PLUMBING SYMBOL LEGEND

MEDICAL GAS SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
MA	MA	MEDICAL AIR
N	N	NITROGEN
NO	NO	NITROUS OXIDE
O	O	OXYGEN
MV	MV	MEDICAL VACUUM
IA	IA	INSTRUMENT AIR
WAGD	WAGD	WASTE ANESTHESIA GAS DISPOSAL
DA	DA	DENTAL AIR
DV	DV	DENTAL VACUUM
		EXISTING PIPING
		ALARM PANEL (IN WALL)
		MEDICAL VALVE BOX
		MEDICAL GAS DROP

PROCESS GASES

SYMBOL	ABBREVIATION	DESCRIPTION
CDA	CDA	COMPRESSED DRY AIR
CO2	CO2	CARBON DIOXIDE
AR	AR	ARGON
AC	AC	ACETYLENE
HE	HE	HELIUM
H	H	HYDROGEN
LN	LN	LIQUID NITROGEN
LOX	LOX	LIQUID OXYGEN
O	O	OXYGEN

VALVE SYMBOLS

SYMBOL	DESCRIPTION
	GATE VALVE
	GLOBE VALVE
	SOLENOID VALVE
	OS&Y VALVE
	BUTTERFLY VALVE
OR OR	BALL VALVE
OR	CHECK VALVE
OR	PLUG VALVE
	BALANCING VALVE/CIRCUIT SETTER MEASURING DEVICE
	WATER PRESSURE REDUCING VALVE
	2-WAY CONTROL VALVE
	3-WAY MODULATING CONTROL VALVE
	FUEL GAS PRESSURE REGULATOR
	PRESSURE RELIEF VALVE
	TEMPERATURE AND PRESSURE RELIEF VALVE
	DRAIN VALVE
	VALVE IN VERTICAL
	FLOW SWITCH
	DIAPHRAGM (PROCESS SYSTEMS)
	REDUCED PRESSURE BACKFLOW PREVENTER (RPBP)
	ATMOSPHERIC VACUUM BREAKER
	PRESSURE STYLE VACUUM BREAKER

SITE UTILITY SYMBOLS

DESCRIPTION	NEW	EXISTING	FUTURE
FIRE PROTECTION SPRINKLER	(N) FS	(E) FS	(F) FS
FIRE PROTECTION WATER	(N) FW	(E) FW	(F) FW
OXYGEN	(N) O	(E) O	(F) O

SECTION SYMBOL

A — SECTION LETTER
P-100 — DRAWING NUMBER WHERE DETAILED

DETAIL SYMBOL

1 — DETAIL NUMBER
P-500 — DRAWING NUMBER WHERE DETAILED

SECTION, ELEVATION, AND DETAIL TITLES

SECTION LETTER — A — SECTION
DRAWING NUMBER WHERE DETAILED — P-300 — SCALE

DETAIL NUMBER — 1 — DETAIL
DRAWING NUMBER WHERE DETAILED — P-500 — SCALE

ELEVATION LETTER — A — ELEVATION
DRAWING NUMBER WHERE DETAILED — P-200 — SCALE

FIXTURE & EQUIPMENT SYMBOL

LETTER REFER TO EQUIPMENT TYPE
P## — NUMBER REFERS TO SPECIFIC EQUIPMENT
SYMBOL INDICATES FIXTURE/EQUIPMENT IDENTIFIED IN EQUIPMENT SCHEDULE

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ANT	ACID NEUTRALIZING TANK
AVTR	ACID RESISTANT VENT THROUGH ROOF
B.C.	BALANCING COCK
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
CWB	CLOTHES WASHER BOX
CFH	CUBIC FEET PER HOUR
CO	CLEANOUT
COTG	CLEANOUT TO GRADE
CP	CIRCULATION PUMP
CWV	COMBINATION WASTE AND VENT
DCO	DOUBLE CLEANOUT
DCOTG	DOUBLE CLEANOUT TO GRADE
DF	DRINKING FOUNTAIN
DN	DOWN
DS	DOWNSPOUT
DSN	DOWNSPOUT NOZZLE
(E)	EXISTING
EL	ELEVATION
EWH	ELECTRIC WATER HEATER
EWC	ELECTRIC WATER COOLER
EEW	EMERGENCY EYEWASH
ES	EMERGENCY SHOWER EYE WASH
ESEW	
°F	DEGREES FAHRENHEIT
(F)	FUTURE
FCO	FLOOR CLEANOUT
FFE	FINISHED FLOOR ELEVATION
FT	FEET
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOV	FUEL OIL VENT
FV	FLUSH VALVE
GD	GUTTER DRAIN
GI	GREASE INTERCEPTOR
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GWH	GAS WATER HEATER
HB	HOSE BIBB
HD	HEAD
HP	HORSEPOWER
IN	INCHES
INV	INVERT
kW	KILOWATT
MBh	1,000 BTUH
MV	MIXING VALVE
(N)	NEW
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
No. #	NUMBER
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
O	OXYGEN
OS&Y	OUTSIDE SCREW AND YOKE
PH	PHASE
Ph	POWERS OF HARDNESS
PSIG	POUNDS PER SQUARE INCH GAUGE
SP	STATIC PRESSURE
TD	TRENCH DRAIN
TYP	TYPICAL
YB	YARD BOX
YH	YARD HYDRANT
WCO	WALL CLEANOUT
WC	WATER CLOSET

NOTE: NOT ALL ABBREVIATIONS OR SYMBOLS APPLY TO THIS PROJECT

PIPING SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
AV	AV	ACID VENT
AW	AW	ACID WASTE
CA	CA	COMPRESSED AIR
CD	CD	CONDENSATE DRAIN
DCW	DCW	DOMESTIC COLD WATER
DHW	DHW	DOMESTIC HOT WATER
DHWR	DHWR	DOMESTIC HOT WATER RETURN
DHW 140°F	DHW 140°F	140° DOMESTIC HOT WATER
DHWR 140°F	DHWR 140°F	140° DOMESTIC HOT WATER RETURN
ROS	ROS	REVERSE OSMOSIS SUPPLY
ROR	ROR	REVERSE OSMOSIS RETURN
MU	MU	MAKE-UP WATER
NPW	NPW	NON-POTABLE WATER
V	V	VENT
DIS	DIS	DEIONIZED WATER SUPPLY
DIR	DIR	DEIONIZED WATER RETURN
SAN	SAN	SANITARY SEWER
GW	GW	GREASE WASTE
GV	GV	GREASE VENT
RD	RD	STORM/ROOF DRAIN
ORD	ORD	OVERFLOW ROOF DRAIN
LPG	LPG	LIQUIFIED PETROLEUM GAS
G	G	NATURAL GAS-LOW PRESSURE
NGM	NGM	NATURAL GAS-MEDIUM PRESSURE
NGH	NGH	NATURAL GAS-HIGH PRESSURE
IRR	IRR	IRRIGATION
SCW	SCW	SOFT COLD WATER
SHW	SHW	SOFT HOT WATER
TWR (_ _ _)	TWR	TEMPERED WATER RETURN (TEMP °F)
TW (_ _ _)	TW	TEMPERED WATER (TEMP °F)
PD	PD	PUMPED DISCHARGE LINE
ICW	ICW	INDUSTRIAL COLD WATER
IHW	IHW	INDUSTRIAL HOT WATER
IHWR	IHWR	INDUSTRIAL HOT WATER RETURN
INW	INW	INDUSTRIAL WASTE
IA	IA	INSTRUMENT COMPRESSED AIR
IW	IW	INDIRECT WASTE
LA	LA	LAB COMPRESSED AIR

SCHEMATIC SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
XX		KEYED NOTE
		POINT OF CONNECTION TO EXISTING
		FUTURE PIPE
		EXISTING PIPE TO BE REMOVED
		NEW PIPING
		EXISTING PIPING TO REMAIN
		NEW PIPE CONNECTION TO EXISTING PIPING
		SLOPE OF PIPE
		DIRECTION OF FLOW
		DROP IN PIPE
		RISE IN PIPE
		TOP CONNECTION, 45° OR 90°
		BOTTOM CONNECTION, 45° OR 90°
		CAPPED OUTLET
		SIDE CONNECTION
		UNION
		FLANGED UNION
		ORIFICE UNION
		REDUCER OR INCREASER
		ECCENTRIC REDUCER
		PIPE GUIDE
		FLEXIBLE CONNECTION
		UNIVERSAL TEMPERATURE-PRESSURE FITTING (PETE'S PLUG)
		STRAINER WITH BLOWDOWN VALVE & HOSE BIBB
		THERMOMETER
		PRESSURE GAUGE AND GAUGE COCK
		AQUASTAT
OR		WATER HAMMER ARRESTOR
		TEST PLUG (PRESS/TEMP)
		PENETRATION
	MAV	MANUAL AIR VENT (MAV)
A	AAV	AUTOMATIC AIR VENT (AAV)
	FS/FD/AD	FLOOR SINK , FLOOR DRAIN , AREA DRAIN
	FCO/COTG	FLOOR CLEANOUT/CLEANOUT TO GRADE
	DCOTG	TWO WAY OR DOUBLE CLEANOUT TO GRADE
	VTR	VENT THROUGH ROOF
	AG	AIR GAP FITTING
	(WH) (HB)	WALL HYDRANT, HOSE BIBB

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RECORD DRAWINGS

NO	REVISIONS	DATE

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ARCHITECTS/ENGINEERS

TRIPLE C – THE A&E GROUP
A MULTI-DISCIPLINE A&E COMPANY

BRIDGERS & PAXTON

UNITED STRUCTURAL DESIGN LLC

Drawing Title: PLUMBING LEGEND

Approved : Project Director

Project Title: **PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS**

Location: **2615 E CLINTON AVE, FRESNO, CA 93703**

Date	Checked by	Drawn
10/10/2024	R. REIF	R. SCHAMP

Project Number: **570-16-302**

Building Number:

Drawing number: **P-001**

Page 0 of 0

Office of Construction and Facilities Management

Department of Veterans Affairs

Autodesk Docs://570-16-302 VA Fresno Chiller Plant PZ 10/10/2016/VA Fresno Chiller Plant MPE_ADD_SERVICE.rvt
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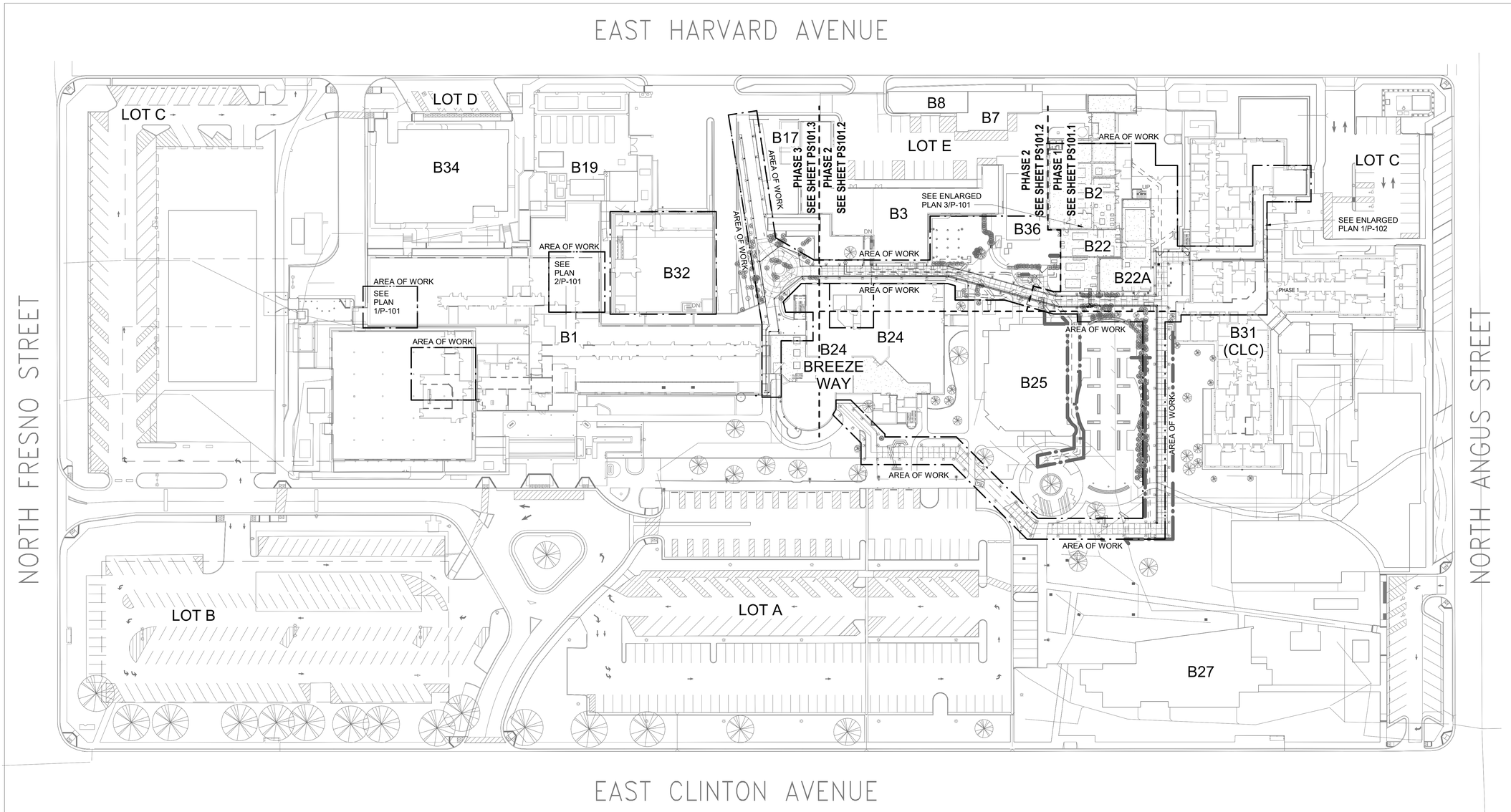

1 PLUMBING SITE PLAN - OVERALL

Scale: 1" = 40'-0"

0' 20' 40' 80'

PLUMBING PROJECT SCOPE

THE OVERHEAD PEDESTRIAN CANOPIES SHALL INCLUDE:

A. CONCEALED RACEWAY CARRYING MEDICAL OXYGEN FROM BUILDING NO. 22 TO BUILDING NO. 31 PENTHOUSE AND FROM FIRST FLOOR ALARM PANEL TO BUILDING 1.

B. REMOVAL OF EXISTING PIPE UTILITY STANDS ASSOCIATED WITH MEDICAL OXYGEN SERVICES WHICH WERE CONSTRUCTED FOR PROJECT NO. 570-13-300, "NEW BUILDING NO. 22A AND CHILLER INFRASTRUCTURE".

C. EMERGENCY LOW PRESSURE OXYGEN INLET. SEE SHEET P-102 FOR SCOPE OF WORK.

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GENERAL SHEET NOTES

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D COORDINATE UTILITY VALVES, JACKET SEAMS, GAUGES, AND TEST PORTS WITH ACCESS PANELS. CENTER SERVICE POINT IN ACCESS PANEL TO MAXIMIZE ACCESS.

E ALL PIPING TO BE PAINTED AND LABELED PER VA UTILITY STANDARD AND AS IDENTIFIED IN THE PAINTING. MEDICAL GAS PIPES ARE NOT REQUIRED TO BE PAINTED. SEE SCOPE OF WORK AND SPEC SECTION 09 91 00 - 34.

F CONTRACTOR TO SUBMIT PROPOSED UTILITY STACKING CONFIGURATION FOR COR REVIEW PRIOR TO THE START OF WORK.

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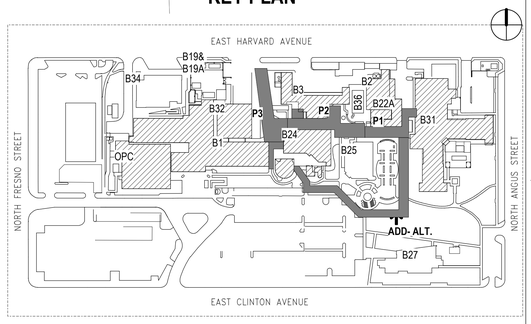
J SEE COMMISSIONING REQUIREMENTS FOR ADDITIONAL INFORMATION.

KEY PLAN



RECORD DRAWINGS

Autodesk Docs://570-16-302 VA Fresno Chiller Plant/P2 10/10/2024 VA Fresno Chiller Plant MPE_ADD_SERVICE.rvt
11/15/2024 10:33:31 AM

NO	REVISIONS	DATE

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BRIDGERS & PAXTON

UNITED STRUCTURAL DESIGN LLC

Drawing Title: PLUMBING SITE PLAN

Approved : Project Director

Project Title: PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS

Location: 2615 E CLINTON AVE, FRESNO, CA 93703

Date: 10/10/2024 | Checked by: R. REIF | Drawn: R. SCHAMP

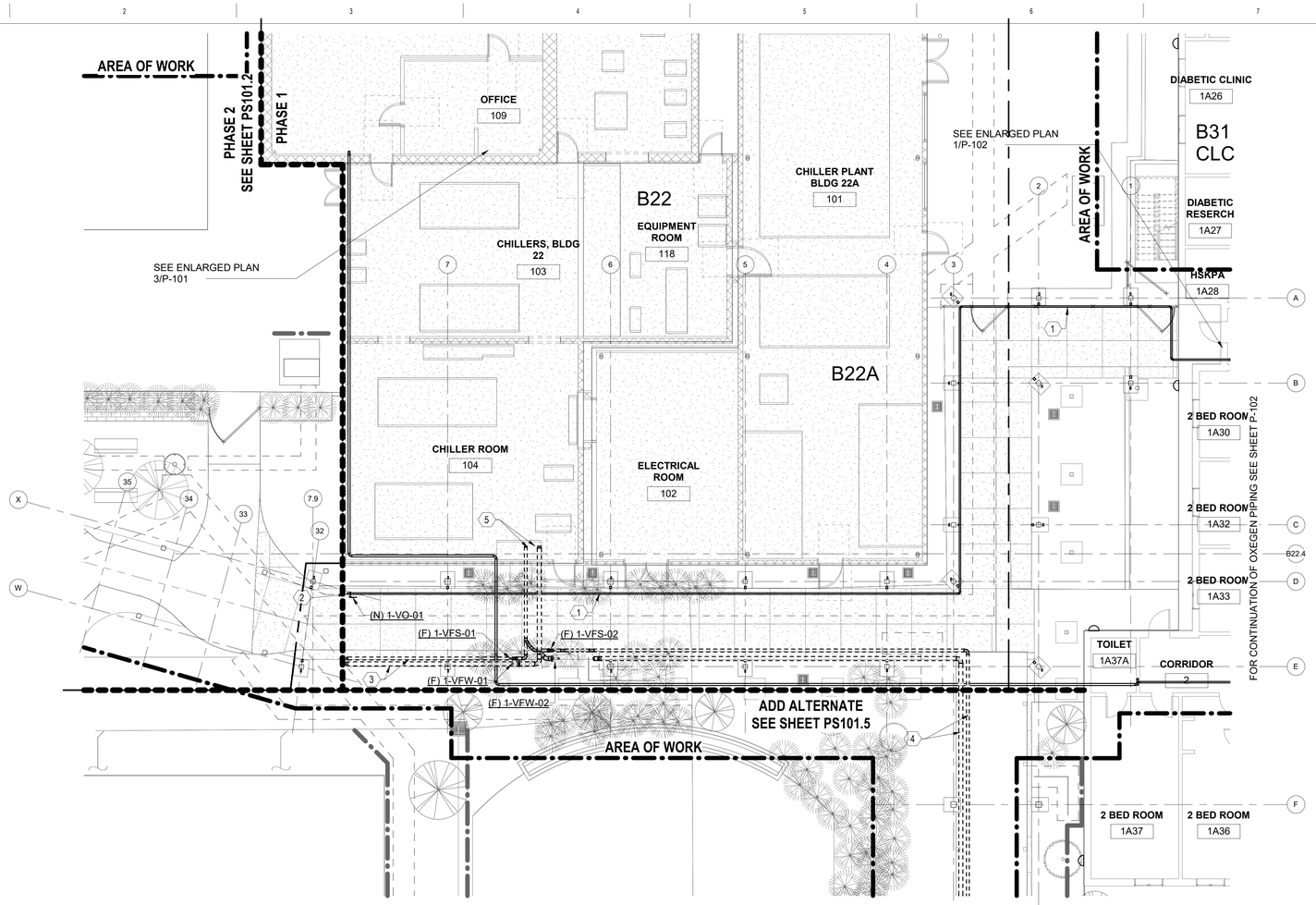
Project Number: 570-16-302

Building Number

Drawing number: PS101

Office of Construction and Facilities Management

Department of Veterans Affairs



1 PLUMBING SITE PLAN - PHASE 1
Scale: 1/8" = 1'-0"

0' 4' 8' 16'

PLUMBING VALVE SCHEDULE PHASE 1					
SYMBOL	VAVLE TYPE	VAVLE SIZE	LOCATION IN PROJECT	SYSTEM	COUNT
Phase 1					
(F) 1-VFW-01	BUTTERFLY	6"	COLUMN E-7	FW	1
(F) 1-VFS-02	BUTTERFLY	4"	COLUMN E-6	FS	1
(F) 1-VFS-01	BUTTERFLY	4"	COLUMN E-7	FS	1
(F) 1-VFW-02	BUTTERFLY	6"	COLUMN E-6	FW	1
Grand total: 4					

OXYGEN VALVE SCHEDULE - PAHSE 1					
SYMBOL	VAVLE TYPE	VAVLE SIZE	LOCATION IN PROJECT	SYSTEM	COUNT
Phase 1					
(N) 1-VO-01	BUTTERFLY	2"	COLUMN D-32	O	1
Grand total: 1					

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J SEE COMMISSIONING REQUIREMENTS FOR ADDITIONAL INFORMATION.

