COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES

HARRISBURG, PENNSYLVANIA

JOSH SHAPIRO, GOVERNOR

REGINALD B. McNEIL, II - SECRETARY

PROJECT NO. D.G.S. C-0503-0027 PHASE 1
DANVILLE STATE HOSPITAL REPLACE STEAM GENERATION EQUIPMENT
DANVILLE, PENNSYLVANIA

DANVILLE,MAHONING TOWNSHIP, MONTOUR COUNTY, PENNSYLVANIA

ENGINEERING CONSULTANT
CJL ENGINEERING
232 HORNER STREET
JOHNSTON, PA

SHEET INDEX

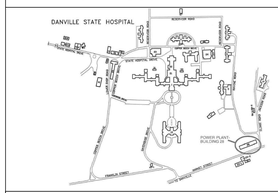
CODE APPROVALS

NOTES

PROJECT LOCATION MAP

VICINITY MAP

CAMPUS / KEY PLAN



CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MATTHEW R. SOTOSKY
ENGINEER
046578-E
PENNSYLVANIA

SIGNATURE 10-14-2024 DATE

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation
Equipment

COVER SHEET

DRAWN BY	DATE	SHEET No.
JV	10-14-2024	CS-1
CHECKED BY	SCALE	
RRR	NOT TO SCALE	

1 / C-1 **SITE PLAN**
1" = 10'

NORTH

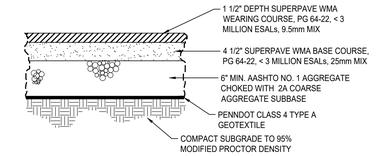
10' 0 10' 20'
SCALE: 1" = 10'

LEGEND

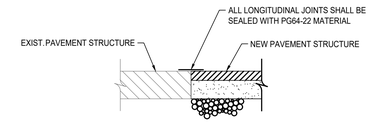
- EXISTING CONTOUR
- PROPOSED CONCRETE
- PROPOSED ASPHALT
- SLOPE DIRECTION

NOTES:

1. EXISTING INFORMATION SHOWN IS BASED ON AERIAL IMAGERY AND TOPOGRAPHY OBTAINED FROM PASDA. A TOPOGRAPHIC SURVEY NOR UNDERGROUND UTILITY INVESTIGATION WAS PERFORMED FOR THIS PROJECT. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
2. LOCATION OF WORK SHOWN IS APPROXIMATE. COORDINATE EXACT LOCATION OF CONC. APRONS WITH STRUCTURAL DRAWINGS.



2 / C-1 **LIGHT-DUTY BITUMINOUS PAVEMENT**
NO SCALE



3 / C-1 **PAVEMENT SAWCUT SEALING**
NO SCALE

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
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DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation Equipment

SITE PLAN

VERIFY SCALE
BAR IS ONE (1) INCH LONG ON ORIGINAL DRAWING.
0 1
IF BAR IS NOT ONE (1) INCH LONG ADJUST SCALE ACCORDINGLY.

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. VARIANCE FROM CONTRACT DOCUMENTS NOT PERMITTED WITHOUT PROFESSIONAL & BUREAU OF CONSTRUCTION APPROVAL

DRAWN BY	DATE	SHEET No.
KW	10-14-2024	C-1
CHECKED BY	SCALE	
RR	AS NOTED	

1 / C-2 **LAND TITLE LEASE DRAWING**
1" = 150'

NORTH

60' 0 60' 120'
SCALE: 1" = 60'

GENERAL NOTES

1. PROPERTY LINES SHOWN WERE OBTAINED FROM MONTOUR COUNTY GIS MAPPING. PROPERTY LINES SHOWN ARE NOT SURVEYED.
2. TAX ID : 6-36-53
   OWNER NAME : BOROUGH OF DANVILLE
   TOTAL PARCEL ACRES : 563.77

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
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DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation Equipment

LAND TITLE LEASE DRAWING

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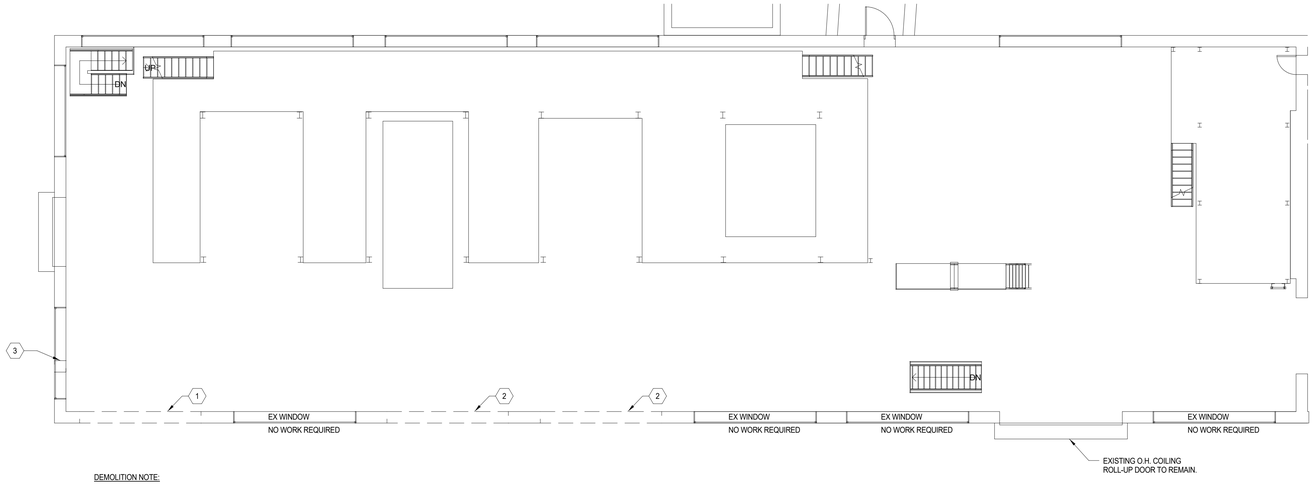
DRAWN BY	DATE	SHEET No.
KW	10-14-2024	C-2
CHECKED BY	SCALE	
RR	AS NOTED	

NUMBERED NOTES

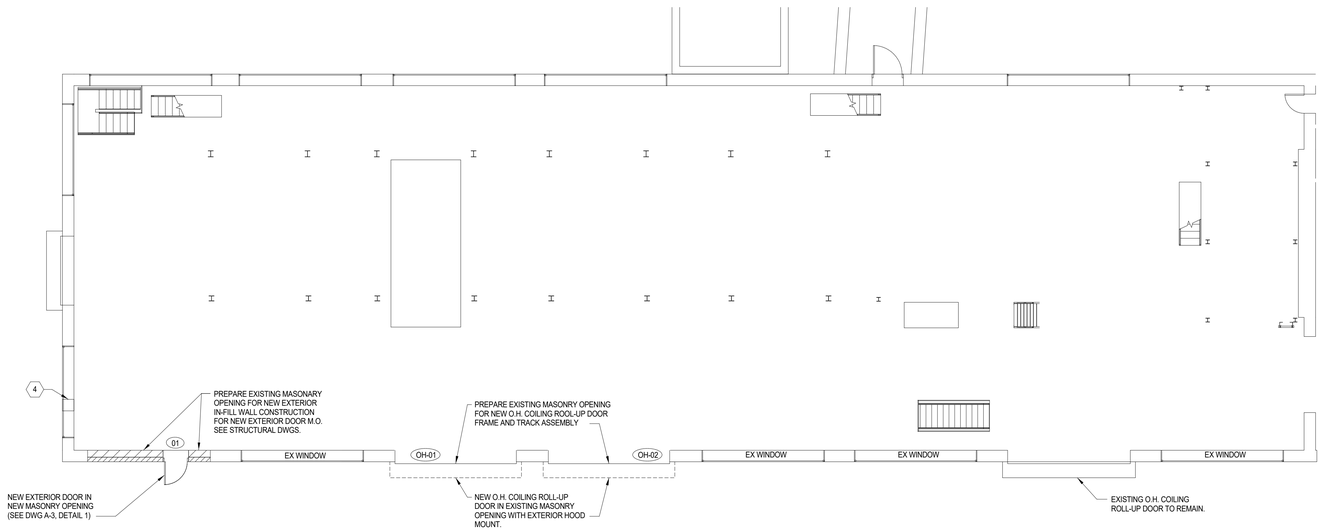
1. REMOVE EXISTING APPROX 144 SQ/FT STEEL FRAME WINDOW UNIT COMPLETE.
   REMOVE PORTION OF EXISTING MASONRY WALL FOR NEW MAN DOOR / FRAME ASSEMBLY.
2. REMOVE EXISTING APPROX 144 SQ/FT STEEL FRAME WINDOW UNITE COMPLETE.
   REMOVE PORTION OF EXISTING MASONRY WALL FROM WINDOW SILL TO EXISTING FLOOR SLAB FOR NEW OVERHEAD COILING DOOR / FRAME ASSEMBLY.
3. REMOVE EXISTING APPROX 10 SQ/FT SECTION OF GLASS GLAZING FROM EXISTING STEEL FRAMED WINDOW AT THE UPPER LEVEL WINDOW UNIT FOR NEW 18" ø FLUE PIPE.
4. PREPARE EXISTING STEEL FRAME WINDOW OPENING AT THE UPPER LEVEL WINDOW FOR NEW FLUE PENETRATION PANEL. FURNISH AND INSTALL NEW METAL FRAME INSERT ASSEMBLY FOR NEW FLUE PANEL.



DEMOLITION NOTE:

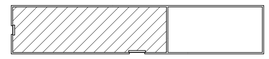
.1 CONTRACTOR RESPONSIBLE FOR ASBESTOS ABATEMENT AND FOR PROPER REMOVAL OF EXISTING STEEL FRAME EXTERIOR WINDOW UNIT. REFERENCE SPEC SECTON 028000 FOR ADDITIONAL INFORMATION.

1 / A-1 PARTIAL FIRST FLOOR PLAN - DEMOLITION
1/8" = 1'-0"



2 / A-1 PARTIAL BUILDING ELEVATION PLAN - NEW WORK
1/8" = 1'-0"

CAMPUS / KEY PLAN



RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
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COMMONWEALTH OF PENNSYLVANIA

SIGNATURE 10-14-2024 DATE

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HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation Equipment

ARCHITECTURAL- PLAN VIEW

VERIFY SCALE

BAR IS ONE (1) INCH LONG ON ORIGINAL DRAWING:

0 1

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DRAWN BY	DATE	SHEET No.
Author	10-14-2024	A-1
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Checker	As indicated	

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NUMBERED NOTES

1. REMOVE EXISTING APPROX 144 SQ/FT STEEL FRAME WINDOW UNIT COMPLETE.
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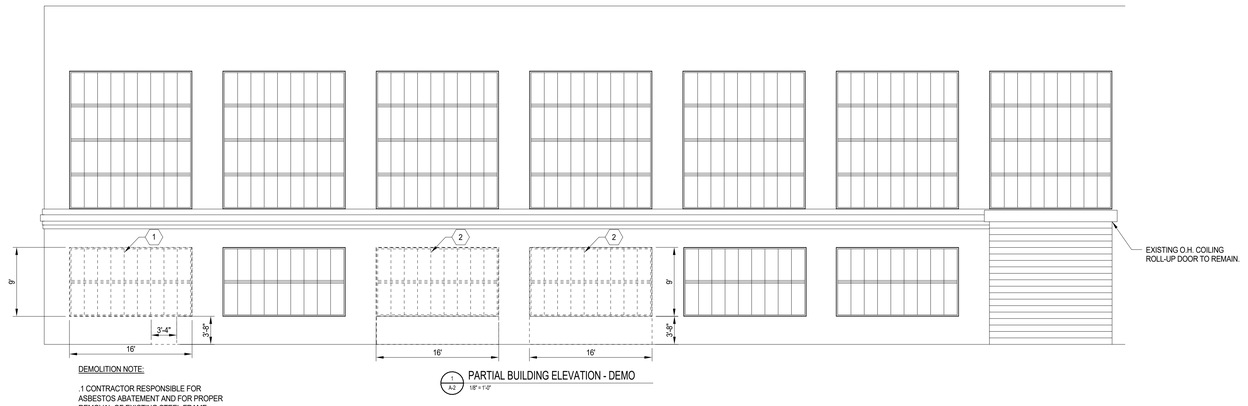

DEMOLITION NOTE:

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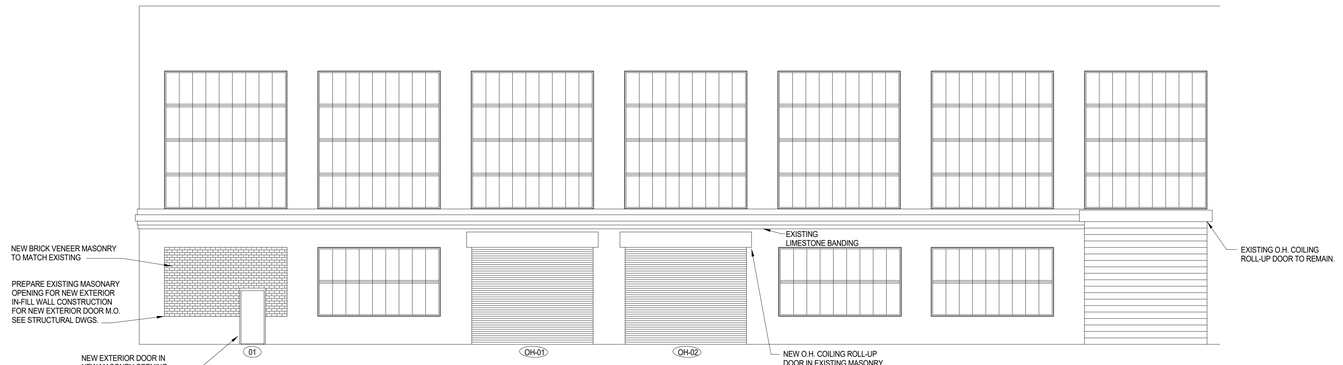
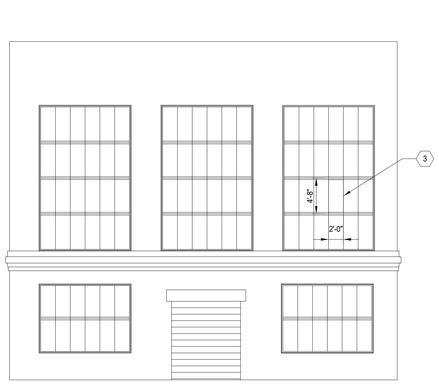
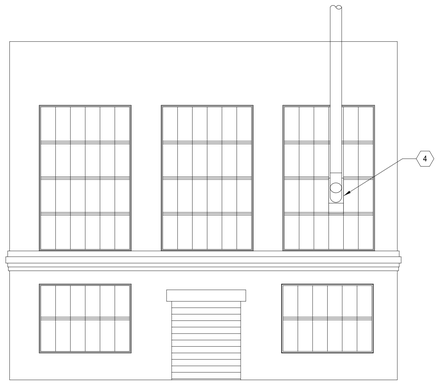
1 / A2 PARTIAL BUILDING ELEVATION - DEMO
1/8" = 1'-0"



2 / A2 PARTIAL BUILDING ELEVATION - NEW WORK
1/8" = 1'-0"



1 / A2 LEFT SIDE BUILDING ELEVATION - DEMO
1/8" = 1'-0"



1 / A2 LEFT SIDE BUILDING ELEVATION - NEW WORK
1/8" = 1'-0"

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
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HARRISBURG, PENNSYLVANIA

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Danville State Hospital
Replace Steam Generation Equipment

SECTION VIEWS - ARCHITECTURAL

DRAWN BY	DATE	SHEET No.
Author	10-14-2024	A-2
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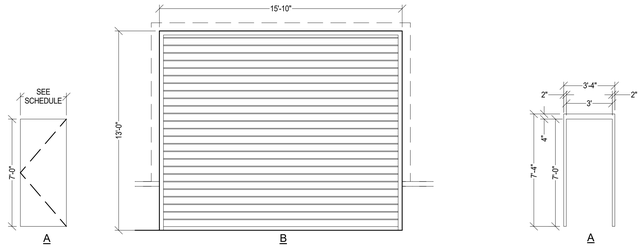
DOOR SCHEDULE

DOOR NO	DOOR LOCATION	SIZE & THICKNESS	TYPE	MAT'L	FRAME				RATING	THRES	GLASS	HDR SET	REMARKS
					MAT'L	TYPE	HEAD	JAMB					
01	NEW MAIN DOOR	3'-0" X 7'-0" X 1 3/4"	A	METAL	HM	A	H-1	J-1	-	ALUM.	-	1	MATCH EXIST. DOOR FINISH
OH-01	FRONT ELEVATION	15'-10" X 13'-0"	B	METAL	HM	-	H-2	J-2	-	-	-	-	MATCH EXIST. DOOR FINISH
OH-02	FRONT ELEVATION	15'-10" X 13'-0"	B	METAL	STEEL	-	H-2	J-2	-	-	-	-	MATCH EXIST. DOOR FINISH



DOOR TYPES
1/4" = 1'-0"

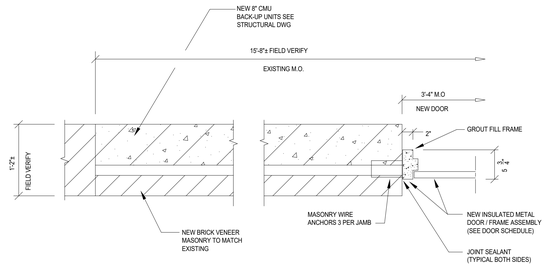
FRAME TYPE
1/4" = 1'-0"

DOOR NOTES:

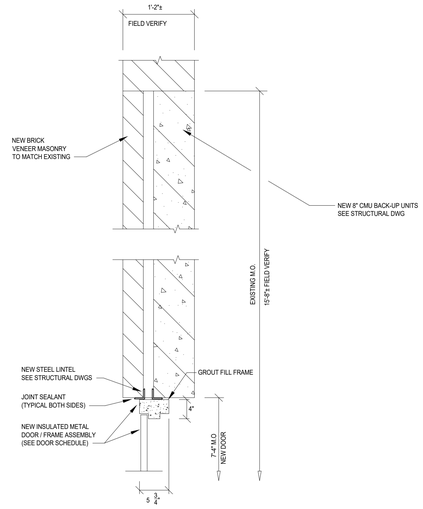
1. HARDWARE FINISHES AT ALL DOORS SHALL BE US26D 626 SATIN CHROMIUM - TYPICAL
2. ALL NEW DOOR ASSEMBLIES SHALL RECEIVE NEW FINISHES.
   STEEL FRAMES (NEW):
   ONE (1) COAT OF PRIMER
   TWO (2) COATS OF ACRYLIC PAINT
3. HARDWARE MANUFACTURERS SPECIFIED TO MATCH OWNER'S STANDARD MATERIALS USED FROM PREVIOUS PROJECTS. FIRE RATED DOOR ASSEMBLIES SHALL RECEIVE 'UL' LABEL. HARDWARE COMPLETE. ALL NEW DOORS SHALL RECEIVE NEW HARDWARE AS NOTED.

DOOR HARDWARE SCHEDULE:

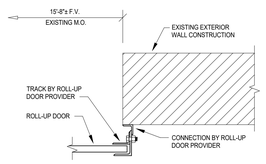
HARDWARE SET #1	QTY.	DESCRIPTION
SINGLE DOOR	3 EA	HINGES
EXTERIOR	1 EA	RIM EXIT DEVICE
EXIT	1 EA	SURFACE CLOSER
	1 EA	THRESHOLD
	1 EA	GASKETING
	2 EA	SWEEP



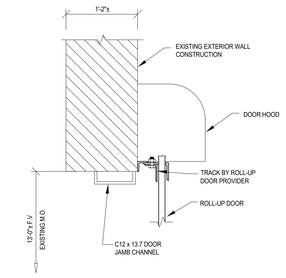
1 A-3 JAMB DETAIL J-1
1" = 1'-0"



2 A-3 JAMB HEAD MAN DOOR DETAIL H-1
1" = 1'-0"



3 A-3 JAMB ROLL-UP DOOR DETAIL J-2
1" = 1'-0"



4 A-3 HEAD ROLL-UP DOOR DETAIL H-2
1" = 1'-0"

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
PROFESSIONAL ENGINEER
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COMMONWEALTH OF PENNSYLVANIA

SIGNATURE 10-14-2024 DATE

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DGS C-0503-0027 Phase 001

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Danville State Hospital
Replace Steam Generation Equipment

SCHEDULES AND DETAILS - ARCHITECTURAL

DRAWN BY	DATE	SHEET No.
Author	10-14-2024	A-3
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STRUCTURAL NOTES:

DESIGN LOADS

DESIGN LIVE LOADS, PER IBC 2018 REQUIREMENTS AS FOLLOWS:

MECHANICAL/ELECTRICAL ROOMS ..... 100 PSF
NEW EQUIPMENT
BOILERS #2 AND 3.....80,000 LBS
BOILER #6.....25,600 LBS
DA TANK.....19,000 LBS

FOUNDATIONS

NO GEOTECHNICAL REPORT HAS BEEN PREPARED FOR THIS PROJECT. AN ALLOWABLE SOIL BEARING CAPACITY UTILIZED FOR THE DESIGN OF THE SPREAD AND STRIP FOOTINGS HAS BEEN ASSUMED TO BE 4500 PSF (NET) FOR FOOTINGS BEARING ON THE UNDERLYING ROCK OR PROPERLY COMPACTED ENGINEERED FILL ON ROCK. ASSUMED SOIL BEARING CAPACITY SPECIFIED ABOVE SHALL BE FIELD VERIFIED BY AN INDEPENDENT TESTING AGENCY PRIOR TO PLACING ANY CONCRETE FOUNDATIONS.

PLACE COMPACTED FILL AS REQUIRED TO BRING SUBGRADE TO THE PROPER ELEVATION PRIOR TO OTHER FOUNDATION WORK. THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 4'-0" BELOW FINISHED EXTERIOR GRADE UNLESS A LOWER ELEVATION IS NOTED.

ALL FOUNDATION SUBGRADES SHALL BE INSPECTED AND APPROVED UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL GEOTECHNICAL ENGINEER PRIOR TO BEING CONCRETED. FOOTINGS MAY BE LOWERED TO ACHIEVE BEARING CAPACITY IF REQUIRED SUBJECT TO REVIEW AND APPROVAL OF THE STRUCTURAL ENGINEER OR GEOTECHNICAL ENGINEER.

CONCRETE (CAST-IN-PLACE)

MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 3,000 PSI FOR FOUNDATION CONCRETE AND FOR CONCRETE ON STEEL FLOOR DECK. CONCRETE FOR SLABS-ON-GRADE SHALL BE 4,000 PSI AND 4,500 PSI FOR INTERIOR AND EXTERIOR SLABS, RESPECTIVELY.

ALL EXTERIOR CONCRETE AND CONCRETE EXPOSED TO WEATHER SHALL BE AIR-ENTRAINED.

ALL CONCRETE SHALL BE NORMAL WEIGHT.

THE CONTRACTOR SHALL SUBMIT MIX DESIGNS AND CORRESPONDING BACK-UP TEST DATA IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE (ACI) BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, LATEST EDITION FOR APPROVAL.

REINFORCING STEEL

REINFORCING BARS SHALL BE DEFORMED BILLET STEEL CONFORMING TO ASTM A615, GRADE 60. BARS SHALL BE BRANDED BY THE MANUFACTURER WITH BAR SIZE AND GRADE OF STEEL AND CERTIFIED MILL REPORTS SHALL BE SUBMITTED FOR THE OWNER'S RECORD. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", LATEST EDITION.

PROVIDE CORNER BARS AT "L" SHAPED CORNERS AND "T" SHAPED INTERSECTIONS OF CONCRETE WALLS AND FOOTINGS AND LAP WITH WALL AND FOOTING REINFORCING. THE SIZE AND SPACING OF CORNER BARS ARE TO BE THE SAME AS HORIZONTAL WALL OR FOOTING REINFORCING. PROVIDE A MINIMUM ACI CLASS B LAP SPLICE FOR ALL REINFORCING UNLESS A GREATER LAP IS NOTED ON THE STRUCTURAL DRAWINGS. PROVIDE PLACING ACCESSORIES IN ACCORDANCE WITH ACI RECOMMENDATIONS.

ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 IN FLAT SHEETS. PROVIDE SUPPORT FOR WELDED WIRE FABRIC, AS REQUIRED, TO MINIMIZE SAGGING.

MASONRY

SPECIFIED COMPRESSIVE STRENGTH OF MASONRY, f'm, SHALL BE MINIMUM 1,500 PSI. HOLLOW AND SOLID CONCRETE BLOCK USED IN WALLS SHALL CONFORM TO ASTM C-90.

MORTAR FOR MASONRY SHALL CONFORM TO ASTM C270, TYPE M OR S. MINIMUM COMPRESSIVE STRENGTH OF MORTAR SHALL BE 2,500 PSI FOR TYPE M MORTAR AND 1,800 PSI FOR TYPE S MORTAR. PROVIDE TYPE S MORTAR FOR ALL MASONRY WORK EXCEPT PROVIDE TYPE M MORTAR FOR MASONRY IN CONTACT WITH EARTH.

GROUT FOR MASONRY SHALL CONFORM TO ASTM C476. MINIMUM COMPRESSIVE STRENGTH OF GROUT SHALL BE 2,500 PSI.

ALL VERTICAL REINFORCING IN MASONRY WALLS SHALL BE GROUTED SOLID FULL HEIGHT INTO CENTERS OF CELLS OF UNITS WITH CEMENT GROUT. PROVIDE CONTINUOUS HORIZONTAL JOINT REINFORCING SPACED AT 16" OC MAXIMUM VERTICALLY IN ALL MASONRY WALLS. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

ALL MASONRY ANCHORS, HEADED STUDS, EPOXY/ADHESIVE ANCHORS, EXPANSION ANCHORS, AND OTHER ITEMS CONNECTED TO OR EMBEDDED IN MASONRY AS SPECIFIED ON THE DRAWINGS SHALL BE CONNECTED TO OR EMBEDDED IN GROUTED SOLID MASONRY CELLS.

PROVIDE MINIMUM 72 BAR DIAMETER LAP SPLICE FOR ALL REINFORCING IN MASONRY UNLESS A GREATER LAP IS NOTED ON THE STRUCTURAL DRAWINGS.

FILL COLUMN AND BEAM POCKETS IN MASONRY WALLS WITH GROUT.

PROVIDE LEVEL B QUALITY ASSURANCE PER TABLE 1.18.2 IN ACI 530-08.

STRUCTURAL STEEL

W SHAPES SHALL CONFORM TO ASTM A992 (Fy = 50 KSI)
TUBE STEEL HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A500, GRADE B (Fy = 46 KSI).
STEEL PIPE SHALL CONFORM TO ASTM A500, (Fy = 46 KSI)
ALL OTHER STEEL SHALL CONFORM TO ASTM A36 (Fy = 36 KSI)

THE STEEL SHEAR CONNECTIONS AT ENDS OF MEMBERS SHALL BE DESIGNED AND DETAILED IN ACCORDANCE WITH THE LATEST EDITION OF THE AISC "MANUAL OF STEEL CONSTRUCTION" FOR THE LOAD REACTIONS GIVEN BELOW UNLESS NOTED OTHERWISE. REGARDLESS OF LOADING, THE MEMBERS WILL BE FURNISHED WITH NO FEWER THAN NUMBER OF WEB BOLTS GIVEN BELOW UNLESS SEATED CONNECTIONS ARE UTILIZED.

MEMBER DEPTHS	REACTIONS	WEB BOLTS
W4 - W10	10 KIPS	2 BOLTS
W12-14	35 KIPS	3 BOLTS
W16	40 KIPS	4 BOLTS

WHEN DOUBLE ANGLE CONNECTIONS ARE UTILIZED, BEAMS FRAMING INTO EACH SIDE OF A COLUMN OR BEAM WEB SHALL HAVE THE FIRST BEAM CONNECTED TO THE WEB WITH A MINIMUM OF TWO BOLTS AND WRENCH-TIGHT NUTS. THIS SHALL BE ACCOMPLISHED BY MAKING THE CONNECTION ANGLES LONGER AND PROVIDING TWO ADDITIONAL BOLTS OR BY PROVIDING AN ERECTION SEAT WITH BOLTED CONNECTION FOR THE FIRST BEAM.

WHEN SEATED CONNECTIONS ARE UTILIZED, PROVIDE WELDED STABILIZER PLATES OR ANGLES AT TOP OF BEAMS.

ALL BOLTS SHALL BE HIGH STRENGTH 3/4" INCH DIAMETER CONFORMING TO ASTM A325 BEARING TYPE, UNLESS NOTED OTHERWISE. PROVIDE STIFFENERS, DOUBLER PLATES AND REINFORCING TO ADEQUATELY DESIGN AND FABRICATE ALL CONNECTIONS.

WELDING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STRUCTURAL WELDING CODE, AWS D1.1, LATEST EDITION AND THE AISC SPECIFICATIONS, LATEST EDITION. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS ONLY. WELDING ELECTRODES SHALL BE E70 SERIES UNLESS NOTED OTHERWISE.

CONDUIT MAY NOT BE RUN THROUGH SLABS ON STEEL DECK SUPPORTED BY COMPOSITE STEEL FRAMING.

PROVIDE 3/16" WELDED END PLATES WITH 3/16" CONTINUOUS WELD ON EACH END OF ALL HSS MEMBERS, TYPICAL UNLESS NOTED OTHERWISE.

OPENINGS THROUGH BEAMS AND COLUMNS SHALL NOT BE PERMITTED UNLESS APPROVED BY THE STRUCTURAL ENGINEER.

THE .1 CONTRACTOR SHALL NOT REPRODUCE ANY PORTION OF THE STRUCTURAL CONTRACT DRAWINGS FOR UTILIZATION AS SHOP DRAWINGS, UNLESS APPROVAL OF THE STRUCTURAL ENGINEER IS OBTAINED.

ALL STEEL EXPOSED TO THE WEATHER, OR EMBEDDED IN EXTERIOR WALLS, SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123.

IMMEDIATELY AFTER INSTALLATION, CLEAN AND TOUCH-UP WELDS, BURNED AREAS AND DAMAGED SPOTS WITH PRIME PAINT. USE A TYPE OF PRIMER CONSISTENT WITH THE SHOP COAT. USE ZINC PAINT TO TOUCH-UP GALVANIZED SURFACES.

ALL STRUCTURAL STEEL DESIGN, FABRICATION, AND ERECTION SHALL COMPLY WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) NEW STEEL ERECTION STANDARD.

STEEL FLOOR DECK

WHERE INDICATED IN PLANS AND SECTIONS, PROVIDE 3" (16 GAGE) COMPOSITE TYPE GALVANIZED STEEL FLOOR DECK TYPICAL.

WHERE INDICATED IN PLANS AND SECTIONS, PROVIDE 1 1/2" (18 GAGE) COMPOSITE TYPE GALVANIZED STEEL FLOOR DECK TYPICAL.

ALL DECK SHALL BE CONTINUOUS OVER A MINIMUM OF THREE SPANS.

PROVIDE POUR STOPS, COLUMN CLOSURES, END CLOSURES, COVER PLATES, AND GUTTER FILLERS OF THE TYPE REQUIRED BY THE STEEL DECK INSTITUTE. POUR STOPS SHALL BE OF SUFFICIENT STRENGTH AND STIFFNESS TO REMAIN IN PLACE WITHOUT DISTORTION.

ERECT STEEL FLOOR DECKING, AND ACCESSORIES IN ACCORDANCE WITH THE SDI DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS, AND ROOF DECKS, AND IN ACCORDANCE WITH THE SDI MANUAL OF STEEL CONSTRUCTION WITH STEEL DECK. PROVIDE WELDING IN ACCORDANCE WITH AWS D1.1.

PROVIDE MINIMUM 2" BEARING ON STEEL SUPPORT MEMBER SURFACES.

CONDUIT MAY NOT BE RUN THROUGH COMPOSITE TYPE STEEL DECK.

IMMEDIATELY AFTER INSTALLATION, CLEAN AND TOUCH-UP WELDS, BURNED AREAS AND DAMAGED SPOTS ON GALVANIZED SURFACES WITH ZINC PAINT.

ALL WELDS SHALL BE PERFORMED BY CERTIFIED WELDERS ONLY, AND SHALL BE IN ACCORDANCE WITH ALL AWS REQUIREMENTS.

LINTELS

EXCEPT FOR LINTELS SCHEDULED ON THE STRUCTURAL DRAWINGS, PROVIDE STEEL LINTELS AS SPECIFIED BELOW IN NON-LOADBEARING WALLS.

ALL LINTELS LOCATED IN EXTERIOR WALLS ARE TO BE GALVANIZED.

W-SHAPES SHALL CONFORM TO ASTM A992 (Fy = 50 KSI)
TUBE STEEL HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A500, GRADE B (Fy = 46 KSI).
ALL OTHER STEEL SHALL CONFORM TO ASTM A36 (Fy = 36 KSI)

FOR OPENINGS IN EXTERIOR AND INTERIOR NON-LOADBEARING MASONRY WALLS, PROVIDE ONE STEEL ANGLE FOR EACH 4" OF WALL THICKNESS IN MASONRY WALLS ACCORDING TO THE FOLLOWING SCHEDULE:

OPENINGS:		
	UP TO 3'-0"	L 3 1/2x3 1/2x5/16
	3'-1" TO 5'-0"	L 5x3 1/2x5/16 (LLV)
	5'-1" TO 8'-0"	L 6x3 1/2x3/8 (LLV)

LINTELS CONSISTING OF MORE THAN ONE STEEL ANGLE SHALL HAVE THE ANGLES WELDED TO EACH OTHER WITH 3" LONG 3/16" WELDS AT 12" OC MAX TOP AND BOTTOM. LINTELS SHALL BEAR A MINIMUM OF 8 INCHES AT EACH END ON A MINIMUM OF ONE BLOCK COURSE (MIN 8" HIGH x MIN 16" LONG) SOLID OR GROUTED SOLID MASONRY, UNLESS OTHERWISE NOTED.

EPOXY (ADHESIVE) ANCHORS

ALL POST-INSTALLED ANCHORS SHALL BE CHEMICAL (ADHESIVE) TYPE ANCHORS UNLESS NOTED OTHERWISE ON THE DRAWINGS. ANCHOR EMBEDMENT LENGTHS AND DIAMETER SHOWN ON THE DRAWINGS SHALL BE CONSIDERED MINIMUM.

ALL ANCHORS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.

LATERAL BRACING AND SHORING OF STRUCTURAL ELEMENTS

PROVIDE ADEQUATE BRACING, GUY-WIRING, AND SHORING FOR STEEL FRAMING AND ALL OTHER MEMBERS DURING STEEL ERECTION, CONCRETE WORK ON DECK, AND ANY OTHER ERECTION WORK. BRACING, SHORING, AND GUY-WIRING SHALL REMAIN IN PLACE UNTIL PERMANENT CONNECTIONS HAVE BEEN MADE. STEEL FRAME SHALL BE PLUMB WITHIN AISC TOLERANCES.

PROVIDE ADEQUATE BRACING FOR RETAINING AND PIT WALLS. BRACE PIT WALLS UNTIL SUPPORTING FLOORS, TOP AND BOTTOM, ARE IN PLACE AND HAVE ATTAINED DESIGN STRENGTH. WHERE BACKFILL IS REQUIRED ON BOTH SIDES OF A WALL, BACKFILL BOTH SIDES SIMULTANEOUSLY WITH THE GRADE DIFFERENCE NOT TO EXCEED 2'-0" AT ANY TIME.

SHOP DRAWINGS

THE .1 CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS FOR APPROVAL. THE STRUCTURAL ENGINEER WILL NOT BE RESPONSIBLE FOR THE STRUCTURAL CERTIFICATION AND DESIGN OF THE PROJECT IF THE .1 CONTRACTOR FAILS TO OBTAIN APPROVAL OF THE SHOP DRAWINGS. THE .1 CONTRACTOR SHALL INFORM THE STRUCTURAL ENGINEER IN WRITING CONCERNING DEVIATIONS AND/OR OMISSIONS FROM THE CONTRACT DOCUMENT AT THE TIME OF SHOP DRAWING SUBMISSION. THE .1 CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS AND SHALL MAKE ALL NECESSARY CORRECTIONS BEFORE SUBMISSION. THE .1 CONTRACTOR SHALL STATE ON THE SHOP DRAWINGS THAT CONTRACT DOCUMENT REQUIREMENTS HAVE BEEN MET AND THAT ALL DIMENSIONS, CONDITIONS, AND QUANTITIES HAVE BEEN REVIEWED AND VERIFIED AS SHOWN AND/OR CORRECTED ON THE SHOP DRAWINGS.

