DAVIS TECHNICAL COLLEGE
WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST, KAYSVILLE, UT 84037

BID PACKAGE #2



DEFERRED SUBMITTALS

- FIRE ALARM
- FIRE SPRINKLERS
- SEISMIC RESTRAINTS (MECHANICAL & ELECTRICAL)
- OPEN WEB STEEL JOITS

REQUIRED FOR OCCUPANCY

THE FOLLOWING DOCUMENTS ARE REQUIRED BEFORE A CERTIFICATE OF OCCUPANCY IS ISSUED:

- A CODE INSPECTION REPORT RECOMMENDING THAT A CERTIFICATE OF OCCUPANCY BE ISSUED.
- FINAL REPORT FROM THE SPECIAL INSPECTION AGENCY.
- CERTIFICATE OF FIRE CLEARANCE FROM THE STATE FIRE MARSHALL.
- FINAL APPROVAL FROM THE STATE ELEVATOR INSPECTOR, IF APPLICABLE.
- FINAL APPROVAL FROM THE STATE BOILER INSPECTOR, IF APPLICABLE.
- REPORT OF THE DISINFECTION OF THE POTABLE WATER SYSTEM. IPC 610
- A CERTIFICATE OF COMPLIANCE FROM THE APPROVED FABRICATOR, IF APPLICABLE. IBC 1704.2.2.
- A STAMPED AND SIGNED FINAL REPORT FROM THE STRUCTURAL ENGINEER WHEN STRUCTURAL OBSERVATION IS REQUIRED BY IBC 1710.
- AN NFRC CERTIFICATE FOR FENESTRATION WITHOUT THE NFRC LABEL.
- FINAL REPORT FROM THE SPECIAL INSPECTOR AND THE MECHANICAL ENGINEER WHEN SMOKE CONTROL IS REQUIRED. THE REPORTS MUST COMPLY WITH IBC 909.18.8.3.

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

CONTRACTOR

GRAMOLL CONSTRUCTION
KEN ROMNEY
801-295-2341
KEN.ROMNEY@GRAMOLL.COM

ARCHITECT

CRSA
JEFF BAIRD
801-746-6842
JBAIRD@CRSA.COM

STATE OF UTAH · JEFFREY D BAIRD · 9142736-0301 · LICENSED ARCHITECT

LANDSCAPE ARCHITECT

IO LANDARCH
LAUREN COLUNGA
801-505-6601
LAUREN@IOLANDARCH.COM

STATE OF UTAH · SHALAE A. LARSEN · 5278795-5301 · LICENSED LANDSCAPE ARCHITECT · 11/1/2024

PLUMBING ENGINEER

HEATH ENGINEERING
ROB KESLER
801-322-0487
RKESLER@HEATHENG.COM

LICENSED PROFESSIONAL ENGINEER · No. 270896 · ROBERT JACK KESLER · 11/01/24 · STATE OF UTAH

MECHANICAL ENGINEER

HEATH ENGINEERING
BRIAN ANDERSON
801-322-0487
BANDERSON@HEATHENG.COM

PROFESSIONAL ENGINEER · 10403362 · JEFFREY BRIAN ANDERSON · 11/01/24 · STATE OF UTAH

ELECTRICAL ENGINEER

SPECTRUM ENGINEERS
MARIO MARTINEZ
814-401-9415
MARIO.MARTINEZ@SPECENG.COM

PROFESSIONAL ENGINEER · No. 17735766 · MARIO SEBASTIAN MARTINEZ · STATE OF UTAH · 2024.11.01

DAVIS TECHNICAL COLLEGE
WELDING TECHNOLOGY BUILDING
355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH · JEFFREY D BAIRD · 9142736-0301 · LICENSED ARCHITECT

COVER SHEET
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GENERAL

GI000.2 COVER SHEET
GI001.2 SHEET INDEX
GI003.2 CODE SUMMARY DFCM
GI004.2 SPECIAL INSPECTIONS
GI101.2 LEVEL 1 CODE PLAN
GI002.2 SHEET MATRIX

LANDSCAPE

L-601.2 IRRIGATION PLAN
L-602.2 IRRIGATION DETAILS (SYSTEM & SPRAY)
L-603.2 IRRIGATION DETAILS (DRIP)
L-701.2 PLANTING PLAN (OVERALL)
L-702.2 ENLARGED PLANTING PLAN
L-703.2 PLANTING DETAILS

ARCHITECTURAL SITE

AS101.2 ARCHITECTURAL SITE PLAN
AS110.2 ARCHITECTURAL SITE DETAILS

ARCHITECTURAL

AE101.2 LEVEL 1 FLOOR PLAN
AE121.2 LEVEL 1 DIMENSION PLAN
AE171.2 LEVEL 1 REFLECTED CEILING PLAN
AE191.2 ROOF PLAN
AE201.2 BUILDING ELEVATIONS
AE301.2 BUILDING SECTIONS
AE312.2 WALL SECTIONS
AE311.2 WALL SECTIONS
AE313.2 WALL SECTIONS
AE314.2 WALL SECTIONS
AE401.2 ENLARGED PLANS AND INTERIOR ELEVATIONS
AE402.2 ENLARGED PLANS AND INTERIOR ELEVATIONS
AE501.2 SECTION DETAILS
AE502.2 SECTION DETAILS
AE503.2 SECTION DETAILS
AE510.2 DOOR AND WINDOW DETAILS
AE520.2 CEILING DETAILS
AE525.2 LADDER AND ROOF DETAILS
AE526.2 SCREEN DETAILS
AE527.2 DFCM ROOFING DETAILS
AE528.2 DFCM ROOFING DETAILS
AE530.2 MILLWORK DETAILS
AE535.2 BOOTH DETAILS
AE601.2 PANEL TYPES, FRAME TYPES, AND DOOR SCHEDULE
AE602.2 FRAME TYPES
AE610.2 TYPICAL SIGNAGE

PLUMBING

P-001.2 PLUMBING SCHEDULES AND SYMBOL LEGEND
PL111.2 PLUMBING PLAN – DRAIN/WASTE/VENT
PL112.2 PLUMBING PLAN - WATER, GAS AND COMPRESSED AIR
PL401.2 ENLARGED PLUMBING PLAN
PL402.2 ENLARGED PLUMBING PLAN
PL501.2 PLUMBING DETAILS
PL502.2 PLUMBING DETAILS
PL604.2 CO2 AND AR GAS FLOW DIAGRAM
PL901.2 WASTE AND VENT ISOMETRIC
PL121.2 ROOF PLUMBING PLAN
PL601.2 DOMESTIC WATER FLOW DIAGRAM
PL602.2 GAS FLOW DIAGRAM
PL603.2 COMPRESSED AIR FLOW DIAGRAM

MECHANICAL

MH000.2 PROJECT NOTES
MH001.2 MECHANICAL SCHEDULES
MH002.2 MECHANICAL SCHEDULES
MH003.2 MECHANICAL SCHEDULES
MH110.2 LEVEL 1 OVERALL MECHANICAL PLAN
MH111.2 LEVEL 1 MECHANICAL PLAN
MH112.2 LEVEL 1 MECHANICAL PLAN - EXTRACTOR
MH121.2 ROOF LEVEL MECHANICAL PLAN
MH311.2 MECHANICAL SECTIONS
MH312.2 MECHANICAL SECTIONS
MH313.2 MECHANICAL SECTIONS
MH411.2 LEVEL 1 OFFICE AREA MECHANICAL PLAN
MH501.2 MECHANICAL DETAILS
MH502.2 MECHANICAL DETAILS
MH503.2 MECHANICAL DETAILS
MH611.2 MECHANICAL DIAGRAMS
MH612.2 MECHANICAL OVERALL DIAGRAM
MI001.2 CONTROL SCHEDULES
MI110.2 LEVEL 1 MECHANICAL CONTROL PLAN
MI601.2 CONTROL DIAGRAM – RTU-1
MI602.2 CONTROL DIAGRAMS - MAU
MI603.2 CONTROL DIAGRAMS - MISCELLANEOUS

ELECTRICAL

EE001.2 SHEET INDEX, AND ABBREVIATIONS
EE002.2 TELECOM SYMBOLS AND ABBREVIATIONS
EE003.2 AV ROUNGH-IN SCHEDULE AND GENERAL NOTES
EE501.2 ELECTRICAL DETAILS
EE601.2 GROUNDING RISER DIAGRAM
EE701.2 TYPICAL MOUNTING DETAILS
EE702.2 TYPICAL LABELING DETAILS
ES101.2 ELECTRICAL SITE PLAN
ES102.2 ELECTRICAL SITE UNDERGROUND CONDUIT PLAN
ES501.2 ELECTRICAL SITE DETAILS
ES502.2 PULLBOX SCHEDULE AND RISER DIAGRAM
EP101.2 LEVEL 1 POWER PLAN
EP102.2 ROOF POWER PLAN
EP103.2 ROOF POWER PLAN
EP401.2 ENLARGED PLANS
EP450.2 ENLARGED TELECOM PLANS
EP550.2 TELECOM DETAILS
EP551.2 TELECOM DETAILS
EP553.2 TELECOM CABLE TRAY DETAILS
EP601.2 ONE-LINE DIAGRAM
EP602.2 RISERS AND DIAGRAMS
EP603.2 EQUIPMENT SCHEDULES
EP604.2 PANEL SCHEDULES
EP605.2 PANEL SCHEDULES
EP606.2 PANEL SCHEDULES
EP651.2 TELECOM CABLE RISER DIAGRAM
EL101.2 LEVEL 1 LIGHTING PLAN
EL102.2 ENLARGED LIGHTING PLANS
EL601.2 LIGHTING FIXTURE SCHEDULE
EL602.2 LIGHTING FIXTURE SCHEDULE
EY101.2 LEVEL 1 AUXILIARY PLAN
EY102.2 LEVEL 1 AUXILIARY PLAN
EY601.2 FIRE ALARM RISER DIAGRAMS
EY650.2 ACCESS CONTROL RISER DIAGRAMS
EY651.2 CCTV RISER DIAGRAM
EJ101.2 LEVEL 1 AV ROUGH-IN PLAN
EJ601.2 AV ROUGH-IN DETAILS & DIAGRAMS
EK101.2 LIGHTNING PROTECTION PLAN
EK501.2 LIGHTNING PROTECTION DETAILS
EK502.2 GROUNDING DETAILS
TA001.2 SHEET INDEX, ABBREVIATIONS, AND NOTES
TA002.2 AV SYSTEMS EQUIPMENT SCHEDULE
TA101.2 LEVEL 1 AUDIO VISUAL SYSTEMS PLAN
TA601.2 AUDIO VISUAL SYSTEMS DETAILS & DIAGRAMS
TA602.2 AV SYSTEMS CONNECTION PANEL DETAILS

NARRATIVE

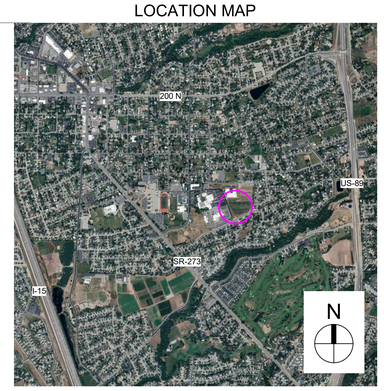
BID PACKAGE #1

SITE & STRUCTURE - Major structural and site elements.

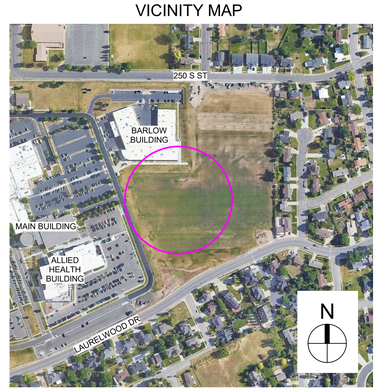
BID PACKAGE #2

CORE, SHELL, & INTERIOR FINISHES - Exterior envelope and major MEP systems. Interior elements, including finishes and millwork.

LOCATION MAP



VICINITY MAP



CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. [illegible]
9142[illegible]-0301
LICENSED ARCHITECT

SHEET INDEX
GI001.2

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BP-1 SHEET MATRIX

SHEET NUMBER	SHEET NAME	BP-1	ADD #01	ADD #02	ADD #03	ADD #04	ADD #05	SUPERSEDED BY
GI000.1	COVER SHEET	X		X	X			
GI001.1	SHEET INDEX	X	X		X			
GI002.1	CODE SUMMARY DFCM	X						GI002.2
GI003.1	SPECIAL INSPECTIONS	X						GI003.2
GI101.1	LEVEL 1 CODE PLAN	X	X					GI101.2
C100.1	GENERAL NOTES AND DETAILS		X					
C101.1	UTILITY DETAILS		X					
C102.1	APWA DETAILS		X					
C200.1	BOUNDARY & TOPOGRAPHIC SURVEY		X			X		
C201.1	BOUNDARY & TOPOGRAPHIC SURVEY		X					
CS210.1	DEMOLITION PLAN		X					
CS230.1	SITE PLAN		X			X		
CU300.1	UTILITY PLAN	X	X					
CG400.1	GRADING PLAN	X	X					
C500.1	EROSION CONTROL PLAN	X	X					
C510.1	EROSION CONTROL DETAILS	X	X					
AS101.1	ARCHITECTURAL SITE PLAN	X	X		X			AS101.2
AE100.1	DIMENSION CONTROL PLAN	X	X	X	X	X	X	
AE101.1	LEVEL 1 FLOOR PLAN	X	X		X			AE101.2
AE171.1	LEVEL 1 REFLECTED CEILING PLAN	X	X		X			AE171.2
AE191.1	ROOF PLAN	X			X			AE191.2
AE201.1	BUILDING ELEVATIONS	X	X	X	X			AE201.2
SE001.1	GENERAL STRUCTURAL NOTES	X		X	X			
SE002.1	GENERAL STRUCTURAL NOTES	X		X				
SE003.1	GENERAL STRUCTURAL NOTES	X						
SE101.1	FOOTING AND FOUNDATION PLAN	X		X	X	X	X	
SE102.1	LOW ROOF FRAMING PLAN	X			X	X	X	
SE103.1	HIGH ROOF FRAMING PLAN	X		X	X	X		
SE201.1	ELEVATIONS	X		X	X	X		

BP-1 SHEET MATRIX

SHEET NUMBER	SHEET NAME	BP-1	ADD #01	ADD #02	ADD #03	ADD #04	ADD #05	SUPERSEDED BY
SE211.1	BUILDING ELEVATIONS	X				X		
SE301.1	BUILDING SECTIONS	X				X		
SE501.1	FOOTING AND FOUNDATION DETAILS	X		X			X	
SE502.1	FOOTING AND FOUNDATION DETAILS	X				X		
SE701.1	ROOF FRAMING DETAILS	X				X		
SE702.1	ROOF FRAMING DETAILS	X					X	
SE703.1	ROOF FRAMING DETAILS	X				X	X	
SE704.1	STEEL STUD FRAMING DETAILS	X				X	X	
SE705.1	ROOF FRAMING DETAILS						X	
SE801.1	CONCRETE SCHEDULES	X		X				
SE802.1	STEEL SCHEDULES	X						
SE803.1	MASONRY SCHEDULES	X		X	X		X	
SE804.1	STEEL STUD SCHEDULES	X				X		
SE805.1	DIAPHRAGM SCHEDULE	X		X				
P-001.1	PLUMBING SCHEDULES AND SYMBOL LEGEND			X	X			
PL111.1	PLUMBING PLAN -DRAIN/WASTE/VENT	X		X	X		X	
PL112.1	PLUMBING PLAN -WATER, GAS & COMPRESSED AIR	X						
PL401.1	ENLARGED PLUMBING PLANS	X		X	X			
PL501.1	PLUMBING DETAILS			X	X			
PL502.1	PLUMBING DETAILS			X	X			
PL901.1	WASTE & VENT ISOMETRIC			X	X			
MH001.1	MECHANICAL SCHEDULES							
MH002.1	MECHANICAL SCHEDULES							
MH003.1	MECHANICAL SCHEDULES							
MH111.1	LEVEL 1 MECHANICAL PLAN							
EE001.1	SHEET INDEX, AND ABBREVIATIONS	X						
ES101.1	ELECTRICAL SITE PLAN	X						
ES501.1	ELECTRICAL DETAILS	X						
EP601.1	ONE-LINE DIAGRAM	X						

BP-2 SHEET MATRIX

SHEET NUMBER	SHEET NAME	SUPERSEDES	BP-2
GI000.2	COVER SHEET		X
GI001.2	SHEET INDEX		X
GI003.2	CODE SUMMARY DFCM	GI002.1	X
GI004.2	SPECIAL INSPECTIONS	GI003.1	X
GI101.2	LEVEL 1 CODE PLAN	GI101.1	X
L-601.2	IRRIGATION PLAN		X
L-602.2	IRRIGATION DETAILS (SYSTEM & SPRAY)		X
L-603.2	IRRIGATION DETAILS (DRIP)		X
L-701.2	PLANTING PLAN (OVERALL)		X
L-702.2	ENLARGED PLANTING PLAN		X
L-703.2	PLANTING DETAILS		X
AS101.2	ARCHITECTURAL SITE PLAN	AS101.1	X
AS110.2	ARCHITECTURAL SITE DETAILS		X
AE101.2	LEVEL 1 FLOOR PLAN		X
AE121.2	LEVEL 1 DIMENSION PLAN		X
AE171.2	LEVEL 1 REFLECTED CEILING PLAN		X
AE191.2	ROOF PLAN		X
AE401.2	ENLARGED PLANS AND INTERIOR ELEVATIONS		X
AE402.2	ENLARGED PLANS AND INTERIOR ELEVATIONS		X
AE501.2	SECTION DETAILS		X
AE502.2	SECTION DETAILS		X
AE503.2	SECTION DETAILS		X
AE510.2	DOOR AND WINDOW DETAILS		X
AE520.2	CEILING DETAILS		X
AE525.2	LADDER AND ROOF DETAILS		X
AE526.2	SCREEN DETAILS		X
AE527.2	DFCM ROOFING DETAILS		X
AE528.2	DFCM ROOFING DETAILS		X
AE530.2	MILLWORK DETAILS		X
AE535.2	BOOTH DETAILS		X
AE601.2	PANEL TYPES, FRAME TYPES, AND DOOR SCHEDULE		X
AE602.2	FRAME TYPES		X
AE610.2	TYPICAL SIGNAGE		X
GI002.2	SHEET MATRIX		X
AE201.2	BUILDING ELEVATIONS		X
AE301.2	BUILDING SECTIONS		X
AE312.2	WALL SECTIONS		X
AE311.2	WALL SECTIONS		X
AE313.2	WALL SECTIONS		X
AE314.2	WALL SECTIONS		X
P-001.2	PLUMBING SCHEDULES AND SYMBOL LEGEND		X
PL111.2	PLUMBING PLAN – DRAIN/WASTE/VENT		X
PL112.2	PLUMBING PLAN - WATER, GAS AND COMPRESSED AIR		X
PL401.2	ENLARGED PLUMBING PLAN		X
PL402.2	ENLARGED PLUMBING PLAN		X
PL501.2	PLUMBING DETAILS		X
PL502.2	PLUMBING DETAILS		X
PL604.2	CO2 AND AR GAS FLOW DIAGRAM		X
PL901.2	WASTE AND VENT ISOMETRIC		X
PL121.2	ROOF PLUMBING PLAN		X
PL601.2	DOMESTIC WATER FLOW DIAGRAM		X
PL602.2	GAS FLOW DIAGRAM		X
PL603.2	COMPRESSED AIR FLOW DIAGRAM		X
MH000.2	PROJECT NOTES		X
MH001.2	MECHANICAL SCHEDULES		X
MH002.2	MECHANICAL SCHEDULES		X
MH003.2	MECHANICAL SCHEDULES		X
MH110.2	LEVEL 1 OVERALL MECHANICAL PLAN		X
MH111.2	LEVEL 1 MECHANICAL PLAN		X
MH112.2	LEVEL 1 MECHANICAL PLAN - EXTRACTOR		X

BP-2 SHEET MATRIX

SHEET NUMBER	SHEET NAME	SUPERSEDES	BP-2
MH121.2	ROOF LEVEL MECHANICAL PLAN		X
MH311.2	MECHANICAL SECTIONS		X
MH312.2	MECHANICAL SECTIONS		X
MH313.2	MECHANICAL SECTIONS		X
MH411.2	LEVEL 1 OFFICE AREA MECHANICAL PLAN		X
MH501.2	MECHANICAL DETAILS		X
MH502.2	MECHANICAL DETAILS		X
MH503.2	MECHANICAL DETAILS		X
MH611.2	MECHANICAL DIAGRAMS		X
MH612.2	MECHANICAL OVERALL DIAGRAM		X
MI001.2	CONTROL SCHEDULES		X
MI110.2	LEVEL 1 MECHANICAL CONTROL PLAN		X
MI601.2	CONTROL DIAGRAM – RTU-1		X
MI602.2	CONTROL DIAGRAMS - MAU		X
MI603.2	CONTROL DIAGRAMS - MISCELLANEOUS		X
EE001.2	SHEET INDEX, AND ABBREVIATIONS		X
EE002.2	TELECOM SYMBOLS AND ABBREVIATIONS		X
EE003.2	AV ROUNGH-IN SCHEDULE AND GENERAL NOTES		X
EE501.2	ELECTRICAL DETAILS		X
EE601.2	GROUNDING RISER DIAGRAM		X
EE701.2	TYPICAL MOUNTING DETAILS		X
EE702.2	TYPICAL LABELING DETAILS		X
ES101.2	ELECTRICAL SITE PLAN		X
ES102.2	ELECTRICAL SITE UNDERGROUND CONDUIT PLAN		X
ES501.2	ELECTRICAL SITE DETAILS		X
ES502.2	PULLBOX SCHEDULE AND RISER DIAGRAM		X
EP101.2	LEVEL 1 POWER PLAN		X
EP102.2	ROOF POWER PLAN		X
EP103.2	ROOF POWER PLAN		X
EP401.2	ENLARGED PLANS		X
EP450.2	ENLARGED TELECOM PLANS		X
EP550.2	TELECOM DETAILS		X
EP551.2	TELECOM DETAILS		X
EP553.2	TELECOM CABLE TRAY DETAILS		X
EP601.2	ONE-LINE DIAGRAM		X
EP602.2	RISERS AND DIAGRAMS		X
EP603.2	EQUIPMENT SCHEDULES		X
EP604.2	PANEL SCHEDULES		X
EP605.2	PANEL SCHEDULES		X
EP606.2	PANEL SCHEDULES		X
EP651.2	TELECOM CABLE RISER DIAGRAM		X
EL101.2	LEVEL 1 LIGHTING PLAN		X
EL102.2	ENLARGED LIGHTING PLANS		X
EL601.2	LIGHTING FIXTURE SCHEDULE		X
EL602.2	LIGHTING FIXTURE SCHEDULE		X
EY101.2	LEVEL 1 AUXILIARY PLAN		X
EY102.2	LEVEL 1 AUXILIARY PLAN		X
EY601.2	FIRE ALARM RISER DIAGRAMS		X
EY650.2	ACCESS CONTROL RISER DIAGRAMS		X
EY651.2	CCTV RISER DIAGRAM		X
EJ101.2	LEVEL 1 AV ROUGH-IN PLAN		X
EJ601.2	AV ROUGH-IN DETAILS & DIAGRAMS		X
EK101.2	LIGHTNING PROTECTION PLAN		X
EK501.2	LIGHTNING PROTECTION DETAILS		X
EK502.2	GROUNDING DETAILS		X
TA001.2	SHEET INDEX, ABBREVIATIONS, AND NOTES		X
TA002.2	AV SYSTEMS EQUIPMENT SCHEDULE		X
TA101.2	LEVEL 1 AUDIO VISUAL SYSTEMS PLAN		X
TA601.2	AUDIO VISUAL SYSTEMS DETAILS & DIAGRAMS		X
TA602.2	AV SYSTEMS CONNECTION PANEL DETAILS		X

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. BATES
9142276-0301
LICENSED ARCHITECT

SHEET MATRIX

GI002.2

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DFCM GUIDELINES FOR SEISMIC RESTRAINT OF NONSTRUCTURAL COMPONENTS

1. General Comments:

a) These guidelines shall apply to all nonstructural components installed in newly constructed buildings, building additions, and all new or replaced components in existing buildings. Nonstructural components consist of architectural, mechanical and electrical components that are permanently attached to the primary structure.

b) When a change in occupancy occurs that causes an existing building to be re-classified to a higher Occupancy Category per IBC Table 1604.5, all existing nonstructural components shall be confirmed to meet the seismic restraint requirements of Chapter 13 in ASCE 7.

c) These guidelines define the minimum submittal requirements to obtain DFCM approval for seismic restraint of nonstructural components. The guidelines noted herein shall not cancel or set aside more conservative requirements specified by the design professional in responsible charge.

d) All references made to the IBC or ASCE 7 reference the 2006 and 2005 editions, respectively.

2. Checklist Requirements:

a) All DFCM projects shall have the "**Nonstructural Component Checklist**' clearly shown on the front of the construction plans. Click here to download a PDF of this checklist.

b) Each item within the checklists shall have the appropriate box checked and comments shall be provided noting the particular component(s) that require seismic restraint. See the example checklists provided at the end of this handout.

c) The "Not Required" box should only be checked if the component is exempt from requiring seismic restraint by Section 13.1.4 of ASCE 7, or if the component in question will not be provided as part of the project.

d) If the "Deferred Submittal" box is checked the additional requirements of Section 6 included in this handout must be met.

3. Submittal Requirements:

a) The seismic restraint requirements for nonstructural components may be provided with the original construction documents submitted to DFCM or may be submitted later as a deferred submittal. Whether provided with the original plans or later, the requirements of this section must be met.

b) Seismic restraint submittals shall include construction documents meeting the requirements of Section 4 of this handout as well as supporting design information discussed in Section 5 of this handout.

4. Construction Documents:

a) The construction documents must include seismic restraint details providing specific information relating to the materials, type, size, and locations of anchorages; materials used for bracing; attachment requirements of bracing to structure and component; and locations of transverse and longitudinal sway bracing and rod stiffeners.

b) The construction documents must note the special inspection and testing requirements for the seismic restraint of nonstructural components per Section 13.2.7 of ASCE 7.

c) DFCM will accept products that have been tested and listed under the ICC Evaluation Service Program, as long as they are installed in accordance with the provisions and limitations of the ICC Listing Report.

d) The requirements for anchorage/bracing of nonstructural components cannot be satisfied by a general reference to Design Manuals. Design professional may utilize these manuals as a basis of their design, but must provide all supporting documentation to ensure that the design conforms to the requirements of the 2006 IBC.

e) Rod hangers shall not be used as seismic supports unless the length of the hanger from the supporting structure is 12 in. or less. Rod hangers shall not be constructed in a manner that subjects the rod to bending moments.

5. Seismic Restraint Design Requirements:

a) Per IBC 1613.1, the seismic restraint of nonstructural components shall meet the requirements of ASCE 7. If the component in question is exempted by Section 13.1.4 of ASCE 7, a submittal noting the seismic restraint of that particular component is not required.

b) The seismic restraint design must meet the requirements listed in Table 13.2-1 of ASCE 7. These requirements may be met by providing either a project-specific design prepared by a registered design professional, or a manufacturer's certification that the component is seismically qualified.

c) A certificate of seismic qualification by the manufacturer must be accompanied by one of the following items:

- An engineered analysis conforming to the requirements of Chapter 13 of ASCE 7.

- Testing by a nationally recognized testing standard procedure such as ICC-ES AC 156. The substantiated seismic design capacities shall exceed the seismic demands determined by Section 13.3 of ASCE 7.

- Experience data conforming to a nationally recognized procedure. The substantiated seismic design capacities shall exceed the seismic demands determined by Section 13.3 of ASCE 7.

d) The following seismic restraint publications shall be considered "Accepted Engineering Practice":

- Seismic Restraint Manual, Guidelines for Mechanical Systems (3rd Edition, published by SMACNA)

- Guidelines and details that have been evaluated and reported under the International Code Council Evaluation Service Program (ICC-ES).

- Seismic restraint manuals, guidelines and details that have been approved by the California Office of Statewide Health Planning and Development (OSHPD) under their pre-approval program for seismic restraint systems.

6. Deferred Submittals:

a) Deferred submittals of seismic restraint of nonstructural components must be submitted to the DFCM Building Official a minimum of two weeks prior to the planned installation in order to allow for plan review and forwarding to inspectors. In the event that the submittal is deficient additional time may become necessary.

b) Deferred submittals shall be clearly noted on the construction plans as required by IBC 106.3.4.2. Prior to submitting to the DFCM Building Official, the submittal must be reviewed by the design professional in responsible charge and approved for general conformance with the design of the building. Please note on the plans that no deferred submittal element shall be installed until DFCM approval has been received.

c) If seismic restraints of nonstructural components are installed prior to receiving DFCM approval they shall not be covered or concealed until plan review and inspection approval. Further, installers are proceeding at their own risk until plan review and inspection approval occurs.

DFCM SUBMITTAL NOTES

1. DEFERRED SUBMITTALS FOR SEISMIC RESTRAINT OF NONSTRUCTURAL COMPONENTS MUST BE SUBMITTED TO THE DFCM BUILDING OFFICIAL A MINIMUM OF TWO WEEKS PRIOR TO THE PLANNED INSTALLATION IN ORDER TO ALLOW FOR PLAN REVIEW AND FORWARDING TO INSPECTORS. IN THE EVENT THAT THE SUBMITTAL IS DEFICIENT ADDITIONAL TIME MAY BECOME NECESSARY.
2. IF SEISMIC RESTRAINTS OF NON-STRUCTURAL COMPONENTS ARE INSTALLED PRIOR TO RECEIVING DFCM APPROVAL THEY SHALL NOT BE COVERED OR CONCEALED UNTIL RECEIVING BOTH PLAN REVIEW AND INSPECTION APPROVAL. FURTHER, INSTALLERS ARE PROCEEDING AT THEIR OWN RISK UNTIL PLAN REVIEW AND INSPECTION APPROVAL OCCURS.
3. THE REQUIREMENTS FOR SEISMIC RESTRAINT OF NONSTRUCTURAL COMPONENTS CANNOT BE SATISFIED BY A GENERAL REFERENCE TO DESIGN MANUALS. THE DESIGN PROFESSIONAL MAY UTILIZE THESE MANUALS AS A BASIS OF THEIR DESIGN, BUT MUST PROVIDE ALL SUPPORTING DOCUMENTATION TO ENSURE THAT THE DESIGN CONFORMS TO THE REQUIREMENTS OF ASCE 7- 05, CHAPTER 13.
4. SUBMITTALS MUST INCLUDE DETAILS OF THE PROPOSED SEISMIC RESTRAINT OF NONSTRUCTURAL COMPONENTS. THESE DETAILS MUST SHOW SPECIFIC INFORMATION RELATING TO THE MATERIALS, TYPE, SIZE, AND LOCATIONS OF ANCHORAGES; MATERIALS USED FOR BRACING; ATTACHMENT REQUIREMENTS OF BRACING TO STRUCTURE AND COMPONENT; AND LOCATIONS OF TRANSVERSE AND LONGITUDINAL SWAY BRACING AND ROD STIFFENERS. SUBMITTALS MAY ALSO REQUIRE STRUCTURAL CALCULATIONS, ENGINEERING REPORTS, TEST DATA, AND/OR SPECIFICATIONS TO ENSURE CODE COMPLIANCE.

REQUIREMENTS FOR OCCUPANCY

1. A CODE INSPECTION REPORT RECOMMENDING THAT A CERTIFICATE OF OCCUPANCY BE ISSUED.
2. FINAL REPORT FROM THE SPECIAL INSPECTION AGENCY.
3. CERTIFICATE OF FIRE CLEARANCE FROM THE STATE FIRE MARSHALL.
4. FINAL APPROVAL FROM THE STATE ELEVATOR INSPECTOR, IF APPLICABLE.
5. FINAL APPROVAL FROM THE STATE BOILER INSPECTOR, IF APPLICABLE.
6. REPORT OF THE DISINFECTION OF THE POTABLE WATER SYSTEM. IPC 610.
7. A CERTIFICATE OF COMPLIANCE FROM THE APPROVED FABRICATOR, IF A APPLICABLE. IBC 1704.2.2
8. A STAMPED AND SIGNED FINAL REPORT FORM THE STRUCTURAL ENGINEER WHEN STRUCTURAL OBSERVATION IS REQUIRED BY IBC 1710.
9. FINAL REPORT FROM THE SPECIAL INSPECTOR AND THE MECHANICAL ENGINEER WHEN SMOKE CONTROL IS REQUIRED. THE REPORTS MUST COMPLY WITH IBC 909.18.8.3.
10. THE NFRC CERTIFICATE TO SHOW COMPLIANCE WITH THE FENESTRATION REQUIREMENTS OF THE INTERNATIONAL ENERGY CODE.

NONSTRUCTURAL COMPONENT CHECKLIST

ITEM DESCRIPTION	NOT REQUIRED	ON CONST. DOCUMENTS	DEFERRED SUBMITTAL	COMMENTS
ARCHITECTURAL COMPONENTS:				
Interior Nonstructural Walls & Partitions		X		
Cantilever Elements (i.e. parapets, etc.)		X		
Exterior Nonstructural Wall Elements		X		
Veneer		X		
Penthouse		X		
Ceilings (i.e. suspended grid or hard-lid)		X		
Cabinets (i.e. storage cabinets, equip, etc.)		X		
Access Floors	X			
Storage Racks	X			
Appendages & Ornamentations	X			
Signs & Billboards	X			
MEP COMPONENTS:				
Fire Sprinklers			X	Fire Sprinkler Submittal
Mechanical Equipments (i.e. HVAC, fans, air handlers, boilers, furnaces, tanks, chillers, water heaters, heat exchangers, evaporates, engines, turbines, pumps, compressors, MFR equipments, etc.)			X	MEP Seismic Restraints Submittals
Electrical Equipments (i.e. generators, batteries inverters, transformers, MCC, panel boards, switch gear, cabinets, etc.)			X	MEP Seismic Restraints Submittals
Elevator & Escalator Components	X			
Communication Equipments, Computers, Instrumentation, and Controls	X			
Roof - mounted Chimneys, Stacks, Cooling & Electrical Towers	X			
Lighting Fixtures		X		
Vibration Isolated Components	X			
Piping & Conduit System			X	MEP Seismic Restraints Submittals
Ductwork (including in-line components)			X	MEP Seismic Restraints Submittals
Conveyors	X			
Cable Trays			X	MEP Seismic Restraints Submittals

CODE ANALYSIS

APPLICABLE CODES

	Year		Year
International Building Code	2021	National Electrical Code	2020
International Mechanical Code	2021	Uniform Code for	
International Plumbing Code	2021	Building Conservation	
International Fire Code	2021	ADA Accessibility	
International Energy		Guildelines	2010
Conservation Code	2021	Accessibility Standard	
International Fuel		ICC-A117.1	2009
Gas Code	2021		

A. Occupancy and Group: B
Change in Use: Yes _____ No X Mixed Occupancy: Yes _____ No X
Special Use and Occupancy (e.g. High Rise, Covered Mall): N/A

B. Seismic Design Category: D Design Wind Speed: 105 mph

C. Type of Construction (circle one):

I		II		III		IV	V	(V)
A	B	A	B	A	B	HT	A	B

D. Fire Resistance Rating Requirements for the Exterior Walls based on the fire separation distance (in hours):
North: 0 South: 0 East: 0 West: 0

E. Mixed Occupancies: _____ Nonseparated Uses: √

F: Sprinklers:
Required: _____ Provided: √ Type of Sprinkler System:FULL NFPA-13

G: Number of Stories: 1 Building Height: 20'-0"

H: Actual Area per Floor (square feet): 17,052

I: Tabular Area: 36,000

J: Area Modifications: N/A

a) N/A

b) Sum of the Ratio Calculations for Mixed Occupancies:
$\frac{\text{Actual Area}}{\text{Allowable Area}} \leq 1$

c) Total Allowable Area for:
1) One Story: N/A
2) Two Story: A_s (2) N/A
3) Three Story: A_s (3) N/A

d) Unlimited Area Building: Yes _____ No X Code Section:TABLE 507.4

K. Fire Resistance Rating Requirements for Building Elements (hours).

Element	Hours	Assembly Listing	Element	Hours	Assembly Listing
Exterior Bearing Walls	0		Floors - Ceiling Floors	0	
Interior Bearing Walls	0		Roofs - Ceiling Roofs	0	
Exterior Non-Bearing Walls	0		Exterior Doors and Windows	0	
Structural Frame	0		Shaft Enclosures	N/A	
Partitions - Permanent	0		Fire Walls	N/A	
Fire Barriers	0		Fire Partitions	N/A	
			Smoke Partitions	N/A	

L. Design Occupant Load: 147 Stair Occupant Load: N/A
Exit Width Required: 30" Stair Width Required: N/A
Exit Width Provided: 144" Stair Width Provided: N/A

M. Minimum Number of Required Plumbing Facilities:
a) Water Closets - Required 4
Total Provided: 5
b) Lavatories - Required 3
Total Provided: 4
c) Bath Tubs or Showers: Required: 0
Provided: 0
d) Drinking Fountains: 2 Service Sinks: 1
Provided Level 1: (DF) 2, Level 1: (SS) 1

FOOTNOTES:

1) In case of conflict with the U.S. Department of Justice Federal Registers Parts I through V - ADA Guidelines and specific reference to the International Building Code Accessibility Chapters, the more restrictive requirement shall govern.

2) Additional Code Information shall be provided at the discretion of the Building Official for Complex Buildings. Including, but not limited to:
a) High Rise Requirements.
b) Atriums.
c) Performance Based Criteria.
d) Means or Egress Analysis.
e) Fire Assembly Locator Sheet.
f) Exterior and Interior Accessibility Route.
g) Fire Stopping, Including Tested Design Number.

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. [illegible]
9142[illegible]-0301
LICENSED ARCHITECT

CODE SUMMARY DFCM

GI003.2

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Special Inspection, Material Testing & Structural Observation Items Required by Chapter 17 of the 2021 IBC

Indicate items requiring special inspection, structural testing, or structural observations by checking the appropriate box. All items not requiring inspection/testing should be removed from the form. For items requiring continuous inspection, a special inspector must be present onsite during the performance of that task. In most cases "periodic" inspections/tests shall be performed prior to commencing the task, intermittently during the task, and at the completion of the task. The "Detailed Instructions & Frequency" provides a description of the presumed requirements for tasks requiring "periodic" inspections. The design professional in responsible charge should revise the requirements as needed on a project-specific basis.

FABRICATORS (IBC 1704.2.5.1 & 1705.10)

☐ Approved Fabricator	Yes	No

Fabricators Name:	
Fabricators plant location	

Required In-plant Inspections: ☐ Steel Construction ☐ Cold-formed Construction ☐ Concrete Construction ☐ Other: ☐ Wood Construction ☐ Other:

STRUCTURAL STEEL (IBC 1705.2.1, 1705.12.1 & 1705.13.1)

Please refer to drawing SE003.1 for further information re: Structural Steel.