KEYNOTES

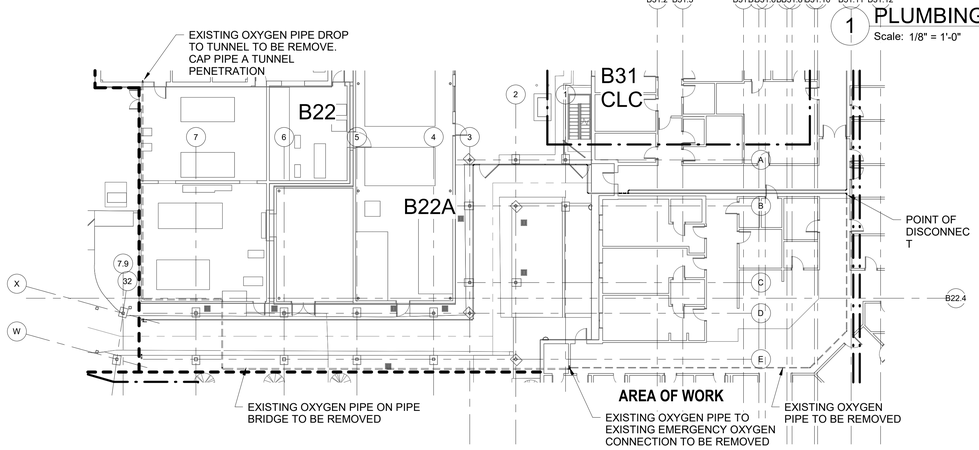
1 (N) 2" OXYGEN ROUTED INSIDE WALKWAY ENCLOSURE.

2 VALVE AND CAP (N) 2" OXYGEN PIPE FOR FUTURE CONNECTION.

3 FUTURE 6" FIRE PROTECTION WATER LINE TO BUILDING 01 AND FUTURE 4" FIRE SPRINKLER TO BUILDING 24.

4 ADD ALTERNATE (N) 6" FIRE PROTECTION AND (N) 4" FIRE SPRINKLER TO SERVE THE FUTURE CLC ADDITION AND CANTEEN.

5 FUTURE 6" FIRE PROTECTION AND FUTURE 4" FIRE SPRINKLER TO BE CONNECTED TO EXISTING MAINS.



2 PLUMBING PARTIAL SITE PLAN - PHASE 2 DEMO
Scale: 1/16" = 1'-0"

0' 8' 16' 32'

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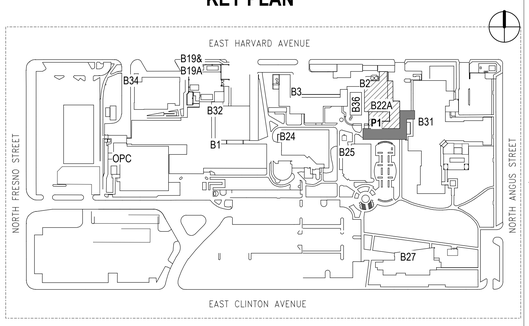
KEY PLAN



RECORD DRAWINGS

NO	REVISIONS	DATE

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ARCHITECTS/ENGINEERS

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A MULTI-DISCIPLINE AE COMPANY

BRIDGERS & PAXTON

UNITED STRUCTURAL DESIGN LLC

Drawing Title: PLUMBING SITE PLAN - PHASE 1

Approved : Project Director

Project Title: PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS

Location: 2615 E CLINTON AVE, FRESNO, CA 93703

Date: 10/10/2024 | Checked by: R. REIF | Drawn: R. SCHAMP

Project Number: 570-16-302

Building Number

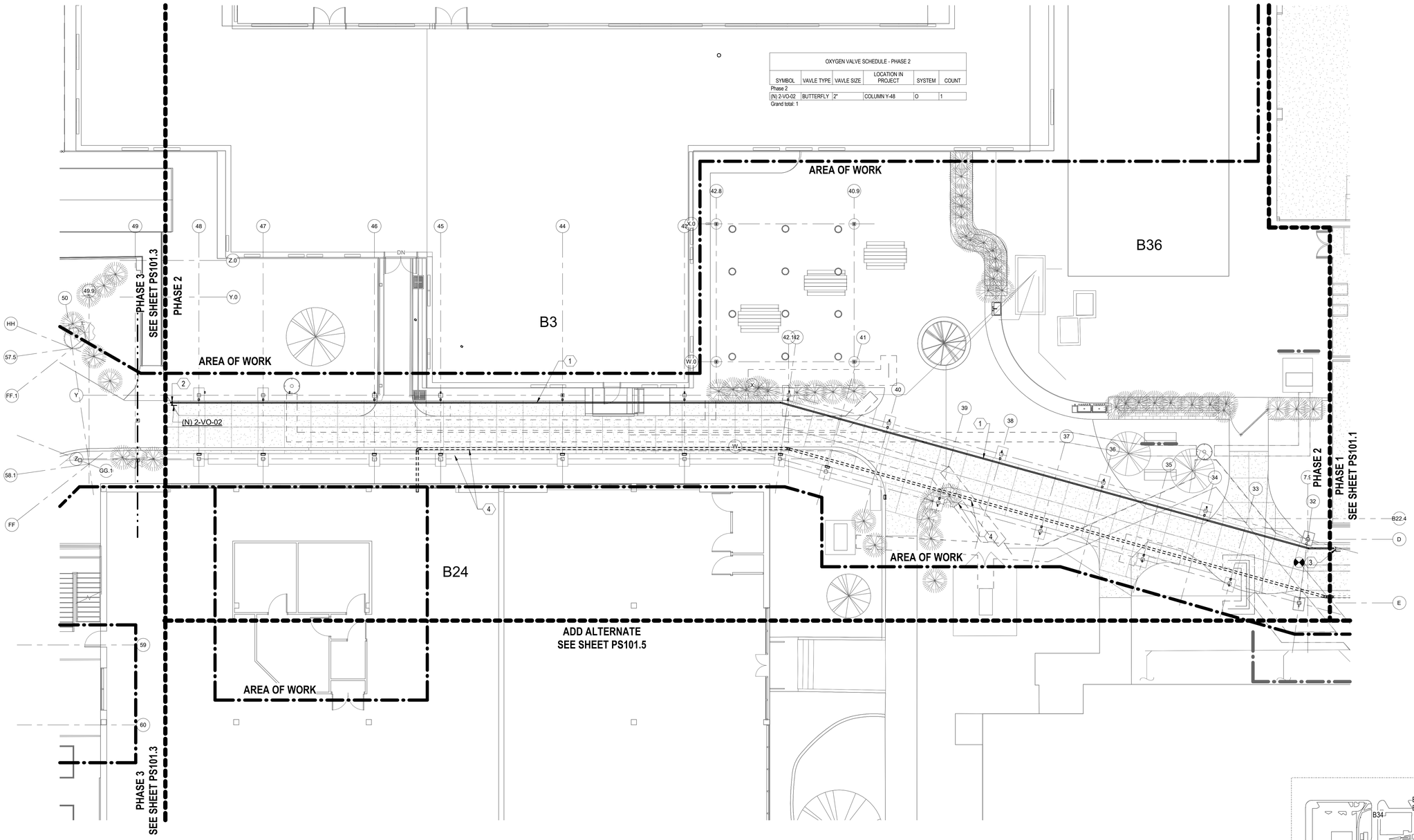
Drawing number: PS101.1

Office of Construction and Facilities Management

Department of Veterans Affairs

Autodesk Docs://570-16-302 VA Fresno Chiller Plant P2 10102618/VA Fresno Chiller Plant MPE_ADD_SERVICE.rvt
11/15/2024 10:30:41 AM

OXYGEN VALVE SCHEDULE - PHASE 2					
SYMBOL	VAVLE TYPE	VAVLE SIZE	LOCATION IN PROJECT	SYSTEM	COUNT
Phase 2					
(N) 2-VO-02	BUTTERFLY	2"	COLUMN Y-48	O	1
Grand total: 1					



1 PLUMBING SITE PLAN - PHASE 2

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

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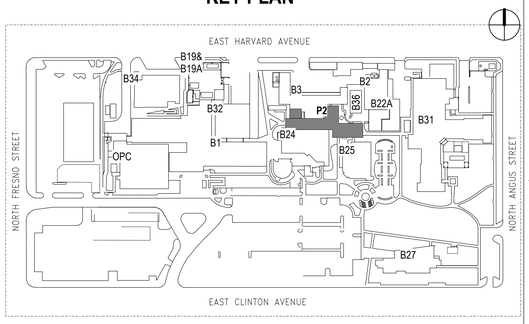
2 VALVE AND CAP (N) 2" OXYGEN PIPE FOR FUTURE CONNECTION.

3 CONNECT (N) 2" OXYGEN TO (E) 2" OXYGEN PIPE.

4 (F) 6" FIRE PROTECTION WATER LINE TO BUILDING 01 AND (F)4" FIRE SPRINKLER TO BUILDING 24.

KEY PLAN



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RECORD DRAWINGS

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11/15/2024 10:30:46 AM

NO	REVISIONS	DATE

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ARCHITECTS/ENGINEERS

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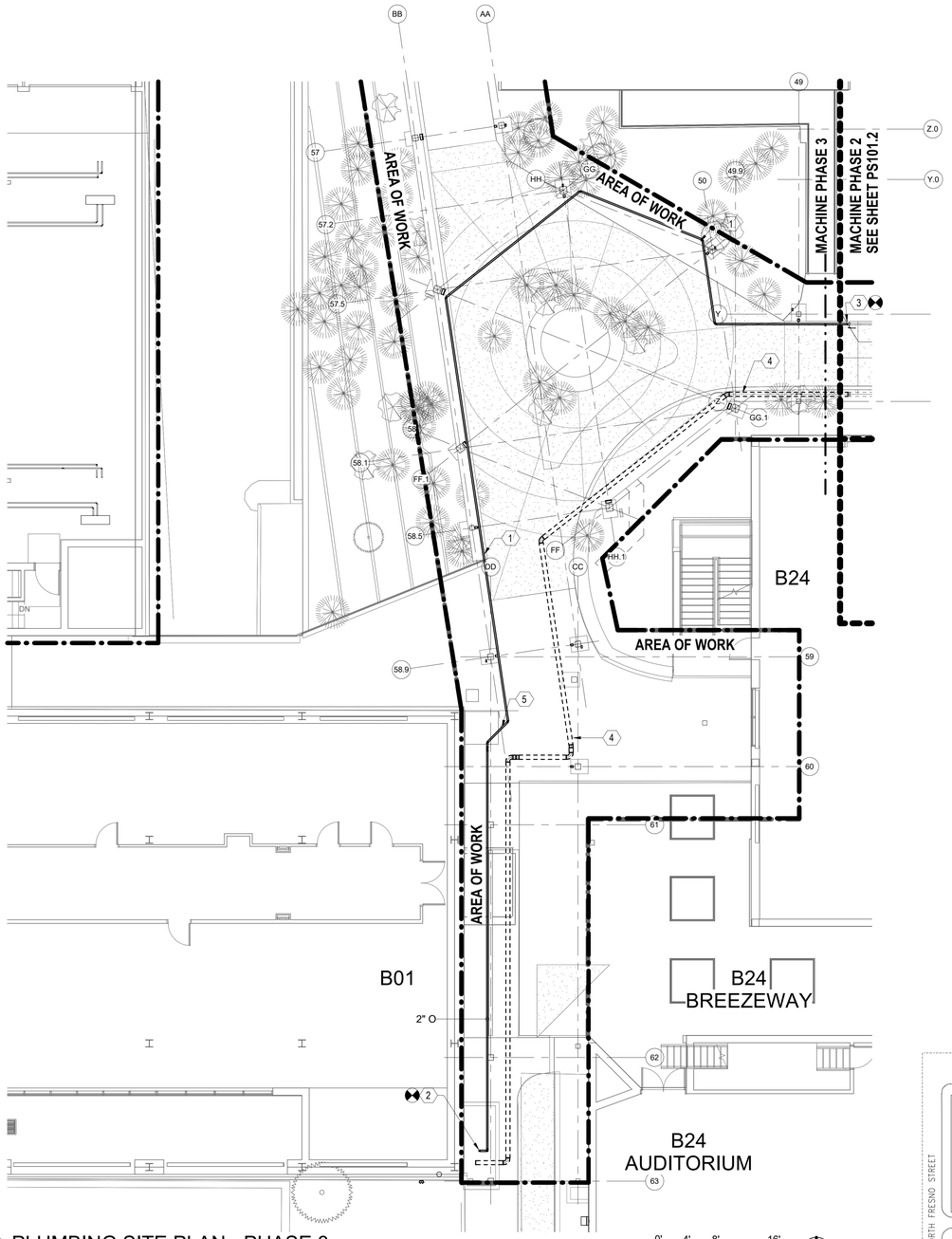
BRIDGERS & PAXTON

UNITED STRUCTURAL DESIGN LLC

Drawing Title	PLUMBING SITE PLAN - PHASE 2
Approved : Project Director	
Project Title	PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS
Location	2615 E CLINTON AVE, FRESNO, CA 93703
Date	10/10/2024
Checked by	R. REIF
Drawn	R. SCHAMP
Project Number	570-16-302
Building Number	
Drawing number	PS101.2

Office of Construction and Facilities Management

Department of Veterans Affairs



1 PLUMBING SITE PLAN - PHASE 3
Scale: 1/8" = 1'-0"

GENERAL SHEET NOTES

A CONTRACTOR TO ENSURE ALL SERVICE INTERRUPTIONS ARE COORDINATED WITH THE COR 30 DAYS IN ADVANCE AND A PRE-CUTOVER MEETING IS TO OCCUR 2 DAYS PRIOR TO INTERRUPTION.

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C FUTURE WORK IS CONSIDERED NIC EXCEPT THAT UTILITY BANK ENCLOSURE IS TO BE PROVIDED AS DESIGNED.

D COORDINATE UTILITY VALVES, JACKET SEAMS, GAUGES, AND TEST PORTS WITH ACCESS PANELS. CENTER SERVICE POINT IN ACCESS PANEL TO MAXIMIZE ACCESS.

E ALL PIPING TO BE PAINTED AND LABELED PER VA UTILITY STANDARD AND AS IDENTIFIED IN THE PAINTING. MEDICAL GAS PIPES ARE NOT REQUIRED TO BE PAINTED. SEE SCOPE OF WORK AND SPEC SECTION 09 91 00 - 34.

F CONTRACTOR TO SUBMIT PROPOSED UTILITY STACKING CONFIGURATION FOR COR REVIEW PRIOR TO THE START OF WORK.

G ALL INSULATION AND JACKETING TO BE PROVIDED AS REQUIRED BY THE SPECIFICATIONS AND VA UTILITY STANDARDS.

H CONTRACTOR TO PURCHASE AND LEAVE ON SITE 1 MAN-LIFT AND 1 FORKLIFT AS REQUIRED BY SPECIFICATION 01 00 00.

I ALL NEW PIPES TO BE CLEANED AND TESTED PRIOR TO COMMISSIONING.

J SEE COMMISSIONING REQUIREMENTS FOR ADDITIONAL INFORMATION.

KEYNOTES

1 (N) 2" OXYGEN ROUTED INSIDE WALKWAY ENCLOSURE.

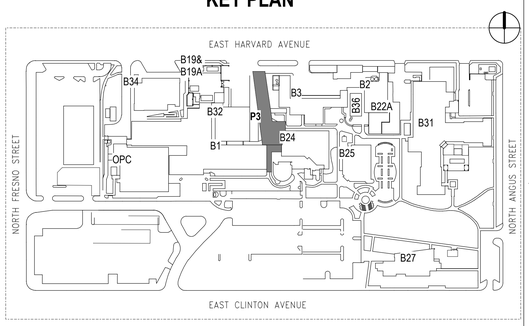
2 CONNECT (N) 2" OXYGEN TO (E) 2" OXYGEN PIPE LOCATED IN SUB-BASEMENT

3 CONNECT (N) 2" OXYGEN TO (E) 2" OXYGEN PIPE.

4 (F) 6" FIRE PROTECTION WATER LINE TO BUILDING 01.

5 (N) 2" OXYGEN ROUTED OVER EXISTING CANOPY.