EXISTING CONDITIONS

THE .1 CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS AND FRAMING SHOWN ON THE STRUCTURAL AND ARCHITECTURAL DRAWINGS WHICH PERTAIN TO ANY NEW WORK, PRIOR TO BEGINNING FABRICATION OF MATERIALS AND/OR PRIOR TO STARTING ANY NEW CONSTRUCTION. THE .1 CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF ANY EXISTING CONDITIONS ARE FOUND TO BE IN CONFLICT WITH THE ARCHITECTURAL OR STRUCTURAL DRAWINGS.

THE .1 CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND LATERAL BRACING FOR BOTH NEW AND EXISTING MEMBERS PRIOR TO BEGINNING ANY DEMOLITION WORK AND UNTIL COMPLETING CONSTRUCTION OF ALL NEW FRAMING AS SPECIFIED ON THE STRUCTURAL DRAWINGS AND IN THE PROJECT SPECIFICATIONS. THE .1 CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND ERECTION OF ALL TEMPORARY SHORING AND LATERAL BRACING.

PRIOR TO CUTTING, SANDING, OR WELDING EXISTING STRUCTURAL STEEL FOR DEMOLITION OR CONNECTION OF NEW CONSTRUCTION, OR DISTURBANCE OF ANY PAINTED MATERALS, THE .1 CONTRACTOR SHALL PROPERLY ABATE THE LEAD-BASED PAINT FROM THE STRUCTURE WITH PROPERLY TRAINED LEAD PERSONNEL. THE .1 CONTRACTOR SHALL MARK THE LOCATIONS OF THE CUTTING, SANDING, OR WELDING WHERE LEAD ABATEMENT IS REQUIRED AND VERIFY WITH DESIGN PROFESSIONAL PRIOR TO THE INITIATION OF ANY WORK PRACTICES.

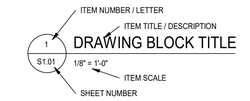
STRUCTURAL STANDARD DRAWING ABBREVIATIONS

AB	Anchor Bolt	LSH	Long Side Horizontal
ADDL	Additional	LSV	Long Side Vertical
ADJ	Adjacent	LT GA	Light Gage
AESS	Arch Exposed Struct Stl	LW	Light Weight
AFF	Above Finished Floor	LWC	Light Weight Concrete
ALT	Alternate		
ANC	Anchor	MATL	Material
APPROX	Approximate	MAX	Maximum
ARCH	Architectural / Architect	MC	Moment Connection
@	At	MECH	Mechanical
		MEZZ	Mezzanine
B/	Bottom of (e.g. B/STL = Bottom of Steel)	MFR	Manufacturer
		MIN	Minimum
BLDG	Building	MISC	Miscellaneous
BM	Beam	MO	Masonry Opening
BOT	Bottom	MTL	Metal
BRCG	Bracing		
BRDG	Bridging	NIC	Not In Contract
BRG	Bearing	NO. or #	Number
BSMT	Basement	NS	Near Side
		NTS	Not To Scale
CAM	Camber	NW	Normal Weight
CANT	Cantilever	NWC	Normal Weight Concrete
CHKD	Checkered		
CIP	Cast-in-place	OC	On Center
CJ	Contraction / Control Joint	OD	Outside Diameter
CL	Center Line	O.F.	Outside Face
CLR	Clear	OPNG	Opening
CMU	Concrete Masonry Unit	OPP	Opposite
COL	Column	OSL	Outstanding Leg
CONC	Concrete		
CONN	Connection	PC	Precast
CONSTR	Construction	PCF	Pounds per Cubic Foot
CONT	Continuous	PL	Plate
COORD	Coordinate	PLBG	Plumbing
CTR	Center	PLF	Pounds per Linear Foot
CY	Cubic Yard	PROJ	Projection
		PSF	Pounds per Square Foot
DBL	Double	PSI	Pounds per Square Inch
DET or DTL	Detail	PT	Pressure Treated
DIA or Ø	Diameter		
DIAG	Diagonal	R	Riser
DIM	Dimension	RAD	Radius
DL	Dead Load	RD	Roof Drain
DN	Down	REF	Reference
DO	Ditto	REINF	Reinforcement / Reinforcing
DWG	Drawing	REQD	Required
DWL	Dowel	REV	Revision
EA	Each	SCHED	Schedule
EF	Each Face	SECT	Section
EJ	Expansion Joint	SIM	Similar
EL	Elevation	SOD	Slab on Deck
EOD	Edge of Deck	SOG	Slab on Grade
EOS	Edge of Slab	SPA	Space(s)
EQ	Equal	SPEC	Specification(s)
ES	Each Side	SQ	Square
EW	Each Way	SS	Stainless Steel
EXIST	Existing	STD	Standard
EXP	Expansion	STG(D)	Stagger(ed)
EXT	Exterior	STIFF	Stiffener
		STL	Steel
FFE	Finished Floor Elevation	STRUCT	Structural
FIN	Finish	SYMM	Symmetrical
FLR	Floor		
FDTN	Foundation	T	Tread
FS	Far Side	T & B	Top and Bottom
FT	Foot or Feet	T/	Top of (e.g. T/CONC = Top of Concrete)
FTG	Footing		
		TEMP	Temporary
GA	Gage	TYP	Typical
GALV	Galvanized		
GC	General Contractor	UON	Unless Otherwise Noted
GR	Grade	UNO	Unless Noted Otherwise
GR BM	Grade Beam		
		VERT	Vertical
HC	Hollow Core	VIF	Verify In Field
HORIZ	Horizontal		
HP	High Point	W	Width
HS	High Strength	W/	Width
HSS	Hollow Structural Steel	WD	Wood
		WF	Wide Flange
ID	Inside Diameter	WL	Wind Load
IF	Inside Face	W/O	Without
IN.	Inch or Inches	WP	Work Point
INFO	Information	WT	Weight
INSUL	Insulation	WWF	Welded Wire Fabric
INT	Interior		
INV	Invert	X-STRONG	Extra Strong
		XX-STRONG	Double Extra Strong
JT	Joint		
		YD	Yard
K	Kip(s)		
KSF	Kips per Square Foot		
L	Angle		
LAM	Laminated		
LB or #	Pound		
LG	Long		
LL	Live Load		
LLH	Long Leg Horizontal		
LLV	Long Leg Vertical		
LP	Low Point		
LRG	Large		

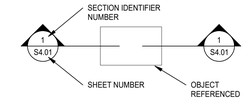
SYMBOLS LEGEND

DESCRIPTION / SYMBOLS

DRAWING BLOCK TITLE MARK - PLANS, ELEVATIONS, SECTIONS, & DETAILS



SECTION MARK -



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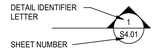
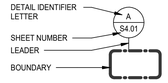
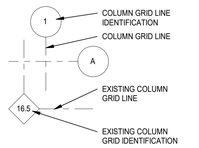


DETAIL INDICATOR W/ BOUNDARY



NORTH ARROW

COLUMN GRID & IDENTIFICATION



REVISION INDICATOR with CLOUD

DATUM POINT INDICATOR

MATCHLINE

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL TIMOTHY DEAN NICHOLSON ENGINEER PE075865

10/14/2024

SIGNATURE 10-14-2024 DATE

CJL ENGINEERING
232 Homer Street
Johnstown, PA 15902
ph: (814) 536-1651, fax: (814) 536-5732

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation Equipment

STRUCTURAL NOTES AND ABBREVIATIONS

VERIFY SCALE

BAR IS ONE (1) INCH LONG ON ORIGINAL DRAWING.
0 1
IF BAR IS NOT ONE (1) INCH LONG ADJUST SCALE ACCORDINGLY.

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. VARIANCE FROM CONTRACT DOCUMENTS NOT PERMITTED WITHOUT PROFESSIONAL & BUREAU OF CONSTRUCTION APPROVAL.

DRAWN BY	DATE	SHEET No.
EJK	10-14-2024	S-1
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TDN	NTS	

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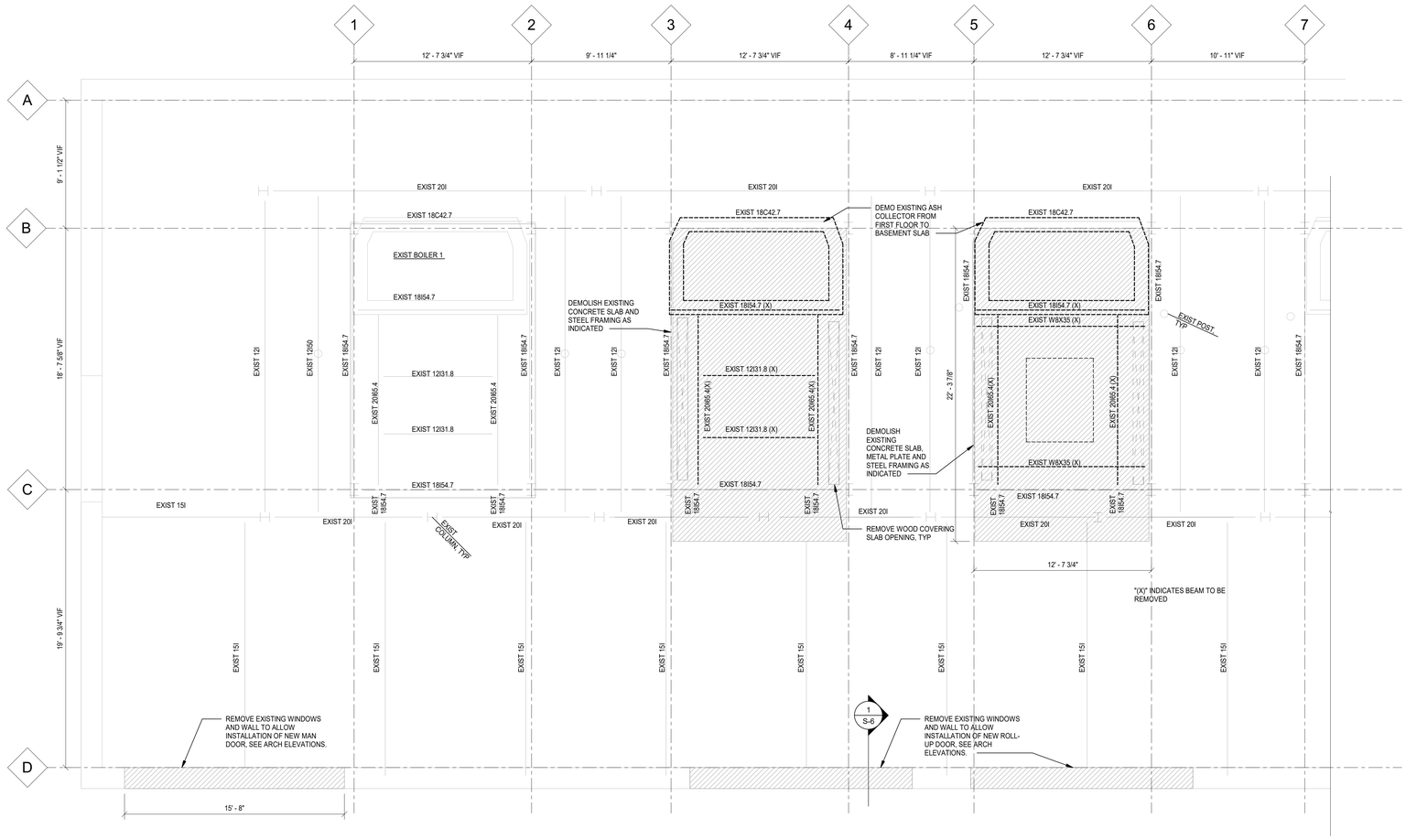

1 S-2 PARTIAL FIRST FLOOR DEMOLITION PLAN

1/4" = 1'-0"

DEMOLITION PLAN NOTES:

1. DEMOLISH AND REMOVE ALL ITEMS AND MEMBERS SHOWN ON PLAN TO BE DEMOLISHED.
2. REFERENCE ARCHITECTURAL SHEET A-2 FOR ADDITIONAL INFORMATION ON THE DEMOLITION OF THE WINDOWS AND ITEMS ON THE BUILDING'S ELEVATION.
3. REFER TO THE SELECTIVE DEMOLITION SPECIFICATION FOR ADDITIONAL INFORMATION.
4. THE BUILDING'S OPERATION SHALL BE MAINTAINED DURING THE ENTIRE DEMOLITION AND CONSTRUCTION PERIOD.

CAMPUS / KEY PLAN

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PARTIAL FIRST FLOOR DEMOLITION PLAN

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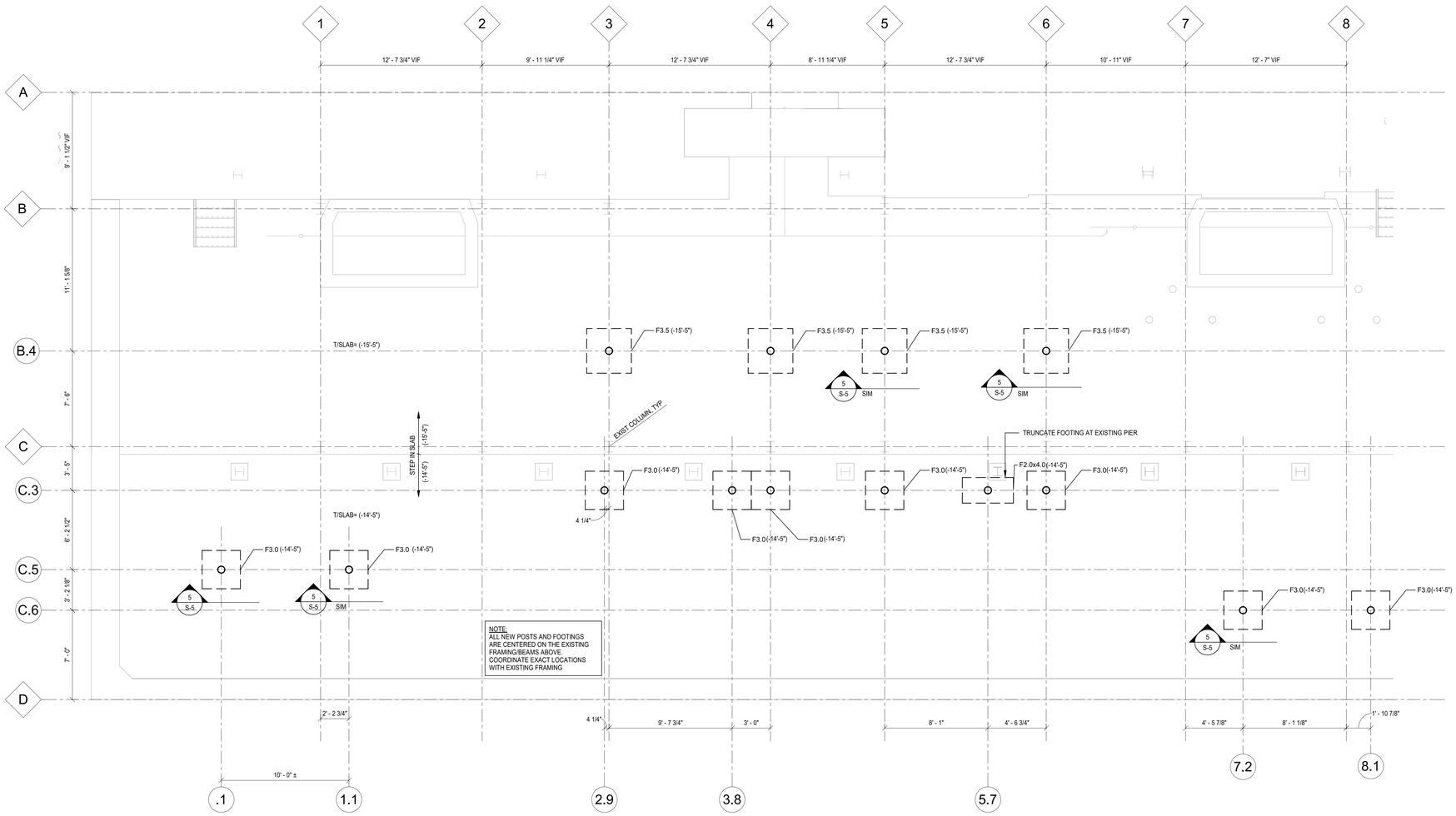

1 / S-3 PARTIAL BASEMENT FOUNDATION PLAN

1/4" = 1'-0"

FOUNDATION PLAN NOTES:

1. FINISHED FLOOR (TOP OF SLAB) ELEVATION = -15'-5" (REFERENCE, ACTUAL = xxxx.xx') TYPICAL UNO ON PLAN.
2. ALL ELEVATIONS SHOWN ON PLAN AND IN SECTIONS OR DETAILS REFERENCE THE FINISHED FIRST FLOOR ELEVATION OF 0'-0".
3. ELEVATIONS SHOWN ON PLAN THUS (xx'-x") ARE TOP OF FOOTING AND SLAB ELEVATIONS. TOP OF ALL INTERIOR FOOTINGS = -15'-5" TYPICAL, UNO ON PLAN.
4. ALL SPREAD FOOTINGS AND PIERS SHALL BE CENTERED ON THE INTERSECTION OF THE GRID LINES, TYPICAL UNO.
5. NEW POST AND FOOTING LOCATIONS AND DIMENSIONS SHOWN ARE APPROXIMATIONS. POSTS SHALL BE PLACED TO ACCOMPLISH THE INTENT THAT IS SHOWN IN THE SECTIONS. TRUE FIT DIMENSIONS SHALL BE COORDINATED PRIOR TO STEEL SHOP DRAWING SUBMISSION.
6. REFER TO TYPICAL DETAILS, STRUCTURAL NOTES, AND PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

COLUMN SCHEDULE

MARK	SIZE	BASE PLATE SIZE	ANCHOR BOLT DIAMETER	REMARKS
C-1	Pipe6XS	3/4"x12"x12"	3/4"	

FOOTING SCHEDULE

MARK	SIZE	REINFORCING EACH WAY TOP	REINFORCING EACH WAY BOT	REMARKS
F2.0x4.0	2'-0" x 4'-0" x 12"	(6) - #4 SHORT BARS AND (3) - #4 LONG BARS	(6) - #4 SHORT BARS AND (3) - #4 LONG BARS	-
F3.0	3'-0" x 3'-0" x 12"	(4) - #4	(4) - #4	-
F3.5	3'-6" x 3'-6" x 12"	(5) - #4	(5) - #4	-

LINTEL SCHEDULE

MARK	SIZE	BEARING (EACH END)	REMARKS
L-1	(2) - L3-1/2x3-1/2x5/16" UNDER CMU W/ (1) L- 3-1/2x3-1/2x5/16 UNDER BRICK	8" MIN	

NOTES:
1. EACH END OF ALL LINTELS SHALL BEAR ON A MINIMUM OF ONE BLOCK COURSE (1'-4" MIN LONG x 8" MIN HIGH) OF GROUTED SOLID MASONRY UNO.
2. ALL EXTERIOR LINTELS SHALL BE GALVANIZED

CAMPUS / KEY PLAN

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Replace Steam Generation Equipment

PARTIAL BASEMENT FOUNDATION PLAN

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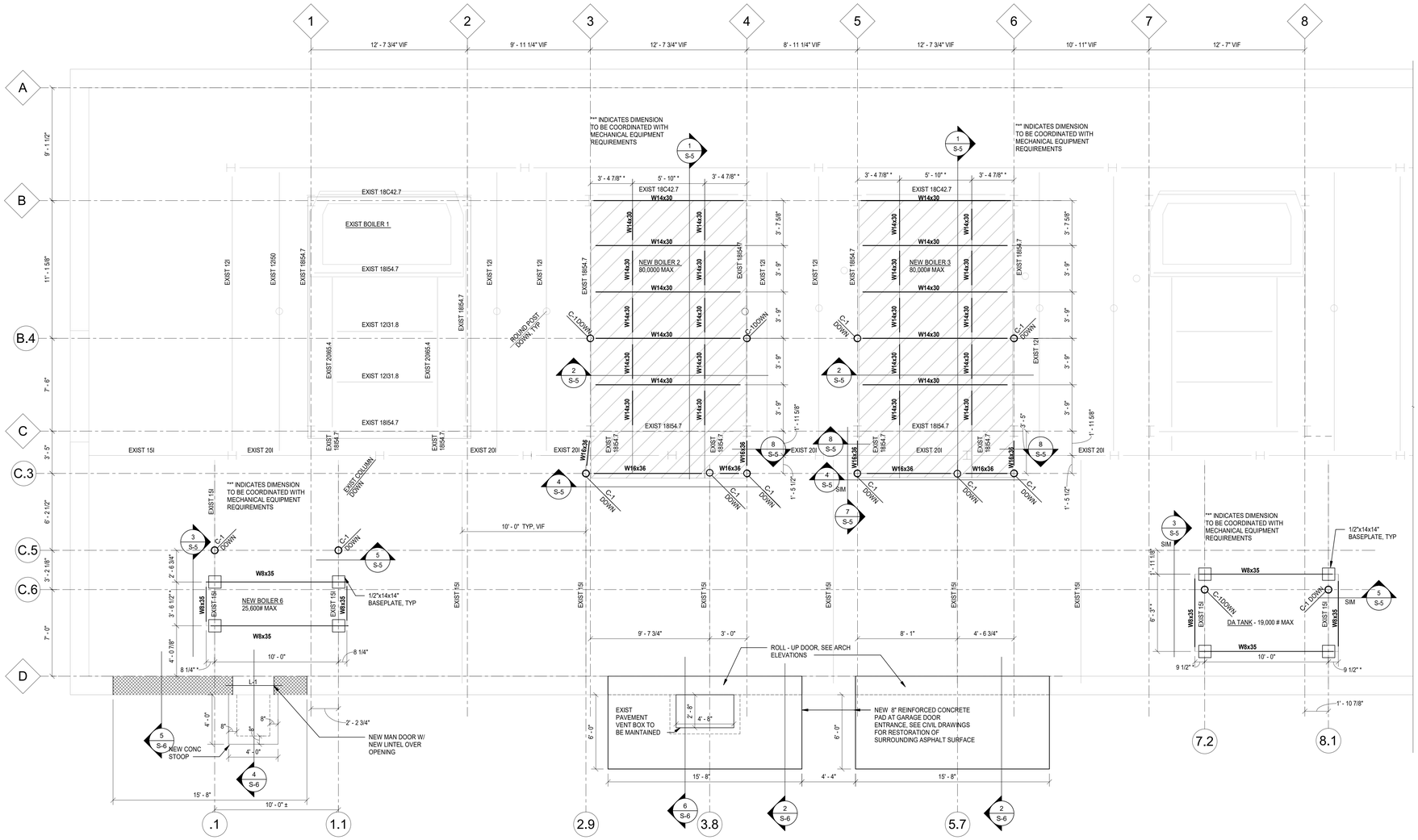

1 S-4 PARTIAL FIRST FLOOR FRAMING PLAN

1/4" = 1'-0"

FIRST FLOOR FRAMING PLAN NOTES:

1. TYPICAL FLOOR CONSTRUCTION AT FLOOR INFILL AREAS: NORMAL WEIGHT CONCRETE SLAB REINFORCED WITH #5 @12" OC EACH WAY TOP AND BOTTOM ON 3" (16 GA) GALVANIZED WIDE RIB TYPE COMPOSITE STEEL DECK (12"± TOTAL THICKNESS TO MATCH EXISTING CONDITIONS) TYPICAL UNLESS NOTED OTHERWISE (UNO).
2. WHERE INDICATED IN SECTIONS, FLOOR CONSTRUCTION SHALL BE NORMAL WEIGHT CONCRETE SLAB REINFORCED WITH #5@12" OC EACH WAY ON 1 1/2" (18 GA) GALVANIZED WIDE RIB TYPE COMPOSITE STEEL DECK (6"± TOTAL THICKNESS TO MATCH EXISTING CONDITIONS)
3. ELEVATIONS SHOWN ON PLAN ARE TOP OF STEEL ELEVATIONS AND REFERENCE THE FIRST FLOOR ELEVATION OF 0'-0" (REFERENCE).
4. THE TOP OF STEEL (T/STL) ELEVATION SHALL BE 12" BELOW TOP OF SLAB UNO ON PLAN.
   TOP OF SLAB = 0'-0", TYPICAL UNO
   T/ STL = (-1'-0"), TYPICAL UNO
5. REFER TO FOUNDATION PLAN AND ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
6. REFER TO SHEET S-3 FOR ALL SCHEDULES.
7. REFER TO TYPICAL DETAILS, STRUCTURAL NOTES, AND PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TIMOTHY DEAN NICHOLSON
ENGINEER
COMMONWEALTH OF PENNSYLVANIA

10/14/2024
SIGNATURE
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Danville State Hospital
Replace Steam Generation Equipment

PARTIAL FIRST FLOOR FRAMING PLAN

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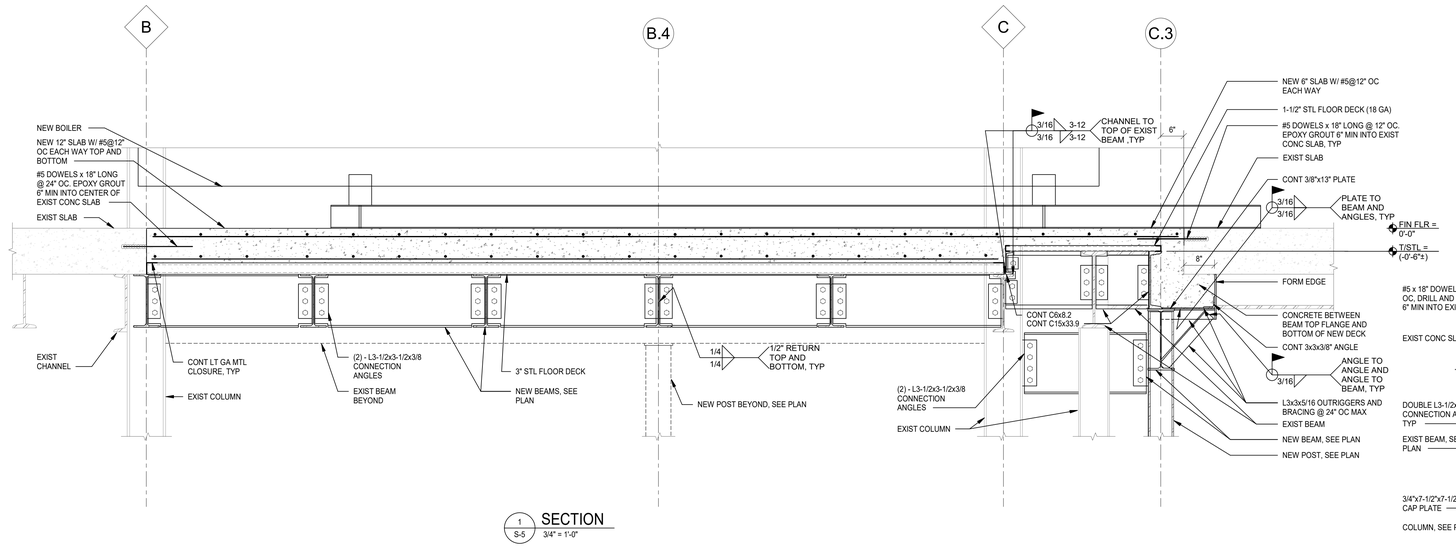
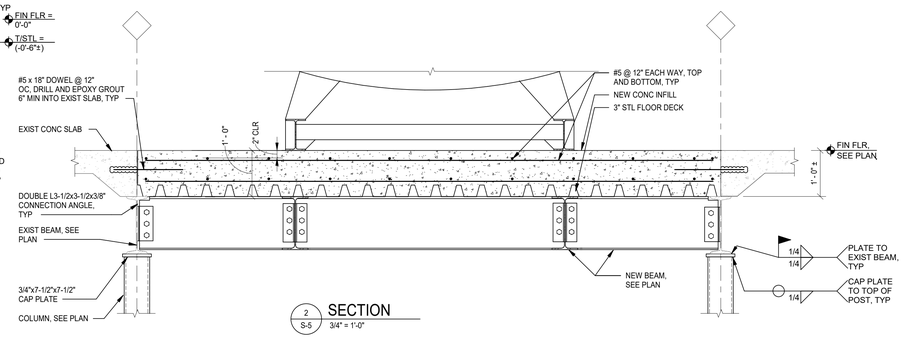
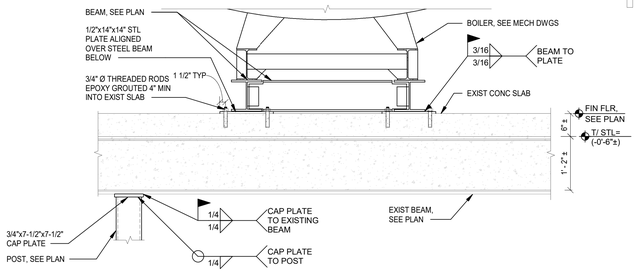


1 S-5 SECTION 3/4" = 1'-0"



2 S-5 SECTION 3/4" = 1'-0"



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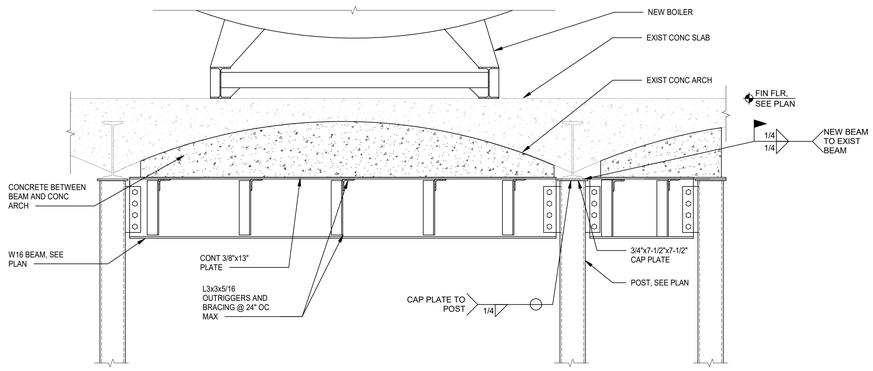

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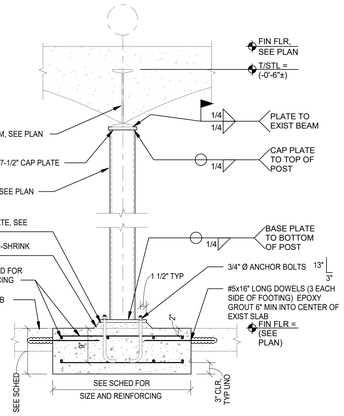

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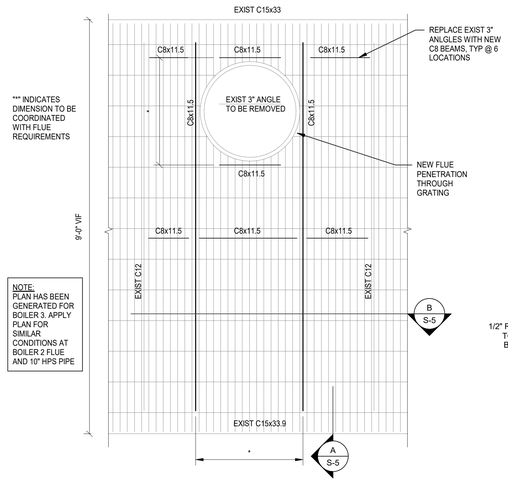
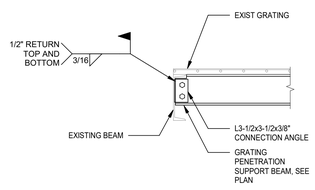


6 S-5 GRATING SUPPORT AROUND BOILER FLUE PENETRATIONS 3/4" = 1'-0"



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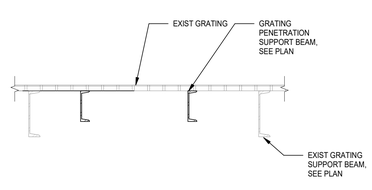

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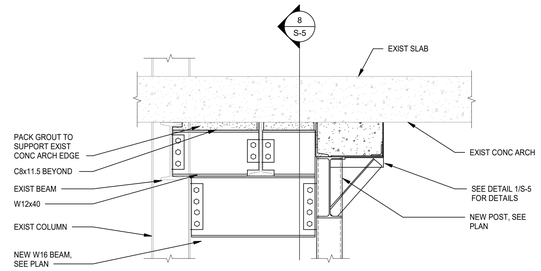
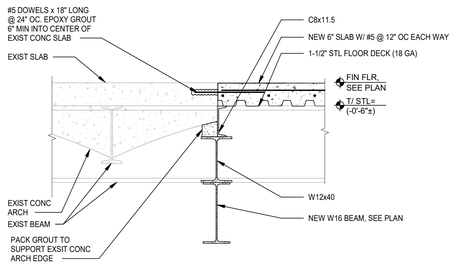


7 S-5 SECTION 3/4" = 1'-0"



8 S-5 SECTION 3/4" = 1'-0"

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL TIMOTHY DEAN NICHOLSON ENGINEER PE075865

10/14/2024

SIGNATURE — 10-14-2024 DATE

CJL ENGINEERING
232 Homer Street
Johnstown, PA 15902
ph: (814) 536-1651, fax: (814) 536-5732

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation Equipment

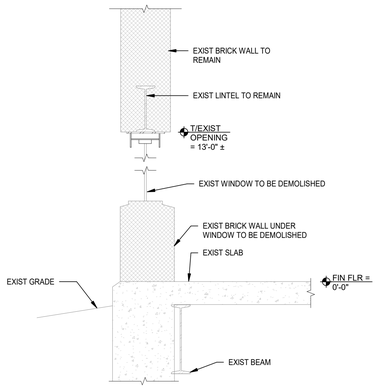
FRAMING SECTIONS AND DETAILS

VERIFY SCALE
BAR IS ONE (1) INCH LONG ON ORIGINAL DRAWING.
0 1
IF BAR IS NOT ONE (1) INCH LONG ADJUST SCALE ACCORDINGLY.

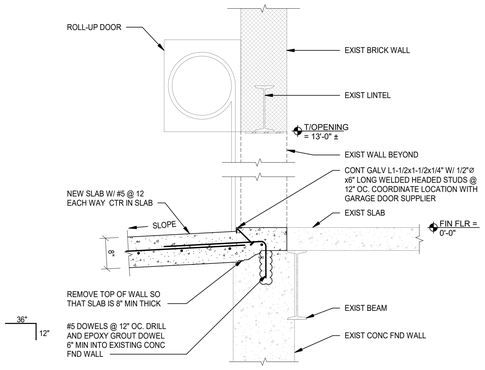
CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. VARIANCE FROM CONTRACT DOCUMENTS NOT PERMITTED WITHOUT PROFESSIONAL & BUREAU OF CONSTRUCTION APPROVAL.