Item			*Detailed Instructions and Frequencies*
PRIOR TO WELDING (TABLE N5.4-1, AISC 360-16):			
Welder qualification records	☑ Observe	☑ Perform	Verify welder qualification records and continuity records.
Welding procedures (WPS) and consumable certificates	☐ Observe	☑ Perform	
Material identification	☑ Observe	☐ Perform	Verify type and grade of material.
Welder identification	☐ Observe	☐ Perform	Confirm a system is in place by which a welder who has welded a joint or member can be identified.
Fit-up groove welds	☐ Observe	☑ Perform	Verify joint preparation, dimensions, cleanliness, tacking, and backing.
Fit-up of CJP welds to HSS T-, Y- and K- joints without backing	☑ Observe	☑ Perform	Verify joint preparation, dimensions, cleanliness and tacking.
Access holes	☑ Observe	☐ Perform	Verify configuration and finish.
Fit-up of fillet welds	☑ Observe	☐ Perform	Verify dimensions, cleanliness and tacking.
DURING WELDING (TABLE N5.4-2, AISC 360-16):			
Control and handling of welding consumables	☑ Observe	☐ Perform	Verify packaging and exposure control.
Cracked tack welds	☑ Observe	☐ Perform	Verify that welding does not occur over cracked tack welds.
Environmental conditions	☑ Observe	☐ Perform	Verify wind speed is within limits as well as precipitation and temperature.
WPS followed	☑ Observe	☐ Perform	Verify items such as settings on welding equipment, travel speed, welding materials, shielding gas type/flow

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			rate, preheat applied, interpass temperature maintained, and proper position.
Welding techniques	☑ Observe	☐ Perform	Verify interpass and final cleaning, each pass is within profile limitations, and quality of each pass.
Headed stud anchors	☐ Observe	☑ Perform	Verify placement and installation of head stud anchors.
AFTER WELDING (TABLE N5.4-3, AISC 360-16):			
Welds cleaned	☑ Observe	☑ Perform	Verify that welds have been properly cleaned.
Size, length, and location of welds	☐ Observe	☑ Perform	Verify the size, length and location of welds.
Welds meet visual acceptance criteria	☐ Observe	☑ Perform	Verify that welds meet crack prohibition, base metal fusion, profile, size, undercut, and porosity provisions.
Arc strikes	☐ Observe	☑ Perform	Verify that arc strikes do not exist outside the permanent weld areas.
k-area	☐ Observe	☑ Perform	When welding of doubler plates; continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks.
Backing & weld tabs removed	☐ Observe	☑ Perform	If required on the approved construction documents, verify that back and weld tabs are removed.
Repair activities	☐ Observe	☑ Perform	Verify that repair activities are performed in accordance with AISC 360 and AWS D1.1.
Documentation	☐ Observe	☑ Perform	Document the acceptance or rejection of the welded joint or member.
Prohibited welds	☑ Observe	☐ Perform	Verify that no prohibited welds have been added with the approval of the engineer of record.
NONDESTRUCTIVE TESTING (SECTION N5, AISC 360-16):			
CJP welds (Risk Cat. II)	☐ Observe	☐ Perform	
CJP welds (Risk Cat. III or IV)	☐ Observe	☐ Perform	
Welded joints subject to fatigue	☐ Observe	☐ Perform	
PRIOR TO BOLTING (TABLE N5.6-1, AISC 360-16):			
➢ *Not required if only snug-tight joints are specified [per Section N5.6(1) of AISC 360-16].*			
Certifications of fasteners	☑ Observe	☑ Perform	Verify that manufacturer's certificates are available for fastener materials.
Fasteners marked	☑ Observe	☐ Perform	Verify that fasteners have been marked in accordance with ASTM requirements.
Proper fasteners for joint	☑ Observe	☐ Perform	Verify grade, type, and bolt length if threads are excluded from the shear plane.
Proper bolting procedure	☑ Observe	☐ Perform	Verify proper procedure is used for the joint detail.
Connecting elements	☑ Observe	☐ Perform	Verify appropriate faying surface condition and hole preparation, if specified, meet requirements.
Pre-installation verification testing	☑ Observe	☑ Perform	Observe and document verification testing by installation personnel for fastener assemblies and methods used.
Proper storage	☑ Observe	☐ Perform	Verify proper storage of bolts, nuts, washers, and other fastener components.
DURING BOLTING (TABLE N5.6-2, AISC 360-16):			
➢ *Not required if only snug-tight joints are specified [per Section N5.6(1) of AISC 360-16].*			
➢ *Not required for pretensioned joints using turn-of-the-nut method with match-marking, direct-tension-indicators, or twist-off type tension control method [per Section N5.6(2) of AISC 360-16].*			
Fastener assemblies	☑ Observe	☐ Perform	Verify that fastener assemblies are of suitable

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			condition, paced in all holes, and washers are positioned as required.
Snug-tight prior to pretensioning	☑ Observe	☐ Perform	Verify that joints are brought to snug-tight condition prior to pretensioning operation.
Fastener component	☑ Observe	☐ Perform	Verify that fastener component is not turned by wrench prevented from rotating.
Pretensioned fasteners	☑ Observe	☐ Perform	Verify that fasteners are Pretensioned in accordance with RCSC Specification, progressing systematically from the most rigid point toward the free edges.
AFTER BOLTING (TABLE N5.6-3, AISC 360-16):			
Documentation	☐ Observe	☑ Perform	Document the acceptance or rejection of bolted connections.
OTHER STEEL INSPECTIONS (SECTION N5.7 & N5.8, AISC 360-16; Tables J8.1 & J10.1, AISC 341-16):			
Galvanized structural steel	☐ Observe	☐ Perform	
Structural steel details	☐ Observe	☐ Perform	
Anchor rods and other embedments supporting structural steel	☐ Observe	☐ Perform	
Reduced beam sections (RBS)	☐ Observe	☐ Perform	
Protected zones	☐ Observe	☐ Perform	
H-piles	☐ Observe	☐ Perform	
COMPOSITE CONSTRUCTION – STEEL & CONCRETE (TABLES J9.1, J9.2, J9.3 of AISC 341-16):			
Prior to concrete placement	☑ Observe	☐ Perform	Verify type and grade of reinforcing steel; carbon equivalent if other than A706 bars; proper reinforcing steel size, spacing and orientation; that bar has not been re-bent; bar is tied and supported; proper clearances are provided; and composite member has required size.
During concrete placement	☑ Observe	☐ Perform	Verify appropriate mix design; limitations on water added to truck/pump; and proper placement techniques are used to limit segregation.
After concrete placement	☑ Observe	☐ Perform	Document that minimum concrete compressive strength was achieved at specified age.
STEEL ROOF AND FLOOR DECKS (IBC 1705.2.2 and SDI QA/QC—2017):			
Prior to metal deck attachment	☐ Observe	☑ Perform	Verify and document compliance of materials (deck and all deck accessories) with approved construction documents, including profiles, material properties, and base metal thickness.
After metal deck placement	☐ Observe	☑ Perform	Verify and document compliance of deck, and deck accessories, installation with the approved construction documents. Verify that mill certificates comply with approved construction documents.
Prior to welding	☑ Observe	☐ Perform	Verify that welding procedures and certifications of consumables are available, material is properly identified, and welding equipment is appropriate.
During welding	☑ Observe	☐ Perform	Verify that welders are qualified, proper handling of consumables is provided, that environmental conditions are acceptable and WPS is followed.

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After welding	☐ Observe	☑ Perform	Verify size, location and appearance of welds. Verify that repair activities are acceptable.
Prior to mechanical fastening	☑ Observe	☐ Perform	Verify that manufacturer's installation instructions and tools are available. Verify proper storage of fasteners.
During mechanical fastening	☑ Observe	☐ Perform	Verify that fasteners are positioned appropriately and installed per manufacturer's instructions.
After mechanical fastening	☐ Continuous	☑ Periodic	Verify spacing and type of all fasteners. Verify that repair activities are acceptable.
OPEN WEB STEEL JOISTS AND JOIST GIRDERS (IBC TABLE 1705.2.3):			
End connections – welded or bolted	☐ Continuous	☑ Periodic	Visual inspection to confirm that end connections conform to the approved construction documents.
Bridging – horizontal or diagonal	☐ Continuous	☑ Periodic	Visual inspection to confirm that bridging is provided per the approved construction documents.
COLD-FORMED STEEL CONSTRUCTION (IBC 1705.2.4, 1705.11.2, 1705.12.3, and 1705.12.9):			
Trusses spanning > 60-feet	☐ Continuous	☐ Periodic	
Wind-force-resisting systems or seismic-force-resisting systems	☐ Continuous	☐ Periodic	
Cold-formed steel special bolted moment frame	☐ Continuous	☐ Periodic	

CONCRETE CONSTRUCTION (IBC 1705.3 & 1705.12.1)

Please refer to drawing SE003.1 for further information re: Concrete Construction.

Item			*Detailed Instructions and Frequencies*
Reinforcing steel, including prestressing tendons	☐ Continuous	☑ Periodic	Verify prior to placing concrete that reinforcing is of specified type, grade and size; that it is free of oil, dirt and rust; that it is located and spaced properly; that hooks, bends, ties, stirrups and supplemental reinforcement are placed correctly; that lap lengths, stagger and offsets are provided, and that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report.
Welding of reinforcing steel	☑ Continuous	☑ Periodic	Visually inspect all welds and also verify weldability of reinforcing steel based upon carbon equivalent and in accordance with AWS D1.4. Continuously inspect any welds over 5/16" thick.
Cast-in bolts & embeds	☐ Continuous	☑ Periodic	Inspection of anchors or embeds cast in concrete is required when allowable loads have been increased or where strength design is used.
Post-installed anchors or dowels	☑ Continuous	☑ Periodic	All post-installed anchors/dowels shall be specially inspected as required by the approved ICC-ES report. Horizontally or upwardly inclined anchors that resist sustained tension loads require continuous inspection and approved installers.
Use of required mix design	☐ Continuous	☑ Periodic	Verify that all mixes used comply with the approved construction documents; ACI 318: Ch. 19, 26.4.3, 26.4.4, and IBC 1904.1, 1904.2.
Concrete sampling for strength tests, slump, air content, and temperature	☑ Continuous	☐ Periodic	
Concrete & shotcrete placement	☑ Continuous	☐ Periodic	

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Curing temperature and techniques	☐ Continuous	☑ Periodic	Verify that the ambient temperature for concrete is kept at > 50°F for at least 7 days after placement. High-early-strength concrete shall be kept at > 50°F for at least 3 days. Accelerated curing methods may be used (see ACI 318: 26.5.3-26.5.5). The ambient temperature for shotcrete shall be > 40°F for the same period of time as noted for concrete. Shotcrete shall be kept continuously moist for at least 24 hours after shotcreting. All concrete materials, reinforcement, forms, fillers, and ground shall be free from frost. In hot weather conditions ensure that appropriate measures are taken to avoid plastic shrinkage cracking and that the specified water/cement ratio is not exceeded.
Pre-stressed concrete	☐ Continuous	☐ Periodic	
Erection of precast concrete	☐ Continuous	☐ Periodic	
Precast concrete diaphragm connections or reinforcement classified as moderate or high deformability elements in seismic design category C-F	☐ Continuous	☐ Periodic	
Installation tolerances of precast concrete diaphragm connections	☐ Continuous	☐ Periodic	
Strength verification	☐ Continuous	☐ Periodic	
Formwork	☐ Continuous	☑ Periodic	Verify that the forms are placed plumb and conform to the shapes, lines, and dimensions of the members as required by the approved construction documents.

MASONRY CONSTRUCTION (IBC 1705.4)

Please refer to drawing SE003.1 for further information re: Masonry Construction.

Item			*Detailed Instructions and Frequencies*
PRIOR TO CONSTRUCTION (Table 3, TMS 602-16):			
Review material certificates, mix designs, test results and construction procedures	☐ Continuous	☑ Periodic	Verify that materials conform to the approved construction documents. Mix design, test results, material certificates, and construction procedures should be submitted to inspector for review. Mortar mix designs shall conform to ASTM C 270 while grout shall conform to ASTM C 476. Material certificates shall be provided for reinforcement; anchors, ties, fasteners, and metal accessories; masonry units; mortar and grout materials. Construction procedures for cold-weather or hot-weather construction shall be reviewed.
AS MASONRY CONSTRUCTION BEGINS (TABLE 4, TMS 602-16):			
Proportions of site-prepared mortar	☐ Continuous	☑ Periodic	Verify that mortar is of the type and color specified on the construction documents, that it conforms to ASTM C 270, and that it is mixed in accordance with Article 2.6 A of TMS-602-16.
Grade and size of prestressing tendons and anchorages	☐ Continuous	☑ Periodic	Verify that prestressing tendons comply with Article 2.4 B of TMS-602-16 and that anchorages, couplers, and end blocks comply with Article 2.4 H.

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Reinforcement, connectors, and anchorages	☐ Continuous	☑ Periodic	Verify that reinforcement, connectors, and anchorages are of the proper grade, type and size in accordance with Article 3.4 of TMS-602-16. Prestressing tendons shall be placed per Article 3.6 A.
Prestressing technique	☐ Continuous	☑ Periodic	Verify that prestressing technique complies with Article 3.6 B of TMS-602-16.
Properties of thin-bed mortar for AAC masonry	☑ Continuous	☑ Periodic	Verify that mortar complies with Article 2.1 C of TMS-602-16. (If Risk Category IV this should be performed on a continuous basis.)
Sample panel	☑ Continuous	☑ Periodic	Verify that sample panels are properly constructed and that subsequent work conforms per Article 1.6 D of TMS-602-16. (If Risk Category IV this should be performed on a continuous basis.)
PRIOR TO GROUTING (TABLE 4, TMS 602-16):			
Grout space	☑ Continuous	☑ Periodic	Verify that grout space is free of mortar droppings, debris, loose aggregate, and other deleterious materials and that cleanouts are provided per Article 3.2 D and 3.2 F of TMS-602-16. (If Risk Category IV this should be performed on a continuous basis.)
Placement of prestressing tendons and anchorages	☐ Continuous	☑ Periodic	Verify that prestressing tendons and anchorages are installed per the approved construction documents and per Articles 2.4 and 3.6 of TMS-602-16.
Placement of reinforcement, connectors, and anchor bolts	☑ Continuous	☑ Periodic	Verify that reinforcement, joint reinforcement, wall ties, anchor bolts and veneer anchors are installed in accordance with the approved construction documents and Articles 3.2 E and 3.4 of TMS-602-16. (If Risk Category IV this should be performed on a continuous basis.)
Proportions of site-prepared grout and prestressing grout for bonded tendons	☐ Continuous	☑ Periodic	Verify that grout is proportioned per ASTM C 476 and has a slump between 8-11 inches. Self-consolidated grout shall not be proportioned onsite. (see Articles 2.6 B and 2.4 G.1.b of TMS-602-16.)
DURING MASONRY CONSTRUCTION (TABLE 4, TMS 602-16):			
Materials and procedures	☐ Continuous	☑ Periodic	Ensure that materials and procedures conform to the approved construction documents and Article 1.5 of TMS-602-16.
Placement of masonry units and mortar joint construction	☐ Continuous	☑ Periodic	Verify that masonry units are properly placed and that mortar joint construction conforms to Article 3.3 B of TMS-602-16.
Size and location of structural elements	☐ Continuous	☑ Periodic	Verify the locations of structural elements with respect to the approved plans and confirm that tolerances meet the requirements of Article 3.3 F of TMS-602-16.
Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction.	☑ Continuous	☑ Periodic	Verify that correct anchorages and connections are provided per the approved plans and Sections 1.2.1, 6.2.1 and 6.3.1 of TMS-402-16. (If Risk Category IV this should be performed on a continuous basis.)
Welding of reinforcement	☑ Continuous	☐ Periodic	
Preparation, construction, and protection of masonry during cold weather (<40°F) or hot weather	☐ Continuous	☑ Periodic	Verify that cold-weather construction is performed in accordance with Article 1.8 C of TMS-602-16 and hot weather construction per Article 1.8 D of TMS-602-16.

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(>90°F).			
Application and measurement of prestressing force	☑ Continuous	☐ Periodic	
Placement of grout and prestressing grout for bonded tendons is in compliance	☑ Continuous	☐ Periodic	
Placement of AAC masonry units and construction of thin-bed mortar joints	☐ Continuous	☑ Periodic	Verify that mortar is placed in accordance with Article 3.3 B.9 of TMS-602-16. (If Risk Category IV this should be performed on a continuous basis.)
Observation of grout specimens, mortar specimens, and/or prisms	☐ Continuous	☑ Periodic	Confirm that specimens/prisms are performed as required by Article 1.4 B of TMS-602-16. (If Risk Category IV this should be performed on a continuous basis.)
MINIMUM TESTING:			
Verification of f'_m and f'_{AAC}	☐ Continuous	☑ Periodic	Determine the compressive strength for each wythe by the "unit strength method" or by the "prism test method" as specified in Article 1.4 B of TMS 602-16 prior to construction. (For Risk Category IV buildings this should be verified at every 5,000ft² of construction.)
Verification of Slump Flow and Visual Stability Index (VSI) for self-consolidating grout	☐ Continuous	☑ Periodic	Compressive strength tests should be performed in accordance with ASTM C 1019 for slump flow and ASTM C 1611 for VSI.
Verification of proportions of materials in premixed or pre-blended mortar and grout	☐ Continuous	☑ Periodic	Verify that proportions for mortar meet ASTM C 270 and proportions for grout meet ASTM C 476. (This applies to Risk Category IV buildings only.)

WOOD CONSTRUCTION (IBC 1705.5, 1705.11.1 & 1705.12.2)

Item			*Detailed Instructions and Frequencies*
High-load diaphragms	☐ Continuous	☐ Periodic	
Wood trusses spanning > 60-feet	☐ Continuous	☐ Periodic	
Structural wood	☐ Continuous	☐ Periodic	

MASS TIMBER CONSTRUCTION (IBC 1705.5.3)

Item			*Detailed Instructions and Frequencies*
Anchorage of connections of mass timber to timber deep foundation systems.	☐ Continuous	☐ Periodic	
Erection of mass timber construction	☐ Continuous	☐ Periodic	
Sealing of mass timber	☐ Continuous	☐ Periodic	
Inspection of connections where installation methods are required to meet design loads	See below	See below	
Threaded fasteners	☐ Continuous	☐ Periodic	
Adhesive anchors installed horizontally or upwardly inclined to resist sustained tension	☐ Continuous	☐ Periodic	
Adhesive anchors installed downwardly inclined	☐ Continuous	☐ Periodic	

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Bolted connections	☐ Continuous	☐ Periodic	
Concealed connections	☐ Continuous	☐ Periodic	

SOILS CONSTRUCTION (IBC 1705.6)

Please refer to drawing SE003.1 for further information re: Soils Construction.

Item			*Detailed Instructions and Frequencies*
Verify subgrade is adequate to achieve design bearing capacity	☐ Continuous	☑ Periodic	Prior to placement of concrete.
Verify excavations extend to proper depth and material	☐ Continuous	☑ Periodic	Prior to placement of compacted fill or concrete.
Verify subgrade has been appropriately prepared prior to placing compacted fill	☐ Continuous	☑ Periodic	Prior to placement of compacted fill.
Perform classification and testing of compacted fill materials	☐ Continuous	☑ Periodic	All materials shall be checked at each lift for proper classifications and gradations not less than once for each 10,000ft² of surface area.
Verify proper materials, densities and lift thicknesses during placement and compaction.	☑ Continuous	☐ Periodic	Verify use of proper materials and procedures in accordance with the geotechnical report. Verify densities and lift thicknesses during placement and compaction of compacted fill.

DRIVEN DEEP FOUNDATIONS (IBC 1705.7)

Item			*Detailed Instructions and Frequencies*
Verify materials, sizes and lengths	☐ Continuous	☐ Periodic	
Determine capacities and conduct necessary load tests	☐ Continuous	☐ Periodic	
Observe driving operations	☐ Continuous	☐ Periodic	
Verify placement locations & plumbness, confirm type & size of hammer, record number of blows per foot, record tip and butt elevations and document any damage to element	☐ Continuous	☐ Periodic	
Perform additional inspections for steel, concrete or other specialty elements.	☐ Continuous	☐ Periodic	

CAST-IN-PLACE DEEP FOUNDATIONS (IBC 1705.8)

Item			*Detailed Instructions and Frequencies*
Observe drilling operation and reporting	☐ Continuous	☐ Periodic	
Verify placement locations & plumbness, confirm element diameters, lengths, embedment and adequate end-bearing capacity. Record concrete or grout volumes.	☐ Continuous	☐ Periodic	
Perform additional inspections for concrete elements.	☐ Continuous	☐ Periodic	

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HELICAL PILE FOUNDATIONS (IBC 1705.9)

Item			*Detailed Instructions and Frequencies*
Record installation equipment used, pile dimensions, tip elevations, final depth, and final installation torque	☐ Continuous	☐ Periodic	
Verify that helical piles used match the approved submittal	☐ Continuous	☐ Periodic	

SPRAYED FIRE-RESISTANT MATERIALS (IBC 1705.15)

Item			*Detailed Instructions and Frequencies*
Surface preparation	☐ Continuous	☐ Periodic	
Material thickness	☐ Continuous	☐ Periodic	
Material density	☐ Continuous	☐ Periodic	
Bonding strength	☐ Continuous	☐ Periodic	

MASTIC AND INTUMESCENT FIRE-RESISTANT COATINGS (IBC 1705.16 & AWCI 12-B)

Item			*Detailed Instructions and Frequencies*
Surface preparation	☐ Continuous	☐ Periodic	
Thickness	☐ Continuous	☐ Periodic	

EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS) (IBC 1705.17)

Item			*Detailed Instructions and Frequencies*
Material and installation	☐ Continuous	☐ Periodic	

FIRE-RESISTANT PENETRATIONS AND JOINTS (IBC 1705.18)

➢ *Only required for high-rise buildings or those assigned to Risk Category III or IV per IBC Table 1604.5 or in fire areas containing group R occupancies with an occupant load greater than 250.*

Item			*Detailed Instructions and Frequencies*
Penetration firestops	☐ Continuous	☐ Periodic	
Fire-resistant joint systems	☐ Continuous	☐ Periodic	

SMOKE CONTROL (IBC 1705.19)

Item			*Detailed Instructions and Frequencies*
Verify device locations and perform leakage testing	☐ Continuous	☐ Periodic	
Pressure difference testing, flow measurements and detection and control verification	☐ Continuous	☐ Periodic	

ARCHITECTURAL COMPONENTS (IBC 1705.13.5)

➢ *Only required for buildings located within Seismic Design Category D, E, or F.*

Item			*Detailed Instructions and Frequencies*
Erection and fastening of exterior cladding or interior and exterior veneers	☐ Continuous	☐ Periodic	
Erection and fastening of interior and exterior nonbearing walls	☐ Continuous	☐ Periodic	
Access floors	☐ Continuous	☐ Periodic	

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STORAGE RACKS (IBC 1705.13.7)

➢ *Only required for buildings located within Seismic Design Category D, E, or F.*

Item			*Detailed Instructions and Frequencies*
Materials used	☐ Continuous	☐ Periodic	
Fabricated storage rack elements	☐ Continuous	☐ Periodic	
Storage rack anchorage installation.	☐ Continuous	☐ Periodic	
Completed storage rack system	☐ Continuous	☐ Periodic	

MECHANICAL & ELECTRICAL COMPONENTS (IBC 1705.13.6)

➢ *Only required for buildings located within Seismic Design Category C, D, E, or F.*

Item			*Detailed Instructions and Frequencies*
Anchorage of emergency or standby power systems	☐ Continuous	☐ Periodic	
Installation of piping systems carrying flammable, combustible or highly toxic materials	☐ Continuous	☐ Periodic	
Installation of HVAC ductwork containing hazardous materials	☐ Continuous	☐ Periodic	
Installation of vibration isolation systems having a clearance of ≤¼"	☐ Continuous	☐ Periodic	
Clearances to fire sprinkler drops and sprigs	☐ Continuous	☐ Periodic	
Designated seismic systems	☐ Continuous	☐ Periodic	

SEISMICALLY ISOLATED STRUCTURES (IBC 1705.13.8 & 1705.14.4)

Item			*Detailed Instructions and Frequencies*
Prototype tests	☐ Continuous	☐ Periodic	
Fabrication and installation	☐ Continuous	☐ Periodic	

SPECIAL CASES (IBC 1705.1.1) – material alternatives or unusual design applications

Item			*Detailed Instructions and Frequencies*
Material and installation	☐ Continuous	☐ Periodic	

MISCELLANEOUS AREAS

➢ *These inspections may be recommended by the Architect/Engineer and are to be approved by DFCM.*

Item			*Detailed Instructions and Frequencies*
Suspended Acoustical Ceilings	☐ Continuous	☐ Periodic	
Soil backfill (specify locations and frequency)	☐ Continuous	☐ Periodic	
Soils for curb and gutter (specify locations and frequency)	☐ Continuous	☐ Periodic	
Soils for parking lots (specify locations and frequency)	☐ Continuous	☐ Periodic	

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Soils for utility trench backfill	☐ Continuous	☐ Periodic	
Reinforcement for slab on grade sidewalks and drive approaches (specify locations and frequency)	☐ Continuous	☐ Periodic	
Concrete testing for slab on grade sidewalks and drive approaches (specify locations and frequency)	☐ Continuous	☐ Periodic	
Concrete testing for interior slab on grade (specify locations and frequency)	☐ Continuous	☐ Periodic	
Asphalt inspection (specify locations and frequency)	☐ Continuous	☐ Periodic	
Asphalt testing (specify locations and frequency)	☐ Continuous	☐ Periodic	
Seismic supports for duct work and sealing of joints for duct work	☐ Continuous	☐ Periodic	
Seismic supports for electrical raceways, cable trays and lights	☐ Continuous	☐ Periodic	
Seismic supports for plumbing lines including gas, water and steam and condensation	☐ Continuous	☐ Periodic	
Seismic bracing for mechanical units both on slab and suspended	☐ Continuous	☐ Periodic	

Special Inspectors Shall:

- Be approved by the Building Official prior to performing any duties;
- Provide proof of licensure as a special inspector by the State of Utah for each type of inspection;
- Inspection reports are to meet the requirements of IBC 1704.2.4 and DFCM standards;
- Inspection reports are to be submitted to the code consultant, architect, DFCM project manager, and the State of Utah Building Official within 48 hours of performing inspections;
- A final inspection report shall be submitted following completion of the project documenting the types of special inspections performed and a statement indicating that the structure is in compliance with the approved construction documents and applicable codes (see IBC 1704.2.4).

CONTRACTOR'S STATEMENT OF RESPONSIBILITY (IBC 1704.4)

The following statement must be provided on the plans along with a signature from the contractor prior to permit issuance.

Each contractor involved with the construction of wind or seismic force-resisting systems shall comply with the requirements of IBC 1704.4. The contractor is responsible for providing the special inspector access to approved plans and contract documents at the job site. All special inspection records shall be retained at the job site by the contractor and shall be made available to the Building Department upon request.

Declaration by General Contractor

I, the General Contractor of the project, agree to comply with the "Contractor Responsibility" items noted above.

Signature _____ Date _____

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STRUCTURAL OBSERVATIONS (IBC 1704.6)

Please refer to drawing SE002.1 for further information re: Structural Observations.

Item		*Proposed Frequency*	*Name of Structural Observer*
Footings, Slabs on Grade, & Concrete over Steel Deck	☑ Required	At initial placement.	Dunn Associates.
Masonry Walls	☑ Required	At initial grout pours.	Dunn Associates.
Structural Steel	☑ Required	At initial erection.	Dunn Associates.
Structural Roof Deck	☑ Required	At completion.	Dunn Associates.

Structural Observer's Shall:

- Provide proof of licensure as a licensed professional/structural engineer by the State of Utah;
- If structural observations are performed by individuals other than the design professional in responsible charge, they should first be approved by the Building Official.
- At the conclusion of work a final structural observation report must be submitted to the Building Official noting any deficiencies which, to the best of the structural observer's knowledge, have not been resolved (see IBC 1704.6).

Last Revised: 8/2023

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PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE
WELDING TECHNOLOGY BUILDING
355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. [illegible]
9142[illegible]0301
LICENSED ARCHITECT

SPECIAL INSPECTIONS
GI004.2

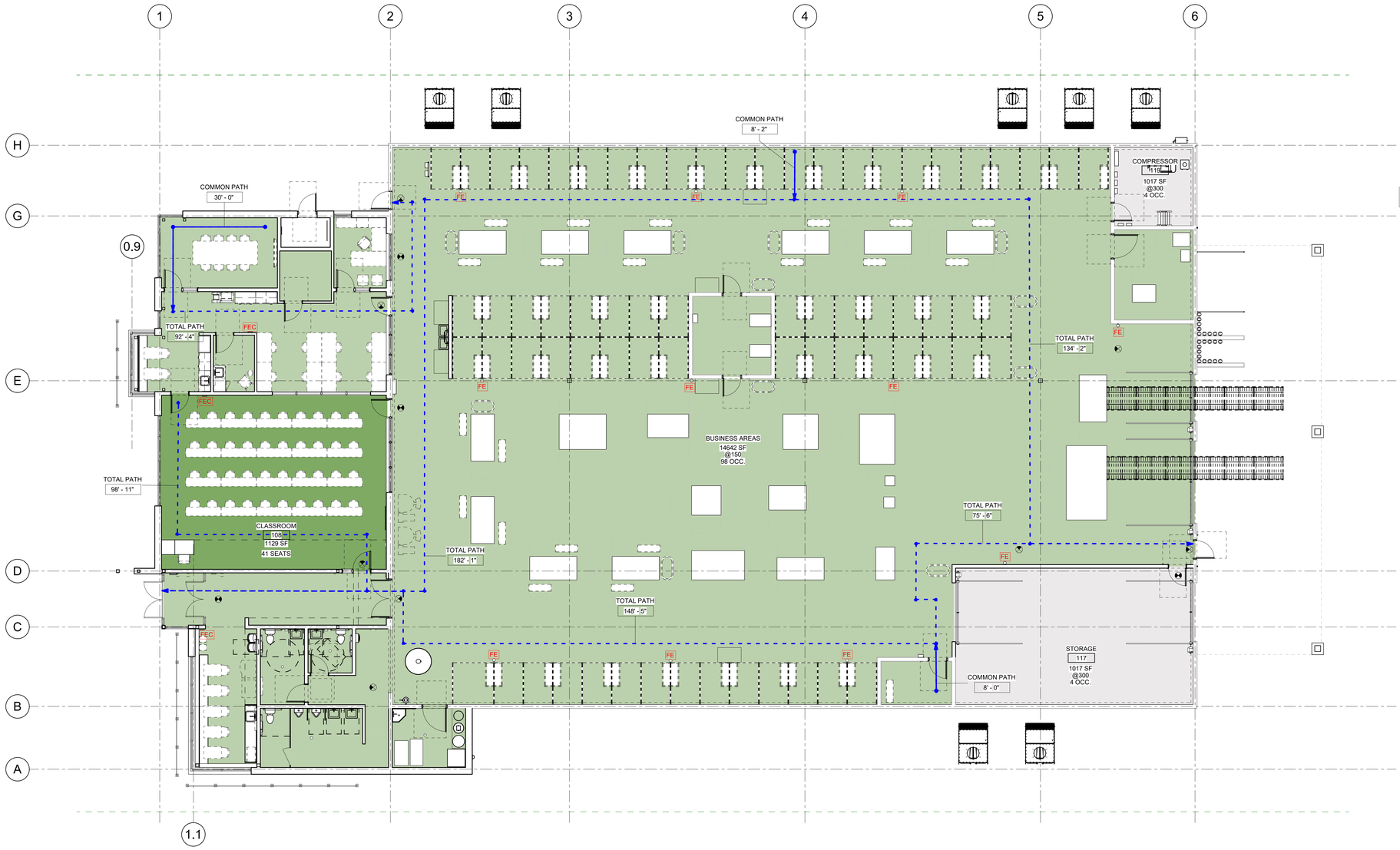
GENERAL NOTES

- GENERAL CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS AND SHALL REPORT TO THE ARCHITECT ANY UNKNOWN CONDITIONS, ERRORS OR CONFLICT IN THE DRAWINGS BEFORE BEGINNING WORK.
- DO NOT SCALE DRAWINGS
- ITEMS HALF-TONED SHOWN FOR REFERENCE ONLY.

CODE PLAN LEGEND

ASSEMBLY GROUP A - SMALL ASSEMBLY SPACE (OCCUPANT LOAD < 50) - FIXED SEATS	
BUSINESS AREAS (150 GROSS)	
ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM (300 GROSS)	
COMMON PATH OF TRAVEL	
TOTAL PATH OF TRAVEL	
FIRE EXTINGUISHER / FIRE EXTINGUISHER CABINET	FE FEC
EMERGENCY EXIT SIGNAGE	

KEYNOTES



A1 / GI101.2 LEVEL 1 FLOOR PLAN
1/8" = 1'-0"

11/19/2024 10:26:17 AM

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE
WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. [illegible]
9142[illegible]-0301
LICENSED ARCHITECT

LEVEL 1 CODE PLAN

GI101.2

IRRIGATION NOTES

A. IF A CONFLICT OCCURS BETWEEN DRAWINGS, DRAWINGS AND SPECIFICATIONS, SPECIFICATIONS AND DIVISIONS, OR BETWEEN OTHER PARTS OF THESE CONSTRUCTION DOCUMENTS OR THESE DOCUMENTS AND ANY CODE REQUIREMENTS, THE CONTRACTOR MAY REQUEST CLARIFICATION DURING THE BIDDING PERIOD. OTHERWISE, THE MOST STRINGENT REQUIREMENTS SHALL APPLY AND BE PART OF THE CONTRACT AT NO ADDITIONAL COST TO THE OWNER.

B. ALL WORK AND MATERIALS SHALL BE IN FULL CONFORMANCE WITH THE LATEST FEDERAL, STATE, AND LOCAL CODES, LAWS, AND ORDINANCES, INCLUDING THEIR MOST RECENT REVISIONS, AMENDMENTS, AND INTERPRETATIONS.

C. THE GENERAL CONTRACTOR SHALL BRING TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR IMMEDIATE RESOLUTION ANY NON-CONFORMING CONDITIONS WHICH MAY BE FOUND IN EXISTING FIELD CONDITIONS.

D. PATCH AND REPAIR ANY DAMAGE TO ANY SURFACE, EQUIPMENT EXT. NOT IN THE SCOPE OF WORK.

E. CONTRACTOR IS TO LIMIT WORK TO AREAS INDICATED.

F. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK. NOTIFY ARCHITECT IF THERE ARE ANY DISCREPANCIES BETWEEN THE EXISTING CONDITIONS, DIMENSIONS, OR OTHER WORK SHOWN IN THE CONTRACT DOCUMENTS.

G. ANY ALTERATIONS TO THESE DRAWINGS DURING CONSTRUCTION SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT AND RECORDED ON "AS BUILT" DRAWINGS BY THE CONTRACTOR.

H. IRRIGATION CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES ON SITE PRIOR TO CONSTRUCTION. COORDINATE WORK WITH GENERAL CONTRACTOR AND OTHER UTILITIES AND PLANTING PLANS TO AVOID CONFLICTING LOCATIONS BETWEEN IRRIGATION PIPING, PLANT PITS, AND OTHER UTILITIES. SOME UTILITIES NOT SHOWN FOR PLAN CLARITY.

I. THIS SYSTEM IS DIAGRAMMATIC. SYSTEM COMPONENTS MAY BE SHOWN IN PAVED AREAS, BUILDINGS, AND OUTSIDE PROPERTY LINES FOR PLAN CLARITY.

J. AS INSTALLATION OCCURS, CONTRACTOR IS REQUIRED TO PREPARE ACCURATE RECORD DRAWINGS PER THE SPECIFICATIONS. RECORD DRAWINGS TO BE SUBMITTED BEFORE FINAL INSPECTION.

K. ALL LINES RUNNING UNDER SIDEWALKS, PATIOS, AND PAVED AREAS SHALL BE RUN THROUGH A PVC SLEEVE PER THE SPECIFICATIONS.

L. WILLFUL INSTALLATION OF THIS WORK WHEN IT IS OBVIOUS THERE EXISTS JOBSITE DISCREPANCIES ON PLANS THAT ARE DETRIMENTAL TO THE PROJECT AND THAT SHOULD BE BROUGHT TO THE ATTENTION OF THE THE OWNER OR LANDSCAPE ARCHITECT WILL BE BACK CHARGED TO THE INSTALLER. THE INSTALLER ASSUMES FULL RESPONSIBILITY TO CORRECT THE WORK AT HIS OWN EXPENSE IF HE FAILS TO GIVE THE REQUIRED NOTIFICATION FOR RESOLUTION.

M. SYSTEM IS DESIGNED TO OPERATE AT 40PSI FOR SPRAY ZONES AND 20PSI FOR DRIP ZONES. CONTRACTOR SHALL BE RESPONSIBLE TO TEST AND REPORT EXISTING PSI AND DESIGN FLOW TO THE LANDSCAPE ARCHITECT.

N. SEE DETAILS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

DRIP EMITTER NOTES:
FOR DRIP EMITTER INSTALLATION, CONTRACTOR SHALL RUN EMITTERS TO ROOT ZONES OF PLANTS AND TREES.

1 gallon sized plants	= 1 gph emitter
5 gallon sized plants	= 2gph total emitters (2x1gph emitter)
10 gallon sized plant	= 4gph total emitters (2x2gph emitters)
15 gallon sized plan	= 6gph total emitters (3x2gph emitters)
25 gallon sized plant and 2" caliper trees	= 8-15 gph total depending on actual plant size (4x 2 OR 3x 5gph emitters per plant)

IRRIGATION LEGEND

DRIP LINE EMMITERS PER SPECIFICATIONS

SPRAY EMMITERS PER SPECIFICATIONS



1 IRRIGATION PLAN
SCALE: 1" = 20'-0"

0 20 30 40 FT

POC SCHEDULE

Symbol	Name	Output Pressure	Max Safe Flow
POC	6" PIPE	79.773	46.98

IRRIGATION SYSTEM COMPONENT SCHEDULE

Symbol	Quantity	Type	Manufacturer	Series	Model
C	1	WEATHERTRAK ET PRO 3	HYDROPOINT	PTIFLOW KEY UPGRAD	2-WIRE
⊙	3	Drip System Operation Pop-Up Visual Indicator Kit	RainBird	OPERIND	SKU#: X17500

IRRIGATION OUTLET SCHEDULE

Symbol	Quantity	Outlet Type	Manufacturer	Series	Model	Radius
●	92	Emitter	Rain Bird(R)	Xeri-Bug(TM) Emitters	XB-20PC	
	4	Spray	Rain Bird(R)	MPR Fixed Nozzles	5H	5'0"
	1	Spray	Rain Bird(R)	U-Series Fixed Arc Nozzles	U-12Q	12'0"
	4	Spray	Rain Bird(R)	U-Series Fixed Arc Nozzles	U-10Q	10'0"
	5	Spray	Rain Bird(R)	U-Series Fixed Arc Nozzles	U-15Q	15'0"
	1	Spray	Rain Bird(R)	U-Series Fixed Arc Nozzles	U-15F	15'0"
	82	Spray	Rain Bird(R)	U-Series Fixed Arc Nozzles	U-10H	10'0"
	5	Spray	Rain Bird(R)	U-Series Fixed Arc Nozzles	U-8Q	8'0"
	6	Spray	Rain Bird(R)	U-Series Fixed Arc Nozzles	U-15H	15'0"
	4	Spray	Rain Bird(R)	U-Series Fixed Arc Nozzles	U-12H	12'0"
	1	Spray	Rain Bird(R)	U-Series Fixed Arc Nozzles	U-8H	8'0"
	4	Spray	Rain Bird(R)	VAN Series Adjustable Arc Nozzles	8-VAN	8'0"
	1	Spray	Rain Bird(R)	VAN Series Adjustable Arc Nozzles	6-VAN	6'0"
	7	Spray	Rain Bird(R)	VAN Series Adjustable Arc Nozzles	15-VAN	15'0"
	7	Spray	Rain Bird(R)	VAN Series Adjustable Arc Nozzles	10-VAN	10'0"
	3	Spray	Rain Bird(R)	VAN Series Adjustable Arc Nozzles	12-VAN	12'0"

DRIP LINE SCHEDULE

Area Quantity	Manufacturer	Series	Model	Area	Row Spacing	Estimated Length
3	Rain Bird (r)	XFD On-Surface Dripline	XFD-06-18	1011.691 sq ft	1'6"	655'10 3/4"

IRRIGATION VALVE SCHEDULE

Zone ID	Symbol	Manufacturer	Series	Model	Size	Design Flow
ZONE 1		Rain Bird (r)	Drip Control Zone Kit	XCZ-100-PRB-LC	1	1.867
ZONE 2		Rain Bird (r)	Drip Control Zone Kit	XCZ-150-LCS	1.5	39.86
ZONE 3		Rain Bird (r)	Drip Control Zone Kit	XCZ-150-LCS	1.5	42.12
ZONE 4		Rain Bird (r)	Drip Control Zone Kit	XCZ-100-PRB-LC	1	0.667
ZONE 5		Rain Bird (r)	Drip Control Zone Kit	XCZ-150-LCS	1.5	35.85
ZONE 6		Rain Bird (r)	Drip Control Zone Kit	XCZ-100-PRB-LC	1	4.423
		Zurn	Isolation Valve	850XL	1.5	0

IRRIGATION PIPE SCHEDULE

Type	Diameter	Total Length
Polyethylene Tubing	1/2	327' 7/8"
Polyethylene Tubing	3/4	993'11 1/4"
Polyethylene Tubing	1 1/4	115'6 3/4"
PVC Schedule 40	1/2	421'11 1/4"
PVC Schedule 40	3/4	111'8 7/8"
PVC Schedule 40	1	30'9 1/2"
PVC Schedule 40	1 1/4	42'1 1/4"
PVC Schedule 40	1 1/2	1149'7"
PVC Schedule 40	2	336'1 1/8"
PVC Schedule 40	2 1/2	298'11 5/8"

CRSA

PROJECT **24-038**

BID PACKAGE #1 2024-08-26
BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

550 EAST 300 SOUTH,
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
SHALAE A. LARSEN
5278795-5301
LICENSED LANDSCAPE ARCHITECT

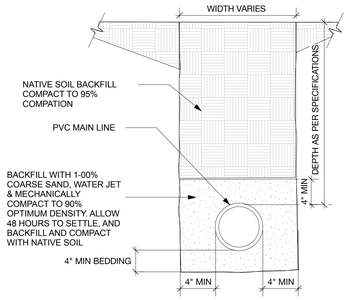
2024-11-01

IRRIGATION PLAN

L601.2

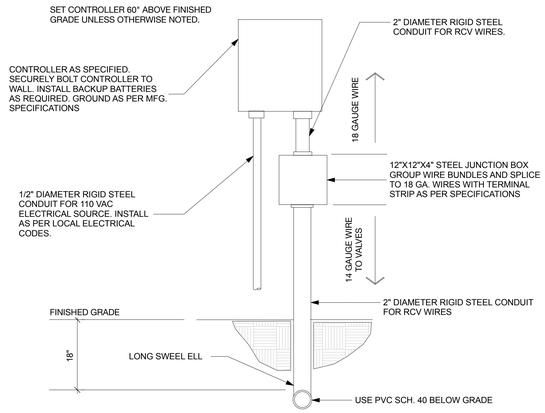
Blue Stakes of Utah 811

(801) 355-5915



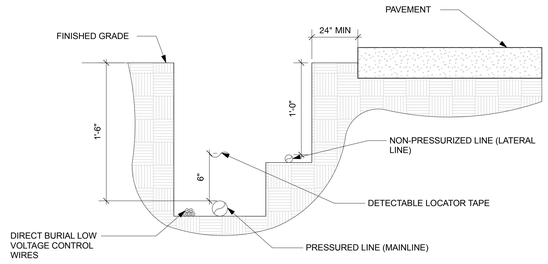
01 MAINLINE WITH SAND BEDDING
SCALE: 1 1/2"=1'

BACK REFERENCE:



02 WALL MOUNT CONTROLLER
SCALE: 1 1/2"=1'-0"

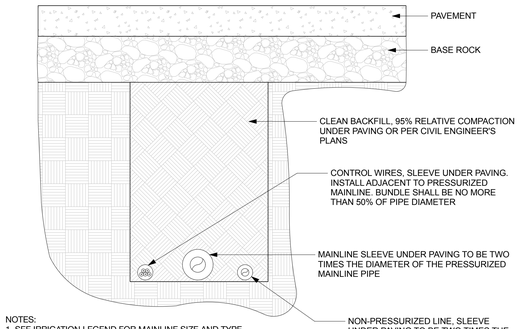
BACK REFERENCE:



NOTES:
1. SEE IRRIGATION LEGEND FOR MAINLINE AND LATERAL LINE PIPE SIZE AND TYPE
2. DIRECT BURIAL CONTROL WIRES SHELL BE INSTALLED IN SCH 40 PVC ELECTRICAL CONDUIT IF REQUIRED.
3. 2-WIRE IRRIGATION WIRE SHALL BE INSTALLED IN SCH 40 PVC ELECTRICAL CONDUIT
4. DETECTABLE LOCATOR TAPE SHALL BE LOCATED SIX INCHES (6") ABOVE THE ENTIRE MAINLINE RUN.