KEY PLAN



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RECORD DRAWINGS

Autodesk Docs://570-16-302 VA Fresno Chiller Plant P2 10102616/VA Fresno Chiller Plant MPE_ADD_SERVICE.rvt
11/15/2024 10:30:48 AM

NO	REVISIONS	DATE

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ARCHITECTS/ENGINEERS

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A MULTI-DISCIPLINE AE COMPANY
BRIDGERS & PAXTON
UNITED STRUCTURAL DESIGN LLC

Drawing Title: PLUMBING SITE PLAN - PHASE 3

Approved : Project Director

Project Title: PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS

Location: 2615 E CLINTON AVE, FRESNO, CA 93703

Date: 10/10/2024 | Checked by: R. REIF | Drawn: R. SCHAMP

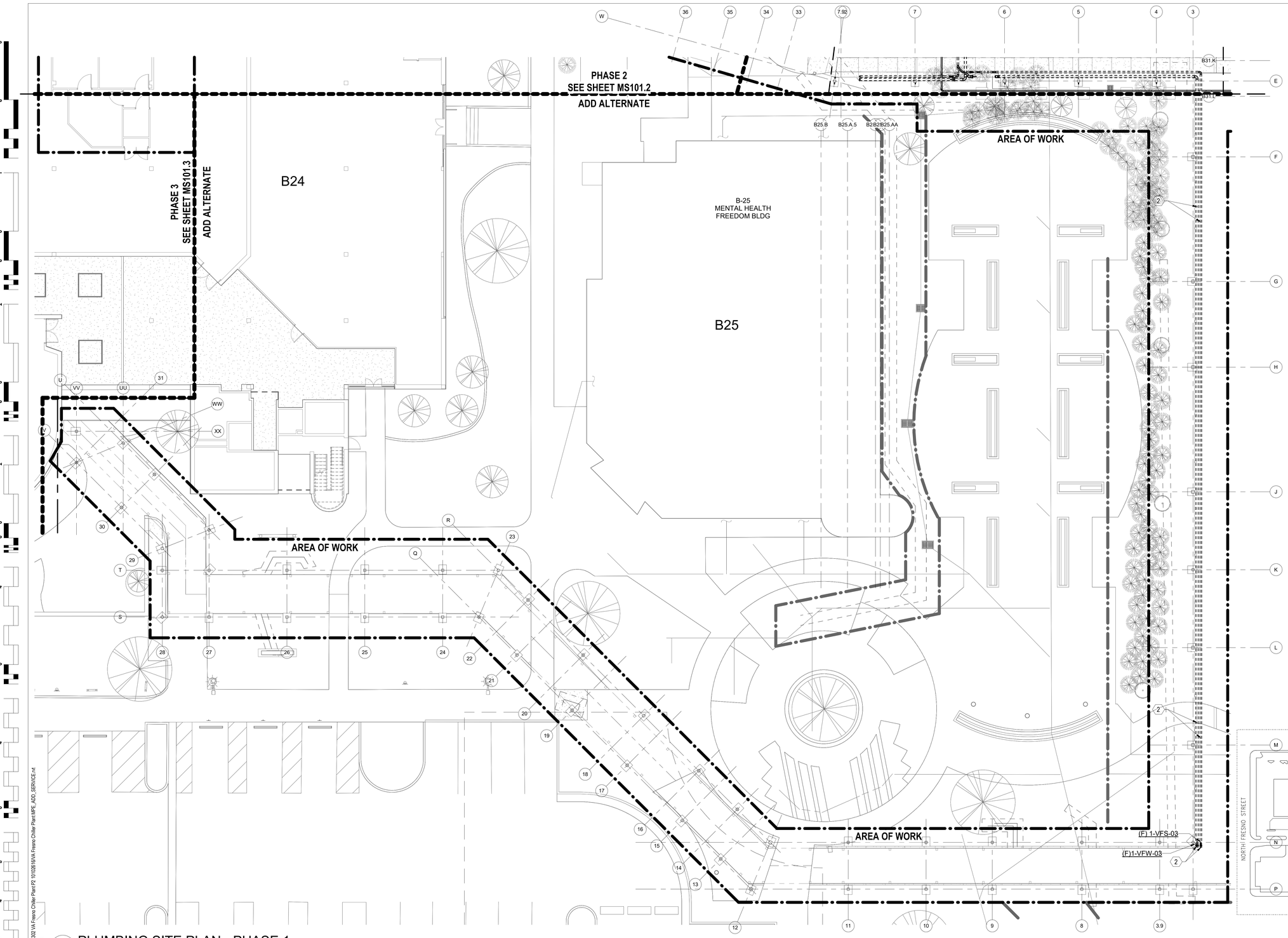
Project Number: 570-16-302

Building Number

Drawing number: PS101.3

Office of Construction and Facilities Management

Department of Veterans Affairs



1 PLUMBING SITE PLAN - PHASE 1

Scale: 1" = 10'-0"

0' 5' 10' 20'

GENERAL SHEET NOTES

A CONTRACTOR TO ENSURE ALL SERVICE INTERRUPTIONS ARE COORDINATED WITH THE COR 30 DAYS IN ADVANCE AND A PRE-CUTOVER MEETING IS TO OCCUR 2 DAYS PRIOR TO INTERRUPTION.

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F CONTRACTOR TO SUBMIT PROPOSED UTILITY STACKING CONFIGURATION FOR COR REVIEW PRIOR TO THE START OF WORK.

G ALL INSULATION AND JACKETING TO BE PROVIDED AS REQUIRED BY THE SPECIFICATIONS AND VA UTILITY STANDARDS.

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I ALL NEW PIPES TO BE CLEANED AND TESTED PRIOR TO COMMISSIONING.

J SEE COMMISSIONING REQUIREMENTS FOR ADDITIONAL INFORMATION.

KEYNOTES

1 FUTURE 6" FIRE PROTECTION AND 4" FIRE SPRINKLER TO SERVE THE FUTURE CLC ADDITION AND CANTEEN .

2 FUTURE ISOLATION VALVE FOR CONNECTION TO FUTURE CLC EXPANSION AND CANTEEN.

PLUMBING VALVE SCHEDULE ADD ALTERNATE

SYMBOL	VAVLE TYPE	VAVLE SIZE	LOCATION IN PROJECT	SYSTEM	COUNT
ADD ALTERNATE					
(F)1-VFW-03	BUTTERFLY	6"	COLUMN N-4	FW	ADD ALTERNATE
(F) 1-VFS-03	BUTTERFLY	4"	COLUMN N-4	FS	ADD ALTERNATE
Grand total: 2					

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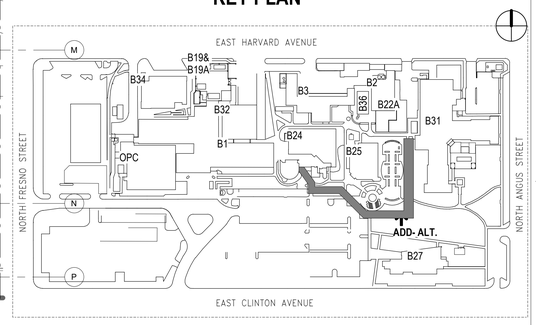
KEY PLAN



RECORD DRAWINGS

NO	REVISIONS	DATE

PROJECT TEAM

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A MULTI-DISCIPLINE AE COMPANY

BRIDGERS & PAXTON

UNITED STRUCTURAL DESIGN LLC

Drawing Title
PLUMBING SITE PLAN - PHASE 1 ADD ALTERNATE

Approved : Project Director

Project Title
PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS

Location
2615 E CLINTON AVE, FRESNO, CA 93703

Date 10/10/2024 | Checked by R. REIF | Drawn R. SCHAMP

Project Number 570-16-302

Building Number

Drawing number PS101.5

Office of Construction and Facilities Management

Department of Veterans Affairs

Autodesk Docs://570-16-302 VA Fresno Chiller Plant/P2 10/10/2024 VA Fresno Chiller Plant MPE_ADD_SERVICE.rvt
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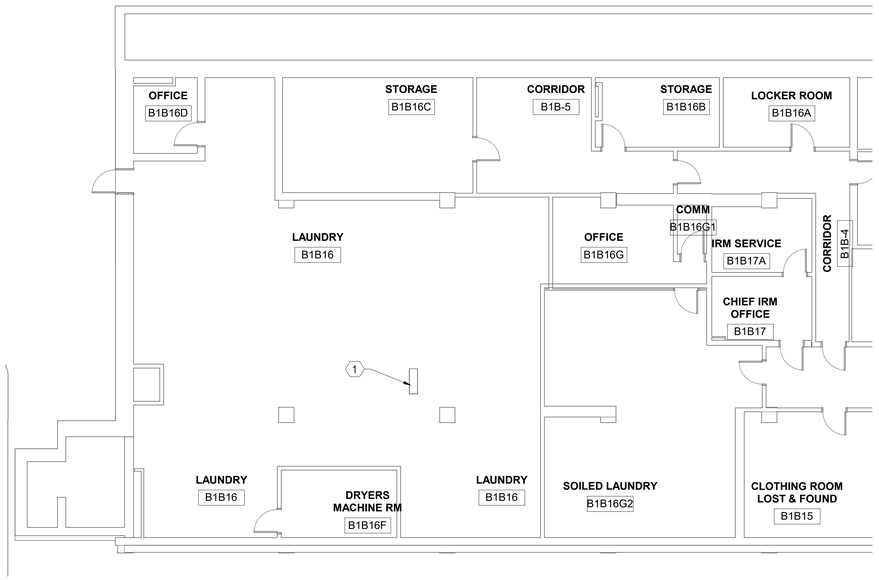
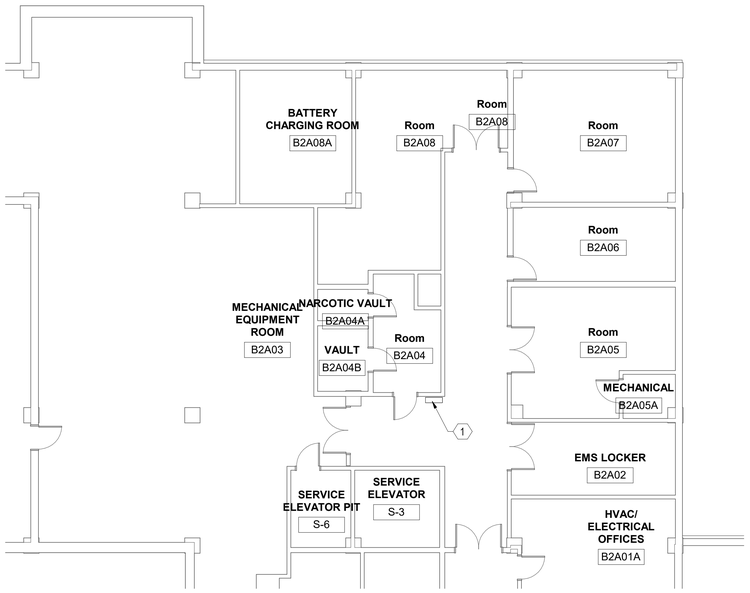


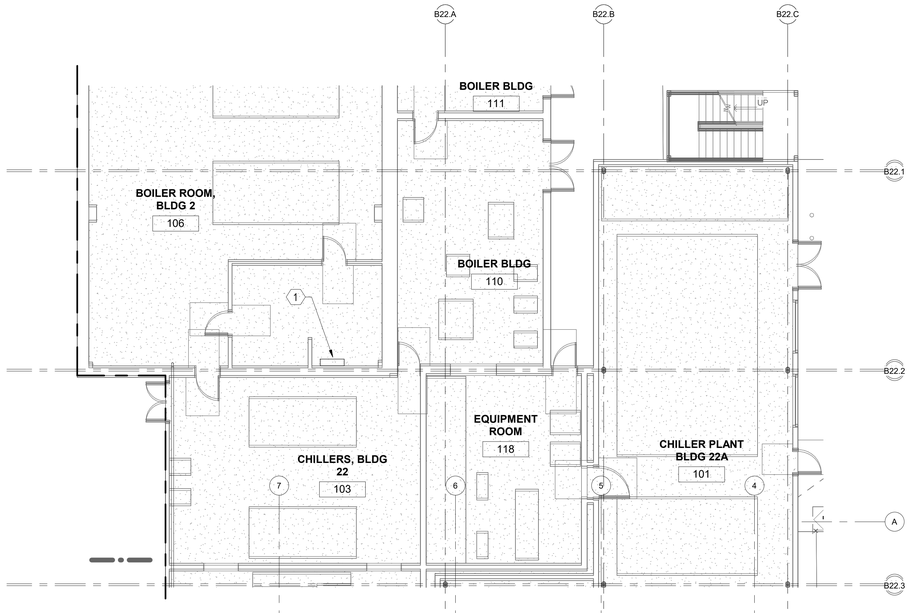
1 PLUMBING PARTIAL BASEMENT PLAN - BUILDING 1

Scale: 1/8" = 1'-0"



2 PLUMBING PARTIAL SUB-BASEMENT PLAN - BUILDING 1

Scale: 1/8" = 1'-0"



3 PLUMBING PARTIAL FIRST FLOOR PLAN - BUILDING 22 AND 22A

Scale: 1/8" = 1'-0"

GENERAL SHEET NOTES

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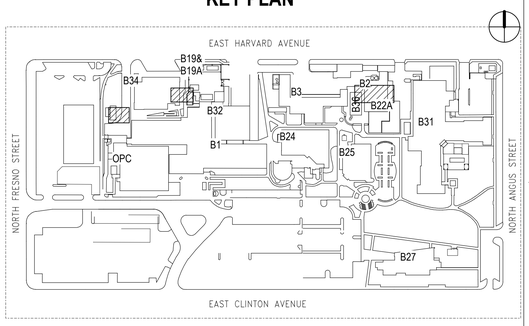
D SEE COMMISSIONING REQUIREMENTS FOR ADDITIONAL INFORMATION.

KEYNOTES

1 EXISTING MEDICAL GAS MASTER ALARM PANEL TO BE RELABELED IN ACCORDANCE WITH NFPA99 ALARM LABELING REQUIREMENTS. SEE SHEET P-501.

KEY PLAN



RECORD DRAWINGS

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NO	REVISIONS	DATE

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A MULTI-DISCIPLINE AE COMPANY

BRIDGERS & PAXTON

UNITED STRUCTURAL DESIGN LLC

Drawing Title: PLUMBING PARTIAL PLANS - BUILDINGS 1 AND 22	Project Title: PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS	Project Number: 570-16-302	Office of Construction and Facilities Management
Approved : Project Director	Location: 2615 E CLINTON AVE, FRESNO, CA 93703	Building Number	Department of Veterans Affairs
	Date: 10/10/2024 · Checked by: R. REIF · Drawn: R. SCHAMP	Drawing number: P-101	

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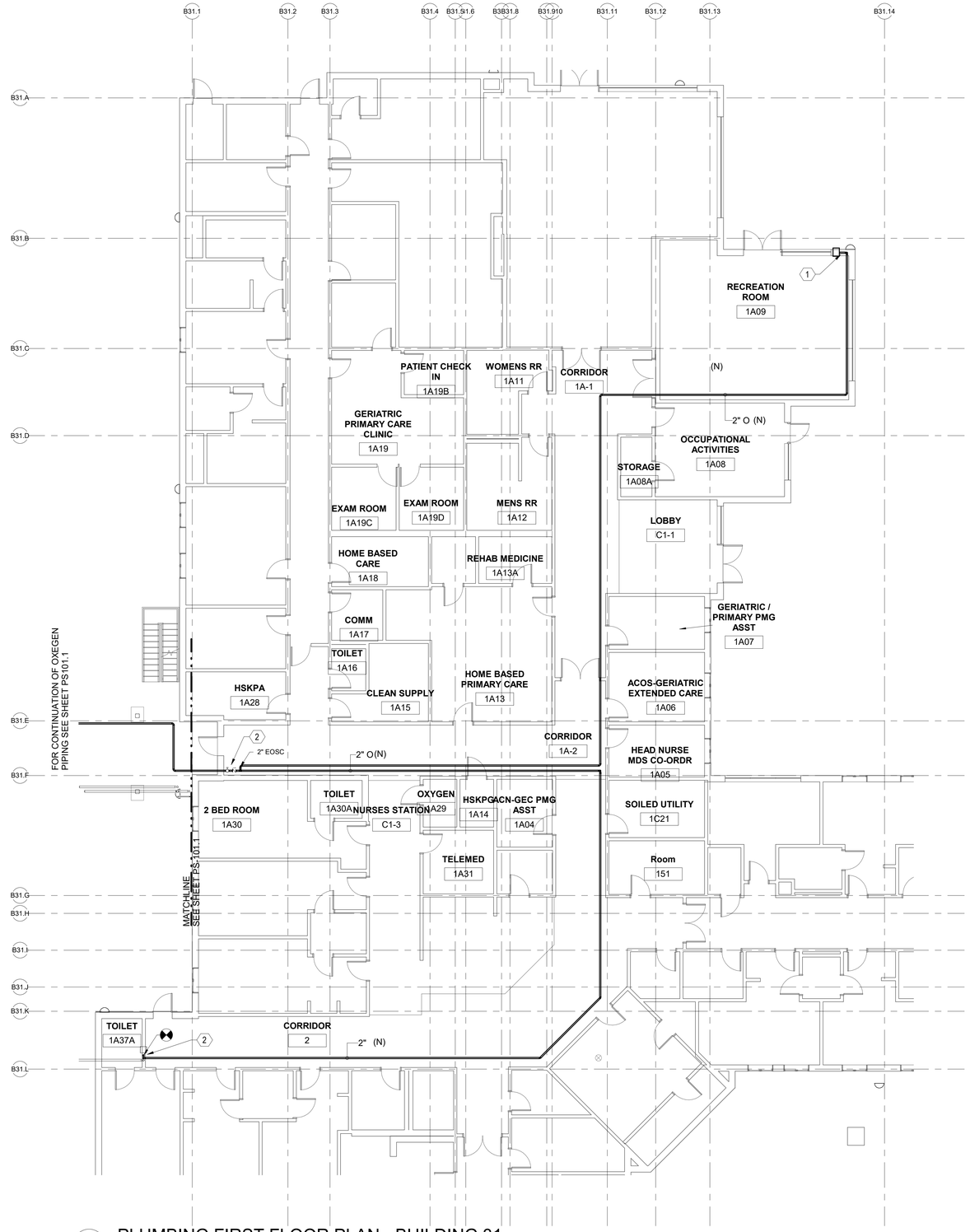

1 PLUMBING FIRST FLOOR PLAN - BUILDING 31

SCALE: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL SHEET NOTES

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I ALL NEW PIPES TO BE CLEANED AND TESTED PRIOR TO COMMISSIONING.

J SEE COMMISSIONING REQUIREMENTS FOR ADDITIONAL INFORMATION.

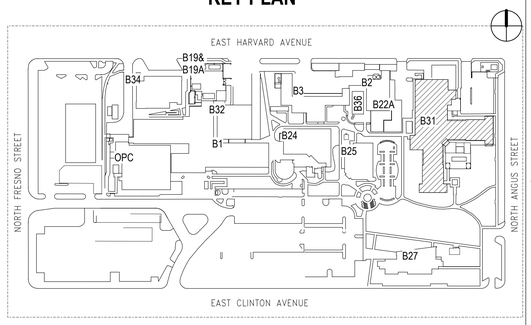
KEYNOTES

1 PROVIDE NEW EMERGENCY OXYGEN SUPPLY CONNECTION IN ACCESSIBLE AREA BY EMERGENCY SUPPLY VEHICLES AT ALL TIMES IN ALL WEATHER CONDITIONS PER NFPA99 REQUIREMENTS. SEE VALVE ARRANGEMENT DETAIL B1/P502.

2 ROUTE (N) 2" OXYGEN SUPPLY PIPING FROM EXISTING EMERGENCY OXYGEN CONNECTION TO NEW EMERGENCY OXYGEN SUPPLY CONNECTION. SEE VALVE ARRANGEMENT DETAIL B1/P502.