DRAWN BY	DATE	SHEET No.
EJK	10-14-2024	S-5
CHECKED BY	SCALE	
TDN	3/4" = 1'-0"	

10/14/2024 11:45:20 AM



1 S-6 SECTION
3/4" = 1'-0"



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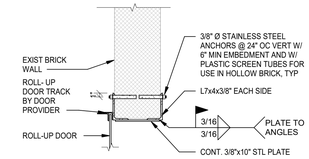
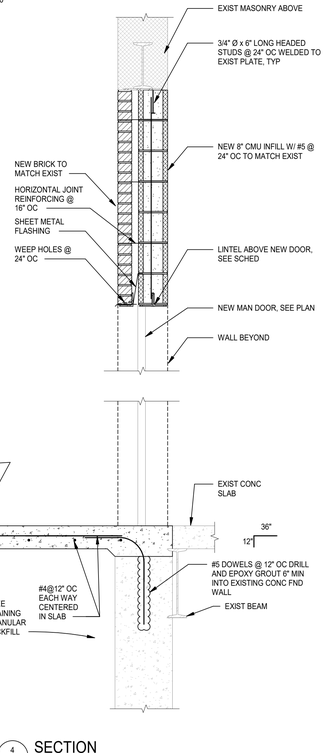


3 S-6 DOOR JAMB AT NEW ROLL-UP DOOR DETAIL
3/4" = 1'-0"



4 S-6 SECTION
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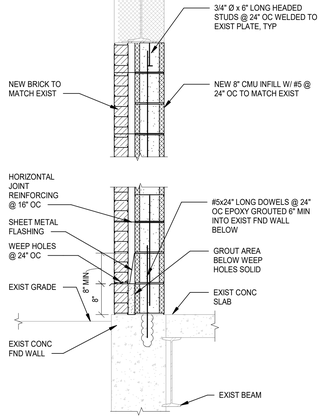

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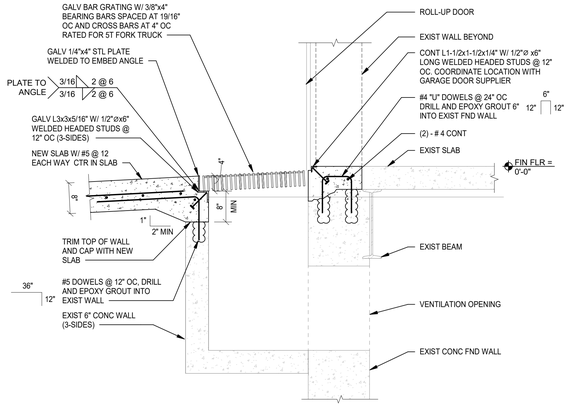
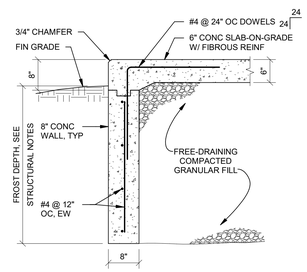


6 S-6 SECTION
3/4" = 1'-0"



7 S-6 TYPICAL EXTERIOR EQUIPMENT SLAB DETAIL
3/4" = 1'-0"

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DRAWN BY	DATE	SHEET No.
Author	10-14-2024	S-6
CHECKED BY	SCALE	
Checker	3/4" = 1'-0"	

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MECHANICAL ABBREVIATIONS

AAV	AUTOMATIC AIR VENT
ABV	ABOVE
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
AMP	AMPERE
APD	AIR PRESSURE DROP
APPROX	APPROXIMATELY
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERANT AND AIR CONDITIONING
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ATC	AUTOMATIC TEMPERATURE CONTROL
ATM	ATMOSPHERE
AUTO	AUTOMATIC
AUX	AUXILIARY
AVG	AVERAGE
BAS	BUILDING AUTOMATION SYSTEM
BC	BALANCING COCK
BDD	BACKDRAFT DAMPER
BFP	BOILER FEED PUMP
BFW	BOILER FEED WATER
BFV	BUTTERFLY VALVE
BHP	BRAKE HORSE POWER
BJ	BALL JOINT
BLW	BELOW
BLDG	BUILDING
BO	BLOW OFF
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
CAP	CAPACITY
CFM	CUBIC FEET PER MINUTE
CIRC	CIRCULATING
CHKV	CHECK VALVE
CLG	CEILING
CO	CLEAN OUT
COEFF	COEFFICIENT
COL	COLUMN
CONC	CONCRETE
COND	CONDENSATE
CONN	CONNECTION
CONT	CONTINUATION
CONTR	CONTRACTOR
CU FT	CUBIC FEET
CU IN	CUBIC INCH
CW	COLD WATER
dB	DECIBEL
dBA	DECIBEL A-WEIGHTED
DEG (°)	DEGREE
DIA	DIAMETER
DISCH	DISCHARGE
DN	DOWN
DPR	DAMPER
DR	DRAIN
DS	DISCONNECT SWITCH
DSC	DRAFT SEQUENCE CONTROL
DWG	DRAWING
EA	EACH OR EXHAUST AIR
EC	ELECTRICAL CONTRACTOR
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
EL	ELEVATION
ELECT	ELECTRIC
ENCLOS	ENCLOSURE
EQUIP	EQUIPMENT
ER	ECCENTRIC REDUCER
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
F	FAHRENHEIT
F&T	FLOAT AND THERMOSTATIC
FC	FLEXIBLE CONNECTION OR FORWARD CURVED
FCD	FLOW CONTROL DEVICE
FCV	FLOW CONTROL VALVE
FLG	FLANGE
FLR	FLOOR
FNL	FUNNEL
FNL DR	FUNNEL DRAIN
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FR	FROM
FT	FEET
FTG	FITTING
FW	FEED WATER
GA	GAUGE
GAL	GALLONS
GC	GENERAL CONTRACTOR
GLV	GLOBE VALVE
GPM	GALLONS PER MINUTE
GRAV	GRAVITY
GV	GATE VALVE
HDR	HEADER
HORIZ	HORIZONTAL
HP	HORSE POWER
HPD	HIGH PRESSURE DRIP
HR	HOUR
HTG	HEATING
HZ	HERTZ (FREQUENCY)

MECHANICAL ABBREVIATIONS

IBT	INVERTED BUCKET TRAP
ID	INSIDE DIAMETER
IER	INVERTED ECCENTRIC REDUCER
INSUL	INSULATED
KW	KILOWATT
KWH	KILOWATT HOUR
LBS	POUNDS
LF	LINEAR FEET
LP	LOW PRESSURE
LPD	LOW PRESSURE DRIP
LWCO	LOW WATER CUT OFF
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	THOUSAND BTU's
MC	MECHANICAL CONTRACTOR
MFGR	MANUFACTURER
MIN	MINIMUM
MPD	MEDIUM PRESSURE DRIP
MTR	MOTOR
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED OR NOISE CRITERIA
NO	NORMALLY OPEN OR NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OD	OUTSIDE DIAMETER
OPNG	OPENING
PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PG	PRESSURE GAUGE WITH COCK
PH	PHASE
PPM	PARTS PER MILLION
PRV	PRESSURE REDUCING VALVE
PS	PIPE SUPPORT
PSF	POUNDS PER SQUARE FOOT
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	PRESSURE TAP
QTY	QUANTITY
R	THERMAL RESISTANCE
RA	RETURN AIR
REQD	REQUIRED
RET	RETURN
REV	REVOLUTIONS
RH	RELATIVE HUMIDITY
RPM	REVOLUTIONS PER MINUTE
RV	RELIEF VALVE
SAT	SATURATED
SCH	SCHEDULE
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SQ FT	SQUARE FEET
SS	STAINLESS STEEL
STD	STANDARD
STR	STRAINER
SUCT	SUCTION
SUP	SUPPLY
SV	SAFETY VALVE / SAFETY VENT
SW	SWITCH
TAB	TEST, ADJUST AND BALANCE
TCV	TEMPERATURE CONTROL VALVE
TDV	TRIPLE DUTY VALVE
TEMP	TEMPERATURE
TH	THERMOMETER
TOT	TOTAL
TRANS	TRANSITION
T'STAT	THERMOSTAT
TSP	TOTAL STATIC PRESSURE
TT	THERMOSTATIC TRAP
TYP	TYPICAL
UG	UNDERGROUND
V	VOLT
VEL	VELOCITY
VOL	VOLUME
W	WATT
WG	WATER GAUGE
WT	WEIGHT
XR	EXISTING TO REMAIN

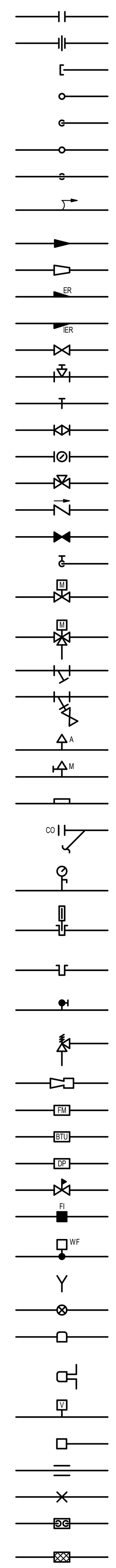
MECHANICAL EQUIPMENT ABBREVIATIONS

AS	AIR SEPARATOR
B	BOILER
CP	CONDENSATE PUMP
EF	EXHAUST FAN
ET	EXPANSION TANK
HUH	HORIZONTAL UNIT HEATER
IDF	INDUCED DRAFT FAN
P	PUMP
SS	STEAM SEPARATOR
UH	UNIT HEATER
VFD	VARIABLE FREQUENCY DRIVE

MECHANICAL PIPING ABBREVIATIONS

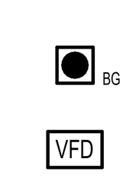
—— BBD ——	BOILER BLOW DOWN
—— BFW ——	BOILER FEED WATER
—— FOF ——	FUEL OIL FILL
—— FOR ——	FUEL OIL RETURN
—— FOS ——	FUEL OIL SUPPLY
—— FOV ——	FUEL OIL VENT
—— G ——	GAS (NATURAL)
—— HPR ——	HIGH PRESSURE RETURN
—— HPS ——	HIGH PRESSURE STEAM
—— MU ——	MAKE-UP WATER
—— MPR ——	MEDIUM PRESSURE RETURN
—— MPS ——	MEDIUM PRESSURE STEAM
—— PD ——	PUMP DISCHARGE (CONDENSATE)
—— V ——	VENT

MECHANICAL PIPING SYMBOLS



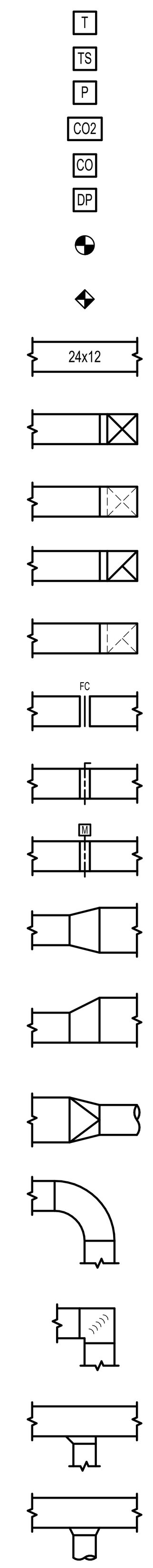
- FLANGE
- UNION, SCREWED
- CAPPED PIPE
- PIPE ELBOW UP
- PIPE ELBOW DOWN
- PIPE TEE UP
- PIPE TEE DOWN
- DIRECTION OF PIPE SLOPE DOWN
- DIRECTION OF FLOW
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- INVERTED ECCENTRIC REDUCER
- ISOLATION VALVE
- PLUG VALVE
- BALANCING COCK
- BALANCING VALVE
- CIRCUIT SETTER VALVE
- MIXING VALVE
- CHECK VALVE
- TRIPLE DUTY VALVE
- ISOLATION VALVE IN RISER
- TWO-WAY VALVE WITH ELECTRONIC ACTUATOR
- THREE-WAY VALVE WITH ELECTRONIC ACTUATOR
- STRAINER
- STRAINER WITH BLOW OFF
- AUTOMATIC AIR VENT
- MANUAL AIR VENT
- AQUASTAT
- CLEAN OUT
- PRESSURE GAUGE WITH SHUT OFF COCK
- THERMOMETER WITH SEPARABLE WELL
- THERMOMETER / INSTRUMENT WELL
- PRESSURE / TEMPERATURE PORT
- SAFETY OR RELIEF VALVE
- VENTURI TYPE FLOW METER
- INLINE FLOW METER
- BTU METER
- DIFFERENTIAL PRESSURE SENSOR
- PRESSURE REDUCING VALVE
- FLOW INDICATOR
- WATER FLOW SWITCH
- FUNNEL DRAIN
- THERMOSTATIC TRAP
- INVERTED BUCKET TRAP
- FLOAT & THERMOSTATIC TRAP
- VACUUM BREAKER
- MAIN DRIP
- PIPE GUIDE
- PIPE ANCHOR
- EXPANSION JOINT
- FLEXIBLE CONNECTION / VIBRATION ISOLATION

MECHANICAL ELECTRICAL SYMBOLS



- EMERGENCY BREAK GLASS STATION
- VARIABLE FREQUENCY DRIVE

MECHANICAL SYMBOLS



- THERMOSTAT
- TEMPERATURE SENSOR
- PRESSURE MONITOR
- CARBON DIOXIDE SENSOR
- CARBON MONOXIDE SENSOR
- DIFFERENTIAL PRESSURE SENSOR
- CONNECTION POINT - NEW TO EXISTING
- DISCONNECT POINT - EXTENT OF DEMOLITION
- INTERIOR CLEAR DUCTWORK DIMENSIONS: WxH
- SUPPLY DUCT TOWARD VIEWER
- SUPPLY DUCT AWAY FROM VIEWER
- EXHAUST DUCT TOWARD VIEWER
- EXHAUST DUCT AWAY FROM VIEWER
- FLEXIBLE CONNECTION
- MANUAL VOLUME DAMPER
- MOTORIZED CONTROL DAMPER
- TRANSITION: SYMMETRIC
- TRANSITION: ASYMMETRIC
- TRANSITION: RECTANGULAR TO ROUND
- 90 DEG RADIUS ELBOW
- MITERED ELBOW WITH TURNING VANES
- TEE: 45 DEG ENTRY BRANCH
- TEE: CONICAL ROUND BRANCH

PROJECT GENERAL NOTES

1. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
2. CONTRACT DOCUMENT DRAWINGS FOR MECHANICAL WORK ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY.
3. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS, CONTRACT DOCUMENTS AND APPLICABLE CODES AND REGULATIONS.
4. THE LOCATION OF EXISTING EQUIPMENT AND UTILITIES IS SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PAY FOR AND REPAIR ALL DAMAGES CAUSED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES UNLESS OTHERWISE INDICATED.
5. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.
6. MAINTAIN A MINIMUM OF 6'-8" CLEARANCE TO THE UNDERSIDE OF PIPES, DUCTS, CONDUITS, SUSPENDED EQUIPMENT, ETC., THROUGHOUT ACCESS ROUTES IN MECHANICAL ROOMS.
7. ALL TESTS SHALL BE COMPLETED BEFORE ANY MECHANICAL EQUIPMENT OR PIPING INSULATION IS APPLIED.
8. LOCATE ALL TEMPERATURE, PRESSURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH THE STRAIGHT SECTION OF PIPE OR DUCT UP- AND DOWNSTREAM AS RECOMMENDED BY THE MANUFACTURER FOR PROPER ACCURACY.
9. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER SHALL BE USED.
10. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
11. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE AND DIVISION 26 OF THE SPECIFICATION.
12. CONCRETE HOUSEKEEPING PADS FOR MECHANICAL EQUIPMENT SHALL BE SIZED AND LOCATED BY THE MECHANICAL CONTRACTOR. MINIMUM CONCRETE PAD THICKNESS SHALL BE 8 INCHES. PAD SHALL EXTEND BEYOND THE EQUIPMENT A MINIMUM OF 4 INCHES ON EACH SIDE. CONCRETE HOUSEKEEPING PADS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE THE SIZE AND LOCATION OF CONCRETE HOUSEKEEPING PADS WITH THE GENERAL CONTRACTOR.
13. REINFORCEMENT, DETAILING, AND PLACEMENT OF CONCRETE SHALL CONFORM TO ASTM 315 AND ACI 318. CONCRETE SHALL CONFORM TO ASTM C94. CONCRETE WORK SHALL CONFORM TO ACI 318, PART ENTITLED "CONSTRUCTION REQUIREMENTS." COMPRESSIVE STRENGTH IN 28 DAYS SHALL BE 3,000 PSI. TOTAL AIR CONTENT OF EXTERIOR CONCRETE SHALL BE BETWEEN 5 AND 7 PERCENT BY VOLUME. SLUMP SHALL BE BETWEEN 3 AND 4IN. CONCRETE SHALL BE CURED FOR 7 DAYS AFTER PLACEMENT.
14. WHEN MECHANICAL WORK IS SUBCONTRACTED, IT SHALL BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE SUBCONTRACTORS AND THE ASSOCIATED CONTRACTS. WHEN DISCREPANCIES ARISE PERTAINING TO WHICH CONTRACTOR PROVIDED A PARTICULAR ITEM OF THE MECHANICAL CONTRACT OR WHICH CONTRACTOR PROVIDES FINAL CONNECTIONS FOR A PARTICULAR ITEM OF THE MECHANICAL CONTRACT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE MECHANICAL CONTRACTOR, WHOSE DECISION SHALL BE FINAL.
15. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS.
16. ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN DETAILS FOR PIPING, DUCTWORK AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
17. ALL EQUIPMENT, PIPING, DUCTWORK, ETC. SHALL BE SUPPORTED AS DETAILED, SPECIFIED AND REQUIRED TO PROVIDE A VIBRATION-FREE INSTALLATION.
18. ALL DUCTWORK, PIPING AND EQUIPMENT SUPPORTED FROM STRUCTURAL STEEL SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. ALL ATTACHMENTS TO STEEL BAR JOISTS, TRUSSES, OR JOISTS GIRDERS SHALL BE AT PANEL POINTS.
19. MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING SHALL NOT SUPPORTED FROM A METAL DECK.
20. ALL ROOF-MOUNTED EQUIPMENT CURBS FOR EQUIPMENT PROVIDED BY THE MECHANICAL CONTRACTOR SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE GENERAL CONTRACTOR.
21. LOCATIONS AND SIZES OF FLOOR, WALL AND ROOF OPENINGS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.

HVAC PIPING GENERAL NOTES

1. ALL PIPING WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
2. PROVIDE AN AIR VENT AT THE HIGH POINT OF EACH DROP IN THE BOILER FEEDWATER AND OTHER CLOSED-WATER PIPING SYSTEMS. ALL PIPING SHALL GRADE TO LOW POINTS. PROVIDE HOSE END DRAIN VALVES AT THE BOTTOM OF ALL RISERS AND LOW POINTS.
3. INSTALL PIPING SO ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES, AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.
4. ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATORS AND THE MAXIMUM ADJUSTABLE STOPS (MEMORY STOPS).
5. ALL VALVES (EXCEPT CONTROL VALVES) AND STRAINERS SHALL BE THE FULL SIZE OF THE PIPE BEFORE REDUCING IN SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS.
6. PROVIDE A LINE SIZE STRAINER UPSTREAM OF EACH AUTOMATIC VALVE. PROVIDE A SHUTOFF VALVE ON EACH SIDE OF A STRAINER.
7. PITCH STEAM PIPING DOWNWARD IN THE DIRECTION OF FLOW 1/4 INCH IN 10 FEET (1 INCH IN 40 FEET) MINIMUM. PITCH ALL STEAM RETURN LINES DOWNWARD IN THE DIRECTION OF CONDENSATE FLOW 1/2 INCH PER 10 FEET (IN INCH IN 20 FEET) MINIMUM. WHERE THE LENGTH OF BRANCH LINES IS LESS THAN 8 FEET, PITCH BRANCH LINES TOWARD MAINS 1/2 INCH/FOOT MINIMUM.
8. TAP ALL BRANCH LINES FROM THE TOP OF THE STEAM MAINS (45 DEGREES PREFERRED; 90 DEGREES ACCEPTABLE).
9. PROVIDE AN END OF MAIN DRIP AT EACH RISE IN THE STEAM MAIN. PROVIDE CONDENSATE DRIPS AT THE BOTTOM OF ALL STEAM RISERS, DOWNFED RUNOUTS TO EQUIPMENT, RADIATORS, ETC. AT THE END OF MAINS AND LOW POINTS, AND AHEAD OF ALL PRESSURE REGULATORS, CONTROL VALVES, ISOLATION VALVES AND EXPANSION JOINTS.
10. STEAM TRAPS SHALL BE THE MINIMUM 1 INCH SIZE.
11. INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.
12. ALL VALVES SHALL BE ADJUSTED FOR SMOOTH AND EASY OPERATION.

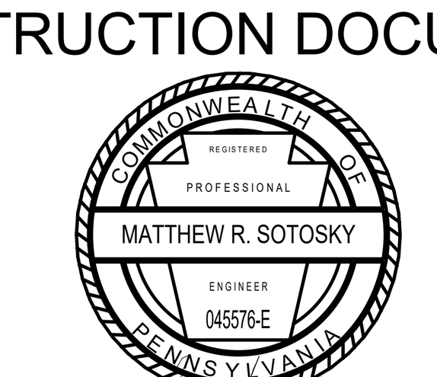
SHEET LIST - MECHANICAL

SHEET	DESCRIPTION
H-1	MECHANICAL COVER SHEET
H-2	BASEMENT DEMOLITION PLAN - MECHANICAL
H-3	FIRST FLOOR DEMOLITION PLANS - MECHANICAL
H-4	BASEMENT PLAN - MECHANICAL
H-5	FIRST FLOOR PLANS - MECHANICAL
H-6	SECTION VIEWS - MECHANICAL
H-7	SECTION VIEWS - MECHANICAL
H-8	BOILER FLOW DIAGRAMS
H-9	ATC ARCHITECTURE DIAGRAM
H-10	DETAILS - MECHANICAL
H-11	DETAILS - MECHANICAL
H-12	DETAILS - MECHANICAL
H-13	SCHEDULES - MECHANICAL

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS



SIGNATURE 10-14-2024 DATE

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232 Horner Street
Johnstown, PA 15902
ph: (814) 536-1651, fax: (814) 536-5732

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

VERIFY SCALE

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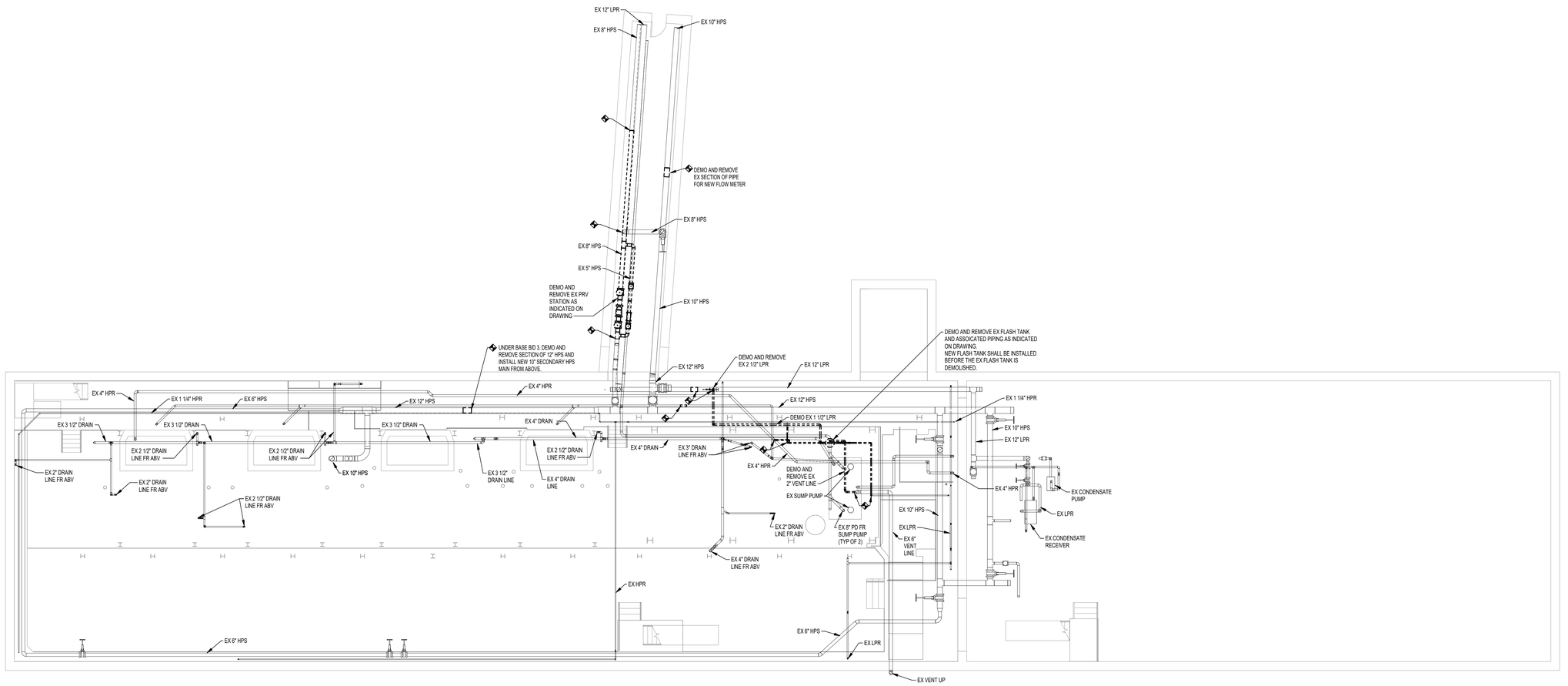
Danville State Hospital
Replace Steam Generation Equipment

MECHANICAL COVER SHEET

DRAWN BY	DATE	SHEET No.
RRR	10-14-2024	H-1
CHECKED BY	SCALE	
RRR	1/8" = 1'-0"	



1 H-2 BASEMENT DEMOLITION PLAN - PIPING
1/8" = 1'-0"

GENERAL NOTES

1. PIPING, BREECHING, AND EQUIPMENT SHOWN LIGHT AND SOLID IS EXISTING TO REMAIN UNLESS OTHERWISE NOTED.
2. NO WORK IN THE BASEMENT UNDER BASE BID 1.

BASE BID 1:

1. INSTALL NEW BOILERS B-2, B-3, & B-6 WITH ASSOCIATED PIPING, BREECHING, EQUIPMENT, WIRING, ECT.
2. INSTALL NEW COMBINATION DEAERATOR AND SURGE TANK DA-2 WITH ASSOCAITED PIPING, PUMPS, WIRING, ECT. EXISTING DA TANK WILL REMAIN FOR BACKUP.
3. DEMOLITION OF EXISTING UNDERSIZED FLASH TANK. INSTALLATION OF NEW APPROPRIATELY SIZED FLASH TANK TANK WITH ASSOCAITED PIPING.
4. INSTALLATION OF NEW STEAM METER ON STEAM MAIN IN TUNNEL.
5. DEMOLITION OF EXISTING BOILER CONTROL PANELS AND INSTALLATION OF NEW BOILER CONTROL PANELS.
6. DEMOLITION OF EXISTING WALLS AND INSTALLATION OF NEW ROLLUP GARAGE DOORS TO SERVE NEW BOILERS B-2&3.

BASE BID 2:

1. ALL MECHANICAL WORK DESCRIBED IN BASE BID 1. REFER TO ELECTRICAL DRAWINGS FOR BASE BID 2 WORK.

BASE BID 3:

1. ALL WORK DESCRIBED IN BASE BID 2.
2. INSTALLATION OF SECONDARY HPS LINE FROM STEAM HEADER TO CONNECTION POINT IN BASEMENT. SECONDARY STEAM LINE WILL AHVE SHUTOFF VALVE.
3. INSTALLATION OF EMERGENCY PORT CONNECTIONS FROM THE STEAM SYSTEM, GAS, AND OIL PIPING TO TERMINATION POINT SHOWN ON DRAWINGS FOR EMERGENCY BOILER.

BASE BID 4:

1. ALL WORK DESCRIBED IN BASE BID 3.
2. INSTALLATION OF NEW STEAM BLOWDOWN SEPARATOR AND ASSOCIATED PIPING.
3. INSTALLATION OF NEW CONTROL PANELS FOR SEWER PUMPS IN BASEMENT.
4. INSTALLATION OF NEW VFDS FOR EXSTING BOILER FEED PUMPS.

BASE BID 5:

1. ALL WORK DESCRIBED IN BASE BID 4.
2. INSTALLATION NEW FUEL OIL PUMP ASSEMBLY.
3. INSTALL NEW DUAL FUEL BURNER ON EXISTING BOILER B-4 FOR GAS AND OIL FIRED OPERATION.

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
PROFESSIONAL
MATTHEW R. SOTOSKY
ENGINEER
045576-E
PENNSYLVANIA

SIGNATURE 10-14-2024 DATE

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Danville State Hospital
Replace Steam Generation Equipment

BASEMENT DEMOLITION PLAN - MECHANICAL

VERIFY SCALE

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JV	10-14-2024	H-2
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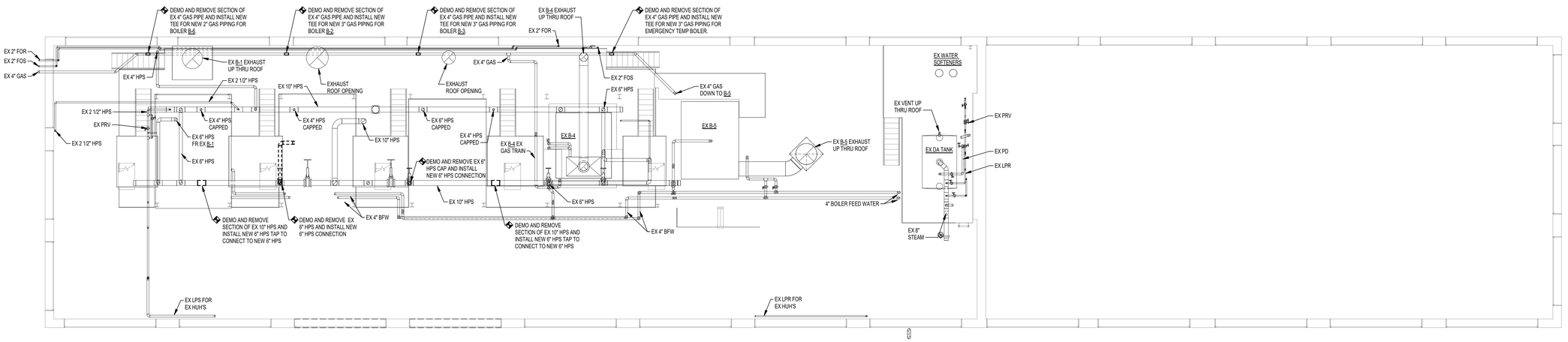
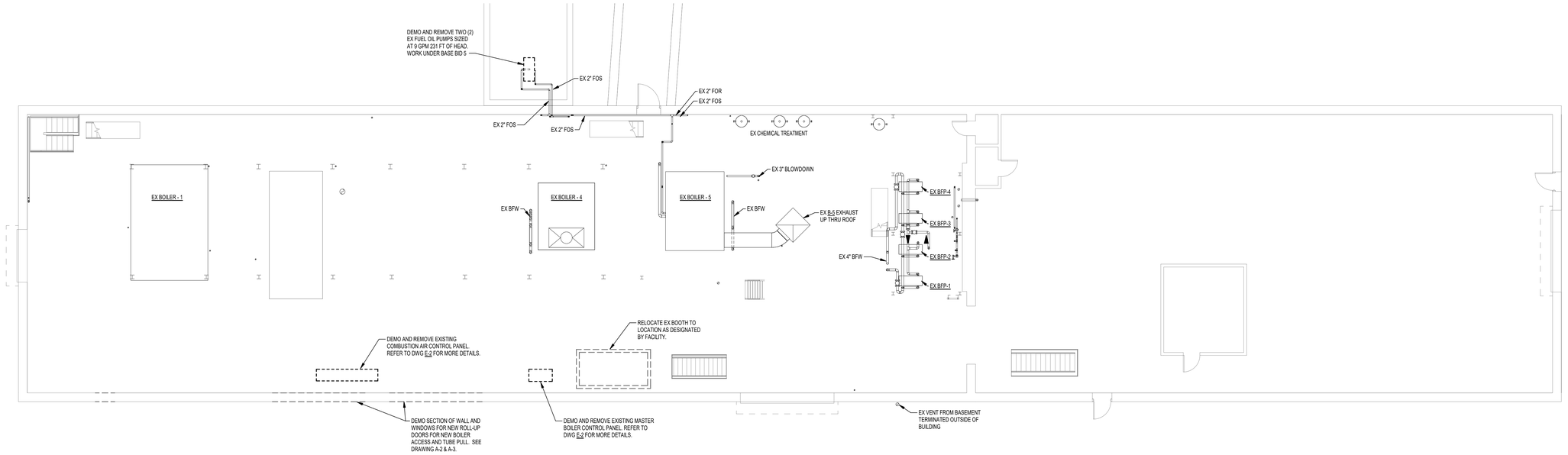


1 H-3 FIRST FLOOR DEMOLITION PLAN - UPPER LEVEL

1/8" = 1'-0"



2 H-3 FIRST FLOOR DEMOLITION PLAN - LOWER LEVEL

1/8" = 1'-0"

GENERAL NOTES

1. PIPING, BREECHING, AND EQUIPMENT SHOWN LIGHT AND SOLID IS EXISTING TO REMAIN UNLESS OTHERWISE NOTED.
2. PIPING, BREECHING, AND EQUIPMENT SHOWN BOLD AND DASHED IS TO BE DEMOLISHED AND REMOVED UNDER THE NEW WORK SCOPE UNLESS OTHERWISE NOTED.

BASE BID 1:

1. INSTALL NEW BOILERS B-2, B-3, & B-6 WITH ASSOCIATED PIPING, BREECHING, EQUIPMENT, WIRING, ECT.
2. INSTALL NEW COMBINATION DEAERATOR AND SURGE TANK DA-2 WITH ASSOCAITED PIPING, PUMPS, WIRING, ECT. EXISTING DA TANK WILL REMAIN FOR BACKUP.
3. DEMOLITION OF EXISTING UNDERSIZED FLASH TANK. INSTALLATION OF NEW APPROPRIATELY SIZED FLASH TANK TANK WITH ASSOCAITED PIPING.
4. INSTALLATION OF NEW STEAM METER ON STEAM MAIN IN TUNNEL.
5. DEMOLITION OF EXISTING BOILER CONTROL PANELS AND INSTALLATION OF NEW BOILER CONTROL PANELS.
6. DEMOLITION OF EXISTING WALLS AND INSTALLATION OF NEW ROLLUP GARAGE DOORS TO SERVE NEW BOILERS B-2&3.

BASE BID 2:

1. ALL MECHANICAL WORK DESCRIBED IN BASE BID 1. REFER TO ELECTRICAL DRAWINGS FOR BASE BID 2 WORK.

BASE BID 3:

1. ALL WORK DESCRIBED IN BASE BID 2.
2. INSTALLATION OF SECONDARY HPS LINE FROM STEAM HEADER TO CONNECTION POINT IN BASEMENT. SECONDARY STEAM LINE WILL AHVE SHUTOFF VALVE.
3. INSTALLATION OF EMERGENCY PORT CONNECTIONS FROM THE STEAM SYSTEM, GAS, AND OIL PIPING TO TERMINATION POINT SHOWN ON DRAWINGS FOR EMERGENCY BOILER.

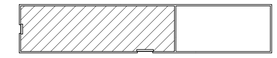
BASE BID 4:

1. ALL WORK DESCRIBED IN BASE BID 3.
2. INSTALLATION OF NEW STEAM BLOWDOWN SEPARATOR AND ASSOCIATED PIPING.
3. INSTALLATION OF NEW CONTROL PANELS FOR SEWER PUMPS IN BASEMENT.
4. INSTALLATION OF NEW VFDS FOR EXSTING BOILER FEED PUMPS.

BASE BID 5:

1. ALL WORK DESCRIBED IN BASE BID 4.
2. INSTALLATION NEW FUEL OIL PUMP ASSEMBLY.
3. INSTALL NEW DUAL FUEL BURNER ON EXISTING BOILER B-4 FOR GAS AND OIL FIRED OPERATION.

CAMPUS / KEY PLAN



RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MATTHEW R. SOTOSKY — ENGINEER — 045578-E — COMMONWEALTH OF PENNSYLVANIA

SIGNATURE 10-14-2024 DATE

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation Equipment

FIRST FLOOR DEMOLITION PLANS - MECHANICAL

VERIFY SCALE

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JV	10-14-2024	H-3
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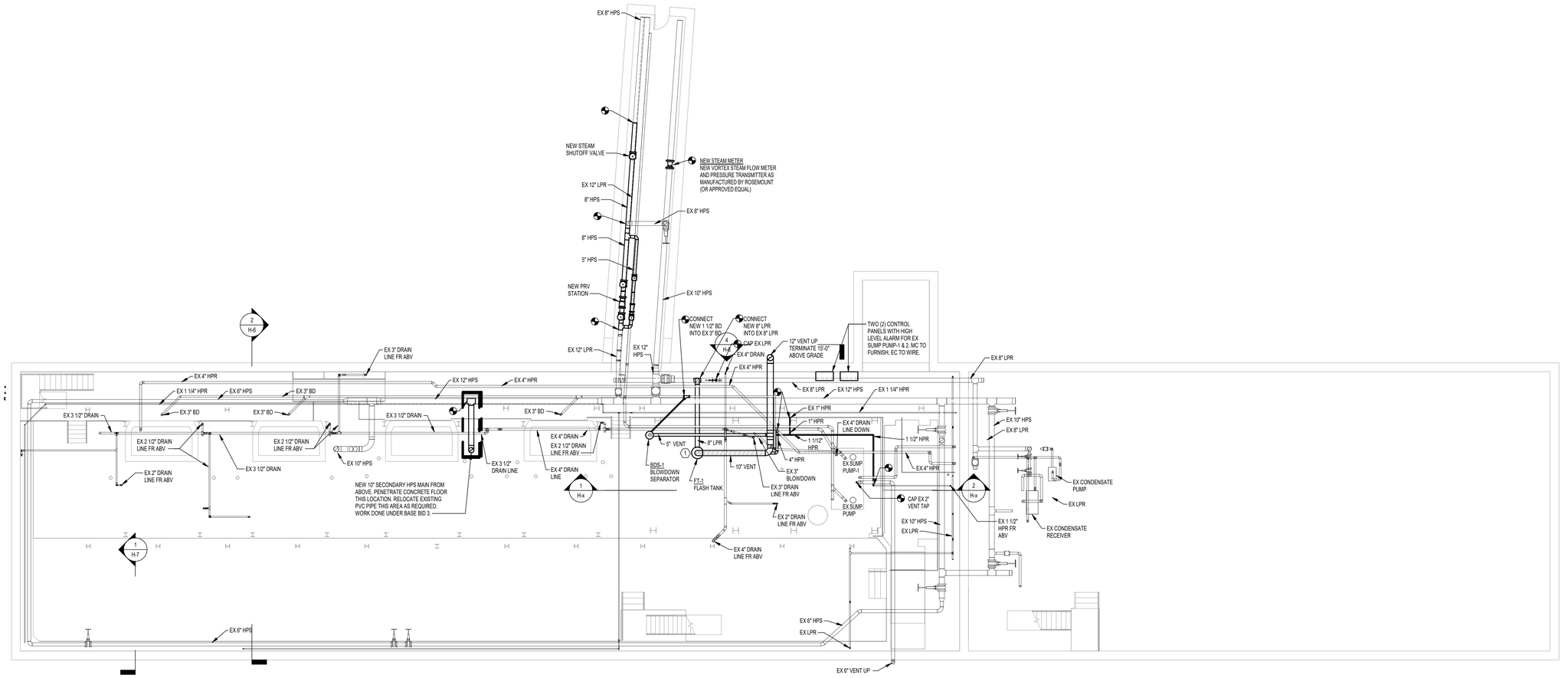


1 H-4 BASEMENT PLAN - PIPING
1/8" = 1'-0"

NUMBERED NOTES

1. NEW FLASH TANK FT-1
   24"DIA x 36"H. 10" VENT, 4" HPR INLET, 8" LPR OUTLET.
   MOUNT AS HIGH AS POSSIBLE TO ALLOW FOR LPR TO GRAVITY FEED FROM OUTLET OF FLASH TANK. NEW FLASH TANK SHALL BE INSTALLED BEFORE THE EXISTING FLASH TANK IS DEMOLISHED.