03 IRRIGATION TRENCHING
SCALE: 1 1/2"=1'-0"

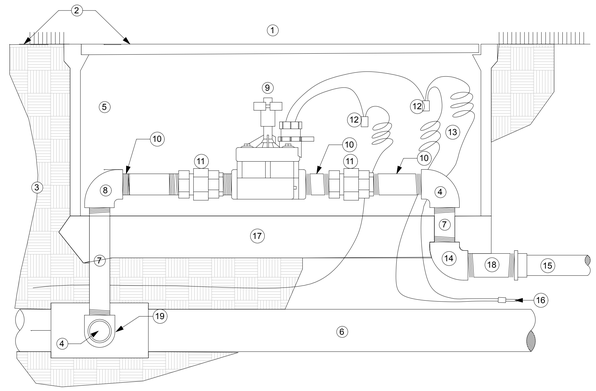
BACK REFERENCE:



NOTES:
1. SEE IRRIGATION LEGEND FOR MAINLINE SIZE AND TYPE
2. ALL SLEEVES SHALL BE SCH 40 PVC PIPE
3. ALL SLEEVES SHALL EXTEND 12" BEYOND THE EDGE OF PAVEMENT
4. END OF SLEEVES SHALL BE LOCATED WITH A WOODEN STAKE OR PVC PIPE. LOCATORS SHALL RUN CONTINUOUSLY FROM THE END OF THE SLEEVE TO FINISHED GRADE.

04 PIPE BENEATH PAVEMENT
SCALE: 1 1/2"=1'-0"

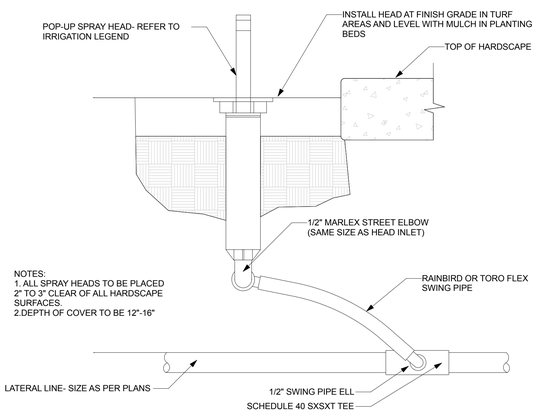
BACK REFERENCE:



1. CARSON-BROOKS STANDARD OR JUMBO VALVE BOX
2. INSTALL AT GRADE
3. 18" MAX. DEPTH
4. MAIN IRRIGATION SUPPLY LINE
5. PVC SCH. 80 T X T ELBOW
6. PVC SCH. 80 NIPPLE; LENGTH AS REQUIRED (TYP.)
7. PVC SCH. 80 T X T ELL SAME SIZE AS VALVE
8. ELECTRIC CONTROL VALVE- SEE EQUIPMENT SCHEDULE
9. SCH 80 NIPPLE ON EITHER SIDE OF UNION
10. PVC SCH. 80 UNION
11. WATER TIGHT CONNECTORS (3M DBY ONLY)
12. PROVIDE 24" EXPANSION LOOP AT EACH WIRE CONNECTOR IN BOX
13. SCH 80 ELBOW WITH SCH. 80 NIPPLE INTO T X T BUSHING TO LATERAL
14. LATERAL LINE
15. CONTROL WIRES
16. 6" MIN DEPTH WASHED AGGREGATE
17. THREADED NIPPLE WITH BUSHING
18. PVC SCH. 80 TEE SXSXS WITH SCH. 80 SXT BUSHING
19. PVC SCH. 80 TEE SXSXS WITH SCH 80 SXT BUSHING

NOTES:
1. ONE REMOTE CONTROL VALVE PER STANDARD BOX.
2. TWO REMOTE CONTROL VALVES PER JUMBO SIZE BOX.
3. ALL FITTINGS AND NIPPLES IN MANIFOLD SHALL BE SCH. 80 THREADED PVC USING TEFLON TAPE.
4. VALVE MANIFOLD TO BE INSTALLED GOING AWAY FROM MAIN LINE. MINIMUM OF 1 FOOT BEFORE CHANGE IN DIRECTION.

05 AUTOMATIC REMOTE CONTROL VALVE
SCALE: 1/2"=1'-0"



NOTES:
1. ALL SPRAY HEADS TO BE PLACED 2" TO 3" CLEAR OF ALL HARDSCAPE SURFACES.
2.DEPTH OF COVER TO BE 12"-16"

06 POP UP SPRAY HEAD
SCALE: 1/2"=1'-0"

CRSA

PROJECT **24-038**

BID PACKAGE #1	2024-08-26
BID PACKAGE #2	2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

550 EAST 300 SOUTH, KAYSVILLE, UT 84037

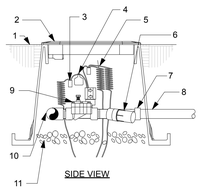
DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
SHALAE A. LARSEN
5278795-5301
LICENSED LANDSCAPE ARCHITECT
2024-11-01

IRRIGATION DETAILS (SYSTEM & SPRAY)
L602.2

Blue Stakes of Utah 811

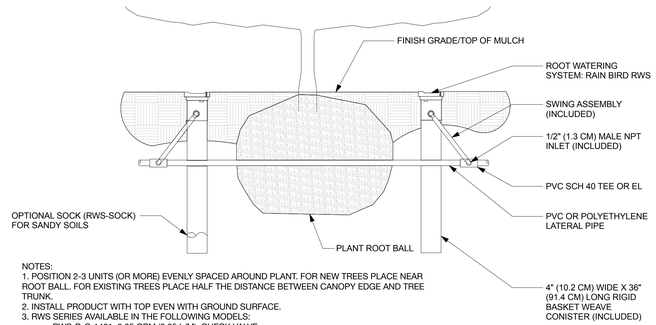
(801) 355-5915



SIDE VIEW

NOTES
1. FINISH GRADE
2. STANDARD VALVE BOX WITH COVER: RAIN BIRD VB-STD
3. WATERPROOF CONNECTION: RAIN BIRD DB SERIES
4. VALVE ID TAG
5. 30" LINEAR LENGTH OF WIRE, COILED PRESSURE REGULATING FILTER: RAIN BIRD PRF-100-RBY
6. INCLUDED IN XCZ-100-PRF KIT: PVC SCH 40 FEMALE ADAPTOR
7. LATERAL PIPE
8. REMOTE CONTROL VALVE: RAIN BIRD 100-DV (INCLUDED IN XCZ-100-PRF KIT)
9. PVC SCH 40 TEE OR ELL TO MANIFOLD
10. 3" MINIMUM DEPTH OF 3/4"
11. WASHED GRAVEL
12. MANIFOLD PIPE AND FITTINGS

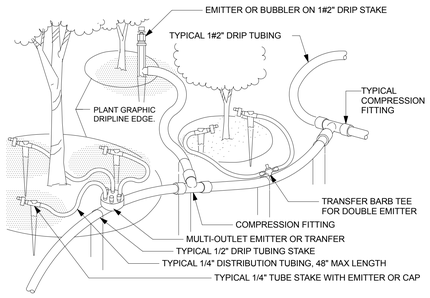
01 ZONE CONTROL KIT
SCALE: 1 1/2"=1'-0"
BACK REFERENCE:



NOTES:
1. POSITION 2-3 UNITS (OR MORE) EVENLY SPACED AROUND PLANT. FOR NEW TREES PLACE NEAR ROOT BALL. FOR EXISTING TREES PLACE HALF THE DISTANCE BETWEEN CANOPY EDGE AND TREE TRUNK.
2. INSTALL PRODUCT WITH TOP EVEN WITH GROUND SURFACE.
3. RWS SERIES AVAILABLE IN THE FOLLOWING MODELS:
   RWS-B-C-1401: 0.25 GPM (0.95 L/M). CHECK VALVE
   RWS B-1401: .25 GPM (0.95 L/M)
   RWS B-X-1401: .025 GPM (0.95 L/M), 18" (45.7 CM) SWING ASSEMBLY
   RWS B-C-1402: 0.5 GPM (1.9 L/M), CHECK VALVE
   RWS B-1402: 0.5 GPM (1.9 L/M)
   RWS-B-C-1404: 1.0 GPM (3.8 L/M), CHECK VALVE
4. WHEN INSTALLING IN EXTREMELY HARD OR CLAY SOILS, ADD 3/4" (1.9 CM) GRAVEL UNDER AND AROUND THE UNIT TO ALLOW FASTER WATER INFILTRATION AND ROOT PENETRATION.
5. ONCE RWS HAS BEEN INSTALLED FILL THE BASKET WITH PEA GRAVEL BEFORE LOCKING UP.
6. OPTIONAL RWS-SOCK FOR USE IN SANDY SOILS

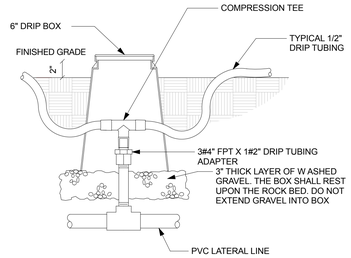
02 ROOT WATERING SYSTEM RWS: INSTALLATION FOR TREES
SCALE: 1 1/2"=1'-0"
BACK REFERENCE:

DETAILS FOR POINT SOURCE DRIP IRRIGATION IRRIGATION

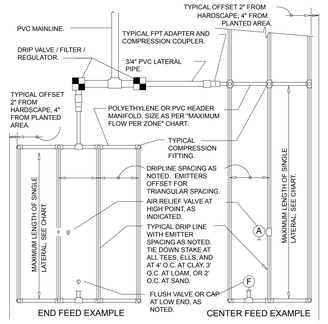


NOTE:
1. PLACE EMITTERS 3#4 BETWEEN THE TRUNK AND OUTTER DRIPLINE.
2. EVENLY SPACE EMITTERS AROUND PLANT.
3. STAKE THE DRIP TUBING AT EACH TEE, ELL, COUPLER, AT EACH EMITTER OR TRANSFER, AND AT 6'-0" MAX O.C.

03 TYPICAL DRIP TUBING
SCALE: 1 1/2"=1'-0"
BACK REFERENCE:



04 DRIP TRANSITION IN IRRIGATION BOX
SCALE: 1 1/2"=1'
BACK REFERENCE:



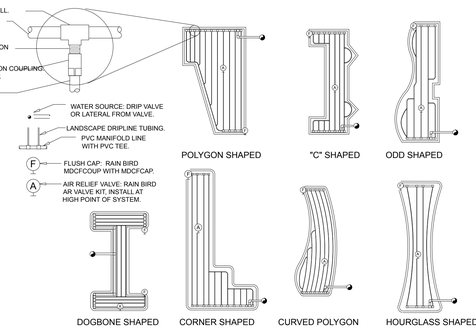
MAXIMUM LATERAL LENGTH (FEET)						
	EMITTER FLOW RATE GPH					
	12" SPACING		18" SPACING		24" SPACING	
PSI	0.6	0.9	0.6	0.9	0.6	0.9
10	125	96	175	135	218	171
20	249	191	350	171	442	340
30	307	236	434	333	550	422
40	350	268	495	380	627	171
50	125	96	175	135	218	171
60	125	96	175	135	218	171

GRID PRECIPITATION RATES (IN/HR)			
EMITTER SPACING	LATERAL SPACING	EMITTER FLOW RATE	
		0.6	0.9
12	12	0.96	1.44
18	18	0.69	1.03
24	24	0.28	0.41

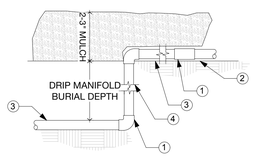
LATERAL FLOW PER 100 FT (GPM)			
EMITTER FLOW	12" SPACING	18" SPACING	24" SPACING
0.6 GPH	1.0 GPM	0.67 GPM	0.50 GPM
0.9 GPH	1.5 GPM	1.0 GPM	0.75 GPM

MAXIMUM FLOW PER ZONE	
MAX GPM	PSI LOSS
SCHEDULE 40 PVC HEADER SIZE	
1/2" 4.7 GPM	7.7 PSI
3/4" 8.3 GPM	5.6 PSI
1" 13.5 GPM	4.2 PSI
1-1/2" 33.9 GPM	2.9 PSI
2" 52.4 GPM	1.9 PSI
POLY PIPE HEADER SIZE	
1/2" 4.7 GPM	8.8 PSI
3/4" 8.3 GPM	6.3 PSI
1" 13.5 GPM	4.8 PSI
1-1/2" 31.8 GPM	2.9 PSI
2" 52.4 GPM	2.2 PSI

SLOPED CONDITION NOTE:
1. DRIPLINE LATERALS SHOULD FOLLOW THE CONTOURS OF THE SLOPE WHENEVER POSSIBLE.
2. INSTALL AIR RELIEF VALVE AT HIGHEST POINT.
3. NORMAL SPACING WITHIN THE TOP ⅓ OF SLOPE.
4. INSTALL DRIPLINE AT 25% GREATER SPACING AT THE BOTTOM ½ OF THE SLOPE.
5. WHEN ELEVATION CHANGE IS 10 FT OR MORE, ZONE THE BOTTOM ⅓ ON A SEPARATE VALVE.



07 TYPICAL RAIN BIRD DRIPLINE REQUIREMENTS
SCALE: NTS
BACK REFERENCE:

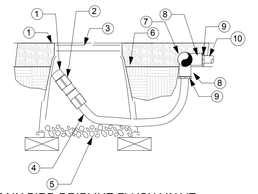


Notes
1. PVC SCH 40 TEE OR EL (TYP)
2. PVC SUPPLY MANIFOLD
3. PVC SUPPLY PIPE FROM CONTROL ZONE (SIZED TO MEET LATERAL FLOW DEMAND)
4. PVC SCH 40 RISER PIPE

08 DRIPLINE TRANSITION POINT
SCALE: NTS
BACK REFERENCE:

1. MULCH
2. FLUSH CAP FIR EASY FIT COMPRESSION FITTINGS: RAINBIRD MDCFCAP
3. EASY FIT COUPLING: RAINBIRD MDCFCOUP
4. SUBTERRANEAN EMITTER BOX
5. 1/2" POLYETHYLENE TUBING
6. FINISH GRADE
7. PVC EXHAUST HEADER
8. PVC SCH 40 TEE OR EL
9. BARB X MALE FITTING
10. ON-SURFACE DRIPLINE
11. 3" MIN DEPTH OF 3/4" WASHED GRAVEL

NOTES:
1. ALLOW A MINIMUM OR 6" OF DRIPLINE TUBIGN IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE VALVE BOX



09 RAIN BIRD DRIPLINE FLUSH VALVE
SCALE: 1 1/2"=1'
BACK REFERENCE:

CRSA

PROJECT **24-038**

BID PACKAGE #1	2024-08-26
BID PACKAGE #2	2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

550 EAST 300 SOUTH, KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
SHALAE A. LARSEN
NO. 5278795-5301
LICENSED LANDSCAPE ARCHITECT

2024-11-01

IRRIGATION DETAILS (DRIP)

L603.2

Blue Stakes of UTAH 811

(801) 355-5915

TREE SCHEDULE

	5	Prunus serrulata 'Kwanzan'	**Kwanzan Flowering Cherry**	2" cal	12
	16	Tilia americanan 'Redmond'	**American Linden Redmond**	2" Cal	35
	2	Acer grandidentatum	**Bigtooth Maple**	2" cal	12

PLANT SCHEDULE

PERENNIALS: SUN MIX	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING(ft.)	COMMENTS
	8	Achillea millefollium	**Yarrow**	1 gal	2.5	
	13	Bouteloua gracilis 'Blonde Ambition'	**Blue Grama Grass**	1 gal	8	
	8	Coreopsis verticillata 'Zagreb'	**Zagreb Whorled Tickseed**	1 gal	1.75	
	8	Echinacea purpurea 'Magnus'	**Magnus Coneflower**	1 gal	1.479	
	8	Nepeta faassenii 'Select Blue'	**Select Blue Catmint**	1 gal	1.167	
	21	Salvia nemorosa 'Caradonna'	**Caradonna Salvia**	1 gal	1.479	
	8	Sedum spectabile 'Autumn Joy'	**Autumn Joy Sedum**	1 gal	2	
SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING(ft.)**	**COMMENTS**
	3	Symphoricarpos albus	**Common snowberry**	5 gal	3	
	6	Philadelphus X virginalis 'Miniature Snowflake'	**Miniature Snowflake Mock Orange**	5 gal	3.5	
	3	Pinus mugo var. pumilio	**Dwarf Mugo Pine**	5 gal	5	
	5	Physocarpus opulifolius 'Ruby Spice'	**Ruby Spice Ninebark**	5 gal	5	

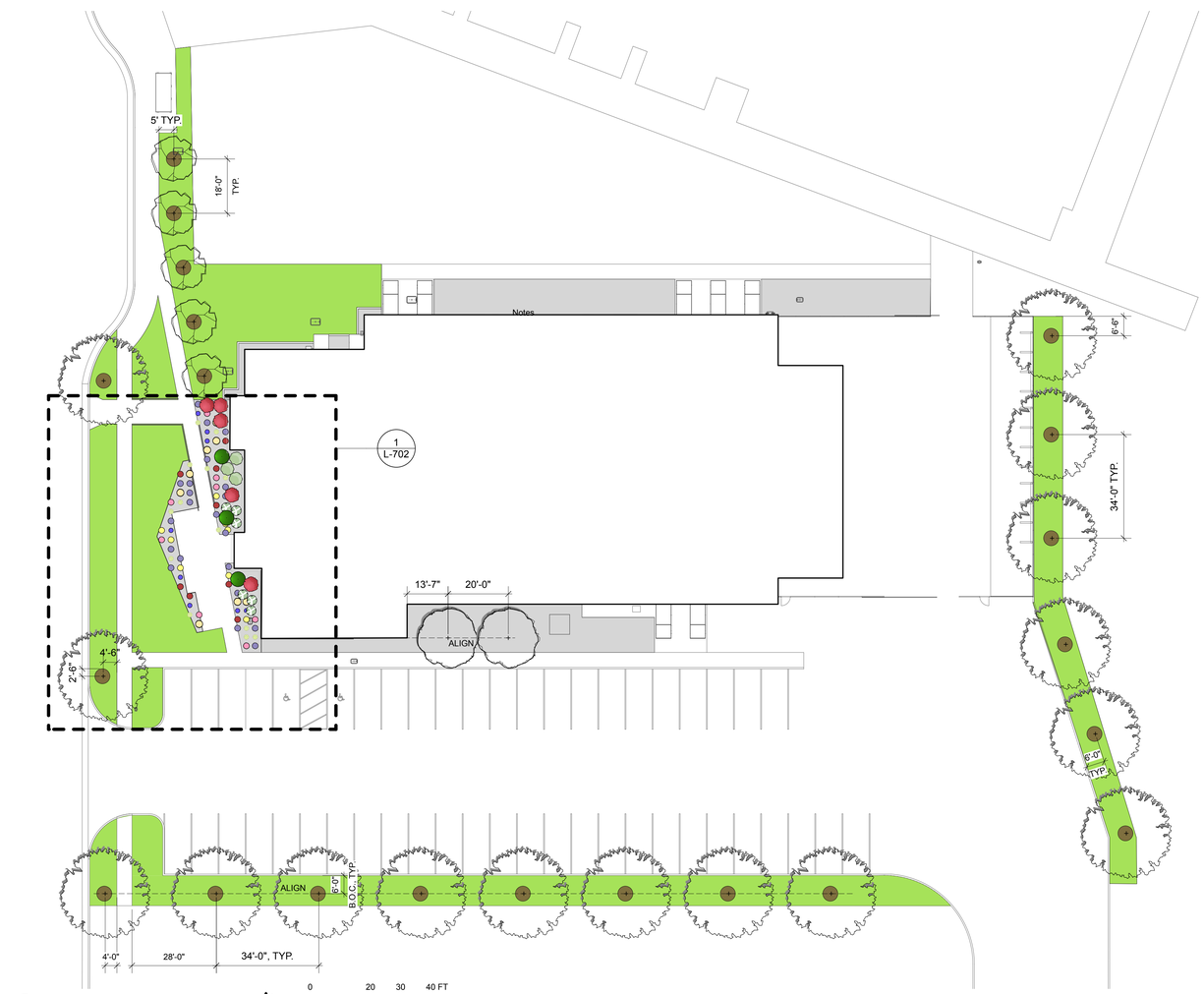
PLANTING PLAN LEGEND

GENEVA ROCK 3/4" GRAVEL 'TWILIGHT'

SOD- MATCH EXISTING

2.5' RADIUS METAL EDGING RING WITH 3" LAYER OF BARK MULCH
BARK MULCH PER SPECIFICATIONS

METAL EDGING:
MANUFACTURER: Edge Right www.edgeright.com
PRODUCT: EDGERIGHT 2: Cor-Ten Steel Hammer-In Landscape Edging
4 ft. strips with connector clips
8 inch height
Rolled Edge



1 PLANTING PLAN (OVERALL)
Scale: 1" = 20'-0"

PLANTING NOTES

A. ANY ALTERATIONS TO THESE DRAWINGS DURING CONSTRUCTION SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT AND RECORDED ON "AS BUILT" DRAWINGS BY THE CONTRACTOR.
B. ALL PLANT MATERIAL SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED BY THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN NURSERY ASSOCIATION INC.
C. ALL PLANTS TO BE BALLED AND BURLAPPED OR CONTAINER GROWN, UNLESS OTHERWISE NOTED ON THE PLANTS LIST.
D. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING SHOWN ON THE DRAWINGS.
E. ANY PROPOSED SUBSTITUTIONS OF PLANT SPECIES SHALL BE MADE WITH PLANTS OF EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE ONLY AS APPROVED THE LANDSCAPE ARCHITECT.
F. ALL PLANTS SHALL BE TAGGED AND APPROVED BY THE LANDSCAPE ARCHITECT AT THE NURSERY PRIOR TO DIGGING OR DELIVERY TO SITE.
G. THE CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING UTILITY LINES PRIOR TO PLANTING AND SHALL REPORT ANY CONFLICTS TO THE LANDSCAPE ARCHITECT.
H. THE CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING UTILITY LINES PRIOR TO PLANTING AND SHALL REPORT ANY CONFLICTS TO THE LANDSCAPE ARCHITECT.
I. STAKE LOCATION OF ALL PROPOSED PLANTING FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO THE COMMENCEMENT OF PLANTING.
J. ALL PLANT BEDS TO RECEIVE 3" COMPOSTED BARK MULCH UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

SEEDING NOTES

A. SEED QUALITY- ALL SEED SHALL BE THOROUGHLY CLEANED, AND TESTED FOR PURITY AND GERMINATION, USING THE PROCEDURES SANCTIONED BY THE ASSOCIATION OF OFFICIAL SEED ANALYSTS.
B. PREPARE THE SITE BY REMOVING EXISTING VEGETATION. APPLY A NON-SELECTIVE HERBICIDE TO ACTIVELY GROWING VEGETATION FOLLOWING THE MANUFACTURER'S RECOMMENDATIONS. TEN DAYS TO TWO WEEKS FOLLOWING HERBICIDE APPLICATION SHALLOW TILL THE GROUND SURFACE AND REMOVE ALL VEGETATION. AVOID DEEPLY DISTURBING THE SOIL AS THIS WILL BRING UP MORE DORMANT WEED SEEDS. WATER THE SITE FOR AN ADDITIONAL WEEK TO HELP GERMINATE THE NEW WEED SEEDS. WHEN THE NEW WEEDS HAVE REACHED TWO TO THREE INCHES OF GROWTH, REPEAT THE HERBICIDE APPLICATION.

C. FOLLOWING SITE PREPARATION, BROADCAST SEED AT THE SPECIFIED RATES IN LATE SPRING.
D. MIX SEED WITH A HYDROMULCH PRODUCT AND APPLY AT 20 LBS PER ACRE.

E. AFTER PLANTING- CONTRACTOR SHALL MAINTAIN A MOIST SEED BED FOR PROPER GERMINATION. IF RAINFALL IS NOT SUFFICIENT, WATER ENOUGH TO KEEP THE SITE MOIST BUT NOT WET, AS THIS MAY CREATE A CRUST THAT THE GERMINATING SEEDLINGS WILL FIND DIFFICULT TO BREAK THROUGH. AVOID FERTILIZER APPLICATIONS AS WELL.

F. ONCE THE GRASS SEED MIX IS ACTIVELY GROWING (ABOUT 1-MONTH) MOW, USING A CLEAN MOWER BLADE, THE SEEDED AREAS TO ENCOURAGE ROOT GROWTH AND CUT BACK ANY NEW WEEDS THAT HAVE GERMINATED. CONTINUE TO MOW THE AREA EVERY 1-MONTH FOR THE FIRST GROWING SEASON AND SPOT TREAT WITH A BROAD-LEAF HERBICIDE AS NEEDED TO CONTROL WEEDS.
G. DURING THE SECOND GROWING SEASON MOW THE GRASS ONCE IN EARLY JUNE AND AGAIN IN LATE JULY. CONTINUE TO SPOT TREAT WITH A BROAD-LEAF HERBICIDE AS NEEDED.

TOPSOIL NOTES

A. TEST THE SOIL IN PLANTING AREAS PRIOR TO INSTALLATION OF PLANT MATERIAL, AND SHALL AMMEND OR IMPORT TOPSOIL AS NEEDED UNTIL PLANTING SOIL MEETS THE IDEAL OR ACCEPTABLE RANGES BELOW.
B. SUBMIT TEST RESULTS AND TREATMENT RECCOMENDATIONS FOR SOIL TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO COMPLETING TOPSOIL WORK.

C. IMPORT OR AMMEND TOPSOIL TO A DEPTH OF 18" FOR PLANTING BEDS AND 12" FOR LAWN/SEEDED AREAS.

Summary of topsoil quality guidelines

Category	Soluble salts (dS/m or mmho/cm)	pH	Sand (%)	Silt (%)	Clay (%)	Texture class*	Organic Matter (%)	% Coarse fragments (> 2 mm in diameter)**	Sodium Adsorption Ratio (SAR)*
Ideal	< 2	5.5 to 7.5	< 70	< 70	< 30	L, SiL	≥ 2.0	≤ 2	< 3 for any texture
Acceptable	< 4	5.0 to 8.2	< 70	< 70	< 30	SCL, SL, CL, SiCL	≥ 1.0	2.1 to 5.0	3 to 7 (SiL, SiCL, CL) 3 to 10 (SCL, SL, L)
Unacceptable	> 4	< 5.0 or > 8.2	> 70	> 70	> 30	LS, SC, SiC, S, Si, C	<1.0	> 5.0	> 10 for any texture

*L = loam; SiL = Silt loam; SCL = sandy clay loam; SL = sandy loam; CL = clay loam; SiCL = silty clay loam; LS = loamy sand; SC = sandy clay; SiC = silty clay; S = sand; Si = silt; C = clay.
**This guideline also includes no fragments larger than 1 ½ inch in diameter.

TREE PROTECTION NOTES

A. FOR ALL TREES INDICATED AS REMAINING ON THE DRAWINGS, THAT ARE WITHIN THE AREA OF WORK CONTRACTOR SHALL PROVIDE THE FOLLOWING:

B. INSTALL TEMPORARY CONSTRUCTION FENCING AROUND THE ROOT ZONE OF TREES.
C. PROVIDE TEMPORARY DRIP IRRIGATION TO ROOT ZONE OF TREES.
D. INSPECT FENCING AND IRRIGATION WEEKLY DURING CONSTRUCTION TO MAKE SURE FENCING REMAINS INTACT AND IRRIGATION REMAINS OPERABLE.

E. ANY DEMOLITION, EXCAVATION, TRENCHING OR OTHER CONSTRUCTION WORK THAT MUST OCCUR WITHIN THE ROOT ZONE OF ANY EXISTING TREES TO REMAIN SHALL BE DONE BY HAND.

Blue Stakes of Utah 811 — Know what's below. Call before you dig.

CRSA

PROJECT **24-038**

BID PACKAGE #1 2024-08-26
BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

550 EAST 300 SOUTH,
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
SHALAE A. LARSEN
5278795-5301
LICENSED LANDSCAPE ARCHITECT

2024-11-01

PLANTING PLAN OVERALL

L701.2

(801) 355-5915

PLANT SCHEDULE

PERENNIALS: SUN MIX	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING(ft.)	COMMENTS
	8	Achillea millefolium	**Yarrow**	1 gal	2.5	
	13	Bouteloua gracilis 'Blonde Ambition'	**Blue Grama Grass**	1 gal	8	
	8	Coreopsis verticillata 'Zagreb'	**Zagreb Whorled Tickseed**	1 gal	1.75	
	8	Echinacea purpurea 'Magnus'	**Magnus Coneflower**	1 gal	1.479	
	8	Nepeta faassenii 'Select Blue'	**Select Blue Catmint**	1 gal	1.167	
	21	Salvia nemorosa 'Caradonna'	**Caradonna Salvia**	1 gal	1.479	
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SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING(ft.)	COMMENTS
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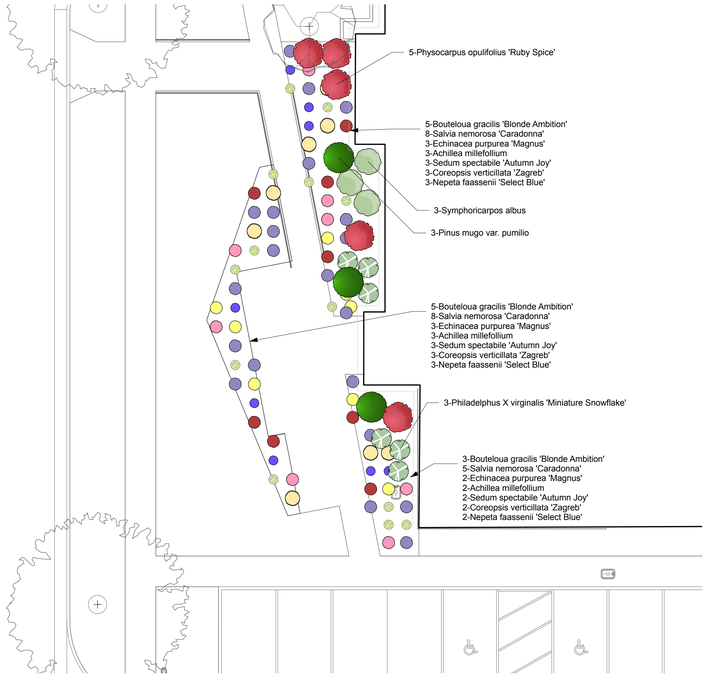
	3	Pinus mugo var. pumilio	**Dwarf Mugo Pine**	5 gal	5	
	5	Physocarpus opulifolius 'Ruby Spice'	**Ruby Spice Ninebark**	5 gal	5	



1 ENLARGED PLANTING PLAN
Scale: 1" = 10'-0"

N

0 5 10 15 FT

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SEEDING NOTES

A. SEED QUALITY- ALL SEED SHALL BE THOROUGHLY CLEANED, AND TESTED FOR PURITY AND GERMINATION, USING THE PROCEDURES SANCTIONED BY THE ASSOCIATION OF OFFICIAL SEED ANALYSTS.
B. PREPARE THE SITE BY REMOVING EXISTING VEGETATION. APPLY A NON-SELECTIVE HERBICIDE TO ACTIVELY GROWING VEGETATION FOLLOWING THE MANUFACTURER'S RECOMMENDATIONS. TEN DAYS TO TWO WEEKS FOLLOWING HERBICIDE APPLICATION SHALLOW TILL THE GROUND SURFACE AND REMOVE ALL VEGETATION. AVOID DEEPLY DISTURBING THE SOIL AS THIS WILL BRING UP MORE DORMANT WEED SEEDS. WATER THE SITE FOR AN ADDITIONAL WEEK TO HELP GERMINATE THE NEW WEED SEEDS. WHEN THE NEW WEEDS HAVE REACHED TWO TO THREE INCHES OF GROWTH, REPEAT THE HERBICIDE APPLICATION.

C. FOLLOWING SITE PREPARATION, BROADCAST SEED AT THE SPECIFIED RATES IN LATE SPRING.
D. MIX SEED WITH A HYDROMULCH PRODUCT AND APPLY AT 20 LBS PER ACRE.

E. AFTER PLANTING- CONTRACTOR SHALL MAINTAIN A MOIST SEED BED FOR PROPER GERMINATION. IF RAINFALL IS NOT SUFFICIENT, WATER ENOUGH TO KEEP THE SITE MOIST BUT NOT WET, AS THIS MAY CREATE A CRUST THAT THE GERMINATING SEEDLINGS WILL FIND DIFFICULT TO BREAK THROUGH. AVOID FERTILIZER APPLICATIONS AS WELL.

F. ONCE THE GRASS SEED MIX IS ACTIVELY GROWING (ABOUT 1-MONTH) MOW, USING A CLEAN MOWER BLADE, THE SEEDED AREAS TO ENCOURAGE ROOT GROWTH AND CUT BACK ANY NEW WEEDS THAT HAVE GERMINATED. CONTINUE TO MOW THE AREA EVERY 1-MONTH FOR THE FIRST GROWING SEASON AND SPOT TREAT WITH A BROAD-LEAF HERBICIDE AS NEEDED TO CONTROL WEEDS.
G. DURING THE SECOND GROWING SEASON MOW THE GRASS ONCE IN EARLY JUNE AND AGAIN IN LATE JULY. CONTINUE TO SPOT TREAT WITH A BROAD-LEAF HERBICIDE AS NEEDED.

TOPSOIL NOTES

A. TEST THE SOIL IN PLANTING AREAS PRIOR TO INSTALLATION OF PLANT MATERIAL, AND SHALL AMMEND OR IMPORT TOPSOIL AS NEEDED UNTIL PLANTING SOIL MEETS THE IDEAL OR ACCEPTABLE RANGES BELOW.
B. SUBMIT TEST RESULTS AND TREATMENT RECCOMENDATIONS FOR SOIL TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO COMPLETING TOPSOIL WORK.

C. IMPORT OR AMMEND TOPSOIL TO A DEPTH OF 18" FOR PLANTING BEDS AND 12" FOR LAWN/SEEDED AREAS.

Summary of topsoil quality guidelines

Category	Soluble salts (dS/m or mmho/cm)	pH	Sand (%)	Silt (%)	Clay (%)	Texture class*	Organic Matter (%)	% Coarse fragments (> 2 mm in diameter)**	Sodium Adsorption Ratio (SAR)*
Ideal	< 2	5.5 to 7.5	< 70	< 70	< 30	L, SiL	≥2.0	≤ 2	< 3 for any texture
Acceptable	< 4	5.0 to 8.2	< 70	< 70	< 30	SCL, SL, CL, SiCL	≥1.0	2.1 to 5.0	3 to 7 (SiL, SiCL, CL) 3 to 10 (SCL, SL, L)
Unacceptable	> 4	< 5.0 or > 8.2	> 70	> 70	> 30	LS, SC, SiC, S, Si, C	<1.0	> 5.0	> 10 for any texture

*L = loam; SiL = Silt loam; SCL = sandy clay loam; SL = sandy loam; CL = clay loam; SiCL = silty clay loam; LS = loamy sand; SC = sandy clay; SiC = silty clay; S = sand; Si = silt; C = clay.
**This guideline also includes no fragments larger than 1 ½ inch in diameter.

TREE PROTECTION NOTES

A. FOR ALL TREES INDICATED AS REMAINING ON THE DRAWINGS, THAT ARE WITHIN THE AREA OF WORK CONTRACTOR SHALL PROVIDE THE FOLLOWING:

B. INSTALL TEMPORARY CONSTRUCTION FENCING AROUND THE ROOT ZONE OF TREES.
C. PROVIDE TEMPORARY DRIP IRRIGATION TO ROOT ZONE OF TREES.
D. INSPECT FENCING AND IRRIGATION WEEKLY DURING CONSTRUCTION TO MAKE SURE FENCING REMAINS INTACT AND IRRIGATION REMAINS OPERABLE.

E. ANY DEMOLITION, EXCAVATION, TRENCHING OR OTHER CONSTRUCTION WORK THAT MUST OCCUR WITHIN THE ROOT ZONE OF ANY EXISTING TREES TO REMAIN SHALL BE DONE BY HAND.