3 PROVIDE 2" ISOLATION VALVE AND CHECK VALVE AT BUILDING ENTRY.

KEY PLAN



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RECORD DRAWINGS

Autodesk Docs://570-16-302 VA Fresno Chiller Plant P2/ 101026160VA Fresno Chiller Plant MPE_ADD_SERVICE.rvt
11/15/2024 10:36:19 AM

NO	REVISIONS	DATE

PROJECT TEAM

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TRIPLE C - THE A&E GROUP
A MULTI-DISCIPLINE COMPANY

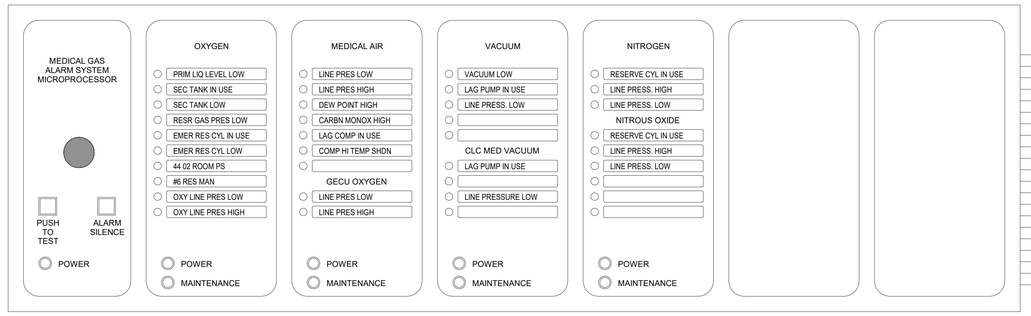
BRIDGERS & PAXTON

UNITED STRUCTURAL DESIGN LLC

Drawing Title: PLUMBING FIRST FLOOR PLAN - BUILDING 31	Project Title: PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS		Project Number: 570-16-302
Approved : Project Director	Location: 2615 E CLINTON AVE, FRESNO, CA 93703		Building Number
	Date: 10/10/2024	Checked by: R. REIF / Drawn: R. SCHAMP	Drawing number: P-102

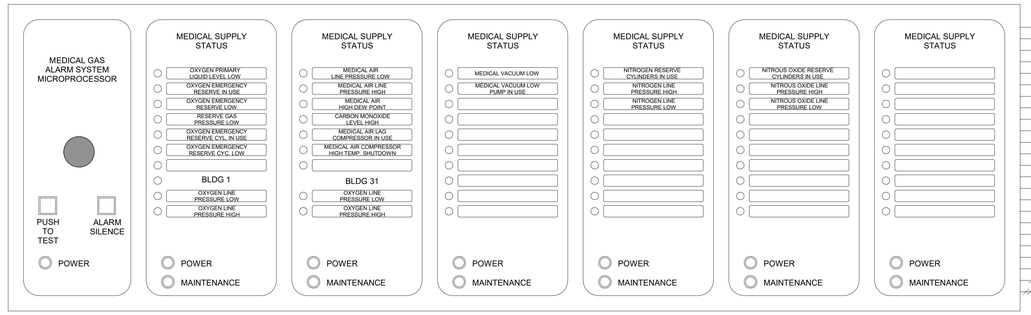
Office of Construction and Facilities Management

Department of Veterans Affairs



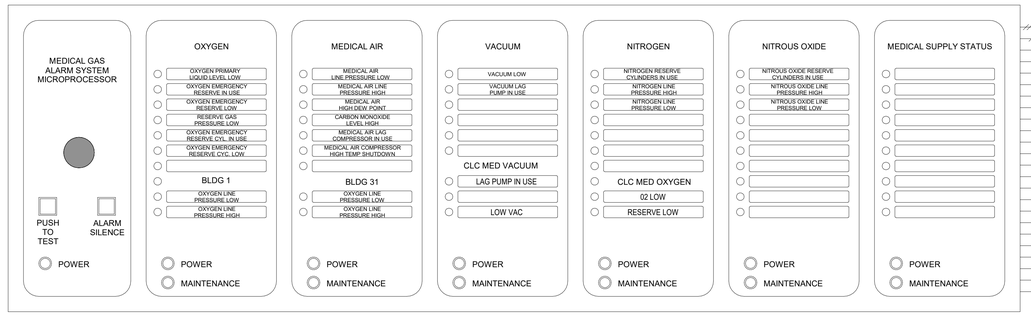
EXISTING #22 AWG TWISTED SHIELDED PAIR HIGH QUALITY ALARM CABLING (BELDEN #8451 OR APPROVED EQUIVALENT)

EXISTING MASTER ALARM PANEL (BOILER ROOM)



EXISTING #22 AWG TWISTED SHIELDED PAIR HIGH QUALITY ALARM CABLING (BELDEN #8451 OR APPROVED EQUIVALENT)

EXISTING MASTER ALARM PANEL (BLDG 1 - BASEMENT EMERGENCY DEPARTMENT)



EXISTING MASTER ALARM PANEL (SUB-BASEMENT)

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Autodesk Docs://570-16-302 VA Fresno Chiller Plant P2 10\10261\VA Fresno Chiller Plant MPE_ADD_SERVICE.rvt
11/15/2024 10:30:21 AM

NO	REVISIONS	DATE

PROJECT TEAM

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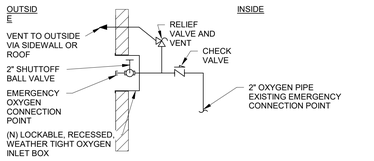
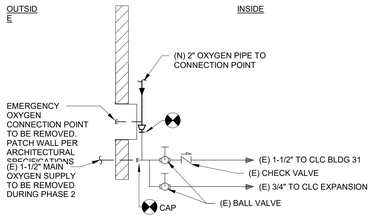
BRIDGERS & PAXTON
UNITED STRUCTURAL DESIGN LLC

Drawing Title: PLUMBING DETAILS	Project Title: PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS	Project Number: 570-16-302	Office of Construction and Facilities Management
Approved : Project Director	Location: 2615 E CLINTON AVE, FRESNO, CA 93703	Building Number	Department of Veterans Affairs
	Date: 10/10/2024 · Checked by: R. REIF · Drawn: R. SCHAMP	Drawing number: P-501	



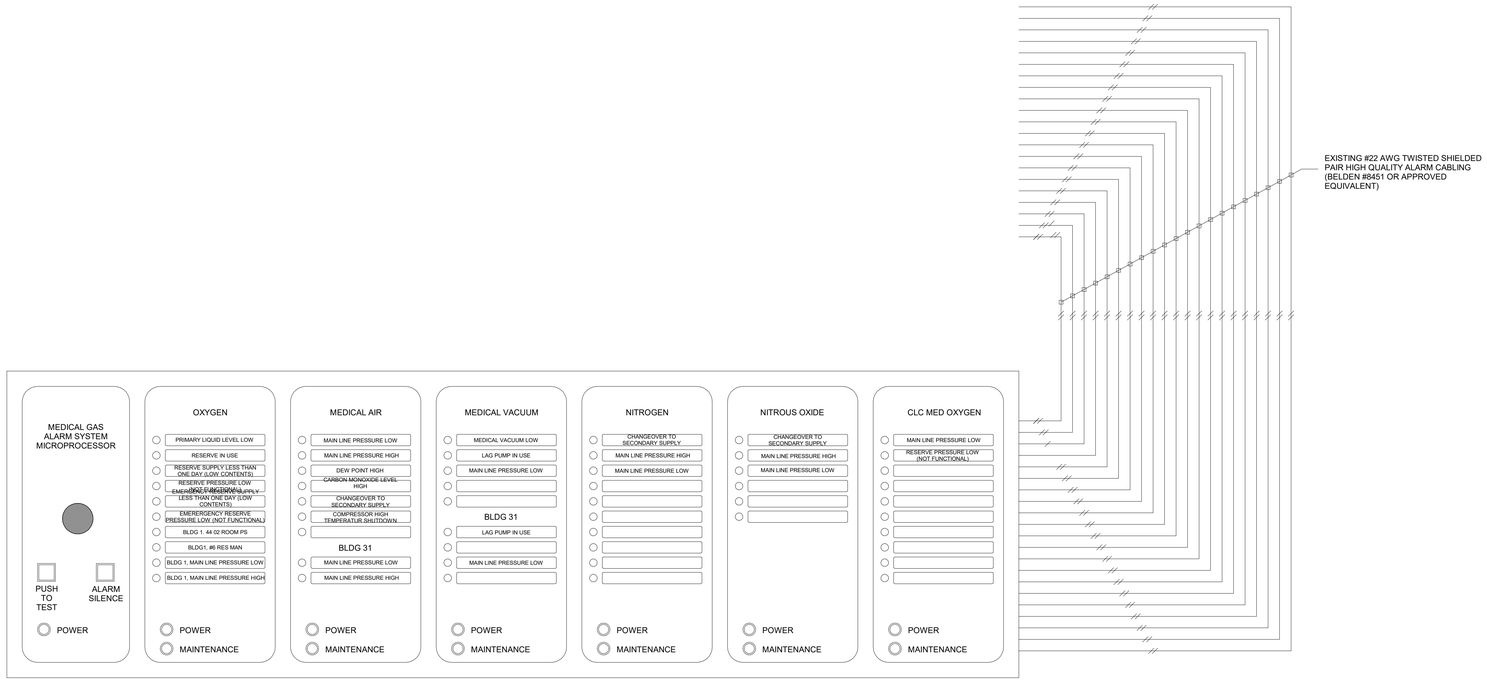
VALVE ARRANGEMENT AT NEW LOCATION IN RECREATION ROOM 1A09



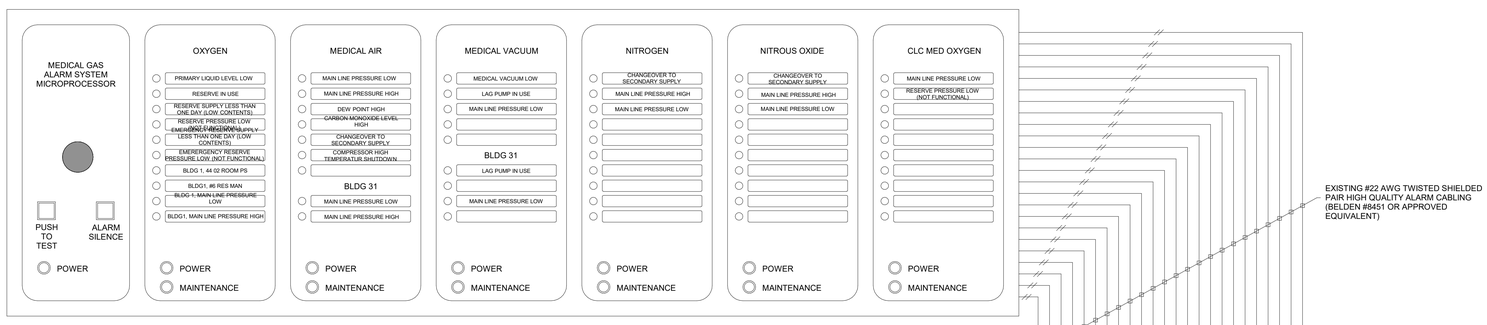
VALVE ARRANGEMENT AT EXISTING LOCATION IN CORRIDOR 2

B1 EMERGENCY OXYGEN SUPPLY CONNECTION (PHASE 1)

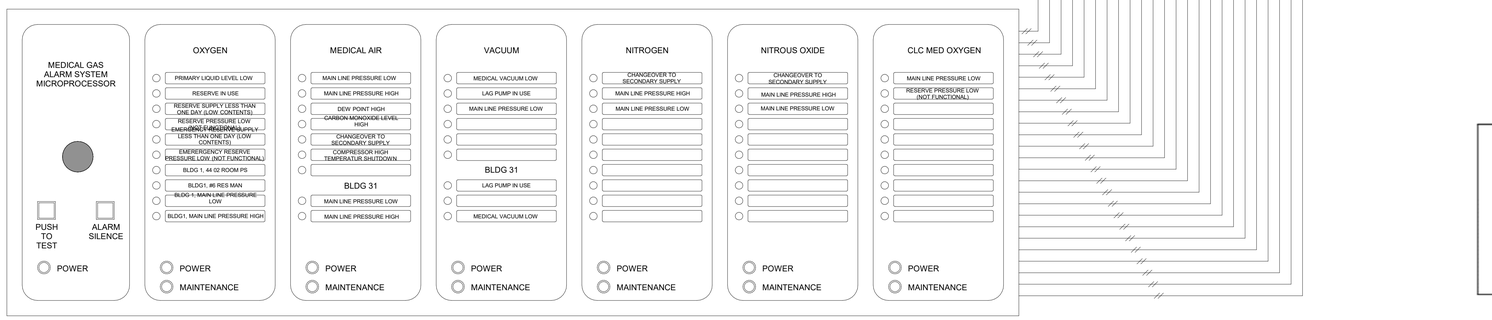
SCALE = NONE



RELABELING OF EXISTING MASTER ALARM PANEL (BOILER ROOM)



RELABELING OF EXISTING MASTER ALARM PANEL (BLDG 1 - BASEMENT EMERGENCY DEPARTMENT)



RELABELING OF EXISTING MASTER ALARM PANEL (SUB-BASEMENT)

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RECORD DRAWINGS

NO	REVISIONS	DATE

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BRIDGERS & PAXTON
UNITED STRUCTURAL DESIGN LLC

Drawing Title: PLUMBING DETAILS	Project Title: PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS	Project Number: 570-16-302	Office of Construction and Facilities Management
Approved : Project Director	Location: 2615 E CLINTON AVE, FRESNO, CA 93703	Building Number	Department of Veterans Affairs
	Date: 10/10/2024 · Checked by: R. REIF · Drawn: R. SCHAMP	Drawing number: P-502	

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ABBREVIATIONS

AD	ACCESS DOOR
ACU	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AL	ACOUSTIC LINING
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
CA	COMPRESSED AIR
CD	CONDENSATE DRAIN
CFM	CUBIC FEET PER MINUTE
CO	CLEANOUT
CONT.	CONTINUATION
D	DRAIN
DX	DIRECT EXPANSION
ENT	ENTERING
EXH	EXHAUST
EMCS	ENERGY MANAGEMENT CONTROL SYSTEM
°F	DEGREES FAHRENHEIT
FB	FLAT BOTTOM
FCO	FLOOR CLEANOUT
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
F.G.	FILTER GAUGE
FLEX	FLEXIBLE
FPM	FEET PER MINUTE
FS	FLOOR SINK
FT	FLAT TOP
FT.	FEET
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HD	HAND DAMPER (VOLUME DAMPER)
HEPA	HIGH EFFICIENCY PARTICULATE AIR (FILTER)
IN	INCHES
KW	KILOWATT
KWH	KILOWATT HOUR
MA	MAIN AIR (CONTROLS)
MCC	MOTOR CONTROL CENTER
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO.	NUMBER (QUANTITY)
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
PRV	PRESSURE REDUCING VALVE
PSIG	POUNDS PER SQUARE INCH GAGE
QTY	QUANTITY
QUAD	QUADRANT
R.A.	RETURN AIR
Rh	RELATIVE HUMIDITY
RPM	REVOLUTIONS PER MINUTE
SCD	SMOKE CONTROL DAMPER
SP	STATIC PRESSURE (INCHES OF WATER)
SDVV	SINGLE DUCT VARIABLE VOLUME
ST	SOUND TRAP
TOPT	TOP OF PIPE TRAPEZE
TP	TOTAL PRESSURE (INCHES OF WATER)
TYP.	TYPICAL
V	VOLTS
VAC	VOLTS, ALTERNATING CURRENT
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VTR	VENT THRU ROOF
WCO	WALL CLEANOUT
WH	WALL HYDRANT
(E)	EXISTING
(N)	NEW
(F)	FUTURE

MECHANICAL SYMBOL LEGEND

PIPING SYMBOLS

HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN
CD	CONDENSATE DRAIN
D	DRAIN
V	VENT
MU	MAKE-UP WATER
RS	REFRIGERATION SUCTION
RL	REFRIGERATION LIQUID
R	REFRIGERATION
RR	REFRIGERATION RELIEF
TWS	TOWER WATER SUPPLY
TWR	TOWER WATER RETURN
TWB	TOWER WATER BYPASS
HPS	STEAM - HIGH PRESSURE SUPPLY
HPR	STEAM - HIGH PRESSURE RETURN
MPS	STEAM - MEDIUM PRESSURE SUPPLY
MPR	STEAM - MEDIUM PRESSURE RETURN
LPS	STEAM - LOW PRESSURE SUPPLY
LPR	STEAM - LOW PRESSURE RETURN
CND	STEAM - CONDENSATE RETURN
PC	STEAM - PUMPED CONDENSATE
DOWN	DIRECTION OF PIPE PITCH (DOWN)
	DIRECTION OF FLOW
	EXISTING PIPE TO REMAIN
	EXISTING PIPE TO BE REMOVED
	FUTURE PIPE

SECTION SYMBOLS

SECTION NUMBER — X#

DRAWING NUMBER WHERE DETAILED — X###

DETAIL REFERENCE

DETAIL LOCATION — X#/X###

DRAWING NUMBER WHERE DETAILED

LIDAR SCAN OR PHOTO

SCAN OR PHOTO NUMBER — #

EQUIPMENT SYMBOLS

XX - ##
- LETTERS REFER TO THE EQUIPMENT TYPE
- NUMBERS REFER TO SPECIFIC EQUIPMENT
- SYMBOL INDICATES NEW EQUIPMENT IDENTIFIED IN EQUIPMENT SCHEDULE

##x#
XX - #
###
- SIDEWALL GRILLE DIMENSION WHERE SHOWN ON PLANS
- SYMBOL INDICATES GRILLE OR DIFFUSER IDENTIFIED IN EQUIPMENT SCHEDULE
- CFM

SECTION AND DETAIL TITLES

SECTION LOCATION — X# SECTION / SCALE

DETAIL LOCATION — X# DETAIL / SCALE

VALVE SYMBOLS

SINGLE LINE PIPE SYMBOLS

- GATE VALVE
- GLOBE VALVE
- CHECK VALVE
- PLUG VALVE
- PRESSURE REDUCING VALVE
- THREE-WAY MODULATING CONTROL VALVE
- TWO-WAY CONTROL VALVE
- SAFETY VALVE OR PRESSURE RELIEF
- MANUAL AIR VENT
- SOLENOID VALVE
- 3/4" GATE VALVE WITH ADAPTER TO 3/4" HOSE THREAD
- BUTTERFLY VALVE
- BALL VALVE
- VALVE IN RISE
- WATER FLOW MEASURING DEVICE
- VALVE ASSEMBLY
- VALVE - BALL LEVER
- VALVE - GATE MANUAL
- VALVE - BUTTERFLY MOTORIZED
- VALVE - GLOBE MANUAL
- VALVE - GLOBE LEVER
- VALVE - PLUG LEVER
- VALVE - PLUG MANUAL
- VALVE - PRESSURE REGULATING
- VALVE - CHECK
- VALVE - PRESSURE RELIEF

DOUBLE LINE PIPE SYMBOLS

- GATE VALVE
- GLOBE VALVE
- CHECK VALVE
- PLUG VALVE
- PRESSURE REDUCING VALVE
- 3-WAY CONTROL VALVE
- 2-WAY CONTROL VALVE
- RELIEF VALVE
- SOLENOID VALVE
- BUTTERFLY VALVE
- BALL VALVE
- DIAPHRAGM VALVE
- CIRCUIT SETTER
- STEAM TRAP INVERTED BUCKET

FITTING SYMBOLS

SINGLE LINE PIPE SYMBOLS

- ELBOW - DOWN
- ELBOW - UP
- PIPE RISE - DROP
- ELBOW - DOWN TO TEE
- TEE - DOWN
- TEE - UP
- ELBOW - UP TO TEE
- END CAP
- FLEX CONNECTION
- PIPE REDUCER - CONCENTRIC
- PIPE REDUCER - ECCENTRIC
- PIPE STRAINER
- UNION - SCREWED
- AIR VENT - AUTOMATIC
- AIR VENT - MANUAL
- GAUGE - DIFFERENTIAL
- GAUGE - PRESSURE
- GAUGE - PRESSURE WITH COCK
- GAUGE - TEMPERATURE
- PIPE - CAPPED WITH SHUT-OFF VALVE
- PIPE ANCHOR
- PIPE EXPANSION JOINT
- PIPE GUIDE
- SENSOR - FLOW
- SWITCH - FLOW
- SWITCH - PRESSURE
- SWITCH - TEMPERATURE
- TEMPERATURE - PRESSURE TEST FITTING
- THERMOMETER
- THERMOMETER WELL

DOUBLE LINE PIPE SYMBOLS

- ELBOW - DOWN
- ELBOW - UP
- PIPE RISE - DROP
- ELBOW - DOWN TO TEE
- TEE - DOWN
- END CAP
- PIPE REDUCER - CONCENTRIC
- PIPE REDUCER - ECCENTRIC
- UNION - SCREWED
- PIPE STRAINER

NOTE: NOT ALL ABBREVIATIONS AND SYMBOLS APPLY TO THIS PROJECT.

