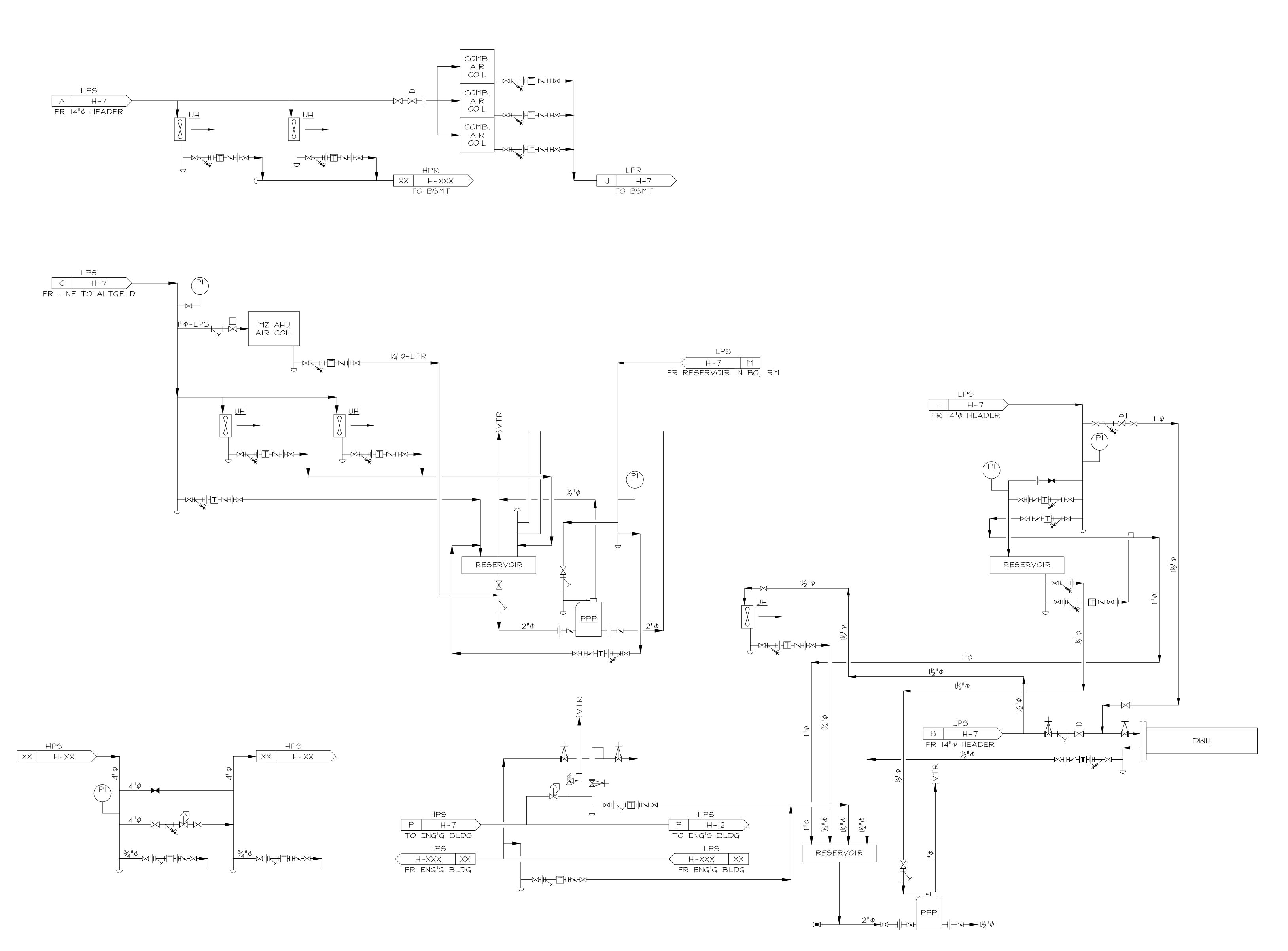
DEKALB, DEKALB COUNTY, ILLINOIS

PROJECT NO. 822-010-127

SHEET NO. H-6







1 EHP LOW PRESSURE STEAM/CONDENSATE PIPING SCHEMATIC DIAGRAM H-8 SCALE: NONE

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NO.	DATE	REMARKS	FΤ	FΤ	VERIF DIMEN
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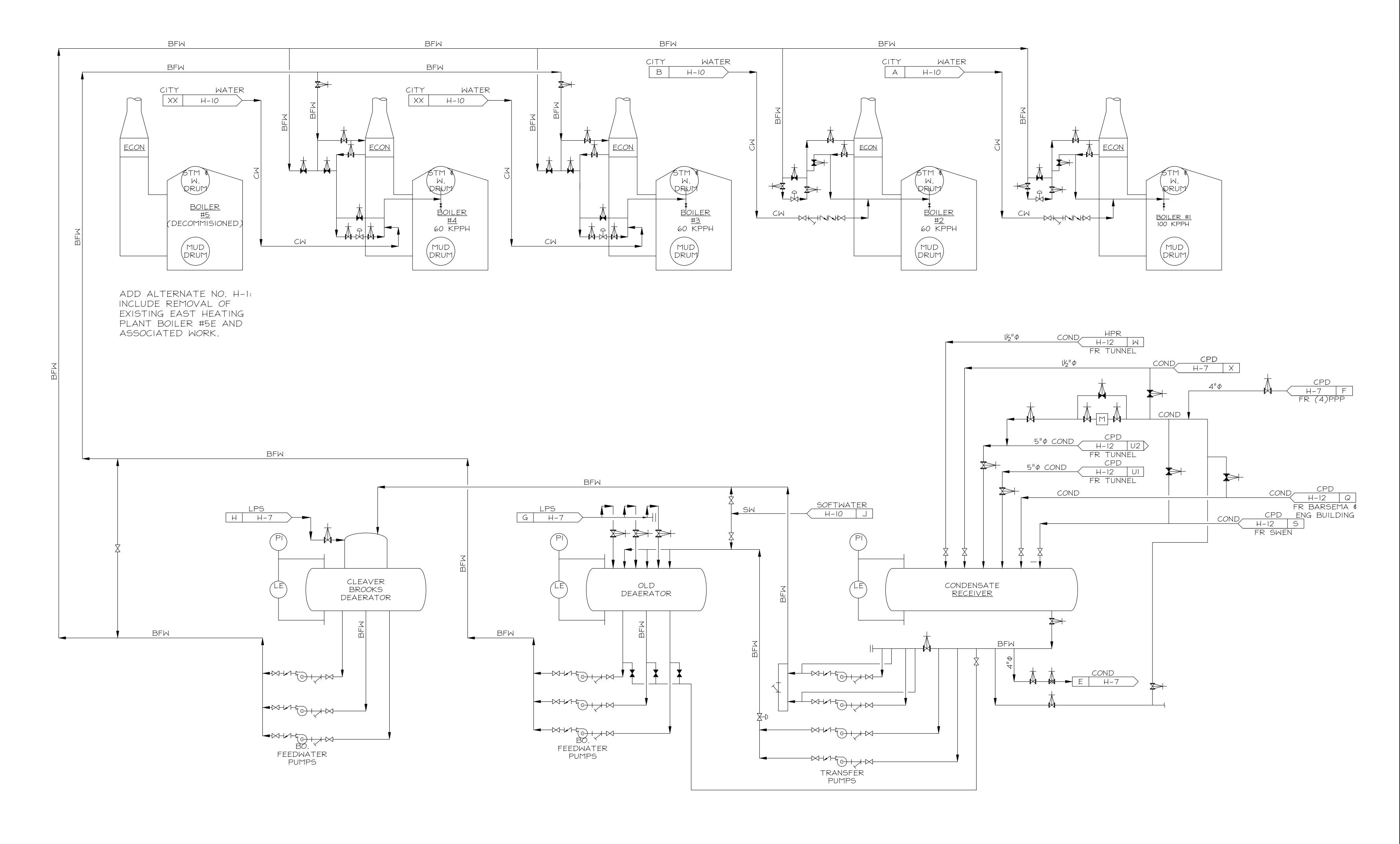
PREPARED

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	REVISED BRIDGING DOCUMENTS - NOT FOR CONS	STRUCTION
	EHP LP STEAM/COND PIPING SCHEMATIC DIAGRAM	PROJECT NO. 822-010-127
	CAMPUS BOILER REPLACEMENTS	DATE 03/09/2021
		SHEET NO.
		H-8
		OF (63) SHEETS



1 EHP BOILER FEEDWATER PIPING SCHEMATIC DIAGRAM HD-9 SCALE: NONE

R	REVISIONS			PREPARED	
NO.	DATE	REMARKS	FΤ	FT	
D	03/09/2021	REVISED BRIDGING DOCUMENTS	TRACED	APPROVED	
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State of Illinois JB PRITZKER, GOVERNOR Illinois Capital Development Board

REVISED BRIDGING DOCUMENTS - NOT FOR CONSTRUCTION

EHP BOILER FEEDWATER PIPING SCHEMATIC DIAGRAM

CAMPUS BOILER REPLACEMENTS

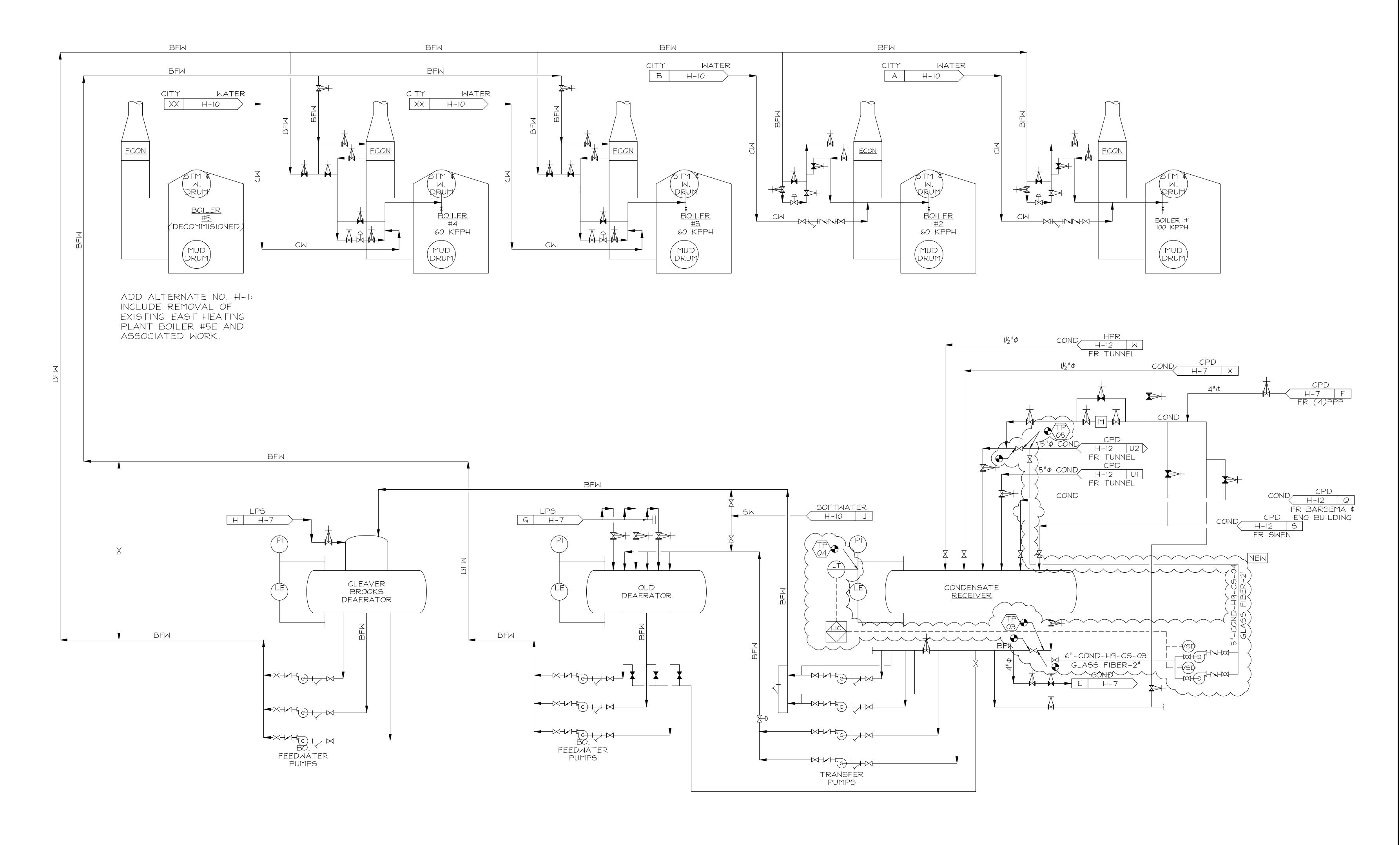
NORTHERN ILLINOIS UNIVERSITY

DEKALB, DEKALB COUNTY, ILLINOIS

PROJECT NO.
822-010-127

SHEET NO.

HD-9



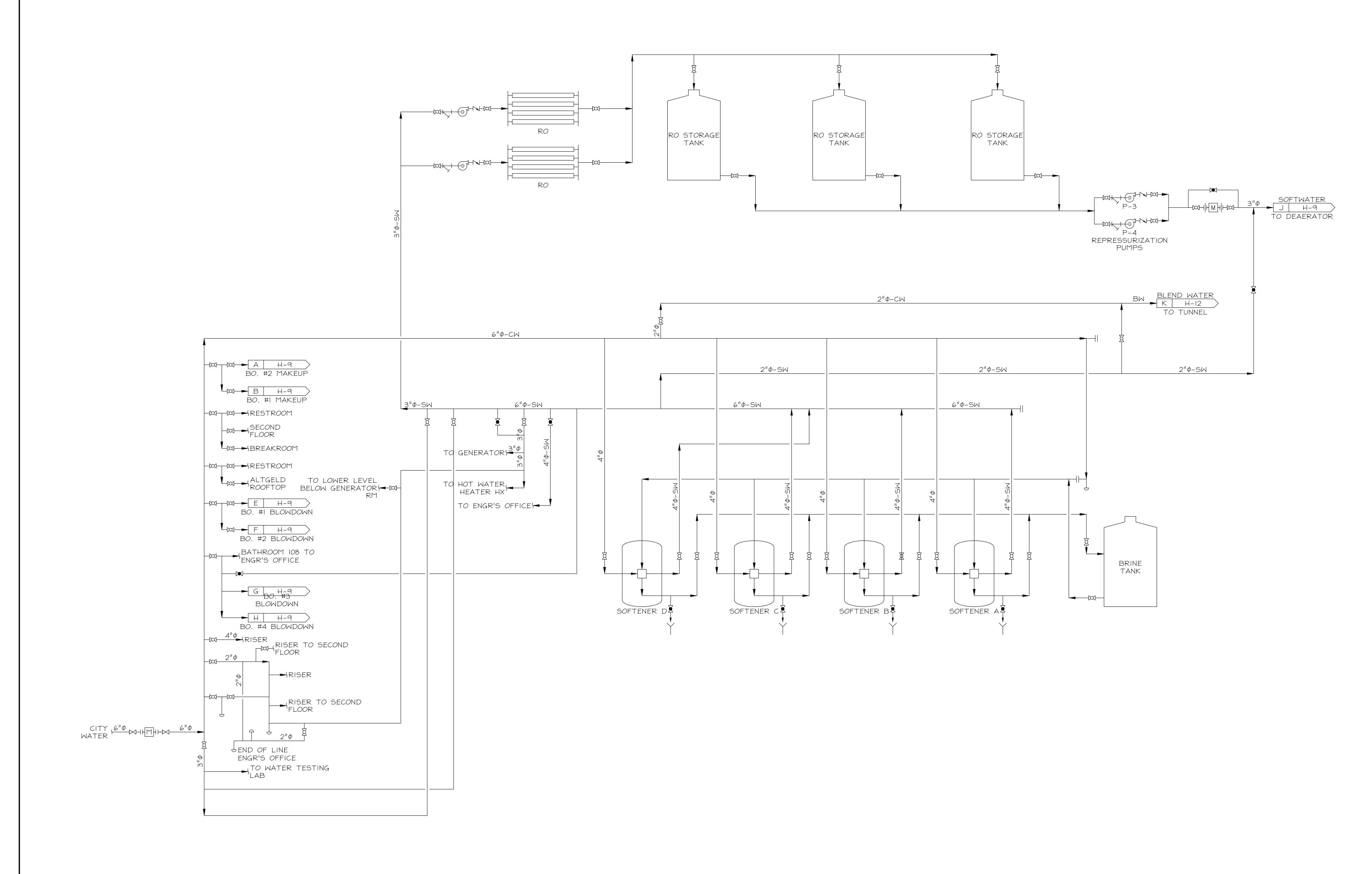
1 EHP BOILER FEEDWATER PIPING SCHEMATIC DIAGRAM H-9 SCALE: NONE

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О	03/09/2021	REVISED BRIDGING DOCUMENTS	TRACED	APPROVED	
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EHP BOILER FEEDWATER PIPING SCHEMATIC DIAGRAM	PROJECT NO. 822-010-127
CAMPUS BOILER REPLACEMENTS	DATE 03/09/2021
NORTHERN ILLINOIS UNIVERSITY	SHEET NO.
DEKALB, DEKALB COUNTY, ILLINOIS	
	OF (63) SHEETS



1 EHP WATER TREATMENT PIPING SCHEMATIC DIAGRAM H-10 SCALE: NONE

R	REVISIONS			PREPARED
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State of Illinois JB PRITZKER, GOVERNOR Illinois Capital Development Board

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EHP WATER TREATMENT PIPING SCHEMATIC DIAGRAM

CAMPUS BOILER REPLACEMENTS

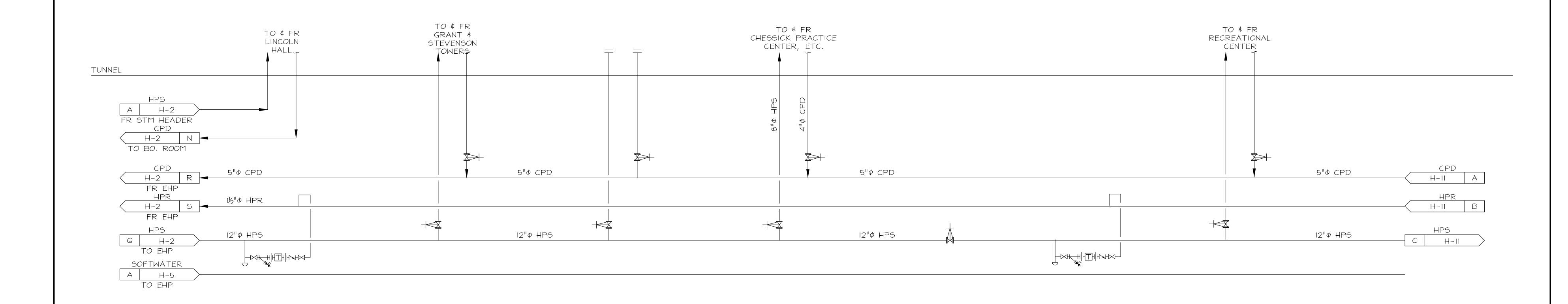
NORTHERN ILLINOIS UNIVERSITY

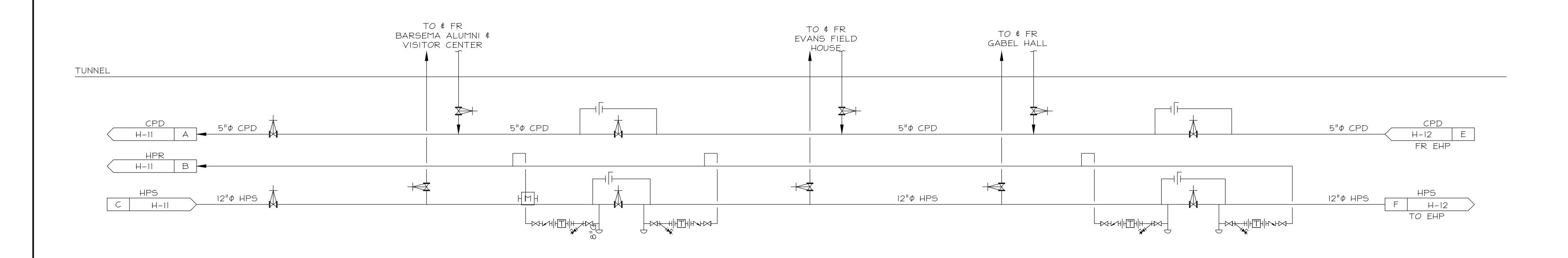
DEKALB, DEKALB COUNTY, ILLINOIS

PROJECT NO.
822-010-127

SHEET NO.