Blue Stakes of Utah 811

CRSA

PROJECT **24-038**

BID PACKAGE #1 2024-08-26
BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

550 EAST 300 SOUTH,
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

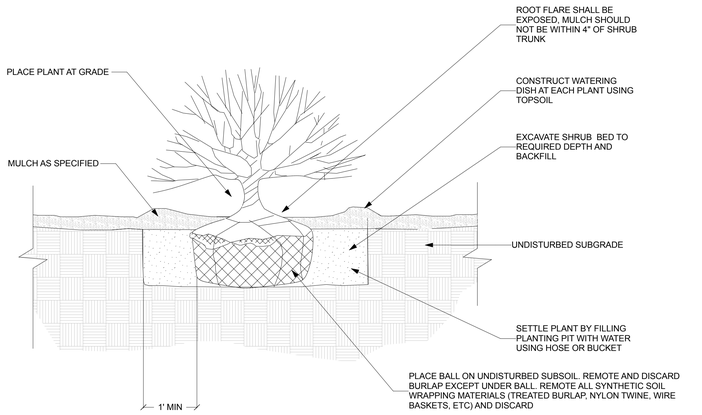
STATE OF UTAH
SHALAE A. LARSEN
5278795-5301
LICENSED LANDSCAPE ARCHITECT

2024-11-01

ENLARGED PLANTING PLAN

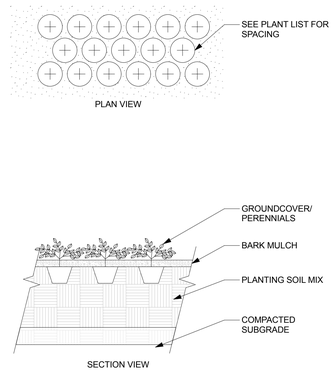
L702.2

(801) 355-5915



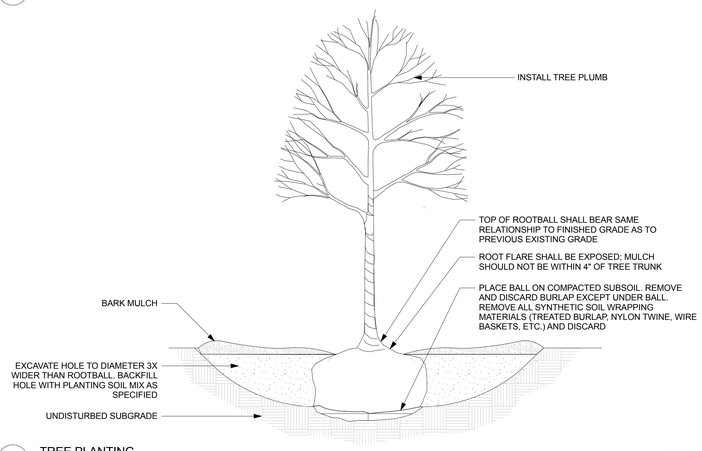
01 SHRUB PLANTING
SCALE: 1 1/2"=1'-0"

BACK REFERENCE:



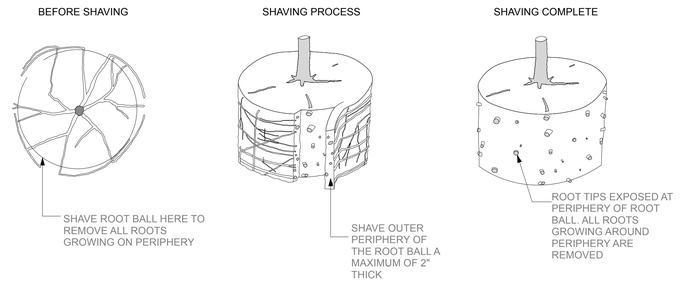
02 GROUNDCOVER/PERENNIAL INSTALLATION
SCALE: NTS

BACK REFERENCE:



03 TREE PLANTING
SCALE: NTS

BACK REFERENCE:



NOTES:
1. SHAVING TO BE CONDUCTED USING A SHARP BLADE OR HAND SAW ELIMINATED NO MORE THAN NEEDED TO REMOVE ALL ROOTS ON THE PERIPHERY OF ROOT BALL.
2. SHAVING CAN BE PERFORMED JUST PRIOR TO PLANTING OR AFTER PLACING IN THE HOLE.

URBAN TREE FOUNDATION © 2014
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04 ROOTBALL SHAVING
SCALE: NTS

BACK REFERENCE:

CRSA

PROJECT **24-038**

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BID PACKAGE #2	2024-11-01

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KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
SHALAE A. LARSEN
5278795-5301
LICENSED LANDSCAPE ARCHITECT

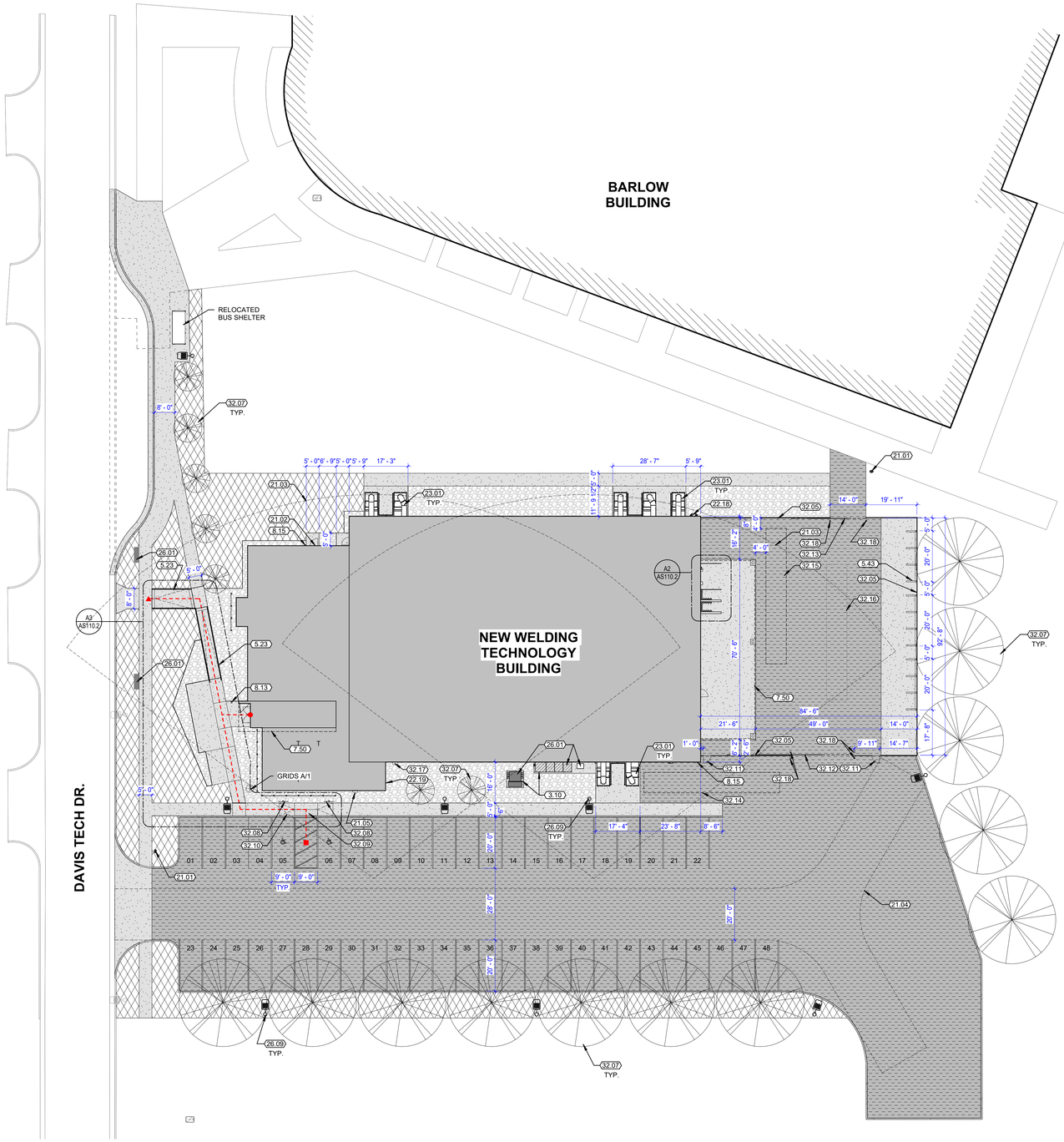
2024-11-01

IRRIGATION PLAN

L703.2

Blue Stakes of UTAH 811

(801) 355-5915



A2 AS101.2 ARCHITECTURAL SITE PLAN
1" = 20'-0"

N PROJECT
N TRUE

0 10' 20' 40'
0 2"
1" = 20'-0"

GENERAL NOTES

- GENERAL CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS AND SHALL REPORT TO THE ARCHITECT ANY UNKNOWN CONDITIONS, ERRORS OR CONFLICT IN THE DRAWINGS BEFORE BEGINNING WORK.
- DO NOT SCALE DRAWINGS
- ITEMS HALF-TONED SHOWN FOR REFERENCE ONLY.

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PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

ARCHITECTURAL SITE PLAN LEGEND

ASPHALT PAVING	
CONCRETE PAVING	
ROCK MULCH & PLANTING AREAS	
TURF AREAS	
EXTENTS OF SITE DEMOLITION	
ACCESSIBLE EGRESS PATH	
ACCESSIBLE PUBLIC SIDEWALK ARRIVAL POINT	
ACCESSIBLE PUBLIC BUILDING ENTRANCE (1/1)	
ACCESSIBLE PARKING ARRIVAL POINT	
ACCESSIBLE PARKING STALL	

PARKING CALCULATION

SEE IBC 2021 TABLE 1106.2

TOTAL PARKING SPACES PROVIDED	47
REQUIRED MINIMUM NUMBER OF ACCESSIBLE SPACES	2
NUMBER OF ACCESSIBLE SPACES PROVIDED	2

KEYNOTES

3.10	CONCRETE HOUSEKEEPING PAD. COORDINATE LOCATION & EXTENTS W/ ELECTRICAL EQUIPMENT
5.23	HANDRAILS, BOTH SIDES
5.43	MATERIAL RACKING, OFOI
7.50	LINE OF ROOF ABOVE
8.13	PEDESTAL AUTOMATIC DOOR OPERATOR AND CARD READER
8.15	FIRE DEPARTMENT EMERGENCY KEY CABINET
21.01	FIRE HYDRANT, SEE CIVIL
21.02	FIRE RISER ROOM
21.03	FIRE APPARATUS 150' REACH LINE
21.04	FIRE APPARATUS ACCESS ROAD TURN AROUND - 60-FOOT "Y" CONFIGURATION
21.05	FIRE DEPARTMENT CONNECTION
22.18	GAS METER, SEE MECHANICAL
22.19	OVERFLOW ROOFDRAIN DOWNSPOUT, SEE MECHANICAL
23.01	MECHANICAL EQUIPMENT
26.01	ELECTRICAL EQUIPMENT
26.09	LIGHT POLE, SEE ELECTRICAL
32.05	CHAIN-LINK FENCE
32.07	SCHEDULED TREE, SEE LANDSCAPE
32.08	ACCESSIBLE PARKING SIGNAGE
32.09	TRUNCATED DOMES
32.10	CURB RAMP, SEE CIVIL
32.11	CHAIN-LINK FENCE 3'-0" LOCKABLE MAN GATE
32.12	CHAIN-LINK FENCE 25'-0" LOCKABLE ROLLING VEHICLE GATE
32.13	CHAIN-LINK FENCE 15'-0" LOCKABLE ROLLING VEHICLE GATE
32.14	53' X 8' MOBILE TRAILER PARKING LOCATION
32.15	53' X 8' SCRAP TRAILER PARKING LOCATION
32.16	53' X 8' SCRAP TRAILER TEMPORARY UNLOADING LOCATION
32.17	IRRIGATION CONTROLLER, SEE LANDSCAPE
32.18	BOLLARD

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. BAIRD
9142226-0301
LICENSED ARCHITECT
11/1/24

ARCHITECTURAL SITE PLAN
AS101.2

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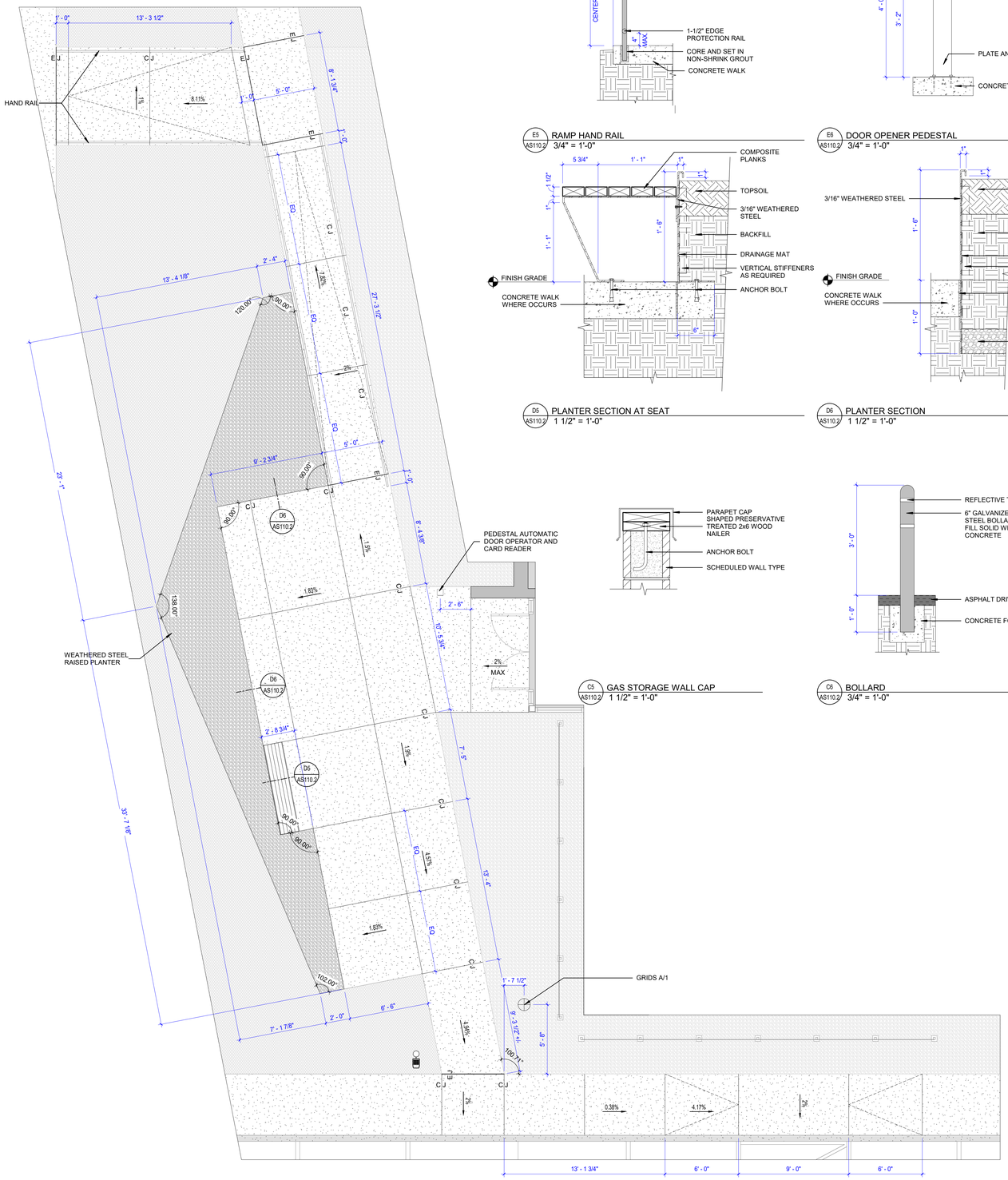
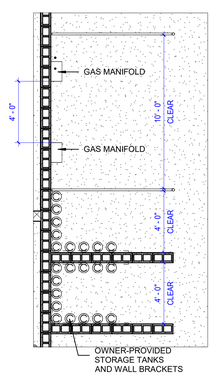
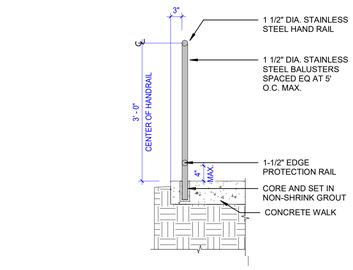


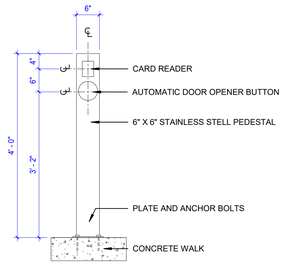
A3 RAMP PLAN
1/4" = 1'-0"



A2 ENLARGED GAS STORAGE
1/4" = 1'-0"

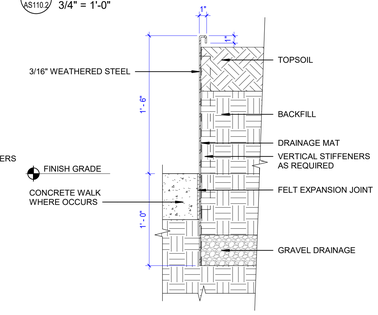


E5 RAMP HAND RAIL
3/4" = 1'-0"



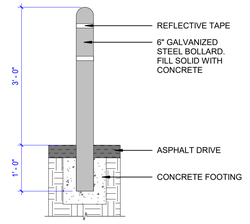
E6 DOOR OPENER PEDESTAL
3/4" = 1'-0"

D5 PLANTER SECTION AT SEAT
1 1/2" = 1'-0"



D6 PLANTER SECTION
1 1/2" = 1'-0"

C5 GAS STORAGE WALL CAP
1 1/2" = 1'-0"



C6 BOLLARD
3/4" = 1'-0"

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. BAIRD
9142226-0301
LICENSED ARCHITECT

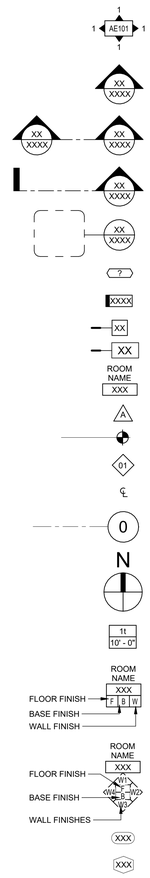
ARCHITECTURAL SITE DETAILS

AS110.2

ABBREVIATIONS

#	NUMBER
@	AT
℄	CENTER LINE
⌀	DIAMETER
L	ANGLE
3L	THREE LAYERS
A.B.	ANCHOR BOLT
ABV.	ABOVE
ADJ.	ADJUSTABLE
A.F.F.	ABOVE FINISH FLOOR
A.I.A.	AMERICAN INSTITUTE OF ARCHITECTS
ALUM.	ALUMINUM
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
A.S.T.M.	AMERICAN SOCIETY FOR TESTING MATERIALS
D.B.A.	DEFORMED BAR ANCHOR
BD.	BOARD
BITUM.	BITUMINOUS
BLDG.	BUILDING
B.M.	BENCHMARK
B.O.	BOTTOM OF
BOT.	BOTTOM
B.P.	BASE PLATE
BRG.	BEARING
BTWN.	BETWEEN
CER.	CERAMIC
C.J.	CONSTRUCTION JOINT
CLG.	CEILING
CLR.	CLEAR
CMU	CONCRETE MASONRY UNIT
COL.	COLUMN
CONC.	CONCRETE
CONT.	CONTINUOUS
CONST.	CONSTRUCTION
COORD.	COORDINATE
C.P.	CAP PLATE
C.T.J.	CONTRACTION JOINT
DBL.	DOUBLE
DEPT	DEPARTMENT
DET.	DETAIL
DIA.	DIAMETER
DTL.	DETAIL
DWGS.	DRAWINGS
EA.	EACH
E.F.	EACH FACE
E.J.	EXPANSION JOINT
EL.	ELEVATION
ELEV.	ELEVATION
EQ.	EQUAL
E.S.	EACH SIDE
E.W.	EACH WAY
EXIST.	EXISTING
EXPAN.	EXPANSION
EXT.	EXTERIOR
E.W.C.	ELECTRIC WATER COOLER
F.D.	FLOOR DRAIN
FDN.	FOUNDATION
FDTN.	FOUNDATION
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
F.F.	FINISH FLOOR
FIN.	FINISH
FLR.	FLOOR
FT.	FEET
FTG.	FOOTING
GA.	GAGE/GAUGE
GAL.	GALLON
GALV.	GALVANIZED
GFCI	GOVERNMENT FURNISHED CONTRACTOR INSTALLED
GFGI	GOVERNMENT FURNISHED GOVERNMENT INSTALLED
GPM	GALLONS PER MINUTE
GND.	GROUND
GOVT OR GOV.	GOVERNMENT
GWB.	GYPSUM WALL BOARD
GYP. BD.	GYPSUM BOARD
HC.	HANDICAPPED
HDW.	HARDWARE
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
HR.	HOUR
H.S.A.	HEADED STUD ANCHOR
HT.	HEIGHT
HVAC	HEATING/VENTILATION/ AIR CONDITIONING
HYD	HYDRANT
I.D.	INSIDE DIAMETER
I.F.	INSIDE FACE
IN.	INCHES
INFO.	INFORMATION
INSUL.	INSULATION
LAV.	LAVATORY
LT.	LIGHT
LT. WT.	LIGHT WEIGHT
MAINT.	MAINTENANCE
MANUF OR MFG.	MANUFACTURER
MAX.	MAXIMUM
MAT.	MATERIAL
M.C.J.	MASONRY CONTROL JOINT
MECH.	MECHANICAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
M.O.	MASONRY OPENING
MTL.	METAL
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.F.	OUTSIDE FACE
O.F.C.I.	OWNER FURNISHED CONTRACTOR INSTALLED
O.F.O.I.	OWNER FURNISHED OWNER INSTALLED
O.H.	OVERHEAD
OHD	OVERHEAD DOOR
OPP.	OPPOSITE
O.W.S.J.	OPEN WEB STEEL JOIST
PART.	PARTITION
P.C.F.	POUNDS PER CUBIC FOOT
PERP.	PERPENDICULAR
PL.	PLATE
P.L.F.	POUNDS PER LINEAL FOOT
PNTD.	PAINTED
PROT.	PROTECTION
P.S.F.	POUNDS PER SQUARE FOOT
P.S.I.	POUNDS PER SQUARE INCH
QTY.	QUANTITY
R.D.	ROOF DRAIN
RE:	REFERENCE TO
RAD.	RADIUS
REINF.	REINFORCED
REQ'D	REQUIRED
RM.	ROOM
R.O.	ROUGH OPENING
SCHED.	SCHEDULE
S.D.I.	STEEL DECK INSTITUTE
SHR.	SHOWER
SHT.	SHEET
SIM.	SIMILAR
S.J.I.	STEEL JOIST INSTITUTE
SPEC.	SPECIFICATION
STC	SOUND TRANSMISSION COEFFICIENT
STD.	STANDARD
STIFF.	STIFFENER
STR.	STRUCTURAL
SUPER.	SUPERVISOR
SUSP.	SUSPENDED
THRU	THROUGH
T.O.	TOP OF
T.O.A.	TOP OF ASPHALT
T.O.C.	TOP OF CURB
T.O.F.	TOP OF FOOTING
T.O.S.	TOP OF SLAB OR SIDEWALK
T.O.W.	TOP OF WALL
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VCT	VINYL COMPOSITION TILE
VERT OR VER.	VERTICAL
VEST.	VESTIBULE
VNR.	VENEER
W/	WITH
W.A.S.	WALL AS SCHEDULED
WD.	WOOD
W.W.F.	WELDED WIRE FABRIC

SYMBOLS LEGEND



INTERIOR ELEVATIONS

EXTERIOR ELEVATIONS

BUILDING SECTIONS

WALL SECTIONS

DETAIL CALL OUT

KEYNOTE

DOOR NUMBER

WALL TYPE

HORIZONTAL ASSEMBLY TYPE

ROOM NAME AND NUMBER

GLAZING TYPE

DATUM

WINDOW TYPE

CENTER LINE

GRID

PROJECT NORTH (UNO)

CEILING TYPE AND ELEVATION

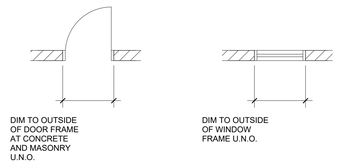
ROOM FINISH

ALTERNATE ROOM FINISH

MATERIAL

EQUIPMENT

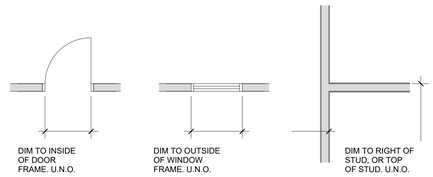
TYPICAL DIMENSIONING KEY



DIM TO OUTSIDE OF DOOR FRAME AT CONCRETE AND MASONRY U.N.O.

DIM TO OUTSIDE OF WINDOW FRAME U.N.O.

CONC & MASONRY WALLS



DIM TO INSIDE OF DOOR FRAME. U.N.O.

DIM TO OUTSIDE OF WINDOW FRAME. U.N.O.

DIM TO RIGHT OF STUD, OR TOP OF STUD. U.N.O.

FRAMED WALLS

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE



SYMBOLS AND LEGENDS

AE001.2

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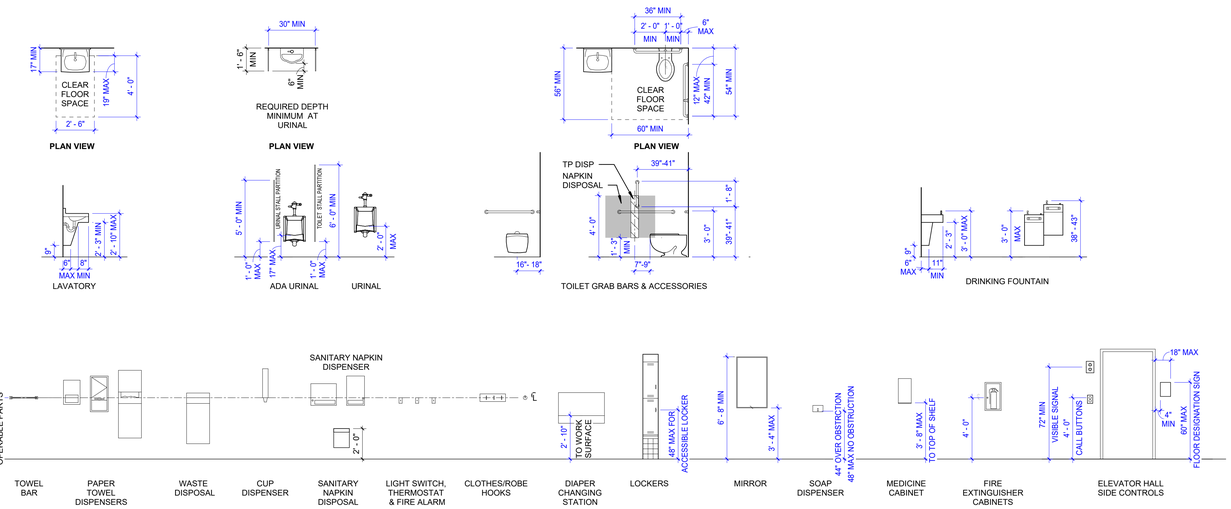

A1 AE002.2 ADA MOUNTING DIMENSIONS
1/4" = 1'-0"

NOTES:

WHERE DIMENSIONS ARE NOT OTHERWISE INDICATED USE DIMENSIONS SHOWN THIS SHEET FOR LOCATING AND MOUNTING ELEMENTS SHOWN.

PROVIDE SOLID BLOCKING FOR ALL WALL MOUNTED ELEMENTS, APPERTINANCES, ACCESSORIES ETC SHOWN THIS SHEET AND ELSEWHERE IN THE DRAWINGS.

ALL ELEMENTS TO BE INSTALLED IN ACCORDANCE WITH REACH, CLEARANCE, LOCATION AND CLEAR SPACE REQUIREMENTS SPECIFIED BY MOST CURRENT VERSIONS OF ADAAG, ANSI A117 & IBC
-AND-
IN ACCORDANCE WITH MANUFACTURERES RECOMMENDATIONS AND INSTRUCTIONS. IF IN CONFLICT WITH ADAAG, ANSI A117 OR IBC NOTIFY CONFLICT TO ARCHITECT BEFORE INSTALLATION

TOILET ACCESSORIES & OTHER OBJECTS MAY NOT BE MOUNTED WITHIN 1-1/2" OF GRAB BAR SURFACE

CRSA

PROJECT **24-038**

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WELDING TECHNOLOGY BUILLDING

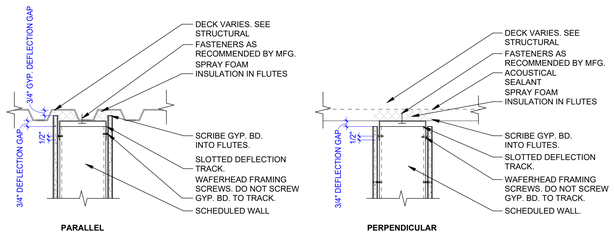
355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

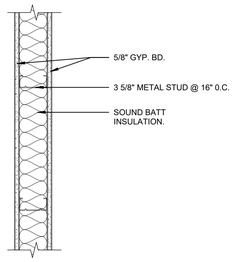
STATE OF UTAH
JEFFREY D. BAIRD
9142226-0301
LICENSED ARCHITECT

ACCESSIBILITY COMPLIANCE

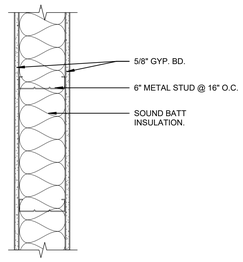
AE002.2



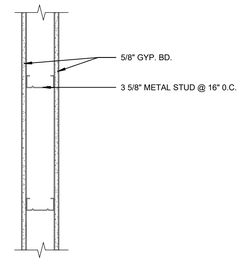
E1 / AE003.2 DEFLECTION TRACK DETAILS
1 1/2" = 1'-0"



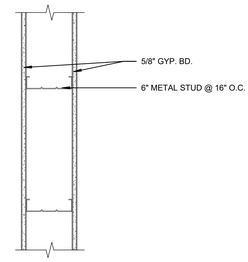
A1		
	FIRE RATING:	N/A
	FIRE TEST:	N/A
	STC RATING:	N/A
	SOUND TEST:	N/A
	WALL HEIGHT:	TO DECK



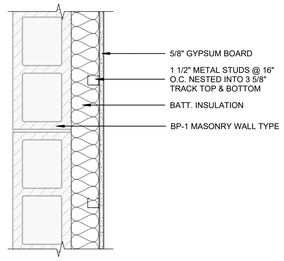
A2		
	FIRE RATING:	N/A
	FIRE TEST:	N/A
	STC RATING:	N/A
	SOUND TEST:	N/A
	WALL HEIGHT:	TO DECK



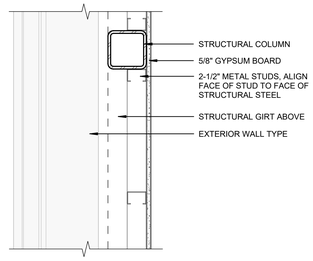
A3		
	FIRE RATING:	N/A
	FIRE TEST:	N/A
	STC RATING:	N/A
	SOUND TEST:	N/A
	WALL HEIGHT:	TO DECK



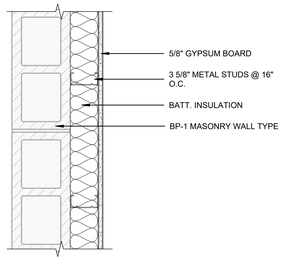
A4		
	FIRE RATING:	N/A
	FIRE TEST:	N/A
	STC RATING:	N/A
	SOUND TEST:	N/A
	WALL HEIGHT:	TO 6" BELOW STRUCTURE



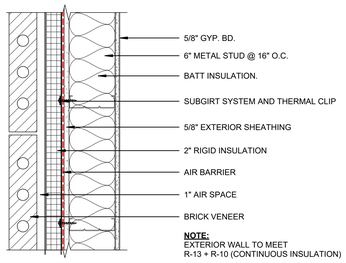
B1		
	FIRE RATING:	N/A
	FIRE TEST:	N/A
	STC RATING:	N/A
	SOUND TEST:	N/A
	WALL HEIGHT:	10'-0" AFF. TO DECK



B2		
	FIRE RATING:	N/A
	FIRE TEST:	N/A
	STC RATING:	N/A
	SOUND TEST:	N/A
	WALL HEIGHT:	TO SILL

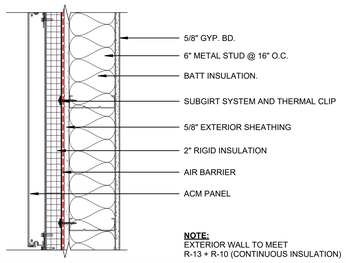


B3		
	FIRE RATING:	N/A
	FIRE TEST:	N/A
	STC RATING:	N/A
	SOUND TEST:	N/A
	WALL HEIGHT:	TO DECK



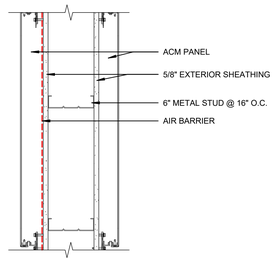
NOTE:
EXTERIOR WALL TO MEET
R-13 + R-10 (CONTINUOUS INSULATION)

E1		
	FIRE RATING:	N/A
	FIRE TEST:	N/A
	STC RATING:	N/A
	SOUND TEST:	N/A
	WALL HEIGHT:	SEE ELEVATIONS

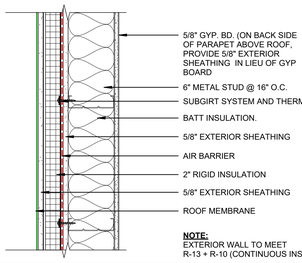


NOTE:
EXTERIOR WALL TO MEET
R-13 + R-10 (CONTINUOUS INSULATION)

E2		
	FIRE RATING:	N/A
	FIRE TEST:	N/A
	STC RATING:	N/A
	SOUND TEST:	N/A
	WALL HEIGHT:	SEE ELEVATIONS

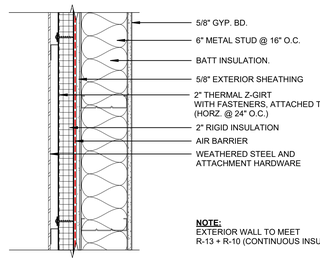


E3		
	FIRE RATING:	N/A
	FIRE TEST:	N/A
	STC RATING:	N/A
	SOUND TEST:	N/A
	WALL HEIGHT:	SEE ELEVATIONS



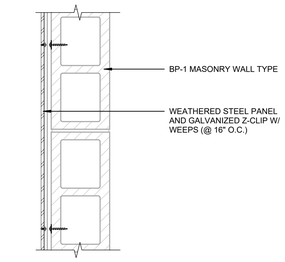
NOTE:
EXTERIOR WALL TO MEET
R-13 + R-10 (CONTINUOUS INSULATION)

E4		
	FIRE RATING:	N/A
	FIRE TEST:	N/A
	STC RATING:	N/A
	SOUND TEST:	N/A
	WALL HEIGHT:	SEE ELEVATIONS

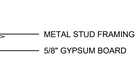


NOTE:
EXTERIOR WALL TO MEET
R-13 + R-10 (CONTINUOUS INSULATION)

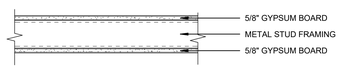
E5		
	FIRE RATING:	N/A
	FIRE TEST:	N/A
	STC RATING:	N/A
	SOUND TEST:	N/A
	WALL HEIGHT:	SEE ELEVATIONS



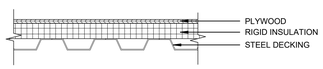
E6		
	FIRE RATING:	N/A
	FIRE TEST:	N/A
	STC RATING:	N/A
	SOUND TEST:	N/A
	WALL HEIGHT:	SEE ELEVATIONS



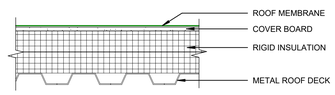
C1 CEILING TYPE - C1



C2 CEILING TYPE - C2

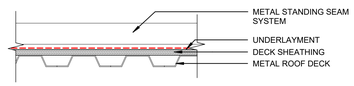


C3 CEILING TYPE - C3

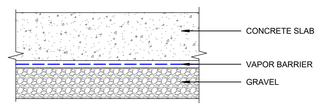


NOTE:
ROOF INSULATION TO MEET
R-30 (CONTINUOUS INSULATION) ABOVE DECK

R1 ROOF TYPE - R1



R2 ROOF TYPE - R2



F1 FLOOR TYPE - F1

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. [illegible]
9142[illegible]-0301
LICENSED ARCHITECT

WALL TYPES, HORIZONTAL ASSEMBLY TYPES

AE003.2

11/15/2024 10:06:48 PM

GENERAL NOTES

- GENERAL CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS AND SHALL REPORT TO THE ARCHITECT ANY UNKNOWN CONDITIONS, ERRORS OR CONFLICT IN THE DRAWINGS BEFORE BEGINNING WORK.
- DO NOT SCALE DRAWINGS
- ITEMS HALF-TONED SHOWN FOR REFERENCE ONLY.