GENERAL NOTES:

1. ALL PIPING IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN FURRED CHASES OR SUSPENDED CEILINGS, UNLESS OTHERWISE NOTED.
2. PROVIDE 1/2" MANUAL AIR VENTS AT ALL HIGH POINTS OF CLOSED SYSTEM PIPING AND 1/2" MANUAL DRAIN VALVES WITH HOSE CONNECTION AT LOW POINTS AS REQUIRED TO PROVIDE COMPLETE SYSTEM DRAINAGE. WHERE DRAIN VALVES OCCUR ABOVE CEILING AREAS AND IN AREAS OUTSIDE MECHANICAL RANGE PROVIDE HOSE CONNECTION ON VALVE.
3. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL FIRE RATED AND/OR SMOKE RATED WALLS AND ASSEMBLIES. ALL PIPE AND DUCTWORK PENETRATIONS OF FIRE, SMOKE AND FULL HEIGHT WALLS SHALL BE CAULKED AIRTIGHT TO THE ADJACENT STRUCTURE BY MEANS OF U.L. APPROVED FIRE PROOF CAULKING MATERIAL.
4. CONTRACTOR SHALL COORDINATE ALL DUCTWORK, PIPING, PLUMBING AND FIRE PROTECTION PIPING WITH STRUCTURAL AND ELECTRICAL SYSTEMS AND SHALL PROVIDE NECESSARY OFFSETS TO AVOID CONFLICTS AND TO MAINTAIN EQUIPMENT ACCESS AND SERVICEABILITY.
5. CONTRACTOR SHALL FURNISH ALL NECESSARY STRUCTURES, INSERTS, SLEEVES, AND HANGING DEVICES FOR INSTALLATION OF MECHANICAL AND PLUMBING EQUIPMENT, AND PIPING, ETC. CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR AND ALL BUILDING TRADES TO AVOID CONFLICTS AND TO MAINTAIN EQUIPMENT ACCESS AND SERVICEABILITY.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY MISCELLANEOUS ANGLES, CHANNELS, UNISTRUT, ETC., AS MAY BE REQUIRED TO ADEQUATELY SUPPORT THE MECHANICAL PIPING, DUCTWORK, AND EQUIPMENT IN A MANNER APPROVED BY THE ARCHITECT, WHICH WILL NOT OVERLOAD THE BUILDING STRUCTURAL SYSTEM.
7. WHERE SIZES ARE INDICATED FOR EXISTING PIPES, THESE SIZES ARE APPROXIMATE. VERIFY IN FIELD
8. SEE SPECIFICATION SECTION 230593, TESTING, ADJUSTING, & BALANCING OR MECHANICAL SYSTEMS FOR ADDITIONAL DESCRIPTION AND REQUIREMENTS.

GENERAL DEMO NOTES:

A THE DEMOLITION DRAWINGS REFLECT INFORMATION ON EXISTING BUILDING SERVICES GATHERED BY SITE INSPECTION, DISCUSSIONS WITH MAINTENANCE PERSONNEL AND PREVIOUS CONSTRUCTION DRAWINGS. THE EXACT LOCATION, ARRANGEMENT, AND SIZES OF PIPE LINES AND DUCTWORK IN THE EXISTING BUILDING MAY BE DIFFERENT FROM THAT SHOWN ON THESE DRAWINGS.

B THE CONTRACTOR SHALL COORDINATE THE SHUTDOWN OF EXISTING BUILDING SERVICES FOR REMOVALS WITH THE COR AUTHORIZED REPRESENTATIVE AND SHALL CONFORM TO THEIR REQUIREMENTS.

C DISRUPTION OF NORMAL HOSPITAL ACTIVITIES ARE TO BE KEPT TO AN ABSOLUTE MINIMUM. DUST, DEBRIS, AND FUMES SHALL BE CONTROLLED SO AS NOT TO AFFECT THE HEALTH AND SAFETY OF OCCUPIED AREAS WITHIN THE MEDICAL CENTER WHICH ARE OUTSIDE THE AREA OF WORK. COORDINATE WITH THE ARCHITECT AND THE OWNER'S REPRESENTATIVE WITH REGARD TO ALL ACTIVITIES TO BE CONDUCTED OUTSIDE OF THE REMODEL AREA WHICH MAY AFFECT THE OPERATION OF THE MEDICAL CENTER. THE CONTRACTOR SHALL PROVIDE TEMPORARY VENTILATION (MAINTAIN WORK ZONE AT NEGATIVE PRESSURE), FILTRATION, AIR PURIFIERS, DUST SCREENS, ETC. FOR ALL WORK AREAS AFFECTED BY DEMOLITION FOR NEW INSTALLATION TO MINIMIZE DUST AND FUMES. SOME ASPECTS OF THE WORK WILL BE REQUIRED TO BE PERFORMED DURING OFF NORMAL HOURS, INCLUDING NIGHTS AND WEEKENDS.

D THE CONTRACTOR SHALL PRESENT AN AREA BY AREA WORK PLAN WELL IN ADVANCE TO THE ARCHITECT AND THE COR'S AUTHORIZED REPRESENTATIVE FOR APPROVAL PRIOR TO BEGINNING WORK. THE WORK PLAN SHALL INCLUDE AN OUTLINE OF ALL ACTIVITIES OF ALL SUBCONTRACTORS. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S AUTHORIZED REPRESENTATIVE TO ESTABLISH ACCEPTABLE ROUTING AND ACCESS WITHIN THE MEDICAL CENTER FOR MATERIALS REQUIRED FOR THE NEW INSTALLATION.

E ALL TEST AND MEASUREMENT TRAVERSE LOCATIONS SHALL BE CLEARLY NOTED ON FLOOR PLANS WHICH SHALL BE INCLUDED WITH THE TEST AND MEASUREMENT DATA.

F ALL DATA OBTAINED VIA TESTING AND MEASURING OF THE EXISTING AIR HANDLING UNIT, AND THE ASSOCIATED RETURN/RELIEF FAN, SUPPLY AIR DUCTS, EXHAUST, AND RETURN AIR DUCTS PRIOR TO COMMENCING THE DEMOLITION AND/OR NEW WORK SCOPE OF WORK SHALL BE UTILIZED TO ESTABLISH NEW HVAC SYSTEM PERFORMANCE AND BALANCE DATA FOR THE RENOVATION. DATA SHALL BE FORWARDED TO THE PROJECT ENGINEER FOR REVIEW AND COMMENT PRIOR TO

G GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL TRADES INCLUDING MECHANICAL, PLUMBING, ELECTRICAL, FURNITURE, AND ARCHITECTURAL. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ARCHITECT PRIOR TO START OF WORK.

THESE AS BUILT OR RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THIS DOCUMENT AS A RESULT.

RECORD DRAWINGS

NO	REVISIONS	DATE

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UNITED STRUCTURAL DESIGN LLC

Drawing Title: MECHANICAL LEGEND	Project Title: PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS		Project Number: 570-16-302
Approved : Project Director	Location: 2615 E CLINTON AVE, FRESNO, CA 93703		Building Number
	Date: 10/10/2024	Checked by: R. REIF / Drawn: R. SCHAMP	Drawing number: M-001

Office of Construction and Facilities Management

Department of Veterans Affairs

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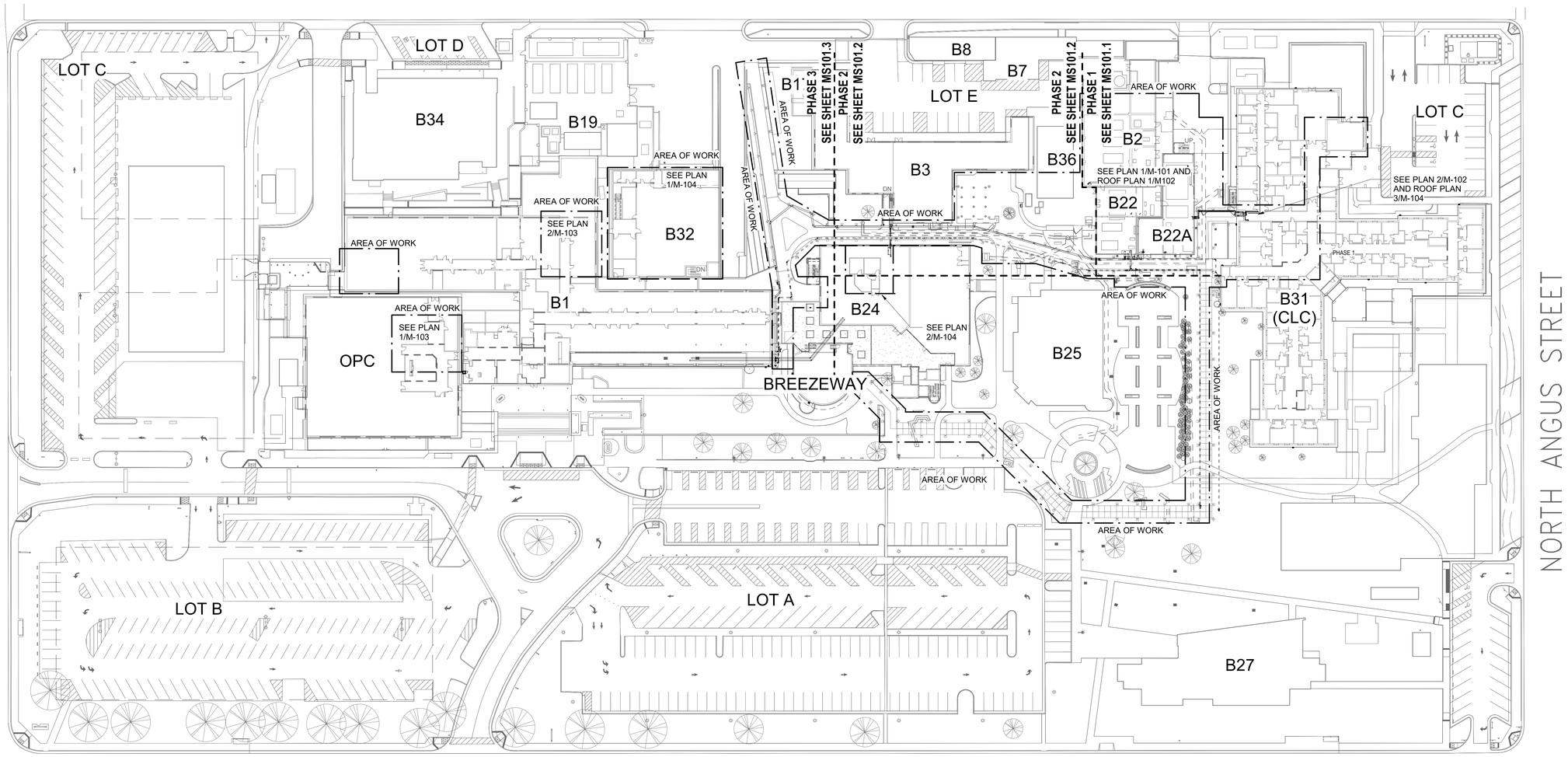

GENERAL SHEET NOTES

A CONTRACTOR TO ENSURE ALL SERVICE INTERRUPTIONS ARE COORDINATED WITH THE COR 30 DAYS IN ADVANCE AND A PRE-CUTOVER MEETING IS TO OCCUR 2 DAYS PRIOR TO INTERRUPTION.

B A DETAILED SCHEDULE, INCLUDING PROJECTED SERVICE INTERRUPTION DATES WITH DURATIONS, AND DETAILED PHASING PLAN IS TO BE PROVIDED TO THE COR PRIOR TO THE START OF WORK. THIS SUBMITTAL MUST BE ACCEPTED BY THE COR PRIOR TO THE START OF WORK.

C FUTURE WORK IS CONSIDERED NIC EXCEPT THAT UTILITY BANK ENCLOSURE IS TO BE PROVIDED AS DESIGNED.

D COORDINATE UTILITY VALVES, JACKET SEAMS, GAUGES, AND TEST PORTS WITH ACCESS PANELS. CENTER SERVICE POINT IN ACCESS PANEL TO MAXIMIZE ACCESS.

E ALL PIPING TO BE PAINTED AND LABELED PER VA UTILITY STANDARD AND AS IDENTIFIED IN THE PAINTING SPECIFICATION 09900.

F CONTRACTOR TO SUBMIT PROPOSED UTILITY STACKING CONFIGURATION FOR COR REVIEW PRIOR TO THE START OF WORK.

G ALL INSULATION AND JACKETING TO BE PROVIDED AS REQUIRED BY THE SPECIFICATIONS AND VA UTLITY STANDARDS.

H CONTRACTOR TO PURCHASE AND LEAVE ON SITE 1 MAN-LIFT AND 1 FORKLIFT AS REQUIRED BY SPECIFICATION 01 00 00.

I ALL NEW PIPES TO BE CLEANED AND TESTED PRIOR TO COMMISSIONING.

J SEE COMMISSIONING REQUIREMENTS FOR ADDITIONAL INFORMATION.

1 MECHANICAL SITE PLAN - OVERALL
Scale: 1" = 40'-0"

MECHANICAL PROJECT SCOPE

THE OVERHEAD PEDESTRIAN CANOPIES SHALL INCLUDE AN UNSEEN RACEWAY CARRYING THE FOLLOWING:

A. CHW FROM BUILDING NO. 22A TO BUILDING NO. 1 SUB-BASEMENT.
B. CHW FROM BUILDING NO. 22A TO BUILDING NO. 31 PENTHOUSE.
C. STEAM & CONDENSATE RETURN FROM BUILDING NO. 22 TO BUILDING NO. 31 PENTHOUSE.(SEE MS-101)
D. CONTROL/ALARM WIRING FROM BUILDING NO. 22 TO BUILDING NO. 31 PENTHOUSE.
E. ADDITIONAL UTILITIES AND SERVICES FOR FUTURE EXPANSION.

REMOVAL OF EXISTING PIPE UTILITY STANDS ASSOCIATED WITH STEAM AND CHILLED WATER WHICH WERE CONSTRUCTED FOR PROJECT NO. 570-13-300, "NEW BUILDING NO. 22A AND CHILLER INFRASTRUCTURE".

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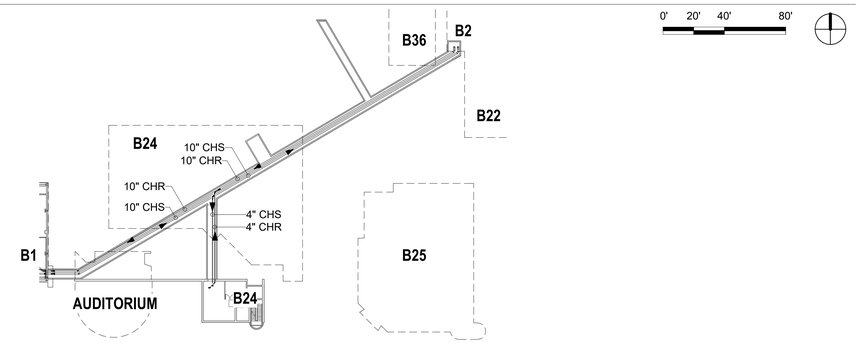
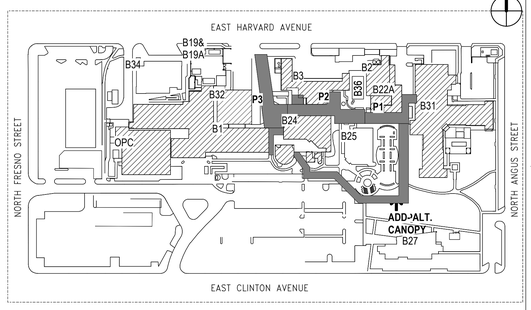


2 MECHANICAL CHW PIPING SITE PLAN - OVERALL TUNNEL
Scale: 1" = 40'-0"

KEY PLAN



RECORD DRAWINGS

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Drawing Title: MECHANICAL SITE PLAN

Approved : Project Director

Project Title: PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS

Location: 2615 E CLINTON AVE, FRESNO, CA 93703

Date: 10/10/2024 | Checked by: R. REIF | Drawn: R. SCHAMP

Project Number: 570-16-302

Building Number

Drawing number: MS101

Office of Construction and Facilities Management

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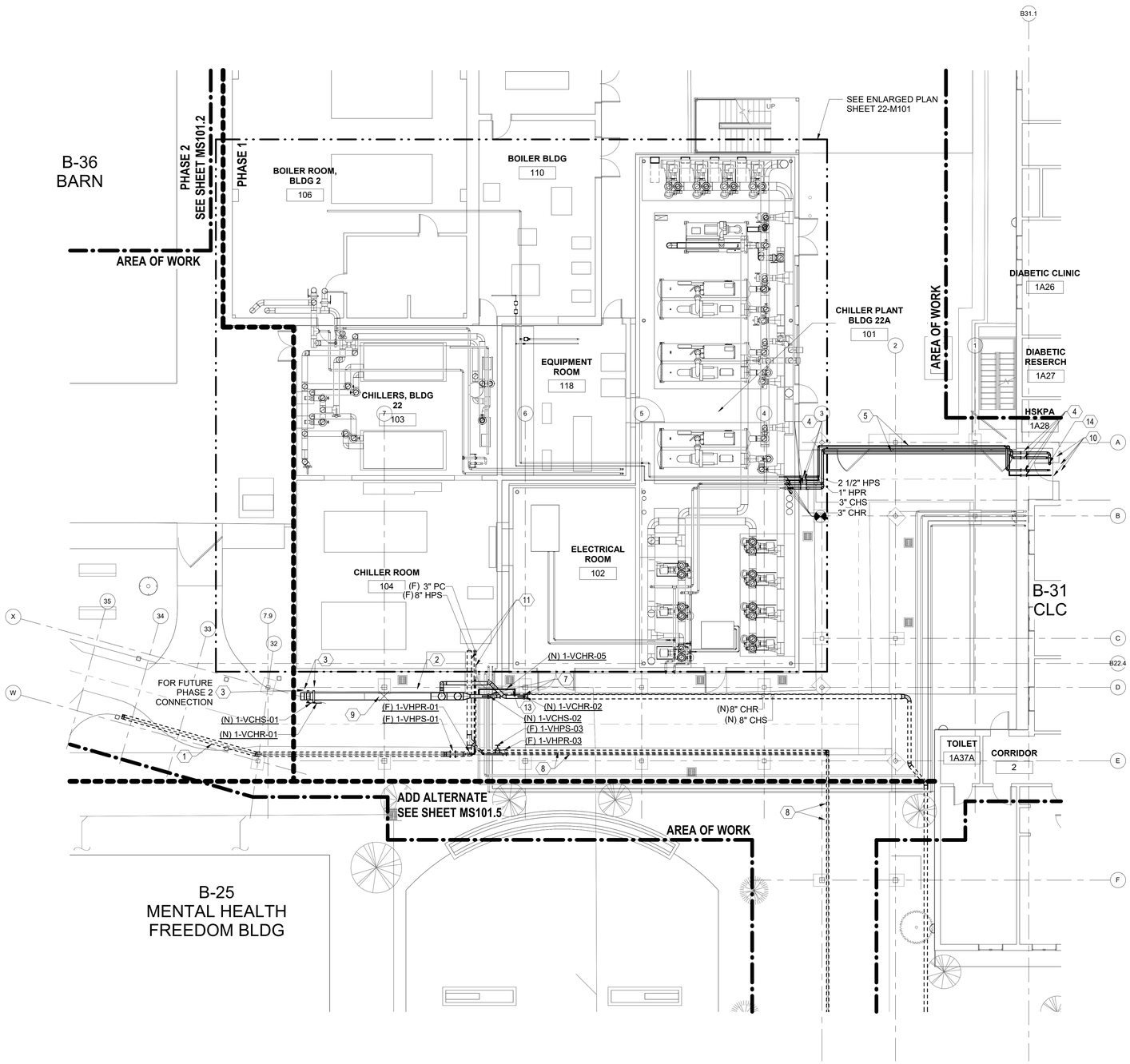

1 MECHANICAL SITE PLAN - PHASE 1
Scale: 1/8" = 1'-0"

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H CONTRACTOR TO PURCHASE AND LEAVE ON SITE 1 MAN-LIFT AND 1 FORKLIFT AS REQUIRED BY SPECIFICATION 01 00 00.