H-10

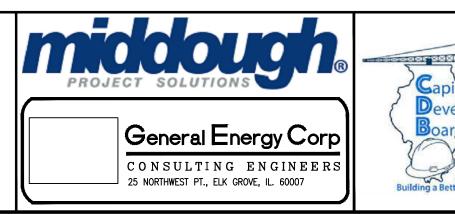




1 TUNNEL PIPING SCHEMATIC DIAGRAM (FROM WEST HEATING PLANT) H-11 SCALE: NONE

R	REVISIONS			PREPARED	
NO.	DATE	REMARKS	FΤ	FT	
D	03/09/2021	REVISED BRIDGING DOCUMENTS	TRACED	APPROVED	
C	01/10/2020	FINAL BRIDGING DOCUMENTS	1		
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State of Illinois JB PRITZKER, GOVERNOR Illinois Capital Development Board

REVISED BRIDGING DOCUMENTS - NOT FOR CONSTRUCTION

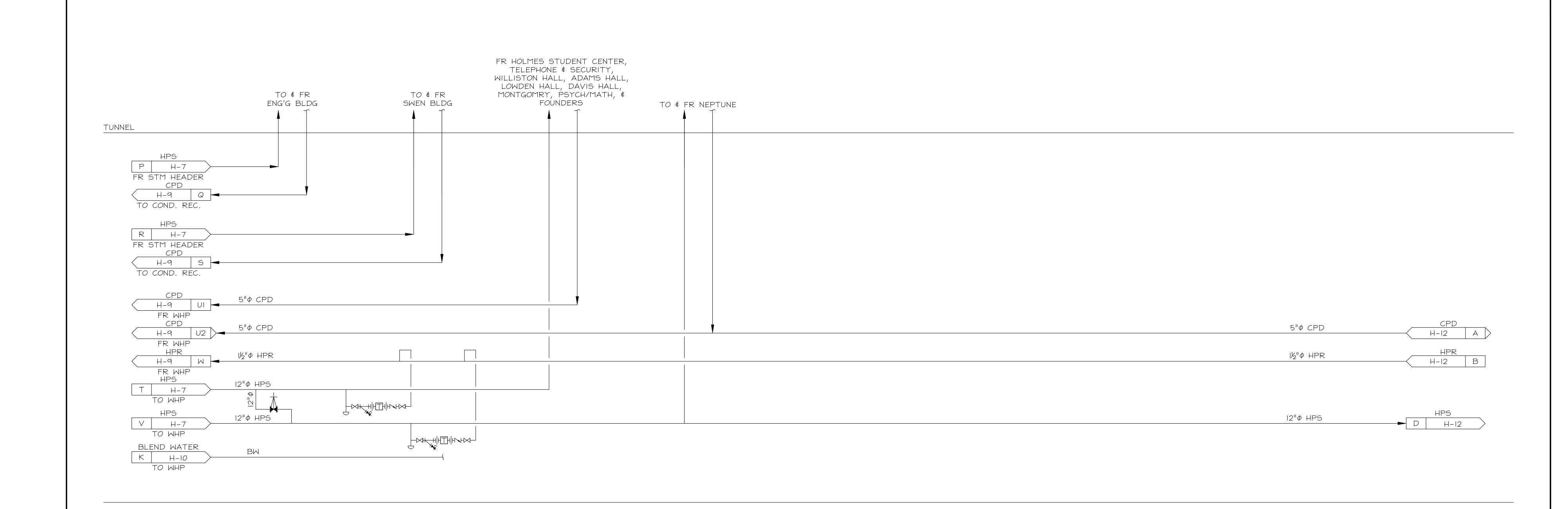
TUNNEL PIPING SCHEMATIC DIAGRAM (FROM WHP)

CAMPUS BOILER REPLACEMENTS

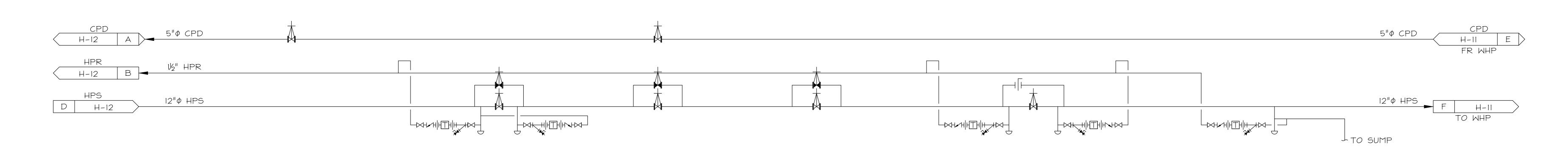
NORTHERN ILLINOIS UNIVERSITY

DEKALB, DEKALB COUNTY, ILLINOIS

OF (63) SHEETS



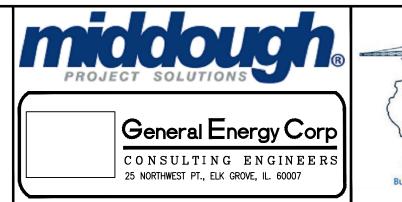
TUNNEL



1 TUNNEL PIPING SCHEMATIC DIAGRAM (FROM EAST HEATING PLANT) H-12 SCALE: NONE

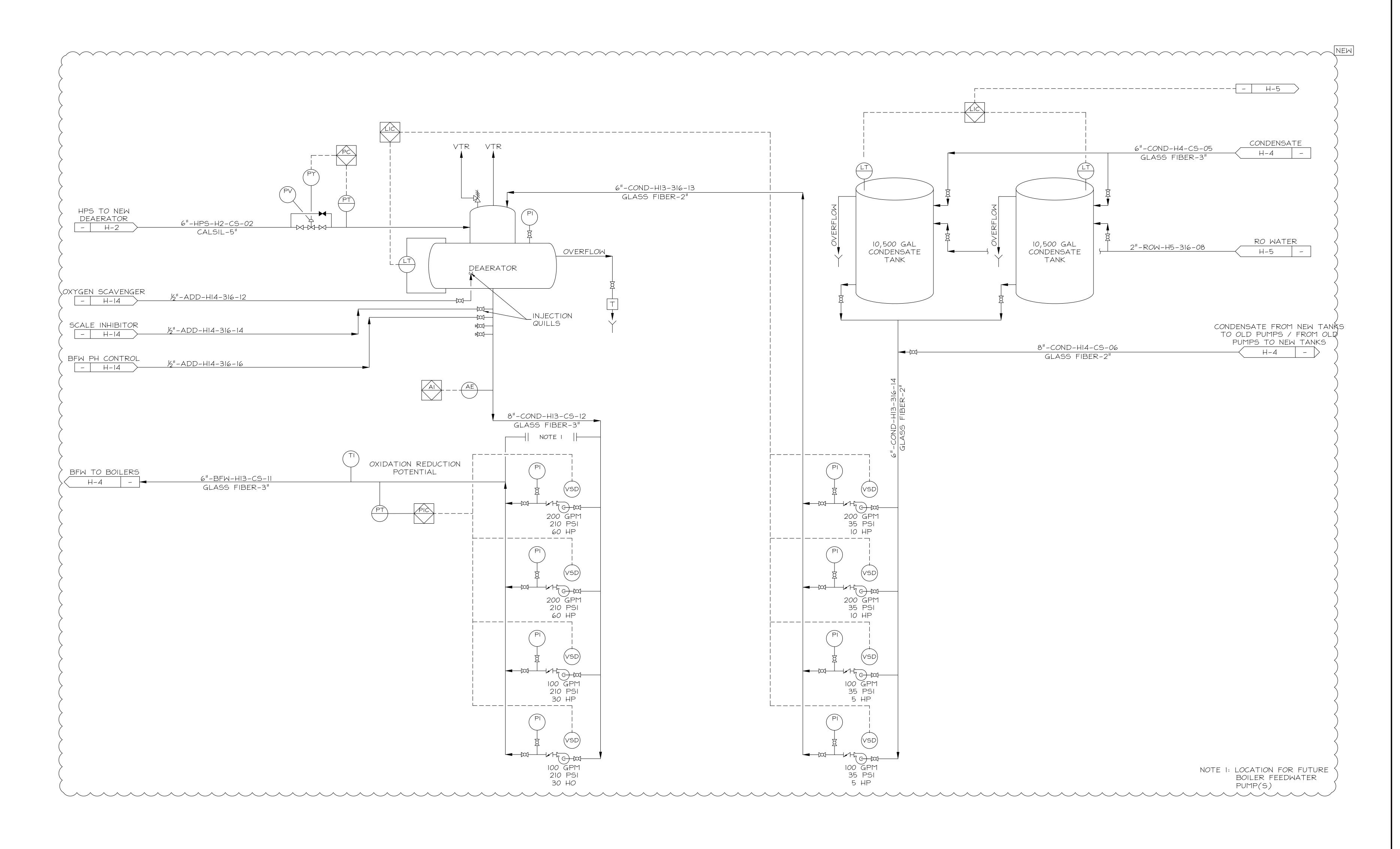
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NO.	DATE	REMARKS	FΤ	FΤ
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TUNNEL PIPING SCHEMATIC DIAGRAM (FROM EHP)	PROJECT NO. 822-010-127
CAMPUS BOILER REPLACEMENTS	DATE 03/09/2021
NORTHERN ILLINOIS UNIVERSITY DEKALB, DEKALB COUNTY, ILLINOIS	SHEET NO
	OF (63) SHEETS



NEW DEAERATOR, TANKS, AND PUMPS SCHEMATIC DIAGRAM H-13 SCALE: NONE

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NO.	DATE	REMARKS	FΤ	FΤ	
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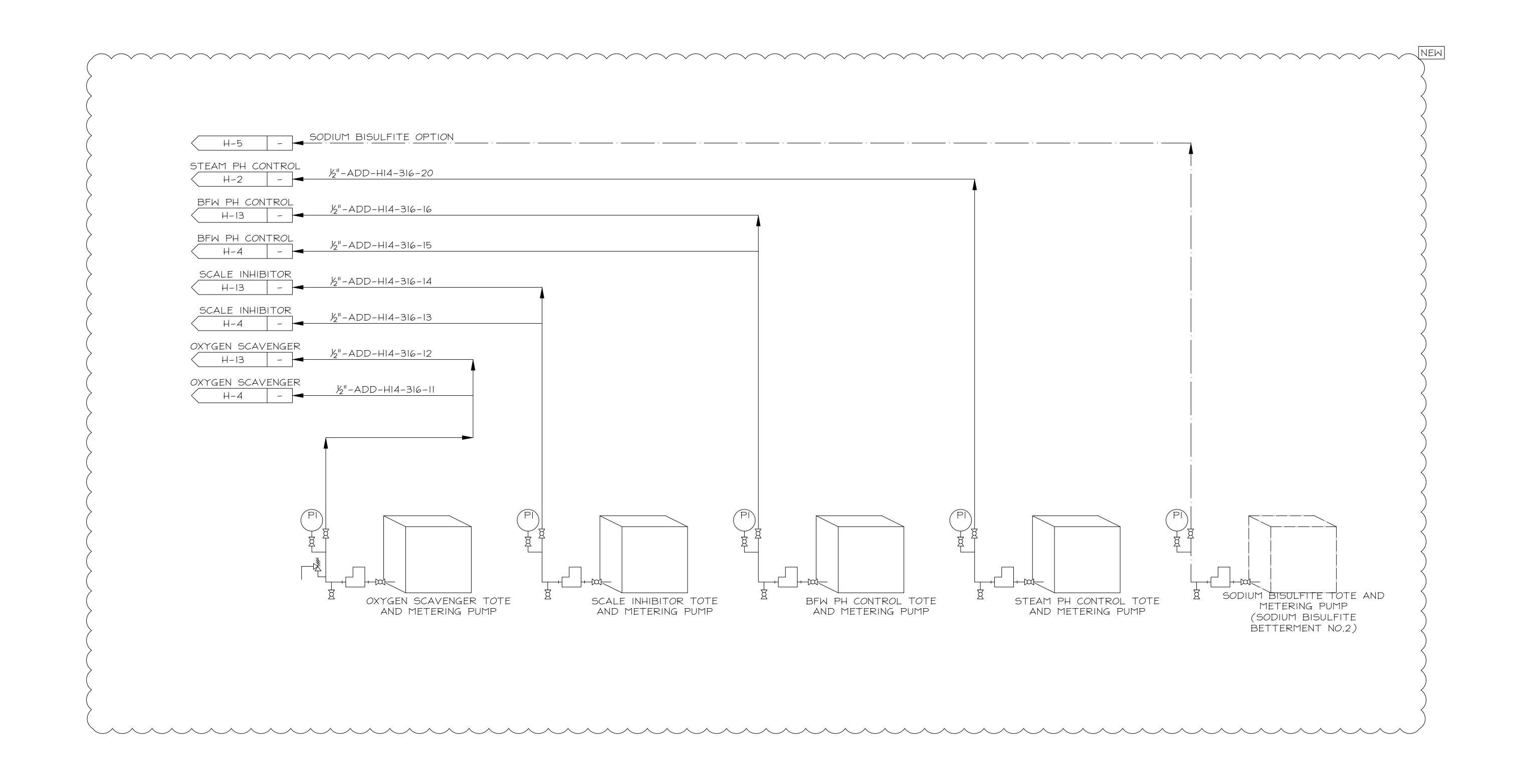


State of Illinois

JB PRITZKER, GOVERNOR

Illinois Capital Development Board

REVISED BRIDGING DOCUMENTS - NOT FOR CON	STRUCTION
NEW DEAERATOR, TANKS, AND PUMPS SCHEMATIC DIAGRAM	PROJECT NO. 822-010-127
CAMPUS BOILER REPLACEMENTS	DATE 03/09/2021
NORTHERN ILLINOIS UNIVERSITY DEKALB, DEKALB COUNTY, ILLINOIS	SHEET NO. H-13



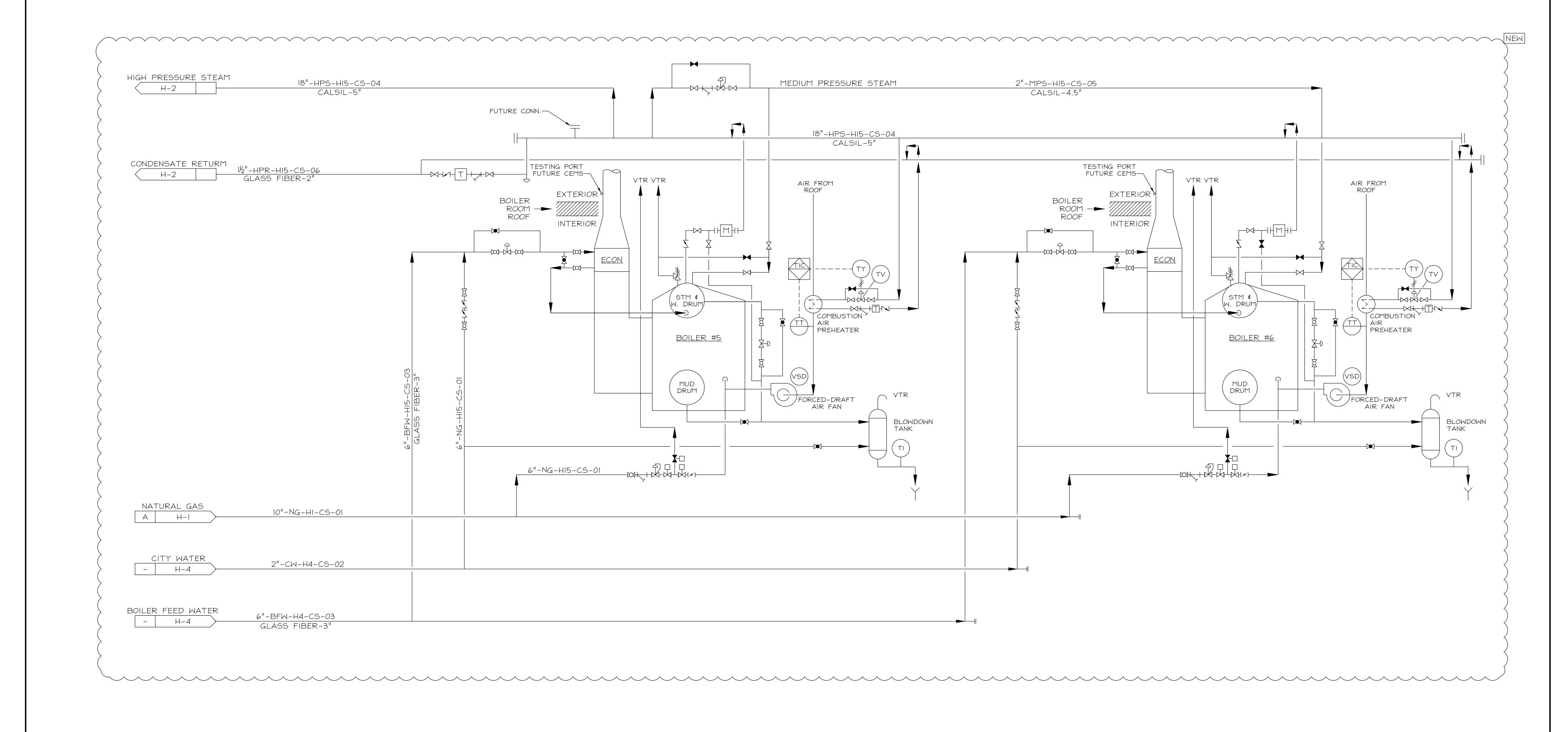
1 CHEMICAL ADDITIVES SCHEMATIC DIAGRAM H-14 SCALE: NONE

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D	03/09/2021	REVISED BRIDGING DOCUMENTS	TRACED	APPROVED	
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	CAMPUS BOILER REPLACEMENTS	DATE 03/09/2021
	NORTHERN ILLINOIS UNIVERSITY DEKALB, DEKALB COUNTY, ILLINOIS	SHEET NO.
		OF (63) SHEETS



NEW BOILERS 5 \$ 6 SCHEMATIC DIAGRAM H-15 SCALE: NONE

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NO.	DATE	REMARKS	FΤ	FΤ	
D	03/09/2021	REVISED BRIDGING DOCUMENTS	TRACED	APPROVED	
C	01/10/2020	FINAL BRIDGING DOCUMENTS			
В	11/08/2019	ISSUED FOR FINAL REVIEW/APPROVAL	CHECKED	APPROVED	
А	09/13/2019	ISSUED FOR REVIEW	GD	PM	

DESIGN-BUILD ENTITY SHALL OBTAIN AND VERIFY ALL AS-BUILT CONDITIONS AND DIMENSIONS AT PROJECT SITE AND BE FULLY RESPONSIBLE FOR THE SAME. BRIDGING DOCUMENTS, DRAWINGS AND NARRATIVES ARE PROVIDED FOR DESIGN INTENT. THE DESIGN-BUILD ENTITY IS RESPONSIBLE FOR THE COMPLETE DESIGN OF A PROJECT THAT ADHERES TO ALL, SCOPE OF WORK REQUIREMENTS, CODES, STATE AND FEDERAL REGULATIONS AND GUIDELINES