GENERAL NOTES

1. PIPING, BREECHING, AND EQUIPMENT SHOWN LIGHT AND SOLID IS EXISTING TO REMAIN UNLESS OTHERWISE NOTED.
2. PIPING, BREECHING, AND EQUIPMENT SHOWN BOLD AND SOLID IS TO BE INSTALLED UNDER THE NEW WORK SCOPE.

BASE BID 1:

1. INSTALL NEW BOILERS B-2, B-3, & B-6 WITH ASSOCIATED PIPING, BREECHING, EQUIPMENT, WIRING, ECT.
2. INSTALL NEW COMBINATION DEAERATOR AND SURGE TANK DA-2 WITH ASSOCAITED PIPING, PUMPS, WIRING, ECT. EXISTING DA TANK WILL REMAIN FOR BACKUP.
3. DEMOLITION OF EXISTING UNDERSIZED FLASH TANK. INSTALLATION OF NEW APPROPRIATELY SIZED FLASH TANK TANK WITH ASSOCAITED PIPING.
4. INSTALLATION OF NEW STEAM METER ON STEAM MAIN IN TUNNEL.
5. DEMOLITION OF EXISTING BOILER CONTROL PANELS AND INSTALLATION OF NEW BOILER CONTROL PANELS.
6. DEMOLITION OF EXISTING WALLS AND INSTALLATION OF NEW ROLLUP GARAGE DOORS TO SERVE NEW BOILERS B-2&3.

BASE BID 2:

1. ALL WORK DESCRIBED IN BASE BID 1.

BASE BID 3:

1. ALL WORK DESCRIBED IN BASE BID 2.
2. INSTALLATION OF SECONDARY HPS LINE FROM STEAM HEADER TO CONNECTION POINT IN BASEMENT. SECONDARY STEAM LINE WILL AHVE SHUTOFF VALVE.
3. INSTALLATION OF EMERGENCY PORT CONNECTIONS FROM THE STEAM SYSTEM, GAS, AND OIL PIPING TO TERMINATION POINT SHOWN ON DRAWINGS FOR EMERGENCY BOILER.

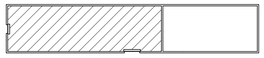
BASE BID 4:

1. ALL WORK DESCRIBED IN BASE BID 3.
2. INSTALLATION OF NEW STEAM BLOWDOWN SEPARATOR AND ASSOCIATED PIPING.
3. INSTALLATION NEW FUEL OIL PUMP ASSEMBLY.
4. INSTALLATION OF NEW CONTROL PANELS FOR SEWER PUMPS IN BASEMENT.
5. INSTALLATION OF NEW VFDS FOR EXSTING BOILER FEED PUMPS.

BASE BID 5:

1. ALL WORK DESCRIBED IN BASE BID 4.
2. INSTALLATION NEW FUEL OIL PUMP ASSEMBLY.
3. INSTALL NEW DUAL FUEL BURNER ON EXISTING BOILER B-4 FOR GAS AND OIL FIRED OPERATION.

CAMPUS / KEY PLAN



RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
MATTHEW R. SOTOSKY
045076-E
ENGINEER
PROFESSIONAL
PENNSYLVANIA

SIGNATURE 10-14-2024 DATE

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation Equipment

BASEMENT PLAN - MECHANICAL

VERIFY SCALE

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Author	10-14-2024	H-4
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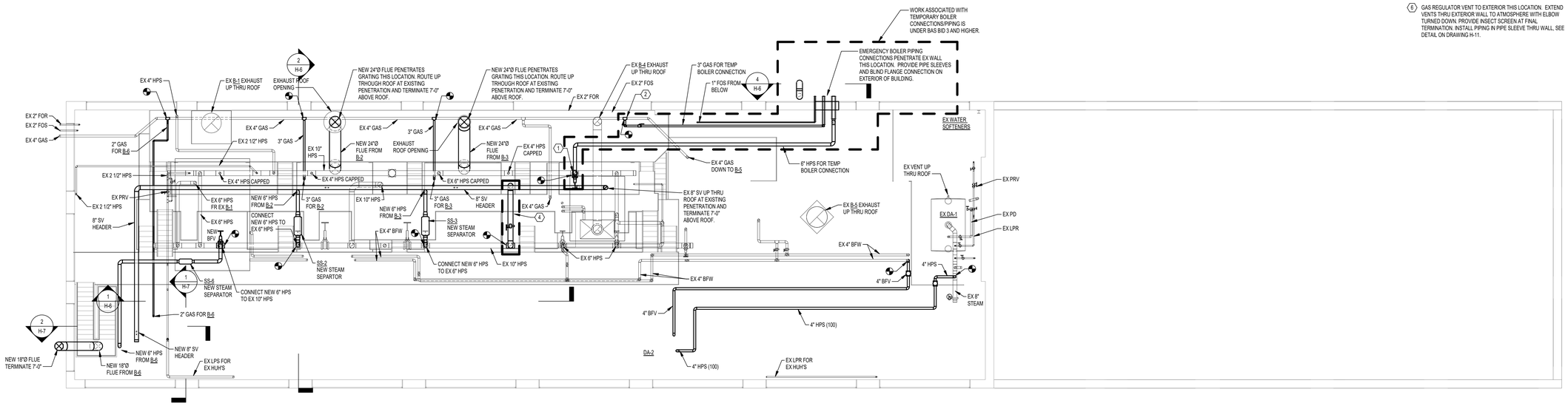
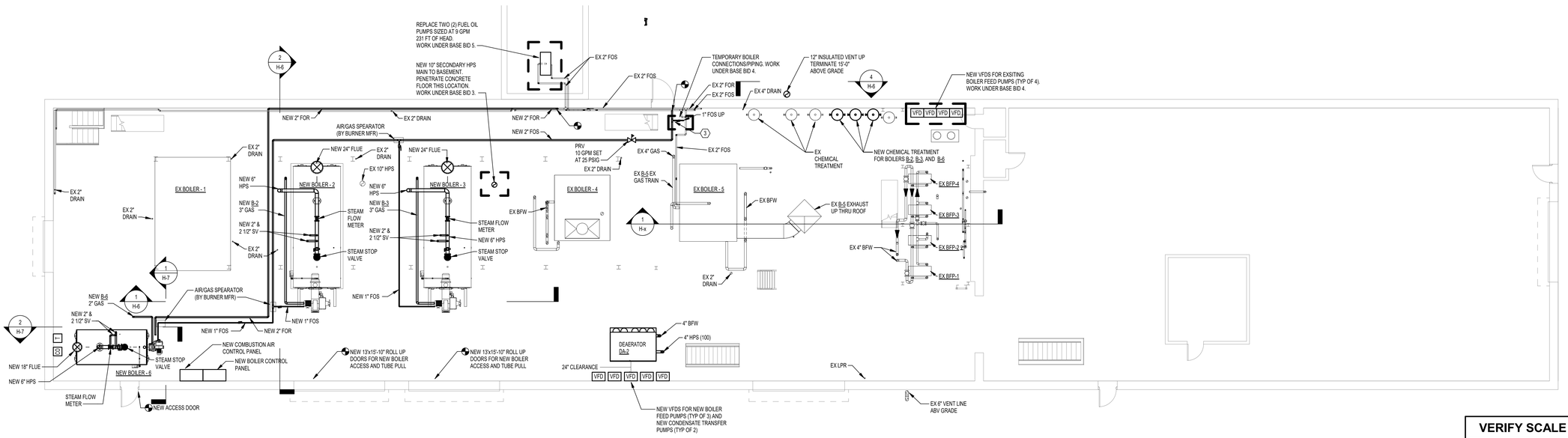


1 H-5 FIRST FLOOR PLAN - UPPER LEVEL
1/8" = 1'-0"



2 H-5 FIRST FLOOR PLAN -LOWER LEVEL
1/8" = 1'-0"

NUMBERED NOTES

1. CONNECT NEW 6" HPS EMERGENCY TEMP BOILER TO EX 8" HPS CONNECTION. PROVIDE NEW STEAM SHUTOFF VALVE
2. CONNECT NEW 3" GAS PIPING FOR EMERGECNY TEMP BOILER TO EX 4" GAS MAIN. PROVIDE NEW SHUTOFF VALVE
3. CONNECT NEW 1" FUEL OIL PIPING FOR EMERGECNY TEMP BOILER TO EX 2" FUEL OIL MAIN. PROVIDE NEW SHUTOFF VALVE
4. NEW 10" SECONDARY HPS MAIN TO BASEMENT. MODIFY GRATING AS REQUIRED. WORK UNDER BASE BID 3.
5. SEE GAS REGULATOR DETAIL AND GAS TRAIN PIPING SCHEMATIC DETAILS ON DWG H-10.
6. GAS REGULATOR VENT TO EXTERIOR THIS LOCATION. EXTEND VENTS THRU EXTERIOR WALL TO ATMOSPHERE WITH ELBOW TURNED DOWN. PROVIDE INSECT SCREEN AT FINAL TERMINATION. INSTALL PIPING IN PIPE SLEEVE THRU WALL. SEE DETAIL ON DRAWING H-11.

GENERAL NOTES

1. PIPING, BREECHING, AND EQUIPMENT SHOWN LIGHT AND SOLID IS EXISTING TO REMAIN UNLESS OTHERWISE NOTED.
2. PIPING, BREECHING, AND EQUIPMENT SHOWN BOLD AND SOLID IS TO BE INSTALLED UNDER THE NEW WORK SCOPE.

BASE BID 1:

1. INSTALL NEW BOILERS B-2, B-3, & B-6 WITH ASSOCIATED PIPING, BREECHING, EQUIPMENT, WIRING, ECT.
2. INSTALL NEW COMBINATION DEAERATOR AND SURGE TANK DA-2 WITH ASSOCIATED PIPING, PUMPS, WIRING, ECT. EXISTING DA TANK WILL REMAIN FOR BACKUP.
3. DEMOLITION OF EXISTING UNDERSIZED FLASH TANK. INSTALLATION OF NEW APPROPRIATELY SIZED FLASH TANK TANK WITH ASSOCIATED PIPING.
4. INSTALLATION OF NEW STEAM METER ON STEAM MAIN IN TUNNEL.
5. DEMOLITION OF EXISTING BOILER CONTROL PANELS AND INSTALLATION OF NEW BOILER CONTROL PANELS.
6. DEMOLITION OF EXISTING WALLS AND INSTALLATION OF NEW ROLLUP GARAGE DOORS TO SERVE NEW BOILERS B-2&3.

BASE BID 2:

1. ALL MECHANICAL WORK DESCRIBED IN BASE BID 1. REFER TO ELECTRICAL DRAWINGS FOR BASE BID 2 WORK.

BASE BID 3:

1. ALL WORK DESCRIBED IN BASE BID 2.
2. INSTALLATION OF SECONDARY HPS LINE FROM STEAM HEADER TO CONNECTION POINT IN BASEMENT. SECONDARY STEAM LINE WILL AHVE SHUTOFF VALVE.
3. INSTALLATION OF EMERGENCY PORT CONNECTIONS FROM THE STEAM SYSTEM, GAS, AND OIL PIPING TO TERMINATION POINT SHOWN ON DRAWINGS FOR EMERGENCY BOILER.

BASE BID 4:

1. ALL WORK DESCRIBED IN BASE BID 3.
2. INSTALLATION OF NEW STEAM BLOWDOWN SEPARATOR AND ASSOCIATED PIPING.
3. INSTALLATION OF NEW CONTROL PANELS FOR SEWER PUMPS IN BASEMENT.
4. INSTALLATION OF NEW VFDS FOR EXSTING BOILER FEED PUMPS.

BASE BID 5:

1. ALL WORK DESCRIBED IN BASE BID 4.
2. INSTALLATION NEW FUEL OIL PUMP ASSEMBLY.
3. INSTALL NEW DUAL FUEL BURNER ON EXISTING BOILER B-4 FOR GAS AND OIL FIRED OPERATION.

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
MATTHEW R. SOTOSKY
ENGINEER
045579-E
PROFESSIONAL
DEPARTMENT OF GENERAL SERVICES

SIGNATURE 10-14-2024 DATE

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Danville State Hospital
Replace Steam Generation Equipment

FIRST FLOOR PLANS - MECHANICAL

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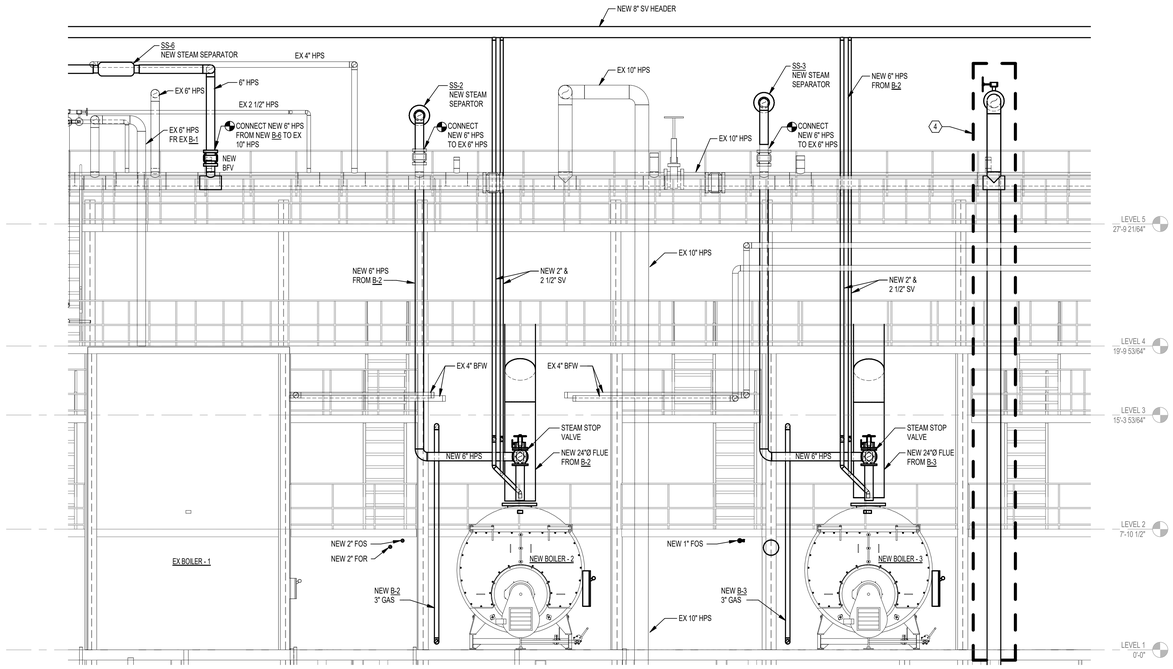
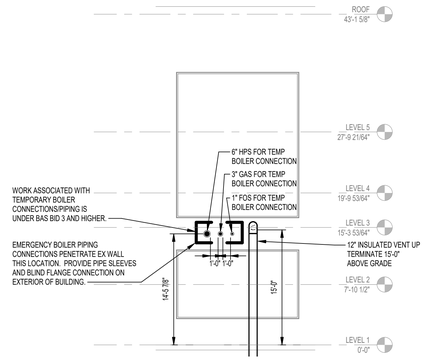


1 H-6 BOILER 2 & 3 - SECTION VIEW 1
1/4" = 1'-0"



4 H-6 EMERGENCY BOILER PIPING PENETRATIONS - EXTERIOR WALL
1/8" = 1'-0"

NUMBERED NOTES

1. CONNECT NEW 6" HPS EMERGENCY TEMP BOILER TO EX 8" HPS CONNECTION. PROVIDE NEW STEAM SHUTOFF VALVE
2. CONNECT NEW 3" GAS PIPING FOR EMERGENCY TEMP BOILER TO EX 4" GAS MAIN. PROVIDE NEW SHUTOFF VALVE
3. CONNECT NEW 1" FUEL OIL PIPING FOR EMERGENCY TEMP BOILER TO EX 2" FUEL OIL MAIN. PROVIDE NEW SHUTOFF VALVE
4. NEW 10" SECONDARY HPS MAIN TO BASEMENT. MODIFY GRATING AS REQUIRED. WORK UNDER BASE BID 3.

GENERAL NOTES

1. PIPING, BREECHING, AND EQUIPMENT SHOWN LIGHT AND SOLID IS EXISTING TO REMAIN UNLESS OTHERWISE NOTED.
2. PIPING, BREECHING, AND EQUIPMENT SHOWN BOLD AND SOLID IS TO BE INSTALLED UNDER THE NEW WORK SCOPE.

BASE BID 1:

1. INSTALL NEW BOILERS B-2, B-3, & B-6 WITH ASSOCIATED PIPING, BREECHING, EQUIPMENT, WIRING, ECT.
2. INSTALL NEW COMBINATION DEAERATOR AND SURGE TANK DA-2 WITH ASSOCAITED PIPING, PUMPS, WIRING, ECT. EXISTING DA TANK WILL REMAIN FOR BACKUP.
3. DEMOLITION OF EXISTING UNDERSIZED FLASH TANK. INSTALLATION OF NEW APPROPRIATELY SIZED FLASH TANK TANK WITH ASSOCAITED PIPING.
4. INSTALLATION OF NEW STEAM METER ON STEAM MAIN IN TUNNEL.
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6. DEMOLITION OF EXISTING WALLS AND INSTALLATION OF NEW ROLLUP GARAGE DOORS TO SERVE NEW BOILERS B-2&3.

BASE BID 2:

1. ALL WORK DESCRIBED IN BASE BID 1.

BASE BID 3:

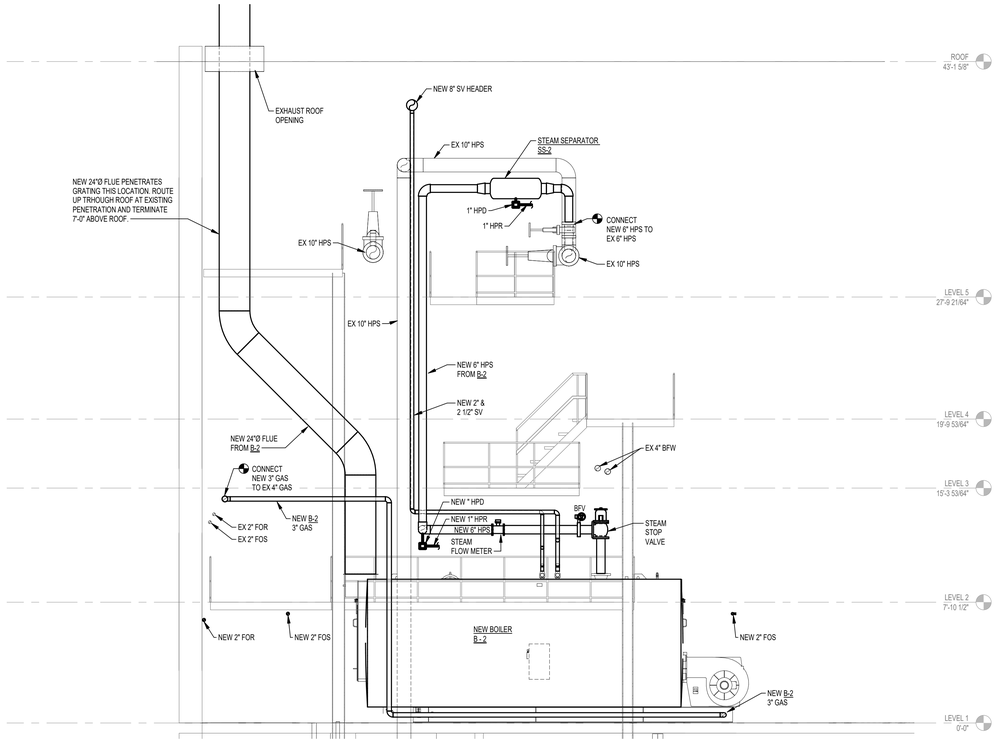
1. ALL WORK DESCRIBED IN BASE BID 2.
2. INSTALLATION OF SECONDARY HPS LINE FROM STEAM HEADER TO CONNECTION POINT IN BASEMENT. SECONDARY STEAM LINE WILL AHVE SHUTOFF VALVE.
3. INSTALLATION OF EMERGENCY PORT CONNECTIONS FROM THE STEAM SYSTEM, GAS, AND OIL PIPING TO TERMINATION POINT SHOWN ON DRAWINGS FOR EMERGENCY BOILER.

BASE BID 4:

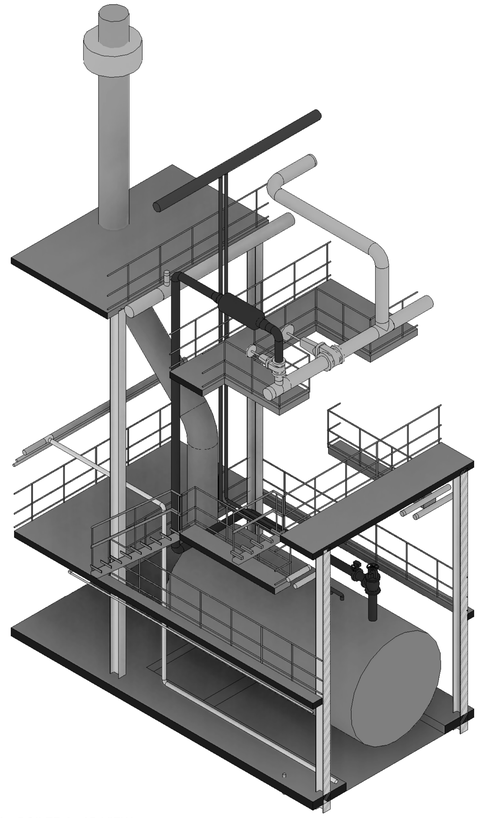
1. ALL WORK DESCRIBED IN BASE BID 3.
2. INSTALLATION OF NEW STEAM BLOWDOWN SEPARATOR AND ASSOCIATED PIPING.
3. INSTALLATION OF NEW CONTROL PANELS FOR SEWER PUMPS IN BASEMENT.
4. INSTALLATION OF NEW VFDS FOR EXSTING BOILER FEED PUMPS.

BASE BID 5:

1. ALL WORK DESCRIBED IN BASE BID 4.
2. INSTALLATION NEW FUEL OIL PUMP ASSEMBLY.
3. INSTALL NEW DUAL FUEL BURNER ON EXISTING BOILER B-4 FOR GAS AND OIL FIRED OPERATION.



2 H-6 BOILER 2 & 3 - SECTION VIEW 2
1/4" = 1'-0"



3 H-6 BOILER 2 - 3D VIEW

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
PROFESSIONAL ENGINEER
MATTHEW R. SOTOSKY
ENGINEER
045575-E
COMMONWEALTH OF PENNSYLVANIA

SIGNATURE 10-14-2024 DATE

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232 Horner Street
Johnstown, PA 15902
ph: (814) 536-1651, fax: (814) 536-5732

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation Equipment

SECTION VIEWS - MECHANICAL

VERIFY SCALE

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0 1
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Checker	As indicated	

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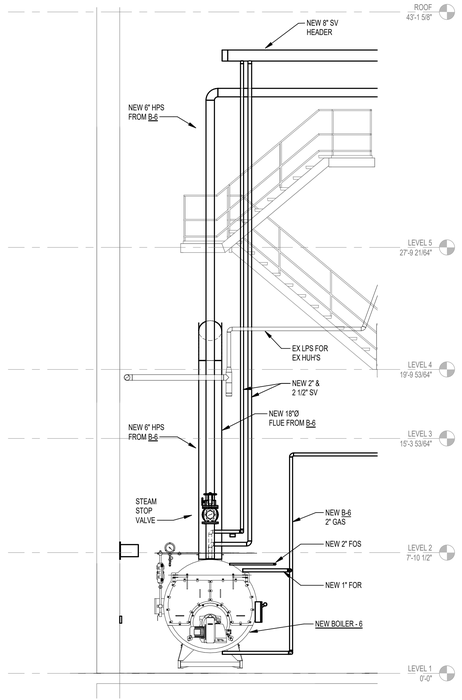
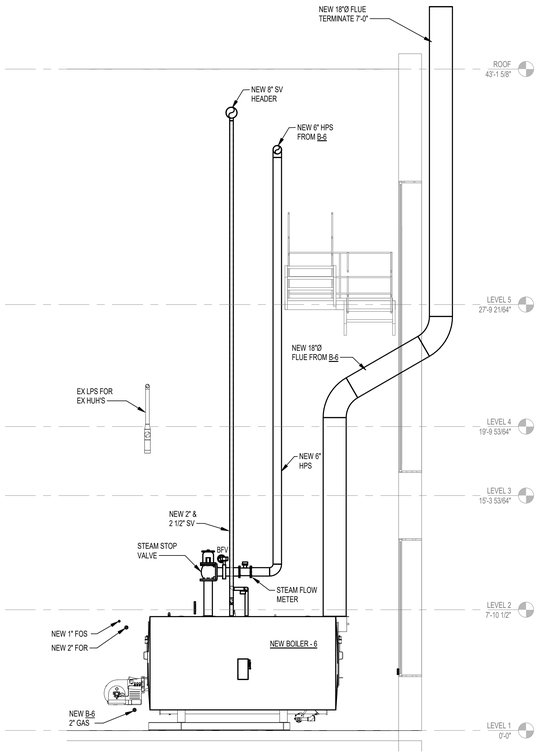
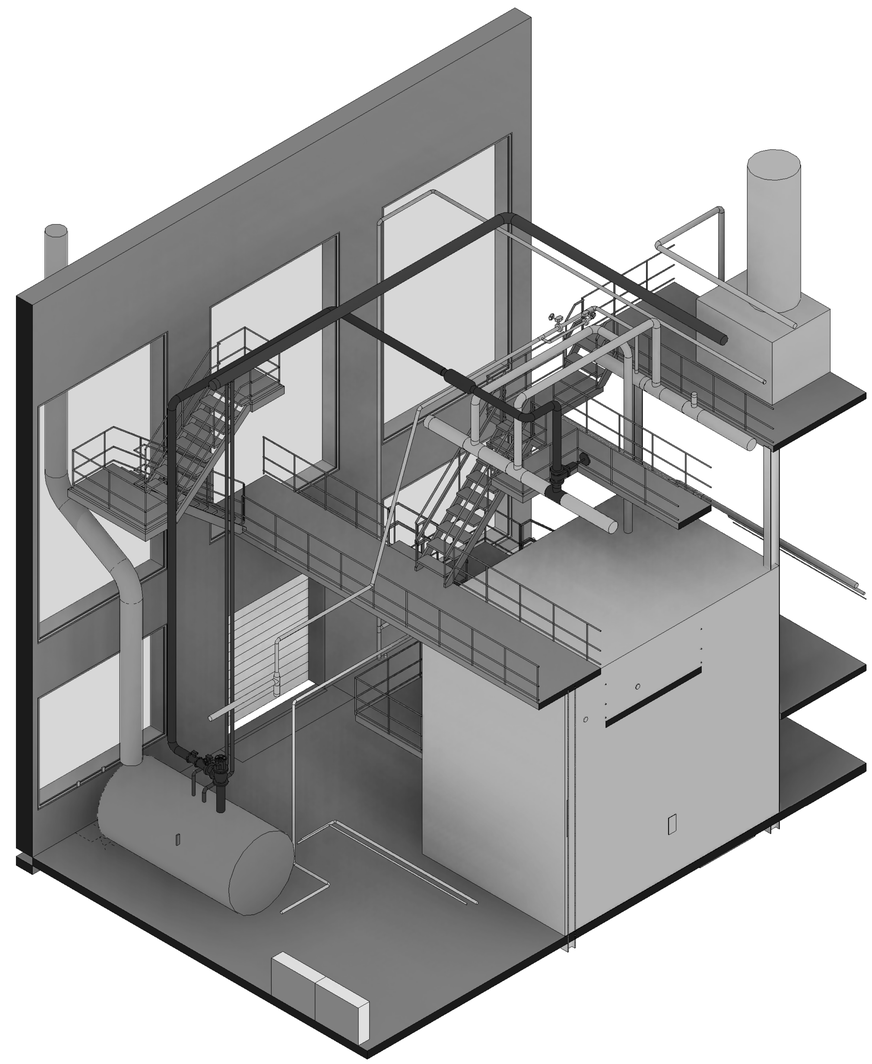


1 H-7 BOILER 6 - SECTION VIEW 1
1/4" = 1'-0"



2 H-7 BOILER 6 - SECTION VIEW 2
1/4" = 1'-0"



3 H-7 BOILER 6 - 3D VIEW

CAMPUS / KEY PLAN

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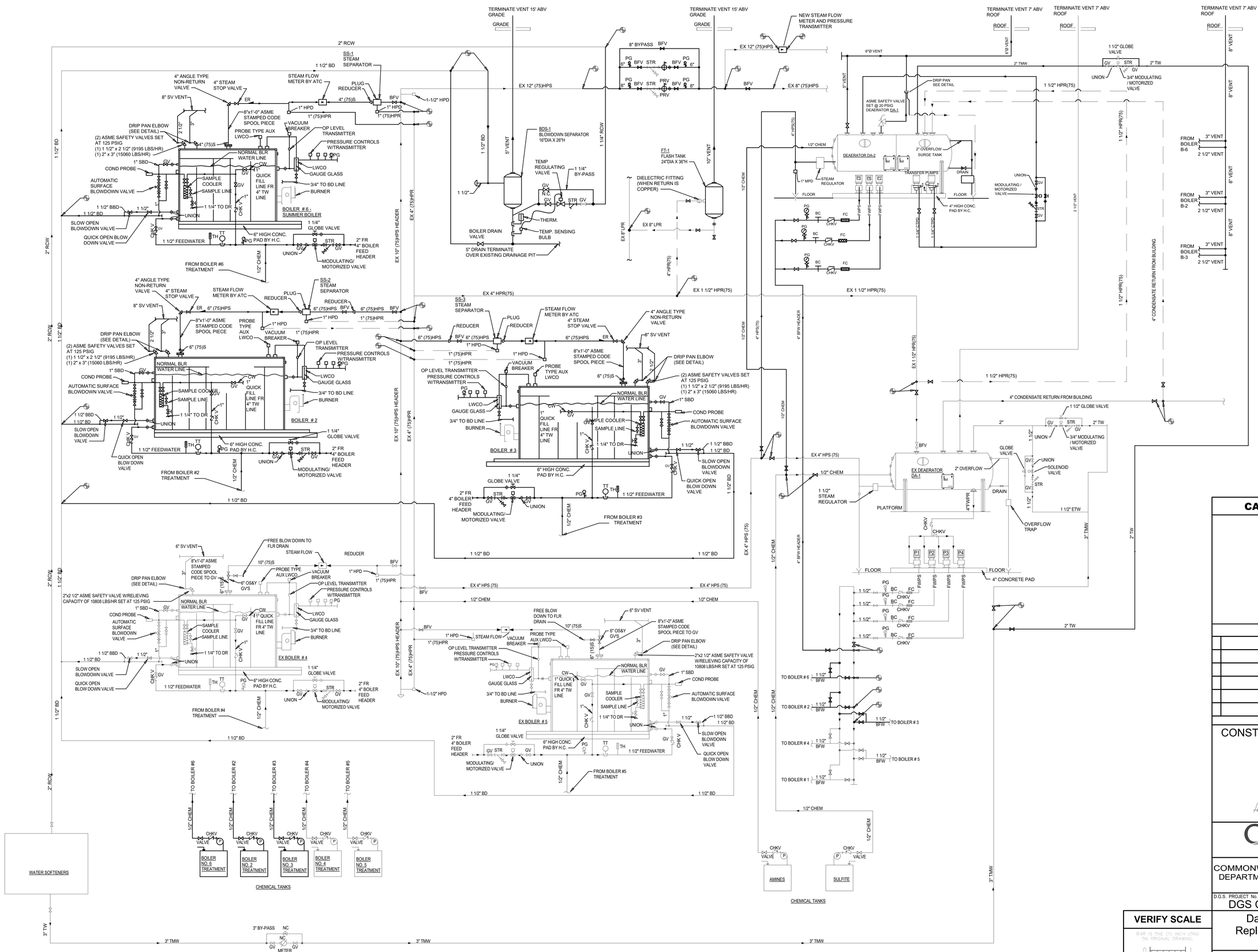

CAMPUS / KEY PLAN

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COMMONWEALTH OF PENNSYLVANIA
MATTHEW R. SOTOSKY
ENGINEER
045076-E
PROFESSIONAL
PENNSYLVANIA

SIGNATURE

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BOILER FLOW DIAGRAMS

VERIFY SCALE

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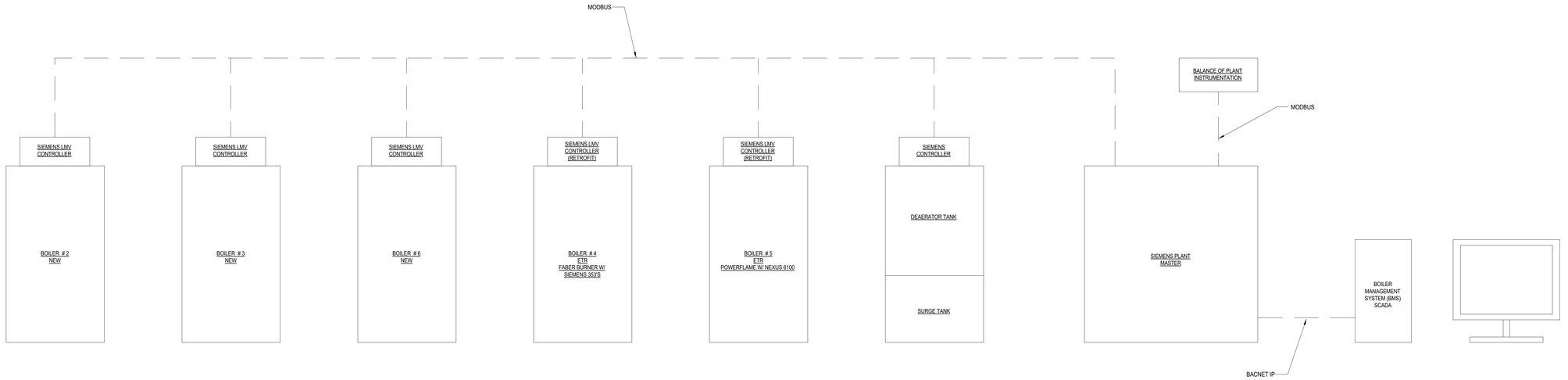

1 / H-9 ATC ARCHITECTURE DIAGRAM
1/4" = 1'-0"