I ALL NEW PIPES TO BE CLEANED AND TESTED PRIOR TO COMMISSIONING.

J SEE COMMISSIONING REQUIREMENTS FOR ADDITIONAL INFORMATION.

K SEE VALVE SCHEDULE ON SHEET M701.

KEYNOTES

1 (F) 8" HPS AND (F) 3" PC TO BUILDING 01 AND 1-1/4" PC TO BUILDING 24. ALOVANCES ARE TO BE MADE FOR STEAM LINES TO PITCH DOWN 1/4"/5'-0" IN THE DIRECTION OF FLOW. STEAM RISERS ARE TO BE AT EVERY 200' OF HPS WITH TRAP DISCHARGE INTO PUMPED CONDENSATE. SLOPE PUMPED CONDENSATE 1/8"/5'-0" IN DIRECTION OF FLOW. SEE DETAILS E1 & E3/M-501. SEE DETAIL F3/M-501 FOR PIPE POSITION ON RACK.

2 14" CHS/R ROUTED INSIDE WALKWAY ENCLOSURE. SEE DETAIL F3/M-501.

3 PROVIDE 14" VALVE AND BLIND FLANGE IN (N) CHS/R FOR FUTURE CONNECTION.

4 BRAIDED METAL FLEXIBLE PIPE CONNECTOR.

5 ROUTE 3" CHR/S, 2-1/2" HPS AND 1" PC INSIDE NEW PIPE ENCLOSURE. PITCH DOWN 1/2"/1'-0" IN THE DIRECTION OF FLOW.

6 3/4" PC FROM BOTTOM OF EXISTING HPS RISER TO CONNECT TO 1" HPS. SEE DETAIL F8/M-501.

7 PROVIDE 6" VALVE AND BLIND FLANGE IN (N) CHS/R FOR FUTURE CONNECTION.

8 (F) 4" HPS AND (F) 2" PC FOR FUTURE CLC EXPANSION AND CANTEEN. ALOWANCES ARE TO BE MADE FOR STEAM LINES TO PITCH DOWN 1/4"/5'-0" IN THE DIRECTION OF FLOW. STEAM RISERS ARE TO BE AT EVERY 100' OF HPS WITH TRAP DISCHARGE INTO PUMPED CONDENSATE. SLOPE PUMPED CONDENSATE 1/8"/5'-0" IN DIRECTION OF FLOW. SEE DETAILS E1 & E3/M-501. SEE DETAIL F3/M-501 FOR PIPE POSITION ON RACK.

9 PROVIDE PIPE ANCHOR FOR 14" CHS/R AT COLUMN. SEE PIPE ANCHOR DETAIL B8/M-501.

10 ROUTE (N)3" CHR/S, (N)2-1/2" HPS AND (N)1" PC ROUTED ABOVE ROOF TO CONNECTIONS INSIDE PENTHOUSE. SEE SHEET M-102 FOR CONTINUATION

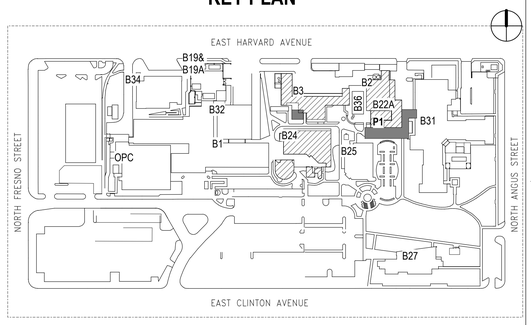
11 FUTURE 8" HPS AND 3" PC.

12 PROVIDE VALVE AND BLIND FLANGE FOR (F) 8" HPS AND (F) 3" PC TO BUILDING 01.

13 PROVIDE 1" BYPASS PIPE WITH BALL VALVE (NO) FOR FREEZE PROTECTION AND CONTINUOUS CIRCULATION.

14. PROVIDE STEAM TRAP AT LOW POINT OF 2-1/2" HPS PIPE AND PIPE TO 1" HPR.

KEY PLAN



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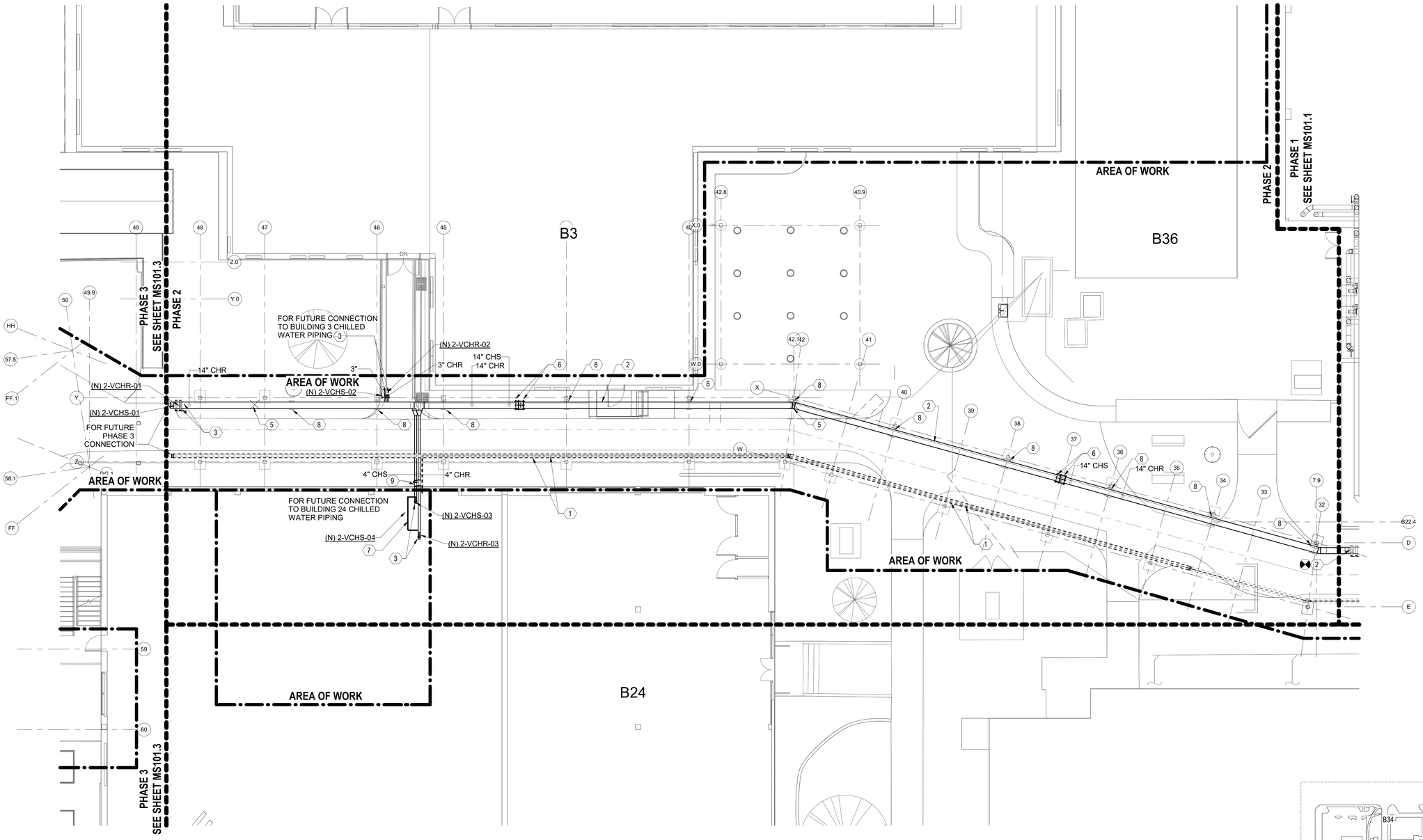


1 MECHANICAL SITE PLAN - PHASE 2

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL SHEET NOTES

A CONTRACTOR TO ENSURE ALL SERVICE INTERRUPTIONS ARE COORDINATED WITH THE COR 30 DAYS IN ADVANCE AND A PRE-CUTOVER MEETING IS TO OCCUR 2 DAYS PRIOR TO INTERRUPTION.

B A DETAILED SCHEDULE, INCLUDING PROJECTED SERVICE INTERRUPTION DATES WITH DURATIONS, AND DETAILED PHASING PLAN IS TO BE PROVIDED TO THE COR PRIOR TO THE START OF WORK. THIS SUBMITTAL MUST BE ACCEPTED BY THE COR PRIOR TO THE START OF WORK.

C FUTURE WORK IS CONSIDERED NIC EXCEPT THAT UTILITY BANK ENCLOSURE IS TO BE PROVIDED AS DESIGNED.

D COORDINATE UTILITY VALVES, JACKET SEAMS, GAUGES, AND TEST PORTS WITH ACCESS PANELS. CENTER SERVICE POINT IN ACCESS PANEL TO MAXIMIZE ACCESS.

E ALL PIPING TO BE PAINTED AND LABELED PER VA UTILITY STANDARD AND AS IDENTIFIED IN THE PAINTING SPECIFICATION 09900.

F CONTRACTOR TO SUBMIT PROPOSED UTILITY STACKING CONFIGURATION FOR COR REVIEW PRIOR TO THE START OF WORK.

G ALL INSULATION AND JACKETING TO BE PROVIDED AS REQUIRED BY THE SPECIFICATIONS AND VA UTILITY STANDARDS.

H CONTRACTOR TO PURCHASE AND LEAVE ON SITE 1 MAN-LIFT AND 1 FORKLIFT AS REQUIRED BY SPECIFICATION 01 00 00.

I ALL NEW PIPES TO BE CLEANED AND TESTED PRIOR TO COMMISSIONING.

J SEE COMMISSIONING REQUIREMENTS FOR ADDITIONAL INFORMATION.

K SEE VALVE SCHEDULE ON SHEET M701.

KEYNOTES

1 (F) 8" HPS, 3" PC TO BUILDING 01 AND 1-1/4" PC TO BUILDING 24. ALOWANCES ARE TO BE MADE FOR STEAM LINES TO PITCH DOWN 1/4"/5'-0" IN THE DIRECTION OF FLOW. STEAM RISERS ARE TO BE AT EVERY 100' OF HPS WITH TRAP DISCHARGE INTO PUMPED CONDENSATE. SLOPE PUMPED CONDENSATE 1/8"/5'-0" IN DIRECTION OF FLOW. SEE DETAILS E1 & E3/M-501. SEE DETAIL F3/M-501 FOR PIPE POSITION ON RACK.

2 (N) 14" CHS/R ROUTED INSIDE WALKWAY ENCLOSURE. SEE DETAIL F3/M-501.

3 PROVIDE VALVE AND CAP FOR 2" AND SMALLER PIPE AND VALVE AND BLIND FLANGE FOR PIPES GREATER THAN 2" FOR FUTURE CONNECTION.

4 CONNECT (N) 10" CHS/R TO EXISTING (E) 10" CHS/R

5 PROVIDE PIPE ANCHOR FOR (N) 14" CHS/R AT COLUMN. SEE PIPE ANCHOR DETAIL B8/M-501.

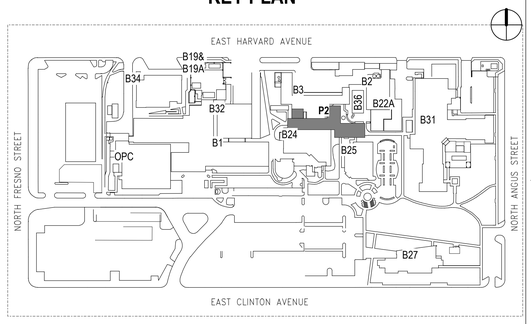
6 PROVIDE RESTRAINED FLANGED BELLOWS FOR 1" OF MOVEMENT. RFB TO BE PRE-COMPRESSED TO ALLOW FOR THE CONTRATCTION.

7 PROVIDE 1" BYPASS PIPE WITH BALL VALVE (NO) FOR FREEZE PROTECTION AND CONTINUOUS CIRCULATION

8 PIPE GUIDE LOCATION, SEE STRUCTURAL DETAIL B4/S-502.

9 BRAIDED METAL PIPE FITTING

KEY PLAN



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RECORD DRAWINGS

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NO	REVISIONS	DATE

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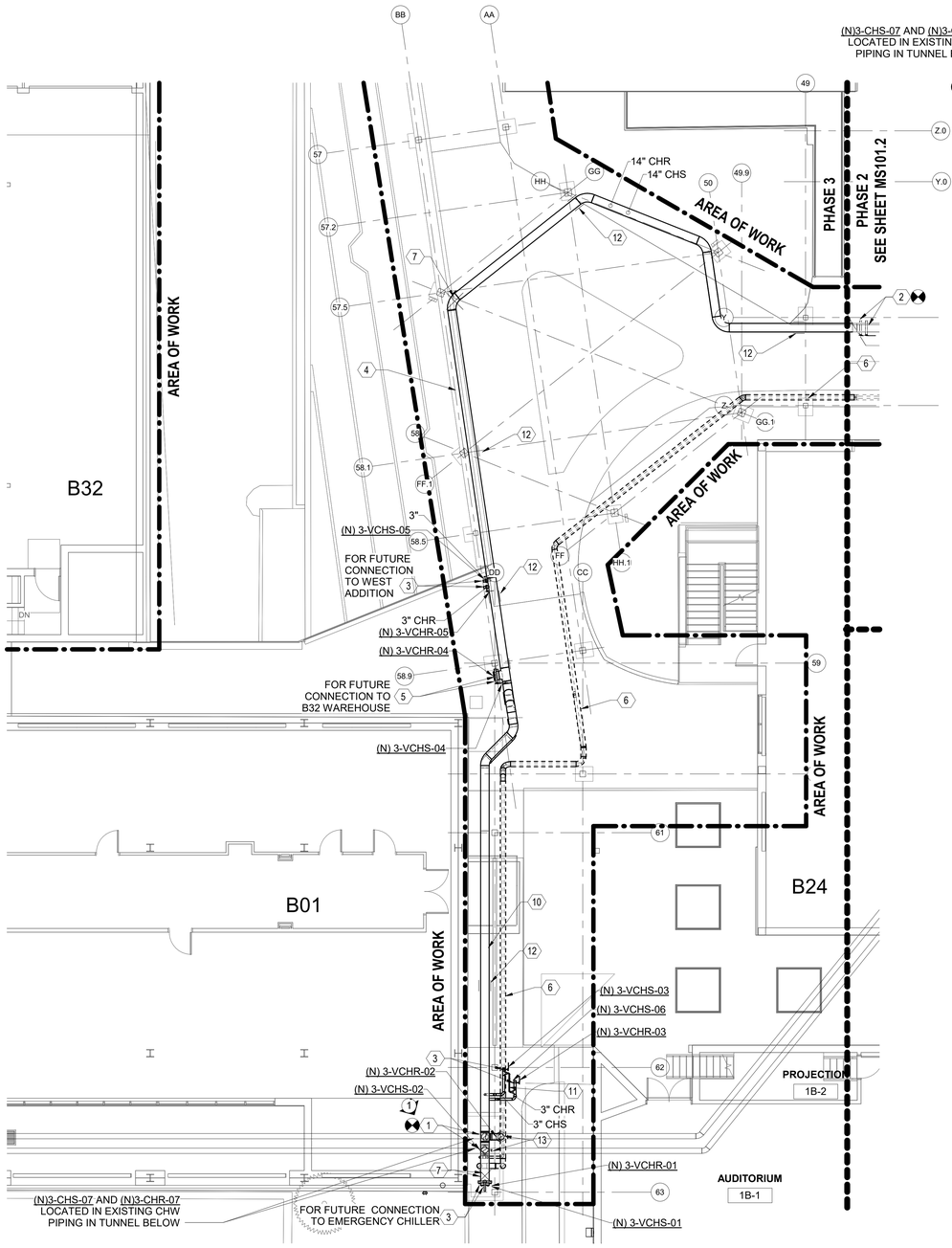
UNITED STRUCTURAL DESIGN LLC

Drawing Title: MECHANICAL SITE PLAN - PHASE 2	Project Title: PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS		Project Number: 570-16-302
Approved : Project Director			Building Number
	Location: 2615 E CLINTON AVE, FRESNO, CA 93703		Drawing number: MS101.2
	Date: 10/10/2024	Checked by: R. REIF	Drawn: R. SCHAMP

Office of Construction and Facilities Management

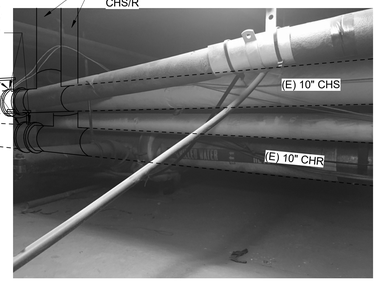
Department of Veterans Affairs



1 MECHANICAL SITE PLAN - PHASE 3

Scale: 1/8" = 1'-0"

0' 4' 8' 16'



1 PHOTO OF EXISTING 10" CHS/R AT TUNNEL CONNECTION TO BUILDING B1

GENERAL SHEET NOTES

A CONTRACTOR TO ENSURE ALL SERVICE INTERRUPTIONS ARE COORDINATED WITH THE COR 30 DAYS IN ADVANCE AND A PRE-CUTOVER MEETING IS TO OCCUR 2 DAYS PRIOR TO INTERRUPTION.

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H CONTRACTOR TO PURCHASE AND LEAVE ON SITE 1 MAN-LIFT AND 1 FORKLIFT AS REQUIRED BY SPECIFICATION 01 00 00.