State of Illinois JB PRITZKER, GOVERNOR Illinois Capital Development Board

REVISED BRIDGING DOCUMENTS - NOT FOR CONSTRUCTION

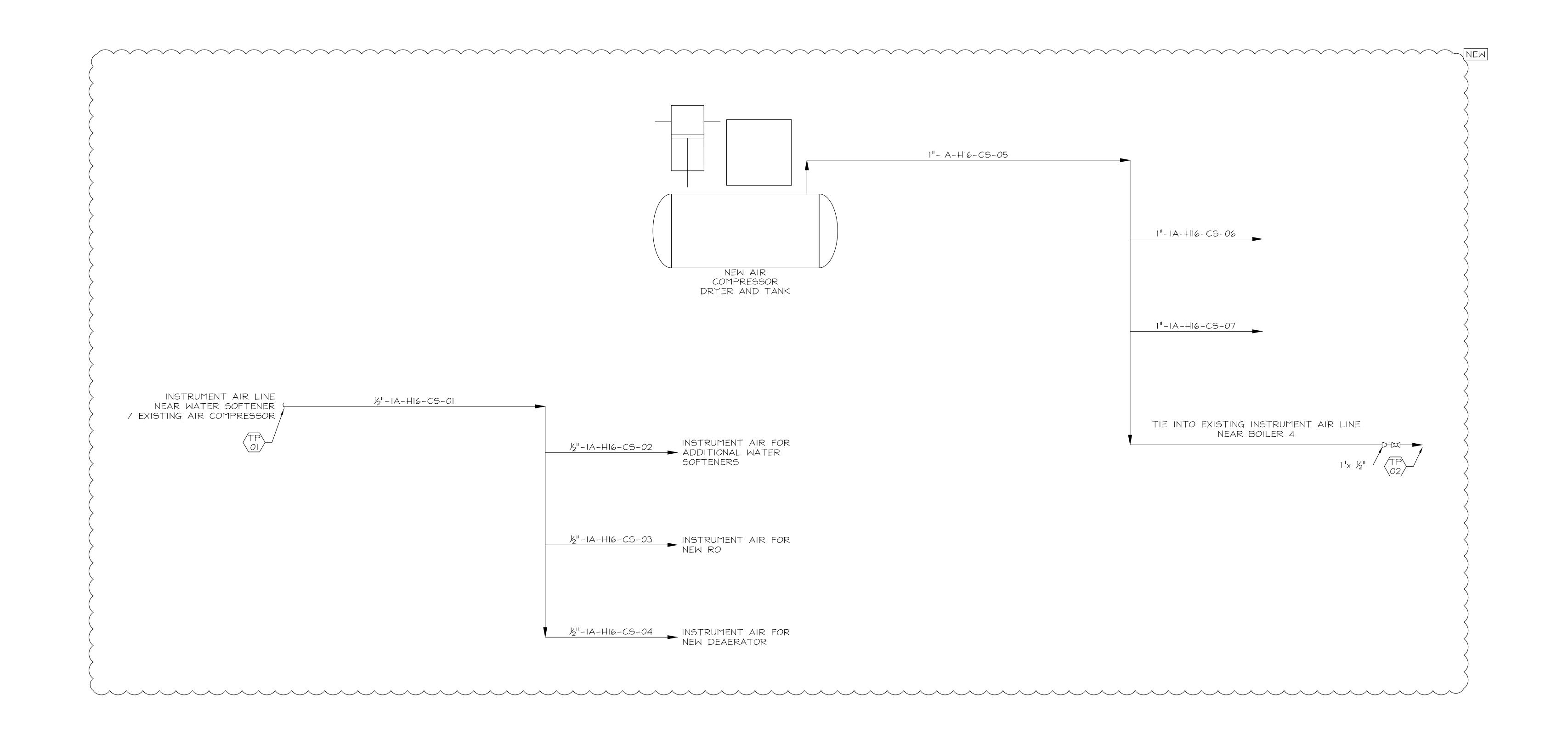
NEW BOILERS 5 & 6 SCHEMATIC DIAGRAM

CAMPUS BOILER REPLACEMENTS

NORTHERN ILLINOIS UNIVERSITY

DEKALB, DEKALB COUNTY, ILLINOIS

OF (63) SHEETS



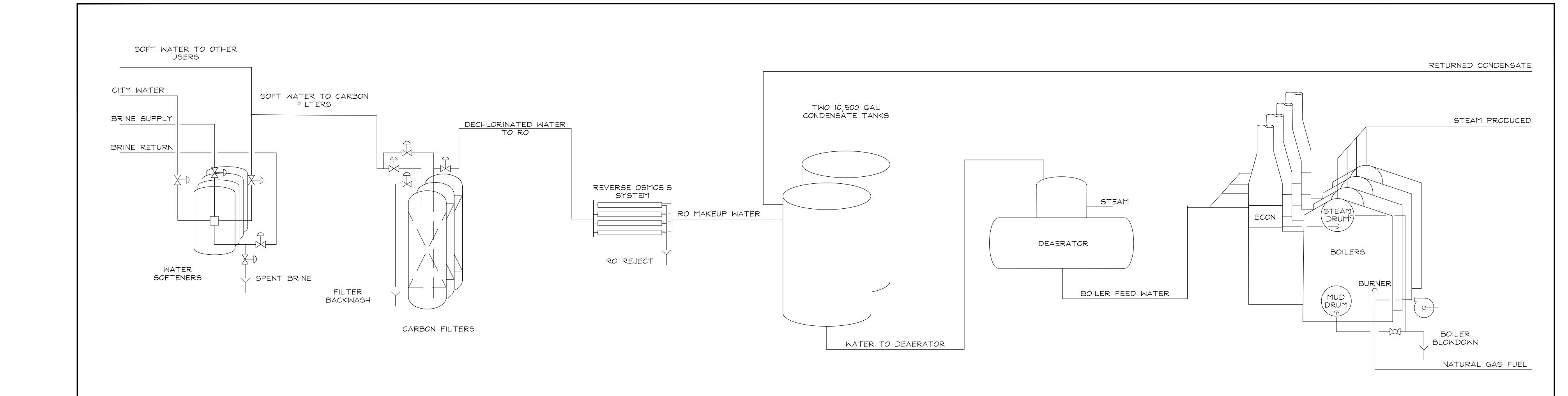
1 WHP INSTRUMENTATION AIR SCHEMATIC DIAGRAM H-16 SCALE: NONE

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NO.	DATE	REMARKS	FΤ	FΤ	
О	03/09/2021	REVISED BRIDGING DOCUMENTS	TRACED	APPROVED	
C	01/10/2020	FINAL BRIDGING DOCUMENTS	1		
Œ	11/08/2019	ISSUED FOR FINAL REVIEW/APPROVAL	CHECKED	APPROVED	
А	09/13/2019	ISSUED FOR REVIEW	D	PM	

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	REVISED BRIDGING DOCUMENTS - NOT FOR CONS	STRUCTION
	WHP INSTRUMENTATION AIR SCHEMATIC DIAGRAM	PROJECT NO. 822-010-127
	CAMBLIC BOLLED DEDLACEMENTS	DATE 03/09/2021
	CAMPUS BOILER REPLACEMENTS NORTHERN ILLINOIS UNIVERSITY DEKALB, DEKALB COUNTY, ILLINOIS	
		OF (63) SHEETS



		BOILER PORTION OF CITY WATER**	BOILER PORTION OF SPENT BRINE**	SOFT WATER TO CARBON FILTERS	DECHLORINATED WATER TO RO	RO MAKEUP WATER	RO REJECT WATER	RETURNED CONDENSATE	WATER FROM CONDENSATE TANKS	WATER TO DEAERATOR / BOILER FEED WATER	BOILER BLOWDOWN	STEAM PRODUCED	NATURAL GAS F
JTURE PEAK ***	GPM	163	3.0	160	160	120	40	0	492	611	9.0		
	LB/H	81,053	1,503	79,550	79,550	59,663	19,888	0	244,838	304,500	4,500	300,000	16,576
	HHV (MMBTU/H)												361.80
JTURE**	GPM	163	3.0	160	160	120	40	446		566	8.4		
	LB/H	81,053	1,503	79,550	79,550	59,663	19,888	222,000		281,663	4,163	277,500	15,333
	HHV (MMBTU/H)												334.67
BSOLUTE PEAK *	GPM	109	2.0	106	106	80	27	0	328	408	6.0		
	LB/H	54,036	1,002	53, <i>0</i> 33	53, <i>0</i> 33	39,775	13,258	0	163,225	203,000	3,000	200,000	11,051
	HHV (MMBTU/H)												241.20
EAK WINTER DAY	GPM	109	2.0	106	106	80	27	297		377	5.6		
	LB/H	54,036	1,002	53, <i>0</i> 33	53, <i>0</i> 33	39,775	13,258	148,000		187,775	2,775	185,000	10,222
	HHV (MMBTU/H)												223.11
OLD WINTER DAY	GPM	70	1.3	69	69	52	17	193		245	3.6		
	LB/H	35,050	650	34,400	34,400	25,800	8,600	96,000		121,800	1,800	120,000	6,630
	HHV (MMBTU/H)												144.72
ARM WINTER DAY	GPM	47	0.9	46	46	35	12	129		163	2.4		
	LB/H	23,367	433	22,933	22,933	17,200	5,733	64,000		81,200	1,200	80,000	4,420
	HHV (MMBTU/H)												96.48
IGH FLOW SUMMER	GPM	23	0.4	23	23	17	5.8	64		82	1.2		
	LB/H	11,683	217	11,467	11,467	8,600	2,867	32,000		40,600	600	40,000	2,210
	HHV (MMBTU/H)												48.24
DW FLOW SUMMER	GPM	12	0.2	12	12	8.6	2.9	32		41	0.6		
	LB/H	5,842	108	5,733	5,733	4,300	1,433	16,000		20,300	300	20,000	1,105
	HHV (MMBTU/H)												24.12

** THE BOILER PORTION OF CITY WATER AND SPENT BRINE IS THE FRACTION NEEDED FOR THE BOILERS. THE MAJORITY OF SOFT WATER PRODUCED IN THE SOFTENERS IS USED ELSEWHERE ON CAMPUS.

*** THE DEAERATOR, BFW LINE AND NATURAL GAS FUEL LINE ARE SIZED FOR FUTURE EXPANSION.

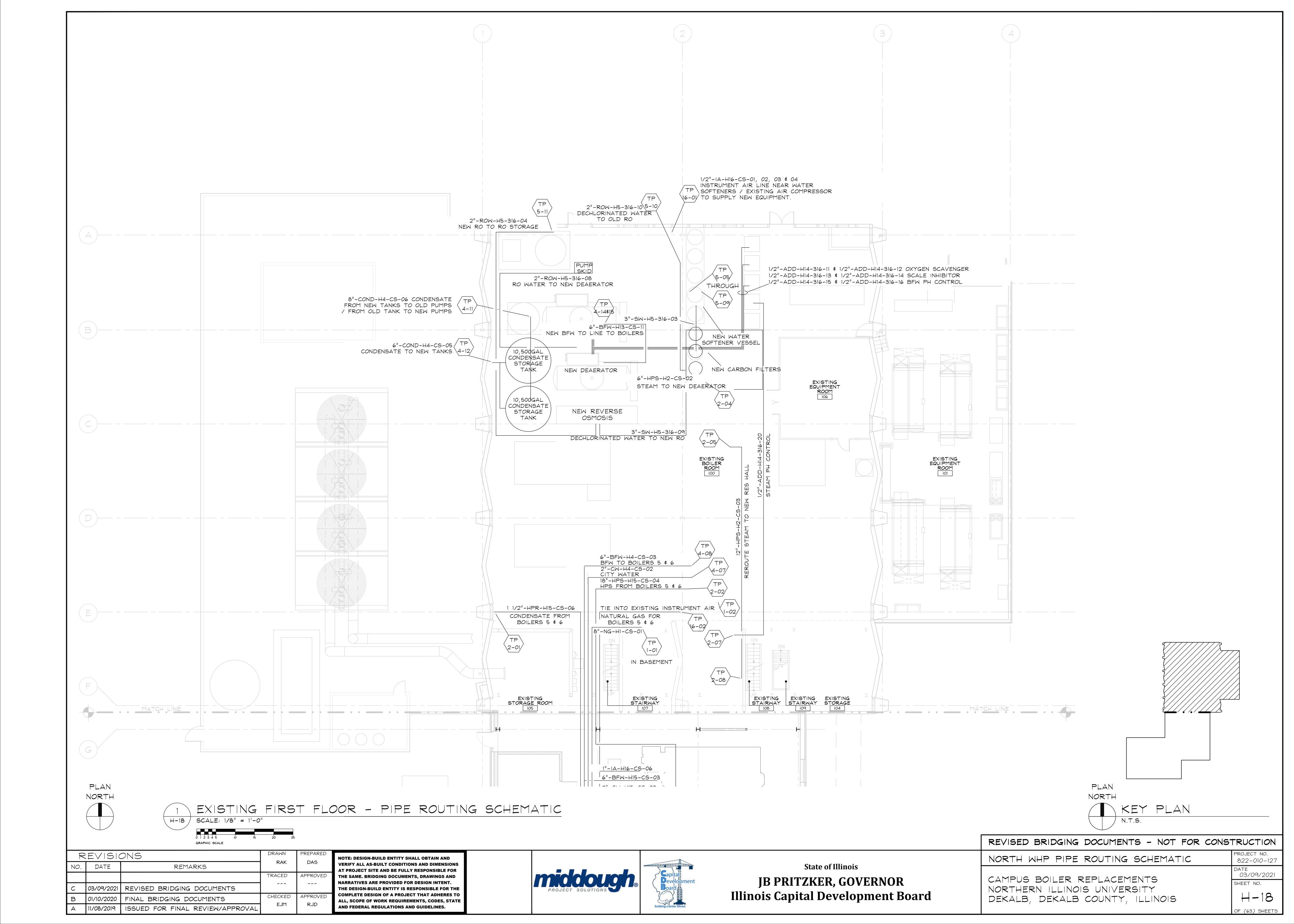
PROCESS FLOW DIAGRAM & MATERIAL BALANCE H-17 SCALE: N.T.S.

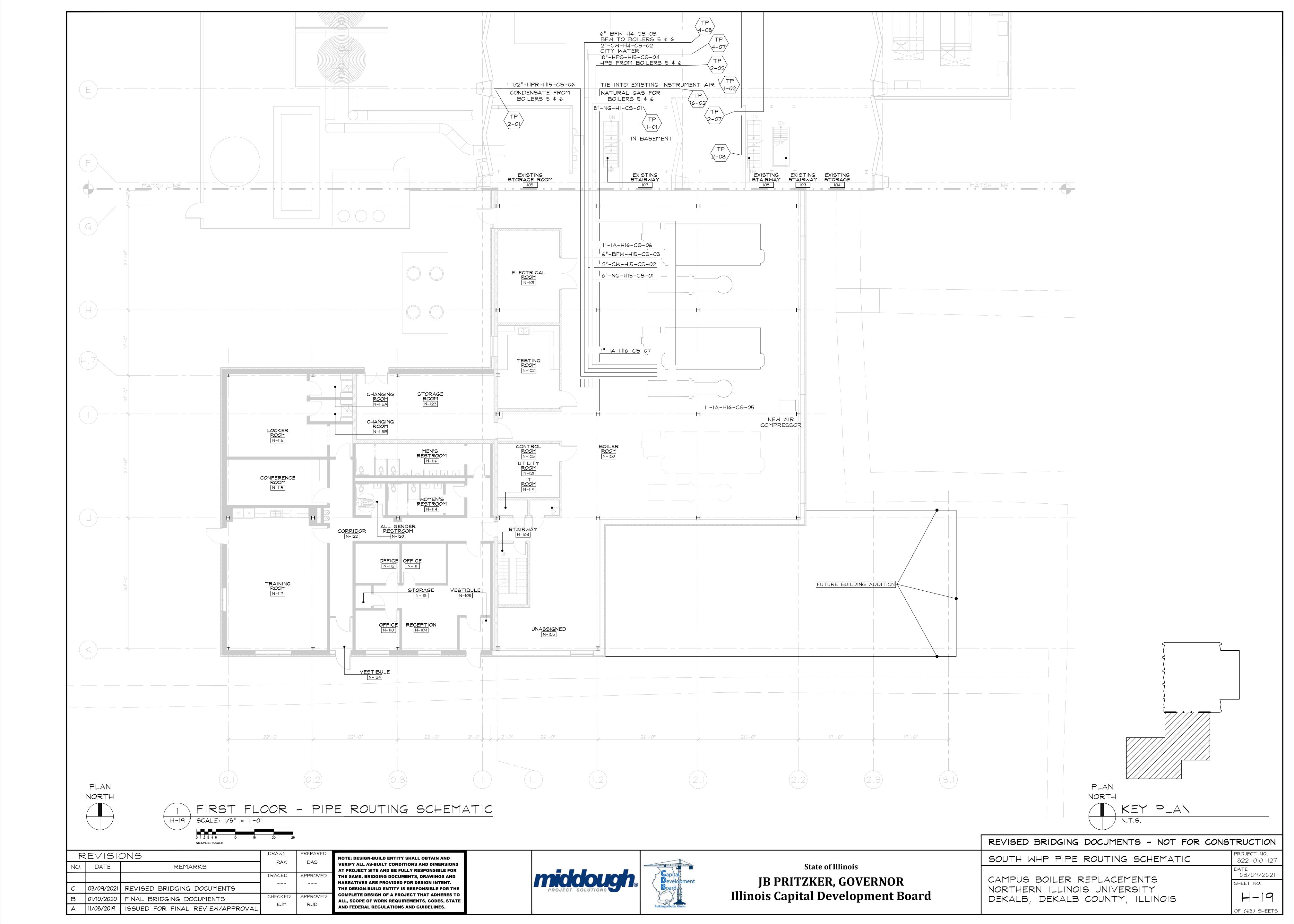
R	EVISI	DRAWN	PREPARED	
NO.	DATE	REMARKS	RAK	DAS
			TRACED	APPROVED
С	03/09/2021	REVISED BRIDGING DOCUMENTS		
B	01/10/2020	FINAL BRIDGING DOCUMENTS	CHECKED	APPROVED
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REVISED BRIDGING DOCUMENTS - NOT FOR CONST	TRUCTION
WHP PFD & MATERIAL BALANCE	PROJECT NO. 822-010-127
CAMPUS BOILER REPLACEMENTS	DATE 03/09/2021
NORTHERN ILLINOIS UNIVERSITY	SHEET NO.
DEKALB, DEKALB COUNTY, ILLINOIS	⊢ −17
	OF (63) SHEETS







PLAN NORTH

1 EXISTING FIRST FLOOR-EAST HEATING PLANT H-20 SCALE: 1/8" = 1'-0"

R	EVISI	DRAWN	PREPARED		
NO.	NO. DATE REMARKS		RAK	DAS	
			TRACED	APPROVED	
С	03/09/2021	REVISED BRIDGING DOCUMENTS			
В	01/10/2020	FINAL BRIDGING DOCUMENTS	CHECKED	APPROVED	
А	11/08/2019	ISSUED FOR FINAL REVIEW/APPROVAL	ML3	DLR	

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State of Illinois

JB PRITZKER, GOVERNOR

Illinois Capital Development Board

REVISED BRIDGING DOCUMENTS - NOT FOR CONSTRUCTION

EAST HEATING PLANT SCHEMATIC

CAMPUS BOILER REPLACEMENTS

NORTHERN ILLINOIS UNIVERSITY

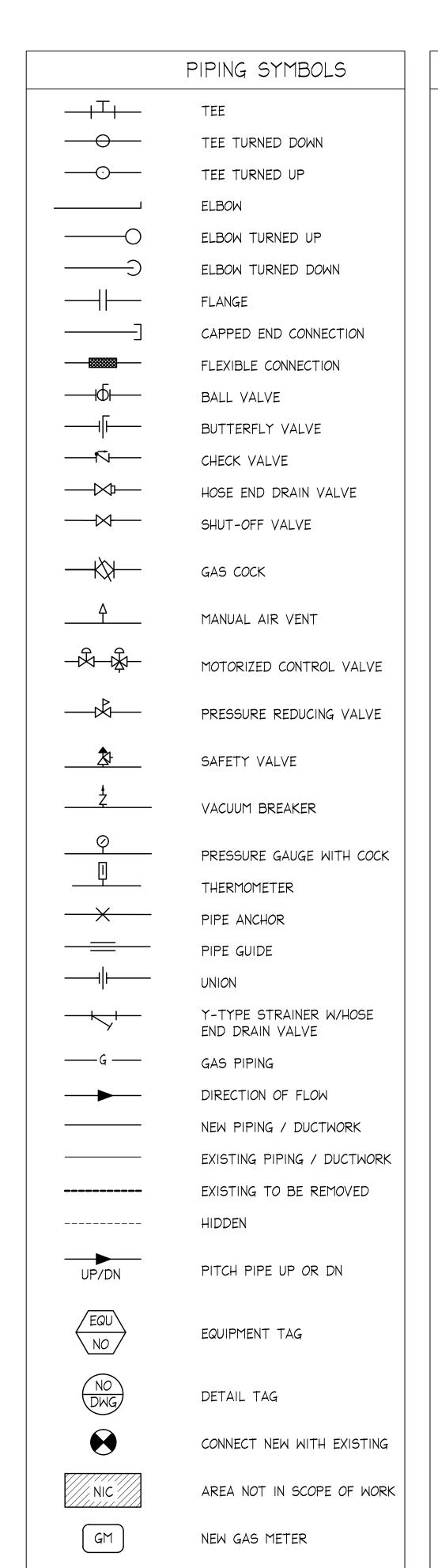
DEKALB, DEKALB COUNTY, ILLINOIS

PROJECT NO.
822-010-127

DATE
03/09/2021

SHEET NO.