CAMPUS / KEY PLAN

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ATC ARCHITECTURE DIAGRAM

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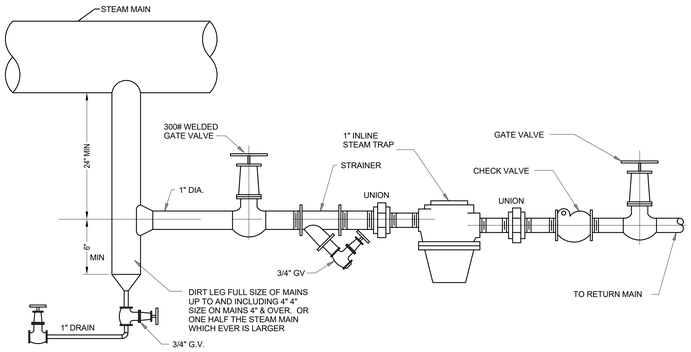
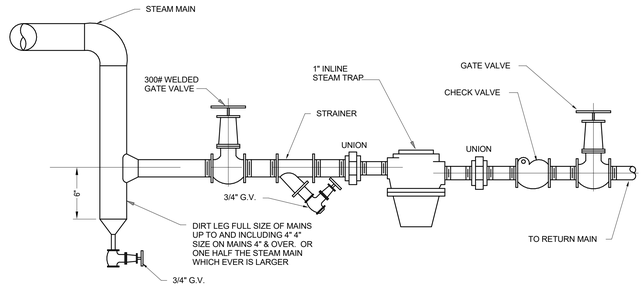


STANDARD MEDIUM PRESSURE DRIP

NOT TO SCALE



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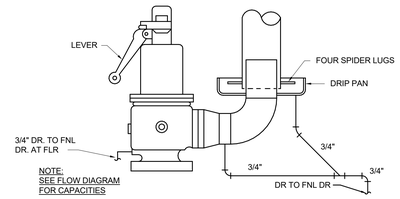
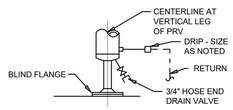


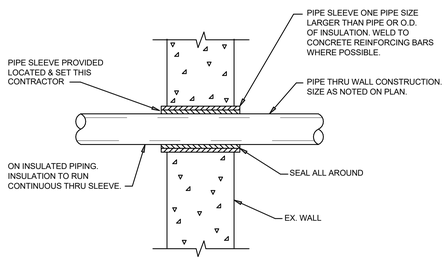
SAFETY VALVE AND DRIP PAN ELBOW DETAIL

NOT TO SCALE



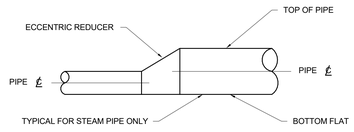
TYPICAL LEG SUPPORT SCHEMATIC FOR PRV STEAM STATIONS

NOT TO SCALE



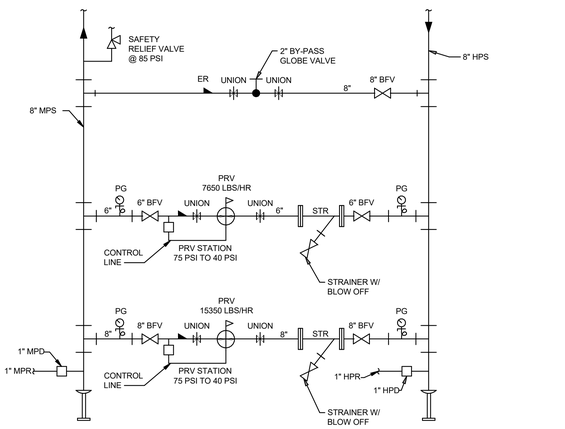
EXISTING WALL SLEEVE DETAIL

NOT TO SCALE

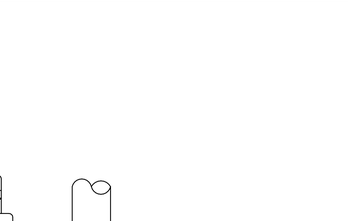


TYPICAL PIPE SIZE CHANGE FOR STEAM

NOT TO SCALE

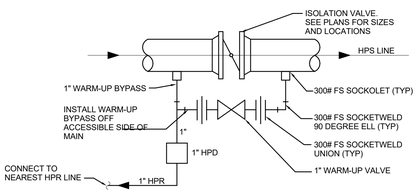


PRV STATION DETAIL



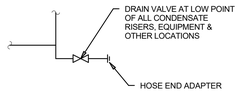
SAFETY VENT DETAIL

NOT TO SCALE



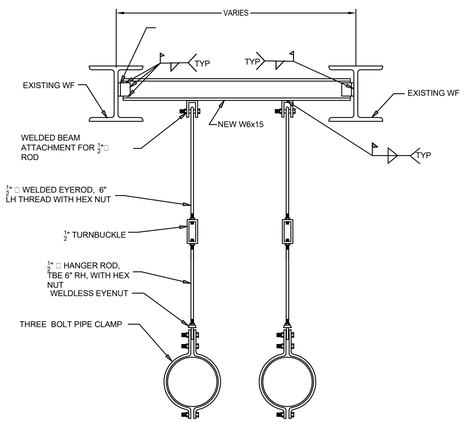
WARM-UP BYPASS VALVE DETAIL

NOT TO SCALE



PIPING SYSTEM DRAIN DETAIL

NOT TO SCALE



PIPE SUPPORT ON SUPPLEMENTAL STEEL

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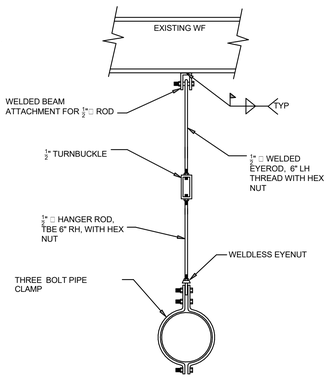
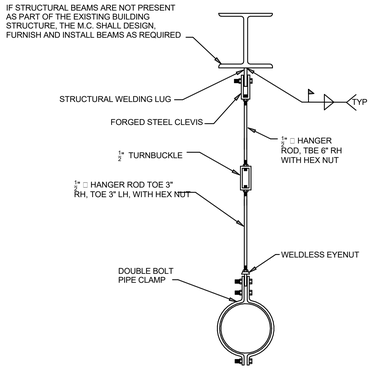


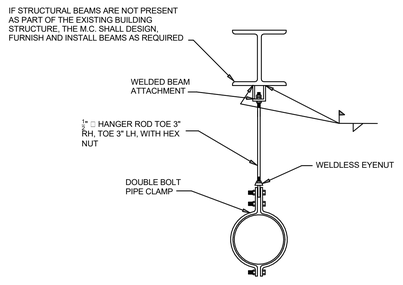
PIPE SUPPORT ON EXISTING STEEL

NOT TO SCALE



STD SUPPORT FOR INSULATED PIPE

NOT TO SCALE



STANDARD SUPPORT FOR INSULATED PIPE

NOT TO SCALE

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA — PROFESSIONAL — MATTHEW R. SOTOSKY — ENGINEER — 045576-E — PENNSYLVANIA

SIGNATURE 10-14-2024 DATE

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation Equipment

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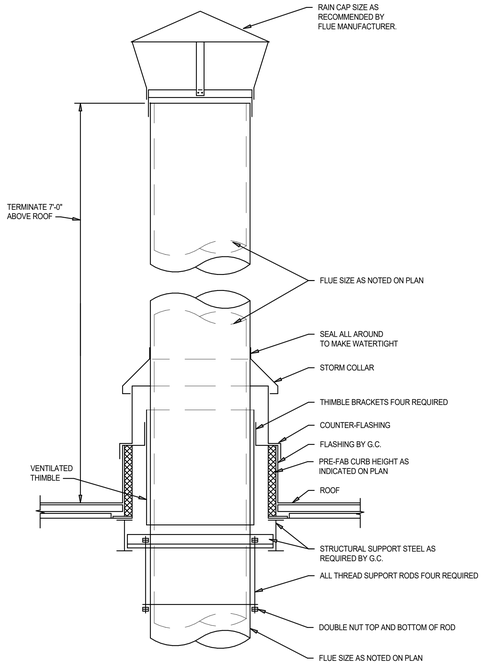
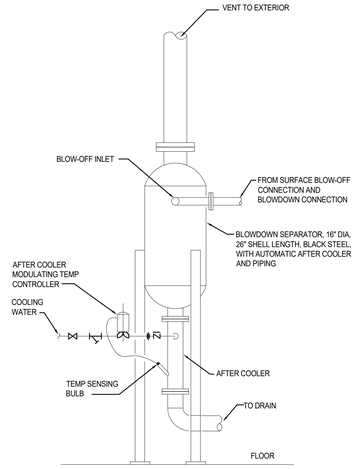


BOILER FLUE SUPPORT DETAIL
NOT TO SCALE



BLOWDOWN SEPARATOR DETAIL
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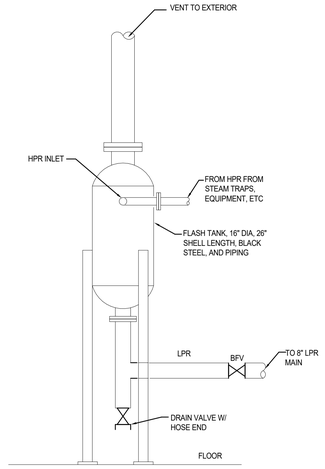
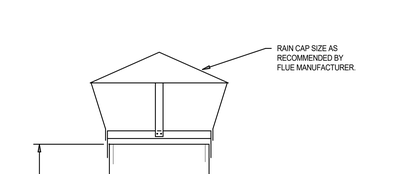


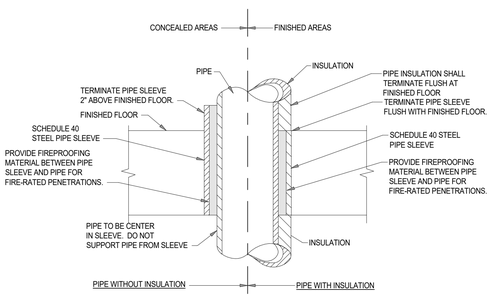
FLASH TANK DETAIL
NOT TO SCALE



GAS REGULATOR DETAIL
NOT TO SCALE

UL/FM/CSD-1 GAS TRAIN PIPING SCHEMATIC FOR B-6
NOT TO SCALE

UL/FM/CSD-1 GAS TRAIN PIPING SCHEMATIC FOR B-2&3
NOT TO SCALE



PIPE SLEEVE THRU FLOOR DETAIL
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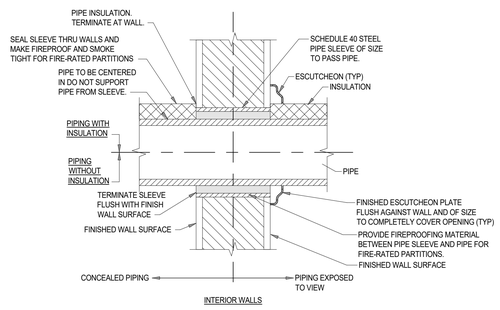
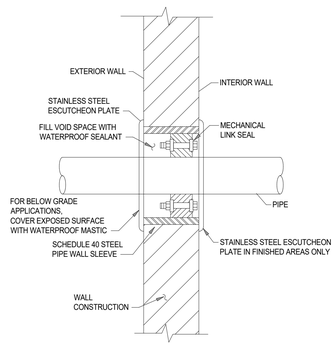


PIPE SLEEVE THRU WALL DETAIL
NOT TO SCALE



EXTERIOR WALL PENETRATION DETAIL
NOT TO SCALE

CAMPUS / KEY PLAN

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PROFESSIONAL
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ENGINEER
045575-E
PENNSYLVANIA

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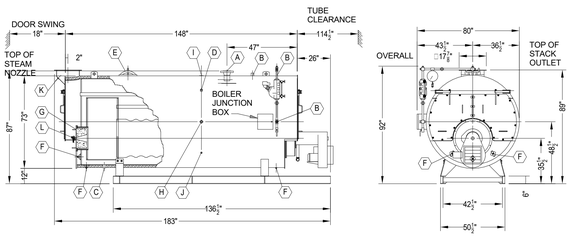
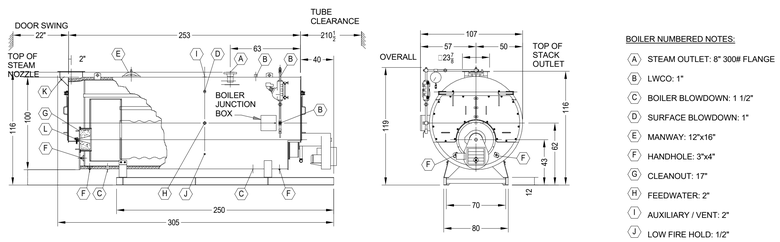


BOILER NUMBERED NOTES:

- (A) STEAM OUTLET: 4" 300# FLANGE
- (B) LWCO: 1"
- (C) BOILER BLOWDOWN: 1 1/4"
- (D) SURFACE BLOWDOWN: 1"
- (E) MANWAY: 12"x16"
- (F) HANDHOLE: 3"x4"
- (G) CLEANOUT: 17"
- (H) FEEDWATER: 1 1/4"
- (I) AUXILIARY / VENT: 2"
- (J) LOW FIRE HOLD: 1/2"
- (K) STACK TEMP: 1/2"
- (L) SIGHT PORT: 1"

BOILER B-6 DETAIL

NOT TO SCALE

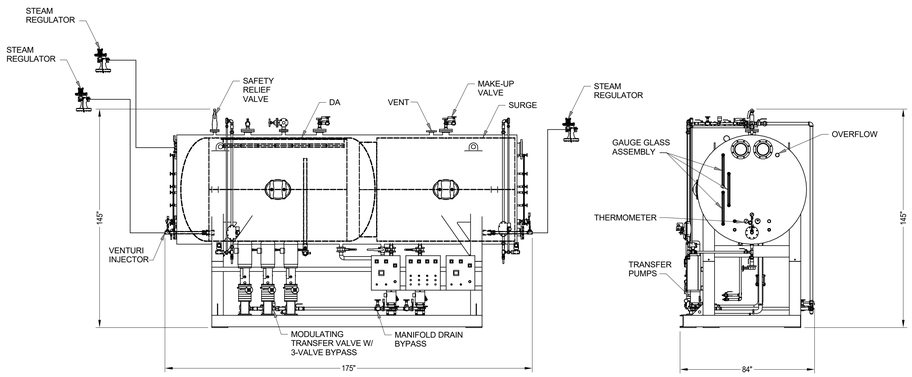


BOILER NUMBERED NOTES:

- (A) STEAM OUTLET: 8" 300# FLANGE
- (B) LWCO: 1"
- (C) BOILER BLOWDOWN: 1 1/2"
- (D) SURFACE BLOWDOWN: 1"
- (E) MANWAY: 12"x16"
- (F) HANDHOLE: 3"x4"
- (G) CLEANOUT: 17"
- (H) FEEDWATER: 2"
- (I) AUXILIARY / VENT: 2"
- (J) LOW FIRE HOLD: 1/2"
- (K) STACK TEMP: 1/2"
- (L) SIGHT PORT: 1"

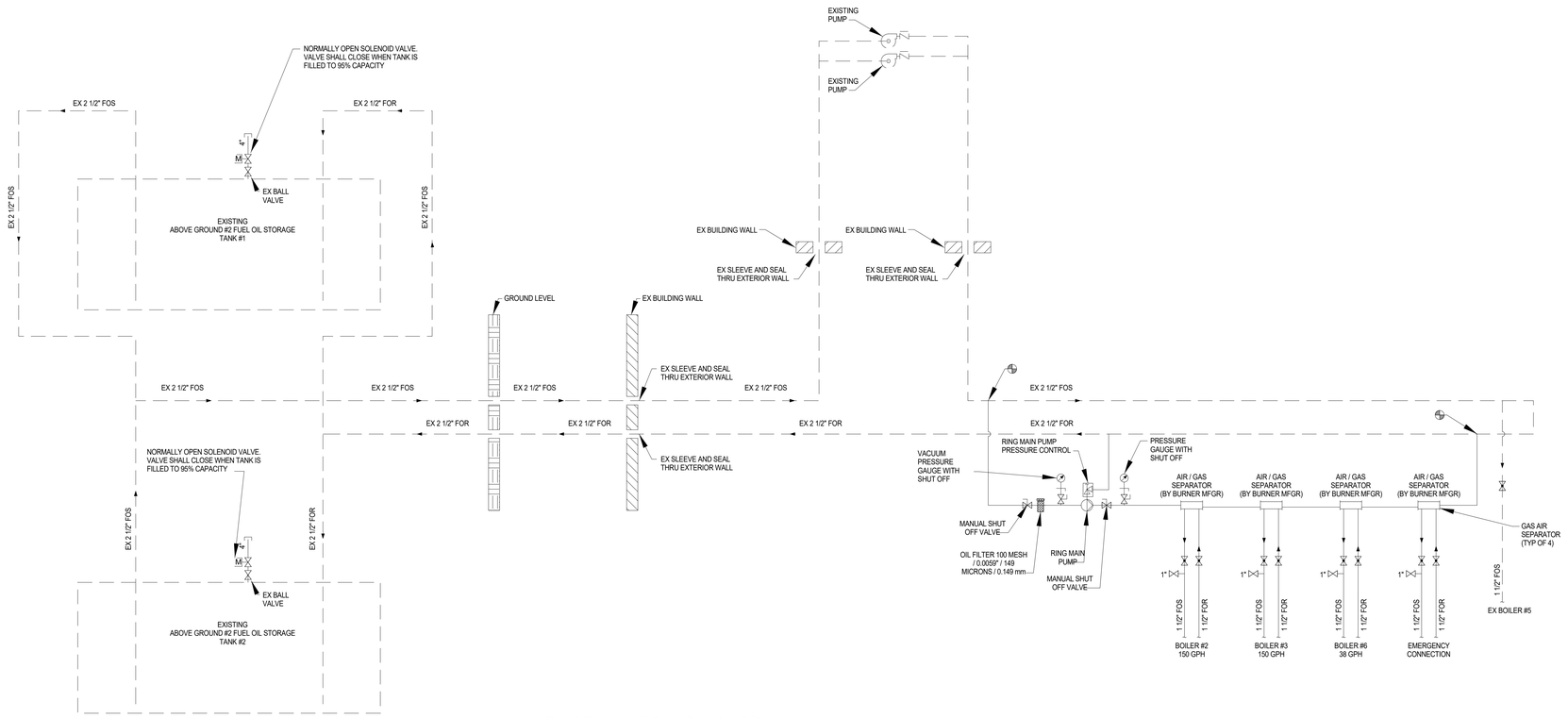
BOILER B-2 & 3 DETAIL

NOT TO SCALE



COMBINATION DEAERATOR SURGE TANK DETAIL

NOT TO SCALE



FUEL OIL SCHEMATIC FLOW DIAGRAM

NOT TO SCALE

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DUAL COMPARTMENT DEAERATOR SCHEDULE

MARK	TYPE	CAPACITY (LBS/HR)	DA RECEIVER GALLONS (NET)	SURGE RECEIVER GALLONS (NET)	BOILER FEED PUMPS					CONDENSATE TRANSFER PUMPS					ELECTRICAL DATA		
					QTY	OPERATION	GPM	DISCHARGE PRESSURE (PSIG)	MOTOR HP	QTY	OPERATION	GPM	DISCHARGE PRESSURE (PSIG)	MOTOR HP	V	PH	HZ
DA-2	INT SPRAY/TRAY	24,150	46	469	3	DUTY/STANDBY	36	100	15	2	DUTY/STANDBY	72	35	2	208	3	60

NOTES

1. FEEDWATER PUMPS MUST BE FURNISHED AS A COMPLETE FACTORY PIPED AND WIRED PACKAGE INTEGRAL TO THE DEAERATOR SYSTEM.
2. FURNISH WITH A COMMON CENTRAL PANEL WITH MAIN DISCONNECT SWITCHES, PUMP FUSING, SELECTION SWITCH, BOILER MASTER CONTROL PANEL INTERFACING AND OTHER SPECIFIED ITEMS.
3. FACTORY PIPING SHALL INCLUDE A PUMP SUCTION HEADER, DISCHARGE HEADER, ISOLATION VALVES, RECIRCULATION LINE TO DEAERATOR, FLEX CONNECTIONS AND OTHER SPECIFIED ITEMS.
4. DEAERATOR SHALL HAVE 304L STAINLESS STEEL MANIFOLD, SPRAY NOZZLES AND TRAYS.
5. UNIT SHALL BE FURNISHED WITH SINGLE POINT POWER CONNECTION.
6. UNIT SHALL BE FURNISHED WITH A 96"H STRUCTURAL STAND, QUADRAPLEX BOILER FEED PUMPS (BFP-1,2,3), AND DUPLEX CONDENSATE TRANSFER PUMPS (CTP-1,2).
7. UNIT SHALL BE FURNISHED WITH MODULATING FEED WATER AND MAKE-UP VALVES WITH 3-VALVE BYPASS FURNISHED AND INSTALLED BY DEAERATOR MANUFACTURER.
8. TWO (2) STEAM PRV'S SHALL BE FACTORY SUPPLIED. FIELD INSTALLED BY CONTRACTOR.

BOILER SCHEDULE

MARK	GAS INPUT (MBH)	OIL INPUT (GPH)	OUTPUT (MBH)	BOILER HP	BURNER HP	ELECTRICAL DATA			WEIGHT (LBS)	REMARKS
						V	PH	HZ		
B-2	20922	149.99	16378	500	25	208	3	60	38500	1
B-3	20922	149.99	16378	500	25	208	3	60	38500	1
B-6	5230	37.35	4184	125	5	208	3	60	12800	2

NOTES

1. BURNER SHALL BE ULTRA LOW NOX.
2. BURNER SHALL BE LOW NOX.

BLOWDOWN SEPARATOR SCHEDULE

MARK	OPERATING STEAM (PSIG)	SIZE (IN)	INLET (IN)	VENT (IN)	OUTLET (IN)
BDS-1	75	16 X 26	1.5	5	5

STEAM SEPARATOR SCHEDULE

MARK	OPERATING STEAM (PSIG)	STEAM FLOW (LBS/HR)	INLET (IN)	OUTLET (IN)
SS-2	75	17250	8	8
SS-3	75	17250	8	8
SS-6	75	4315	4	4

STEAM, GAS, AND OIL FLOW METER SCHEDULE

SERVICE	SYSTEM	TYPE	OPERATING STEAM (PSIG)	MAX FLOW	PIPE SIZE (IN)	REMARKS
B-2	STEAM	VOTREX	75	17250 LBS/HR	6	1
B-2	GAS	INSERTION THERMAL MASS	-	20922 MBH	3	1
B-2	OIL	POSITIVE DISPLACEMENT	-	149.99 GPH	1	1
B-3	STEAM	VOTREX	75	17250 LBS/HR	6	1
B-3	GAS	INSERTION THERMAL MASS	-	20922 MBH	3	1
B-3	OIL	POSITIVE DISPLACEMENT	-	149.99 GPH	1	1
B-6	STEAM	VOTREX	75	4315 LBS/HR	4	1
B-6	GAS	INSERTION THERMAL MASS	-	5230 MBH	3	1
B-6	OIL	POSITIVE DISPLACEMENT	-	37.35 GPH	1	1
MAIN IN TUNNEL	STEAM	VOTREX	75	23000 LBS/HR	12	-

NOTES

1. THE FLOW METER SHALL BE PROVIDED BY THE BOILER SUPPLIER AS PART OF THE BOILER PACKAGE .

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MATTHEW R. SOTOSKY
ENGINEER
045576-E
COMMONWEALTH OF PENNSYLVANIA

SIGNATURE 10-14-2024 DATE

CJL ENGINEERING
232 Horner Street
Johnstown, PA 15902
ph: (814) 536-1651, fax: (814) 536-5732

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation Equipment

SCHEDULES - MECHANICAL

VERIFY SCALE

BAR IS ONE (1) INCH LONG ON ORIGINAL DRAWING:
0 1
IF BAR IS NOT ONE (1) INCH LONG ADJUST SCALE ACCORDINGLY.

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. VARIANCE FROM CONTRACT DOCUMENTS NOT PERMITTED WITHOUT PROFESSIONAL & BUREAU OF CONSTRUCTION APPROVAL.

DRAWN BY	DATE	SHEET No.
Author	10-14-2024	H-13
CHECKED BY	SCALE	
Checker	1/4" = 1'-0"	

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ELECTRICAL GENERAL NOTES

GENERAL
UNLESS SPECIFICALLY INDICATED OTHERWISE, ALL WORK SHOWN ON THE ELECTRICAL DRAWINGS IS NEW WORK TO BE PROVIDED UNDER THIS CONTRACT. THE CONTRACTOR IS RESPONSIBLE FOR THE ENTIRE PROJECT DOCUMENT SET, INCLUDING ALL SPECIFICATIONS, CONTRACT DRAWINGS, ADDENDUMS, ETC. PRIOR TO THEIR BID, THE CONTRACTOR SHALL REVIEW ALL CONTRACT DOCUMENTS. IF WORK ON OTHER TRADE DRAWINGS OR WITHIN OTHER DIVISION SPECIFICATIONS HAS EQUIPMENT, DEVICES, APPURTENANCES, ETC. INCLUDED WITHIN THEM REQUIRING ELECTRICAL EQUIPMENT OR POWER FEEDS IN ORDER TO PROVIDE A COMPLETE OPERATIONAL SYSTEM, IT IS THE CONTRACTOR'S RESPONSIBILITY TO INCLUDE WITHIN THEIR BID AND PAY FOR ALL ELECTRICAL WORK REQUIRED TO COMPLETE THOSE SYSTEMS. THE CONTRACTOR SHALL SUBMIT REQUESTS FOR INFORMATION DURING THE BIDDING PHASE FOR ALL DISCREPANCIES, CONFLICTS, CONSTRUCTABILITY ISSUES, AND CLARIFICATIONS NEEDED IN ORDER FOR THE CONTRACTOR TO PROVIDE COMPLETE OPERATIONAL SYSTEMS FOR THIS PROJECT.

COORDINATION
COORDINATE AND COOPERATE WITH ALL TRADES ON THE PROJECT.

RECORD DRAWINGS
SECURE AN EXTRA SET OF ELECTRICAL DRAWINGS TO BE KEPT ON SITE AND MARK, DAILY, THE DRAWINGS IN RED AS THE PROJECT PROGRESSES IN ORDER TO KEEP AN ACCURATE RECORD OF ALL DEVIATIONS BETWEEN THE WORK SHOWN ON THE DRAWINGS AND THE WORK WHICH IS ACTUALLY INSTALLED. THESE MARKED DRAWINGS SHALL REFLECT ANY AND ALL CHANGES AND REVISIONS TO THE ORIGINAL DESIGN WHICH EXISTS IN THE COMPLETED WORK. DELIVER THE MARKED DRAWINGS TO THE OWNER AT PROJECT CLOSE OUT.

TESTS
TEST ALL WIRING FOR CONTINUITY AND GROUNDS BEFORE CONNECTING ANY FIXTURES OR DEVICES PER SPECIFICATIONS. PERFORM INSULATION RESISTANCE TESTS ON ALL WIRING #8 OR LARGER TO ENSURE THAT ALL PORTIONS ARE FREE FROM SHORT-CIRCUITS AND GROUNDS PER SPECIFIACTIONS.

INSPECTIONS
ARRANGE ALL NECESSARY INSPECTIONS PER SPECIFICATIONS. DELIVER ALL REQUIRED INSPECTION CERTIFICATES TO THE CLIENT AGENCY.

GROUNDING
PROVIDE GROUNDING IN ACCORDANCE WITH THE NEC FOR THE ELECTRICAL SYSTEM INCLUDING EQUIPMENT FRAMES, CONDUITS, SWITCHES, CONTROLLERS, WIRE-WAYS, NEUTRAL CONDUCTORS, AND OTHER EQUIPMENT. PROVIDE A GROUNDING CONDUCTOR IN ALL POWER CIRCUITS.

LABELS
PROVIDE LABELS FOR ALL PANELBOARDS, CABINETS, SAFETY SWITCHES, MOTOR-DISCONNECT SWITCHES, AND MOTOR CONTROLLERS. LABELS SHALL BE MACHINE ENGRAVED, LAMINATED PLASTIC, PERMANENTLY ATTACHED WITH SELF-TAPPING SCREWS OR RIVETS. DO NOT USE SELF ADHESIVE LABELS. PROVIDE ADDITIONAL LABELS FOR CLARITY AT THE ENGINEER'S REQUEST.

J-BOX LABELING
LABEL ALL JUNCTION BOXES WITH PERMANENT MARKER IDENTIFYING CIRCUIT NUMBER AND PANELBOARD OF CIRCUITS WITHIN.

CONDUCTOR SIZE
USE #10 AWG CONDUCTORS (MINIMUM) FOR ALL 20 AMP, 120 VOLT CIRCUIT RUNS GREATER THAN 50' ONE WAY FROM PANELBOARD TO FIRST DEVICE/FIXTURE.

PANEL DIRECTORY
PROVIDE TYPEWRITTEN PANELBOARD DIRECTORY CARD IN EACH PANELBOARD INCLUDING EXISTING PANELBOARDS MODIFIED FOR THIS PROJECT WITH CIRCUIT LOAD INFORMATION AND ROOM NUMBER CLEARLY IDENTIFIED. USE ACTUAL ROOM NUMBERS IN THE BUILDING, NOT THE ROOM NUMBERS SHOWN ON THE CONTRACT DRAWINGS, AS THEY ARE OFTEN DIFFERENT.

MOTOR COORDINATION
MOTORS, MOTOR STARTERS, CONTROLLERS, INTEGRAL DISCONNECT SWITCHES, AND CONTACTORS SHALL BE PROVIDED WITH THEIR RESPECTIVE PIECES OF EQUIPMENT BY THE EQUIPMENT SUPPLIER. COMMUNICATE WITH THE TRADES PROVIDING THE EQUIPMENT, VERIFYING ALL REQUIREMENTS. PROVIDE ALL ELECTRICAL CONNECTIONS REQUIRED THEREIN, AND INSTALL MOTOR STARTERS.

MOTOR DISCONNECTS
ALL MOTORS SHALL HAVE DISCONNECTING MEANS.

MOTOR FUSE PROTECTION
WHERE FUSE PROTECTION IS SPECIFICALLY REQUIRED BY THE EQUIPMENT MANUFACTURER, PROVIDE FUSED SWITCHES IN LIEU OF NON-FUSED SWITCHES OR IN LIEU OF ENCLOSED CIRCUIT BREAKERS, OR OTHER DEVICES INDICATED.

CONNECTION DETAILS
SECURE APPROVED SHOP DRAWINGS SHOWING WIRING DIAGRAMS, ROUGH-IN AND HOOK UP DETAILS FROM OTHER INVOLVED CONTRACTORS FOR EQUIPMENT WHICH MUST BE CONNECTED ELECTRICALLY.

EQUIPMENT DETAILS
MECHANICAL EQUIPMENT WILL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. THE LOCATIONS SHOWN ON THE ELECTRICAL DRAWINGS ARE APPROXIMATE. COORDINATE WITH THE MECHANICAL CONTRACTOR TO DETERMINE THE EXACT LOCATION OF EACH PIECE OF EQUIPMENT AND DETERMINE THE EXACT ROUGH-IN AND CONNECTION REQUIREMENTS.

STARTER MOUNTING
WHERE AN INDIVIDUALLY MOUNTED SAFETY SWITCH, STARTER, OR CIRCUIT BREAKER IS SHOWN ADJACENT TO ITS RESPECTIVE LOAD AND NOT MOUNTED ON A WALL, PROVIDE ALL SUPPORTS, BRACKETS, ANCHORING, ETC. NECESSARY TO PROPERLY SUPPORT THE DEVICE.

MATERIAL COORDINATION
VERIFY CEILING AND WALL CONSTRUCTION AND MATERIAL PRIOR TO ORDERING LIGHT FIXTURES OR OTHER DEVICES TO ENSURE PROPER FIXTURE OR DEVICE IS FURNISHED TO MATCH CONSTRUCTION.

MOUNTING HEIGHTS
MOUNTING HEIGHTS INDICATED ARE FROM THE FINISHED FLOOR TO THE CENTERLINE OF THE WIRING DEVICE UNLESS OTHERWISE NOTED.

DEVICE LOCATIONS
COORDINATE LOCATIONS OF SWITCHES, RECEPTACLES, AND TELE/DATA OUTLETS WITH OTHER WALL MOUNTED DEVICES SUCH AS THERMOSTATS AND CONTROL STATIONS. DO NOT MOUNT WIRING DEVICES BACK TO BACK. PROVIDE MINIMUM OF ONE STUD SEPARATION.

DEVICE COORDINATION
THOROUGHLY REVIEW AND COORDINATE ALL CASEWORK, DOOR SWINGS, AND CABINET DRAWINGS AND ARCHITECTURAL ELEVATIONS WITH DEVICE LOCATIONS PRIOR TO ROUGH-IN OF OUTLET BOXES.

BARRIERS
WHERE A MULTIPLE GANG BOX HAS CIRCUITS OF DIFFERENT VOLTAGES OR SYSTEMS WHICH ARE REQUIRED TO BE SEPARATED, PROVIDE THE CODE-REQUIRED SEPARATION USING A FULL HEIGHT AND DEPTH BARRIER PLATE.

FIRE PROOFING
FOR ANY WALL OR FLOOR PENETRATIONS THROUGH FIRE RATED STRUCTURES, PROVIDE FIRE-PROOFING TO SEAL ALL THE PENETRATIONS AFTER THE RACEWAY HAS BEEN INSTALLED. FIRE PROOFING FOR PENETRATIONS SHALL BE UL APPROVED PER THE PENETRATION MADE IN ORDER TO MAINTAIN FIRE RATED INTEGRITY OF THE STRUCTURE.

CLEAN UP
ON PROJECT CLOSE-OUT, CLEAN ALL ELECTRICAL DEVICES, LIGHTING FIXTURES, LAMPS AND LENSES, AND REMOVE ALL PAINT SPATTERS FROM DEVICES, FIXTURES, AND PLATES. REPLACE ALL INOPERATIVE LAMPS.

OWNER FURNISHED EQUIPMENT
CONTRACTOR SHALL OBTAIN CUT SHEETS, INSTALLATION DATA, AND ROUGH-IN REQUIREMENTS FOR OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT AND COORDINATE ROUGH-IN AND POWER REQUIREMENTS WITH THE OWNER'S REPRESENTATIVE PRIOR TO STARTING ANY ASSOCIATED WORK.

CONDUIT ROUTING
ALL CONDUIT RUN OVERHEAD SHALL BE RUN AT THE BOTTOM OF THE FLOOR, ROOF STRUCTURE, OR LOWEST CHORD OF JOIST SPACE (AS APPLICABLE) ABOVE IN ORDER TO AVOID CONFLICTS WITH OTHER TRADES. ALL CONDUITS SHALL BE RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES AND USE RIGHT ANGLE OFFSETS TO CHANGE DIRECTION.

WIRING DEVICES
ALL RECEPTACLES AND SWITCHES SHALL BE LABELED WITH PLASTIC LAMINATED LABEL WITH THE PANELBOARD DESIGNATION AND CIRCUIT NUMBER FROM WHICH IT IS FED.

EQUIPMENT DEMONSTRATION
PROVIDE A DEMONSTRATION OF THE OPERATION OF ALL ELECTRICAL COMPONENTS UPON REQUEST OF THE CLIENT AGENCY. REFER TO SPECIFICATION SECTION 260508 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

TEMPORARY ELECTRICAL SERVICE
PROVIDE TEMPORARY ELECTRICAL SERVICE AS REQUIRED FOR CONSTRUCTION PROJECT. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

UNDERGROUND WORK
THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES WITHIN THE CONSTRUCTION AREA THREE WORKING DAYS PRIOR TO DIGGING. NOTIFY THE STATE AUTHORITY HAVING JURISDICTION AND AWAIT THE REQUIRED TIME BEFORE COMMENCING EXCAVATION.

CONFLICT NOTIFICATION
NOTIFY THE CLIENT AGENCY'S REPRESENTATIVE AND PROFESSIONAL PRIOR TO PROCEEDING WITH WORK IF A CONFLICT IS FOUND BETWEEN THE DRAWINGS, SPECIFICATIONS, AND/OR FIELD CONDITIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS AND CONSEQUENCES IF THE ABOVE LISTED PARTIES ARE NOT CONTACTED FOR A RESOLUTION PRIOR TO PROCEEDING WITH THE WORK.

GENERAL DEMOLITION NOTES

GENERAL
DEMOLITION DRAWINGS ARE BASED ON EXISTING PLANS AND FIELD INVESTIGATION PRIOR TO DEMOLITION. VISIT THE EXISTING BUILDING PRIOR TO BID IN ORDER TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND IN ORDER TO AVOID CONFLICTS.