I ALL NEW PIPES TO BE CLEANED AND TESTED PRIOR TO COMMISSIONING.

J SEE COMMISSIONING REQUIREMENTS FOR ADDITIONAL INFORMATION.

K SEE VALVE SCHEDULE ON SHEET M701.

KEYNOTES

1 CONNECT (N) 10" CHS/R TO (E) 10" CHS/R PIPING LOCATED IN SUB-BASEMENT

2 CONNECT (N) 14" CHS/RTO (E) 14" CHS/R

3 PROVIDE VALVE AND CAP FOR 2" AND SMALLER PIPE AND VALVE AND BLIND FLANGE FOR PIPES GREATER THAN 2" FOR FUTURE CONNECTION.

4 (N) 14" CHS/R ROUTED INSIDE WALKWAY ENCLOSURE. SEE DETAIL F3/M-501.

5 (N) 14" CHS/R VALVE AND BLIND FLANGE FOR FUTURE CONNECTION

6 (F) 8" HPS, (F) 3" PC TO BUILDING 01 AND (F) 1-1/4" PC TO BUILDING 24. ALOWANCES ARE TO BE MADE FOR STEAM LINES TO PITCH DOWN 1/4"/5'-0" IN THE DIRECTION OF FLOW. STEAM RISERS ARE TO BE AT EVERY 100' OF HPS WITH TRAP DISCHARGE INTO PUMPED CONDENSATE. SLOPE PUMPED CONDENSATE 1/8"/5'-0" IN DIRECTION OF FLOW. SEE DETAILS E1 & E3/M-501. SEE DETAIL F3/M-501 FOR PIPE POSITION ON RACK.

7 PROVIDE PIPE ANCHOR FOR (N) 14" CHS/R AT COLUMN. SEE PIPE ANCHOR DETAIL B8/M-501.

8 PROVIDE 1" BYPASS PIPE WITH BALL VALVE (NO) FOR FREEZE PROTECTION AND CONTINUOUS CIRCULATION

9 CLOSE 1" BYPASS VALVE WHEN PHASE 2 CHW PIPES ARE IN SERVICE.

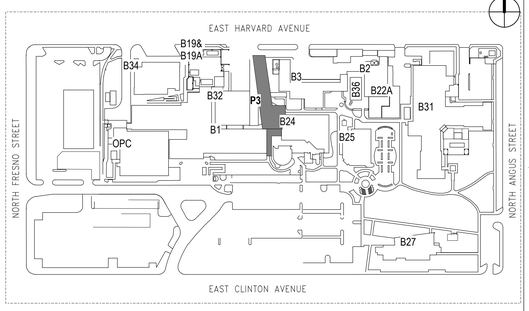
10 (N) 14" CHS/R ROUTED ABOVE EXISTING WALKWAY.

11 PROVIDE 1" BYPASS PIPE WITH BALL VALVE (NO) FOR FREEZE PROTECTION AND CONTINUOUS CIRCULATION

12 PIPE GUIDE LOCATION, SEE STRUCTURAL DETAIL B4/S-502.

13 BRAIDED METAL FLEXIBLE PIPE CONNECTOR.

KEY PLAN



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NO	REVISIONS	DATE

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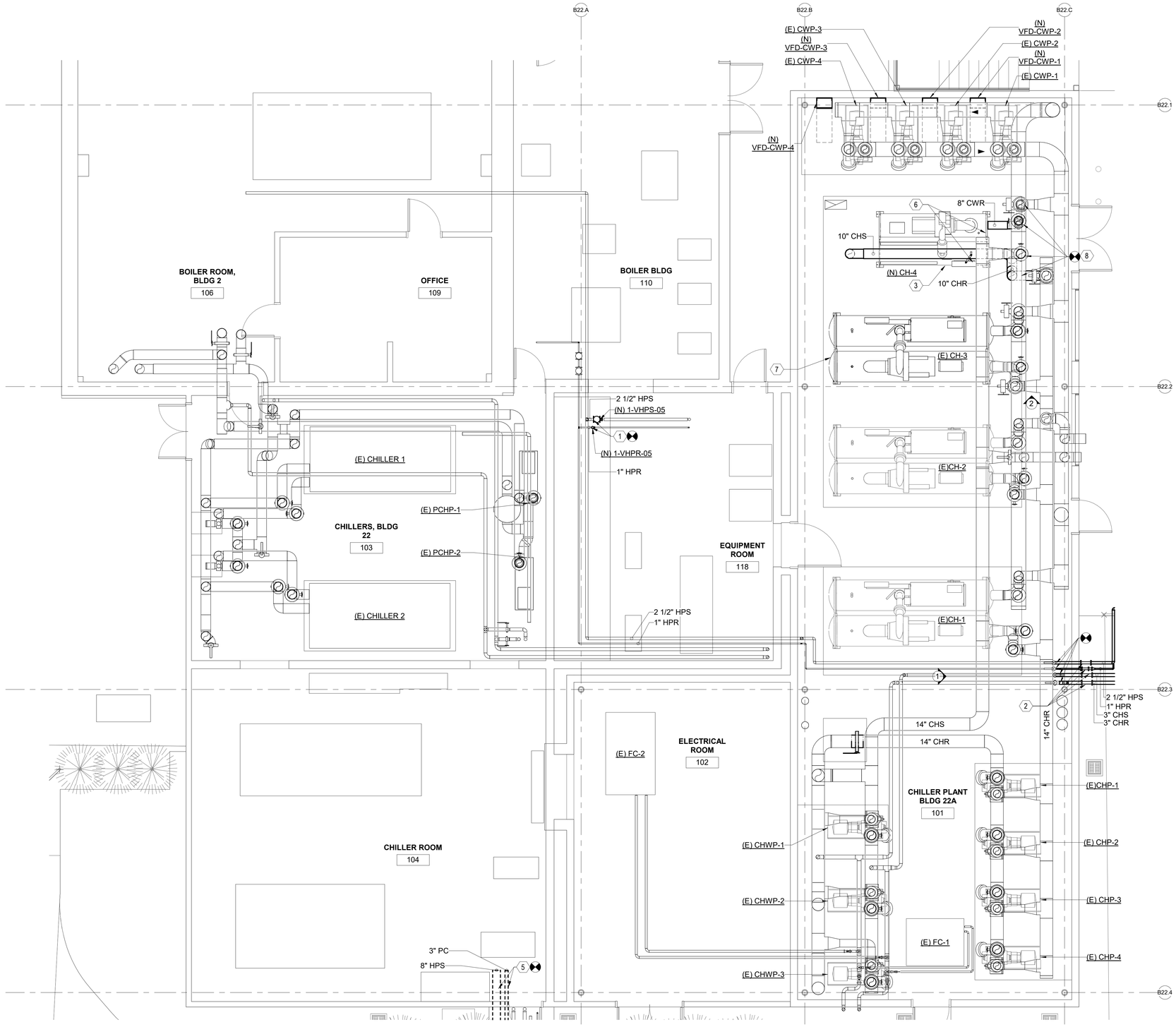
BRIDGERS & PAXTON

UNITED STRUCTURAL DESIGN LLC

Drawing Title	MECHANICAL SITE PLAN - PHASE 3
Approved : Project Director	
Project Title	PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS
Location	2615 E CLINTON AVE, FRESNO, CA 93703
Date	10/10/2024
Checked by	R. REIF
Drawn	R. SCHAMP
Project Number	570-16-302
Building Number	
Drawing number	MS101.3

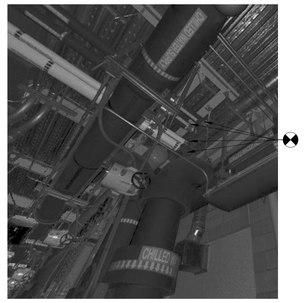
Office of Construction and Facilities Management

Department of Veterans Affairs

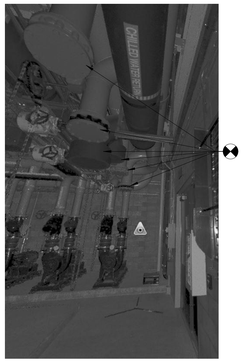


1 HVAC FIRST FLOOR PLAN
Scale: 1/4" = 1'-0"

0' 4' 8' 16'



1 LIDAR SCAN OF EXISTING CHS/R AND HPS/R INSIDE BUILDING 31 PENTHOUSE



2 LIDAR SCAN OF EXISTING CHS/R VALVE AND CAP FOR CONNECTION TO CHILLER INSIDE BUILDING 22A

KEYNOTES

1. PROVIDE ISOLATION VALVE AND BLIND FLANGE ON EXISTING 2-1/2" HPS AND VALVE AND CAP ON EXISTING 1" PC.
2. BRAIDED METAL PIPE FITTING
3. NEW CHILLER MOUNTED TO EXISTING CONCRETE PAD. SEE ANCHOR DETAIL F1/M501.
4. CONNECT (N) 8" HPS AND (N) 3" HPC TO (E) 8" HPS AND (E) 3" HPC PIPE RISER.
5. FUTURE 8" HPS AND 3" PC.
6. REFRIGERANT RELIEF VENT UP THROUGH ROOF, ONE SIZE LARGER THAN CONNECTION ON CHILLER. SEE DETAIL F6/M5-1.
7. OWNER FURNISHED, INSTALLED BY OTHERS ON EXISTING.
8. CONNECT (N) 8" CHS/R AND 8" CWS/R TO EXISTING VALVE AND CONNECT TO CHILLER. SEE DETAIL F6/M-501 FOR VAVE AND FITTING INFORMATION.
9. BRAIDED METAL PIPE FITTING

MECHANICAL PROJECT SCOPE

NEW WORK WILL INCLUDE THE ADDITION OF A NEW 600 TON VARIABLE SPEED DRIVEN CENTRIFUGAL MAGNETIC BEARING CHILLER (OWNER FURNISHED CONTRACTOR INSTALLED), SYMBOL NO. CH-3, AND A NEW 300 TON VARIABLE SPEED MAGNETIC BEARING DRIVEN CHILLER, SYMBOL NO. CH-4, IN BUILDING 22A.

CHILLED WATER SUPPLY AND RETURN WILL BE EXTENDED FROM THE EXISTING ISOLATION VALVES TO THE EVAPORATOR OF CHILLER, CH-3. CONDENSER WATER SUPPLY AND RETURN PIPING WILL BE EXTENDED FROM THE EXISTING ISOLATION VALVES TO THE CONDENSER OF CHILLER, CH-3. CHILLED WATER SUPPLY AND RETURN WILL BE EXTENDED FROM THE EXISTING ISOLATION VALVES TO THE EVAPORATOR OF CHILLER, CH-4. CONDENSER WATER SUPPLY AND RETURN PIPING WILL BE EXTENDED FROM THE EXISTING ISOLATION VALVES TO THE CONDENSER OF CHILLER, CH-4.

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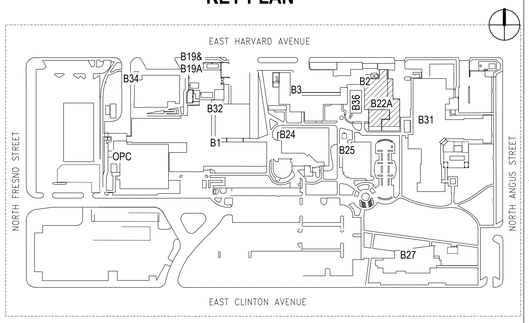
KEY PLAN



RECORD DRAWINGS

NO	REVISIONS	DATE

PROJECT TEAM

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UNITED STRUCTURAL DESIGN LLC

Drawing Title: MECHANICAL FIRST FLOOR PLAN - BUILDING 22 - PHASE 1	Project Title: PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS	Project Number: 570-16-302	Office of Construction and Facilities Management
Approved : Project Director	Location: 2615 E CLINTON AVE, FRESNO, CA 93703	Building Number	Department of Veterans Affairs
	Date: 10/10/2024 · Checked by: R. REIF · Drawn: R. SCHAMP	Drawing number: M-101	

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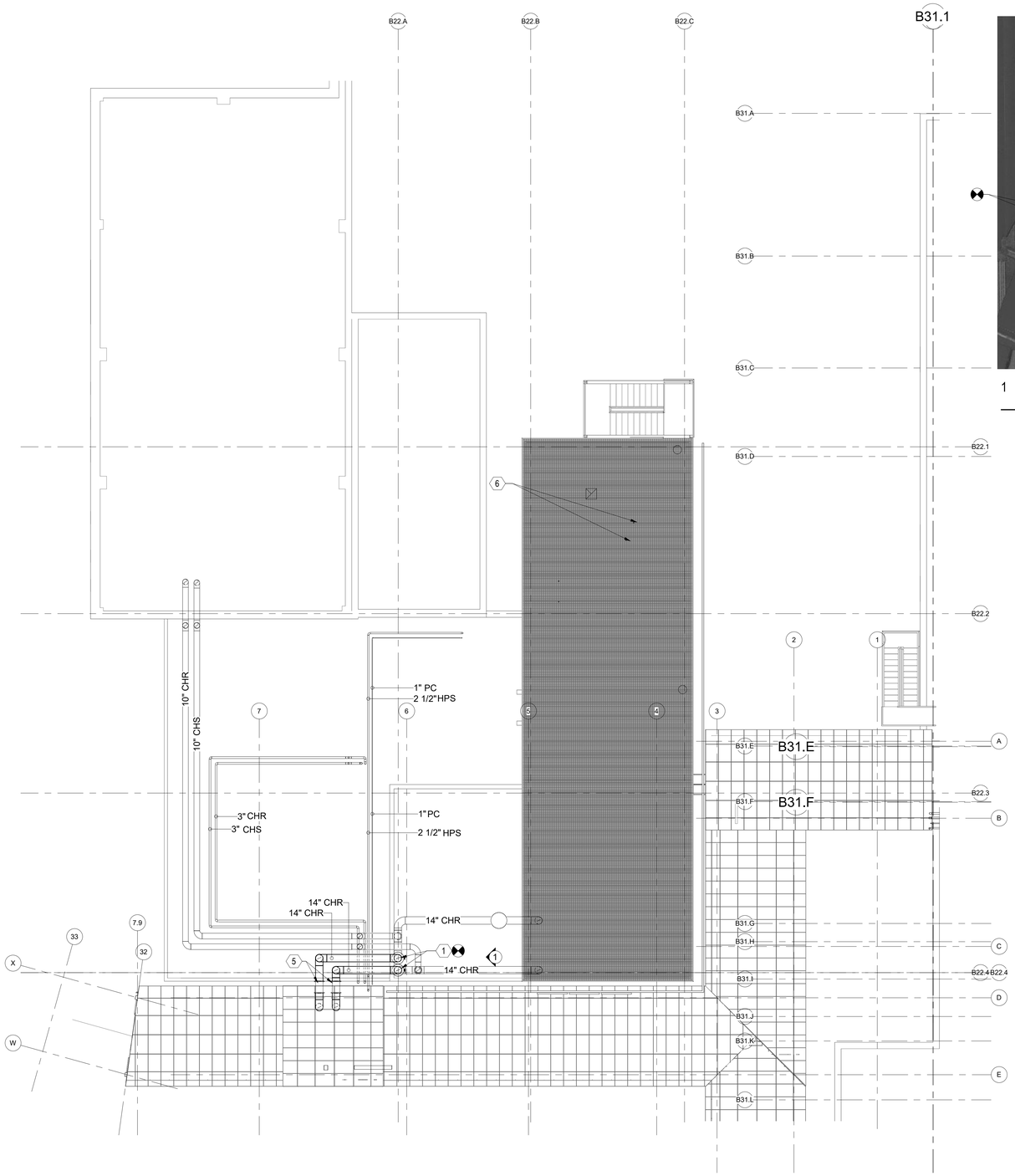
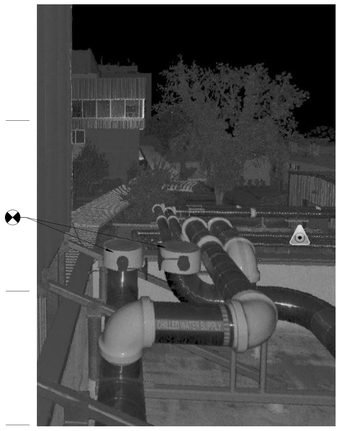


1 MECHANICAL PARTIAL ROOF PLAN - BUILDING 22 - PHASE 1

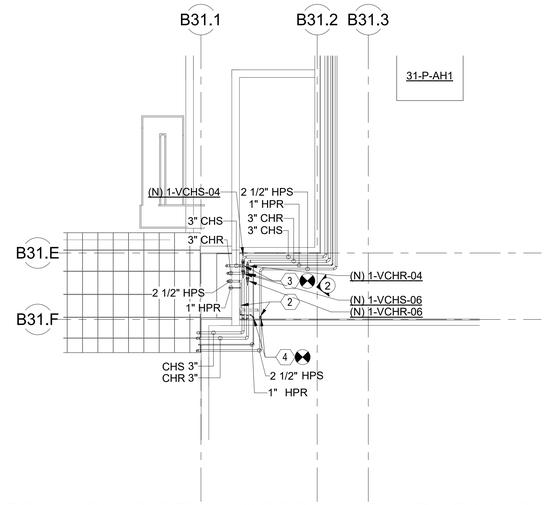
SCALE: 1/8" = 1'-0"

0' 4' 8' 16'



1 LIDAR SCAN OF EXISTING CHS/R VALVE AND CAP ON ROOF OF BUILDING 22A

2 LIDAR SCAN OF EXISTING CHS/R AND HPS/R INSIDE BUILDING 31 PENTHOUSE



2 MECHANICAL PARTIAL ROOF PLAN - BUILDING 31 - PHASE 1

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

KEYNOTES

1 CONNECT (N) 14" CHS/R TO (E) 14" VALVES

2 (N) 3/4" HPS TO CONNECT TO (E) 2-1/2" HPS RISER.

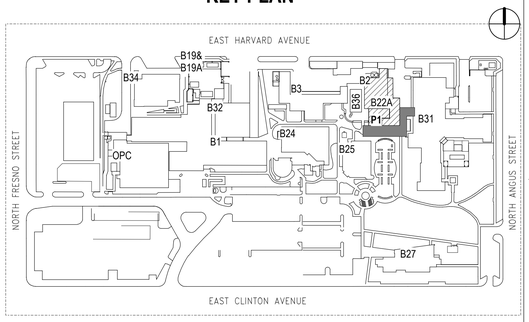
3 CONNECT (N) 3" CHS/R TO (E) 3" CHS/R INSIDE MECHANICAL PENTHOUSE.

4 CONNECT (N) 1" HPR TO (E) 1" PC INSIDE MECHANICAL PENTHOUSE.

5 BRAIDED METAL FLEXIBLE PIPE CONNECTOR.

6 1" RELIEF VENT BELOW COOLING TOWER PLATFORM.