H-20



MECHANICAL GENERAL DEMOLITION NOTES

- 1. WHERE MECHANICAL SYSTEMS OR PORTIONS OF SYSTEMS ARE INDICATED TO BE REMOVED, REMOVE ALL MISCELLANEOUS COMPONENTS THAT ARE MADE OBSOLETE BY REMOVAL OF THE SYSTEM.
- 2. ALL DEMOLITION OF THE HVAC SYSTEM AS CALLED FOR ON THE CONTRACT DOCUMENTS SHALL BE UNDER THIS CONTRACTORS WORK. INCLUDE DEMOLITION OF ALL MECHANICAL COMPONENTS, NOT REQUIRED FOR THE NEW WORK, WHETHER SPECIFICALLY INDICATED ON CONTRACT DOCUMENTS OR NOT.
- 3. BEFORE STARTING ANY DEMOLITION ON HVAC EQUIPMENT WHICH HAS AN ELECTRICAL CONNECTION COORDINATE DISCONNECTING OF THE POWER SUPPLY WITH THE DIVISION 26 CONTRACTOR. DO NOT PROCEED WITH MECHANICAL DEMOLITION UNTIL ALL ELECTRICAL POWER HAS BEEN SAFELY DISCONNECTED FROM EQUIPMENT TO BE DEMOLISHED. REMOVE ALL EQUIPMENT, ELECTRICAL TEMPERATURE CONTROL WIRING AND CONDUIT AND COMPONENTS, ETC. THAT ARE BEING MADE OBSOLETE BY THE SCOPE OF THIS PROJECT.
- 4. WARNING: ASBESTOS-CONTAINING BUILDING MATERIALS ARE OR MAY BE PRESENT IN THIS BUILDING. NO PERSON MAY DISTURB ASBESTOS-CONTAINING BUILDING MATERIALS UNLESS THAT PERSON IS A LICENSED ASBESTOS WORKER AND CONDUCTS SUCH WORK IN ACCORDANCE WITH SPECIFICATION(S) CONTAINED IN THE PROJECT DOCUMENTS AND IN COMPLIANCE WITH ILLINOIS DEPARTMENT OF PUBLIC HEALTH RULES AND REGULATIONS.
- 5. CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN CLEANUP THROUGHOUT THE COURSE OF THE DEMOLITION WORK.
- 6. ALL HVAC EQUIPMENT, MATERIAL, ETC. THAT IS BEING DEMOLISHED WILL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE NOTED. ALL SUCH ITEMS WILL BE REMOVED FROM THE BUILDING SITE BY THE CONTRACTOR. NO ITEM WHICH IS BEING REMOVED UNDER THE DEMOLITION CONTRACT MAY BE REUSED UNDER THE NEW WORK CONTRACT UNLESS NOTED ON THE DRAWINGS.
- 7. SEQUENCE OF ALL DEMOLITION WORK SHALL BE IN STRICT ACCORDANCE WITH THE CONTRACT DOCUMENTS AND/OR AS DIRECTED BY THE USING
- 8. CONTRACTOR TO PROTECT ALL WINDOWS AND BUILDING SURFACES DURING DEMOLITION. ANY COSTS INCURRED BY DAMAGE FROM CUTTING TORCHES, SPARKS, HEAT OR OTHER DEMOLITION PROCEDURES WILL BE BACK CHARGED TO THE CONTRACTOR.
- 9. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL LABOR AND MATERIAL REQUIRED TO PATCH ALL OPENINGS IN EXISTING WALLS AND FIRE SEPARATIONS CREATED BY THE REMOVAL OF CONTRACTOR'S MATERIAL AND EQUIPMENT. WHERE THESE OPENINGS ARE NOT TO BE REUSED, PATCHING OF ALL EXISTING FLOOR, WALL AND ROOF OPENINGS IS THE RESPONSIBILITY OF THE CONTRACTOR.
- 10. PRIOR TO THE START OF DEMOLITION, THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPING, DUCTWORK AND SERVICE SIZES NOTED IN THESE DRAWINGS. ANY DISCREPANCY IN THE NOTED SIZES COULD NOT BE THE BASIS OF ADDITIONAL COST CLAIM.
- 11. CONTRACTOR IS RESPONSIBLE FOR <u>ALL</u> COSTS INCURRED IN REPAIRS, RELOCATIONS, OR REPLACEMENT OF ANY CABLES, CONDUITS, OR OTHER SERVICES THAT ARE TO REMAIN BUT DAMAGED WITHOUT PROPER INVESTIGATIONS.
- 12. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND SERVICES FOR THE DEMOLITION, REMOVAL, AND LEGAL DISPOSAL OF EXISTING EQUIPMENT, DUCTWORK, PIPING, ASSOCIATED CONTROLS, ASSOCIATED STRUCTURAL SUPPORTS, HANGERS, RODS, SUPPORTS, ANCHORS, MISCELLANEOUS HARDWARE, MISCELLANEOUS EQUIPMENT, REMOVAL OF APPURTENANT EQUIPMENT AND MATERIALS, AND LAWFULLY DISPOSE OF ALL EQUIPMENT AND MATERIALS RENDERED OBSOLETE OFF THE PREMISES.
- 13. PROVIDE TEMPORARY WEATHER PROTECTION AT ALL ROOF OPENINGS WHERE MECHANICAL EQUIPMENT IS BEING REMOVED.

MECHANICAL GENERAL NOTES

- SEQUENCE, COORDINATE, AND INTEGRATE THE VARIOUS ELEMENTS OF MECHANICAL SYSTEMS, MATERIALS, AND EQUIPMENT. COMPLY WITH THE FOLLOWING REQUIREMENTS:
- 2. ALL WORK SHALL CONFORM TO APPLICABLE INDUSTRY STANDARDS. ALL WORK SHALL COMPLY WITH ALL APPLICABLE LOCAL, MUNICIPAL, AND NATIONAL CODES.
- 3. MELVIN COHEN AND ASSOCIATES (MCA) SHALL NOT HAVE CONTROL OVER OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, SINCE THESE ARE SOLELY THE CONTRACTOR'S RESPONSIBILITY UNDER THE CONTRACT FOR CONSTRUCTION. MCA SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S SCHEDULES OR FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. MCA SHALL NOT HAVE CONTROL OVER OR CHARGE OF ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR THEIR AGENTS OR EMPLOYEES OR ANY OTHER PERSONS PERFORMING PORTIONS OF THE WORK.
- 4. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTION FEES AS REQUIRED FOR HIS PORTION OF THE WORK.
- 5. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH THE OWNER PERTAINING TO WORKING HOURS, REFUSE DISPOSAL, SECURITY, INTERRUPTIONS OF BUILDING UTILITIES OR FUNCTIONS, OWNERSHIP OF SALVAGED MATERIALS, AND ALL OTHER ITEMS OF MUTUAL INTEREST.
- 6. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO DETERMINE THE FULL EXTENT OF THE WORK AND EXISTING FACILITIES.
- 7. THE CONTRACTOR SHALL VERIFY ALL EXISTING JOBSITE CONDITIONS PERTAINING TO THE WORK INDICATED ON THE DRAWINGS, AND REPORT ANY DISCREPANCIES OR OMISSIONS WHICH WOULD INTERFERE WITH SATISFACTORY COMPLETION OF THE WORK.
- 8. THESE DRAWINGS & SPECIFICATIONS ARE PRESENTED TO THE CONTRACTOR WITH THE UNDERSTANDING THAT HE IS EXPERT & COMPETENT IN THE PREPARATION OF CONTRACT BID PRICES ON THE BASIS OF SUCH INFORMATION AS IS CONTAINED IN THESE SPECIFICATIONS & DRAWINGS.
- 9. WHERE DRAWINGS, SPECIFICATIONS, OR NOTES CONFLICT ONE ANOTHER, THE CONTRACTOR SHALL IMMEDIATELY ADVISE THE ARCHITECT OF SUCH CONFLICTS. FOR PURPOSES OF BIDDING, AND PENDING WRITTEN RECEIPT OF ANY DIRECTION TO THE CONTRARY, THE CONTRACTOR SHALL INCLUDE IN HIS PROPOSAL THE MORE STRINGENT ALTERNATE DESCRIBED.
- 10. INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT TO CONFORM WITH APPROVED SUBMITTAL DATA, INCLUDING COORDINATION DRAWINGS, TO GREATEST EXTENT POSSIBLE. CONFORM TO ARRANGEMENTS INDICATED BY THE CONTRACT DOCUMENTS, RECOGNIZING THAT PORTIONS OF THE WORK ARE SHOWN ONLY IN DIAGRAMMATIC FORM. WHERE COORDINATION REQUIREMENTS CONFLICT WITH INDIVIDUAL SYSTEM REQUIREMENTS, REFER CONFLICT TO THE ARCHITECT.
- 11. ALL WORK SHALL BE GUARANTEED TO BE FREE FROM LEAKS OR DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF PROJECT COMPLETION. ANY DEFECTIVE MATERIALS OR WORKMANSHIP, AS WELL AS DAMAGE TO THE WORK OF ALL TRADES RESULTING FROM SAME, SHALL BE REPLACED OR REPAIRED AS DIRECTED BY THE OWNER FOR THE DURATION OF THE STIPULATED GUARANTEE PERIOD.
- 12. ALL EQUIPMENT AND PIPING SHALL PASS ALL TESTS AS REQUIRED BY APPLICABLE LOCAL AND STATE CODES.
- 13. COORDINATE MECHANICAL SYSTEMS, EQUIPMENT, AND MATERIALS INSTALLATION WITH OTHER BUILDING COMPONENTS. VERIFY ALL DIMENSIONS BY FIELD MEASUREMENTS. THE CONTRACTOR SHALL INSTALL THE WORK TO MEET FIELD CONDITIONS AT NO ADDITIONAL CHARGE, INCLUDING ADJUSTING RISERS TO AVOID BEAMS & TRUSSES.
- 14. ARRANGE FOR CHASES, SLOTS, AND OPENINGS IN OTHER BUILDING COMPONENTS DURING PROGRESS OF CONSTRUCTION, TO ALLOW FOR MECHANICAL INSTALLATIONS.
- 15. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE RESPECTIVE TRADES, AND SHALL SUBMIT COORDINATED SHOP DRAWINGS FOR REVIEW.
- 16. THE CONTRACTOR SHALL PROVIDE THAT THE JURISDICTION OF WORK BE DONE BY THE PROPER TRADES WITH NO DELAY.
- 17. EQUIPMENT, PIPING AND ALL ACCESSORIES SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS FOR A COMPLETE SYSTEM.
- 18. GENERAL LOCATIONS AND ARRANGEMENTS: DRAWINGS (PLANS, SCHEMATICS, AND DIAGRAMS) INDICATE THE GENERAL LOCATION AND ARRANGEMENT OF THE SYSTEMS IN A DIAGRAMMATIC FORM ONLY. LOCATION AND ARRANGEMENT OF PIPE AND EQUIPMENT LAY-OUT SHALL TAKE INTO CONSIDERATION PIPE SIZING AND PRESSURE LOSS, PUMP SIZING, AND OTHER DESIGN CONSIDERATIONS. SO FAR AS PRACTICAL, INSTALL SYSTEM AS INDICATED. ADJUST ROUTING AND PROVIDE ALL OFFSETS, FITTINGS, ETC., AS REQUIRED FOR COORDINATION WITH BUILDING AND ALL OTHER SYSTEMS AT NO ADDITIONAL COST TO THE USING AGENCY. ALL DEVIATIONS FROM THE DESIGN DRAWINGS SHALL BE REFLECTED ON THE SHOP DRAWINGS FOR REVIEW BY THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH FABRICATION OR INSTALLATION.

- 19. DURING CONSTRUCTION, PROTECT ALL PIPING AND EQUIPMENT FROM DAMAGE AND DIRT. CAP THE OPEN ENDS OF ALL AND PIPING.
- 20. THE CONTRACTOR SHALL STORE HIS MATERIALS IN A MANNER THAT WILL MAINTAIN AN ORDERLY CLEAN APPEARANCE. IF STORED ON SITE IN OPEN OR UNPROTECTED AREAS, ALL EQUIPMENT AND MATERIAL SHALL BE KEPT OFF THE GROUND AND COVERED FOR PROTECTION FROM WEATHER AND CONSTRUCTION. EQUIPMENT AND MATERIAL, IF DAMAGED OR LEFT UNPROTECTED, SHALL BE REJECTED, AND REPAIRED OR REPLACED AT THE DIRECTION OF THE OWNER.
- 21. INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS.
- 22. INSTALL MECHANICAL EQUIPMENT TO FACILITATE SERVICING, MAINTENANCE, AND REPAIR OR REPLACEMENT OF EQUIPMENT COMPONENTS. AS MUCH AS PRACTICAL, CONNECT EQUIPMENT FOR EASE OF DISCONNECTING, WITH MINIMUM OF INTERFERENCE WITH OTHER INSTALLATIONS. EXTEND GREASE FITTINGS TO AN ACCESSIBLE LOCATION.
- 23. PROVIDE AND MAINTAIN FOR THE DURATION OF CONSTRUCTION ALL SCAFFOLDS, TARPAULINS, CANOPIES, WARNING SIGNS, STEPS, PLATFORMS, BRIDGES, AND OTHER TEMPORARY CONSTRUCTION NECESSARY FOR PROPER COMPLETION OF WORK IN COMPLIANCE WITH PERTINENT SAFETY AND OTHER REGULATIONS.
- 24. CONTRACTOR SHALL INSTALL ALL AUXILIARY SUPPORTING STEEL AS REQUIRED FOR THE SUPPORTING OF THEIR PIPING, DUCTWORK, CONDUIT, EQUIPMENT, ETC. ALL SUPPORTING STEEL FOR ITEMS ABOVE A SUSPENDED CEILING SHALL BE FROM BUILDING STRUCTURAL MEMBERS ONLY. USE GALVANIZED STEEL RODS, TRAPEZE AND CLEVIS HANGERS, AS NEEDED AT MAXIMUM 5 FT. INTERVAL. PROVIDE GALVANIZED STEEL SADDLES AT INSULATED PIPING.
- 25. PROJECT DESIGN IS BASED ON PARTICULAR EQUIPMENT MANUFACTURERS AS INDICATED IN THE SCHEDULES, AND ESTABLISHES THE QUALITY REQUIRED. USE OF EQUIPMENT BY ONE OF THE OTHER ACCEPTABLE MANUFACTURERS MAY REQUIRE ADDITIONAL WORK BE PERFORMED FOR PROPER INTEGRATION WITH THE BUILDING DESIGN. THE CONTRACTOR PROVIDING THE EQUIPMENT SHALL BE ENTIRELY RESPONSIBLE FOR COORDINATION, AND EXTRA LABOR AND MATERIAL REQUIRED AS A RESULT OF THE USE OF EQUIPMENT OTHER THAN THAT SCHEDULED, AND THE CONTRACTOR SHALL VERIFY THAT THIS EQUIPMENT FITS IN THE ALLOCATED SPACE. THIS RESPONSIBILITY SHALL INCLUDE ANY AND ALL EXTRA EXPENSE INCURRED BY AFFECTED CONTRACTORS; INCLUDING BUT NOT LIMITED TO THE GENERAL, MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL CONTRACTORS. THE CONTRACTOR PROVIDING THE EQUIPMENT SHALL ALSO BE RESPONSIBLE FOR ANY EXTRA EXPENSE INCURRED DUE TO CONSTRUCTION DELAYS AS A RESULT OF ANY ADDITIONAL COORDINATION AND/OR REVISION REQUIRED BY THE ALTERNATE EQUIPMENT MANUFACTURER SELECTION. ALL REVISIONS MUST BE REVIEWED BY THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION.
- 26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL THE DIMENSIONS OF THE PURCHASED EQUIPMENT TO VERIFY THAT IT WILL FIT IN THE SPACE SHOWN ON THE DRAWINGS. MINOR DEVIATIONS IN DIMENSIONS WILL BE PERMITTED, PROVIDED THE RATINGS MEET THOSE SHOWN ON THE DRAWINGS AND EQUIPMENT WILL PHYSICALLY FIT INTO THE SPACE ALLOCATED WITH REQUIRED ACCESS AROUND EQUIPMENT FOR OPERATION AND MAINTENANCE OF THE EQUIPMENT. THE CONTRACTOR SHALL BEAR ALL COSTS RELATED TO INSTALLATION OF THE EQUIPMENT WHERE MINOR DEVIATIONS EXIST BETWEEN THE SPECIFIED MANUFACTURERS, INCLUDING ITS IMPACT ON THE WORK OF OTHER TRADES.
- 27. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO MECHANICAL EQUIPMENT, MATERIALS OR WORK UNTIL FINAL ACCEPTANCE OF THE ENTIRE PROJECT BY THE USING AGENCY.
- 28. IT IS THE INTENT OF THESE SPECIFICATIONS AND DRAWINGS TO CALL FOR FINISHED WORK, TESTED, BALANCED, COMPLETE, AND OPERATING.
- 29. CAP INDICATES THAT A PIPE SHALL BE PLUGGED OR CAPPED, AND SEALED WITH APPROVED MATERIALS.
- 30. ALTERNATES TO PRODUCTS SPECIFIED SHALL BE SUBMITTED FOR REVIEW BEFORE PURCHASE.
- 31. SHOULD THERE BE ANY DISCREPANCIES OR QUESTION OF INTENT, REFER THE MATTER TO THE ARCHITECT/ENGINEER FOR A FINAL DECISION BEFORE ORDERING ANY EQUIPMENT OR MATERIALS AND BEFORE STARTING ANY RELATING WORK.
- 32. PROVIDE ASSISTANCE TO TEST, ADJUSTING AND BALANCING CONTRACTOR BY MAKING ADJUSTMENTS TO SYSTEM AND SYSTEM COMPONENTS REQUIRED FOR ACHIEVING DESIGN PERFORMANCE.
- 33. IF ACCEPTABLE PERFORMANCE OF ANY TEST IS NOT ACHIEVED, MAKE THE NECESSARY CORRECTIONS AND THE TEST SHALL BE REPEATED UNTIL ACCEPTABLE PERFORMANCE IS ACHIEVED.
- 34. AFTER CONSTRUCTION IS COMPLETED, INCLUDING PAINTING, CLEAN EQUIPMENT AND ACCESSORIES INSIDE AND OUT. RETOUCH ANY MARRED OR SCRATCHED SURFACES OF FACTORY FINISHED EQUIPMENT, USING FINISH MATERIALS FURNISHED BY MANUFACTURER AND APPLIED TO MATCH THE QUALITY OF THE ORIGINAL FINISH.
- 35. PROVIDE 4" CONCRETE HOUSEKEEPING PADS FOR ALL FLOOR MOUNTED EQUIPMENT.
- 36. COORDINATE SYSTEM DESIGN WITH LEED REQUIREMENTS.