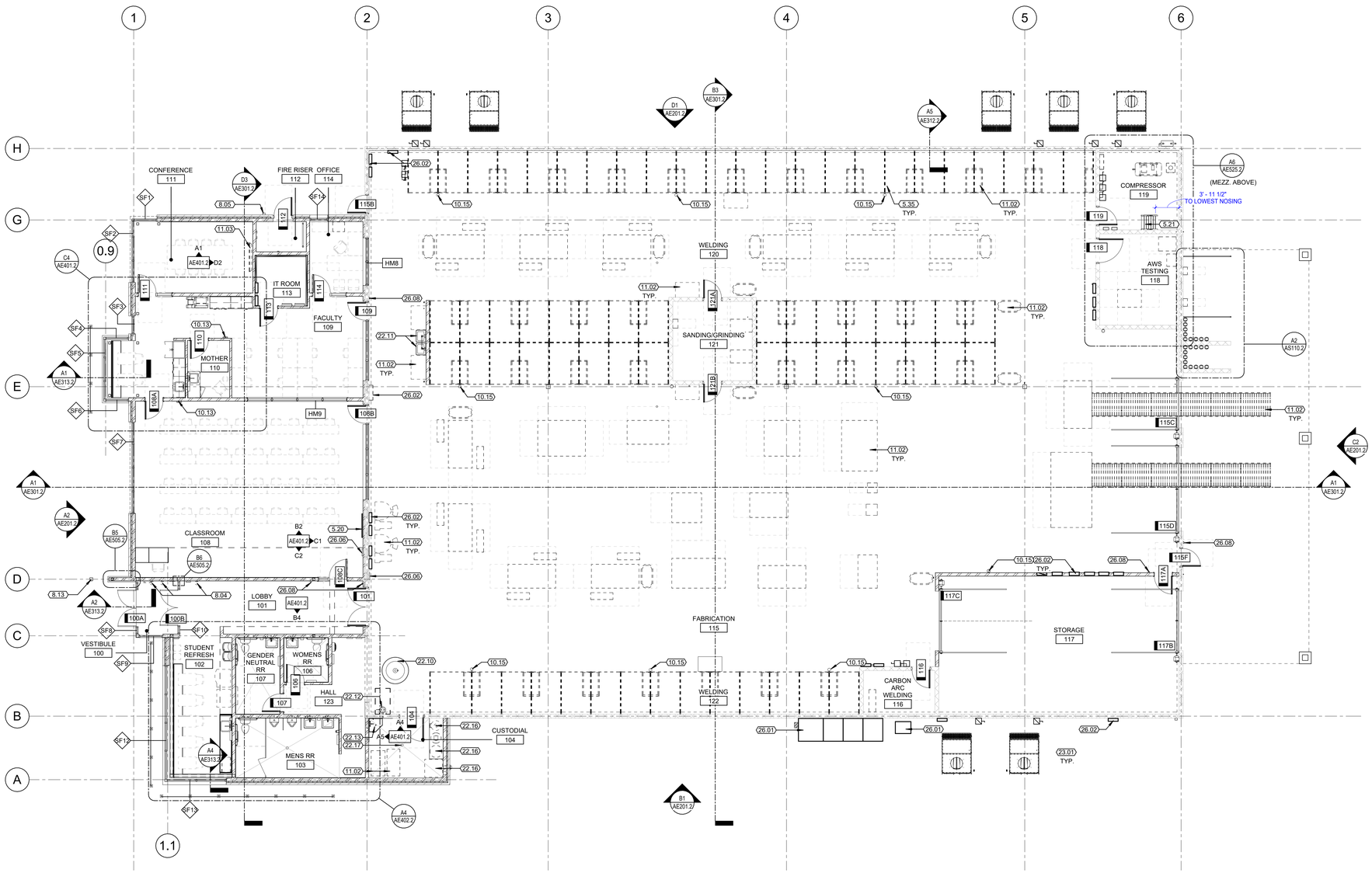
CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION



A1 AE101.2 LEVEL 1 FLOOR PLAN
1/8" = 1'-0"

KEYNOTES

5.20	HOT-ROLLED 22 GA. STEEL DISPLAY BOARD
5.21	SHIPS LADDER. SEE LADDER DETAILS
5.35	WELDING BOOTH
8.04	AUTOMATIC DOOR OPERATOR
8.05	KNOX BOX
8.13	PEDESTAL AUTOMATIC DOOR OPERATOR AND CARD READER
10.13	FIRE EXTINGUISHER CABINET
10.15	FIRE EXTINGUISHER
11.02	SHOP EQUIPMENT. SEE EQUIPMENT SCHEDULE.
11.03	OFCI FLAT SCREEN
22.10	HAND WASH FOUNTAIN
22.11	MATERIAL WASH SINK
22.12	EYE WASH STATION
22.13	FLOOR SINK
22.16	PLUMBING EQUIPMENT
22.17	FLOOR DRAIN
23.01	MECHANICAL EQUIPMENT
26.01	ELECTRICAL EQUIPMENT
26.02	ELECTRICAL PANEL
26.06	STUDENT CHECK-IN
26.08	CARD READER

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. BAIRD
9142223-0301
LICENSED ARCHITECT
11/1/24

LEVEL 1 FLOOR PLAN

AE101.2

GENERAL NOTES

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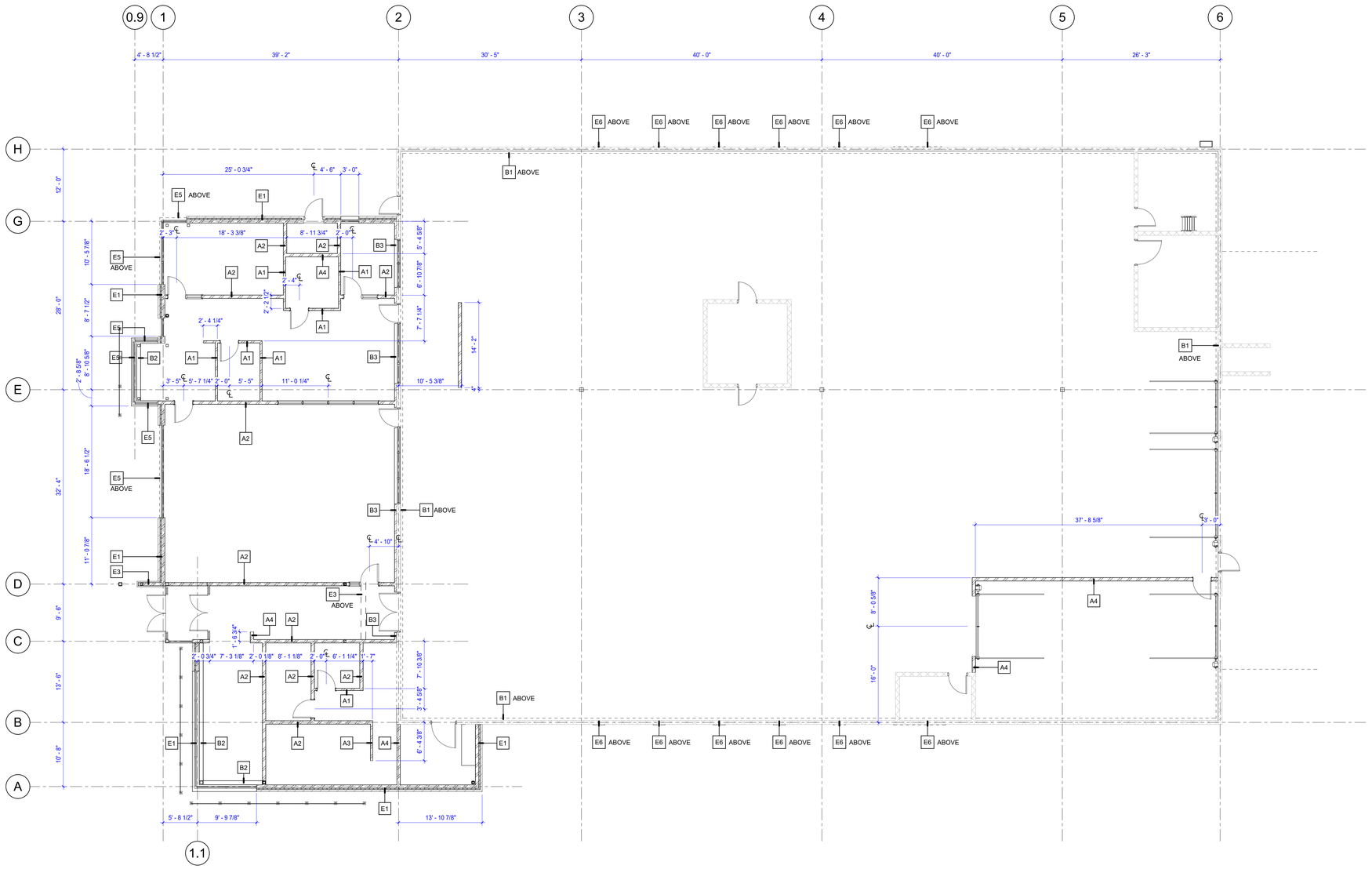


KEYNOTES

A1 / AE121.2 LEVEL 1 FLOOR PLAN
1/8" = 1'-0"

11/1/2024 10:09:00 PM

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D [illegible]
9142[illegible]-0301
LICENSED ARCHITECT

LEVEL 1 DIMENSION PLAN

AE121.2

EQUIPMENT PHOTO KEY

EQ-10



EQ-11



EQ-12



EQ-13



EQ-14



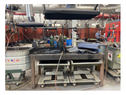
EQ-15



EQ-16



EQ-18



EQ-19



EQ-20



EQ-21



EQ-22



EQ-24



EQ-25



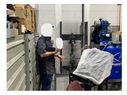
EQ-26



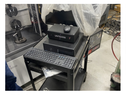
EQ-27



EQ-28



EQ-29



EQ-30



EQ-31



EQ-33



EQ-34



EQ-35



EQUIPMENT SCHEDULE

TYPE MARK	DESCRIPTION	QTY	MFR	MODEL	CUT SHEET	DIMENSIONS WIDTH	DEPTH	HEIGHT	NEW / EXISTING	MOUNTING	FURNISHED BY	INSTALLED BY	VENTILATION	ELECTRICAL REQUIREMENTS VOLTS	AMPS	PHASE	NOTES
EQ-01	PROJECTOR SCREEN	1	TBD	TBD	N				N	CM	C	C					
EQ-02	REFRIGERATOR	1	TBD	TBD	N				N	FS	O	O					SIDE BY SIDE, WATER DISPENSER, ICE MAKER
EQ-03	REFRIGERATOR	1	TBD	TBD	N				N	FS	O	O					UNDERCOUNTER
EQ-04	VENDING MACHINE	1	TBD	TBD	N				N	FS	O	O					BEVERAGES
EQ-05	VENDING MACHINE	1	TBD	TBD	N				N	FS	O	O					SNACKS
EQ-06	PRINTER/COPIER	1	TBD	TBD	N				N	FS	O	O					
EQ-07	MICROWAVE	3	TBD	TBD	N				N	CT	O	O					
EQ-08	DESKTOP PRINTER	1	TBD	TBD	N				N	CT	O	O					
EQ-09	MONITOR	1	LG	TBD	N				N	WM	O	C					W/ MONITOR MOUNT
EQ-10	LASER CUTTER	1	FABLIGHT	4500	N	5' - 7"	3' - 3"	3' - 0"	E	FS	O	O					
EQ-11	PLASMA TABLE	1	LINCOLN	TORCHMATE 4800	N	8' - 6"	6' - 0"	3' - 0"	E	FS	O	O	FUME HOOD				
EQ-12	PRESS BRAKE	1	ATEK BANTAM	B6240GF000R	N	8' - 0"	3' - 9 1/2"	3' - 0"	E	FS	O	O					
EQ-13	PROJECT TABLE	10	-	-	N	8' - 0"	4' - 0"	3' - 0"	E	FS	O	O	EXTRACTION ARM				
EQ-14	IRONWORKER	1	JMT	IW 110/180 BTD	N	9' - 0"	5' - 0"	3' - 0"	E	FS	O	O					
EQ-15	HORIZONTAL BAND SAW	1	HYD-MECH	S-20A	N	8' - 0"	4' - 8"	3' - 0"	N	FS	O	O					
EQ-16	HYDRAULIC SHEAR	1	STANDARD INDUSTRIAL	AS500-10	N	12' - 7 1/2"	6' - 10 1/2"	3' - 0"	E	FS	O	O					
EQ-17	MATERIAL ROLLER/CONVEYOR	2	-	-	N				E	FS	O	O					
EQ-18	SMALL CUTTING TABLE	1	-	-	N	7' - 0"	4' - 0"	3' - 0"	E	FS	O	O	FUME HOOD				
EQ-19	TRACK CUTTER	1	-	-	N	8' - 0"	6' - 0"	3' - 0"	E	FS	O	O	FUME HOOD				
EQ-20	ROD OVEN	2	LINCOLN	HYDROGUARD K2942	N	1' - 10 1/2"	1' - 10 1/2"	2' - 5 1/2"	E	FS	O	O					
EQ-21	VERTICAL MILL	1	SHARP	LMV	N	5' - 0"	5' - 0"	3' - 0"	E	FS	O	O					
EQ-22	PLASMA CUTTER	1			N	6' - 0"	6' - 0"	3' - 0"	E	FS	O	O	FUME HOOD				
EQ-24	LATHE	1	VICTOR	1640	N	6' - 5"	4' - 1 1/2"	3' - 0"	E	FS	O	O					
EQ-25	BELT SANDER	2	BURR KING	979	N	3' - 8"	2' - 2"	4' - 0"	E	FS	O	O					
EQ-26	BENCH GRINDER	1	JET	JBG-6A	N	10 1/2"	1' - 6"	4' - 0"	E	FS	O	O					
EQ-27	HYDRAULIC TEST TABLE	1			N	4' - 0"	3' - 0"	2' - 6"	E	FS	O	O					
EQ-28	UNITED TESTING MACHINE	1			N	2' - 11 1/2"	2' - 4 1/2"	7' - 10"	E	FS	O	O					
EQ-29	COMPUTER TABLE	1	-	-	N	1' - 7"	2' - 1"	2' - 6"	E	FS	O	O					
EQ-30	FLOOR SCRUBBER	1	TENNANT	T300E	N	2' - 2"	4' - 6"	2' - 6"	E	FS	O	O					
EQ-31	QUENCH TANK	11	-	-	N				E	FS	O	O	-				
EQ-32	STAINLESS STEEL TABLE	6	-	-	N				N	FS	O	O					
EQ-33	PRESSURE WASHER	1	HOTSY	800 SERIES	N	2' - 4"	4' - 3"	4' - 4"	E	FS	O	O	FUME HOOD				
EQ-34	WELDING POSITIONER	1	LINCOLN	AD1043-87	N	1' - 8"	1' - 8"	1' - 6"	E	FS	O	O					
EQ-35	WELDING SIMULATOR	2	LINCOLN	VRTEX 360	N				E	FS	O	O					
EQ-36	WELDER	40	LINCOLN	C300	N				E	FS	O	O	EXTRACTION ARM				
EQ-37	WELDER	18	MILLER	DYNASTY 300	N				N	FS	O	O	EXTRACTION ARM				
EQ-38	WELDER	32	MILLER	MULTIMATIC 255	N				N	FS	O	O	EXTRACTION ARM				
EQ-39	GAS MANIFOLD CONTROLLER	2	HARRIS	763 DATASMART	N	8 13/16"	1' - 3 1/2"	1' - 8 3/32"	N	FS	O	O					

SEE ELECTRICAL DRAWINGS EP102.2 & EP403.2 FOR ELECTRICAL REQUIREMENTS

GENERAL NOTES

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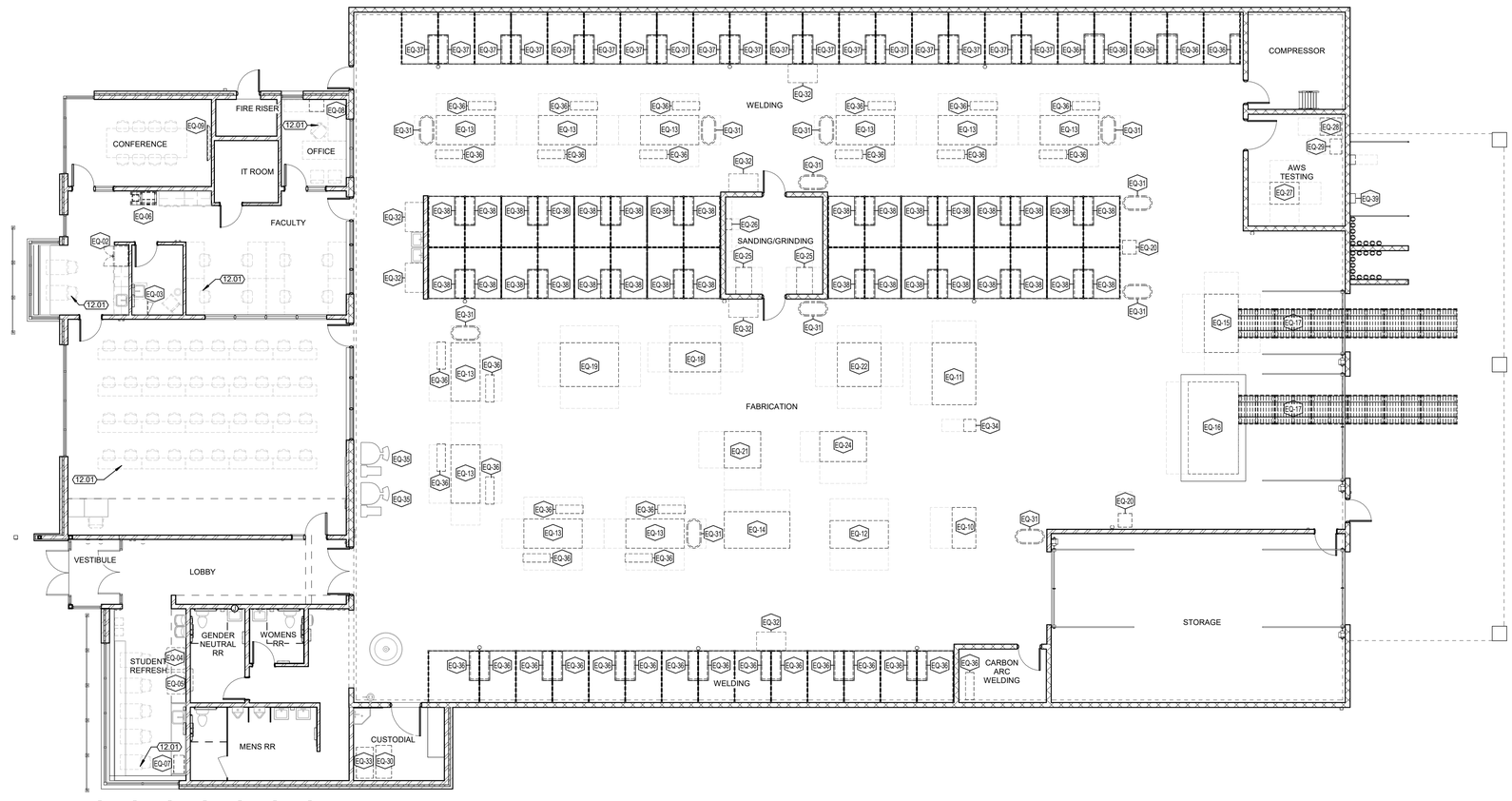
- DO NOT SCALE DRAWINGS
- ITEMS HALF-TONED SHOWN FOR REFERENCE ONLY.

EQUIPMENT LEGEND

EQUIPMENT TAG	EQ-XX
MOUNTING	
CEILING MOUNTED	CM
COUNTERTOP	CT
FREESTANDING	FS
WALL MOUNTED	WM
FURNISHED BY / INSTALLED BY	
OWNER	O
CONTRACTOR	C
VENDOR	V



KEYNOTES

12.01	OFOI FURNITURE

A1 / AE131.2 LEVEL 1 FLOOR PLAN
1/8" = 1'-0"

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE
WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. EATON
9142935-0301
LICENSED ARCHITECT

LEVEL 1 EQUIPMENT PLAN

AE131.2

11/17/2023 9:46:31 PM

ROOM FINISH SCHEDULE

NUMBER	NAME	FLOOR FINISH	BASE FINISH	WALL TILE	WALL FINISHES	CEILING	TRIM	MILLWORK	COUNTERTOP	COMMENTS
104	CUSTODIAL	FC1	BR1		P1	P4	P2			
103	MENS RR	FC1	WT1		WT1	P4	P2			
106	WOMENS RR	FC1	WT1	WT1, WT2	WT1	P4	P2			
107	GENDER NEUTRAL RR	FC1	WT1	WT1, WT2	WT1	P4	P2			
102	STUDENT REFRESH	FC1	BR1		P1	P4	P2		CT1	
101	LOBBY	FC1	BS1		P1	P4	P2			
108	CLASSROOM	FC1	BR1		P1	P4	P2			
110	MOTHER	FC1	BR1		P1	P4	P2		CT1	
109	FACULTY	FC1	BR1		P1	P4	P2		CT1	
111	CONFERENCE	FC1	BR1		P1	P4	P2			
112	FIRE RISER	FC1			P1	P4	P2			
113	IT ROOM	FC1	BR1		P1	P4	P2			
114	OFFICE	FC1	BR1		P1	P4	P2			
117	STORAGE	FC1			P1	P4	P2			
118	AWS TESTING	FC1			P1	P4	P2			
119	COMPRESSOR	FC1			P1	P4	P2			
116	CARBON ARC WELDING	FC1			P1	P4	P2			
121	SANDING/GRINDING	FC1			P1	P4	P2			
100	VESTIBULE	CW1	BS1		P1	P4	P2			
115	FABRICATION	FC1			P1	P4	P2			
120	WELDING	FC1			P1	P4	P2			
122	WELDING	FC1			P1	P4	P2			
123	HALL	FC1	B1		P1					

FINISH LEGEND

KEY	DESCRIPTION	MANUFACTURER	STYLE/PATTERN	COLOR/FINISH	SIZE	NOTES
FLOOR FINISHES						
CW1	WALKOFF CARPET	SHAW	BON JOUR II TILE STEPPING OUT	STERLING 31557	24X24	
FC1	DENSIFIED CONCRETE	ASHFORD	CURE - DENSIFIER	NATURAL		
BASE FINISHES						
BR1	RUBBER BASE	ROPPE	STANDARD TOE BASE	667 GALACTIC	6" H x 1/8"	
BS1	STEEL BASE			HOT ROLLED STEEL	6" H	
WALL FINISHES						
FRP	FRP	MARLITE	SYMMETRIX- SUBWAY SS917	WHITE PNL W/ GREY GROUT		
P1	PAINT	SHERWIN WILLIAMS		CUSTOM COLOR/SATIN		B-7.5, A-22.5 J-1Y15 F-2.5
P2	PAINT	SHERWIN WILLIAMS		SW 7076 CYBERSPACE/ SEMI GLOSS		DOOR TRIM & DOORS
P3	PAINT	SHERWIN WILLIAMS		SW 6594 POINSETTIA		
WC1	WALLCOVERING	KOROSEAL	WALLTALKER MAG-RITE 48	WHITE M248-00	48"	
WT1	WALL TILE	DALTILE	REKINDLE	LIGHT GREY RK12	12x24	GROUT MAPEI 5011 SAHARA BEIGE
WT2	WALL TILE	DALTILE	COLOR WHEEL CLASSICS	MATTE CURRANT SH17	6x18	GROUT MAPEI 5011 SAHARA BEIGE
CEILING						
P4	PAINTED	SHERWIN WILLIAMS		CUSTOM COLOR		B-7.5, A-22.5 J-1Y15 F-2.5
MISC FINISHES						
CG1	CORNER GUARDS			HOT ROLLED STEEL	4' TALL	
CT1	COUNTERTOP			HOT ROLLED STEEL		
HM1	HOLLOW METAL DOOR			P3		
PA1	PARTITION	ASI	FLOOR MOUNTED OVERHEAD BRACES	STAINLESS STEEL	58"	
PA2	PARTITION	ASI	WALL HUNG PRIVACY SCREEN	STAINLESS STEEL		
TS1	TRANSITION STRIP					
WD1	SOLID WOOD DOOR					
WD2	SOLID WOOD		BIRCH	CLEAR FINISH		FOR BENCH
WV1	WOOD VENEER	MASONITE ARCHITECTURAL	ASPIRO SERIES	WHITE BIRCH PLAIN SLICE CLEAR		

GENERAL NOTES

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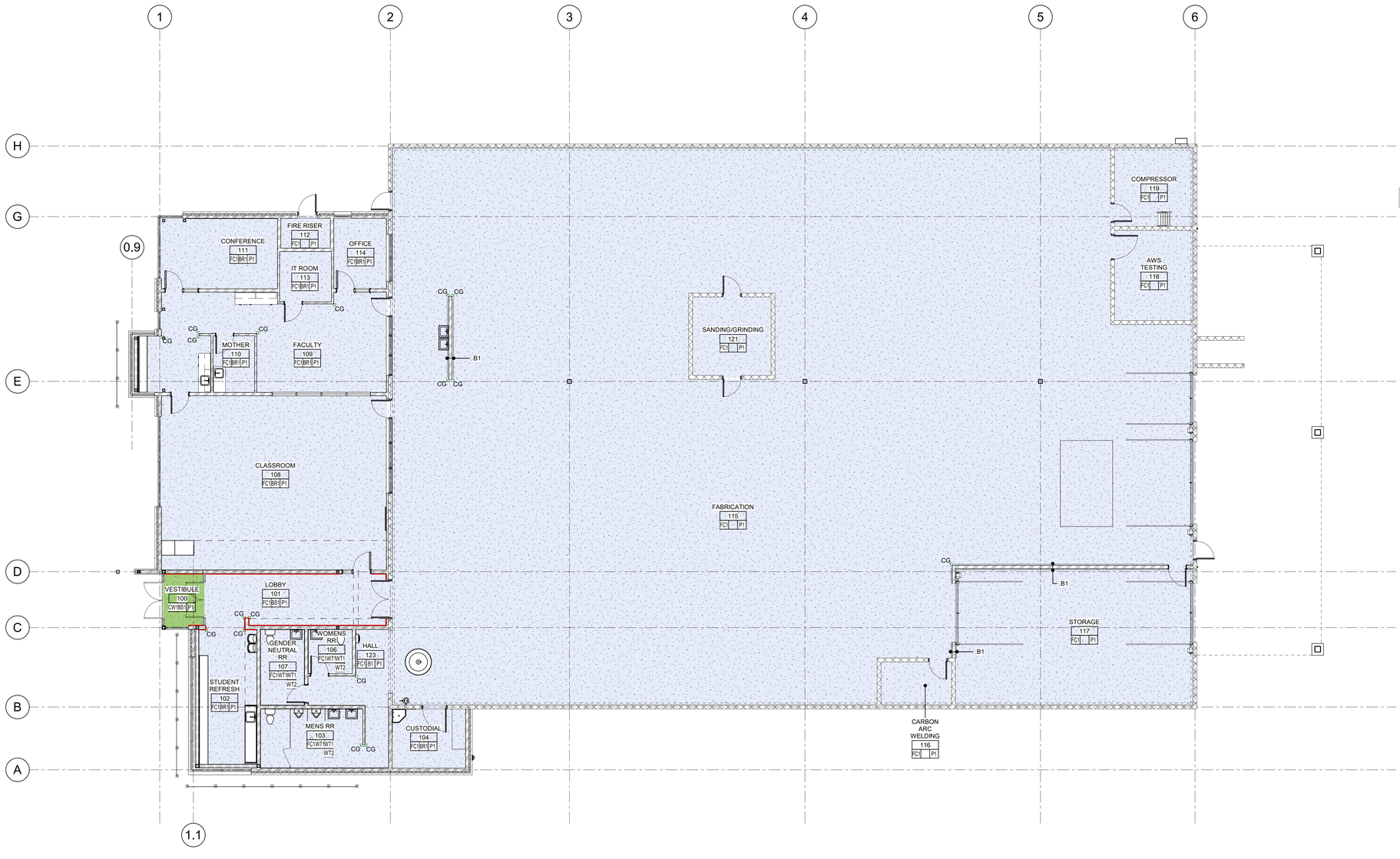
FINISH LEGEND

- POLISHED CONCRETE — FC1
- WALKOFF CARPET — CW1
- EXTENTS OF STEEL BASE
- ALUMINUM THRESHOLD
- STAINLESS STEEL CORNER GUARD — CG
- FINISH KEY LEGEND — ROOM NUMBER 000 (F FLOOR FINISH / B BASE FINISH / W WALL FINISH)

KEYNOTES



A1 / AE151.2 LEVEL 1 FINISH PLAN
1/8" = 1'-0"

11/19/2024 12:13:49 PM

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE
WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH — JEFFREY D. [illegible] — 9142225-0301 — LICENSED ARCHITECT

LEVEL 1 FLOOR FINISH PLAN

AE151.2

GENERAL NOTES

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PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

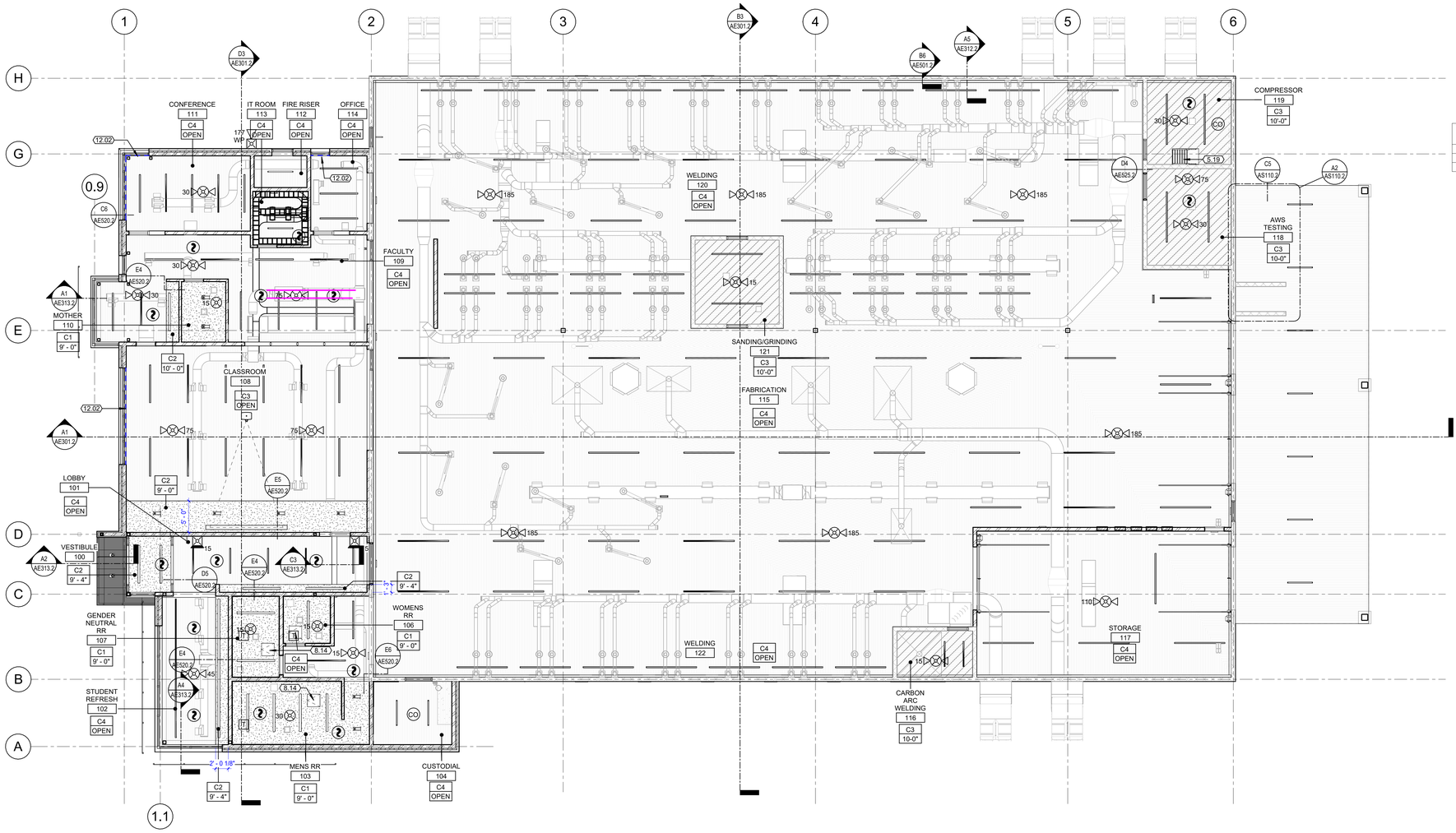
NO.	DATE	DESCRIPTION

CEILING LEGEND

GYPSUM BOARD CEILING	C1 X'-X"
GYPSUM BOARD SOFFIT	C2 X'-X"
INSULATED PLYWOOD LID	C3 X'-X"
OPEN TO STRUCTURE ABOVE	C4
ROLLER SHADES	
LIGHT FIXTURES	
FIRE ALARM DEVICE	
SMOKE ALARM	
EXIT SIGNAGE	
MECHANICAL SUPPLY/RETURN	

KEYNOTES

5.19	ROOF ACCESS LADDER. SEE LADDER DETAILS.
8.14	24" X 24" CEILING ACCESS PANEL
12.02	ROLLER WINDOW SHADE



A1 AE171.2 LEVEL 1 CEILING PLAN
1/8" = 1'-0"

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DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. BAIRD
9142-26-0301
LICENSED ARCHITECT

LEVEL 1 REFLECTED CEILING PLAN

AE171.2

GENERAL NOTES

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PROJECT **24-038**

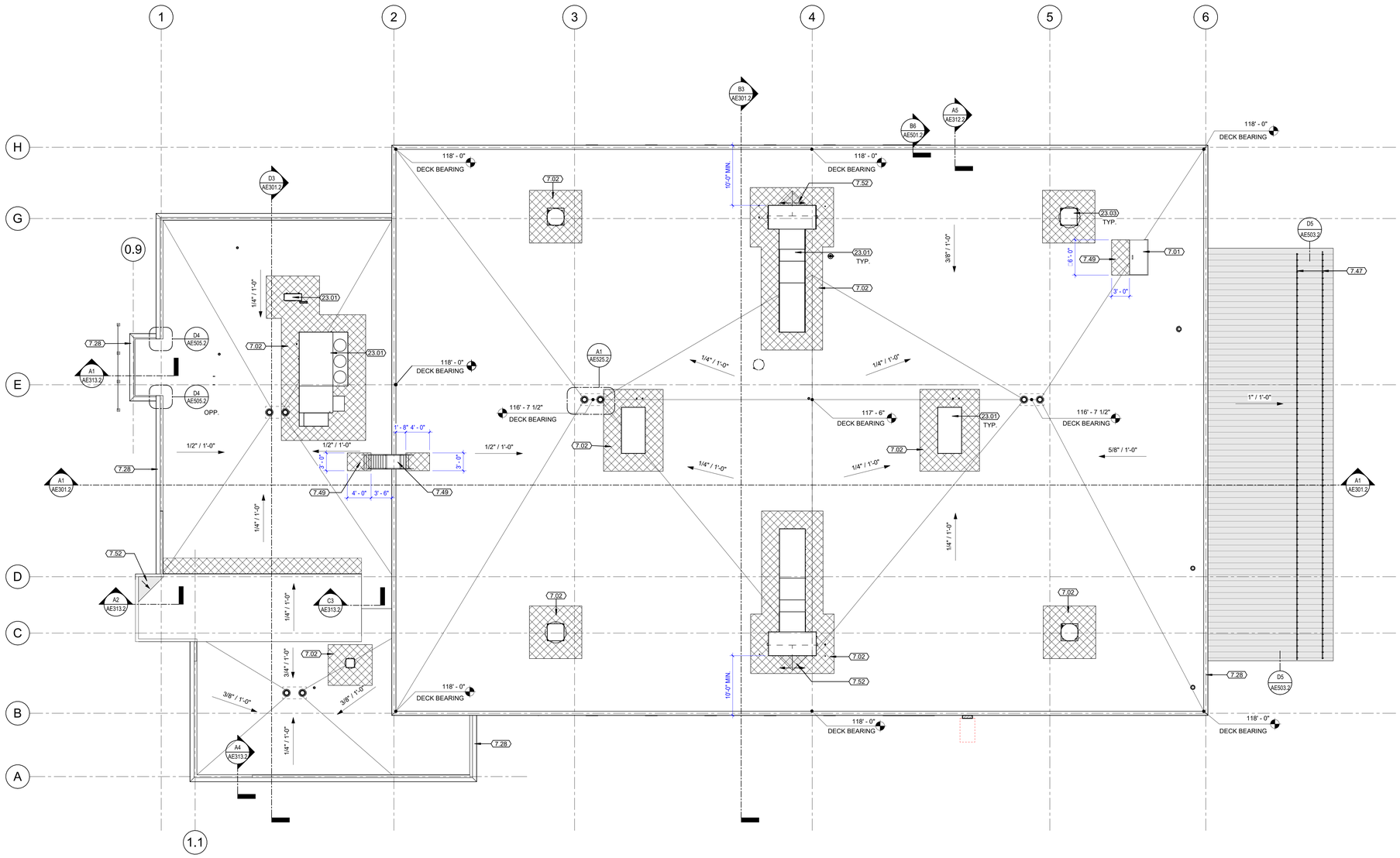
BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

ROOF PLAN LEGEND

ROOF TYPE R1	
ROOF TYPE R2	
WALK PAD	
ROOF DRAIN	



A1 AE191.2 ROOF PLAN
1/8" = 1'-0"

KEYNOTES

7.01	ROOF ACCESS HATCH
7.02	3' WIDE MIN. ROOF WALK PAD ARPOUND SERVICEABLE EQUIPMENT
7.28	PARAPET CAP
7.47	SNOW FENCE
7.49	ROOF WALK PAD
7.52	ROOF CRICKET. SLOPE 1/4" PER FOOT AT VALLEY.
23.01	MECHANICAL EQUIPMENT
23.03	MECHANICAL EXHAUST

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ROOF PLAN
AE191.2

GENERAL NOTES

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PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

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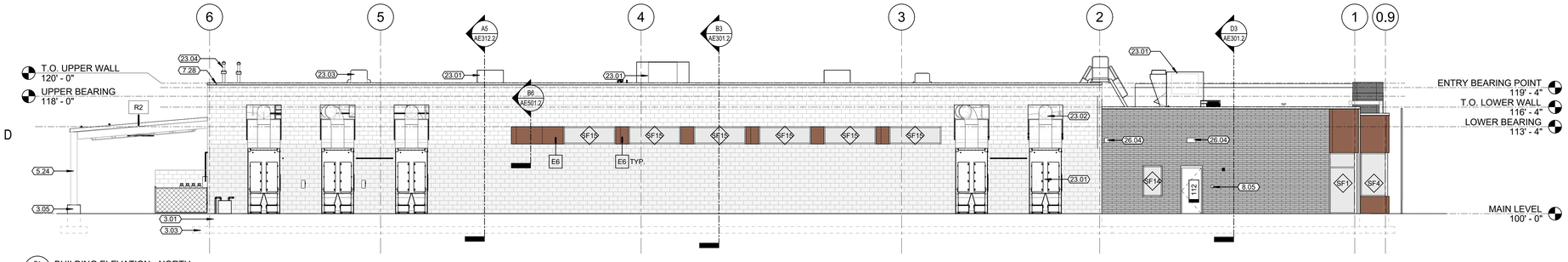
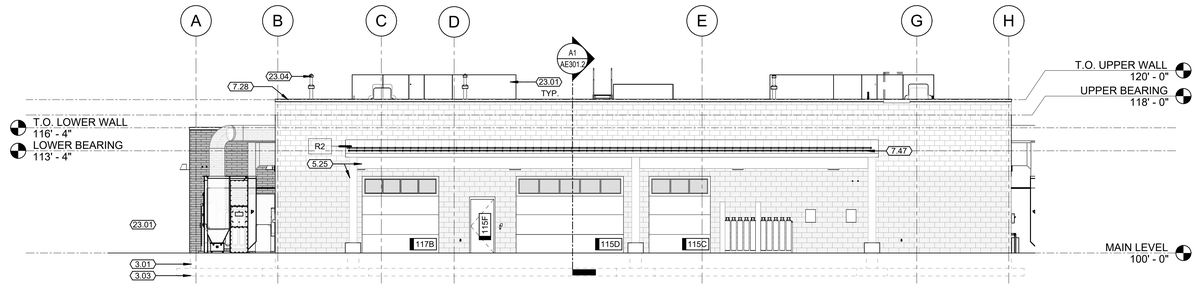
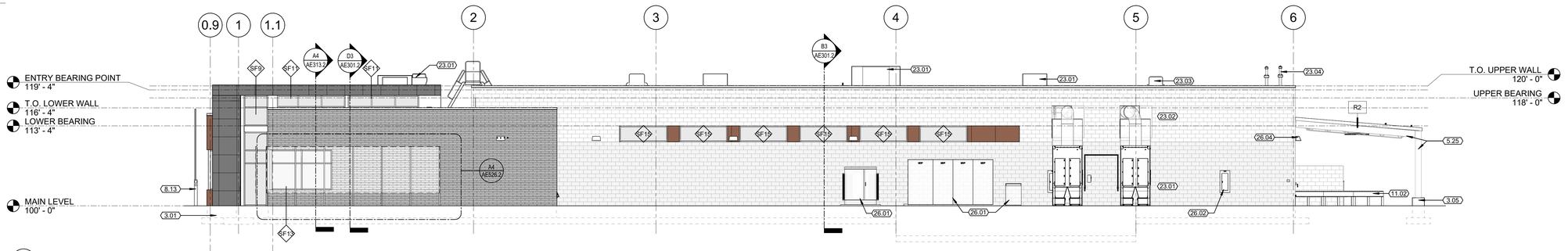


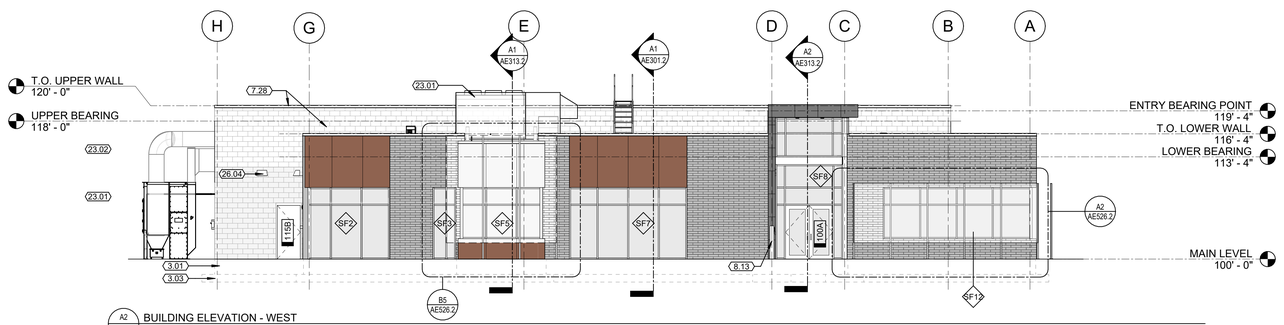
D1 AE201.2 BUILDING ELEVATION - NORTH
1/8" = 1'-0"



C2 AE201.2 BUILDING ELEVATION - EAST
1/8" = 1'-0"



B1 AE201.2 BUILDING ELEVATION - SOUTH
1/8" = 1'-0"



A2 AE201.2 BUILDING ELEVATION - WEST
1/8" = 1'-0"

LEGEND

EMPEROR BRICK COLOR SUNROC 'MIDNIGHT BLACK'	
ACM PANEL	
WEATHERED STEEL	

KEYNOTES

3.01	CONCRETE FOUNDATION WALL
3.03	CONCRETE FOOTING
3.05	CONCRETE PIER
5.24	STRUCTURAL COLUMN
5.25	EXTERIOR PAINTED STEEL
7.28	PARAPET CAP
7.47	SNOW FENCE
8.05	KNOX BOX
8.13	PEDESTAL AUTOMATIC DOOR OPERATOR AND CARD READER
11.02	SHOP EQUIPMENT. SEE EQUIPMENT SCHEDULE.
23.01	MECHANICAL EQUIPMENT
23.02	MECHANICAL DUCT
23.03	MECHANICAL EXHAUST
23.04	MECHANICAL VENT PIPE
26.01	ELECTRICAL EQUIPMENT
26.02	ELECTRICAL PANEL
26.04	LIGHT FIXTURE