KEY PLAN



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RECORD DRAWINGS

NO	REVISIONS	DATE

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ARCHITECTS/ENGINEERS

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BRIDGERS & PAXTON

UNITED STRUCTURAL DESIGN LLC

Drawing Title	MECHANICAL ROOF PLAN PLAN - BUILDING 22 AND PARTILAL BUILDING 31 - PHASE 1
Approved : Project Director	
Project Title	PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS
Location	2615 E CLINTON AVE, FRESNO, CA 93703
Date	10/10/2024
Checked by	R. REIF
Drawn	R. SCHAMP
Project Number	570-16-302
Building Number	
Drawing number	M-102

Office of Construction and Facilities Management

Department of Veterans Affairs

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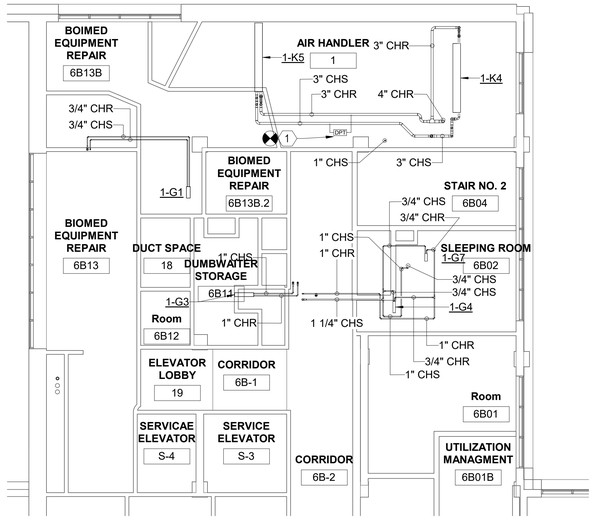
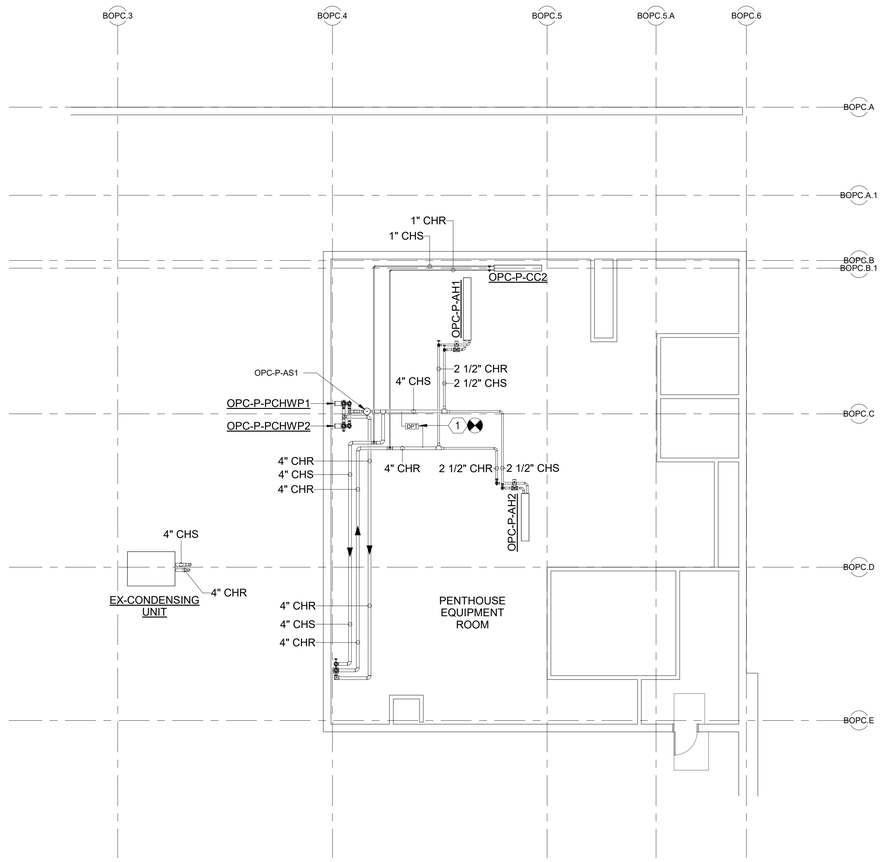


2 MECHANICAL SIXTH FLOOR PARTIAL PIPING PLAN - BUILDING 1 - PHASE 1

Scale: 1/8" = 1'-0"

0' 4' 8' 16'



1 MECHANICAL PENTHOUSE PIPING PLAN - BUILDING OPC - PHASE 1

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

KEYNOTES

1. EXISING DIFFERENTIAL PRESSURE TRANSMITTER TO BE REMOVED AND REPLACED WITH NEW DIFFERENTIAL PRESSURE TRANSMITTER. CONNECT TO METASYS/BMS. SEE DETAIL D6/M501.

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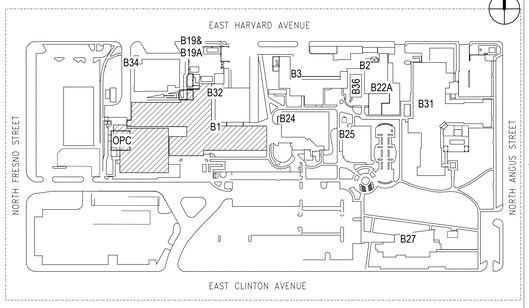
KEY PLAN



RECORD DRAWINGS

NO	REVISIONS	DATE

PROJECT TEAM

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BRIDGERS & PAXTON

UNITED STRUCTURAL DESIGN LLC

Drawing Title	MECHANICAL PARTIAL PLANS OF BUILDING 1 AND OPC - PHASE 1
Approved : Project Director	
Project Title	PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS
Location	2615 E CLINTON AVE, FRESNO, CA 93703
Date	10/10/2024
Checked by	R. REIF
Drawn	R. SCHAMP
Project Number	570-16-302
Building Number	
Drawing number	M-103

Office of Construction and Facilities Management

Department of Veterans Affairs

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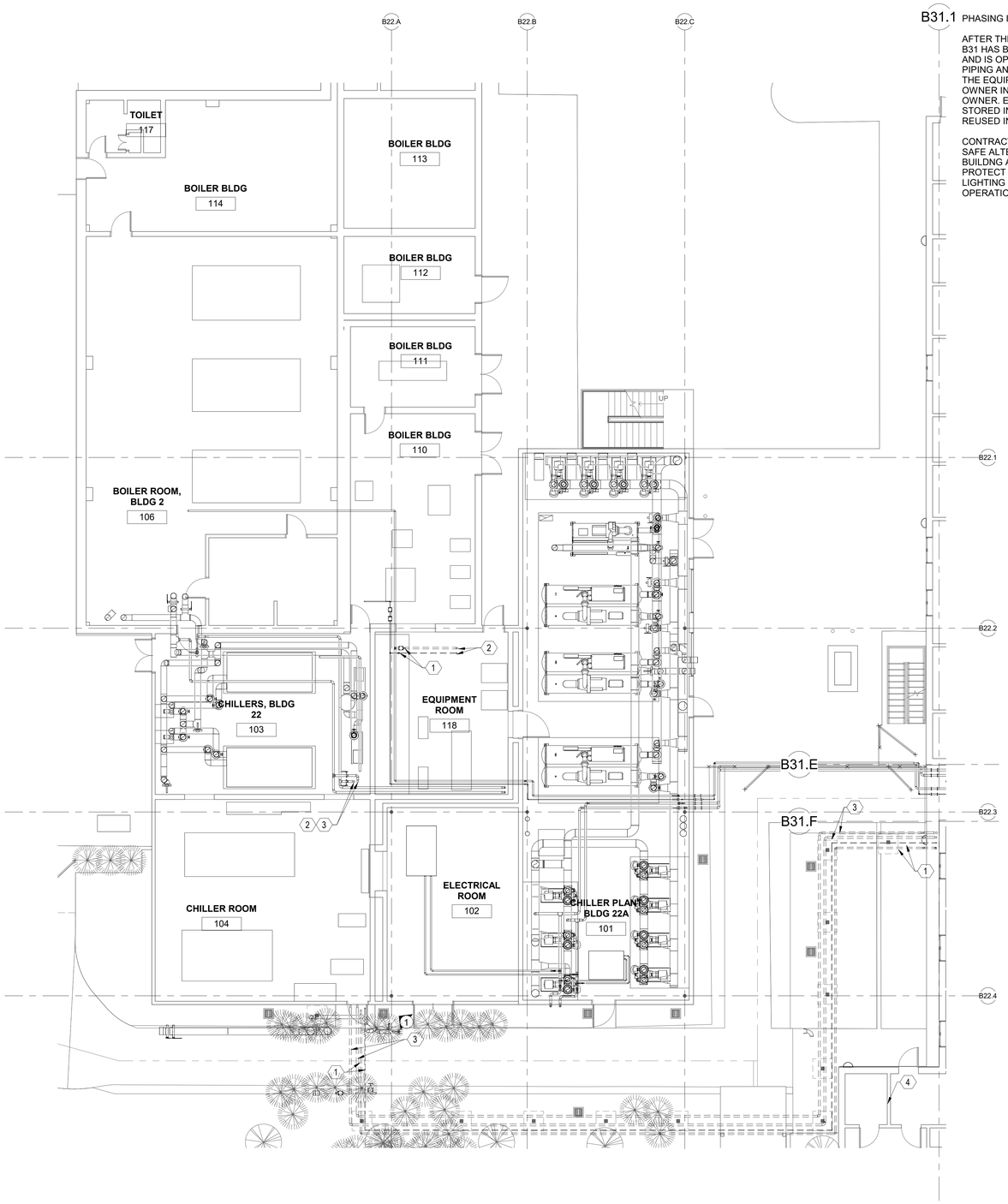
1 PHOTO OF EXISTING CHS/R AND HPS/R
AT BUILDING 22A



A1 MECHANICAL FIRST FLOOR DEMOLITION PLAN - PHASE 2 - BUILDING 22

SCALE: 1/8" = 1'-0"

0' 4' 8' 16'

PHASING INSTRUCTIONS:

AFTER THE NEW CHW/CHWR CONNECTION TO B31 HAS BEEN COMMISSIONED, ACCEPTED, AND IS OPERATIONAL THE EXISTING B31 PIPING AND PIPE BRIDGE MAY BE REMOVED. THE EQUIPMENT IS TO BE RETURNED TO THE OWNER IN A LOCATION SELECTED BY THE OWNER. ENSURE PIPING IS REMOVED AND STORED IN A MANNER THAT ALLOWS IT BE REUSED IN THE FUTURE.

CONTRACTOR TO CONTROL ACCESS, PROVIDE SAFE ALTERNATE PEDESTRIAN ROUTE AND BUILDNG ACCESS WITH TEMPORARY SIGNAGE, PROTECT VEGETATION, IRRIGATION, AND LIGHTING IN PLACE, AND MINIMIZE IMPACT TO OPERATIONS DURING DEMO.

GENERAL SHEET NOTES

A CONTRACTOR TO ENSURE ALL SERVICE INTERRUPTIONS ARE COORDINATED WITH THE COR 30 DAYS IN ADVANCE AND A PRE-CUTOVER MEETING IS TO OCCUR 2 DAYS PRIOR TO INTERRUPTION.

B A DETAILED SCHEDULE, INCLUDING PROJECTED SERVICE INTERRUPTION DATES WITH DURATIONS, AND DETAILED PHASING PLAN IS TO BE PROVIDED TO THE COR PRIOR TO THE START OF WORK. THIS SUBMITTAL MUST BE ACCEPTED BY THE COR PRIOR TO THE START OF WORK.

C FUTURE WORK IS CONSIDERED NIC EXCEPT THAT UTILITY BANK ENCLOSURE IS TO BE PROVIDED AS DESIGNED.

D COORDINATE UTILITY VALVES, JACKET SEAMS, GAUGES, AND TEST PORTS WITH ACCESS PANELS. CENTER SERVICE POINT IN ACCESS PANEL TO MAXIMIZE ACCESS.

E ALL PIPING TO BE PAINTED AND LABELED PER VA UTILITY STANDARD AND AS IDENTIFIED IN THE PAINTING SPECIFICATION 09900.

F CONTRACTOR TO SUBMIT PROPOSED UTILITY STACKING CONFIGURATION FOR COR REVIEW PRIOR TO THE START OF WORK.

G ALL INSULATION AND JACKETING TO BE PROVIDED AS REQUIRED BY THE SPECIFICATIONS AND VA UTLITY STANDARDS.

H CONTRACTOR TO PURCHASE AND LEAVE ON SITE 2 SCISSOR LIFTS AS REQUIRED BY SPECIFICATION 010000.

I ALL UTILITY PIPES TO BE CLEANED AND TESTED PRIOR TO COMMISSIONING.

J SEE COMMISSIONING REQUIREMENTS FOR ADDITIONAL INFORMATION.

KEYNOTES

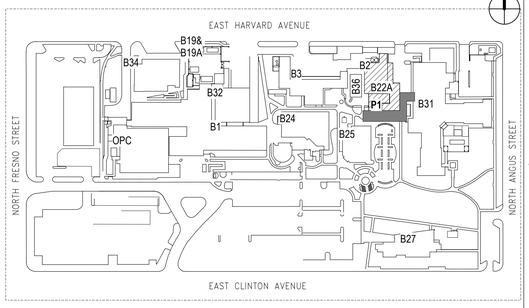
1 EXISTING 2-1/2" HPS AND 1" PC TO BE REMOVED. PROVIDE 2-1/12" BLIND FLANGE AND 1" CAP AT SHUTOFF VALVE.

2 PATCH ROOF OPENING PER SPECIFICATIONS.

3 EXISTING 3" CHS AND CHR TO BE REMOVED. PROVIDE 3" BLIND FLANGE AT SHUTOFF VALVE.

4 EXISTING EMERGENCY OXYGEN SUPPLY CONNECTION TO BE REMOVED.

KEY PLAN



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NO	REVISIONS	DATE

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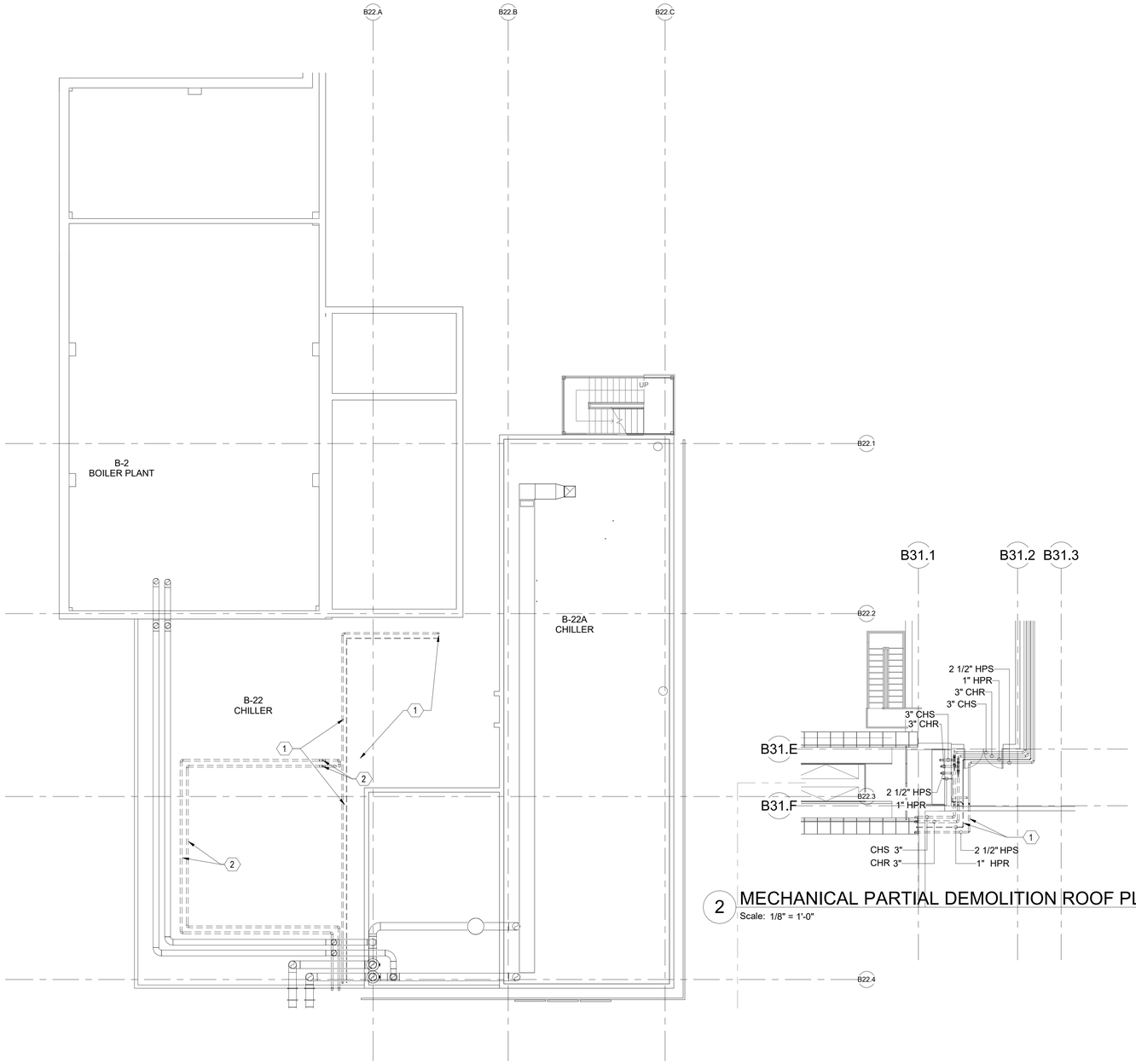
Drawing Title: MECHANICAL FIRST FLOOR DEMOLITION PLAN- BUILDING 22 - PHASE 2	Project Title: PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS		Project Number: 570-16-302
Approved : Project Director	Location: 2615 E CLINTON AVE, FRESNO, CA 93703		Building Number
	Date: 10/10/2024	Checked by: R. REIF / Drawn: R. SCHAMP	Drawing number: MD101

Office of Construction and Facilities Management
Department of Veterans Affairs



1 MECHANICAL CENTRAL PLANT ROOF DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

0' 4' 8' 16'

2 MECHANICAL PARTIAL DEMOLITION ROOF PLAN - PHASE 2 - BUILDING 31

Scale: 1/8" = 1'-0"

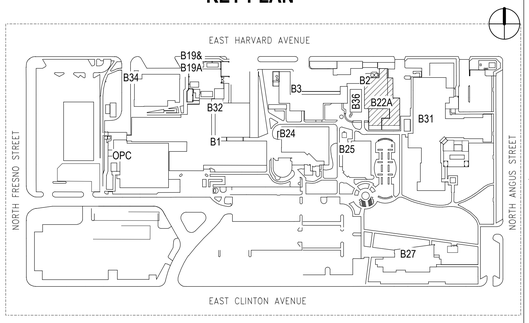
0' 4' 8' 16'

KEYNOTES

1 EXISTING 2-1/2" HPS, 1" PC PIPES AND SUPPORTS TO BE REMOVED. PATCH ROOF PER SPECIFICATIONS. COORDINATE WITH SPECIFICATION SECTIONS 07 72 00 ROOF ACCESSORIES AND 07 76 00 FLASHING AND SHEET METAL.

2 EXISTING 3" CHS/R PIPES AND SUPPORTS TO BE REMOVED. PATCH ROOF PER SPECIFICATIONS.

KEY PLAN



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RECORD DRAWINGS

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Drawing Title: MECHANICAL ROOF DEMOLITION PLAN - BUILDING 22 AND 31 PHASE 2	Project Title: PHASE 2 CHILLER INFRASTRUCTURE ON FRESNO CAMPUS	Project Number: 570-16-302	Office of Construction and Facilities Management
Approved : Project Director	Location: 2615 E CLINTON AVE, FRESNO, CA 93703	Building Number	Department of Veterans Affairs
	Date: 10/10/2024 · Checked by: R. REIF · Drawn: R. SCHAMP	Drawing number: MD102	