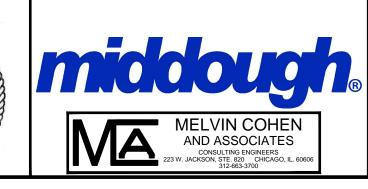
AD	ACCESS DOOR
A/E	ARCHITECT/ENGINEER
AFF	ABOVE FINISHED FLOOR
BD	BACKDRAFT DAMPER
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
CD	CONDENSATE DRAIN
CUH	CABINET UNIT HEATER
DG	DOOR GRILLE
DIFF	DIFFUSER
(E)	EXISTING
EF	EXHAUST FAN
ETR	EXISTING TO REMAIN
FA	FREE AREA
FLA	FULL LOAD AMPACITY
FD	FIRE DAMPER
FPI	FINS PER INCH
G	GAS
GC	GENERAL CONTRACTOR
GR	GRILLE
Н	HIGH, HEIGHT
HP	HORSE POWER
MBH	1000 BTU PER HOUR
NIC	NOT IN CONTRACT
OA	OUTSIDE AIR
<i>O</i> AI	OUTSIDE AIR INTAKE
RA	RETURN AIR
REG	REGISTER
R/E	RETURN/EXHAUST
RO	ROUGH OPENING
SA	SUPPLY AIR
SF	SUPPLY FAN
SFFA	SQUARE FEET FREE AREA
SP	STATIC PRESSURE
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
VTR VD	VENT THRU ROOF VOLUME DAMPER
M	WIDE, WIDTH
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CD	CONDENSATE DRAIN
CR	CONDENSATE RETURN
CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
HG	REFRIGERANT HOT GAS
HGB	REFRIGERANT HOT GAS BYPASS
HPS	HIGH PRESSURE STEAM
HPR	HIGH PRESSURE STEAM CONDENSATE RETURN
HWS	HOT WATER HEATING SUPPLY
HWR	HOT WATER HEATING RETURN
LPS	LOW PRESSURE STEAM
LPR	LOW PRESSURE STEAM CONDENSATE RETURN
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
L	

MECHANICAL ABBREVIATIONS

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NO.	DATE	REMARKS	MCA	MCA
			TRACED	APPROVED
			CHECKED	APPROVED
С	03/09/2021	REVISED BRIDGING DOCUMENTS	MCA	DLA

NOTE: DESIGN-BUILD ENTITY SHALL OBTAIN AND VERIFY ALL AS-BUILT CONDITIONS AND DIMENSIONS AT PROJECT SITE AND BE FULLY RESPONSIBLE FOR THE SAME. BRIDGING DOCUMENTS, DRAWINGS AND NARRATIVES ARE PROVIDED FOR DESIGN INTENT. THE DESIGN-BUILD ENTITY IS RESPONSIBLE FOR THE COMPLETE DESIGN OF A PROJECT THAT ADHERES TO ALL, SCOPE OF WORK REQUIREMENTS, CODES, STATE AND FEDERAL REGULATIONS AND GUIDELINES.







State of Illinois

JB PRITZKER, GOVERNOR Illinois Capital Development Board SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES

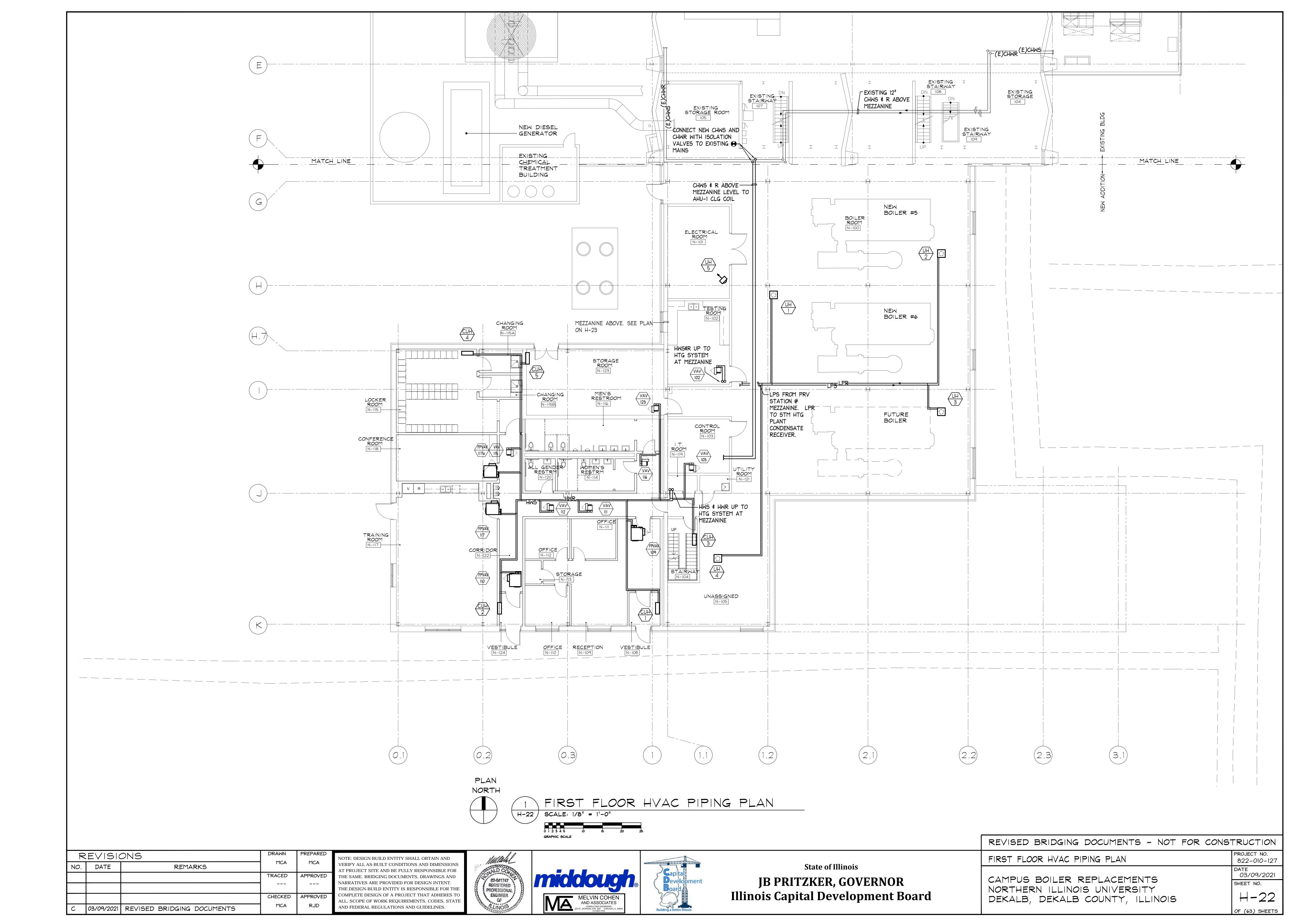
REVISED BRIDGING DOCUMENTS - NOT FOR CONSTRUCTION

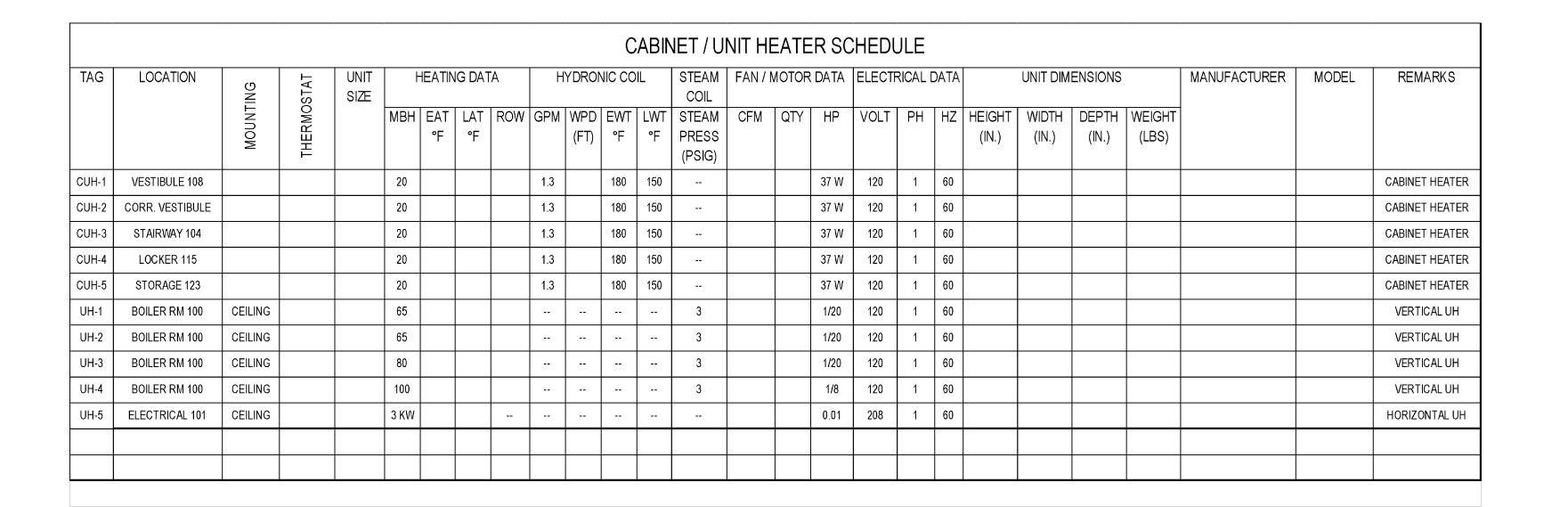
CAMPUS BOILER REPLACEMENTS
NORTHERN ILLINOIS UNIVERSITY
DEKALB, DEKALB COUNTY, ILLINOIS

03/09/2021 SHEET NO. H-21

OF (63) SHEETS

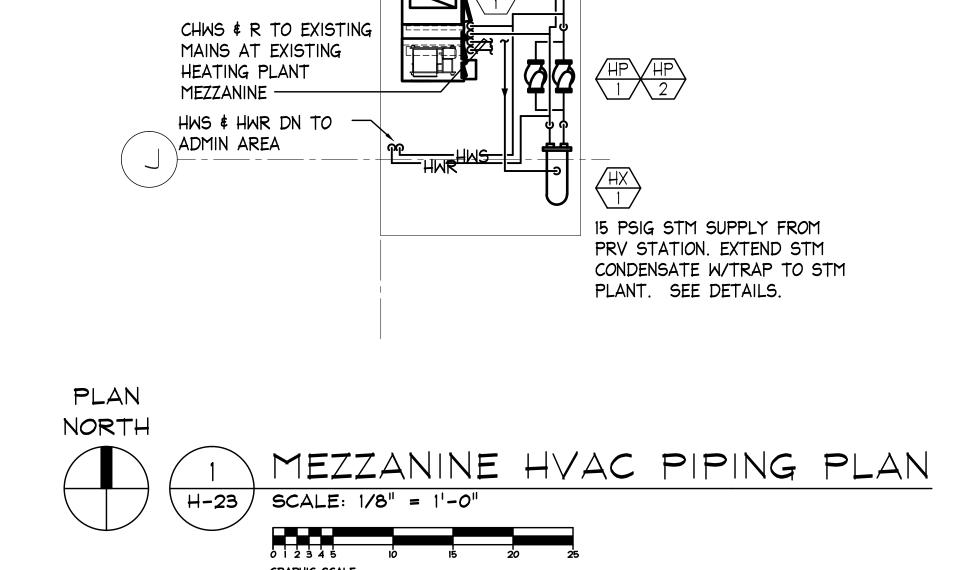
822-010-127





					STE	EAM T	O LIC)UID H	IEAT	EXC	HAN(GER S	CHED	JLE							
TAG	LOCATION	AREA AND/OR	SYSTEM AND/OR	TYPE	FL	OW.	1	TER CON		S WT	l v	VPD	S CTRL VL	TEAM PR	ESSURE HX IN		CONTRO	L VALVE	MANUFACTURER	MODEL	REMARKS
		BLDG SERVED	SERVICE	- · · · -	GPM	[L/s]	°F	[°C]	°F	[°C]	FT	[kPa]	PSIG	[kPa]	PSIG	[kPa]	LBS/HR	[kg/HR]			
HX-1	MEP RM 116	ADMINISTRATION	HW HEATING COILS	SHELL & TUBE	25	[2]	155	[68]	180	[82]		[]	15	[100]	3.0	[21]	312.5	[140]			ALL
 1. PROVIE	DE WITH FLOOR S	TAND FOR SUPPORT.	1			1	1	i			ı	1		3					3	3	3

						PL	JMP S	CHED	ULE							
			-	***			-			MOTOR EL	ECTRICA	L				
TAG	LOCATION	SERVICE	TYPE	FLUID TYPE	GPM	HEAD (FT)	BHP	HP	RPM	VOLT	PH	HZ	SPEED	MANUFACTURER	MODEL	REMARKS
			***************************************					1 11	I XI IVI	VOLI	1 11	1 12	CONTROL			
HP-1	MEZZANINE	HOT WATER HEATING	INLINE	WATER	25	75		2		480	3	60	ECM			1,2
HP-2	MEZZANINE	HOT WATER HEATING	INLINE	WATER	25	75		2		480	3	60	ECM			1,2
1. INLINE PU	JMP W/ INTEGRAL V	FD AND SENSORLESS CONT	ROL.							,					,	



PLANT

PRV STATION.

3700 LBS/HR OUTPUT @ 15 PSIG - EXTEND STM

DETAILS.

CONDENSATE W/TRAP
TO STM PLANT. SEE

HWS&R DN TO TESTING 102

LPS TO BOILER

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С	03/09/2021	REVISED BRIDGING DOCUMENTS	MCA	RJD	1

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2. (2) PUMPS W/ (1) AT 100% STANDBY.





State of Illinois

JB PRITZKER, GOVERNOR

Illinois Capital Development Board

REVISED BRIDGING DOCUMENTS - NOT FOR CONST	TRUCTION
MEZZANINE PIPING PLAN AND EQUIPMENT SCHEDULES	PROJECT NO. 822-010-127
CAMBLIC BOLLED DEDLACEMENTS	DATE 03/09/2021
CAMPUS BOILER REPLACEMENTS NORTHERN ILLINOIS UNIVERSITY DEKALB, DEKALB COUNTY, ILLINOIS	SHEET NO. H-23

MECHANICAL GENERAL NOTES

- SEQUENCE, COORDINATE, AND INTEGRATE THE VARIOUS ELEMENTS OF MECHANICAL SYSTEMS, MATERIALS, AND EQUIPMENT. COMPLY WITH THE FOLLOWING REQUIREMENTS:
- 2. ALL WORK SHALL CONFORM TO APPLICABLE INDUSTRY STANDARDS. ALL WORK SHALL COMPLY WITH ALL APPLICABLE LOCAL, MUNICIPAL, AND NATIONAL CODES.
- 3. MELVIN COHEN AND ASSOCIATES (MCA) SHALL NOT HAVE CONTROL OVER OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, SINCE THESE ARE SOLELY THE CONTRACTOR'S RESPONSIBILITY UNDER THE CONTRACT FOR CONSTRUCTION. MCA SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S SCHEDULES OR FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. MCA SHALL NOT HAVE CONTROL OVER OR CHARGE OF ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR THEIR AGENTS OR EMPLOYEES OR ANY OTHER PERSONS PERFORMING PORTIONS OF THE WORK.
- 4. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTION FEES AS REQUIRED FOR HIS PORTION OF THE WORK.
- 5. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH THE OWNER PERTAINING TO WORKING HOURS, REFUSE DISPOSAL, SECURITY, INTERRUPTIONS OF BUILDING UTILITIES OR FUNCTIONS, OWNERSHIP OF SALVAGED MATERIALS, AND ALL OTHER ITEMS OF MUTUAL INTEREST.
- 6. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO DETERMINE THE FULL EXTENT OF THE WORK AND EXISTING FACILITIES.
- 7. THE CONTRACTOR SHALL VERIFY ALL EXISTING JOBSITE CONDITIONS PERTAINING TO THE WORK INDICATED ON THE DRAWINGS, AND REPORT ANY DISCREPANCIES OR OMISSIONS WHICH WOULD INTERFERE WITH SATISFACTORY COMPLETION OF THE WORK.
- 8. THESE DRAWINGS \$ SPECIFICATIONS ARE PRESENTED TO THE CONTRACTOR WITH THE UNDERSTANDING THAT HE IS EXPERT \$ COMPETENT IN THE PREPARATION OF CONTRACT BID PRICES ON THE BASIS OF SUCH INFORMATION AS IS CONTAINED IN THESE SPECIFICATIONS \$ DRAWINGS.
- 9. WHERE DRAWINGS, SPECIFICATIONS, OR NOTES CONFLICT ONE ANOTHER, THE CONTRACTOR SHALL IMMEDIATELY ADVISE THE ARCHITECT OF SUCH CONFLICTS. FOR PURPOSES OF BIDDING, AND PENDING WRITTEN RECEIPT OF ANY DIRECTION TO THE CONTRARY, THE CONTRACTOR SHALL INCLUDE IN HIS PROPOSAL THE MORE STRINGENT ALTERNATE DESCRIBED.
- 10. INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT TO CONFORM WITH APPROVED SUBMITTAL DATA, INCLUDING COORDINATION DRAWINGS, TO GREATEST EXTENT POSSIBLE. CONFORM TO ARRANGEMENTS INDICATED BY THE CONTRACT DOCUMENTS, RECOGNIZING THAT PORTIONS OF THE WORK ARE SHOWN ONLY IN DIAGRAMMATIC FORM. WHERE COORDINATION REQUIREMENTS CONFLICT WITH INDIVIDUAL SYSTEM REQUIREMENTS, REFER CONFLICT TO THE ARCHITECT.
- 11. ALL WORK SHALL BE GUARANTEED TO BE FREE FROM LEAKS OR DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF PROJECT COMPLETION. ANY DEFECTIVE MATERIALS OR WORKMANSHIP, AS WELL AS DAMAGE TO THE WORK OF ALL TRADES RESULTING FROM SAME, SHALL BE REPLACED OR REPAIRED AS DIRECTED BY THE OWNER FOR THE DURATION OF THE STIPULATED GUARANTEE PERIOD.
- 12. ALL EQUIPMENT AND DUCTWORK SHALL PASS ALL TESTS AS REQUIRED BY APPLICABLE LOCAL AND STATE CODES.
- 13. COORDINATE MECHANICAL SYSTEMS, EQUIPMENT, AND MATERIALS INSTALLATION WITH OTHER BUILDING COMPONENTS. VERIFY ALL DIMENSIONS BY FIELD MEASUREMENTS. THE CONTRACTOR SHALL INSTALL THE WORK TO MEET FIELD CONDITIONS AT NO ADDITIONAL CHARGE, INCLUDING ADJUSTING RISERS TO AVOID BEAMS & TRUSSES.
- 14. ARRANGE FOR CHASES, SLOTS, AND OPENINGS IN OTHER BUILDING COMPONENTS DURING PROGRESS OF CONSTRUCTION, TO ALLOW FOR MECHANICAL INSTALLATIONS.
- 15. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE RESPECTIVE TRADES, AND SHALL SUBMIT COORDINATED SHOP DRAWINGS FOR REVIEW.
- 16. THE CONTRACTOR SHALL PROVIDE THAT THE JURISDICTION OF WORK BE DONE BY THE PROPER TRADES WITH NO DELAY.
- 17. EQUIPMENT, DUCTWORK, GRILLES, REGISTERS, DIFFUSERS, AND ALL ACCESSORIES SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS FOR A COMPLETE SYSTEM.
- 18. SHEET METAL DUCT GAGES, CONSTRUCTION, AND INSTALLATION SHALL BE IN ACCORDANCE WITH STANDARDS OF THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. (SMACNA). IF LOCAL CODES REQUIRE OTHER STANDARDS THAN DESCRIBED IN SMACNA, THE LOCAL CODES SHALL GOVERN.
- 19. GENERAL LOCATIONS AND ARRANGEMENTS: DRAWINGS (PLANS, SCHEMATICS, AND DIAGRAMS) INDICATE THE GENERAL LOCATION AND ARRANGEMENT OF THE SYSTEMS IN A DIAGRAMMATIC FORM ONLY. LOCATION AND ARRANGEMENT OF DUCT, AND EQUIPMENT LAY-OUT SHALL TAKE INTO CONSIDERATION DUCT SIZING AND PRESSURE LOSS, FAN SIZING, AND OTHER DESIGN CONSIDERATIONS. SO FAR AS PRACTICAL, INSTALL SYSTEM AS INDICATED. ADJUST ROUTING AND PROVIDE ALL OFFSETS, FITTINGS, ETC., AS REQUIRED FOR COORDINATION WITH BUILDING AND ALL OTHER SYSTEMS AT NO ADDITIONAL COST TO THE USING AGENCY. ALL DEVIATIONS FROM THE DESIGN DRAWINGS SHALL BE REFLECTED ON THE SHOP DRAWINGS FOR REVIEW BY THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH FABRICATION OR INSTALLATION. CHANGES IN DUCT SIZE AND LOCATION SHALL BE MADE WHERE NECESSARY TO CONFORM TO SPACE CONDITIONS, AT NO ADDITION CHARGE. CONTRACTOR SHALL FIELD MEASURE DUCTWORK BEFORE FABRICATION.
- 20. TAKE ADDITIONAL CARE WITH THE FABRICATION AND INSTALLATION OF ALL EXPOSED DUCTWORK. PROVIDE DUCTWORK WITHOUT DENTS, LABELS, STICKERS, ETC. INSTALL DUCT SEALANT IN A NEAT MANNER TO FORM A SMOOTH, UNIFORM JOINT. CAULK THE PERIMETER OF ALL DUCTWORK WHERE AN EXPOSED PENETRATION THROUGH A WALL OCCURS. UTILIZE PAINTABLE CAULK APPLIED IN A NEAT MANNER TO FORM A SMOOTH, UNIFORM JOINT.
- 21. DURING CONSTRUCTION, PROTECT ALL DUCTWORK AND EQUIPMENT FROM DAMAGE AND DIRT. CAP THE OPEN TOP OF ALL DUCTWORK INSTALLED VERTICALLY. CAP UNUSED DUCTS AND OPENINGS AIRTIGHT, WHETHER OR NOT INDICATED ON THE DRAWINGS.
- 22. THE CONTRACTOR SHALL STORE HIS MATERIALS IN A MANNER THAT WILL MAINTAIN AN ORDERLY CLEAN APPEARANCE. IF STORED ON SITE IN OPEN OR UNPROTECTED AREAS, ALL EQUIPMENT AND MATERIAL SHALL BE KEPT OFF THE GROUND AND COVERED FOR PROTECTION FROM WEATHER AND CONSTRUCTION. EQUIPMENT AND MATERIAL, IF DAMAGED OR LEFT UNPROTECTED, SHALL BE REJECTED, AND REPAIRED OR REPLACED AT THE DIRECTION OF THE OWNER.