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BUILDING ELEVATIONS

AE201.2

GENERAL NOTES

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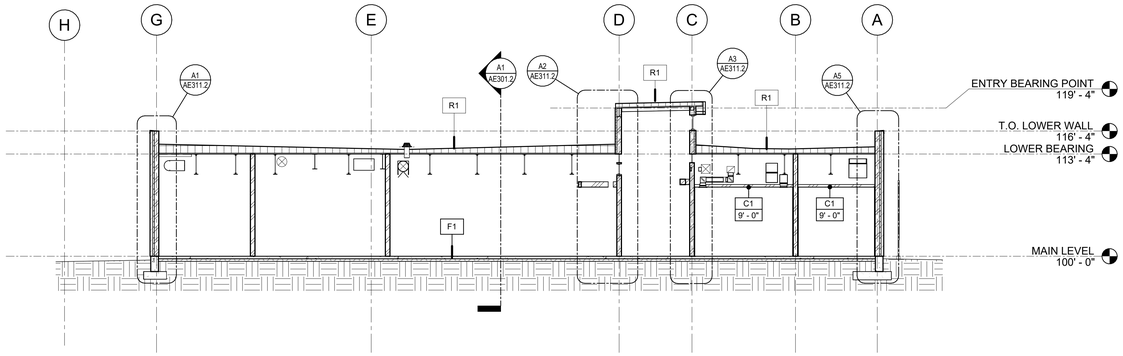
PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION



D3 AE301.2 BUILDING SECTION - N/S 1
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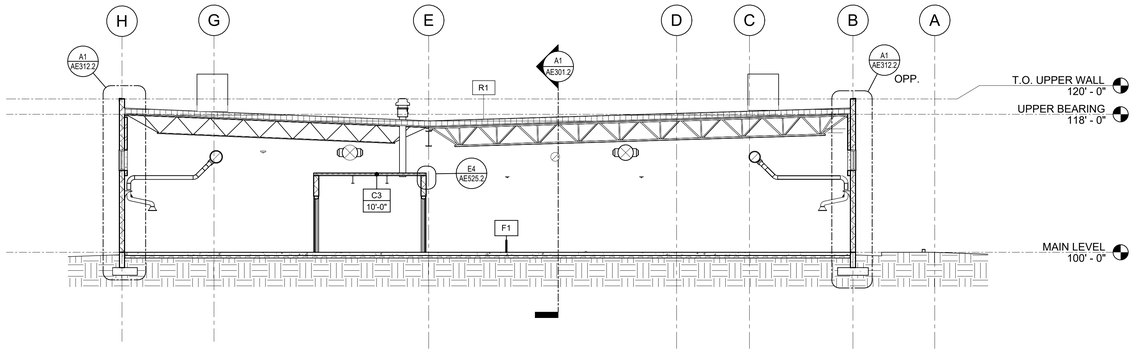
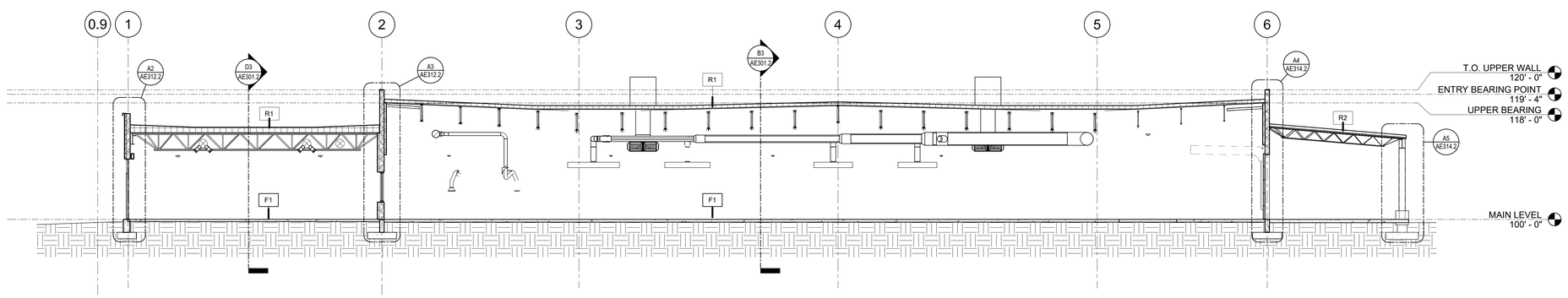


B3 AE301.2 BUILDING SECTION - N/S 2
1/8" = 1'-0"



A1 AE301.2 BUILDING SECTION - E/W 1
1/8" = 1'-0"

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STATE OF UTAH
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LICENSED ARCHITECT

BUILDING SECTIONS
AE301.2

GENERAL NOTES

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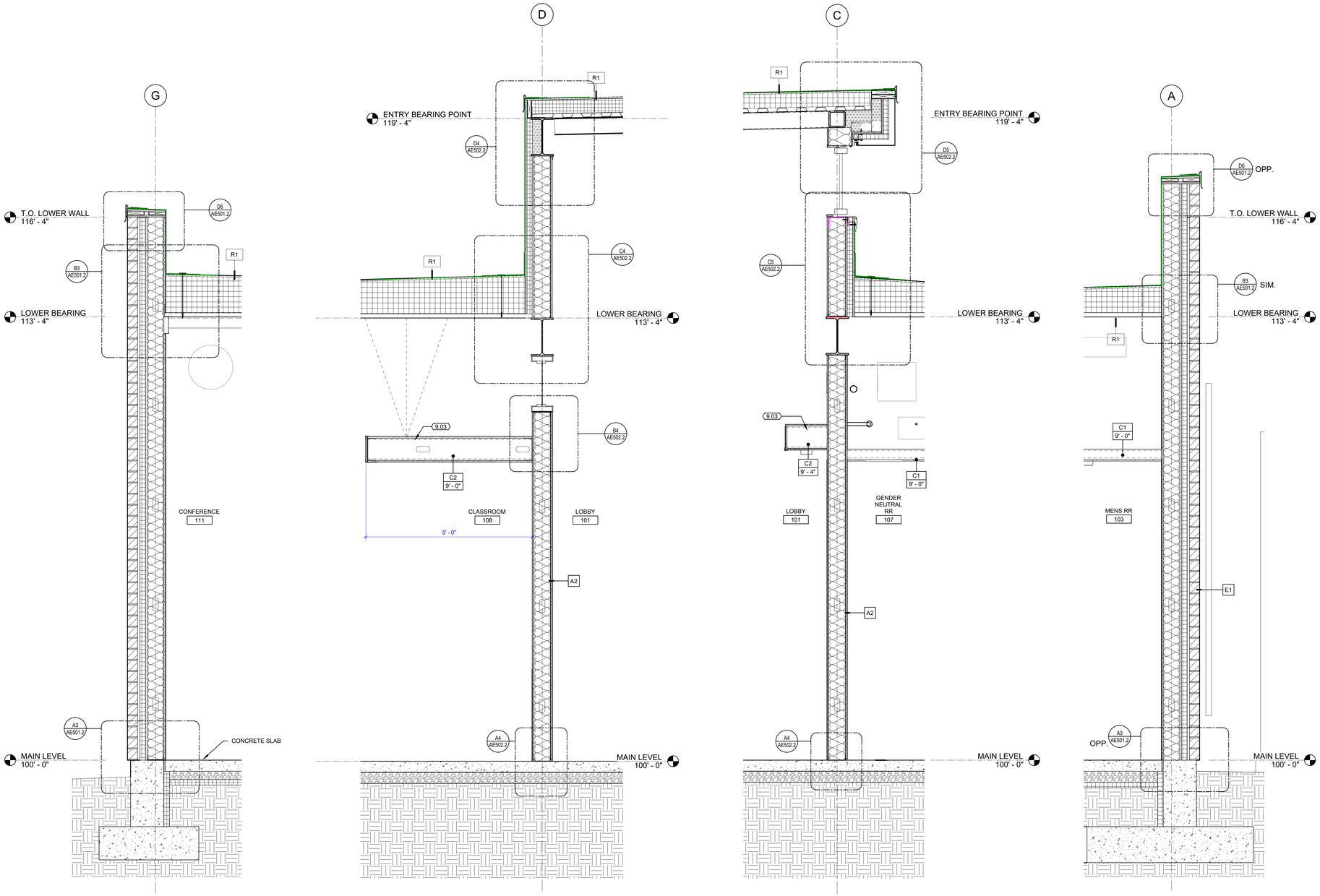
PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION



A1 WALL SECTION 3/4" = 1'-0"

A2 WALL SECTION 3/4" = 1'-0"

A3 WALL SECTION 3/4" = 1'-0"

A5 WALL SECTION 3/4" = 1'-0"

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11/1/24

WALL SECTIONS

AE311.2

GENERAL NOTES

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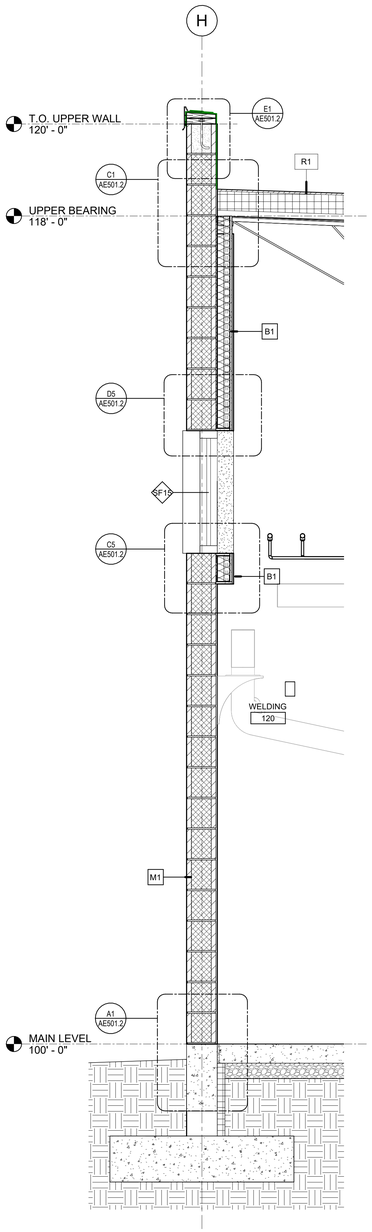
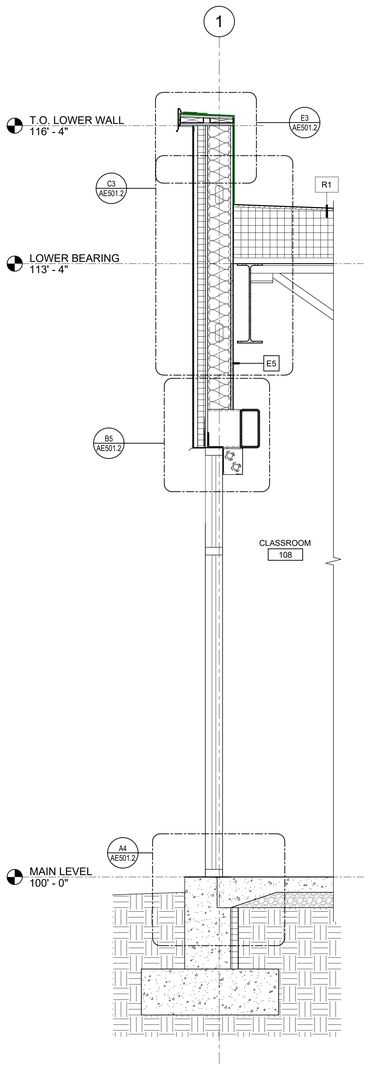
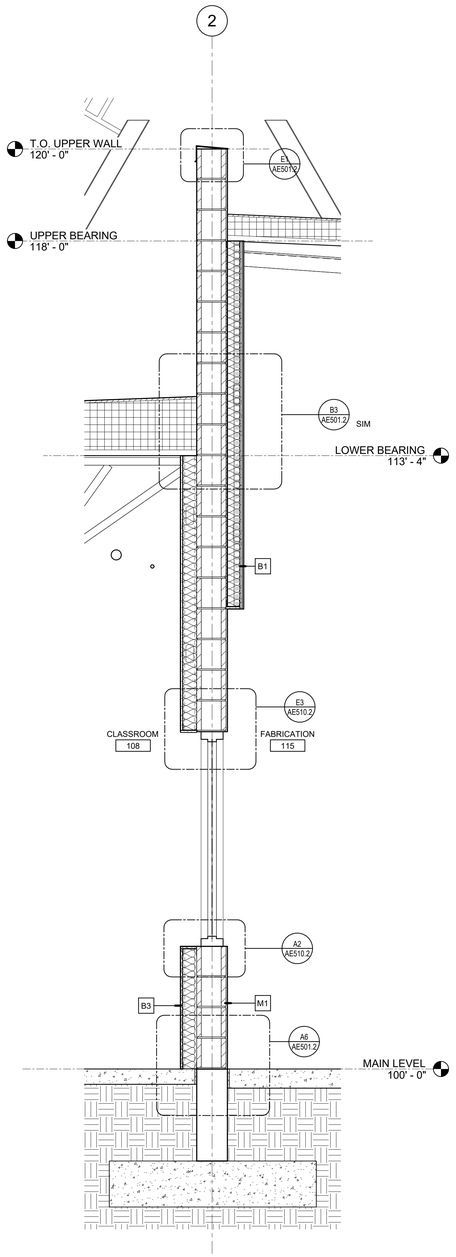


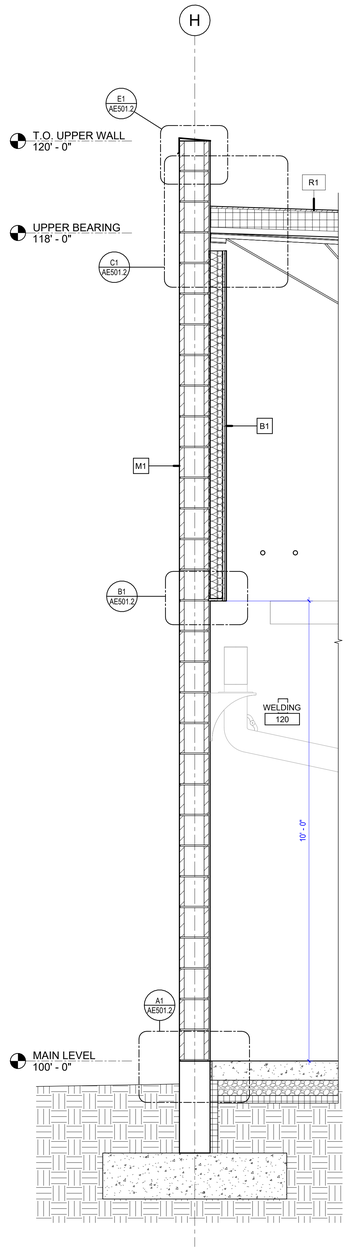
A1 AE312.2 WALL SECTION 3/4" = 1'-0"



A2 AE312.2 WALL SECTION 3/4" = 1'-0"



A3 AE312.2 WALL SECTION 3/4" = 1'-0"



A5 AE312.2 WALL SECTION 3/4" = 1'-0"

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

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PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

WALL SECTIONS
AE312.2

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GENERAL NOTES

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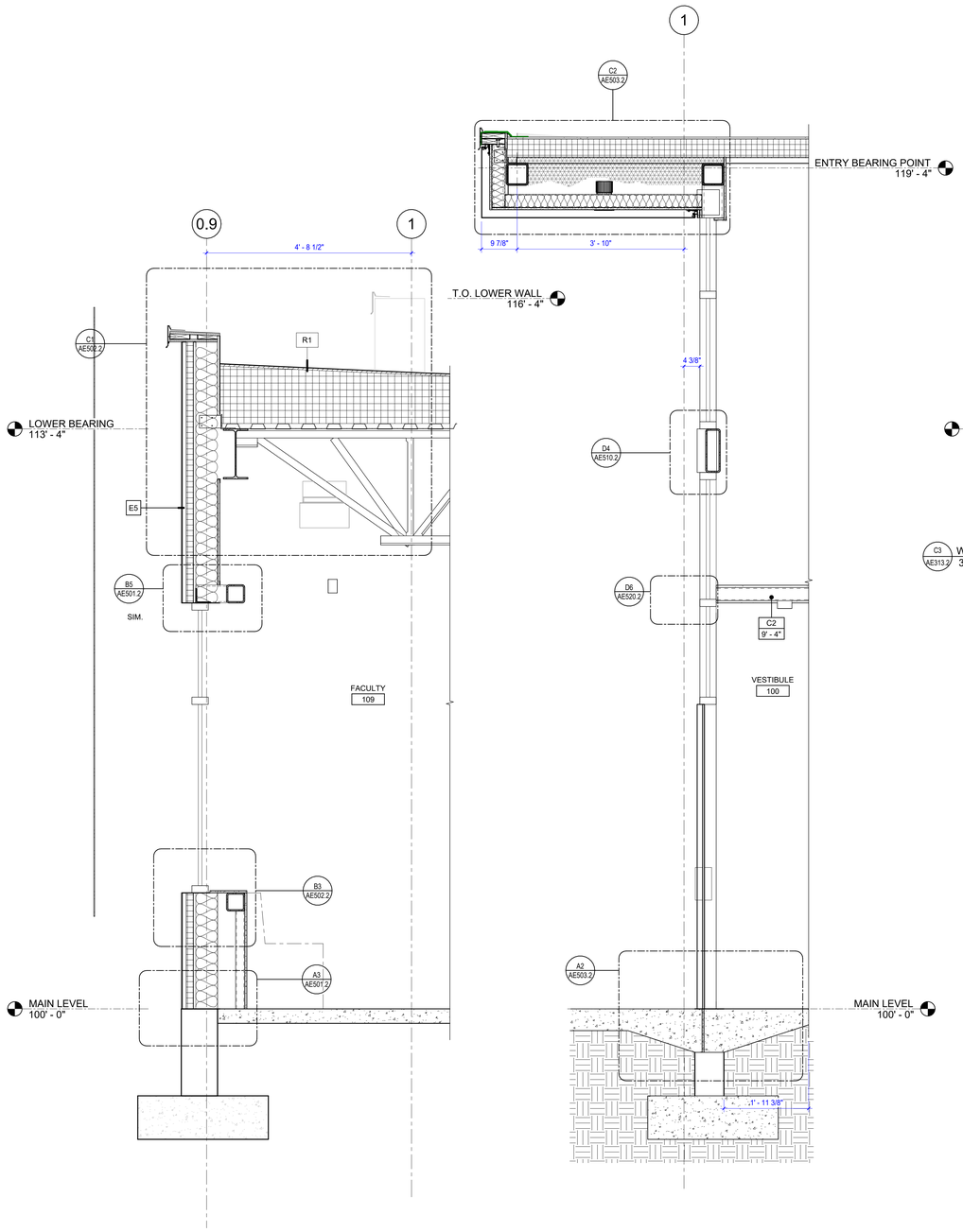
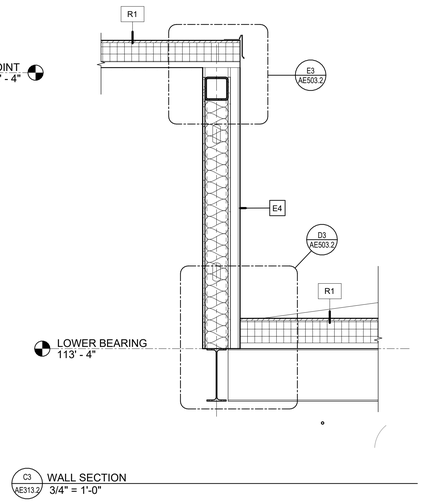
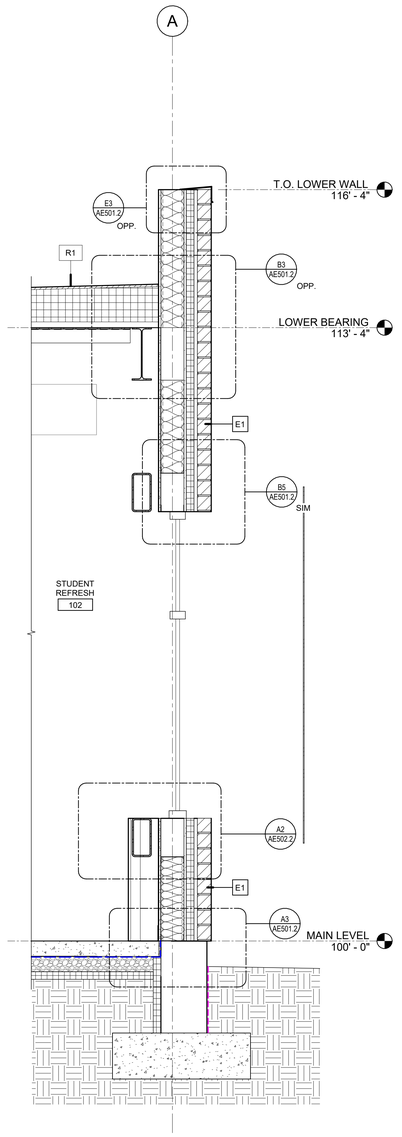


A1 AE313.2 WALL SECTION 3/4" = 1'-0"

A2 AE313.2 WALL SECTION 3/4" = 1'-0"



C3 AE313.2 WALL SECTION 3/4" = 1'-0"



A4 AE313.2 WALL SECTION 3/4" = 1'-0"

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PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. [illegible]
9142[illegible]-0301
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WALL SECTIONS

AE313.2

GENERAL NOTES

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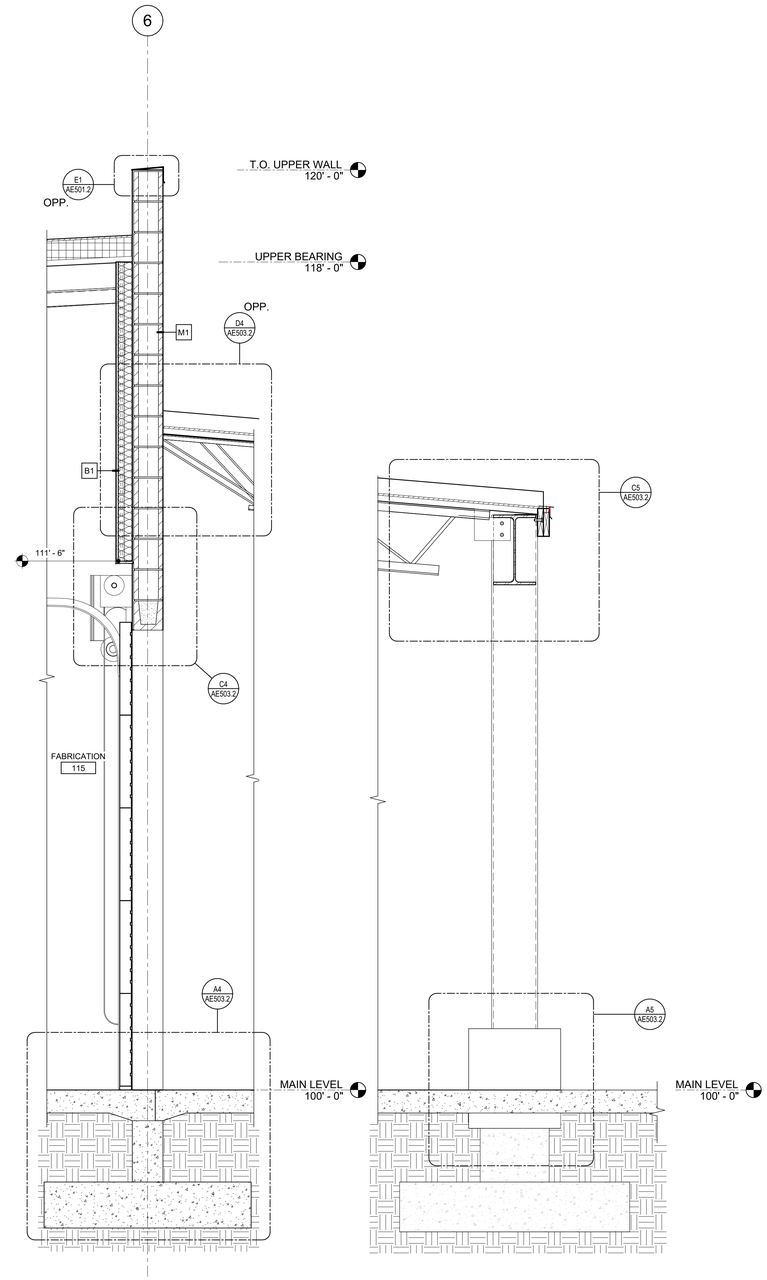


A4 AE314.2 WALL SECTION 3/4" = 1'-0"

A5 AE314.2 WALL SECTION 3/4" = 1'-0"

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

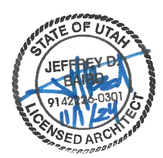
REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE



WALL SECTIONS

AE314.2

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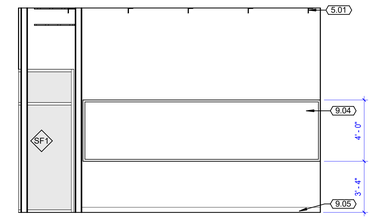
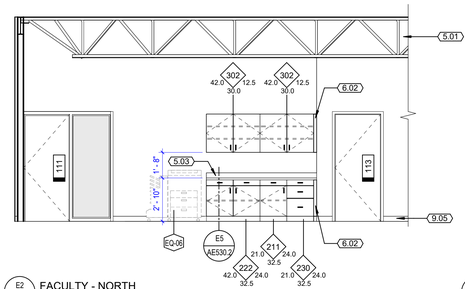
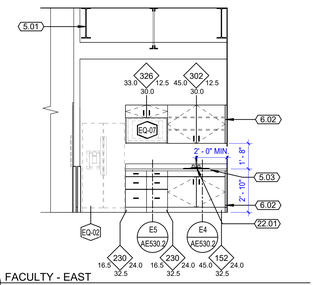


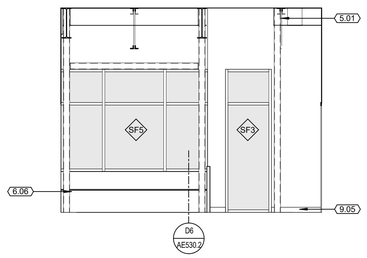
A1 AE401.2 CONFERENCE - NORTH
1/4" = 1'-0"



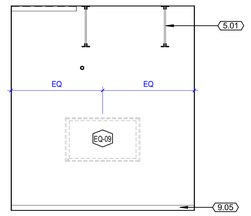
E2 AE401.2 FACULTY - NORTH
1/4" = 1'-0"



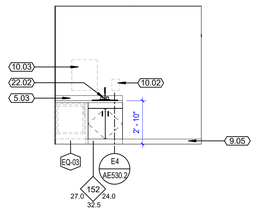
E4 AE401.2 FACULTY - EAST
1/4" = 1'-0"



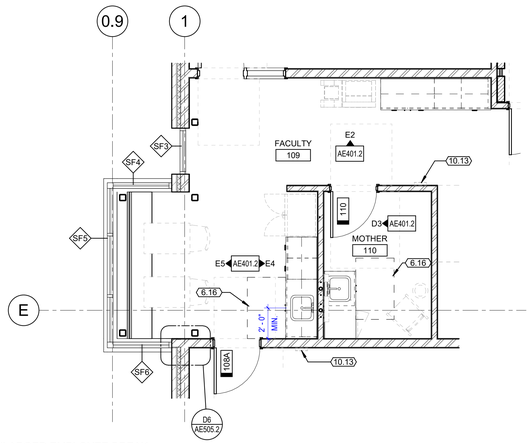
E5 AE401.2 FACULTY - WEST
1/4" = 1'-0"



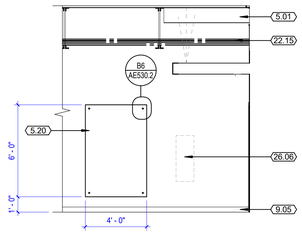
D2 AE401.2 CONFERENCE - EAST
1/4" = 1'-0"



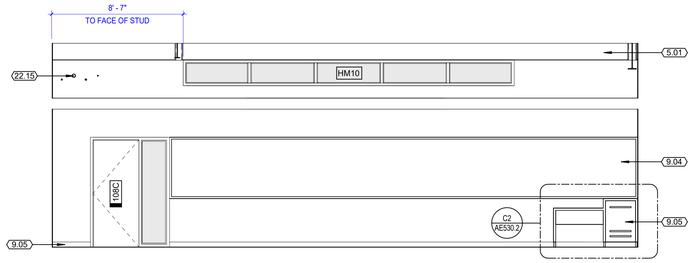
D3 AE401.2 MOTHER - WEST
1/4" = 1'-0"



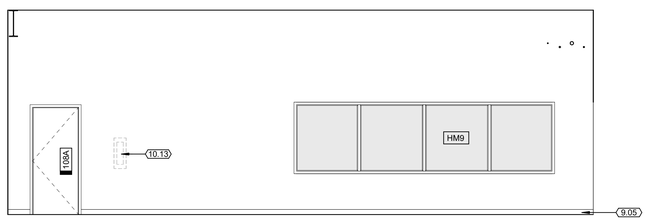
C4 AE401.2 ENLARGED EMPLOYEE BREAK
1/4" = 1'-0"



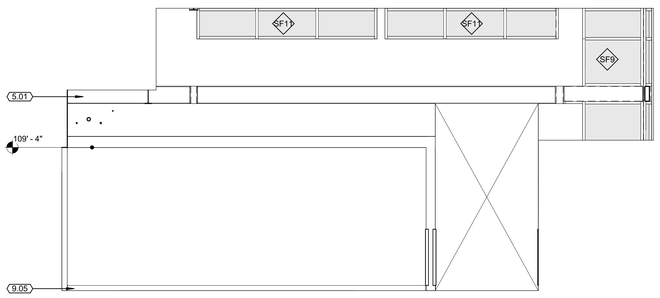
C1 AE401.2 CLASSROOM - EAST
1/4" = 1'-0"



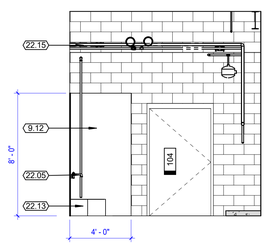
C2 AE401.2 CLASSROOM - SOUTH
1/4" = 1'-0"



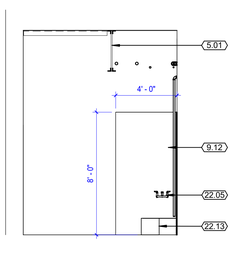
B2 AE401.2 CLASSROOM NORTH
1/4" = 1'-0"



B4 AE401.2 LOBBY SOUTH
1/4" = 1'-0"



A4 AE401.2 CUSTODIAL - NORTH
1/4" = 1'-0"



A5 AE401.2 CUSTODIAL - WEST
1/4" = 1'-0"

GENERAL NOTES

- GENERAL CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS AND SHALL REPORT TO THE ARCHITECT ANY UNKNOWN CONDITIONS, ERRORS OR CONFLICT IN THE DRAWINGS BEFORE BEGINNING WORK.
- DO NOT SCALE DRAWINGS
- ITEMS HALF-TONED SHOWN FOR REFERENCE ONLY.

KEYNOTES

5.01	STRUCTURAL FRAMING. PAINT.
5.03	HOT-ROLLED 22 GA. STEEL
5.20	HOT-ROLLED 22 GA. STEEL DISPLAY BOARD
6.02	CABINET FILLER
6.06	STEEL SUPPORTED PLYWOOD BENCH
6.16	30"X48" CLEAR FLOOR SPACE CENTERED ON SINK
9.04	DRY ERASE WALLCOVERING WITH TRIM
9.05	BASE
9.12	FRP
10.02	OFOI SOAP DISPENSER
10.03	OFOI PAPER TOWEL DISPENSER
10.13	FIRE EXTINGUISHER CABINET
22.01	PORCELAIN SINK
22.02	STAINLESS STEEL SINK
22.05	FAUCET
22.13	FLOOR SINK
22.15	PLUMBING PIPES
26.06	STUDENT CHECK-IN

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDLING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. EATON
9142345-0301
LICENSED ARCHITECT

ENLARGED PLANS AND INTERIOR ELEVATIONS

AE401.2

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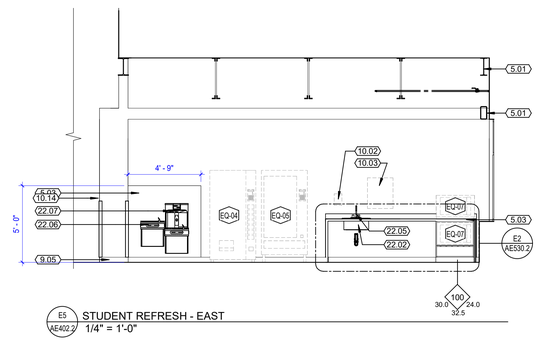
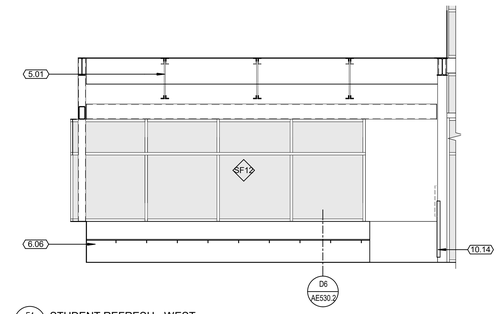
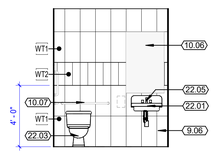


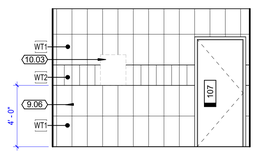
E5 AE402.2 STUDENT REFRESH - EAST
1/4" = 1'-0"



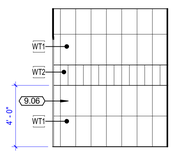
E4 AE402.2 STUDENT REFRESH - WEST
1/4" = 1'-0"



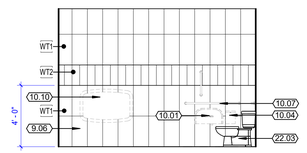
D2 AE402.2 UNISEX RESTROOM - NORTH
1/4" = 1'-0"



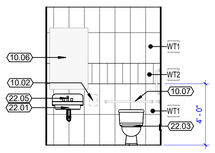
D3 AE402.2 UNISEX RESTROOM - EAST
1/4" = 1'-0"



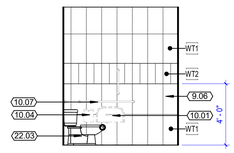
D4 AE402.2 UNISEX RESTROOM - SOUTH
1/4" = 1'-0"



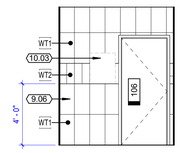
D5 AE402.2 UNISEX RESTROOM - WEST
1/4" = 1'-0"



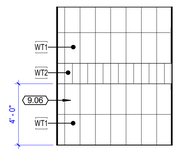
C2 AE402.2 WOMENS RESTROOM - NORTH
1/4" = 1'-0"



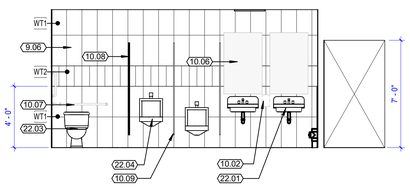
C3 AE402.2 WOMENS RESTROOM - EAST
1/4" = 1'-0"



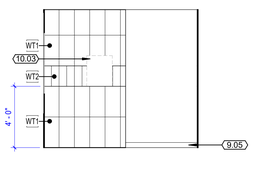
C4 AE402.2 WOMENS RESTROOM - SOUTH
1/4" = 1'-0"



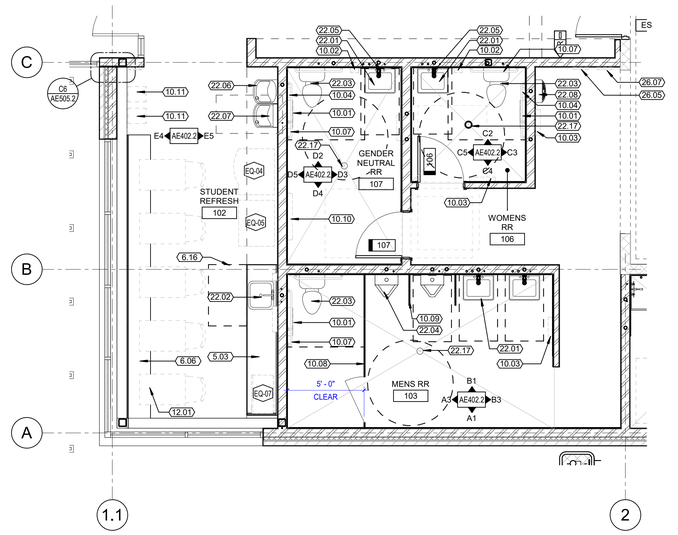
C5 AE402.2 WOMENS RESTROOM -WEST
1/4" = 1'-0"



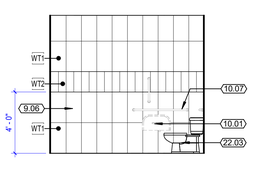
B1 AE402.2 MENS RESTROOM - NORTH
1/4" = 1'-0"



B3 AE402.2 MENS RESTROOM - EAST
1/4" = 1'-0"



A1 AE402.2 MENS RESTROOM - SOUTH
1/4" = 1'-0"



A3 AE402.2 MENS RESTROOM - WEST
1/4" = 1'-0"

A4 AE402.2 ENLARGED SOUTHWEST CORNER
1/4" = 1'-0"

GENERAL NOTES

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- DO NOT SCALE DRAWINGS
- ITEMS HALF-TONED SHOWN FOR REFERENCE ONLY.