DEMOLITION (DASHED) ITEMS
ALL ITEMS SHOWN DASHED ON DEMOLITION PLANS, AND/OR TAGGED WITH 'DM', ARE EXISTING, AND SHALL BE REMOVED COMPLETE INCLUDING: BOXES, CONDUIT, WIRE, FASTENERS, AND ASSOCIATED APPURTENANCES, UON.

EXISTING TO REMAIN (SOLID) ITEMS
ALL ITEMS SHOWN SOLID ON DEMOLITION PLANS, AND/OR TAGGED WITH 'XR', ARE EXISTING TO REMAIN.

CIRCUITING TO REMAIN
EXISTING CIRCUITING TO REMAIN SHALL BE REROUTED OR RECONNECTED, AS REQUIRED, WHERE AFFECTED BY NEW WORK IN ORDER TO MAINTAIN CONTINUITY OF CIRCUIT.

REUSE OF EXISTING CIRCUITRY
EXISTING CIRCUITRY SERVING LIGHTING FIXTURES AND/OR RECEPTACLES FOR A GIVEN AREA SHALL BE REUSED WHERE CONVENIENT TO SERVE THE NEW LAYOUT. PROVIDE CIRCUIT MODIFICATIONS INDICATED OR AS OTHERWISE REQUIRED TO MAINTAIN THE CONTINUITY OF THE EXISTING CIRCUIT THAT REMAIN.

EXTENSION OF EXISTING CIRCUITS
WHERE AN EXISTING CIRCUIT IS NOTED TO BE SAVED AND REUTILIZED, EXTEND EXISTING CIRCUIT SAVED DURING DEMOLITION AS REQUIRED TO SERVE EQUIPMENT IN NEW LOCATION.

EXISTING CONDUIT
ALL EXISTING CONDUITS AND WIRING THAT WILL NOT BE REUSED SHALL BE REMOVED WHERE THEY WILL BE EXPOSED UPON COMPLETION OF NEW WORK. EXISTING CONDUIT TO REMAIN CONCEALED IN WALLS SHALL BE ABANDONED. EXISTING CONDUIT TO REMAIN BELOW FLOOR SLAB SHALL BE CUT OFF ONE INCH BELOW ROUGH FLOOR AND GROUTED FLUSH. ALL EXISTING WIRING IN CONDUITS TO BE ABANDONED SHALL BE DISCONNECTED FROM POWER SOURCE AND REMOVED.

REPAIR DAMAGE
EXERCISE CARE IN REMOVAL OF DEMOLITION ITEMS. REPAIR, AT NO ADDITIONAL COST TO OWNER, AND DAMAGE CAUSE TO EXISTING CONSTRUCTION AND/OR EQUIPMENT TO REMAIN.

ASSOCIATED APPURTENANCES
REMOVE ALL ELECTRICAL APPURTENANCES (DISCONNECTS, STARTERS, WIRING, CONDUIT, ETC.) ASSOCIATED WITH EQUIPMENT TO BE REMOVED BY OTHERS.

KNOCKOUT PLUGS AND COVERS
ALL CONDUIT REMOVED SHALL BE REMOVED IN ITS ENTIRETY, INCLUDING FITTINGS, MOUNTING DEVICES, MOUNTING HARDWARE, ETC. PROVIDE CONDUIT PLUGS AND BLANKS FOR ALL OPENINGS CREATED BY THE REMOVAL OF CONDUIT. PROVIDE BLANK COVER PLATES FOR ALL OPENED OUTLET BOXES CREATED BY THE REMOVAL OF THE EQUIPMENT AND/OR DEVICES.

DEMOLISHED MATERIALS
ALL MATERIALS REMOVED UNDER DEMOLITION, NOT TO BE RELOCATED OR DESIGNATED TO BE TURNED OVER TO THE CLIENT AGENCY, SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED COMPLETELY FROM THE SITE.

SCHEDULE OUTAGES
ALL WORK AND ALL POWER OUTAGES IN THE EXISTING BUILDING SHALL BE SCHEDULED AT TIMES CONVENIENT TO THE CLIENT AGENCY.

NOTIFICATION
NOTIFY THE OWNER PRIOR TO TURNING OFF ANY CIRCUITS.

EXISTING CIRCUITS
IF DURING THE COURSE OF CONSTRUCTION, IT ITS DETERMINED BY THE CONTRACTOR THAT AN EXISTING CIRCUIT BECOMES SPARE, THE CONTRACTOR SHALL UPDATE THE PANELBOARD DIRECTORY TO INDICATE SUCH, EVEN IF IT IS NOT EXPLICITLY MARKED ON THE ELECTRICAL PLANS.

LIGHTING

XX ⧄ ⊟ ▭ ☰ ▭	LIGHTING FIXTURE. SUBSCRIPT INDICATES FIXTURE TYPE (TYP) . REFER TO FIXTURE SCHEDULE FOR ADDITIONAL TYPES AND INFORMATION.
◪ ◪ ◪ ◪ ▬	NORMAL/EMERGENCY LIGHTING FIXTURE. SUBSCRIPT "NL", WHERE USED, INDICATES NIGHT LIGHT CONNECTED AHEAD OF LIGHTING CONTROLS.
○ □	DOWNLIGHT FIXTURE
◐ ◩	NORML/EMERGENCY DOWNLIGHT FIXTURE. SUBSCRIPT "NL", WHERE USED, INDICATES NIGHT LIGHT CONNECTED AHEAD OF LIGHTING CONTROLS
ô □̂	WALL WASH LIGHTING FIXTURE
♀ ⊥	WALL MOUNTED LIGHTING FIXTURE
♀ ⊥	WALL MOUNTED LIGHTING FIXTURE ON EMERGENCY CIRCUIT. SUBSCRIPT "NL", WHERE USED, INDICATES NIGHT LIGHT CONNECTED AHEAD OF LIGHTING CONTROLS
◎	PENDANT MOUNTED LIGHTING FIXTURE
-•-•-•-	TRACK LIGHTING FIXTURE(S)
□-o	POLE MOUNTED SITE LIGHTING FIXTURE
⌂	EMERGENCY BATTERY LIGHTING UNIT, CONNECT AHEAD OF LOCAL SWITCH
⌂	REMOTE HEAD FOR BATTERY PACK
⊗	EXIT LIGHTING FIXTURE WITH DIRECTIONAL ARROWS AS INDICATED ON DRAWINGS. SHADED AREA DENOTES LIGHTED FACE
$	SINGLE POLE SWITCH, 20A, 120/277V
$ 3	THREE-WAY SWITCH, 20A, 120/277V
$ 4	FOUR-WAY SWITCH, 20A, 120/277V
$ K	SINGLE POLE KEYED SWITCH, 20A, 120/277V
$ PL	SINGLE POLE SWITCH WITH PILOT LIGHT, 20A, 120/277V
$ D	DIMMER SWITCH, 20A, 120/277V
$ T	TIMER SWITCH, 20A, 120/277V, REFER TO LIGHTING DETAILS FOR ADDITIONAL INFORMATION
$ OC	WALL SWITCH OCCUPANCY SENSOR, 120/277V, REFER TO LIGHTING DETAILS FOR ADDITIONAL INFORMATION
$ LV	LOW VOLTAGE SWITCH, REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION
PS	LOW VOLTAGE LIGHTING FIXTURE POWER SUPPLY. MOUNT ABOVE ACCESSIBLE CEILING
OC	CEILING MOUNTED OCCUPANCY SENSOR. REFER TO OCCUPANCY SENSOR SCHEDULE AND LIGHTING DETAILS FOR ADDITIONAL INFORMATION
OC	WALL MOUNTED OCCUPANCY SENSOR. REFER TO OCCUPANCY SENSOR SCHEDULE AND LIGHTING DETAILS FOR ADDITIONAL INFORMATION
DS	DAYLIGHT SENSOR, CEILING MOUNTED. REFER TO LIGHTING CONTROLS FOR ADDITIONAL INFORMATION
PC	PHOTOCELL. MOUNT ON ROOF OF BUILDING AND AIM NORTH. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION
LZC	LIGHTING ZONE CONTROLLER, MOUNT ABOVE ACCESSIBLE CEILING. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION
ETD	EMERGENCY TRANSFER DEVICE, MOUNT ABOVE ACCESSIBLE CEILING. DEVICE SHALL BE UL 924 LISTED. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION
DP	DIMMING PANEL, RECESS MOUNTED IN WALL. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION

GENERAL

#	NUMBERED NOTE
DET # SHEET	DETAIL OR SECTION NOTATION
∼	INDICATES CONTINUATION OF LINE
⌒	BRANCH CIRCUIT WIRING
NE	NORMAL EMERGENCY CIRCUIT WIRING
UPS	UNINTERRUPTIBLE POWER SUPPLY CIRCUIT WIRING
⌒→	HOMERUN BACK TO PANELBOARD
★	INDICATES DEVICE MOUNTED ABOVE COUNTERTOP

POWER

Φ	SIMPLEX RECEPTACLE, 20A/120V
Φ	DUPLEX RECEPTACLE, 20A/120V
Φ G	DUPLEX RECEPTACLE, GFCI TYPE, 20A/120V
Φ	DUPLEX RECEPTACLE ON EMERGENCY POWER CIRCUIT, 20A/120V
Φ G	DUPLEX RECEPTACLE ON EMERGENCY POWER CIRCUIT, GFCI TYPE, 20A/120V
Φ IG	ISOLATED GROUND DUPLEX RECEPTACLE, 20A/120V
Φ EXP	DUPLEX RECEPTACLE, EXPLOSION PROOF TYPE, 20A/120V
Φ TR	DUPLEX RECEPTACLE, TAMPER RESISTANT TYPE, 20A/120V. RECEPTACLE SHALL HAVE "TR" STAMPED ON FACE OF DEVICE
Φ U	DUPLEX RECEPTACLE ON UPS POWER CIRCUIT, 20A/120V
Φ EWC	ELECTRIC WATER COOLER CONNECTION, PROVIDE 20A/120V GFCI TYPE DUPLEX RECEPTACLE. COORDINATE WITH EWC MANUFACTURER'S ROUGH-IN REQUIREMENTS
Φ USB	DUPLEX RECEPTACLE, DOUBLE USB PORT, 20A/120V
Φ GW	DUPLEX RECEPTACLE, GFCI TYPE, WEATHER RESISTANT WITH "WHILE-IN-USE" WEATHERPROOF COVER, 20A/120V
⊕	QUAD RECEPTACLE, 20A/120V
⊕	QUAD RECEPTACLE ON EMERGENCY POWER CIRCUIT, 20A/120V
⊕ USB	QUAD RECEPTACLE, DOUBLE USB PORT, 20A, 120V
⊛	SPECIAL RECEPTACLE, NEMA CONFIGURATION AND AMPERAGE AS NOTED
Φ	SIMPLEX RECEPTACLE, CEILING MOUNTED, 20A/120V
Φ	DUPLEX RECEPTACLE, CEILING MOUNTED, 20A/120V
⊕	QUAD RECEPTACLE, CEILING MOUNTED, 20A/120V
◉ X	POKE-THRU, X INDICATES TYPE, REFER TO POKE-THRU SCHEDULE FOR ADDITIONAL INFORMATION
DFGI	DEAD FRONT GFCI DEVICE
FF	FLEXIBLE FURNITURE CONNECTION
FB X	FLOOR BOX, X INDICATES TYPE, REFER TO FLOOR BOX SCHEDULE FOR ADDITIONAL INFORMATION
MB	MEDIA BOX, PROVIDE WIREMOLD MODEL EFSB4 BOX WITH (1) 20A/120V DUPLEX RECEPTACLE AND (2) 1"C WITH PULL STRING STUBBED TO ABOVE ACCESSIBLE CEILING FOR A/V CABLING. TERMINATE CONDUITS WITH INSULATING BUSHING
J	JUNCTION BOX FLUSH IN WALL
J	JUNCTION BOX ABOVE CEILING
E	EQUIPMENT CONNECTION
M	MOTOR CONNECTION
CR	CORD REEL
CF	CEILING FAN CONNECTION
$ M	MOTOR STARTING SWITCH
PP	ELECTRICAL DOOR PUSH PAD, MOUNT 46" AFF
	DOOR HARDWARE NOTE ELECTRICAL DOOR OPERATOR AND DOOR CONTROLLERS SHALL BE PROVIDED BY DOOR HARDWARE SUPPLIER. PROVIDE 120V POWER TO DOOR POWER SUPPLY AND OUTLET BOX AND CONDUIT FOR CONTROLS. COORDINATE WITH DOOR HARDWARE PROVIDER
PB	PULL BOX
GB	GROUND BAR, REFER TO DETAIL
VFD	VARIABLE FREQUENCY DRIVE, FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED AND POWERED BY EC
SPD	SURGE PROTECTIVE DEVICE
▨	SURFACE RACEWAY. MOUNT 46" AFF, UON
●	EMERGENCY POWER OFF BUTTON
▭	DISCONNECT SWITCH. FRAME AS NOTED
⧄	FUSED DISCONNECT SWITCH. FRAME AND FUSE AS NOTED.
◪	ENCLOSED CIRCUIT BREAKER. FRAME AND TRIP AS NOTED
▭	EXISTING PANELBOARD
▬	PANELBOARD
⊠	MOTOR STARTER
⊠	MOTOR STARTER AND DISCONNECT SWITCH
⊠	TRANSFORMER
C	ANALOG CLOCK

FIRE ALARM

FACP	FIRE ALARM CONTROL PANEL
FAA	FIRE ALARM ANNUNCIATOR PANEL
FATP	FIRE ALARM TRANSPONDER PANEL
ADC	AUTOMATED DIALER COMMUNICATOR
ANS	ANSUL SYSTEM, FURNISHED BY KITCHEN EQUIPMENT CONTRACTOR. PROVIDE CONNECTION FOR POWER AND FIRE ALARM SYSTEM AS REQUIRED
ZAM	ZONE ADDRESSABLE MODULE
CMR	CONTROL MODULE RELAY
MIM	MONITOR INPUT MODULE
F	FIRE ALARM MANUAL PULL STATION
F WR	FIRE ALARM MANUAL PULL STATION, WEATHER RESISTANT. PULL STATION SHALL BE RATED FOR WET LOCATIONS AND COLD TEMPERATURES
S	FIRE ALARM SYSTEM PHOTO-ELECTRIC SMOKE DETECTOR, CEILING MOUNTED. DETECTOR SHALL BE MOUNTED NO CLOSER THAN 36" TO NEAREST GRILL/REGISTER/DIFFUSER OR CEILING FAN
S ER	FIRE ALARM SYSTEM PHOTO-ELECTRIC SMOKE DETECTOR, CEILING MOUNTED, WITH ELEVATOR RECALL. COORDINATE TIE IN WITH ELEVATOR PROVIDER
D	FIRE ALARM SYSTEM DUCT MOUNTED PHOTO-ELECTRIC SMOKE DETECTOR, PROVIDE REMOTE INDICATOR IN NEAREST ACCESSIBLE LOCATION.
H	FIRE ALARM SYSTEM ADDRESSABLE HEAT DETECTOR, FIXED TEMPERATURE/RATE OF RISE TYPE, CEILING MOUNTED
CO	FIRE ALARM SYSTEM CARBON MONOXIDE DETECTOR, CEILING MOUNTED
F	FIRE ALARM SYSTEM AUDIBLE (HORN), CEILING MOUNTED, RECESSED
F Xcd	FIRE ALARM SYSTEM AUDIBLE/VISUAL (HORN/STROBE), CEILING MOUNTED. SUBSCRIPT INDICATES MINIMUM CANDELA RATING
F	FIRE ALARM SYSTEM SPEAKER, CEILING MOUNTED, RECESSED
F Xcd	FIRE ALARM SYSTEM SPEAKER/STROBE, CEILING MOUNTED, RECESSED. SUBSCRIPT INDICATES MINIMUM CANDELA RATING
F Xcd	FIRE ALARM SYSTEM VISUAL (STROBE) APPLIANCE, CEILING MOUNTED. SUBSCRIPT INDICATES MINIMUM CANDELA RATING
F	FIRE ALARM SYSTEM AUDIBLE (HORN), WALL MOUNTED
F Xcd	FIRE ALARM SYSTEM AUDIBLE/VISUAL (HORN/STROBE), WALL MOUNTED. SUBSCRIPT INDICATES MINIMUM CANDELA RATING
F	FIRE ALARM SYSTEM SPEAKER, WALL MOUNTED
F Xcd	FIRE ALARM SYSTEM SPEAKER/STROBE, WALL MOUNTED. SUBSCRIPT INDICATES MINIMUM CANDELA RATING
F Xcd	FIRE ALARM SYSTEM VISUAL (STROBE) APPLIANCE, WALL MOUNTED. SUBSCRIPT INDICATES MINIMUM CANDELA RATING
TS	SPRINKLER SYSTEM SUPERVISORY VALVE 0 TAMPER SWITCH CONNECTION
FS	SPRINKLER SYSTEM SUPERVISORY VALVE FLOW SWITCH CONNECTION
PS	SPRINKLER SYSTEM PRESSURE SWITCH CONNECTION
LS	SPRINKLER SYSTEM LOW/HIGH AIR PRESSURE SWITCH CONNECTION
F ▼	FIRE FIGHTER'S TELEPHONE JACK
⬢	FIRE ALARM MAGNETIC DOOR HOLD OPEN DEVICE, POWERED THROUGH FIRE ALARM SYSTEM. COORDINATE MOUNTING HEIGHT WITH ASSOCIATED DOOR MOUNTED DEVICE
DM	DAMPER MOTOR CONNECTION
B	SPRINKLER SYSTEM BELL ALARM APPLIANCE, WEATHERPROOF
ARP	AREA OF RESCUE MASTER PANEL
ARS	AREA OF RESCUE REMOTE CALL STATION
BD	PROJECTED BEAM SMOKE DETECTOR TRANSMITTER
BD	PROJECTED BEAM SMOKE DETECTOR REFLECTOR

TELE/DATA

▼ XD XV	WALL MOUNTED TELE/DATA OUTLET, 4"X4"X2 1/4" BOX WITH SINGLE GANG PLASTER RING, WITH 1"C STUBBED ABOVE ACCESSIBLE CEILING AND TERMINATED WITH INSULATED BUSHING. XD INDICATES DATA CABLE COUNT. XV INDICATES VOICE CABLE COUNT
▼ XV	WALL MOUNTED VOICE OUTLET, 4"X4"X2 1/4" BOX WITH SINGLE GANG PLASTER RING, WITH 3/4"C STUBBED ABOVE ACCESSIBLE CEILING AND TERMINATED WITH INSULATED BUSHING. XV INDICATES VOICE CABLE COUNT FROM OUTLET TO PATCH PANEL
▽ XD	WALL MOUNTED DATA OUTLET, 4"X4"X2 1/4" BOX WITH SINGLE GANG PLASTER RING, WITH 3/4"C STUBBED ABOVE ACCESSIBLE CEILING AND TERMINATED WITH INSULATED BUSHING. XD INDICATES DATA CABLE COUNT FROM OUTLET TO PATCH PANEL
WAP ▽	DATA OUTLET FOR WIRELESS ACCESS POINT, PROVIDE 4"X4"X2 1/4"D BOX SECURED IN CEILING OR WALL FOR CONNECTION OF WAP WITH 1"C STUBBED ABOVE ACCESSIBLE CEILING AND TERMINATED WITH INSULATED BUSHING
▼ XD XV ◉	TELE/DATA POKE-THRU. XD INDICATES DATA CABLE COUNT. XV INDICATES VOICE CABLE COUNT
TD ER	TELEPHONE/DATA SYSTEM DISTRIBUTION EQUIPMENT RACK

POWER RISER DIAGRAM

□	DISCONNECT SWITCH
⧄	FUSED DISCONNECT SWITCH
⏚	GROUND
M	MOTOR
⊠	MOTOR STARTER
⊠	MOTOR STARTER DISCONNECT SWITCH
M	METER
VFD	VARIABLE FREQUENCY DRIVE
SPD	SURGE PROTECTIVE DEVICE
•╲•	SWITCH
•⌒•	CIRCUIT BREAKER
▭	FUSE
•╲•▭•	FUSED SWITCH
≪•⌒•≫	DRAW OUT CIRCUIT BREAKER
≪•╲•▭•≫	DRAW OUT FUSED SWITCH
G	GENERATOR
---KK	KIRK KEY
---ST	SHUNT TRIP
---GF	GROUND FAULT INTERRUPTER
△	DELTA
Y	WYE
R	RELAY
⊸	CURRENT TRANSFORMER
•⊣⊢•	LIGHTNING ARRESTER
⧄	BATTERY CONVERTER
⧄	RECTIFIER
⧄	INVERTER
⌒	ENCLOSED CIRCUIT BREAKER
≡	BATTERY
⩘⩘	PAD MOUNTED TRANSFORMER
⩘⩘	TRANSFORMER
⩘⩘	ISOLATION TRANSFORMER
⏚	MCOV LIGHTNING ARRESTER
⌇	GROUNDING RESISTOR
◇	STATIC SWITCH
□	AUTOMATIC TRANSFER SWITCH
□	ISOLATION BYPASS AUTOMATIC TRANSFER SWITCH
PANEL NAME ###A MCB / MLO ###/###V PHASE / WIRE KACI ADDITIONAL INFO	PANELBOARD

ABBREVIATIONS

A	AMPERE
ADM	ADMINISTRATOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CURRENT
AV	AUDIO/VISUAL
BFG	BELOW FINISHED GRADE
C	CONDUIT
CATV	CABLE ANTENNA TELEVISION
CCTV	CLOSED CIRCUIT TELEVISION
CB	CIRCUIT BREAKER
CF	COFFEE MAKER
CH	CHIME
CKT	CIRCUIT
CM	CEILING MOUNTED
CO	CENTER OFF
DM	DEMOLISH
DO	DOOR OPEN
E	EMERGENCY
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EPO	EMERGENCY POWER OFF
EWC	ELECTRIC WATER COOLER
EXP	EXPLOSION PROOF
F	FIRE ALARM
FF	FLUSH FLOOR MOUNTED
FHP	FRACTIONAL HORSE POWER
FL	FLUORESCENT
FLA	FULL LOAD AMPS
FO	FIBER OPTIC
FPC	FIRE PROTECTION CONTRACTOR
FSS	FUSED SAFETY SWITCH
FU	FUSE
G	GROUND FAULT CIRCUIT INTERRUPTER
GC	GENERAL CONTRACTOR
GND	GROUND
HOA	HAND-OFF INTERRUPTER
HP	HORSE POWER
HVAC	HEATING VENTILATING, AND AIR CONDITIONING
IR	INFRARED
IG	ISOLATED GROUND
JB	JUNCTION BOX
K	KEY
KVA	KILO-VOLT AMPERE
KW	KILO-WATT
LTG	LIGHTING
LV	LOW VOLTAGE
LVC	LOW VOLTAGE CONTRACTOR
M	MOTOR
MCA	MINIMUM CIRCUIT AMPS
MC	MECHANICAL CONTRACTOR
MCB	MAIN CIRCUIT BREAKER
ML	MULTI-LINE
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MW	MICROWAVE
N	NURSE CALL
NE	NORMAL / EMERGENCY
NEC	NATIONAL ELECTRICAL CODE
NF	NON-FUSED
NFPA	NATIONAL FIRE PROTECTION AGENCY
NFSS	NON-FUSED SAFETY SWITCH
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NTS	NOT TO SCALE
OC	ON CENTER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
P	POLE
PA	PAGING SYSTEM
PC	PLUMBING CONTRACTOR
PF	POWER FACTOR
PH	PHASE
PL	PILOT LIGHT
PNL	PANEL
RED	RELOCATED EXISTING DEVICE
REF	REFRIGERATOR
REL	RELOCATE
S	SOUND SYSTEM
SE	SERVICE ENTRANCE
SPD	SURGE PROTECTIVE DEVICE
SW	SWITCH
T	TELEPHONE
TBB	TELEPHONE BACKBOARD
TL	TWIST LOCK
TR	TAMPER RESISTANT
TYP	TYPICAL
U	ULTRASONIC
UGC	UNDERGROUND COMMUNICATIONS
UGE	UNDERGROUND ELECTRIC
UF	UNDERGROUND FIBER
UPS	UNINTERRUPTED POWER SUPPLY
USB	UNIVERSAL SERIAL BUS
UT	UNDERGROUND TELEPHONE
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS
WM	WALL MOUNTED
WG	WIRE GUARD
WR	WEATHER RESISTANT
WT	WATER TIGHT
XFMR	TRANSFORMER
XR	EXISTING TO REMAIN
XRN	EXISTING TO BE REPLACED WITH NEW

BASE BID 1:

1. INSTALLATION OF POWER TO NEW BOILERS B-2, B-3, & B-6 WITH ASSOCIATED WIRING AND CONDUIT.
2. INSTALLATION OF POWER TO NEW BOILER FEED PUMPS AND NEW CONDENSATE TRANSFER PUMPS WITH ASSOCIATED WIRING AND CONDUIT.
3. DEMOLITION OF EXISTING BOILER CONTROL PANELS AND INSTALLATION OF POWER TO NEW BOILER CONTROL PANELS.
4. INSTALLATION OF POWER TO NEW ROLLUP GARAGE DOORS TO SERVE NEW BOILERS B-2&3.
5. INSTALLATION OF AN UNITERRUPTIBLE POWER SUPPLY (UPS) TO BACK UP THE MASTER CONTROL PANEL, BOILER CONTROL PANEL, NETWORK COMPUTER SYSTEM.
6. DEMOLITION OF EXISTING MOTOR CONTROL CENTER (MCC) AND EXTENSION OF EXISTING CIRCUITS TO NEW PANELBOARD AND/OR EXISTING MCC THAT IS TO REMAIN.

BASE BID 2:

1. ALL WORK DESCRIBED IN BASE BID 1.
2. DEMOLITION OF EXISTING SUBSTATION SWITCHBOARD AND INSTALLATION OF NEW SUBSTATION SWITCHBOARD, INCLUDING EXTENSION OF EXISTING CIRCUITS PREVIOUSLY FED FROM EXISTING SUBSTATION SWITCHBOARD.
3. DEMOLITION OF EXISTING SUBSTATION TRANSFORMER AND INSTALLATION OF NEW LIQUID FILLED PAD MOUNTED TRANSFRORMER.

BASE BID 3:

1. ALL WORK DESCRIBED IN BASE BID 2.
2. INSTALLATION OF EMERGENCY PORT (FUSED DISCONNECT SWITCH) FOR TEMPORARY BOILER.

BASE BID 4:

1. ALL WORK DESCRIBED IN BASE BID 3.
2. WIRING AND CONNECTION OF NEW CONTROL PANELS WITH HIGH LEVEL ALARM FOR SEWER PUMPS IN BASEMENT.
3. WIRING AND CONNECTION OF NEW VFDS FOR EXSTING BOILER FEED PUMPS.
4. DEMOLITION OF EXISTING FIRE ALARM SYSTEM AND INSTALLATION OF NEW FIRE ALARM SYSTEM.

BASE BID 5:

1. ALL WORK DESCRIBED IN BASE BID 4.
2. DEMOLITION OF POWER TO EXISTING FUEL PUMP ASSEMBLY AND INSTALLATION OF POWER TO NEW FUEL PUMP ASSEMBLY.

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

TIMOTHY C. BERTOLINO
PE-062314

Timothy C Bertolino 10-14-2024
SIGNATURE DATE

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation
Equipment

ELECTRICAL COVER SHEET

DRAWN BY	DATE	SHEET No.
D. BOYER	10-14-2024	E-1
CHECKED BY	SCALE	
T. BERTOLINO	As indicated	

SHEET LIST - ELECTRICAL

SHEET	DESCRIPTION
E-1	ELECTRICAL COVER SHEET
E-2	DEMOLITION PLANS - ELECTRICAL
E-3	PLANS - LIGHTING
E-4	PLANS - POWER & SYSTEMS
E-5	ELECTRICAL SECTIONS
E-6	RISER DIAGRAM - DEMOLITION
E-7	RISER DIAGRAM - NEW
E-8	SCHEDULES

VERIFY SCALE

BAR IS ONE (1) INCH LONG
ON ORIGINAL DRAWING:

0 1

IF BAR IS NOT ONE (1) INCH LONG
ADJUST SCALE ACCORDINGLY.

CONTRACTOR SHALL FIELD VERIFY
ALL DIMENSIONS.
VARIANCE FROM CONTRACT
DOCUMENTS NOT PERMITTED
WITHOUT PROFESSIONAL & BUREAU
OF CONSTRUCTION APPROVAL

NUMBERED NOTES

1. PATCH ALL EXISTING CORE DRILLED HOLES IN EXISTING FLOOR PREVIOUSLY SERVING EXISTING FEEDER CONDUITS.
2. DISCONNECT ALL ASSOCIATED POWER CONNECTIONS TO EXISTING BOILER-1. RENDER ALL CIRCUITS DEAD AND ABANDON IN PLACE.
3. RELOCATE EXISTING PULL BOX TO NEW LOCATION INDICATED ON NEW WORK.
4. DISCONNECT AND REMOVE HORIZONTAL PORTION OF EXISTING EMERGENCY GENERATOR CONDUIT FROM EXISTING PULL BOX LOCATION BACK TO RELOCATED PULL BOX LOCATION, INDICATED ON NEW WORK.
5. RELOCATE EXISTING VERTICAL CONDUIT FROM EXISTING PULL BOX LOCATION TO RELOCATED PULL BOX LOCATION, INDICATED ON NEW WORK.

BASE BID 1:

1. INSTALLATION OF POWER TO NEW BOILERS B-2, B-3, & B-6 WITH ASSOCIATED WIRING AND CONDUIT.
2. INSTALLATION OF POWER TO NEW BOILER FEED PUMPS AND NEW CONDENSATE TRANSFER PUMPS WITH ASSOCIATED WIRING AND CONDUIT.
3. DEMOLITION OF EXISTING BOILER CONTROL PANELS AND INSTALLATION OF POWER TO NEW BOILER CONTROL PANELS.
4. INSTALLATION OF POWER TO NEW ROLLUP GARAGE DOORS TO SERVE NEW BOILERS B-2&3.
5. INSTALLATION OF AN UNITERRUPTIBLE POWER SUPPLY (UPS) TO BACK UP THE MASTER CONTROL PANEL, BOILER CONTROL PANEL, NETWORK COMPUTER SYSTEM.
6. DEMOLITION OF EXISTING MOTOR CONTROL CENTER (MCC) AND EXTENSION OF EXISTING CIRCUITS TO NEW PANELBOARD AND/OR EXISTING MCC THAT IS TO REMAIN.

BASE BID 2:

1. ALL WORK DESCRIBED IN BASE BID 1.
2. DEMOLITION OF EXISTING SUBSTATION SWITCHBOARD AND INSTALLATION OF NEW SUBSTATION SWITCHBOARD, INCLUDING EXTENSION OF EXISTING CIRCUITS PREVIOUSLY FED FROM EXISTING SUBSTATION SWITCHBOARD.
3. DEMOLITION OF EXISTING SUBSTATION TRANSFORMER AND INSTALLATION OF NEW LIQUID FILLED PAD MOUNTED TRANSFRORMER.

BASE BID 3:

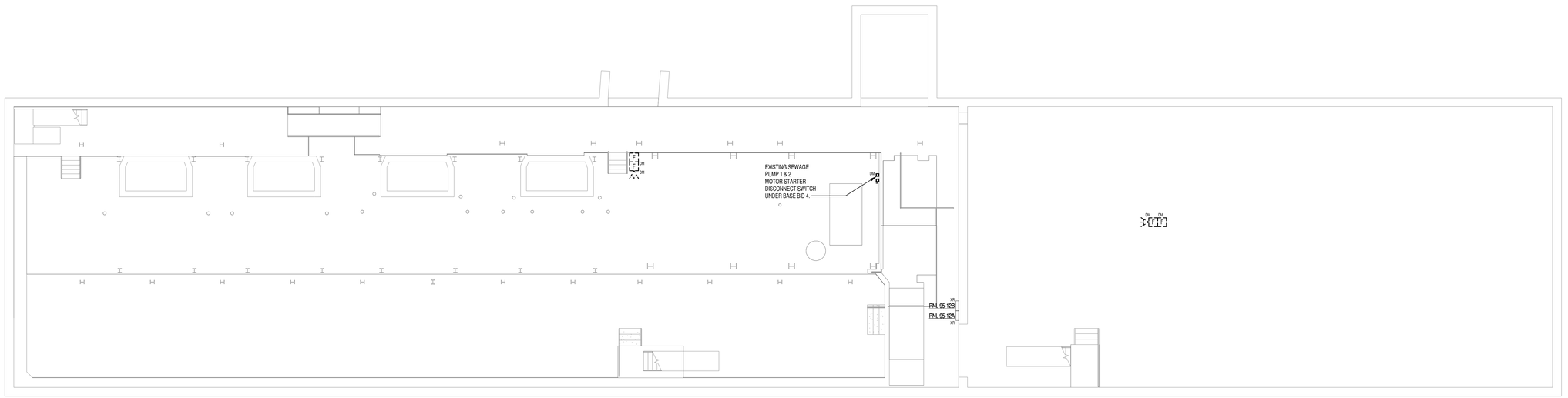
1. ALL WORK DESCRIBED IN BASE BID 2.
2. INSTALLATION OF EMERGENCY PORT (FUSED DISCONNECT SWITCH) FOR TEMPORARY BOILER.

BASE BID 4:

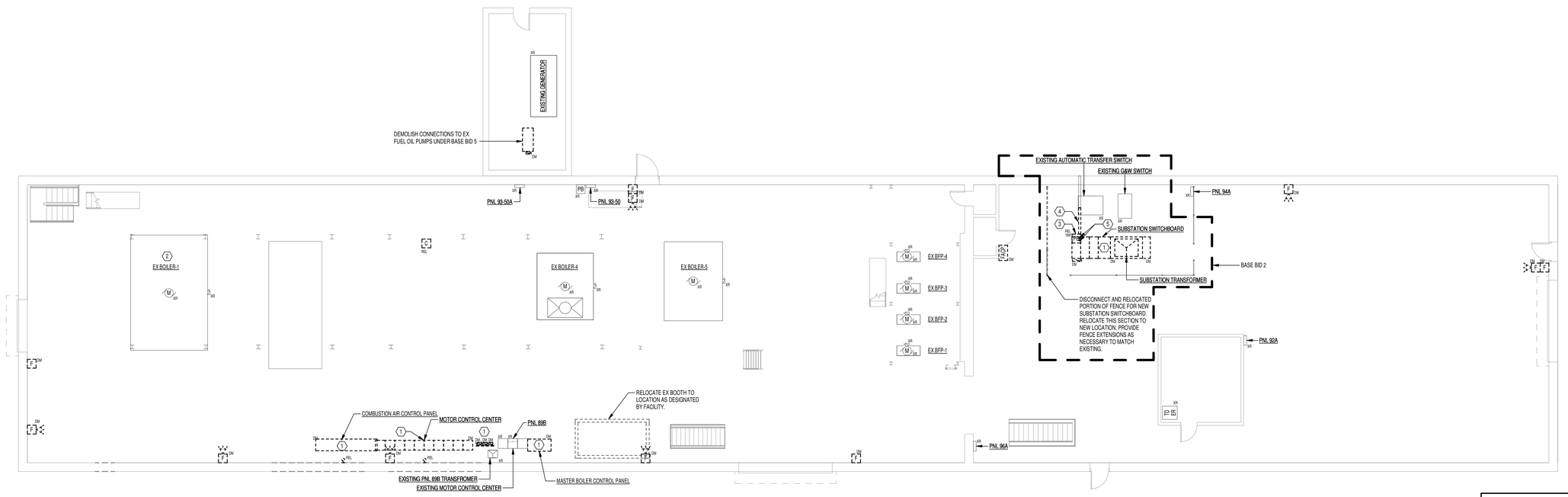
1. ALL WORK DESCRIBED IN BASE BID 3.
2. WIRING AND CONNECTION OF NEW CONTROL PANELS WITH HIGH LEVEL ALARM FOR SEWER PUMPS IN BASEMENT.
3. WIRING AND CONNECTION OF NEW VFDS FOR EXISTING BOILER FEED PUMPS.
4. DEMOLITION OF EXISTING FIRE ALARM SYSTEM AND INSTALLATION OF NEW FIRE ALARM SYSTEM.

BASE BID 5:

1. ALL WORK DESCRIBED IN BASE BID 4.
2. DEMOLITION OF POWER TO EXISTING FUEL PUMP ASSEMBLY AND INSTALLATION OF POWER TO NEW FUEL PUMP ASSEMBLY.