- 23. INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS.
- 24. INSTALL MECHANICAL EQUIPMENT TO FACILITATE SERVICING, MAINTENANCE, AND REPAIR OR REPLACEMENT OF EQUIPMENT COMPONENTS. AS MUCH AS PRACTICAL, CONNECT EQUIPMENT FOR EASE OF DISCONNECTING, WITH MINIMUM OF INTERFERENCE WITH OTHER INSTALLATIONS. EXTEND GREASE FITTINGS TO AN ACCESSIBLE LOCATION.
- 25. PROVIDE AND MAINTAIN FOR THE DURATION OF CONSTRUCTION ALL SCAFFOLDS, TARPAULINS, CANOPIES, WARNING SIGNS, STEPS, PLATFORMS, BRIDGES, AND OTHER TEMPORARY CONSTRUCTION NECESSARY FOR PROPER COMPLETION OF WORK IN COMPLIANCE WITH PERTINENT SAFETY AND OTHER REGULATIONS.
- 26. CONTRACTOR SHALL INSTALL ALL AUXILIARY SUPPORTING STEEL AS REQUIRED FOR THE SUPPORTING OF THEIR PIPING, DUCTWORK, CONDUIT, EQUIPMENT, ETC. ALL SUPPORTING STEEL FOR ITEMS ABOVE A SUSPENDED CEILING SHALL BE FROM BUILDING STRUCTURAL MEMBERS ONLY. USE GALVANIZED STEEL RODS, TRAPEZE AND CLEVIS HANGERS, AS NEEDED AT MAXIMUM 5 FT. INTERVAL. PROVIDE GALVANIZED STEEL SADDLES AT INSULATED PIPING.
- 27. ALL DUCTWORK CONNECTIONS TO AIR MOVING EQUIPMENT SHALL BE MADE WITH FLEXIBLE DUCT CONNECTIONS ON THE INLET AND DISCHARGE OF ALL SUPPLY, RETURN, AND EXHAUST FANS.
- 28. PROJECT DESIGN IS BASED ON PARTICULAR EQUIPMENT MANUFACTURERS AS INDICATED IN THE SCHEDULES, AND ESTABLISHES THE QUALITY REQUIRED. USE OF EQUIPMENT BY ONE OF THE OTHER ACCEPTABLE MANUFACTURERS MAY REQUIRE ADDITIONAL WORK BE PERFORMED FOR PROPER INTEGRATION WITH THE BUILDING DESIGN. THE CONTRACTOR PROVIDING THE EQUIPMENT SHALL BE ENTIRELY RESPONSIBLE FOR COORDINATION, AND EXTRA LABOR AND MATERIAL REQUIRED AS A RESULT OF THE USE OF EQUIPMENT OTHER THAN THAT SCHEDULED, AND THE CONTRACTOR SHALL VERIFY THAT THIS EQUIPMENT FITS IN THE ALLOCATED SPACE. THIS RESPONSIBILITY SHALL INCLUDE ANY AND ALL EXTRA EXPENSE INCURRED BY AFFECTED CONTRACTORS; INCLUDING BUT NOT LIMITED TO THE GENERAL, MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL CONTRACTORS. THE CONTRACTOR PROVIDING THE EQUIPMENT SHALL ALSO BE RESPONSIBLE FOR ANY EXTRA EXPENSE INCURRED DUE TO CONSTRUCTION DELAYS AS A RESULT OF ANY ADDITIONAL COORDINATION AND/OR REVISION REQUIRED BY THE ALTERNATE EQUIPMENT MANUFACTURER SELECTION. ALL REVISIONS MUST BE REVIEWED BY THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION.
- 29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL THE DIMENSIONS OF THE PURCHASED EQUIPMENT TO VERIFY THAT IT WILL FIT IN THE SPACE SHOWN ON THE DRAWINGS. MINOR DEVIATIONS IN DIMENSIONS WILL BE PERMITTED, PROVIDED THE RATINGS MEET THOSE SHOWN ON THE DRAWINGS AND EQUIPMENT WILL PHYSICALLY FIT INTO THE SPACE ALLOCATED WITH REQUIRED ACCESS AROUND EQUIPMENT FOR OPERATION AND MAINTENANCE OF THE EQUIPMENT. THE CONTRACTOR SHALL BEAR ALL COSTS RELATED TO INSTALLATION OF THE EQUIPMENT WHERE MINOR DEVIATIONS EXIST BETWEEN THE SPECIFIED MANUFACTURERS, INCLUDING ITS IMPACT ON THE WORK OF OTHER TRADES.
- 30. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO MECHANICAL EQUIPMENT, MATERIALS OR WORK UNTIL FINAL ACCEPTANCE OF THE ENTIRE PROJECT BY THE USING AGENCY.
- 31. IT IS THE INTENT OF THESE SPECIFICATIONS AND DRAWINGS TO CALL FOR FINISHED WORK, TESTED, BALANCED, COMPLETE, AND OPERATING.
- 32. ORIENT RETURN AND EXHAUST GRILLES FACE THE DIRECTION THAT SHALL BE THE MOST SIGHT PROOF FROM VIEWING INTO THE DUCT THROUGH THE LOUVERED FACE.
- 33. ALL DUCTS AND PIPING SHALL BE SUPPORTED FROM APPROVED FOUNDATIONS AND SUPPORTS. DUCT HANGERS SHALL BE SOLID SHEET METAL STRAPS, RODS, OR ANGLES PER SMACNA.
- 34. CAP INDICATES THAT A DUCT SHALL BE CAPPED AND SEALED WITH APPROVED MATERIALS.
- 35. SUPPLY REGISTERS SHALL BE NECK SIZE & CFM AS NOTED.
- 36. ALTERNATES TO PRODUCTS SPECIFIED SHALL BE SUBMITTED FOR REVIEW BEFORE PURCHASE.
- 37. SHOULD THERE BE ANY DISCREPANCIES OR QUESTION OF INTENT, REFER THE MATTER TO THE ARCHITECT/ENGINEER FOR A FINAL DECISION BEFORE ORDERING ANY EQUIPMENT OR MATERIALS AND BEFORE STARTING ANY RELATING WORK.
- 38. SUBMIT VENTILATION TESTING REPORTS TO OWNER \$ ENGINEER.
- 39. PROVIDE ASSISTANCE TO TEST, ADJUSTING AND BALANCING CONTRACTOR BY MAKING ADJUSTMENTS TO SYSTEM AND SYSTEM COMPONENTS REQUIRED FOR ACHIEVING DESIGN PERFORMANCE.
- 40. IF ACCEPTABLE PERFORMANCE OF ANY TEST IS NOT ACHIEVED, MAKE THE NECESSARY CORRECTIONS AND THE TEST SHALL BE REPEATED UNTIL ACCEPTABLE PERFORMANCE IS ACHIEVED.
- 41. AFTER CONSTRUCTION IS COMPLETED, INCLUDING PAINTING, CLEAN EQUIPMENT AND ACCESSORIES INSIDE AND OUT. RETOUCH ANY MARRED OR SCRATCHED SURFACES OF FACTORY FINISHED EQUIPMENT, USING FINISH MATERIALS FURNISHED BY MANUFACTURER AND APPLIED TO MATCH THE QUALITY OF THE ORIGINAL FINISH.
- 42. PROVIDE FIRE DAMPERS AT ALL DUCT PENETRATIONS THROUGH FLOOR SLABS AND RATED WALLS.
- 43. PROVIDE MANUAL BALANCING DEVICES FOR ALL AIR INLETS \$ OUTLETS.
- 44. PROVIDE 4" CONCRETE HOUSEKEEPING PADS FOR ALL FLOOR MOUNTED EQUIPMENT.
- 45. POSITION ALL ROOF MOUNTED EQUIPMENT THAT REQUIRES SERVICE A MINIMUM OF 10' FROM THE ROOF EDGE.
- 46. SELECT EQUIPMENT AND PROVIDE SOUND ATTENUATORS AS NECESSARY TO MAINTAIN A MAXIMUM OF 30 NC IN THE OFFICE SUITE AND TRAINING ROOM; 35 NC IN THE REMAINING ADMINISTRATION SUITE AREAS, TESTING AND CONTROL ROOM; 60 NC IN THE BOILER ROOM.
- 47. COORDINATE SYSTEM DESIGN WITH LEED REQUIREMENTS.

	100000 0000
)	ACCESS DOOR
E F	ARCHITECT/ENGINEER ABOVE FINISHED FLOOR
)	BACKDRAFT DAMPER
·U	BRITISH THERMAL UNIT
M	CUBIC FEET PER MINUTE
)	CONDENSATE DRAIN
Н	CABINET UNIT HEATER
ī	DOOR GRILLE
F	DIFFUSER
)	EXISTING
	EXHAUST FAN
R	EXISTING TO REMAIN
	FREE AREA
Д	FULL LOAD AMPACITY
	FIRE DAMPER
	FINS PER INCH
	GAS
	GENERAL CONTRACTOR
•	GRILLE
	HIGH, HEIGHT
	HORSE POWER
Н	1000 BTU PER HOUR
	NOT IN CONTRACT
	OUTSIDE AIR
	OUTSIDE AIR INTAKE
	RETURN AIR
G	REGISTER
E	RETURN/EXHAUST
	ROUGH OPENING
	SUPPLY AIR
— A	SUPPLY FAN
FA	SQUARE FEET FREE AREA
	STATIC PRESSURE UNIT HEATER
0	UNLESS NOTED OTHERWISE
D	VARIABLE FREQUENCY DRIVE
: :	VERIFY IN FIELD
R	VENT THRU ROOF
	VOLUME DAMPER
	WIDE, WIDTH
WS	CHILLED WATER SUPPLY
WR	CHILLED WATER RETURN
	CONDENSATE DRAIN
	CONDENSATE RETURN
S	CONDENSER WATER SUPPLY
R	CONDENSER WATER RETURN
	REFRIGERANT HOT GAS
В	REFRIGERANT HOT GAS BYPASS
S	HIGH PRESSURE STEAM
R TURN	HIGH PRESSURE STEAM CONDENSATE
S	HOT WATER HEATING SUPPLY
R	HOT WATER HEATING RETURN
5	LOW PRESSURE STEAM
R TURN	LOW PRESSURE STEAM CONDENSATE
	REFRIGERANT LIQUID
	REFRIGERANT SUCTION

	DUCTWORK SYMBOLS \$ STANDARDS
	DOUBLE THICKNESS TURNING VANES ROUND ELBOW W/ TURNING BLADES IF W >
 \	ROUND ELBOW W/ TURNING BLADES IF W - R = W/2 MIN 18"
CONSTANT VOL	A,B SHALL BE PROPORTIONAL TO AIR QUANTITY IF A OR B IS LESS THAN 6", USE TAP DETAIL. PROVIDE DAMPER IN SMALLEST BRANCH. VARIABLE BOX
	PROVIDE ADJUSTABLE VOLUME DAMPER FOR ALL SUPPLY AND RETURN BRANCHES.
ELEVATION	OFFSET FITTING CONICAL FITTINGS VOLUME DAMPER FLEX
OFFSET MADE WITH SMOOTH ELBOW FITTINGS	
FD +	ACCESS DOOR IN DUCT FD RATING EQUAL TO PARTITION RATING UNLESS NOTED OTHERWISE. (1-1/2 HR MIN.)
H	HEATING COIL FILTER
MD T	MANUAL DAMPER (VOLUME DAMPER) AUTOMATIC CONTROL DAMPER
3	TRANSITION
A	TYPE (SEE SCHEDULE) CFM
	FLEXIBLE CONNECTION (X)-300-X
SUPPLY	SOLID CROSS INDICATES UP OR TOWARD. DASHED CROSS INDICATES DOWN OR AWAY.
GRILLE, REGISTER AND	DIFFUSER STIBOLS:
CEILING SUPPLY	CEILING RETURN OR SIDEWALL SUPPLY SIDEWALL RETURN OR
DIFFUSER OR REGISTER TYPICAL DUCT CONNEC	EXHAUST GRILLE OR REGISTER EXHAUST GRILLE OR REGISTER TION DETAIL
	VD 30° MAX.
SPLITTER	VD VD CRITTIN
RECTANGULAR DUCT SUPPLY BRANCH TAKE-OFF	RECTANGULAR DUCT TRANSITION PIECE RECTANGULAR SUPPLY RECTANGULAR SUPPLY SUPPLY BRANCH TAKE-OFF
SPLITTER	VD 15° MAX.
RECTANGULAR DUCT SUPPLY BRANCH TAKE-OFF	RECTANGULAR DUCT SUPPLY BRANCH TAKE-OFF ROUND TO RECTANGULAR ROUND NAME COLLEGE
	VANE SCHEDULE WIDTH NO. OF VANES
NOTE: 1. PROVIDE STANDARD REQUIRED.	RADIUS ELBOWS WHEN POSSIBLE-SHORT RADIUS WHERE \[\begin{array}{c c c c c c c c c c c c c c c c c c c
2. ALL SHORT RADIUS I	ELBOWS SHALL HAVE VANES. VANES SHALL BE ORTED AND FASTENED AS RECOMMENDED BY SMACNA.
·	TANGULAR HEEL ELBOWS SHALL BE ALLOWED.

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NO.	DATE	REMARKS	MCA	MCA
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JB PRITZKER, GOVERNOR Illinois Capital Development Board

MECHANICAL GENERAL DEMOLITION NOTES

1. WHERE MECHANICAL SYSTEMS OR PORTIONS OF SYSTEMS ARE INDICATED TO BE REMOVED, REMOVE ALL MISCELLANEOUS COMPONENTS THAT ARE MADE OBSOLETE BY REMOVAL OF THE SYSTEM.

- 2. ALL DEMOLITION OF THE HVAC SYSTEM AS CALLED FOR ON THE CONTRACT DOCUMENTS SHALL BE UNDER THIS CONTRACTORS WORK. INCLUDE DEMOLITION OF ALL MECHANICAL COMPONENTS, NOT REQUIRED FOR THE NEW WORK, WHETHER SPECIFICALLY INDICATED ON CONTRACT DOCUMENTS OR NOT.
- 3. BEFORE STARTING ANY DEMOLITION ON HVAC EQUIPMENT WHICH HAS AN ELECTRICAL CONNECTION COORDINATE DISCONNECTING OF THE POWER SUPPLY WITH THE DIVISION 26 CONTRACTOR. DO NOT PROCEED WITH MECHANICAL DEMOLITION UNTIL ALL ELECTRICAL POWER HAS BEEN SAFELY DISCONNECTED FROM EQUIPMENT TO BE DEMOLISHED. REMOVE ALL EQUIPMENT, ELECTRICAL TEMPERATURE CONTROL WIRING AND CONDUIT AND COMPONENTS, ETC. THAT ARE BEING MADE OBSOLETE BY THE SCOPE OF THIS PROJECT.
- 4. WARNING: ASBESTOS-CONTAINING BUILDING MATERIALS ARE OR MAY BE PRESENT IN THIS BUILDING. NO PERSON MAY DISTURB ASBESTOS-CONTAINING BUILDING MATERIALS UNLESS THAT PERSON IS A LICENSED ASBESTOS WORKER AND CONDUCTS SUCH WORK IN ACCORDANCE WITH SPECIFICATION(S) CONTAINED IN THE PROJECT DOCUMENTS AND IN COMPLIANCE WITH ILLINOIS DEPARTMENT OF PUBLIC HEALTH RULES AND REGULATIONS.
- 5. CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN CLEANUP THROUGHOUT THE COURSE OF THE DEMOLITION WORK.
- 6. ALL HVAC EQUIPMENT, MATERIAL, ETC. THAT IS BEING DEMOLISHED WILL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE NOTED. ALL SUCH ITEMS WILL BE REMOVED FROM THE BUILDING SITE BY THE CONTRACTOR. NO ITEM WHICH IS BEING REMOVED UNDER THE DEMOLITION CONTRACT MAY BE REUSED UNDER THE NEW WORK CONTRACT UNLESS NOTED ON THE DRAWINGS.
- 7. SEQUENCE OF ALL DEMOLITION WORK SHALL BE IN STRICT ACCORDANCE WITH THE CONTRACT DOCUMENTS AND/OR AS DIRECTED BY THE USING AGENCY.
- 8. CONTRACTOR TO PROTECT ALL WINDOWS AND BUILDING SURFACES DURING DEMOLITION. ANY COSTS INCURRED BY DAMAGE FROM CUTTING TORCHES, SPARKS, HEAT OR OTHER DEMOLITION PROCEDURES WILL BE BACK CHARGED TO THE CONTRACTOR.
- 9. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL LABOR AND MATERIAL REQUIRED TO PATCH ALL OPENINGS IN EXISTING WALLS AND FIRE SEPARATIONS CREATED BY THE REMOVAL OF CONTRACTOR'S MATERIAL AND EQUIPMENT. WHERE THESE OPENINGS ARE NOT TO BE REUSED, PATCHING OF ALL EXISTING FLOOR, WALL AND ROOF OPENINGS IS THE RESPONSIBILITY OF THE CONTRACTOR.
- 10. PRIOR TO THE START OF DEMOLITION, THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPING, DUCTWORK AND SERVICE SIZES NOTED IN THESE DRAWINGS. ANY DISCREPANCY IN THE NOTED SIZES COULD NOT BE THE BASIS OF ADDITIONAL COST CLAIM.
- 11. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS INCURRED IN REPAIRS, RELOCATIONS, OR REPLACEMENT OF ANY CABLES, CONDUITS, OR OTHER SERVICES THAT ARE TO REMAIN BUT DAMAGED WITHOUT PROPER INVESTIGATIONS.
- 12. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND SERVICES FOR THE DEMOLITION, REMOVAL, AND LEGAL DISPOSAL OF EXISTING EQUIPMENT, DUCTWORK, PIPING, ASSOCIATED CONTROLS, ASSOCIATED STRUCTURAL SUPPORTS, HANGERS, RODS, SUPPORTS, ANCHORS, MISCELLANEOUS HARDWARE, MISCELLANEOUS EQUIPMENT, REMOVAL OF APPURTENANT EQUIPMENT AND MATERIALS, AND LAWFULLY DISPOSE OF ALL EQUIPMENT AND MATERIALS RENDERED OBSOLETE OFF THE PREMISES.
- 13. PROVIDE TEMPORARY WEATHER PROTECTION AT ALL ROOF OPENINGS WHERE MECHANICAL EQUIPMENT IS BEING REMOVED.