KEYNOTES

5.01	STRUCTURAL FRAMING. PAINT.
5.03	HOT-ROLLED 22 GA. STEEL
6.06	STEEL SUPPORTED PLYWOOD BENCH
6.16	30"X48" CLEAR FLOOR SPACE CENTERED ON SINK
9.05	BASE
9.06	WALL TILE
10.01	OFOI TOILET PAPER DISPENSER
10.02	OFOI SOAP DISPENSER
10.03	OFOI PAPER TOWEL DISPENSER
10.04	OFOI SANITARY NAPKIN DISPOSAL
10.06	MIRROR
10.07	GRAB BAR
10.08	TOILET PARTITION
10.09	URINAL PARTITION
10.10	DIAPER CHANGING STATION
10.11	OFOI WASTE RECEPTACLE
10.14	HOT-ROLLED 22 GA. STEEL CORNER GUARD
12.01	OFOI FURNITURE
22.01	PORCELAIN SINK
22.02	STAINLESS STEEL SINK
22.03	TOILET
22.04	URINAL
22.05	FAUCET
22.06	DRINKING FOUNTAIN
22.07	DRINKING FOUNTAIN COMBINATION BOTTLE FILLER
22.08	BOTTLE FILLER
22.17	FLOOR DRAIN
26.05	TIME CLOCK
26.07	KEY BOX

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. BARD
9142215-0301
LICENSED ARCHITECT

ENLARGED PLANS AND INTERIOR ELEVATIONS

AE402.2

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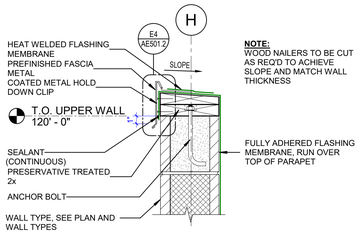
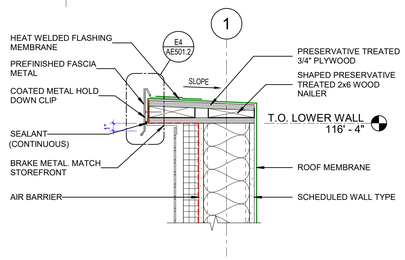
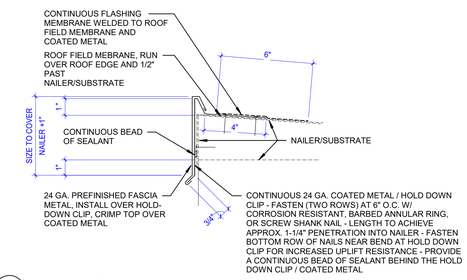


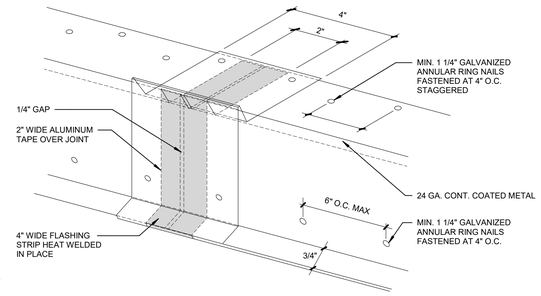
E1 AE501.2 PARAPET AT BLOCK WALL
1 1/2" = 1'-0"

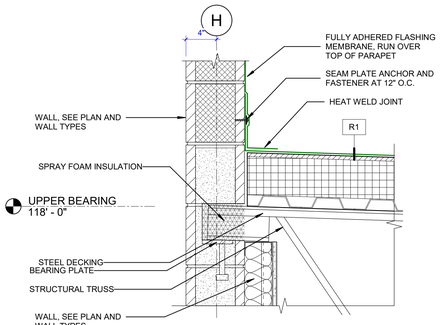


E3 AE501.2 PARAPET AT FRAMED WALL METAL PANEL
1 1/2" = 1'-0"

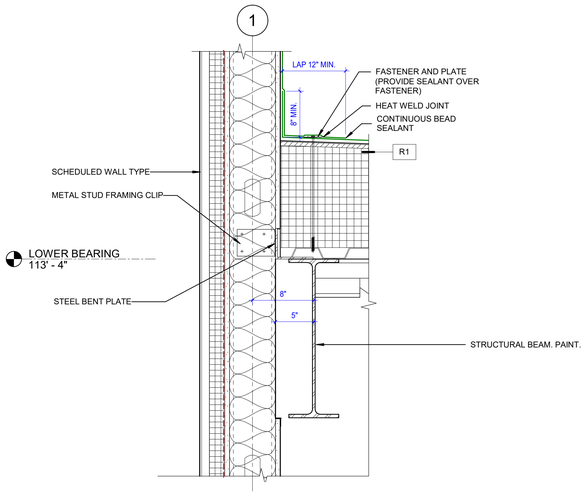


E4 AE501.2 FLASHING /ISOMETRIC
3" = 1'-0"

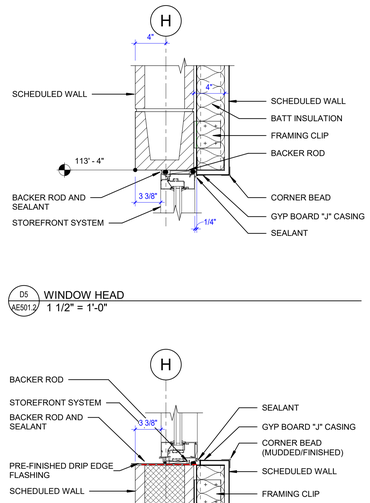




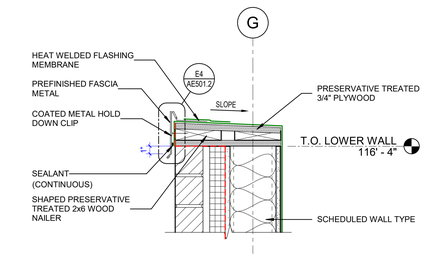
C1 AE501.2 ROOF/WALL AT UPPER ROOF E
1 1/2" = 1'-0"



C3 AE501.2 ROOF/WALL AT LOWER ROOF E
1 1/2" = 1'-0"

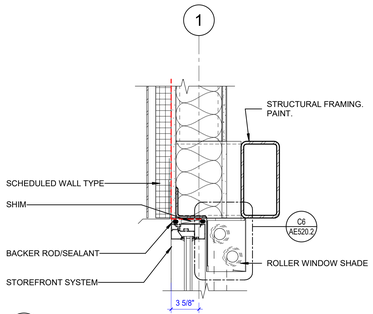


D5 AE501.2 WINDOW HEAD
1 1/2" = 1'-0"

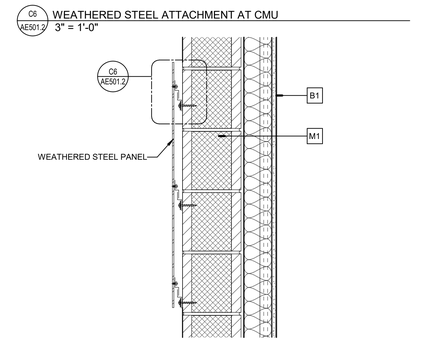


D6 AE501.2 PARAPET AT BRICK
1 1/2" = 1'-0"

C5 AE501.2 WIINDOW SILL
1 1/2" = 1'-0"

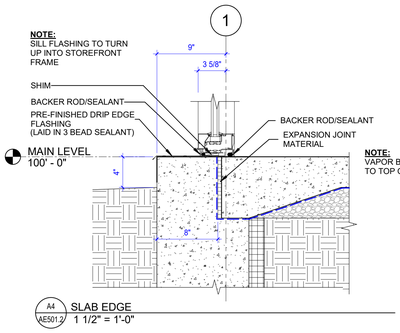


B5 AE501.2 STOREFRONT HEAD @ CLASSROOM
1 1/2" = 1'-0"

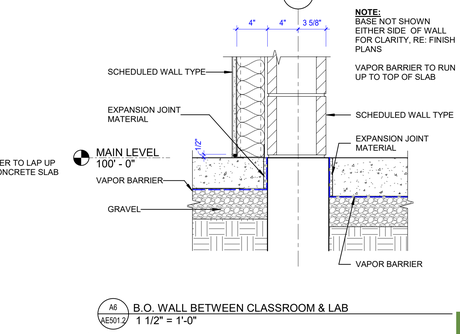


C6 AE501.2 WEATHERED STEEL ATTACHMENT AT CMU
3" = 1'-0"

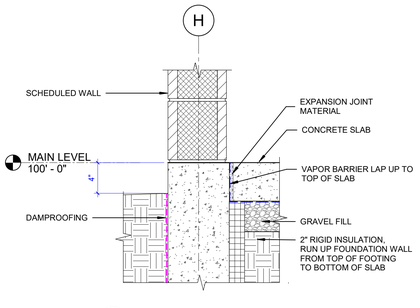
B6 AE501.2 WEATHERED STEEL WALL SECTION
1 1/2" = 1'-0"



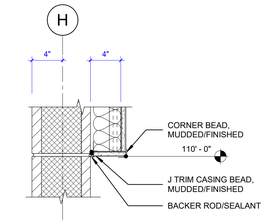
A4 AE501.2 SLAB EDGE
1 1/2" = 1'-0"



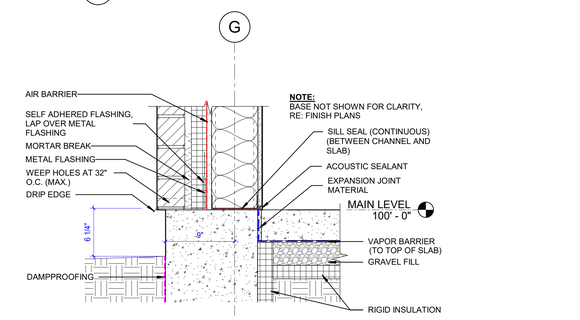
A6 AE501.2 B.O. WALL BETWEEN CLASSROOM & LAB
1 1/2" = 1'-0"



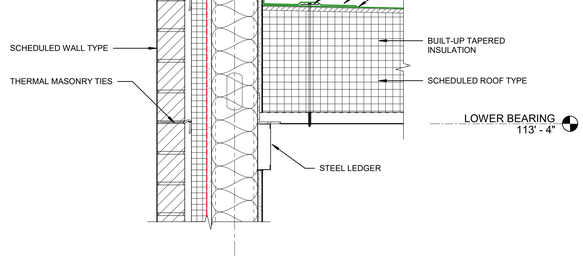
A1 AE501.2 SLAB EDGE
1 1/2" = 1'-0"



B1 AE501.2 BLOCK WALL FURRING
1 1/2" = 1'-0"



A3 AE501.2 SLAB EDGE AT FRAMED WALL
1 1/2" = 1'-0"



B3 AE501.2 ROOF/WALL AT LOWER ROOF N/S
1 1/2" = 1'-0"

11/18/2024 12:25:05 PM

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

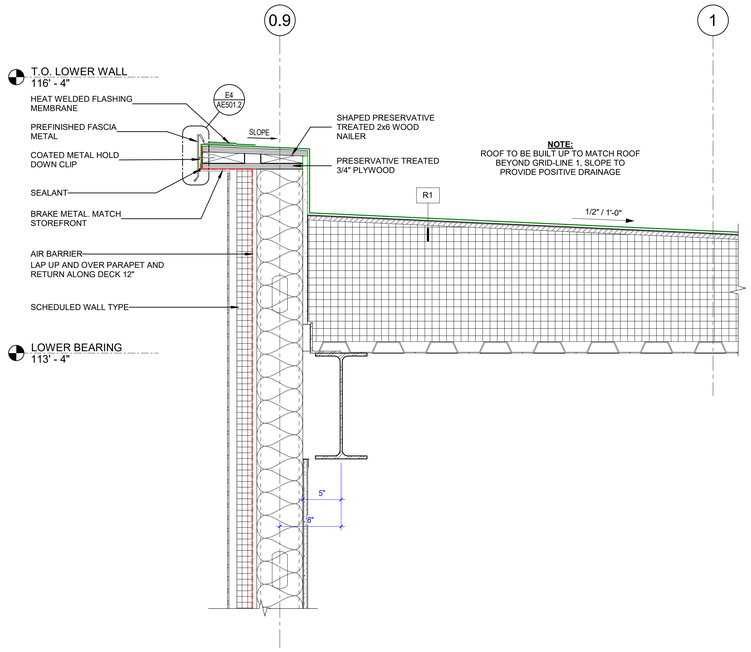
DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

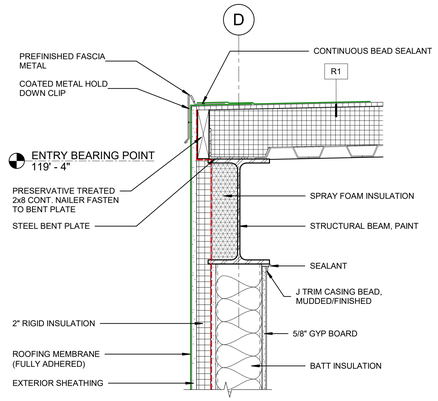
DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. EVANS
9142245-0301
LICENSED ARCHITECT

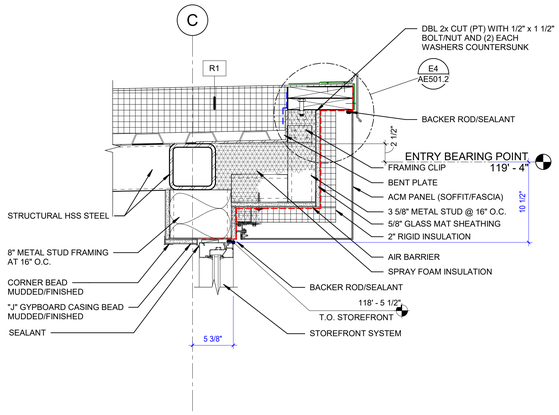
SECTION DETAILS
AE501.2



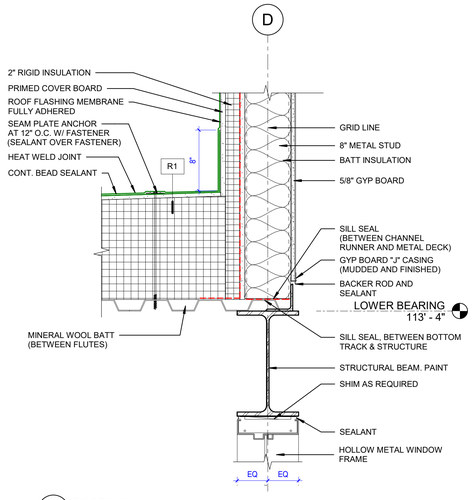
C1 AE502.2 EMPLOYEE ROOF GRAVEL STOP
1 1/2" = 1'-0"



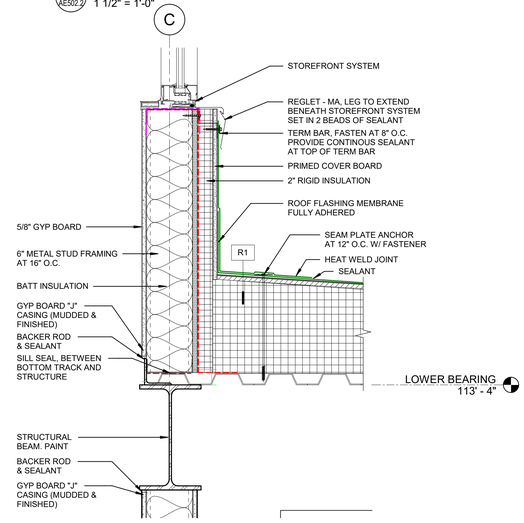
D4 AE502.2 ENTRY CANOPY BEARING
1 1/2" = 1'-0"



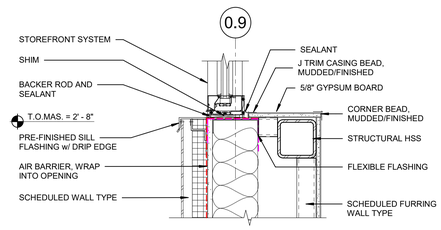
D5 AE502.2 ROOF/WALL
1 1/2" = 1'-0"



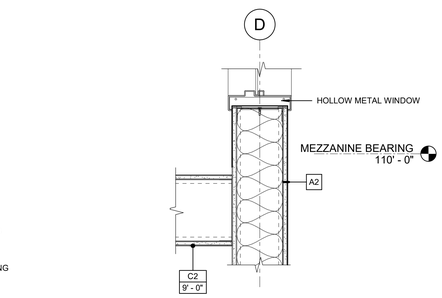
C4 AE502.2 ROOF/WALL
1 1/2" = 1'-0"



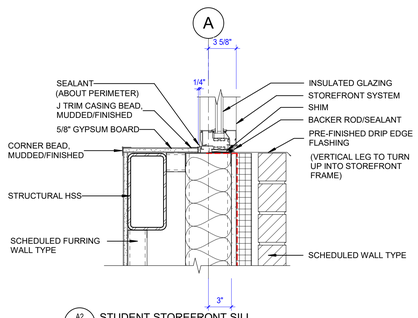
C5 AE502.2 ROOF/WALL
1 1/2" = 1'-0"



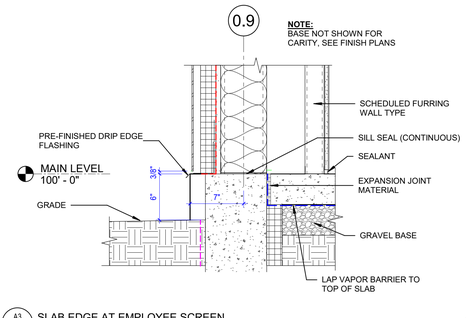
B3 AE502.2 EMPLOYEE STOREFRONT SILL
1 1/2" = 1'-0"



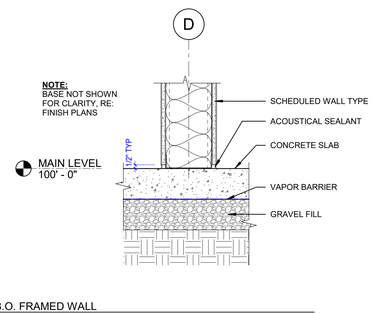
B4 AE502.2 INTERIOR CLERESTORY SILL
1 1/2" = 1'-0"



A2 AE502.2 STUDENT STOREFRONT SILL
1 1/2" = 1'-0"



A3 AE502.2 SLAB EDGE AT EMPLOYEE SCREEN
1 1/2" = 1'-0"



A4 AE502.2 B.O. FRAMED WALL
1 1/2" = 1'-0"

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DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. BARD
9142[illegible]0301
LICENSED ARCHITECT

SECTION DETAILS
AE502.2

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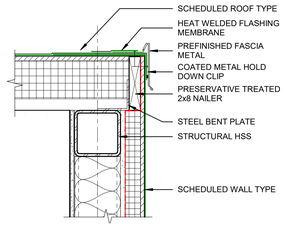
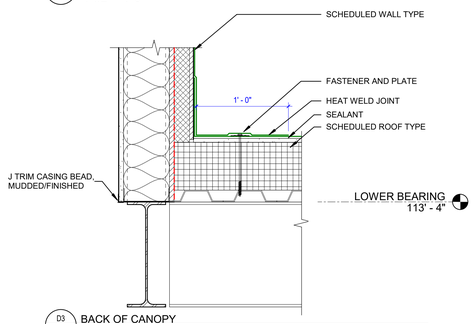
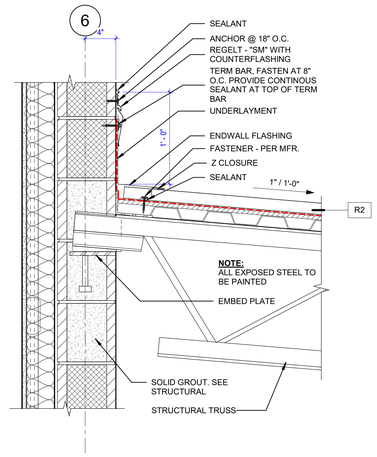


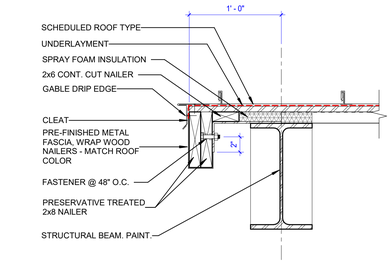
E3 AE503.2 CANOPY RAKE END DETAIL
1 1/2" = 1'-0"



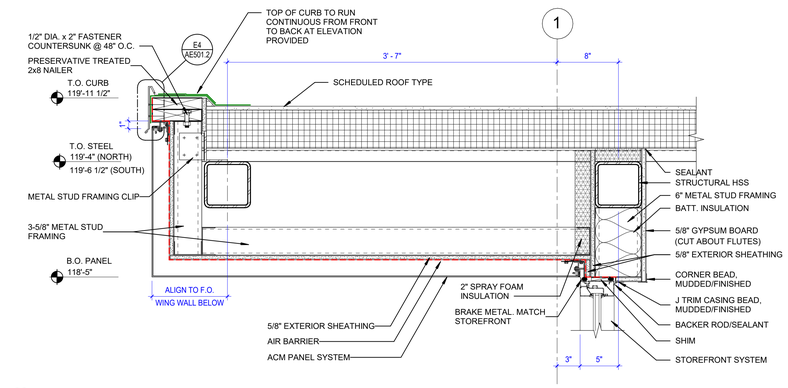
D3 AE503.2 BACK OF CANOPY
1 1/2" = 1'-0"



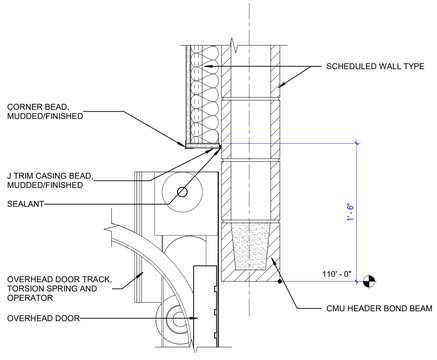
D4 AE503.2 ROOF/WALL AT CANOPY
1 1/2" = 1'-0"



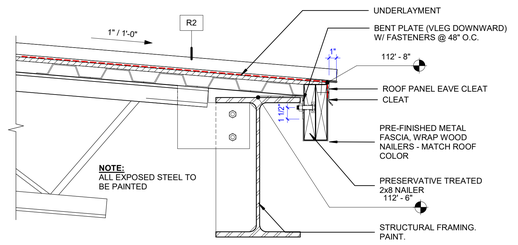
D5 AE503.2 CANOPY RAKE DETAIL
1 1/2" = 1'-0"



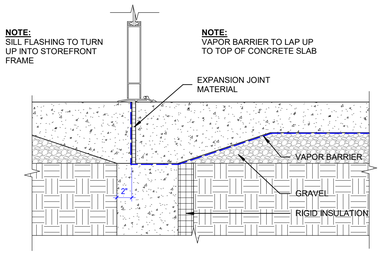
C2 AE503.2 ENTRY CANOPY EAVE DETAIL
1 1/2" = 1'-0"



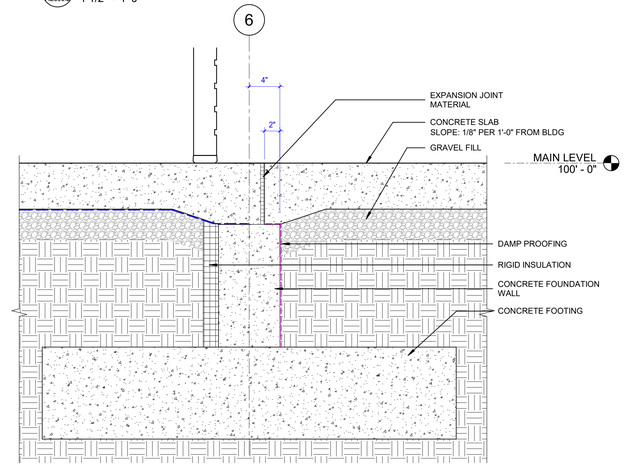
C4 AE503.2 SECTIONAL WALL HEAD
1 1/2" = 1'-0"



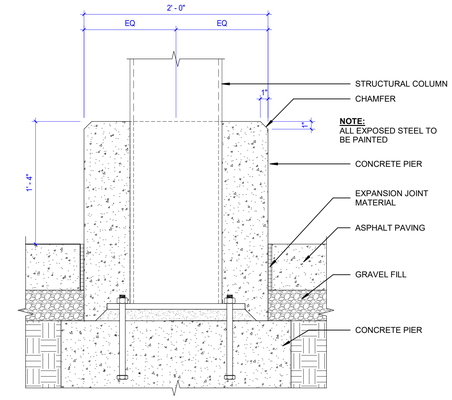
C5 AE503.2 ROOF/COL @ CANOPY COLUMN
1 1/2" = 1'-0"



A2 AE503.2 SLAB EDGE AT ENTRY DOOR
1 1/2" = 1'-0"



A4 AE503.2 FOUNDATION AT SECTIONAL DOOR
1 1/2" = 1'-0"



A5 AE503.2 EXT. B.O. COLUMN
1 1/2" = 1'-0"

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DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. BAIRD
9142[illegible]-0301
LICENSED ARCHITECT

SECTION DETAILS
AE503.2

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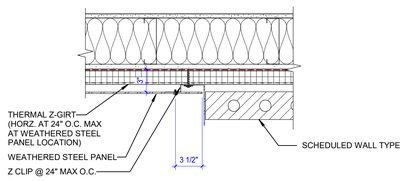
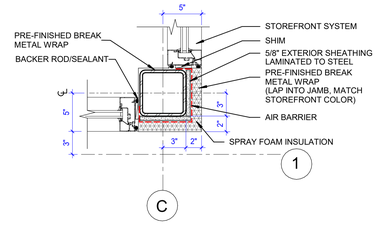
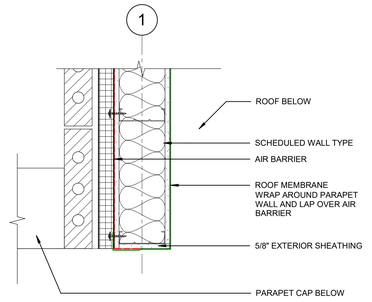


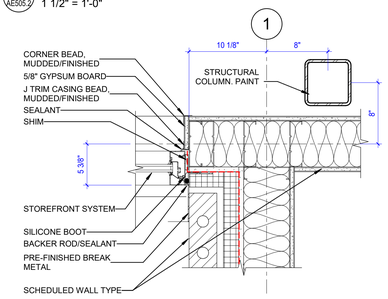
E4 AE505.2 WEATHERED STEEL TO BRICK
1 1/2" = 1'-0"



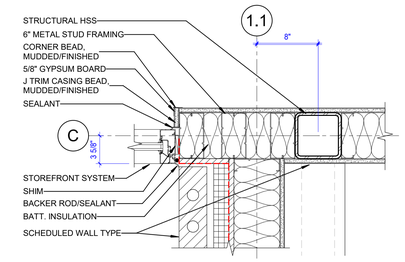
E6 AE505.2 STOREFRONT JAMB
1 1/2" = 1'-0"



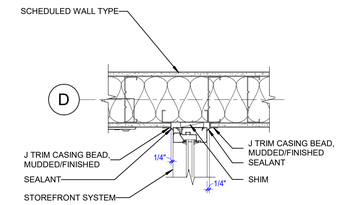
D4 AE505.2 END OF PARAPET WALL
1 1/2" = 1'-0"



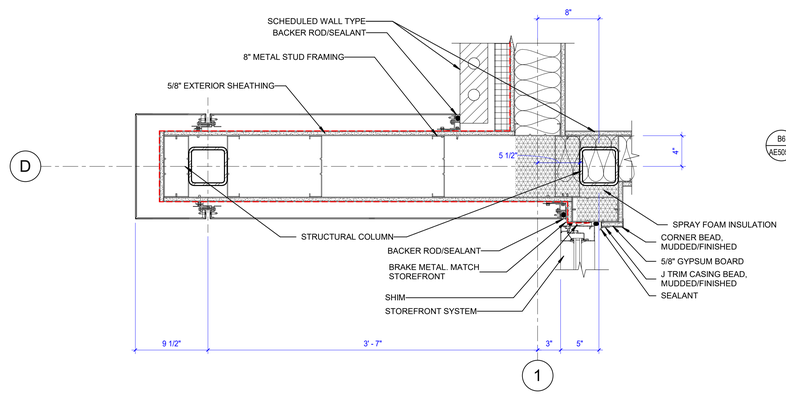
D6 AE505.2 STOREFRONT CORNER
1 1/2" = 1'-0"



C6 AE505.2 STOREFRONT COTNER
1 1/2" = 1'-0"



B6 AE505.2 INTERIOR STOREFRONT JAMB
1 1/2" = 1'-0"



B5 AE505.2 ACM AT BRICK VENEER - PLAN
1 1/2" = 1'-0"

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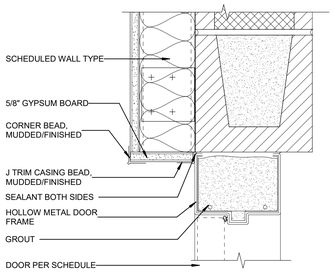
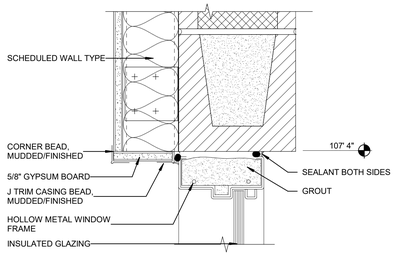
DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. [illegible]
9142[illegible]-0301
LICENSED ARCHITECT

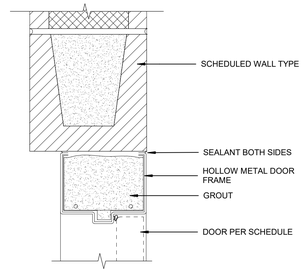
PLAN DETAILS
AE505.2



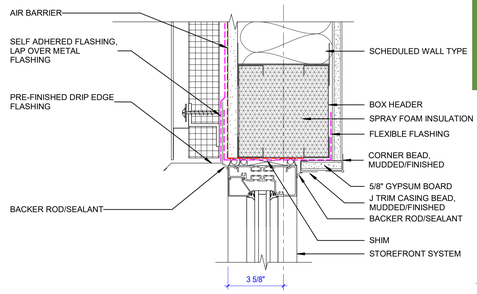
E2 AE510.2 DOOR HEAD 3" = 1'-0"



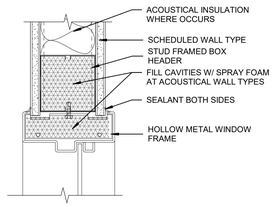
E3 AE510.2 WINDOW HEAD 3" = 1'-0"



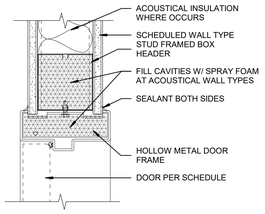
E4 AE510.2 DOOR HEAD 3" = 1'-0"



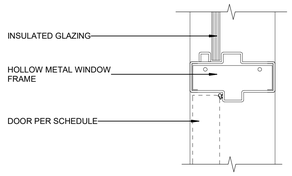
E6 AE510.2 STOREFRONT HEAD 3" = 1'-0"



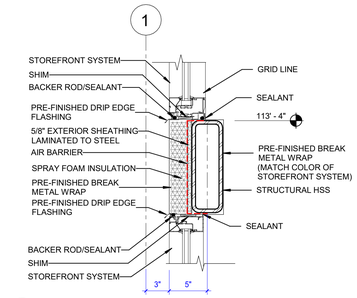
D1 AE510.2 WINDOW HEAD 3" = 1'-0"



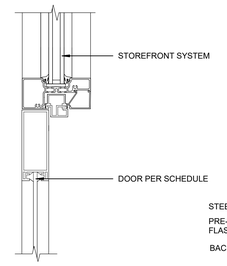
D2 AE510.2 DOOR HEAD 3" = 1'-0"



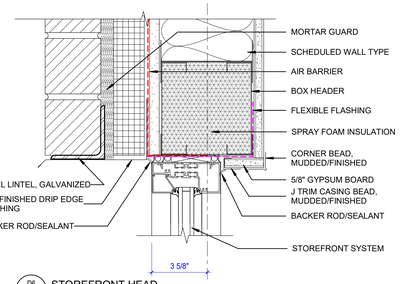
D3 AE510.2 DOOR HEAD 3" = 1'-0"



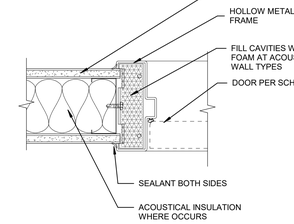
D4 AE510.2 STOREFRONT HEAD/SILL DETAIL 1 1/2" = 1'-0"



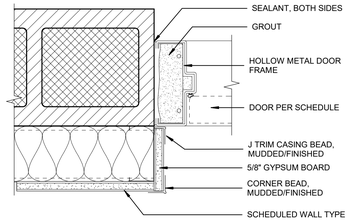
D5 AE510.2 STOREFRONT DOOR HEAD 3" = 1'-0"



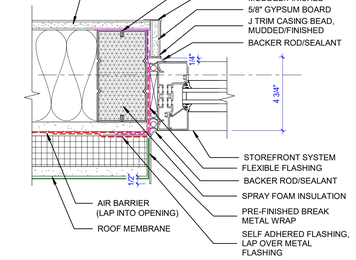
D6 AE510.2 STOREFRONT HEAD 3" = 1'-0"



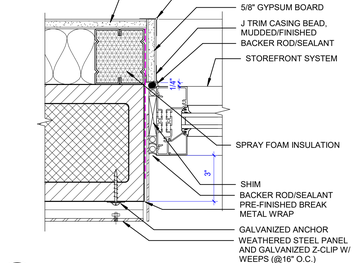
C1 AE510.2 DOOR JAMB 3" = 1'-0"



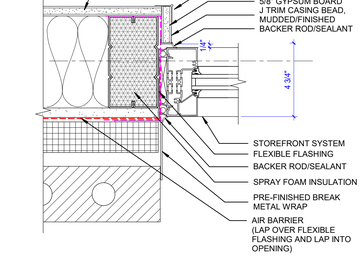
C2 AE510.2 DOOR JAMB 3" = 1'-0"



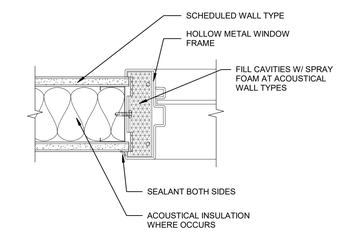
C4 AE510.2 STOREFRONT JAMB 3" = 1'-0"



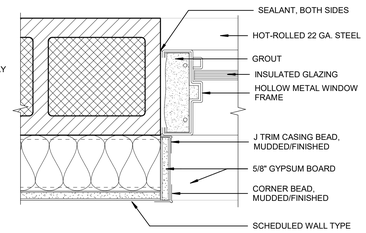
C5 AE510.2 STOREFRONT JAMB 3" = 1'-0"



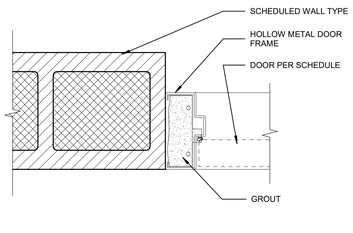
C6 AE510.2 STOREFRONT JAMB 3" = 1'-0"



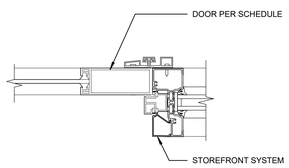
B1 AE510.2 WINDOW JAMB 3" = 1'-0"



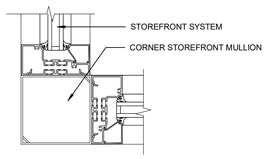
B2 AE510.2 WINDOW JAMB 3" = 1'-0"



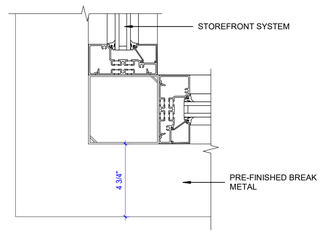
B3 AE510.2 DOOR JAMB 3" = 1'-0"



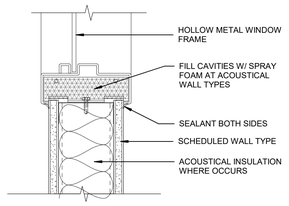
B4 AE510.2 STOREFRONT DOOR JAMB 3" = 1'-0"



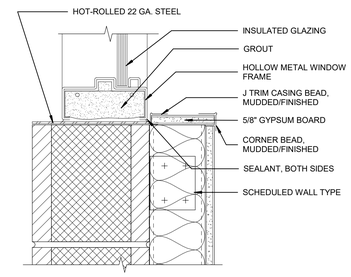
B5 AE510.2 STOREFRONT JAMB 3" = 1'-0"



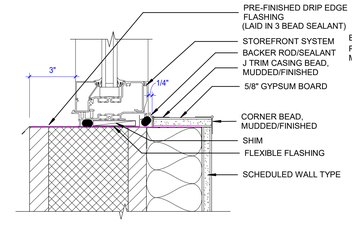
B6 AE510.2 STOREFRONT JAMB 3" = 1'-0"



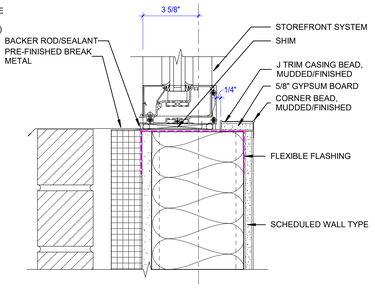
A1 AE510.2 WINDOW SILL 3" = 1'-0"



A2 AE510.2 WINDOW SILL 3" = 1'-0"



A5 AE510.2 STOREFRONT HEAD 3" = 1'-0"



A6 AE510.2 STOREFRONT SILL 3" = 1'-0"

1 2 3 4 5 6

11/19/2024 3:29:12 PM

CRSA

PROJECT 24-038

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE
WELDING TECHNOLOGY BUILDLING

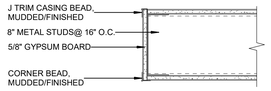
355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

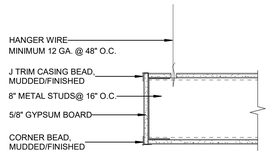
STATE OF UTAH
JEFFREY D. BIRD
9142136-0301
LICENSED ARCHITECT

DOOR AND WINDOW DETAILS

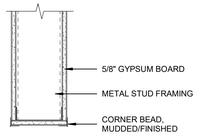
AE510.2



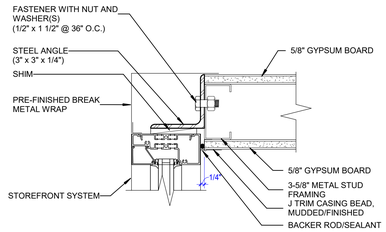
E4 AE520.2 SOFFIT
1 1/2" = 1'-0"



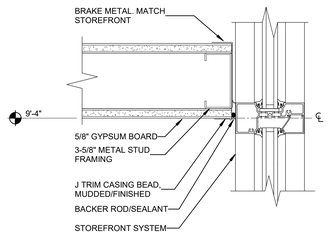
E5 AE520.2 WIRE SUPPORTED SOFFIT
1 1/2" = 1'-0"



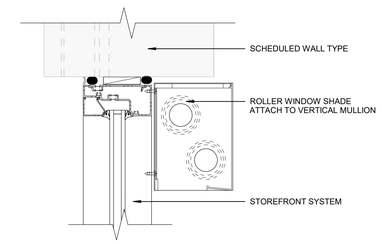
E6 AE520.2 HEADER
1 1/2" = 1'-0"



D5 AE520.2 MULLION AT CEILING
3" = 1'-0"



D6 AE520.2 MULLION AT CEILING
3" = 1'-0"



C6 AE520.2 ROLLER WINDOW SHADE
3" = 1'-0"

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DAVIS TECHNICAL COLLEGE
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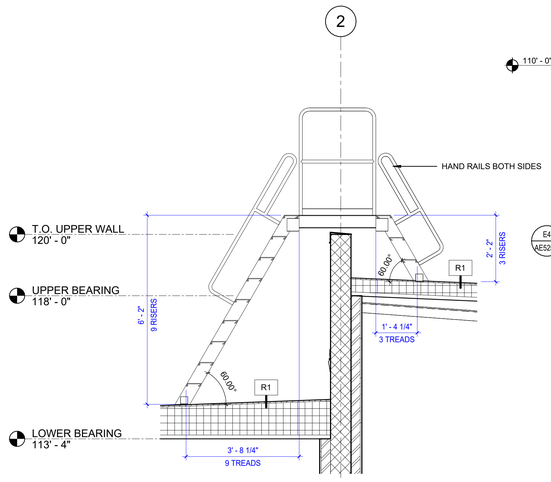
355 SOUTH 650 EAST
KAYSVILLE, UT 84037

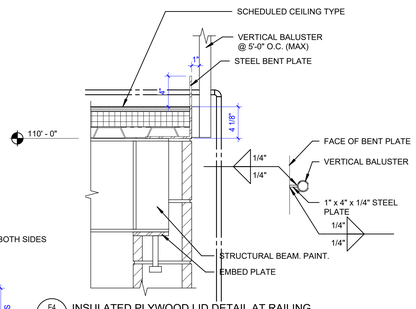
DAVISTECH
DAVIS TECHNICAL COLLEGE



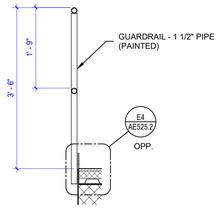
CEILING DETAILS
AE520.2



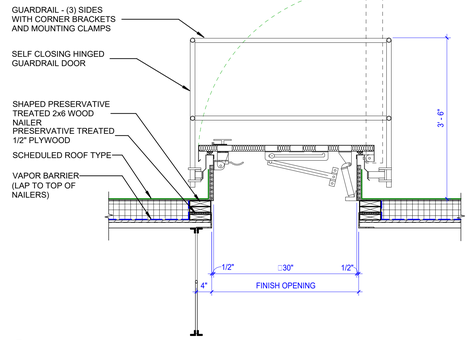
D3 AE525.2 PARAPET LADDER SECTION
1/2" = 1'-0"



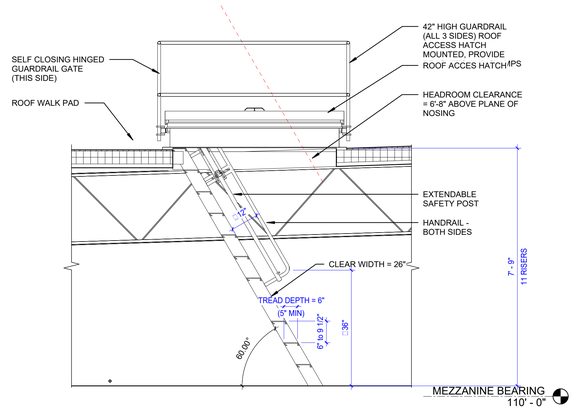
E4 AE525.2 INSULATED PLYWOOD LID DETAIL AT RAILING
1 1/2" = 1'-0"



D4 AE525.2 MEZZANINE RAILING
3/4" = 1'-0"



E5 AE525.2 ROOF ACCES/GUARDRAIL DETAIL
3/4" = 1'-0"



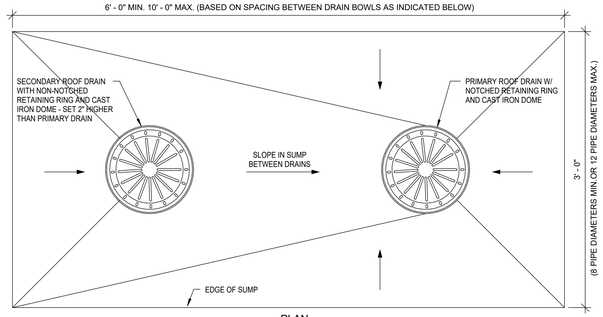
C5 AE525.2 MEZZANINE ROOF LADDER
1/2" = 1'-0"