1 E-2 BASEMENT DEMOLITION PLAN - ELECTRICAL
1/8" = 1'-0"



2 E-2 LEVEL 1 DEMOLITION PLAN - ELECTRICAL
1/8" = 1'-0"

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
TIMOTHY C. BERTOLINO
ENGINEER
PE-060514
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SIGNATURE 10-14-2024 DATE

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation Equipment

DEMOLITION PLANS - ELECTRICAL

VERIFY SCALE

BAR IS ONE (1) INCH LONG ON ORIGINAL DRAWING:
0 1
IF BAR IS NOT ONE (1) INCH LONG ADJUST SCALE ACCORDINGLY.

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. VARIANCE FROM CONTRACT DOCUMENTS NOT PERMITTED WITHOUT PROFESSIONAL & BUREAU OF CONSTRUCTION APPROVAL.

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D. BOYER	10-14-2024	E-2
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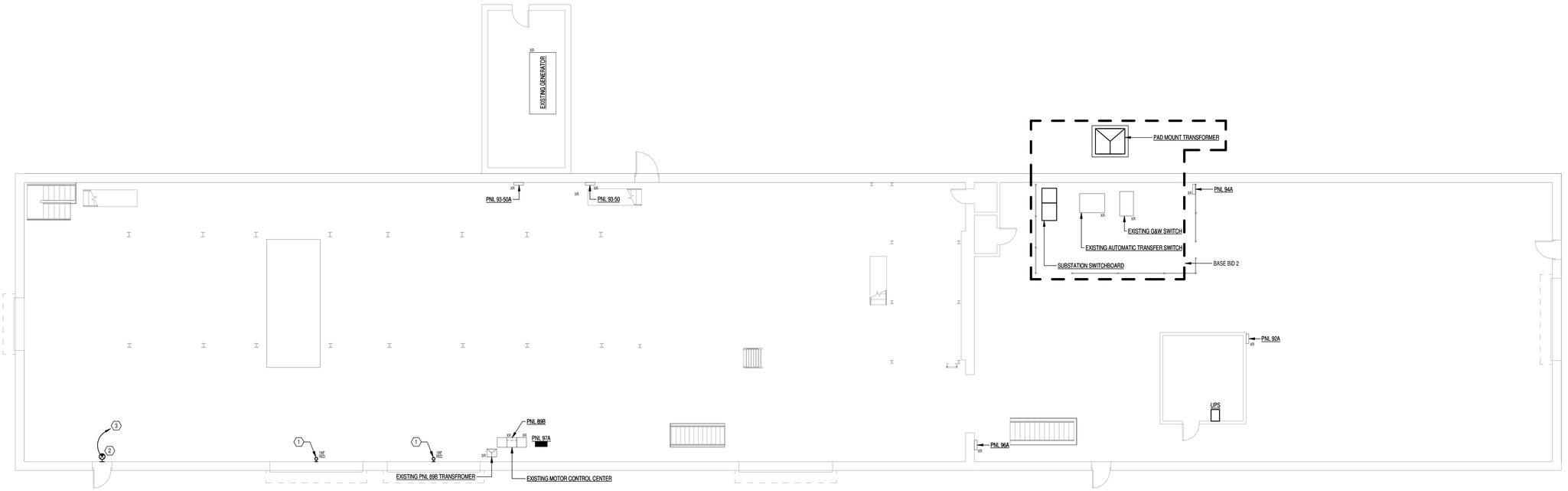

1 / E-3 LEVEL 1 PLAN - LIGHTING
1/8" = 1'-0"

NUMBERED NOTES

1. RELOCATE EXISTING WALL MOUNTED LIGHT FIXTURE TO ABOVE NEW GARAGE DOOR. DISCONNECT, REMOVE, AND PROTECT DURING DEMOLITION. REINSTALL EXISTING FIXTURE 1' ABOVE NEW GARAGE DOOR. PROVIDE CONDUCTOR AND CONDUIT EXTENSIONS AS NECESSARY FOR RELOCATION.
2. PROVIDE NEW EXIT SIGN WITH DUAL EMERGENCY HEADS MOUNTED ABOVE NEW EXTERIOR DOOR. NEW EXIT SIGN WITH DUAL EMERGENCY HEADS TO MATCH EXISTING EXIT SIGNS DUAL EMERGENCY HEADS. EXIT SIGN WITH DUAL EMERGENCY HEADS TO MATCH FINISH (WHITE) AND LETTERING FINISH (RED).
3. CIRCUIT INTO NEAREST EXIT SIGN 120V CIRCUIT. PROVIDE CONDUCTOR AND CONDUIT EXTENSIONS AS NECESSARY TO TIE INTO EXISTING CIRCUIT.

BASE BID 1:

1. INSTALLATION OF POWER TO NEW BOILERS B-2, B-3, & B-6 WITH ASSOCIATED WIRING AND CONDUIT.
2. INSTALLATION OF POWER TO NEW BOILER FEED PUMPS AND NEW CONDENSATE TRANSFER PUMPS WITH ASSOCIATED WIRING AND CONDUIT.
3. DEMOLITION OF EXISTING BOILER CONTROL PANELS AND INSTALLATION OF POWER TO NEW BOILER CONTROL PANELS.
4. INSTALLATION OF POWER TO NEW ROLLUP GARAGE DOORS TO SERVE NEW BOILERS B-2&3.
5. INSTALLATION OF AN UNTERRUPTIBLE POWER SUPPLY (UPS) TO BACK UP THE MASTER CONTROL PANEL, BOILER CONTROL PANEL, NETWORK COMPUTER SYSTEM.
6. DEMOLITION OF EXISTING MOTOR CONTROL CENTER (MCC) AND EXTENSION OF EXISTING CIRCUITS TO NEW PANELBOARD AND/OR EXISTING MCC THAT IS TO REMAIN.

BASE BID 2:

1. ALL WORK DESCRIBED IN BASE BID 1.
2. DEMOLITION OF EXISTING SUBSTATION SWITCHBOARD AND INSTALLATION OF NEW SUBSTATION SWITCHBOARD, INCLUDING EXTENSION OF EXISTING CIRCUITS PREVIOUSLY FED FROM EXISTING SUBSTATION SWITCHBOARD.
3. DEMOLITION OF EXISTING SUBSTATION TRANSFORMER AND INSTALLATION OF NEW LIQUID FILLED PAD MOUNTED TRANSFRORMER.

BASE BID 3:

1. ALL WORK DESCRIBED IN BASE BID 2.
2. INSTALLATION OF EMERGENCY PORT (FUSED DISCONNECT SWITCH) FOR TEMPORARY BOILER.

BASE BID 4:

1. ALL WORK DESCRIBED IN BASE BID 3.
2. WIRING AND CONNECTION OF NEW CONTROL PANELS WITH HIGH LEVEL ALARM FOR SEWER PUMPS IN BASEMENT.
3. WIRING AND CONNECTION OF NEW VFDS FOR EXSTING BOILER FEED PUMPS.
4. DEMOLITION OF EXISTING FIRE ALARM SYSTEM AND INSTALLATION OF NEW FIRE ALARM SYSTEM.

BASE BID 5:

1. ALL WORK DESCRIBED IN BASE BID 4.
2. DEMOLITION OF POWER TO EXISTING FUEL PUMP ASSEMBLY AND INSTALLATION OF POWER TO NEW FUEL PUMP ASSEMBLY.

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — TIMOTHY C. BERTOLINO — ENGINEER — PE-060514 — PENNSYLVANIA

SIGNATURE 10-14-2024 DATE

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation Equipment

PLANS - LIGHTING

VERIFY SCALE

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T. BERTOLINO	As indicated	

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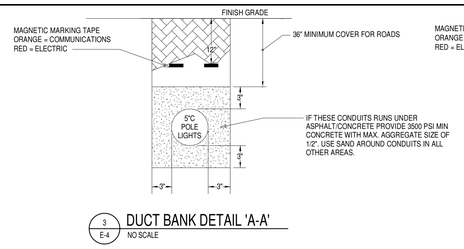
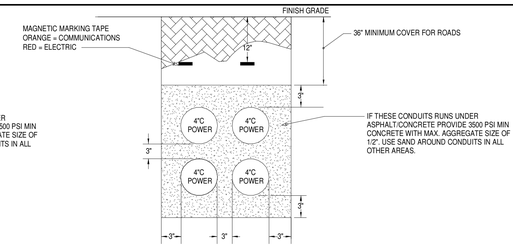
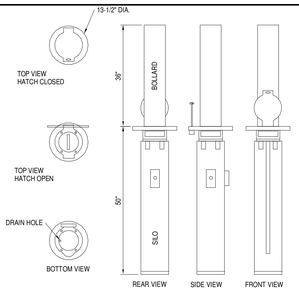


3 E-4 DUCT BANK DETAIL 'A-A'
NO SCALE



4 E-4 DUCT BANK DETAIL 'B-B'
NO SCALE



5 E-4 REMOVABLE CONCRETE BOLLARD DETAIL
NO SCALE

NUMBERED NOTES

1. CONNECT TO EXISTING CIRCUIT PREVIOUSLY SERVING EXISTING FIRE ALARM CONTROL PANEL. PROVIDE CONDUCTOR AND CONDUIT EXTENSIONS AS NECESSARY.
2. PROVIDE ALL NECESSARY MOUNTING HARDWARE INCLUDING HOUSE KEEPING PAD, UNISTRUT, ETC FOR MOUNTING OF NEW 1200A DISTRIBUTION PANELBOARD '97A' UNDER BASE BID 1. PROVIDE UNISTRUT FOR MOUNTING OF NEW 600A PANELBOARD '97A' UNDER BASE BID 2.
3. PROVIDE 3000VA UPS. PROVIDE RACK FOR MOUNTING OF UPS. UPS SHALL HAVE A MINIMUM RUN TIME OF 15 MINUTES. PROVIDE L5-30P RECEPTACLE FOR INPUT CONNECTION TO UPS.
4. PROVIDE PROTECTIVE BOLLARDS. REFER TO BOLLARD DETAIL ON THIS SHEET FOR MORE INFORMATION.
5. RELOCATED EXISTING PULL BOX. PROVIDE ALL NECESSARY MOUNTING HARDWARE.
6. RELOCATED EXISTING VERTICAL CONDUIT FROM RELOCATED PULL BOX LOCATION TO EXISTING AUTOMATIC TRANSFER SWITCH.
7. DISCONNECT, REMOVE, AND PROTECT EXISTING CLOCK DURING DEMOLITION. REINSTALL EXISTING CLOCK AT NEW LOCATION ONCE NEW BOILERS HAVE BEEN SET. PROVIDE CONDUCTOR AND CONDUIT EXTENSIONS AS NECESSARY FOR RELOCATION. COORDINATE FINAL MOUNTING LOCATION WITH CLIENT AGENCY.
8. CONNECT TO EXISTING CIRCUIT PREVIOUSLY SERVING EXISTING FUEL OIL PUMPS. PROVIDE CONDUCTOR AND CONDUIT EXTENSIONS AS NECESSARY.
9. UNDER BASE BID 1, PANELBOARD '97A' SHALL BE 1200A DISTRIBUTION PANELBOARD. UNDER BASE BID 2, PANELBOARD '97A' SHALL BE 600A DISTRIBUTION PANELBOARD. REFER TO RISER DIAGRAMS FOR MORE INFORMATION.

BASE BID 1:

1. INSTALLATION OF POWER TO NEW BOILERS B-2, B-3, & B-6 WITH ASSOCIATED WIRING AND CONDUIT.
2. INSTALLATION OF POWER TO NEW BOILER FEED PUMPS AND NEW CONDENSATE TRANSFER PUMPS WITH ASSOCIATED WIRING AND CONDUIT.
3. DEMOLITION OF EXISTING BOILER CONTROL PANELS AND INSTALLATION OF POWER TO NEW BOILER CONTROL PANELS.
4. INSTALLATION OF POWER TO NEW ROLLUP GARAGE DOORS TO SERVE NEW BOILERS B-2&3.
5. INSTALLATION OF AN UNITERRUPTIBLE POWER SUPPLY (UPS) TO BACK UP THE MASTER CONTROL PANEL, BOILER CONTROL PANEL, NETWORK COMPUTER SYSTEM.
6. DEMOLITION OF EXISTING MOTOR CONTROL CENTER (MCC) AND EXTENSION OF EXISTING CIRCUITS TO NEW PANELBOARD AND/OR EXISTING MCC THAT IS TO REMAIN.

BASE BID 2:

1. ALL WORK DESCRIBED IN BASE BID 1.
2. DEMOLITION OF EXISTING SUBSTATION SWITCHBOARD AND INSTALLATION OF NEW SUBSTATION SWITCHBOARD, INCLUDING EXTENSION OF EXISTING CIRCUITS PREVIOUSLY FED FROM EXISTING SUBSTATION SWITCHBOARD.
3. DEMOLITION OF EXISTING SUBSTATION TRANSFORMER AND INSTALLATION OF NEW LIQUID FILLED PAD MOUNTED TRANSFRORMER.

BASE BID 3:

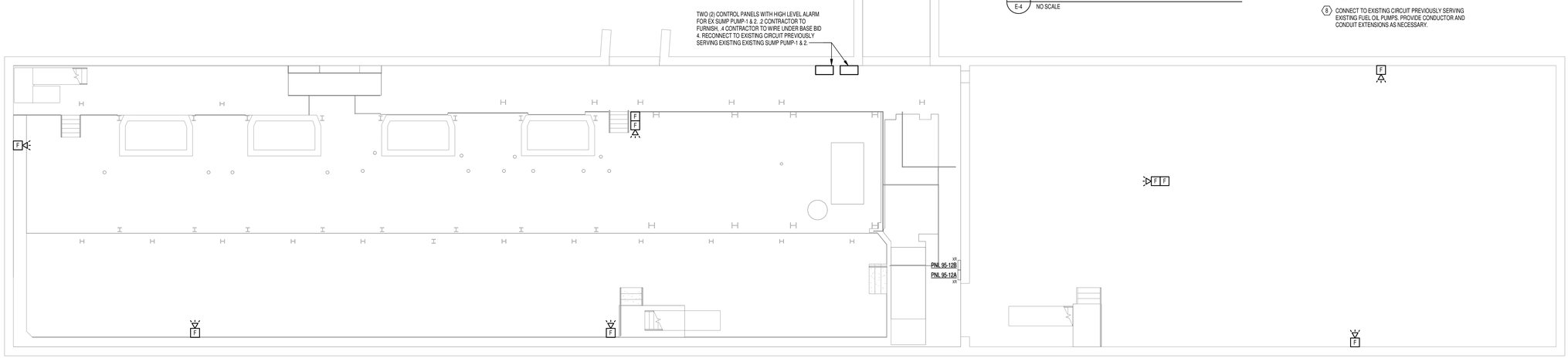
1. ALL WORK DESCRIBED IN BASE BID 2.
2. INSTALLATION OF EMERGENCY PORT (FUSED DISCONNECT SWITCH) FOR TEMPORARY BOILER.

BASE BID 4:

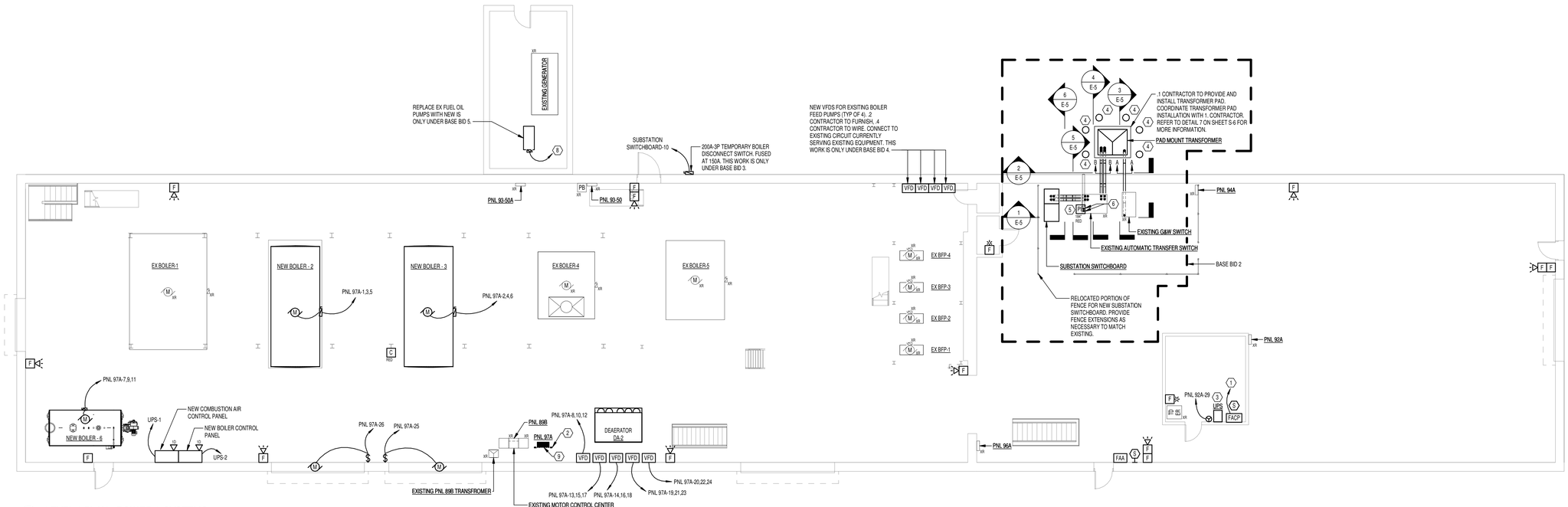
1. ALL WORK DESCRIBED IN BASE BID 3.
2. WIRING AND CONNECTION OF NEW CONTROL PANELS WITH HIGH LEVEL ALARM FOR SEWER PUMPS IN BASEMENT.
3. WIRING AND CONNECTION OF NEW VFDS FOR EXISTING BOILER FEED PUMPS.
4. DEMOLITION OF EXISTING FIRE ALARM SYSTEM AND INSTALLATION OF NEW FIRE ALARM SYSTEM.

BASE BID 5:

1. ALL WORK DESCRIBED IN BASE BID 4.
2. DEMOLITION OF POWER TO EXISTING FUEL PUMP ASSEMBLY AND INSTALLATION OF POWER TO NEW FUEL PUMP ASSEMBLY.



1 E-4 BASEMENT PLAN - POWER & SYSTEMS
1/8" = 1'-0"



2 E-4 LEVEL 1 PLAN - POWER & SYSTEMS
1/8" = 1'-0"

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
TIMOTHY C. BERTOLINO
ENGINEER
PE-060514
PROFESSIONAL
SIGNATURE 10-14-2024 DATE

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232 Horner Street
Johnstown, PA 15902
ph: (814) 536-1651, fax: (814) 536-5732

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

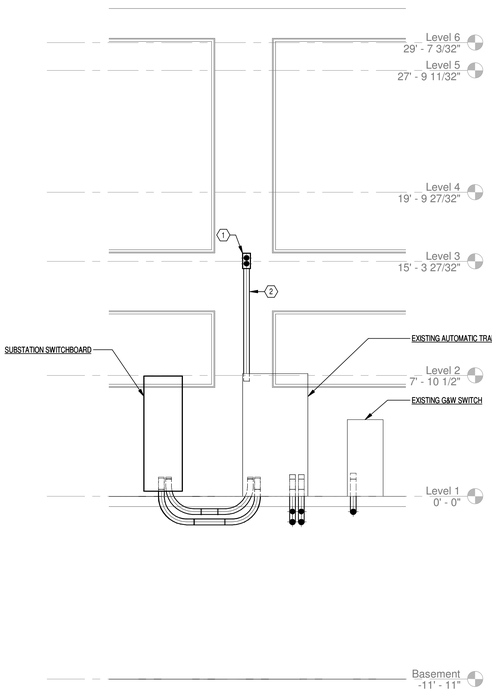
Danville State Hospital
Replace Steam Generation Equipment

PLANS - POWER & SYSTEMS

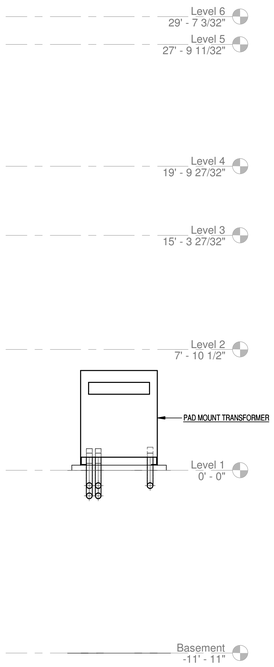
VERIFY SCALE
BAR IS ONE (1) INCH LONG ON ORIGINAL DRAWING:
0 1
IF BAR IS NOT ONE (1) INCH LONG ADJUST SCALE ACCORDINGLY.

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. VARIANCE FROM CONTRACT DOCUMENTS NOT PERMITTED WITHOUT PROFESSIONAL & BUREAU OF CONSTRUCTION APPROVAL.

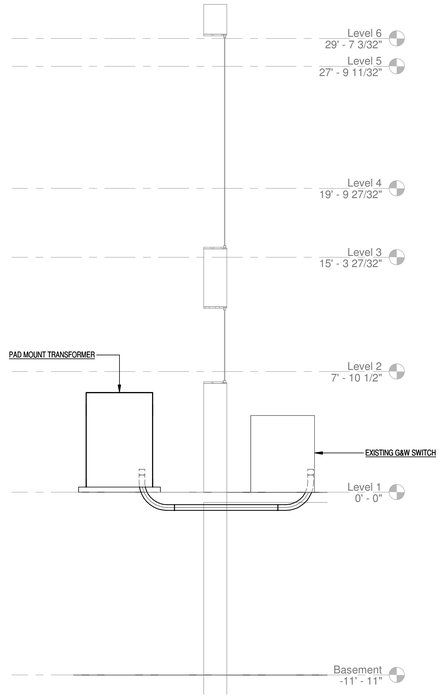
DRAWN BY	DATE	SHEET No.
D. BOYER	10-14-2024	E-4
CHECKED BY	SCALE	
T. BERTOLINO	As indicated	



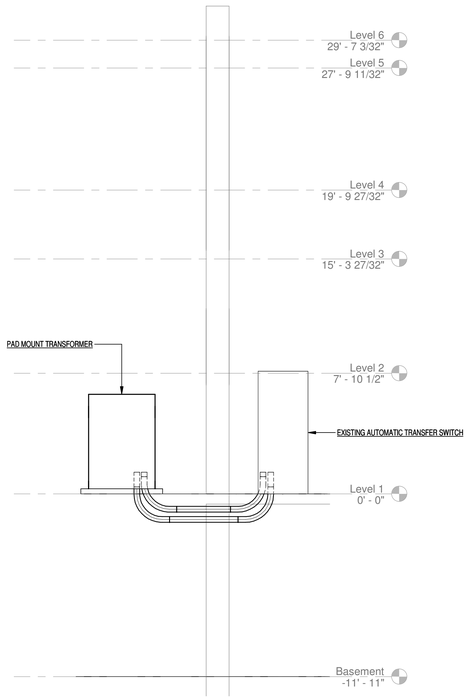
1 E-5 NORTH VIEW CONDUIT NEW CONDUIT ROUTING
1/4" = 1'-0"



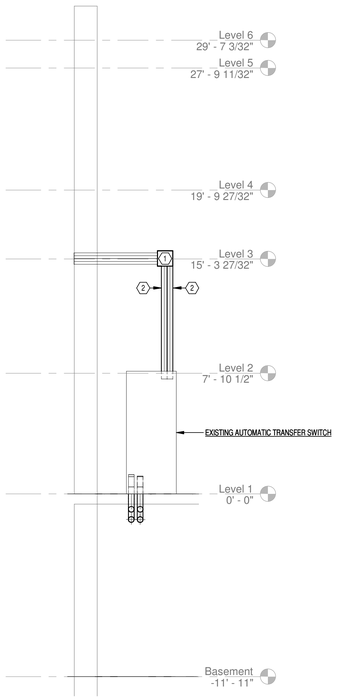
2 E-5 NORTH VIEW TRANSFORMER CONDUIT ROUTING
1/4" = 1'-0"



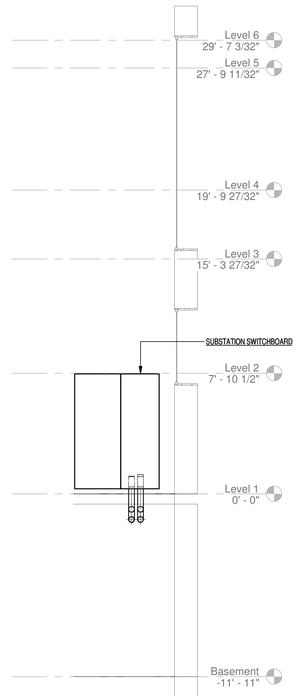
3 E-5 EAST VIEW TRANSFORMER TO G&W SWITCH CONDUIT ROUTING
1/4" = 1'-0"



4 E-5 EAST VIEW TRANSFORMER TO ATS CONDUIT ROUTING
1/4" = 1'-0"



5 E-5 EAST VIEW ATS TO SWITCHBOARD CONDUIT ROUTING
1/4" = 1'-0"



6 E-5 WEST VIEW SWITCHBOARD TO ATS CONDUIT ROUTING
1/4" = 1'-0"

NUMBERED NOTES

1. RELOCATED EXISTING PULL BOX. PROVIDE ALL NECESSARY MOUNTING HARDWARE.
2. RELOCATED EXISTING VERTICAL CONDUIT FROM RELOCATED PULL BOX LOCATION TO EXISTING AUTOMATIC TRANSFER SWITCH.

BASE BID 1:

1. INSTALLATION OF POWER TO NEW BOILERS B-2, B-3, & B-6 WITH ASSOCIATED WIRING AND CONDUIT.
2. INSTALLATION OF POWER TO NEW BOILER FEED PUMPS AND NEW CONDENSATE TRANSFER PUMPS WITH ASSOCIATED WIRING AND CONDUIT.
3. DEMOLITION OF EXISTING BOILER CONTROL PANELS AND INSTALLATION OF POWER TO NEW BOILER CONTROL PANELS.
4. INSTALLATION OF POWER TO NEW ROLLUP GARAGE DOORS TO SERVE NEW BOILERS B-2&3.
5. INSTALLATION OF AN UNINTERRUPTIBLE POWER SUPPLY (UPS) TO BACK UP THE MASTER CONTROL PANEL, BOILER CONTROL PANEL, NETWORK COMPUTER SYSTEM.
6. DEMOLITION OF EXISTING MOTOR CONTROL CENTER (MCC) AND EXTENSION OF EXISTING CIRCUITS TO NEW PANELBOARD AND/OR EXISTING MCC THAT IS TO REMAIN.

BASE BID 2:

1. ALL WORK DESCRIBED IN BASE BID 1.
2. DEMOLITION OF EXISTING SUBSTATION SWITCHBOARD AND INSTALLATION OF NEW SUBSTATION SWITCHBOARD, INCLUDING EXTENSION OF EXISTING CIRCUITS PREVIOUSLY FED FROM EXISTING SUBSTATION SWITCHBOARD.
3. DEMOLITION OF EXISTING SUBSTATION TRANSFORMER AND INSTALLATION OF NEW LIQUID FILLED PAD MOUNTED TRANSFRORMER.

BASE BID 3:

1. ALL WORK DESCRIBED IN BASE BID 2.
2. INSTALLATION OF EMERGENCY PORT (FUSED DISCONNECT SWITCH) FOR TEMPORARY BOILER.

BASE BID 4:

1. ALL WORK DESCRIBED IN BASE BID 3.
2. WIRING AND CONNECTION OF NEW CONTROL PANELS WITH HIGH LEVEL ALARM FOR SEWER PUMPS IN BASEMENT.
3. WIRING AND CONNECTION OF NEW VFDS FOR EXISTING BOILER FEED PUMPS.
4. DEMOLITION OF EXISTING FIRE ALARM SYSTEM AND INSTALLATION OF NEW FIRE ALARM SYSTEM.

BASE BID 5:

1. ALL WORK DESCRIBED IN BASE BID 4.
2. DEMOLITION OF POWER TO EXISTING FUEL PUMP ASSEMBLY AND INSTALLATION OF POWER TO NEW FUEL PUMP ASSEMBLY.

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
REGISTERED
PROFESSIONAL
TIMOTHY C. BERTOLINO
ENGINEER
PE-060514
COMMONWEALTH OF PENNSYLVANIA

SIGNATURE 10-14-2024 DATE

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DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation Equipment

ELECTRICAL SECTIONS

VERIFY SCALE

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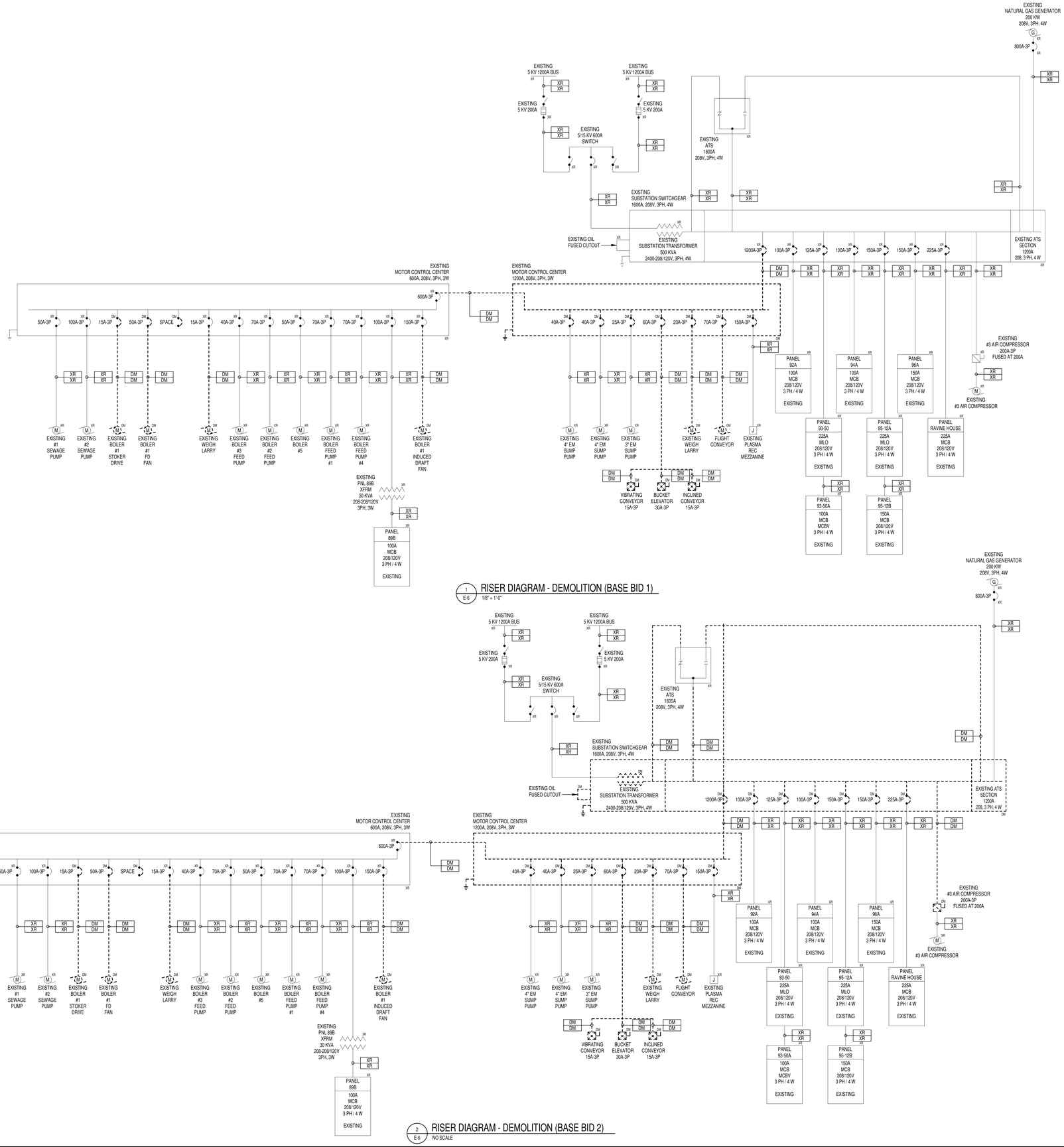
DRAWN BY	DATE	SHEET No.
D. BOYER	10-14-2024	E-5
CHECKED BY	SCALE	
T. BERTOLINO	NO SCALE	

10/14/2024 2:13:21 PM



1 / E-6 RISER DIAGRAM - DEMOLITION (BASE BID 1)
1/8" = 1'-0"

2 / E-6 RISER DIAGRAM - DEMOLITION (BASE BID 2)
NO SCALE

BASE BID 1:

1. INSTALLATION OF POWER TO NEW BOILERS B-2, B-3, & B-6 WITH ASSOCIATED WIRING AND CONDUIT.
2. INSTALLATION OF POWER TO NEW BOILER FEED PUMPS AND NEW CONDENSATE TRANSFER PUMPS WITH ASSOCIATED WIRING AND CONDUIT.
3. DEMOLITION OF EXISTING BOILER CONTROL PANELS AND INSTALLATION OF POWER TO NEW BOILER CONTROL PANELS.
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BASE BID 2:

1. ALL WORK DESCRIBED IN BASE BID 1.
2. DEMOLITION OF EXISTING SUBSTATION SWITCHBOARD AND INSTALLATION OF NEW SUBSTATION SWITCHBOARD, INCLUDING EXTENSION OF EXISTING CIRCUITS PREVIOUSLY FED FROM EXISTING SUBSTATION SWITCHBOARD.
3. DEMOLITION OF EXISTING SUBSTATION TRANSFORMER AND INSTALLATION OF NEW LIQUID FILLED PAD MOUNTED TRANSFRORMER.

BASE BID 3:

1. ALL WORK DESCRIBED IN BASE BID 2.
2. INSTALLATION OF EMERGENCY PORT (FUSED DISCONNECT SWITCH) FOR TEMPORARY BOILER.

BASE BID 4:

1. ALL WORK DESCRIBED IN BASE BID 3.
2. WIRING AND CONNECTION OF NEW CONTROL PANELS WITH HIGH LEVEL ALARM FOR SEWER PUMPS IN BASEMENT.
3. WIRING AND CONNECTION OF NEW VFDS FOR EXSTING BOILER FEED PUMPS.
4. DEMOLITION OF EXISTING FIRE ALARM SYSTEM AND INSTALLATION OF NEW FIRE ALARM SYSTEM.

BASE BID 5:

1. ALL WORK DESCRIBED IN BASE BID 4.
2. DEMOLITION OF POWER TO EXISTING FUEL PUMP ASSEMBLY AND INSTALLATION OF POWER TO NEW FUEL PUMP ASSEMBLY.