	MECHANICAL	SYMBOLS	
	DIRECTION OF FLOW	C 2	CARBON DIOXIDE SENSOR
	NEW PIPING/DUCTWORK	SD	SMOKE DETECTOR
	EXISTING PIPING / DUCTWORK	EQU NO	EQUIPMENT TAG
	EXISTING TO BE REMOVED	NO DWG	DETAIL TAG
	HIDDEN	•	CONNECT NEW WITH EXISTING
DC>	UNDERCUT DOOR		FLEXIBLE DUCT CONNECTION
\bigcirc	THERMOSTAT		
(H)	HUMIDISTAT	MIC'/	AREA NOT IN SCOPE OF WORK
	CARBON MONOXIDE SENSOR		VOLUME DAMPER

R	EVISIO	ONS	DRAWN	PREPARED
NO.	DATE	REMARKS	MCA	MCA
			TRACED	APPROVED
			CHECKED	APPROVED
С	03/09/2021	REVISED BRIDGING DOCUMENTS	MCA	DLA

NOTE: DESIGN-BUILD ENTITY SHALL OBTAIN AND VERIFY ALL AS-BUILT CONDITIONS AND DIMENSIONS AT PROJECT SITE AND BE FULLY RESPONSIBLE FOR ALL, SCOPE OF WORK REQUIREMENTS, CODES, STAT AND FEDERAL REGULATIONS AND GUIDELINES.





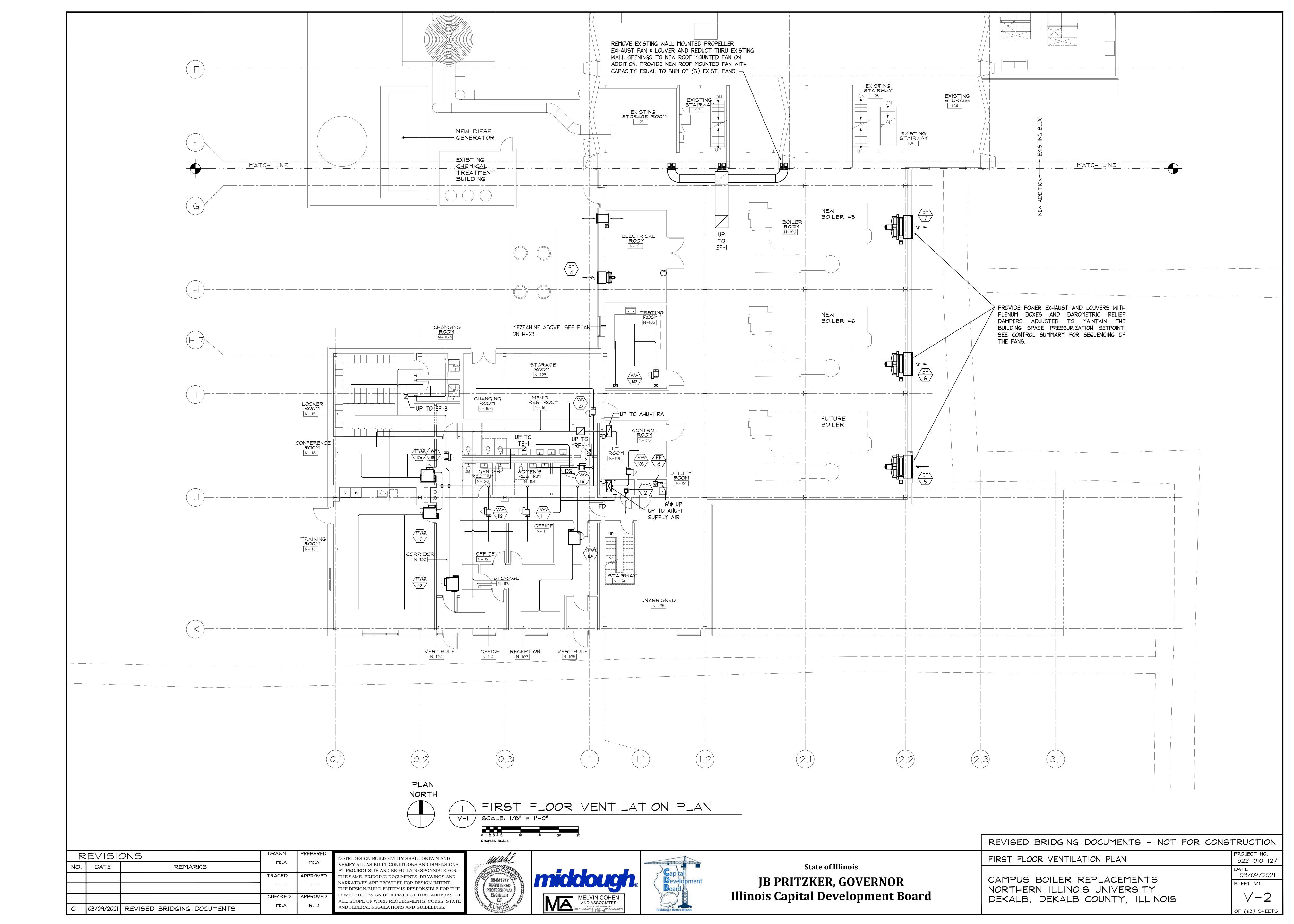


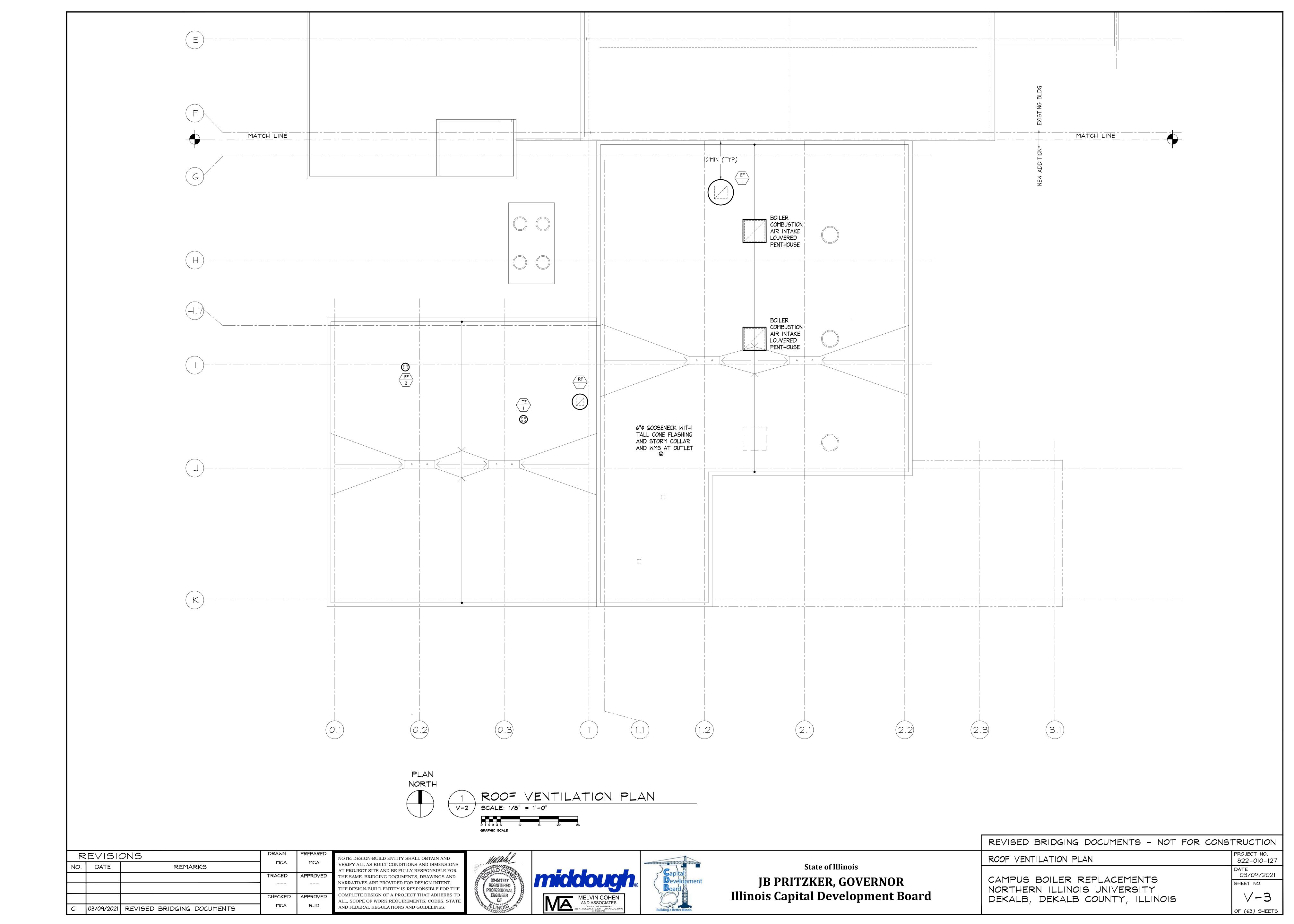
State of Illinois JB PRITZKER, GOVERNOR Illinois Capital Development Board

SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES 822-010-127 03/09/2021 CAMPUS BOILER REPLACEMENTS SHEET NO. NORTHERN ILLINOIS UNIVERSITY DEKALB, DEKALB COUNTY, ILLINOIS OF (63) SHEETS

REVISED BRIDGING DOCUMENTS - NOT FOR CONSTRUCTION

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CONTROL SUMMARY

GENERAL:

- 1. PROVIDE COMPLETE DIRECT DIGITAL CONTROL SYSTEM FOR CONTROL AND MONITORING OF ALL NEW HVAC EQUIPMENT UNLESS NOTED OTHERWISE. PROVIDE COMPONENTS THAT USE NATIVE BACNET MS/TP, BACNET TCP/IP ARCHITECTURE AND BE IN STRICT ACCORDANCE WITH ASHRAE STANDARD 135. PROVIDE COMPONENTS THAT ARE COMPATIBLE WITH THE EXISTING SCHNEIDER ELECTRIC I/NET AND ECO STRUCTURE CAMPUS CONTROL SYSTEM. THE TEMPERATURE CONTROL CONTRACTOR SHALL PROVIDE ALL CONTROL WIRING, CONDUITS, RELAYS, TRANSFORMERS, ETC. AS REQUIRED TO PERFORM THE OPERATING SEQUENCES AND AS REQUIRED FOR INTERFACE WITH THE ASSOCIATED EQUIPMENT, ELECTRICAL SYSTEM COMPONENTS AND FIRE ALARM SYSTEM. PROVIDE MISCELLANEOUS POWER WIRING AS REQUIRED FOR REMOTE CONTROL PANELS, TRANSFORMERS, ACTUATORS, ETC.
- 2. PROVIDE GRAPHICS SCREENS FOR EACH SYSTEM. PROVIDE AN OVERALL PLAN OF THE BUILDING IDENTIFYING THE PHYSICAL LOCATION OF EACH CONTROLLED EQUIPMENT WITH DETAILED SCREENS FOR EACH PIECE OF EQUIPMENT AVAILABLE BY DOUBLE CLICKING ON THE EQUIPMENT LOCATION IN THE OVERALL PLAN. ALL SETPOINTS SHALL BE ADJUSTABLE THROUGH THE DDC SYSTEM.
- 3. ALL CONTROL PANELS, SWITCHES, AND MISCELLANEOUS REMOTE DEVICES SHALL BE CLEARLY AND PERMANENTLY LABELED TO INDICATE THEIR FUNCTION. TAGGING AT CONTROL PANELS SHALL BE ENGRAVED TYPE.
- 4. CONTROL ALL COMPONENTS IN A GRADUAL MANNER WITH AN ADJUSTABLE RATE SO AS NOT TO CAUSE UNNECESSARY OVERSHOOTING, HUNTING, ALARMING AND / OR SAFETY TRIPS.

 5. ALL LOCAL ALARMS SHALL BE AUDIO/VISUAL WITH SILENCE BUTTON.
- 6. MINIMUM CONTROLLER QUANTITY: (1) PER AHU, (1) PER VAV TERMINAL (1) FOR HOT WATER HEATING SYSTEM. PROVIDE ADDITIONAL CONTROLLERS AS NECESSARY TO ACHIEVE THE OPERATING SEQUENCES. DO NOT LOCATE ANY CONTROLLERS IN THE VENTILATION SYSTEM AIR STREAMS.
- 7. ALL HYDRONIC CONTROL VALVES TO BE PRESSURE INDEPENDENT TYPE SIMILAR TO B&G "ULTRA SETTER" SERIES.

ADMINISTRATION AREA VENTILATION SYSTEM AHU-1: PROVIDE THE FOLLOWING CONTROL FEATURES AS A MINIMUM:

- 1. SYSTEM SHALL RUN CONTINUOUSLY.
- 2. VAV \$ FPVAV SUPPLY FAN SPEED CONTROL W/ STATIC PRESSURE RESET BASED ON BOX POSITIONING. INCLUDE HIGH PRESSURE SAFETY CUT OUT.
- 3. MINIMUM OA CONTROL UTILIZING AIRFLOW MEASURING AT OA INLET.
- 4. ENTHALPY CONTROLLED ECONOMIZER.
- 5. 2-WAY MODULATING CONTROL VALVE AT ALL PREHEAT COIL AND AT CHILLED WATER COIL TO MAINTAIN DISCHARGE AIR SETPOINT.
- 6. FILTER DIFFERENTIAL PRESSURE MONITORING.
- 7. RETURN AIR SMOKE SHUT DOWN W/ INTERFACE TO FIRE ALARM SYSTEM. FREEZESTAT ON HEATING COIL.
- 8. VAV \$ FPVAV TERMINAL CONTROL BASED ON SPACE TEMPERATURE SENSOR WITH COOLING MAXIMUM, COOLING MINIMUM AND HEATING AIRFLOW SETPOINTS. DURING HEATING MODE, REHEAT COIL 2-WAY MODULATING VALVE SHALL MAINTAIN SUPPLY AIR HEATING SETPOINT. FPVAV BOXES ARE SERIES TYPE WITH FAN OPERATING ONLY IN HEATING MODE WITH AIR VALVE AT MINIMUM SETPOINT.
- 9. CO2 MONITORING AND VENTILATION AIR RESET FOR TRAINING ROOM 117.
- 10. SYSTEM AHU-1 RELIEF FAN RF-1: VARIABLE SPEED BUILDING PRESSURE CONTROL TO ACTIVATE DURING ECONOMIZER MODE.

BOILER ROOM VENTILATION SYSTEM AHU-2: AHU-2 WILL SERVE TO COOL THE BOILER ROOM USING OUTDOOR AIR AND TO SUPPLEMENT COMBUSTION AIR TO THE EXISTING BOILER ROOM. THE UNIT SHALL BE UTILIZED ONLY FOR COOLING AND VENTILATION. SPACE HEATING SHALL BE PERFORMED BY STEAM UNIT HEATERS. AHU-2 IS SELECTED ONLY TO ADDRESS THE VENTILATION REQUIREMENTS FOR THE (2) INITIAL PHASE 1 BOILERS. AN ADDITIONAL AHU IS INTENDED WHEN PHASE 2 BOILERS AND / OR COGENERATION UNIT IS ADDED IN THE FUTURE. PROVIDE THE FOLLOWING CONTROL FEATURES AS A MINIMUM:

. SUPPLEMENTAL COMBUSTION AIR TO THE EXISTING BOILER ROOM WILL BE ACHIEVED BY VARYING THE FAN SPEED AND ECONOMIZER DAMPER POSITION TO MAINTAIN POSITIVE 0.02" WC (ADJ) BUILDING PRESSURE COORDINATED WITH THE SYSTEM'S RELIEF DAMPER SETTINGS

2. COOLING FUNCTION SHALL BE AVAILABLE AT ALL TIMES WHEN THE OUTSIDE AIR

- TEMPERATURE IS BELOW THE NEW BOILER ROOM SPACE TEMPERATURE. COOLING DISCHARGE AIR SETPOINT SHALL BE 50 DEG F (ADJ). AHU-2 SHALL FUNCTION AS A SINGLE ZONE VAV AS FAR AS COOLING MODE IS REQUIRED BUT FAN SPEED AND OUTSIDE AIR QUANTITIES SHALL NOT BE REDUCED BELOW THAT REQUIRED TO MAINTAIN THE BUILDING PRESSURIZATION. EXCESS OUTDOOR AIR REQUIRED FOR COOLING SHALL BE REMOVED FROM THE BUILDING VIA EXHAUST FANS EF-7 THRU 10 WITH BACKDRAFT DAMPERS ADJUSTED TO MAINTAIN THE BUILDING PRESSURIZATION SETPOINT.
- A. AHU-2 FAN SPEED SHALL BE MODULATED TO MAINTAIN THE BOILER ROOM SPACE TEMPERATURE COOLING SETPOINT (85 DEG F, ADJ) WITH THE ECONOMIZER DAMPERS BEING MODULATED TO ACHIEVE THE DISCHARGE AIR SETPOINT. IF COOLING SUPPLY AIR EXCEEDS THE REQUIREMENTS FOR BUILDING PRESSURIZATION THEN EXCESS AIR SHALL BE RELIEVED THROUGH THE BACKDRAFT DAMPERS AT THE EXHAUST FAN OPENINGS. UPON A CONTINUED RISE IN SPACE PRESSURE ABOVE THE BUILDING PRESSURIZATION SETPOINT, THE EXHAUST FANS SHALL RUN IN UNISON WITH THEIR SPEED MODULATED TO MAINTAIN THE BUILDING PRESSURIZATION SETPOINT.
- B. IF INCREASED OUTSIDE AIRFLOW IS REQUIRED TO MAINTAIN THE BUILDING PRESSURE SETPOINT THEN THE FAN SPEED SHALL BE INCREASED BEYOND THE COOLING FAN SPEED REQUIREMENTS WHILE SIMULTANEOUSLY MODULATING THE ECONOMIZER DAMPERS SO AS NOT TO OVERCOOL THE SPACE BELOW THE BOILER ROOM SPACE TEMPERATURE HEATING SETPOINT
- C. IF INCREASED OUTSIDE AIRFLOW IS REQUIRED TO MAINTAIN THE BUILDING PRESSURE SETPOINT TO THE POINT THAT THE RETURN AIRFLOW TO THE ECONOMIZER NEEDS TO BE REDUCED AND RESULTING IN OVERCOOLING OF THE BOILER ROOM BELOW THE HEATING SETPOINT, THE STEAM HEATING COIL SHALL BE ACTIVATED. ON A CALL FOR HEAT WHERE RETURN AIR IS NOT ADEQUATE TO TEMPER THE SUPPLY AIR, THE FACE \$ BYPASS DAMPERS AT THE COILS SHALL BE MODULATED TO MAINTAIN THE SUPPLY AIR SETPOINT. IN GENERAL, THE HEATING COIL SHOULD NEVER BE ACTIVATED EXCEPT WHEN OUTSIDE AIR IN EXCESS OF THE COOLING NEEDS IS REQUIRED TO MAINTAIN THE BUILDING PRESSURIZATION.
- D. THE STEAM HEATING COILS ARE SELECTED BASED ON THE MAXIMUM AMOUNT OF COMBUSTION AIR THAT SHOULD BE REQUIRED FOR THE (2) EXISTING TO REMAIN BOILERS WHICH IS LESS THAN THE FULL AIR CAPACITY OF AHU-2. THE CONTROLS SHALL LIMIT THE AMOUNT OF OUTSIDE AIR TO THE SYSTEM SO THAT THE HEATING COIL CAN ALWAYS ACHIEVE THE REQUIRED SUPPLY AIR TEMPERATURE.
- E. AT TEMPERATURES BELOW 40 DEG F (ADJ) WHEN THE SUPPLY FAN IS RUNNING, THE STEAM VALVE SHALL BE OPEN TO THE COILS. AT TEMPERATURES BELOW 40 DEG F (ADJ) WHEN THE SUPPLY FAN IS OFF, THE STEAM VALVE SHALL BE MODULATED TO MAINTAIN 50 DEG F (ADJ) WITHIN THE AHU HOUSING.