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF GENERAL SERVICES
TIMOTHY C. BERTOLINO
ENGINEER
PE-062014
PROFESSIONAL
REGISTERED
COMMONWEALTH OF PENNSYLVANIA

SIGNATURE 10-14-2024 DATE

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DEPARTMENT OF GENERAL SERVICES
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DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation Equipment

RISER DIAGRAM - DEMOLITION

DRAWN BY	DATE	SHEET No.
D. BOYER	10-14-2024	E-6
CHECKED BY	SCALE	
T. BERTOLINO	As indicated	

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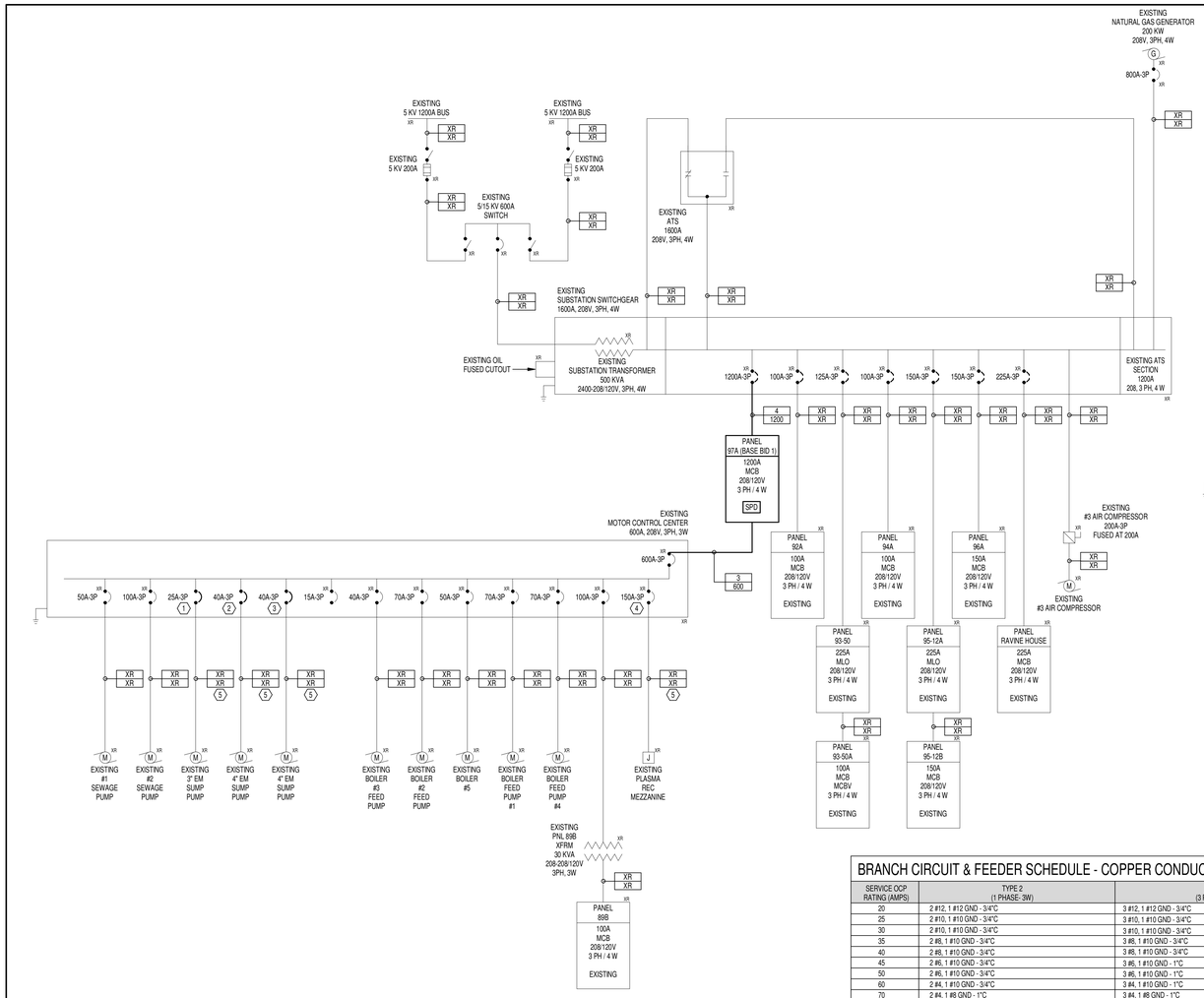

1 E-7 RISER DIAGRAM - NEW (BASE BID 1)
1/8" = 1'-0"

ELECTRICAL CALCULATIONS:

LOAD	AMPERAGE (A)	WATTAGE (kVA)
EXISTING BOILER PLANT (NEC 220.87)	162.4	58.5
EXISTING BOILER #4	40.0	14.4
EXISTING BOILER FEEDWATER PUMP	30.0	10.8
NEW BOILER PLANT LOAD	325.0	117.0

NEC 220.87

(EXISTING BOILER PLANT LOAD * 125%) + (EXISTING BOILER #4 * 125%) + (EXISTING BOILER FEEDWATER PUMP * 125%) + NEW BOILER PLANT LOAD = GENERATOR/SERVICE FEEDER SIZE

(162.4 A * 125%) + (40.0 A * 125%) + (30.0 A * 125%) + 325.0 A = 615.5 A (221.5 kVA)

GENERATOR FEEDER SIZE IS 2 SETS OF #350 KCMIL. AMPACITY OF FEEDER (2 SETS OF #350 KCMIL) = 620.0 A.

PER NEC 220.87, THE MAXIMUM DEMAND AT 125 PERCENT PLUS THE NEW LOAD DOES NOT EXCEED THE AMPACITY OF THE FEEDER OR RATING OF THE SERVICE. (615.5 A < 620.0 A)

BRANCH CIRCUIT & FEEDER SCHEDULE - COPPER CONDUCTORS

SERVICE OCP RATING (AMPS)	TYPE 2 (1 PHASE- 3W)	TYPE 3 (3 PHASE - 3W)	TYPE 4 (3 PHASE - 4W)
20	2 #12, 1 #12 GND - 3/4"C	3 #12, 1 #12 GND - 3/4"C	4 #12, 1 #12 GND - 3/4"C
25	2 #10, 1 #10 GND - 3/4"C	3 #10, 1 #10 GND - 3/4"C	4 #10, 1 #10 GND - 3/4"C
30	2 #10, 1 #10 GND - 3/4"C	3 #10, 1 #10 GND - 3/4"C	4 #10, 1 #10 GND - 3/4"C
35	2 #8, 1 #10 GND - 3/4"C	3 #8, 1 #10 GND - 3/4"C	4 #8, 1 #10 GND - 1"C
40	2 #8, 1 #10 GND - 3/4"C	3 #8, 1 #10 GND - 3/4"C	4 #8, 1 #10 GND - 1"C
45	2 #6, 1 #10 GND - 3/4"C	3 #6, 1 #10 GND - 1"C	4 #6, 1 #10 GND - 1"C
50	2 #6, 1 #10 GND - 3/4"C	3 #6, 1 #10 GND - 1"C	4 #6, 1 #10 GND - 1"C
60	2 #4, 1 #10 GND - 1"C	3 #4, 1 #10 GND - 1"C	4 #4, 1 #10 GND - 1 1/4"C
70	2 #4, 1 #8 GND - 1"C	3 #4, 1 #8 GND - 1"C	4 #4, 1 #8 GND - 1 1/4"C
80	2 #3, 1 #8 GND - 1"C	3 #3, 1 #8 GND - 1 1/4"C	4 #3, 1 #8 GND - 1 1/4"C
90	2 #2, 1 #8 GND - 1"C	3 #2, 1 #8 GND - 1 1/4"C	4 #2, 1 #8 GND - 1 1/2"C
100	2 #1, 1 #8 GND - 1 1/4"C	3 #1, 1 #8 GND - 1 1/4"C	4 #1, 1 #8 GND - 1 1/2"C
110	2 #1, 1 #6 GND - 1 1/4"C	3 #1, 1 #6 GND - 1 1/4"C	4 #1, 1 #6 GND - 1 1/2"C
125	2 #1, 1 #6 GND - 1 1/4"C	3 #1, 1 #6 GND - 1 1/4"C	4 #1, 1 #6 GND - 1 1/2"C
150	2 #1/0, 1 #6 GND - 1 1/4"C	3 #1/0, 1 #6 GND - 1 1/2"C	4 #1/0, 1 #6 GND - 2"C
175	2 #2/0, 1 #6 GND - 1 1/2"C	3 #2/0, 1 #6 GND - 2"C	4 #2/0, 1 #6 GND - 2"C
200	2 #3/0, 1 #6 GND - 1 1/2"C	3 #3/0, 1 #6 GND - 2"C	4 #3/0, 1 #6 GND - 2"C
225	2 #4/0, 1 #4 GND - 2"C	3 #4/0, 1 #4 GND - 2"C	4 #4/0, 1 #4 GND - 2 1/2"C
250	2-250 KCMIL, 1 #4 GND - 2"C	3-250 KCMIL, 1 #4 GND - 2 1/2"C	4-250 KCMIL, 1 #4 GND - 2 1/2"C
300	2-350 KCMIL, 1 #4 GND - 2 1/2"C	3-350 KCMIL, 1 #4 GND - 3"C	4-350 KCMIL, 1 #4 GND - 3"C
350	2-500 KCMIL, 1 #3 GND - 3"C	3-500 KCMIL, 1 #3 GND - 3"C	4-500 KCMIL, 1 #3 GND - 3 1/2"C
400	2-600 KCMIL, 1 #3 GND - 3"C	3-600 KCMIL, 1 #3 GND - 3"C	3-600 KCMIL, 1 #3 GND - 4"C
450	2 SETS EACH: 2 #4/0, 1 #2 GND - 2"C	2 SETS EACH: 3 #4/0, 1 #2 GND - 2"C	2 SETS EACH: 4 #4/0, 1 #2 GND - 2 1/2"C
500	2 SETS EACH: 2-250 KCMIL, 1 #2 GND - 2"C	2 SETS EACH: 3-250 KCMIL, 1 #2 GND - 2 1/2"C	2 SETS EACH: 4-250 KCMIL, 1 #2 GND - 2 1/2"C
600	2 SETS EACH: 2-350 KCMIL, 1 #1 GND - 3"C	2 SETS EACH: 3-350 KCMIL, 1 #1 GND - 3"C	2 SETS EACH: 4-350 KCMIL, 1 #1 GND - 3 1/2"C
700	2 SETS EACH: 2-500 KCMIL, 1 #1/0 GND - 3"C	2 SETS EACH: 3-500 KCMIL, 1 #1/0 GND - 3"C	2 SETS EACH: 4-500 KCMIL, 1 #1/0 GND - 3 1/2"C
800	2 SETS EACH: 2-600 KCMIL, 1 #1/0 GND - 3"C	2 SETS EACH: 3-600 KCMIL, 1 #1/0 GND - 3 1/2"C	2 SETS EACH: 4-600 KCMIL, 1 #1/0 GND - 4"C
1000	3 SETS EACH: 2-500 KCMIL, 1 #2/0 GND - 3"C	3 SETS EACH: 3-500 KCMIL, 1 #2/0 GND - 3"C	3 SETS EACH: 4-500 KCMIL, 1 #2/0 GND - 3 1/2"C
1200	3 SETS EACH: 2-600 KCMIL, 1 #3/0 GND - 3"C	3 SETS EACH: 3-600 KCMIL, 1 #3/0 GND - 3 1/2"C	3 SETS EACH: 4-600 KCMIL, 1 #3/0 GND - 4"C
1600	4 SETS EACH: 2-600 KCMIL, 1 #4/0 GND - 3"C	4 SETS EACH: 3-600 KCMIL, 1 #4/0 GND - 3 1/2"C	4 SETS EACH: 4-600 KCMIL, 1 #4/0 GND - 4"C
2000	5 SETS EACH: 2-600 KCMIL, 1-250 KCMIL GND - 3"C	5 SETS EACH: 3-600 KCMIL, 1-250 KCMIL GND - 3 1/2"C	5 SETS EACH: 4-600 KCMIL, 1-250 KCMIL GND - 4"C
2500	6 SETS EACH: 2-600 KCMIL, 1-350 KCMIL GND - 3"C	6 SETS EACH: 3-600 KCMIL, 1-350 KCMIL GND - 3 1/2"C	6 SETS EACH: 4-600 KCMIL, 1-350 KCMIL GND - 4"C
3000	8 SETS EACH: 2-500 KCMIL, 1-500 KCMIL GND - 3"C	8 SETS EACH: 3-500 KCMIL, 1-500 KCMIL GND - 3"C	8 SETS EACH: 4-500 KCMIL, 1-500 KCMIL GND - 4"C
3500	9 SETS EACH: 2-600 KCMIL, 1 #3 GND - 3"C	9 SETS EACH: 3-600 KCMIL, 1 #3 GND - 3 1/2"C	9 SETS EACH: 4-600 KCMIL, 1 #3 GND - 4"C
4000	10 SETS EACH: 2-600 KCMIL, 1-500 KCMIL GND - 3"C	10 SETS EACH: 3-600 KCMIL, 1-500 KCMIL GND - 3 1/2"C	10 SETS EACH: 4-600 KCMIL, 1-500 KCMIL GND - 4"C

FEEDER TAG KEY

4 — NUMBER OF WIRES
0100 — WIRE AMPS

2 E-7 RISER DIAGRAM - NEW (BASE BID 2)
NO SCALE

GENERAL NOTES

1. CONFIRM ALL EXISTING FUSE SIZES IN EXISTING SUBSTATION SWITCHBOARD. MATCH NEW BREAKER SIZES TO EXISTING FUSE SIZES PRIOR TO SUBMISSION OF SUBSTATION SWITCHBOARD SUBMITTAL.

NUMBERED NOTES

1. DISCONNECT AND REMOVE EXISTING 15A-3P BREAKER. REPLACE EXISTING 15A-3P BREAKER WITH A NEW 25A-3P BREAKER. CONNECT EXISTING 3" EM SUMP PUMP TO NEW 25A-3P BREAKER.
2. DISCONNECT AND REMOVE EXISTING 50A-3P BREAKER. REPLACE EXISTING 50A-3P BREAKER WITH A NEW 40A-3P BREAKER. CONNECT EXISTING 4" EM SUMP PUMP TO NEW 40A-3P BREAKER.
3. PROVIDE NEW 40A-3P BREAKER IN EXISTING SPACE. CONNECT EXISTING 4" EM SUMP PUMP TO NEW 40A-3P BREAKER.
4. CONNECT EXISTING PLASMA MEZZANINE REC TO EXISTING 150A-3P BREAKER.
5. PROVIDE CONDUCTOR AND CONDUIT EXTENSIONS TO EXTEND EXISTING CIRCUIT TO NEW CIRCUIT BREAKER LOCATION. MATCH EXISTING CONDUCTOR AND CONDUIT SIZES. PROVIDE CORE DRILLING OF EXISTING FLOOR TO STUB CONDUITS INTO EXISTING MOTOR CONTROL CENTER OR NEW SUBSTATION SWITCHBOARD.
6. PROVIDE CONDUIT AND CONDUCTOR EXTENSIONS FROM EXISTING G&W SWITCH TO NEW EXTERIOR SUBSTATION TRANSFORMER. MATCH EXISTING CONDUCTOR AND CONDUIT SIZES. PROVIDE DUCTBANK AS INDICATED ON DUCTBANK DETAIL.
7. PROVIDE CONDUIT AND CONDUCTOR EXTENSIONS FROM EXISTING GENERATOR TO EXISTING AUTOMATIC TRANSFER SWITCH. MATCH EXISTING CONDUCTOR AND CONDUIT SIZES.

BASE BID 1:

1. INSTALLATION OF POWER TO NEW BOILERS B-2, B-3, & B-6 WITH ASSOCIATED WIRING AND CONDUIT.
2. INSTALLATION OF POWER TO NEW BOILER FEED PUMPS AND NEW CONDENSATE TRANSFER PUMPS WITH ASSOCIATED WIRING AND CONDUIT.
3. DEMOLITION OF EXISTING BOILER CONTROL PANELS AND INSTALLATION OF POWER TO NEW BOILER CONTROL PANELS.
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5. INSTALLATION OF AN UNITERRUPTIBLE POWER SUPPLY (UPS) TO BACK UP THE MASTER CONTROL PANEL, BOILER CONTROL PANEL, NETWORK COMPUTER SYSTEM.
6. DEMOLITION OF EXISTING MOTOR CONTROL CENTER (MCC) AND EXTENSION OF EXISTING CIRCUITS TO NEW PANELBOARD AND/OR EXISTING MCC THAT IS TO REMAIN.

BASE BID 2:

1. ALL WORK DESCRIBED IN BASE BID 1.
2. DEMOLITION OF EXISTING SUBSTATION SWITCHBOARD AND INSTALLATION OF NEW SUBSTATION SWITCHBOARD, INCLUDING EXTENSION OF EXISTING CIRCUITS PREVIOUSLY FED FROM EXISTING SUBSTATION SWITCHBOARD.
3. DEMOLITION OF EXISTING SUBSTATION TRANSFORMER AND INSTALLATION OF NEW LIQUID FILLED PAD MOUNTED TRANSFRORMER.

BASE BID 3:

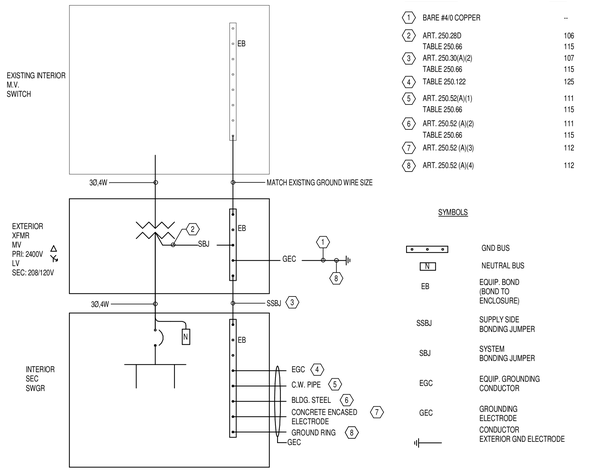
1. ALL WORK DESCRIBED IN BASE BID 2.
2. INSTALLATION OF EMERGENCY PORT (FUSED DISCONNECT SWITCH) FOR TEMPORARY BOILER.

BASE BID 4:

1. ALL WORK DESCRIBED IN BASE BID 3.
2. WIRING AND CONNECTION OF NEW CONTROL PANELS WITH HIGH LEVEL ALARM FOR SEWER PUMPS IN BASEMENT.
3. WIRING AND CONNECTION OF NEW VFDS FOR EXISTING BOILER FEED PUMPS.
4. DEMOLITION OF EXISTING FIRE ALARM SYSTEM AND INSTALLATION OF NEW FIRE ALARM SYSTEM.

BASE BID 5:

1. ALL WORK DESCRIBED IN BASE BID 4.
2. DEMOLITION OF POWER TO EXISTING FUEL PUMP ASSEMBLY AND INSTALLATION OF POWER TO NEW FUEL PUMP ASSEMBLY.

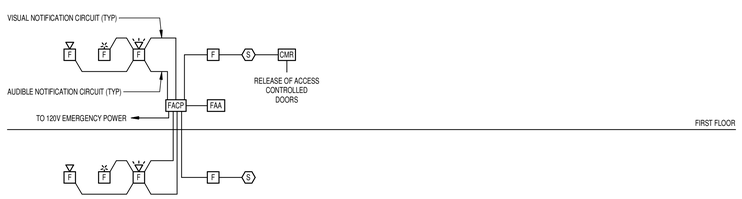


3 E-7 GROUNDING SYSTEM DETAIL
NO SCALE

NOTES-NEC 2011		PAGE
1	BARE #4/0 COPPER	--
2	ART. 250.28D	106
	TABLE 250.66	115
3	ART. 250.30(A)(2)	107
	TABLE 250.66	115
4	TABLE 250.122	125
5	ART. 250.52(A)(1)	111
	TABLE 250.66	115
6	ART. 250.52 (A)(2)	111
	TABLE 250.66	115
7	ART. 250.52 (A)(3)	112
8	ART. 250.52 (A)(4)	112

SYMBOLS

- GND BUS
- N — NEUTRAL BUS
- EB — EQUIP. BOND (BOND TO ENCLOSURE)
- SSBJ — SUPPLY SIDE BONDING JUMPER
- SBJ — SYSTEM BONDING JUMPER
- EGC — EQUIP. GROUNDING CONDUCTOR
- GEC — GROUNDING ELECTRODE CONDUCTOR
- EXTERIOR GND ELECTRODE



NOTES

1. REFER TO FLOOR PLAN FOR QUANTITY AND LOCATION OF SYSTEM COMPONENTS. EXACT ARRANGEMENT AND QUANTITY OF DEVICES SHALL BE INDICATED ON THE SHOP DRAWINGS. PROVIDE COMPLETE RISER DIAGRAM AS PART OF SHOP DRAWINGS. COORDINATE WITH OWNER'S REPRESENTATIVE AND FIRE MARSHALL.
2. PROVIDE WIRING PER MANUFACTURER'S RECOMMENDATION.
3. CANDELA RATING SHALL BE PER NFPA 72 / ADAAG REQUIREMENTS.
4. ALL FIRE ALARM WIRING SHALL BE IN 3/4"C (MINIMUM) OR MC CABLE.
5. DO NOT LOAD ANY CIRCUIT BEYOND 80% OF RATED CAPACITY. SUBMIT CALCULATIONS TO SUBSTANTIATE. ADD ADDITIONAL CIRCUITS AS NECESSARY.
6. PROVIDE CONDUIT SLEEVES WITH ESCUTCHEON PLATES WHERE WIRING PASSES THROUGH WALLS, FLOORS, OR CEILINGS.
7. ALL VISUAL AND AUDIO DEVICES SHALL BE SYNCHRONIZED.
8. PROVIDE EXTENDER PANELS AND BOOSTER PANELS AS REQUIRED TO SUPPLEMENT THE FIRE ALARM SYSTEM.

4 E-7 FIRE ALARM RISER DIAGRAM
NO SCALE

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA — TIMOTHY C. BERTOLINO — PROFESSIONAL ENGINEER — PE-56254

SIGNATURE — 10-14-2024 DATE

CJL ENGINEERING
232 Horner Street
Johnstown, PA 15902
ph: (814) 536-1651, fax: (814) 536-5732

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation Equipment

RISER DIAGRAM - NEW

VERIFY SCALE

BAR IS ONE (1) INCH LONG ON ORIGINAL DRAWING.

IF BAR IS NOT ONE (1) INCH LONG ADJUST SCALE ACCORDINGLY.

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. VARIANCE FROM CONTRACT DOCUMENTS NOT PERMITTED WITHOUT PROFESSIONAL & BUREAU OF CONSTRUCTION APPROVAL.

DRAWN BY	DATE	SHEET No.
D. BOYER	10-14-2024	E-7
CHECKED BY	SCALE	
T. BERTOLINO	As indicated	

10/14/2024 2:13:29 PM

SWITCHBOARD: SUBSTATION SWITCHBOARD

LOCATION:
SUPPLIED FROM: EXISTING AUTOMATIC TRANSFER SWITCH

VOLTAGE: 120/208 WYE
PHASES: 3
WIRES: 4

A.I.C. RATING: 65,000
MCB RATING: 1600 A

BASE BID 2

CKT	CIRCUIT DESCRIPTION	# OF POLES	FRAME SIZE	TRIP RATING	LOAD	WIRE SIZE	Remarks
1	EXISTING MOTOR CONTROL CENTER	3	600 A	600 A	0.00	SEE RISER DIAGRAM	
2	NEW PNL 97A	3	600 A	600 A	117.11	SEE RISER DIAGRAM	
3	EXISTING PNL 92A	3	125 A	100 A	2.00	SEE RISER DIAGRAM	
4	EXISTING PNL 93-50	3	125 A	125 A	0.00	SEE RISER DIAGRAM	
5	EXISTING PNL 94A	3	125 A	100 A	0.00	SEE RISER DIAGRAM	
6	EXISTING PNL 95-12A	3	225 A	150 A	0.00	SEE RISER DIAGRAM	
7	EXISTING PNL 96A	3	225 A	150 A	0.00	SEE RISER DIAGRAM	
8	EXISTING PNL RAVINE HOUSE	3	225 A	225 A	0.00	SEE RISER DIAGRAM	
9	EXISTING #3 AIR COMPRESSOR	3	225 A	200 A	0.00	SEE RISER DIAGRAM	
10	NEW EMERGENCY TEMP BOILER DISCONNECT	3	125 A	100 A	0.00	SEE RISER DIAGRAM	BASE BID 3
11	SPARE	1	125 A	100 A	0.00		
12	SPARE	1	125 A	100 A	0.00		
13	SPARE	1	60 A	60 A	0.00		
14	SPARE	1	60 A	60 A	0.00		
15	SPACE	1	--	--	--		
16	SPACE	1	--	--	--		
17	SPACE	1	--	--	--		
18	SPACE	1	--	--	--		
				TOTAL CONNECTED LOAD:	119.11 kVA		
				TOTAL AMPS:	331 A		

SWITCHBOARD: EXISTING MOTOR CONTROL...

LOCATION:
SUPPLIED FROM: SUBSTATION SWITCHBOARD

VOLTAGE: 120/208 WYE
PHASES: 3
WIRES: 4

A.I.C. RATING: EXISTING
MCB RATING: 600 A

Notes: EXISTING TO REMAIN

CKT	CIRCUIT DESCRIPTION	# OF POLES	FRAME SIZE	TRIP RATING	LOAD	WIRE SIZE	Remarks
1	EXISTING #1 SEWAGE PUMP	3	60 A	50 A	0.00	SEE RISER DIAGRAM	
2	EXISTING #2 SEWAGE PUMP	3	125 A	100 A	0.00	SEE RISER DIAGRAM	
3	EXISTING 3" EM SUMP PUMP	3	30 A	25 A	0.00	SEE RISER DIAGRAM	
4	EXISTING 4" EM SUMP PUMP	3	60 A	40 A	0.00	SEE RISER DIAGRAM	
5	EXISTING 4" EM SUMP PUMP	3	60 A	40 A	0.00	SEE RISER DIAGRAM	
6	SPARE	3	15 A	15 A	0.00		
7	EXISTING BOILER #3 FEED PUMP	3	60 A	40 A	0.00	SEE RISER DIAGRAM	
8	EXISTING BOILER #2 FEED PUMP	3	125 A	70 A	0.00	SEE RISER DIAGRAM	
9	EXISTING BOILER #5	3	60 A	50 A	0.00	SEE RISER DIAGRAM	
10	EXISTING BOILER FEED PUMP #1	3	125 A	70 A	0.00	SEE RISER DIAGRAM	
11	EXISTING BOILER FEED PUMP #4	3	125 A	70 A	0.00	SEE RISER DIAGRAM	
12	EXISTING PNL 89B TRANSFROMER	3	125 A	100 A	0.00	SEE RISER DIAGRAM	
13	EXISTING PLASMA REC MEZZANINE	3	225 A	150 A	0.00	SEE RISER DIAGRAM	
				TOTAL CONNECTED LOAD:	0.00 kVA		
				TOTAL AMPS:	0 A		

PANEL SCHEDULE
PNL 97A

BASE BID 2

LOCATION:
MOUNTING: SURFACE
SUPPLY FROM: SUBSTATION SWITCHBOARD
ENCLOSURE: TYPE 1
POLE SPACES: 42

VOLTAGE: 120/208 WYE
PHASES: 3
WIRES: 4
AIC RATING: 42,000
MAIN TYPE: MCB
BUS RATING: 600 A
MCB RATING: 600 A

CKT	CIRCUIT DESCRIPTION	WIRE SIZE	RATING	# OF POLES	A		B		C		# OF POLES	RATING	WIRE SIZE	CIRCUIT DESCRIPTION	CKT
1					8.97	8.97									2
3	NEW BOILER - 2	4 #1, 1 #8 EGC - 1 1/2"C	100 A	3			8.97	8.97			3	100 A	4 #1, 1 #8 EGC - 1 1/2"C	NEW BOILER - 3	4
5									8.97	8.97					6
7					2.00	5.54									8
9	NEW BOILER - 6	(4) #10, (1) #10 EGC - 3/4"C	30 A	3			2.00	5.54			3	60 A	(4) #4, (1) #10 EGC - 1 1/4"C	NEW FEED WATER PUMP #1	10
11									2.00	5.54					12
13					5.54	5.54									14
15	NEW FEED WATER PUMP #2	(4) #4, (1) #10 EGC - 1 1/4"C	60 A	3			5.54	5.54			3	60 A	(4) #4, (1) #10 EGC - 1 1/4"C	NEW FEED WATER PUMP #3	16
17									5.54	5.54					18
19					0.90	0.90									20
21	NEW TRANSFER PUMP #1	(4) #12, (1) #12 EGC - 3/4"C	20 A	3			0.90	0.90			3	20 A	(4) #12, (1) #12 EGC - 3/4"C	NEW TRANSFER PUMP #2	22
23									0.90	0.90					24
25	NEW GARAGE DOOR #2	(2) #12, (1) #12 EGC - 3/4"C	20 A	1	1.00	1.00					1	20 A	(2) #12, (1) #12 EGC - 3/4"C	NEW GARAGE DOOR #1	26
27							0.00	0.00							28
29	SPARE	--	20 A	3					0.00	0.00	3	20 A	--	SPARE	30
31					0.00	0.00									32
33							0.00	0.00							34
35	SPARE	--	20 A	3					0.00	0.00	3	20 A	--	SPARE	36
37					0.00	0.00									38
39	SPACE	--	--	1			--	--			1	--	--	SPACE	40
41	SPACE	--	--	1					--	--	1	--	--	SPACE	42
			TOTAL CONNECTED APPARENT LOAD:		40.37 kVA		38.37 kVA		38.37 kVA						
			TOTAL CONNECTED AMPS:		336 A		320 A		320 A						
			TOTAL CONNECTED AMPS:		325 A										

PANEL SCHEDULE
PNL 92A

EXISTING TO REMAIN

LOCATION:
MOUNTING: SURFACE
SUPPLY FROM: SUBSTATION SWITCHBOARD
ENCLOSURE: TYPE 1
POLE SPACES: 30

VOLTAGE: 120/208 WYE
PHASES: 3
WIRES: 4
AIC RATING: EXISTING
MAIN TYPE: MCB
BUS RATING: 225 A
MCB RATING: 225 A

CKT	CIRCUIT DESCRIPTION	WIRE SIZE	RATING	# OF POLES	A		B		C		# OF POLES	RATING	WIRE SIZE	CIRCUIT DESCRIPTION	CKT
1					0.00	0.00									2
3	EXISTING WELDER RECEPT. WORK SHOP	--	50 A	3			0.00	0.00			3	20 A	--	EXISTING DRILL LOCAL DISCONNECT #92-A-4	4
5									0.00	0.00					6
7					0.00	0.00									8
9	EXISTING MILLING MACHINE LOCAL DISCONNECT #92-A-3	--	20 A	3			0.00	0.00			3	20 A	--	EXISTING HENDEY LATHE LOCAL DISCONNECT #92-A-4	10
11									0.00	0.00					12
13					0.00	0.00					1	20 A	--	EXISTING PWR STRIP FRONT OFF	14
15	EXISTING OVERHEAD GARAGE DOOR RM 1002	--	20 A	3			0.00	0.00			2	20 A	--	EXISTING OFFICE AC REC	16
17									0.00	0.00					18
19	EXIST. REC ON SIDE OF PNL/MW	--	20 A	1	0.00	0.00					1	20 A	--	EXISTING CONTROL PNL OFFICE	20
21	EXISTING LIGHT AT LATHE	--	20 A	1			0.00	0.00			2	50 A	--	EXISTING ELECTRIC RANGE	22
23	EXISTING CONTROL PNL OFFICE	--	20 A	1					0.00	0.00					24
25	EXISTING SECURITY CAMERAS	--	20 A	1	0.00	0.00									26
27	EXISTING RECS BY OFF WINDOW	--	20 A	1			0.00	0.00			3	100 A	--	EXISTING POWER PLANT STORAGE PANEL	28
29	UPS	(2) #10, (1) #10 EGC - 3/4"C	30 A	1					2.00	0.00					30
		TOTAL CONNECTED APPARENT LOAD:			0.00 kVA		0.00 kVA		2.00 kVA						
		TOTAL CONNECTED AMPS:			0 A		0 A		17 A						
		TOTAL CONNECTED AMPS:			6 A										

PANEL SCHEDULE
PNL 97A

BASE BID 1

LOCATION:
MOUNTING: SURFACE
SUPPLY FROM:
ENCLOSURE: TYPE 1
POLE SPACES: 42

VOLTAGE: 120/208 WYE
PHASES: 3
WIRES: 4
AIC RATING: 42,000
MAIN TYPE: MCB
BUS RATING: 1200 A
MCB RATING: 1200 A

CKT	CIRCUIT DESCRIPTION	WIRE SIZE	RATING	# OF POLES	A		B		C		# OF POLES	RATING	WIRE SIZE	CIRCUIT DESCRIPTION	CKT
1					8.97	8.97									2
3	NEW BOILER - 2	4 #1, 1 #8 EGC - 1 1/2"C	100 A	3			8.97	8.97			3	100 A	4 #1, 1 #8 EGC - 1 1/2"C	NEW BOILER - 3	4
5									8.97	8.97					6
7					2.00	5.54									8
9	NEW BOILER - 6	(4) #10, (1) #10 EGC - 3/4"C	30 A	3			2.00	5.54			3	60 A	(4) #4, (1) #10 EGC - 1 1/4"C	NEW FEED WATER PUMP #1	10
11									2.00	5.54					12
13					5.54	5.54									14
15	NEW FEED WATER PUMP #2	(4) #4, (1) #10 EGC - 1 1/4"C	60 A	3			5.54	5.54			3	60 A	(4) #4, (1) #10 EGC - 1 1/4"C	NEW FEED WATER PUMP #3	16
17									5.54	5.54					18
19					0.90	0.90									20
21	NEW TRANSFER PUMP #1	(4) #12, (1) #12 EGC - 3/4"C	20 A	3			0.90	0.90			3	20 A	(4) #12, (1) #12 EGC - 3/4"C	NEW TRANSFER PUMP #2	22
23									0.90	0.90					24
25	NEW GARAGE DOOR #2	(2) #12, (1) #12 EGC - 3/4"C	20 A	1	1.00	1.00					1	20 A	(2) #12, (1) #12 EGC - 3/4"C	NEW GARAGE DOOR #1	26
27							0.00	0.00							28
29	SPARE	--	20 A	3					0.00	0.00	3	20 A	--	SPARE	30
31					0.00	0.00									32
33							0.00	0.00							34
35	SPARE	--	20 A	3					0.00	0.00	3	600 A	SEE RISER DIAGRAM	EXISTING MOTOR CONTROL CENTER	36
37					0.00	0.00									38
39	SPACE	--	--	1			--	--			1	--	--	SPACE	40
41	SPACE	--	--	1					--	--	1	--	--	SPACE	42
		TOTAL CONNECTED APPARENT LOAD:			40.37 kVA		38.37 kVA		38.37 kVA						
		TOTAL CONNECTED AMPS:			336 A		320 A		320 A						
		TOTAL CONNECTED AMPS:			325 A										

BASE BID 1:

1. INSTALLATION OF POWER TO NEW BOILERS B-2, B-3, & B-6 WITH ASSOCIATED WIRING AND CONDUIT.
2. INSTALLATION OF POWER TO NEW BOILER FEED PUMPS AND NEW CONDENSATE TRANSFER PUMPS WITH ASSOCIATED WIRING AND CONDUIT.
3. DEMOLITION OF EXISTING BOILER CONTROL PANELS AND INSTALLATION OF POWER TO NEW BOILER CONTROL PANELS.
4. INSTALLATION OF POWER TO NEW ROLLUP GARAGE DOORS TO SERVE NEW BOILERS B-2&3.
5. INSTALLATION OF AN UNITERRUPTIBLE POWER SUPPLY (UPS) TO BACK UP THE MASTER CONTROL PANEL, BOILER CONTROL PANEL, NETWORK COMPUTER SYSTEM.
6. DEMOLITION OF EXISTING MOTOR CONTROL CENTER (MCC) AND EXTENSION OF EXISTING CIRCUITS TO NEW PANELBOARD AND/OR EXISTING MCC THAT IS TO REMAIN.

BASE BID 2:

1. ALL WORK DESCRIBED IN BASE BID 1.
2. DEMOLITION OF EXISTING SUBSTATION SWITCHBOARD AND INSTALLATION OF NEW SUBSTATION SWITCHBOARD, INCLUDING EXTENSION OF EXISTING CIRCUITS PREVIOUSLY FED FROM EXISTING SUBSTATION SWITCHBOARD.
3. DEMOLITION OF EXISTING SUBSTATION TRANSFORMER AND INSTALLATION OF NEW LIQUID FILLED PAD MOUNTED TRANSFROMER.

BASE BID 3:

1. ALL WORK DESCRIBED IN BASE BID 2.
2. INSTALLATION OF EMERGENCY PORT (FUSED DISCONNECT SWITCH) FOR TEMPORARY BOILER.

BASE BID 4:

1. ALL WORK DESCRIBED IN BASE BID 3.
2. WIRING AND CONNECTION OF NEW CONTROL PANELS WITH HIGH LEVEL ALARM FOR SEWER PUMPS IN BASEMENT.
3. WIRING AND CONNECTION OF NEW VFDS FOR EXISTING BOILER FEED PUMPS.
4. DEMOLITION OF EXISTING FIRE ALARM SYSTEM AND INSTALLATION OF NEW FIRE ALARM SYSTEM.

BASE BID 5:

1. ALL WORK DESCRIBED IN BASE BID 4.
2. DEMOLITION OF POWER TO EXISTING FUEL PUMP ASSEMBLY AND INSTALLATION OF POWER TO NEW FUEL PUMP ASSEMBLY.

CAMPUS / KEY PLAN

RECORD REVISIONS

CONSTRUCTION DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENERGY
PROFESSIONAL
TIMOTHY C. BERTOLINO
ENGINEER
PE-062314
PENNSYLVANIA

SIGNATURE — DATE: 10-14-2024

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
DGS C-0503-0027 Phase 001

Danville State Hospital
Replace Steam Generation Equipment

SCHEDULES

VERIFY SCALE

BAR IS ONE (1) INCH LONG ON ORIGINAL DRAWING.
0 1
IF BAR IS NOT ONE (1) INCH LONG ADJUST SCALE ACCORDINGLY.

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. VARIANCE FROM CONTRACT DOCUMENTS NOT PERMITTED WITHOUT PROFESSIONAL & BUREAU OF CONSTRUCTION APPROVAL.

DRAWN BY	DATE	SHEET No.
D. BOYER	10-14-2024	E-8
CHECKED BY	SCALE	
T. BERTOLINO	NO SCALE	