- F. AT TEMPERATURES ABOVE 40 DEG F (ADJ), THE STEAM COIL SHALL BE ACTIVATED AND CONTROLLED ONLY AT TIMES WHEN THE AMOUNT OF AIR REQUIRED FOR BUILDING PRESSURIZATION IS OVERCOOLING THE SPACE.
- 3. FILTER DIFFERENTIAL PRESSURE MONITORING.
- 4. RETURN AIR SMOKE SHUT DOWN W/ INTERFACE TO FIRE ALARM SYSTEM. FREEZESTAT ON HEATING COIL.

HOT WATER HEATING SYSTEM:

- 1. PROVIDE MODULATING STEAM VALVE CONTROL TO MAINTAIN HOT WATER HEATING SUPPLY SETPOINT TEMPERATURE.
- 2. START / STOP PUMP BASED ON OUTSIDE AIR TEMPERATURES AND CALL FOR HEAT AT ASSOCIATED COILS. PROVIDE LEAD / LAG CONTROL WITH AUTOMATIC START OF LAG PUMP UPON LEAD PUMP FAILURE.
- 3. PROVIDE 2-WAY MODULATING CONTROL VALVES AT ALL HEATING COILS EXCEPT PROVIDE 3-WAY MODULATING VALVE ON SELECT COIL(S) AS REQUIRED TO MAINTAIN MINIMUM PUMP FLOW. CONTROL PUMP SPEED TO MAINTAIN SYSTEM DIFFERENTIAL PRESSURE THROUGH ECM MOTOR WITH SENSORLESS CONTROLLER.

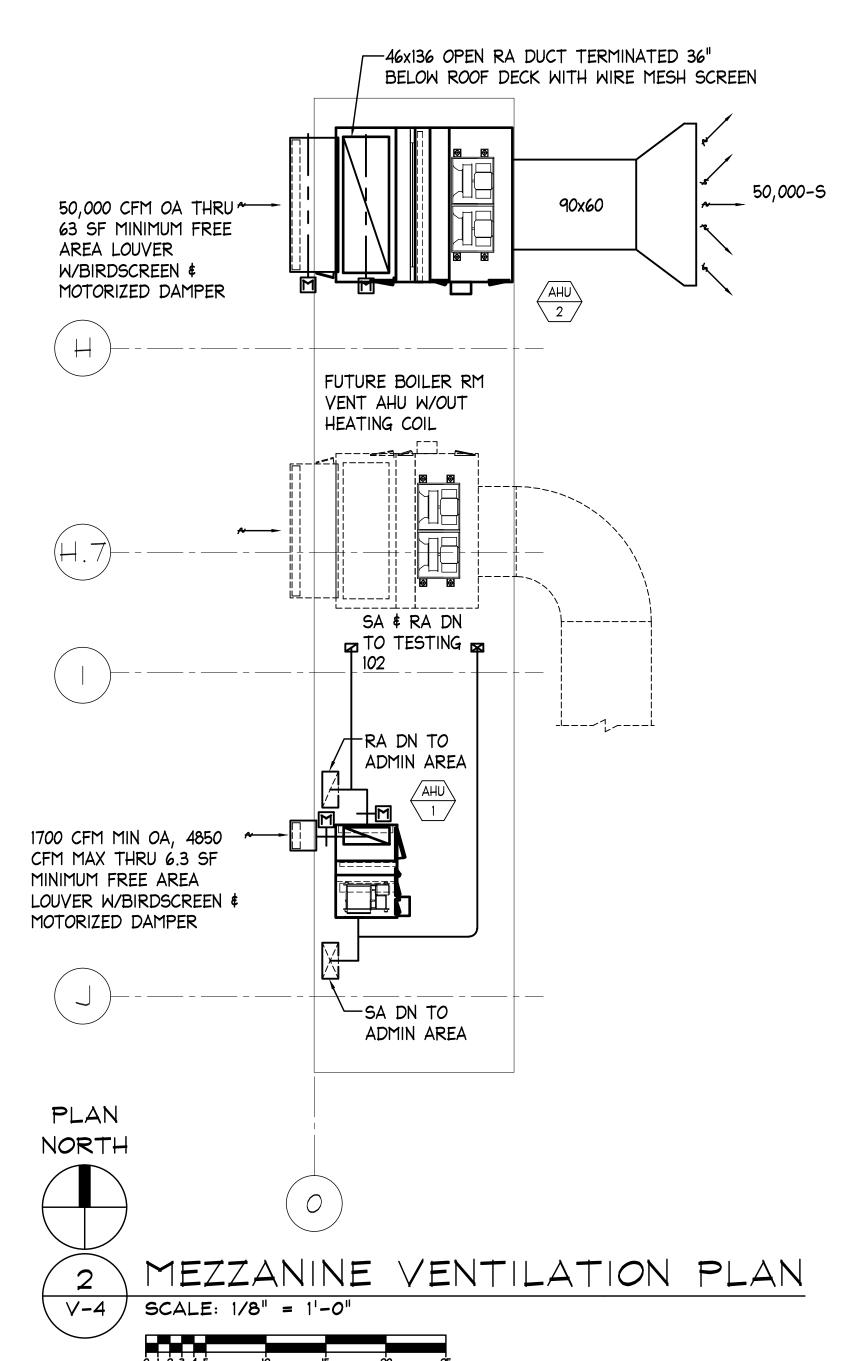
EXHAUST FANS:

- 1. EXISTING BOILER ROOM REPLACEMENT VENTILATION FAN EF-1: RECONNECT TO EXISTING FAN CONTROLS.
- 2. IT ROOM EXHAUST FAN EF-2: PROVIDE THERMOSTAT CONTROL TO VENTILATE ROOM AS REQUIRED AT TIMES THAT AHU-1 IS OFF.
- 3. LOCKER ROOM FAN EF-3: TIMECLOCK CONTROL. WHEN THE FAN IS COMMANDED ON THE FAN SPEED SHALL BE CONTROLLED THRU ITS ECM MOTOR TO TRACK THE LOCKER ROOM VAV SUPPLY AIR.
- 4. ELECTRIC ROOM EXHAUST FAN EF-4: PROVIDE THERMOSTAT CONTROL TO VENTILATE ROOM UPON A RISE IN SPACE TEMPERATURE.
- 5. TOILET ROOM FAN TE-I: TIMECLOCK CONTROL.

CABINET HEATERS: PROVIDE INTEGRAL THERMOSTATS TO MODULATE 2-WAY HOT WATER HEATING CONTROL VALVES AND CYCLE FANS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT NO DDC INTERFACE REQUIRED.

UNIT HEATERS: PROVIDE WALL MOUNTED THERMOSTATS TO MODULATE 2-WAY HOT WATER HEATING (OR STEAM AS APPLICABLE) CONTROL VALVES AND CYCLE FANS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. NO DDC INTERFACE REQUIRED.

UTILITY METERING MONITORING IN ACCORDANCE WITH LEED REQUIREMENTS.



										AIR HAND	LING I	UNIT SO	CHEC	DULE											
TAG	LOCATION	AREA SERVED	CFM	OUTS	SIDE AIR					FAN				N	MOTOR E	LECTR	ICAL		COOLING	HEATING	RA/EF	FILTER	MANUFACTURER	MODEL	REMARKS
				MIN	MAX	FAN TYPE	TSP	ESP	RPM	DISCH SOUND LEVEL	DRIVE	CLASS	BHP	HP	VOLT	PH	HZ	SPEED	COIL TAG	COIL TAG	TAG	EFF		1	
							(IN.)	(IN.)		(OCTAVE 1-8)								CONTROL						1	
AHU-1	MEZZANINE	ADMINISTRATION	4800	1500	4800	AIRFOIL	3.71	2	2134	86,85,89,86,82,77,72,67	BELT		4.9	7.5	480	3	60	VFD	CC-1	HC-1	RF-1	MERV 13			1,2,3
AHU-2	MEZZANINE	BOILER RM VENTILATION	50000	0	50000	PLENUM	3.3	1	1588	93,85,88,85,84,87,79,72	DIRECT		41.2	4 @ 11.5	480	3	60	VFD		HC-2		MERV 8			1,2,3,4
																								1	

1. VERTICAL UNIT WITH THE FOLLOWING SECTIONS IN ORDER OF AIRFLOW: MIXING BOX / ANGLED FILTER WITH AIRFLOW MEASURING ON OA, HORIZONTAL HEATING COIL W/ DOWNSTREAM ACCESS, VERTICAL COOLING COIL WITH DOWNSTREAM ACCESS, SUPPLY FAN.

2. PROVIDE STAINLESS STEEL DRAIN PAN, 4" HOUSEKEEPING PAD AND TRAPPED CONDENSATE DRAIN PIPED TO FLOOR DRAIN. TSP CALCULATED W/ MID LIFE FILTER PD.

3. MINIMUM OA TO BE THE GREATER OF ASHRAE 62.1 AS REQUIRED BY LEED, IMC 2015, OR MAKE-UP AIR FOR ROOM EXHAUST.

4. HORIZONTAL UNIT WITH THE FOLLOWING SECTIONS IN ORDER OF AIRFLOW: MIXING BOX / ANGLED FILTER, INTERNAL FACE & BYPASS, STEAM HEATING COIL W/ DOWNSTREAM ACCESS, SUPPLY FAN. SET ON 4" HOUSEKEEPING PAD. TSP CALCULATED W/ MID LIFE FILTER PD.

											С	OOLING	S AND I	HEATIN	G COIL	SCHE	EDUL	.E (H	YDRO	ONIC)								
TAG	AHU	LOCATION	CFM	FACE					COIL	DATA				MAX	MAX AIR	E <i>F</i>	١T	LA	AT		WATE	ER DATA F	PER COIL		TOTAL	SENS	MANUFACTURER AND MODEL	REMARKS
	SERVING			AREA SQ	QTY	TYPE	W (IN.) L	. (IN.)	MIN	MAX	FLUID	TUBE DIA	TUBE	FACE	PD	Db	Wb	Db	Wb	GPM	EWT	LWT	MAX PD	VEL	CAP	CAP		
				FT					ROWS	FPI	TYPE	(IN.)	THICK	VEL.	(IN. WC.)								(FT)	(FPS)	MBH	MBH		
													(IN.)	(FPM)		°F	°F	°F	°F		°F	°F						
CC-1	AHU-1	MEZZANINE	4800	9.72	1	CHW	50	28	6	10	WATER	0.5	0.016	500	0.62	80	67	55	54.3	27	42	56	7.5	2.11	190.4	130		
HC-1	AHU-1	MEZZANINE	4800	9.19	1	HW	49	27	1	10	WATER	0.625	0.02	530	0.12	40		80		14	180	150	5	1.7		207		

									HEATIN(G COIL (SCHEDUL	E (STEAM)								
TAG	AHU	LOCATION	CFM	FACE AREA				COIL DA	TA			MAX FACE VEL.	MAX AIR	EAT DB	LAT DB	STE	:AM	COND	MANUFACTURER	REMARKS
	SERVING			SQ FT	QTY	TYPE	W (IN.)	L (IN.)	MIN. TUBE	MIN	MAX FPI	(FPM)	PD	°F	°F	INLET	TOTAL	GPM	AND MODEL	
									DIA (IN.)	ROWS			(IN. WC.)			PRESS	LB/HR			
																(PSIG)				
C-2	AHU-2	MEZZANINE	50000	76.4	2	NON-FRZ	141	24	1	1	10	675	0.24	15	70	5	2970	3092		

								FAN	SCHEE	DULE										
TAG	LOCATION	SERVICE	CFM	E.S.P.						М	OTOR ELE	CTRICAL			MANUFACTURER	MODEL	UNIT WT.	REMARKS		
				IN WC	FAN TYPE	CLASS	RPM	DRIVE	MAX SONES	BHP	HP	VOLT	PH	HZ	FLA	SPEED CONTROL			(LBS)	
EF-1	EF-1 ROOF EXIST BOILER RM SUMMER VENT MATCH TOTAL FAN PERFORMANCE FOR (3) EXISTING WALL FANS															NONE				1
EF-2	IT RM 119	IT RM VENT	150	0.25	CEILING				5		54 W	120	1	60		NONE				
EF-3	ROOF	LOCKER / CHANGING	385	0.75	ROOF CENT				15		0.25	120	1	60		ECM				1
EF-4	SIDE-WALL	ELECTRIC 101	SIZE BASED	ON ELECTRIC	ROOM LOAD AND 10 DEG		20							NONE				2		
EF-5 TO 7	SIDE-WALL	BOILER ROOM VENTILATION	25,000	0.25	PROPELLER				22		3	480	3	60		VFD				4
EF-8	UTILITY ROOM	UTILITY ROOM	100	0.25	CEILING				5			120	1	60		NONE				
TE-1	ROOF	TOILET ROOMS	980	0.75	ROOF CENT				15		0.5	120	1	60		NONE				1
RF-1	ROOF	AHU-1 RELIEF FAN	3675	1	ROOF CENT				12		1.5	480	3	60		VFD				1
	_											·								

OOF MOUNTED EXHAUST FAN W/BACKDRAFT DAMPER, HINGED BASE AND 18" CURB.

2. WALL LOUVER, BACKDRAFT DAMPER, OSHA GUARD. THERMOSTATICALLY CONTROLLED, INTERLOCK WITH INTAKE LOUVER

3. SPARK RESISTANT.
4. PROVIDE WITH INTEGRAL DISCONNECT SWITCH, PROVIDE WITH ADJUSTABLE BAROMETRIC BACKDRAFT DAMPER, SIDE WALL FAN WITH ALUMINUM PROP AND COATED HOUSING (CORROSION RESISTANT MATERIALS), OSHA GUARD.

							CC	NSTANT / V	'ARIABLE	AIR V	OLUN	/IE TEF	RMINAL	. UNIT S	CHEDULE							
TAG LOCATION MAX MIN HTG DUCT SIZES TOTAL UNIT MAX NC									NC							MANUFACTURER	MODEL	REMARKS				
			01 111	01 111			7 wc	DISCHARGE	RADIATED	EAT	LAT °F	BTUH	GPM	ROWS	MAX FACE	MAX AIR PE	EWT °F	LWT °F M	IAX WTR PD			
					INLET	OUTLET	1,00			°F					VELOCITY	IN. W.C.			FT			
VAV-102	TESTING 102	480	105	240	7	12x10		25	25	55	90	9072	0.9	1	700	0.25	180	160	5			ALL
VAV-103	CONTROL 103	200	65	65	5	12x8		25	25	55	90	2457	0.2	1	700	0.25	180	160	5			ALL
VAV-111	CORRIDOR 122	75	45	45	4	12x8		25	25	55	90	1701	0.2	1	700	0.25	180	160	5			ALL
VAV-112	CORRIDOR 122	75	45	45	4	12x8		25	25	55	90	1701	0.2	1	700	0.25	180	160	5			ALL
VAV-115	CORRIDOR 122	275	140	140	6	12x8		25	25	55	90	5292	0.5	1	700	0.25	180	160	5			ALL
VAV-116	CORRIDOR 122	530	125	125	7	12x10		25	25	55	90	4725	0.5	1	700	0.25	180	160	5			ALL
VAV-123	STORAGE 123	265	80	80	6	12x8		25	25	55	90	3024	0.3	1	700	0.25	180	160	5			ALL

1. PROVIDE WITH TRANSFORMERS AND VELOCITY SENSORS. FACTORY INSTALL CONTROLLER AND ACTUATOR FURNISHED BY TEMPERATURE CONTROL CONTRACTOR.

2. PROVIDE BOTTOM ACCESS DOOR TO SERVICE INLET FACE OF HEATING COIL. WHERE LENGTH OF INLET DUCT FROM SUPPLY MAIN EXCEEDS 5', TRANSITION TO LARGER DUCT SIZE WITH A MAXIMUM FRICTION OF 0.2 INCH WC PER 100 FT.

	FAN POWERED CONSTANT / VARIABLE AIR VOLUME TERMINAL UNIT SCHEDULE (HYDRONIC COIL)																											
TAG	LOCATION	PRIMAR'	Y AIR CFM	F.A	۸N	DUC	T SIÆS		AIR D	ATA		MO	TOR DA	ATA		MAX UI	VIT NC		WATER COIL DATA					MANUFACTURER	MODEL	REMARKS		
		MAX	MIN	CFM	ESP	INLET	OUTLET	EAT	LAT	MAX UNIT	HP	FLA	V	PH	HZ	DISCHARGE	RADIATED	BTUH	GPM	EW	T LWT	F ROWS	MAX FACE	MAX AIR PD	MAX			
								°F	°F	PD (IN WC)										°F			VEL (FPM)	IN. W.C.	WTR PD			
FPVAV-109	RECEPTION 109	550	125	425	0.2	8	17x11	55	90		0.5	7.7	120	1	60	25	25	13905	1.4	180	160	1	700	0.15	5			ALL
FPVAV-110	CORRIDOR 122	350	80	270	0.2	6	17x11	55	90		0.5	7.7	120	1	60	25	25	8856	0.9	180	160	1	700	0.15	5			ALL
FPVAV-117	CORRIDOR 122	2100	450	1650	0.2	14	16.5x14.5	55	90		1	12.5	120	1	60	25	25	52650	5.3	180	160	1	700	0.15	5			ALL
FPVAV-117a	CORRIDOR 122	700	150	550	0.2	8	17x11	55	90		0.5	7.7	120	1	60	25	25	13905	1.4	180	160	1	700	0.15	5			ALL

1. PROVIDE WITH TRANSFORMERS AND VELOCITY SENSORS. FACTORY INSTALL CONTROLLER AND ACTUATOR FURNISHED BY TEMPERATURE CONTROL CONTRACTOR.

2. PROVIDE W/ ECM MOTOR & 1" THROW AWAY FILTER AT INLET. FAN ESP DOES NOT INCLUDE COIL OR FILTER PRESSURE DROPS. WHERE LENGTH OF INLET DUCT FROM SUPPLY MAIN EXCEEDS 5', TRANSITION TO LARGER DUCT SIZE WITH A MAXIMUM FRICTION OF 0.2 INCH WC PER 100 FT.

A EQ'D SUPPL HAUST CFM	ACTUAL VENTILA	TION	T		
	,,,			SYSTEM	REMARKS / ROOM - FUNCTION
		RETURN CFM	SUPPLY	EXHAUST RETURN	
	-		AHU-2	EF-5,6,7	
	-			EF-4	
- 480	80 -	480	AHU-1	AHU-1/RF-1	
- 200	00 -	200	AHU-1	AHU-1/RF-1	
		-	-	-	
- 50	50 -	-			
- 500	600 -	340	AHU-1	AHU-1/RF-1	
- 300	00 -	300	AHU-1	AHU-1/RF-1	
- 75	75 -	75	AHU-1	AHU-1/RF-1	
- 75	75 -	75	AHU-1	AHU-1/RF-1	
		-	-	-	
140 140	40 250	-	AHU-1	TE-1	
225	25 285	-	AHU-1	EF-3	
50	50 50	-	AHU-1	EF-3	
	50	-	-	EF-3	
350 140	40 440	-	AHU-1	TE-1	
- 2000	000 -	2000	AHU-1	AHU-1/RF-1	
700	00 -	-	AHU-1	AHU-1/RF-1	
65	35 150	-	AHU-1	EF-2	
-	- 50	-	-	TE-1	
	- 100	-	-	EF-10	
- 250	250 -	-	AHU-1	-	
- 265	265 -	200	AHU-1	AHU-1/RF-1	
- 50	50 -	-	AHU-1		
35	50 1 - 20 - 7 - 21	75 - 75 75 75 75 75 75 75 75 75 -	75 - 75 75 - 75 - 75 - 75 	75 - 75 AHU-1 75 - 75 AHU-1 75 - 75 AHU-1 76	75 - 75 AHU-1 AHU-1/RF-1 75 - 75 AHU-1 AHU-1/RF-1 75 - 75 AHU-1 AHU-1/RF-1 76

R	EVISI	DRAWN	PREPARED	
NO.	DATE	REMARKS	MCA	MCA
			TRACED	APPROVED
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State of Illinois

JB PRITZKER, GOVERNOR Illinois Capital Development Board REVISED BRIDGING DOCUMENTS - NOT FOR CONSTRUCTION

MEZZANINE VENTILATION PLAN AND EQUIPMENT SCHEDULES

PROJECT NO. 822-010-127

DATE 03/09/2021

CAMPUS BOILER REPLACEMENTS
NORTHERN ILLINOIS UNIVERSITY
DEKALB, DEKALB COUNTY, ILLINOIS

SHEET NO. $\sqrt{-4}$ OF (63) SHEETS