NOTES:

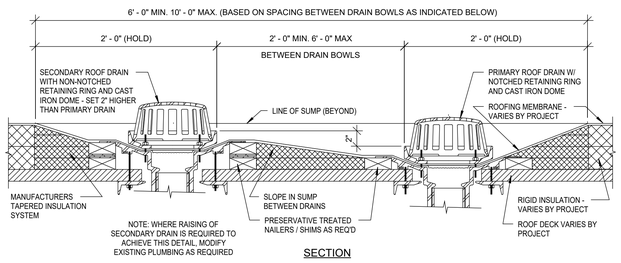
ANY EXTG. DRAIN LINES THAT ARE CLOGGED WITH DEBRIS, BALLAST, LEAVES ETC. SHALL BE CLEANED OUT AND ARE TO BE VERIFIED TO BE IN GOOD WORKING ORDER

USE MANUFACTURER'S TAPERED INSULATION PANELS TO CREATE PRIMARY DRAIN SUMPS - NO HAND CUT INSULATION WILL BE ALLOWED

WHERE EXISTING PLASTIC DRAIN DOMES OCCUR, REPLACED WITH NEW CAST IRON DOMES

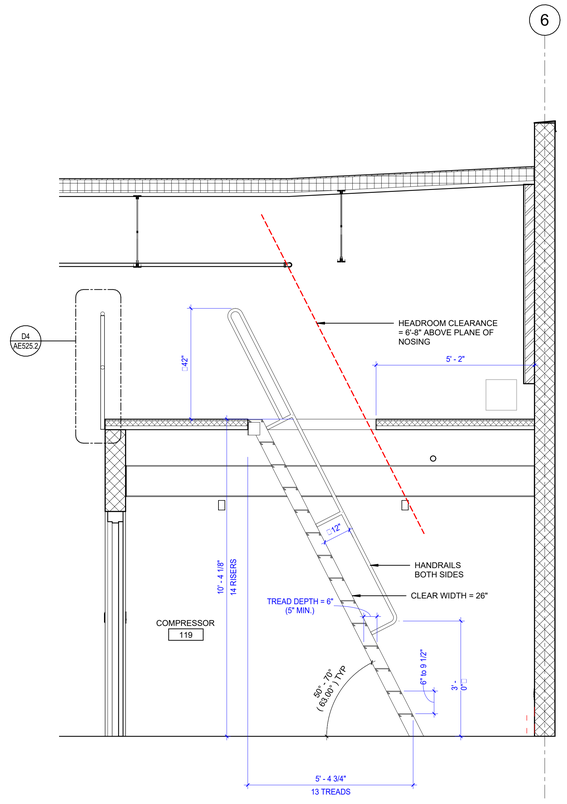


PLAN

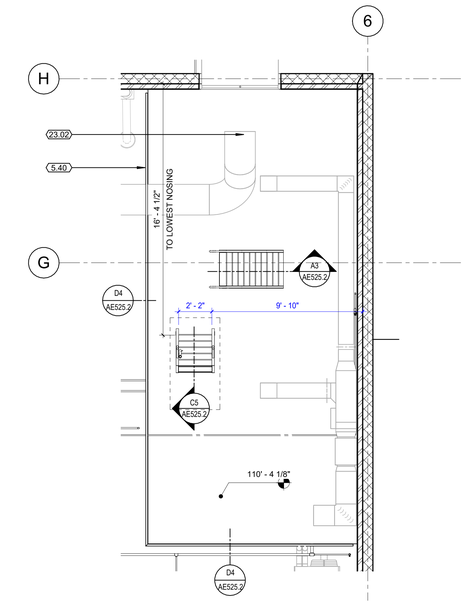


SECTION

A1 AE525.2 ROOF DRAIN
1 1/2" = 1'-0"



A3 AE525.2 MEZZANINE LADDER
1/2" = 1'-0"



SIM
A6 AE525.2 COMPRESSOR MEZZANINE
1/4" = 1'-0"

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PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

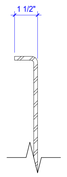
355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

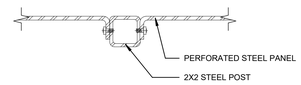
STATE OF UTAH
JEFFREY D. [illegible]
9142[illegible]-0301
LICENSED ARCHITECT

LADDER AND ROOF DETAILS

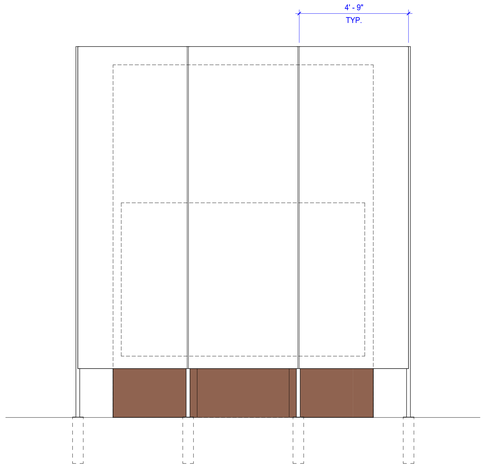
AE525.2



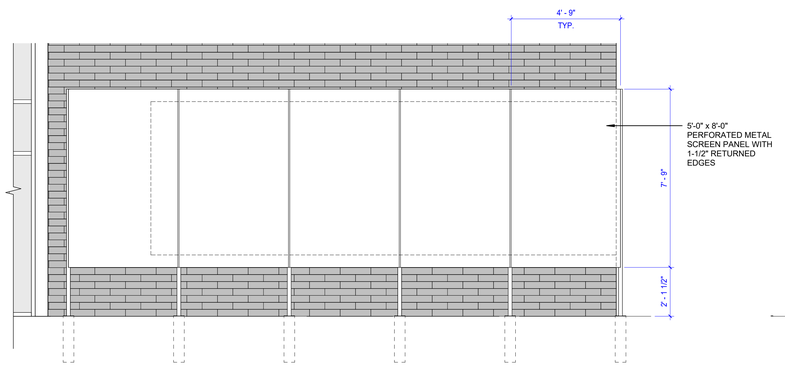
C5 AE526.2 PERFORATED STEEL PANEL EDGE
3" = 1'-0"



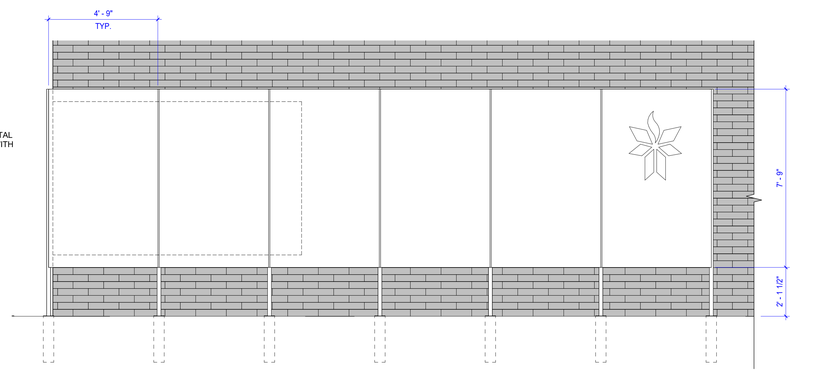
B4 AE526.2 PANEL TO POST CONNECTION
3" = 1'-0"



B5 AE526.2 FACULTY PERFORATED PANEL
3/8" = 1'-0"



A2 AE526.2 STUDENT PERFORATED PANEL WEST
3/8" = 1'-0"



A4 AE526.2 STUDENT PERFORATED PANEL SOUTH
3/8" = 1'-0"

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PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

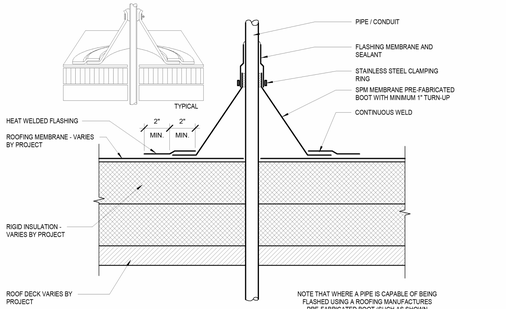
DAVIS TECHNICAL COLLEGE
WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

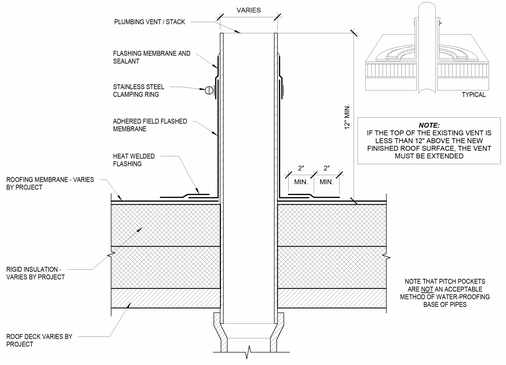
DAVISTECH
DAVIS TECHNICAL COLLEGE

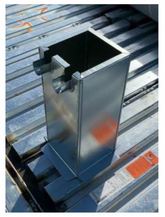
STATE OF UTAH
JEFFREY D. BAIRD
9142-26-0301
LICENSED ARCHITECT

SCREEN DETAILS
AE526.2

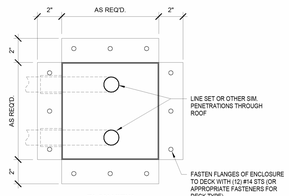


C1 AE527.2 DFCM - PIPE/CONDUIT FLASHING
12" = 1'-0"

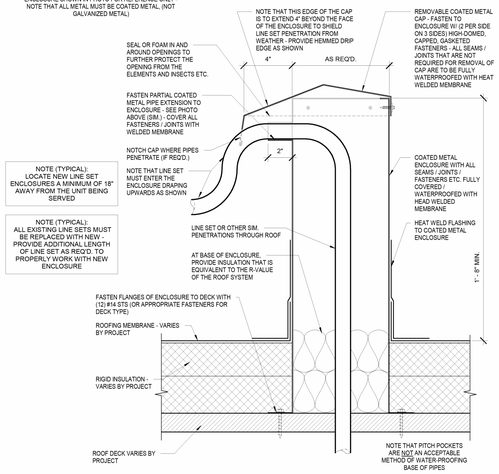




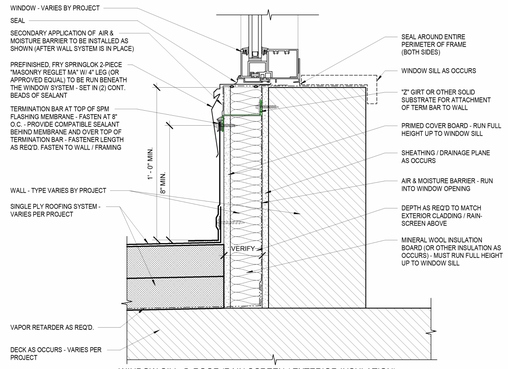
ENCLOSURE SHOWN IN PHOTO FOR REFERENCE ONLY - NOTE THAT ALL METAL MUST BE COATED METAL. (NOT GALVANIZED METAL)



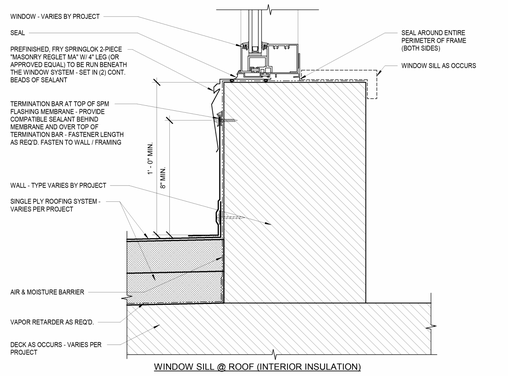
PLAN VIEW



C2 AE527.2 DFCM - LINESET ENCLOSURE
12" = 1'-0"

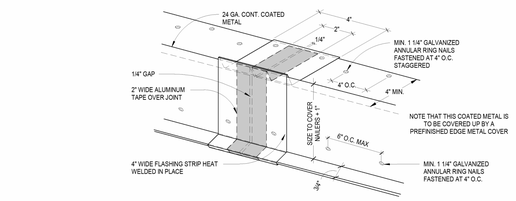


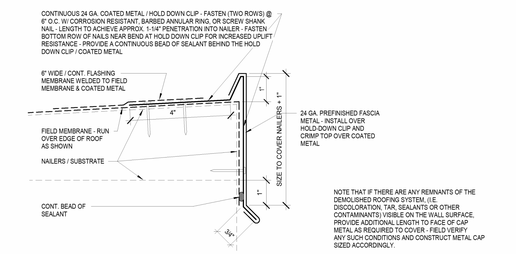
WINDOW SILL @ ROOF (RAIN SCREEN / EXTERIOR INSULATION)

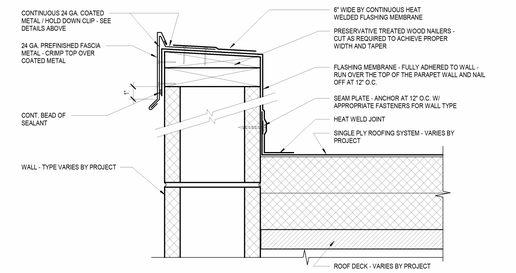


WINDOW SILL @ ROOF (INTERIOR INSULATION)

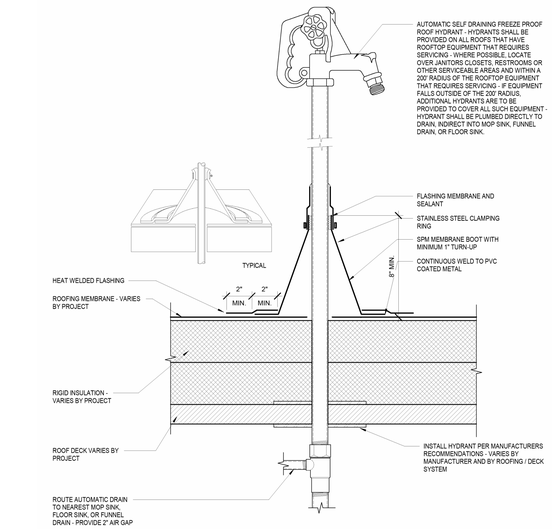
C4 AE527.2 DFCM - REMOVABLE FLASHING AT WINDOW SILL
12" = 1'-0"



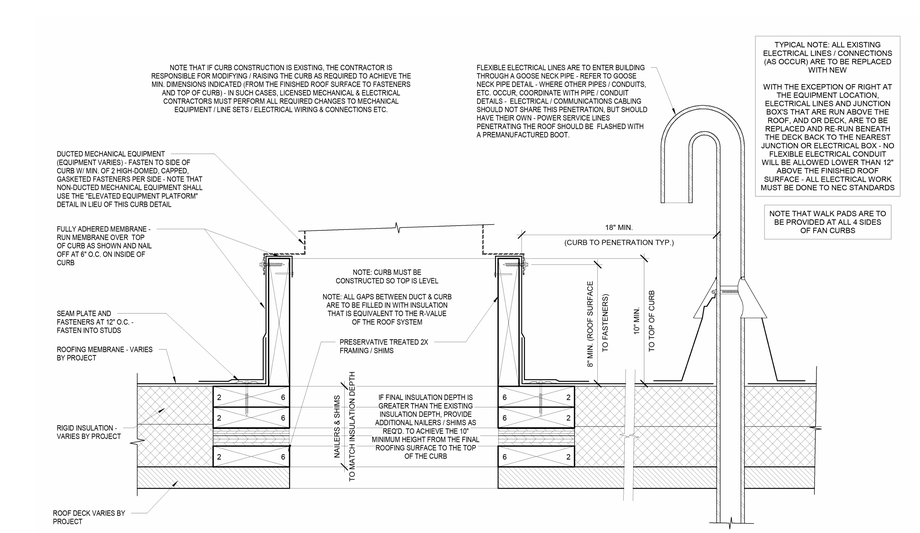




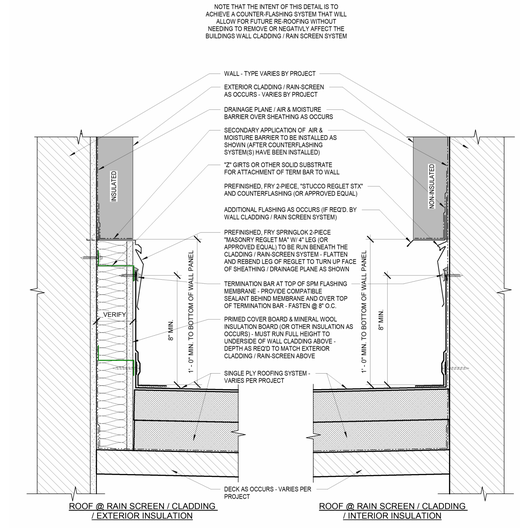
C5 AE527.2 DFCM - PARAPET EDGE DETAIL
NOT TO SCALE



A1 AE527.2 DFCM - WATER HYDRANT
12" = 1'-0"



A3 AE527.2 DFCM - EQUIPMENT CURB
12" = 1'-0"



ROOF @ RAIN SCREEN / CLADDING / EXTERIOR INSULATION

ROOF @ RAIN SCREEN / CLADDING / INTERIOR INSULATION

A5 AE527.2 DFCM - REMOVABLE FLASHING AT WALL BASE
12" = 1'-0"

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDLING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. [illegible]
9142[illegible]-0301
LICENSED ARCHITECT

DFCM ROOFING DETAILS

AE527.2

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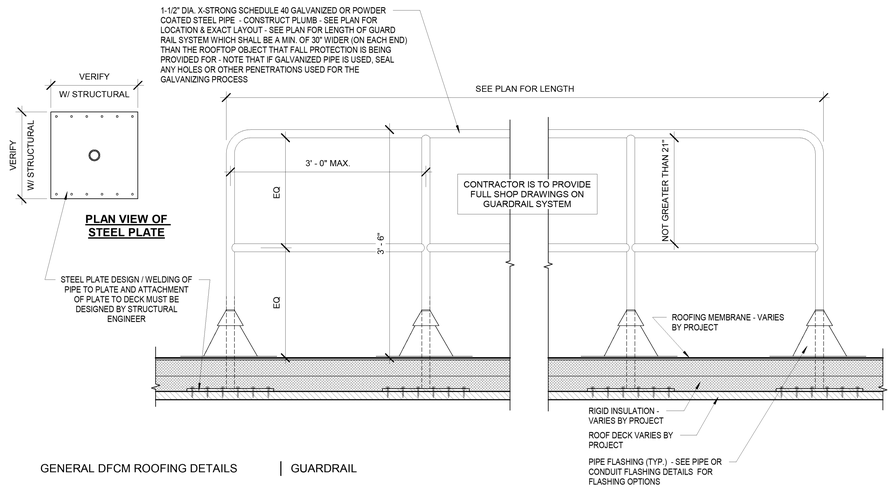
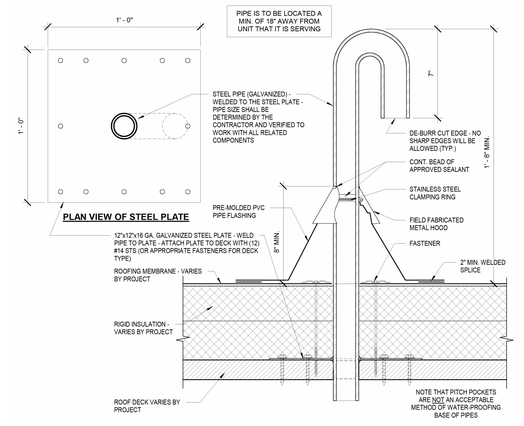


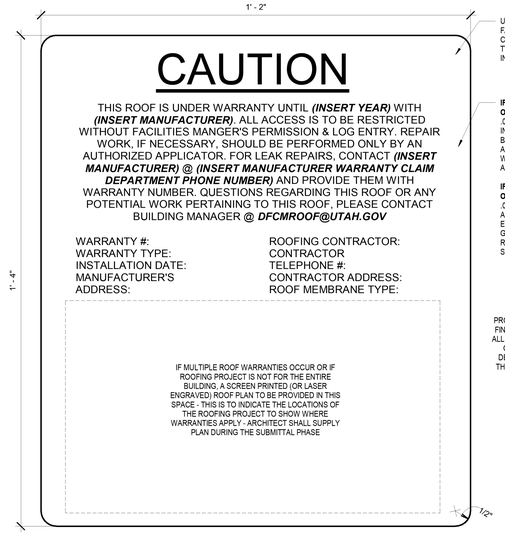
GENERAL DFCM ROOFING DETAILS | GUARDRAIL

D2 / AE528.2 DFCM - GUARDRAIL
12" = 1'-0"

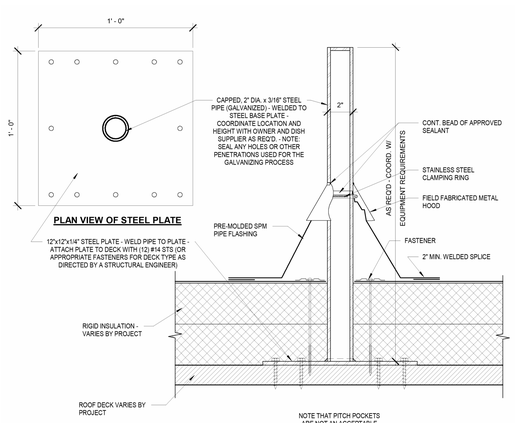


D5 / AE528.2 DFCM - GOOSENECK PIPE
12" = 1'-0"

NOTE: THIS SIGN IS TO BE PROVIDED AND INSTALLED ON AN INTERIOR WALL NEAR ALL ROOF ACCESS POINTS - IF INTERIOR INSTALLATION IS NOT FEASIBLE, EXTERIOR APPLICATION NEAR AN OBVIOUS ACCESS LOCATION IS ACCEPTABLE



A2 / AE528.2 DFCM - SIGNAGE
12" = 1'-0"



GENERAL DFCM ROOFING DETAILS | SATELLITE / ANTENNA POST DETAIL

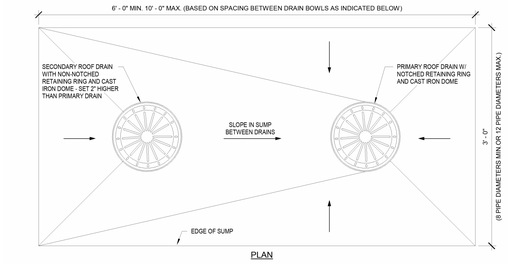
A3 / AE528.2 DFCM - SATELLITE/ANTENNA POST
12" = 1'-0"

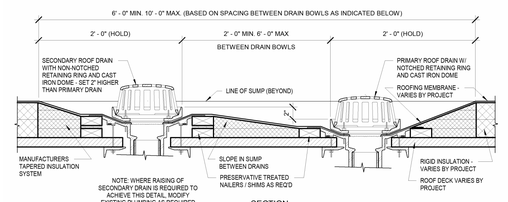
NOTES:

ANY EXTG. DRAIN LINES THAT ARE CLOGGED WITH DEBRIS, BALLAST, LEAVES ETC. SHALL BE CLEANED OUT AND ARE TO BE VERIFIED TO BE IN GOOD WORKING ORDER

USE MANUFACTURER'S TAPERED INSULATION PANELS TO CREATE PRIMARY DRAIN SUMPS - NO HAND CUT INSULATION WILL BE ALLOWED

WHERE EXISTING PLASTIC DRAIN DOMES OCCUR, REPLACED WITH NEW CAST IRON DOMES





GENERAL DFCM ROOFING DETAILS | DRAIN SUMP DETAIL

A5 / AE528.2 DFCM - ROOF DRAIN
12" = 1'-0"

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. EATON
9142134-0301
LICENSED ARCHITECT

DFCM ROOFING DETAILS

AE528.2

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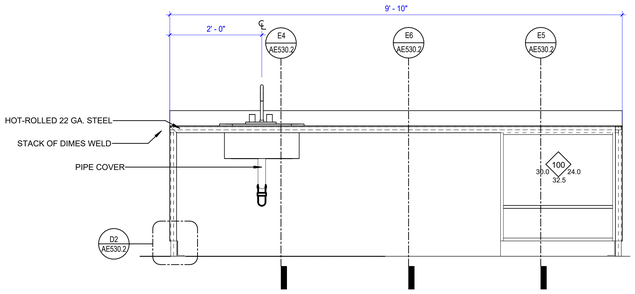
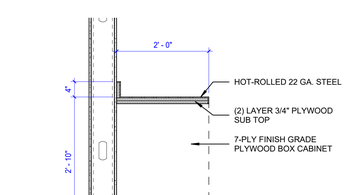
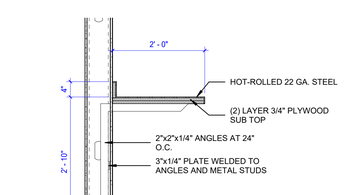


E2 AE530.2 STUDENT COUNTER FRONT
3/4" = 1'-0"

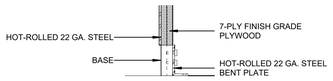
E4 AE530.2 SECTION
3/4" = 1'-0"



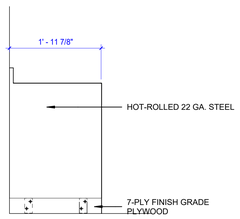
E5 AE530.2 SECTION
3/4" = 1'-0"



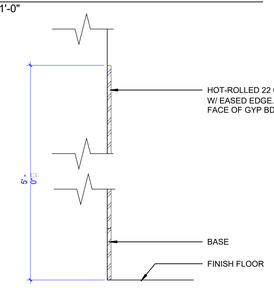
E6 AE530.2 SECTION
3/4" = 1'-0"



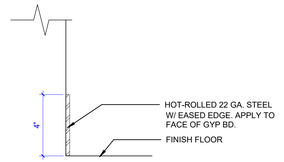
D2 AE530.2 FLOOR ATTACHMENT
1 1/2" = 1'-0"



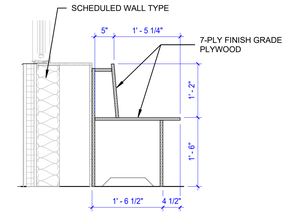
D3 AE530.2 SIDE ELEVATION
3/4" = 1'-0"



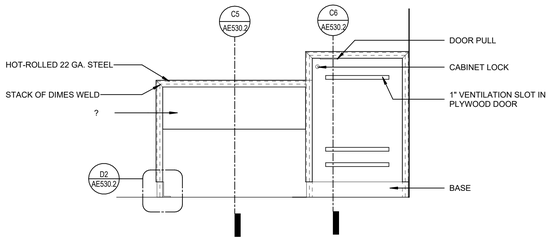
D4 AE530.2 STEEL BACKSPLASH
3" = 1'-0"



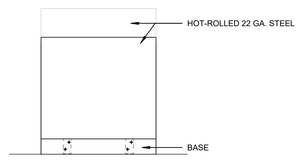
D5 AE530.2 STEEL BASE
3" = 1'-0"



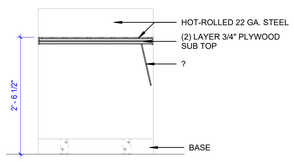
D6 AE530.2 BENCH SECTION
3/4" = 1'-0"



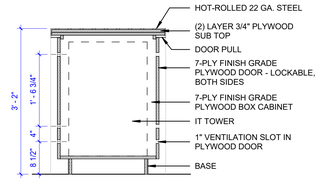
C2 AE530.2 INSTRUCTORS PODIUM ELEVATION
3/4" = 1'-0"



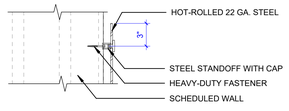
C4 AE530.2 INSTRUCTORS STATION SIDE
3/4" = 1'-0"



C5 AE530.2 INSTRUCTORS STATION SECTION
3/4" = 1'-0"



C6 AE530.2 INSTRUCTORS STATION SECTION
3/4" = 1'-0"



B6 AE530.2 JOB BOARD WALL CONNECTION
1 1/2" = 1'-0"

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

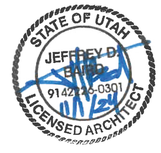
REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE



MILLWORK DETAILS

AE530.2

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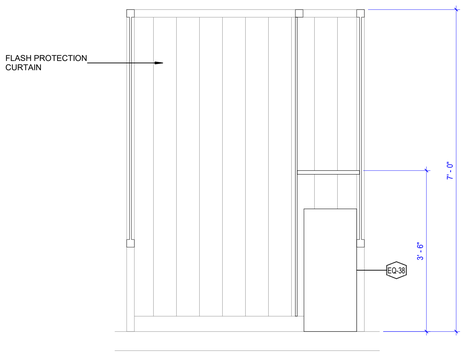
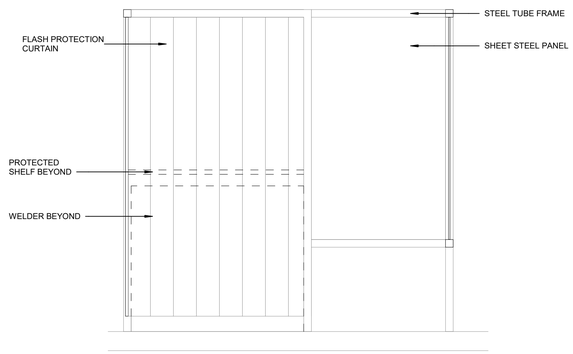
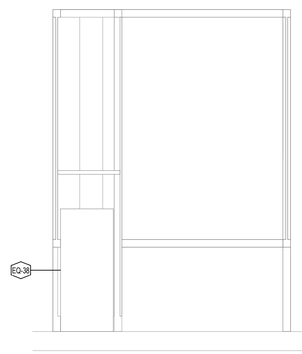


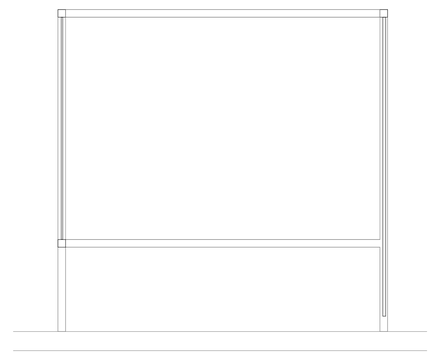
B1 AE535.2 BOOTH - BACK
3/4" = 1'-0"



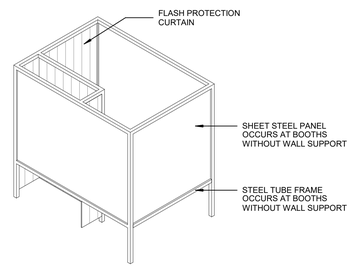
B2 AE535.2 BOOTH - SHELF SIDE
3/4" = 1'-0"



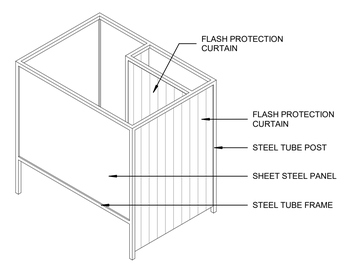
B4 AE535.2 BOOTH -FRONT
3/4" = 1'-0"



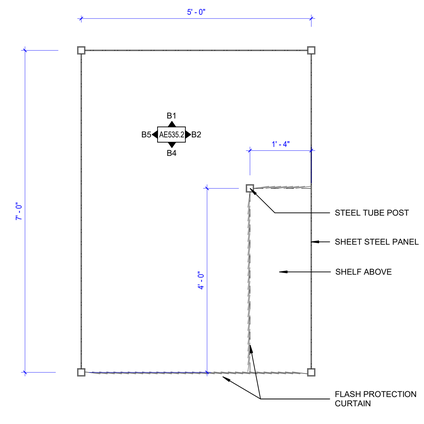
B5 AE535.2 BOOTH - SIDE
3/4" = 1'-0"



A3 AE535.2 BOOTH FRONT AXON



A4 AE535.2 BOOTH BACK AXON



A5 AE535.2 WELDING BOOTH PLAN
3/4" = 1'-0"

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CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE

STATE OF UTAH
JEFFREY D. [illegible]
9142[illegible]-0301
LICENSED ARCHITECT

BOOTH DETAILS

AE535.2

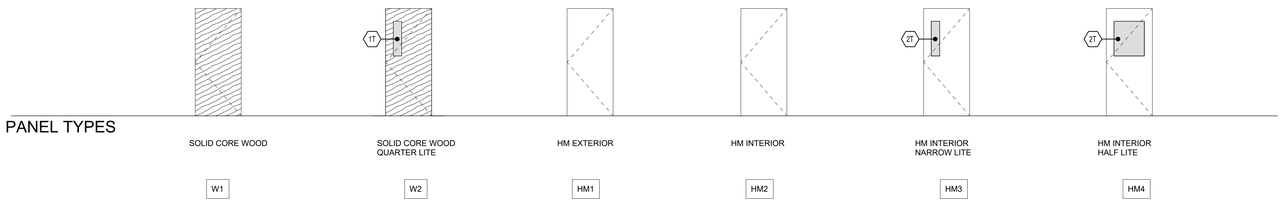
DOOR SCHEDULE

DOOR #	SIZE WIDTH	SIZE HEIGHT	PANEL TYPE	FRAME TYPE	FIRE RATING	COMMENTS	HARDWARE SET
MAIN LEVEL							
100A	6' - 2"	7' - 0"	AL1	SF8		CARD READER	A1
100B	6' - 0"	7' - 0"	AL1	SF10			A2
101	3' - 0"	7' - 0"	HM5	HM7		CARD READER	04
104	4' - 0"	7' - 0"	OH4	HM1			07
106	3' - 0"	7' - 0"	HM2	HM2			11
107	3' - 0"	7' - 0"	HM2	HM2			11
108A	3' - 0"	7' - 0"	W2	HM2			08
108B	3' - 0"	7' - 0"	HM4	HM6			08
108C	3' - 0"	7' - 0"	W1	HM4		CARD READER	05
109	3' - 0"	7' - 0"	HM4	HM5		CARD READER	06
110	3' - 0"	7' - 0"	W1	HM2			11
111	3' - 0"	7' - 0"	W1	HM3			12
112	3' - 0"	7' - 0"	HM1	HM1			02
113	3' - 0"	7' - 0"	W1	HM2			07
114	3' - 0"	7' - 0"	W1	HM3			10
115B	3' - 0"	7' - 0"	HM1	HM1			03
115C	8' - 0"	10' - 0"	OH1			OVERHEAD SECTIONAL DOOR	R1
115D	14' - 0"	10' - 0"	OH3			OVERHEAD SECTIONAL DOOR	R1
115F	3' - 0"	7' - 0"	HM1	HM1		CARD READER	01
116	3' - 0"	7' - 0"	HM3	HM1			13
117A	3' - 0"	7' - 0"	HM2	HM2		CARD READER	05
117B	10' - 0"	10' - 0"	OH2			OVERHEAD SECTIONAL DOOR	R1
117C	10' - 0"	10' - 0"	OH2			OVERHEAD SECTIONAL DOOR	R1
118	4' - 0"	7' - 8"	HM3	HM1			09
119	3' - 0"	7' - 0"	HM2	HM1			07
121A	3' - 0"	7' - 0"	HM3	HM1			13
121B	3' - 0"	7' - 0"	HM3	HM1			13

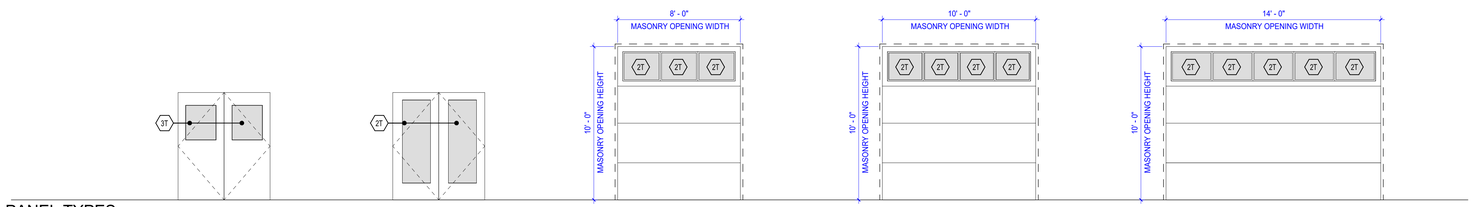
GLAZING TYPE LEGEND

- 1 — 1/4" CLEAR GLASS
- 1T — 1/4" CLEAR GLASS TEMPERED
- 2 — 1" INSULATED GLASS SYSTEM
- 2T — 1" INSULATED GLASS SYSTEM TEMPERED
- 3T — LAMINATED TEMPERED

PANEL TYPES

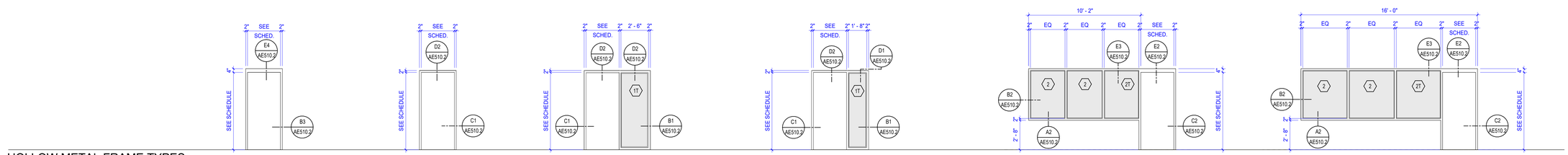


SOLID CORE WOOD	SOLID CORE WOOD QUARTER LITE	HM EXTERIOR	HM INTERIOR	HM INTERIOR NARROW LITE	HM INTERIOR HALF LITE
W1	W2	HM1	HM2	HM3	HM4

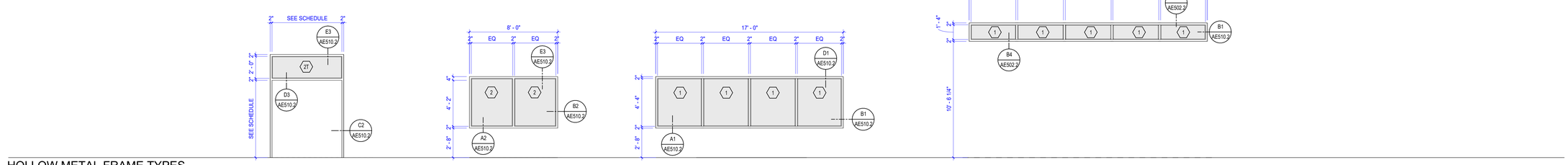


HM INTERIOR DBL HALF LITE	ALUM STOREFRONT ANODIZED BRONZE MEDIUM STILE	INSULATED SECTIONAL OVERHEAD DOOR MOTORIZED VISION LITES	INSULATED SECTIONAL OVERHEAD DOOR MOTORIZED VISION LITES	INSULATED SECTIONAL OVERHEAD DOOR MOTORIZED VISION LITES
HM5	AL1	OH1	OH2	OH3

HOLLOW METAL FRAME TYPES



INSET FRAME	WRAP FRAME	WRAP FRAME	WRAP FRAME	INSET FRAME	INSET FRAME
HM1	HM2	HM3	HM4	HM5	HM6



INSET FRAME	INSET FRAME	WRAP FRAME	WRAP FRAME
HM7	HM8	HM9	HM10

HOLLOW METAL FRAME TYPES

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CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

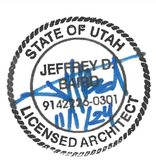
REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

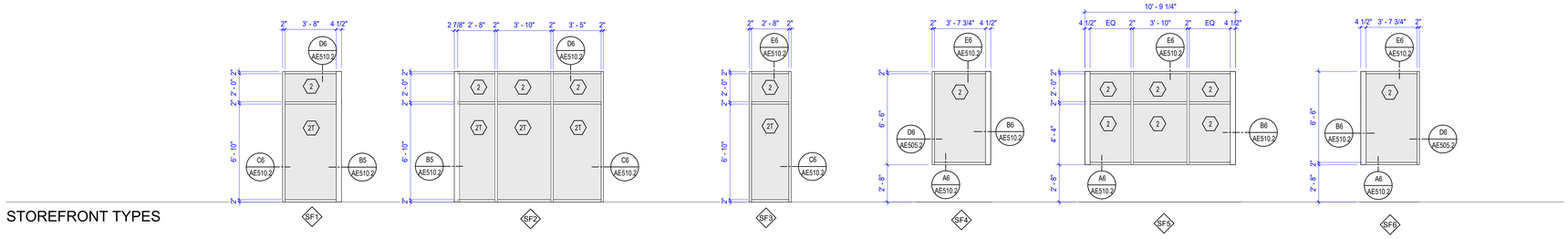
DAVISTECH
DAVIS TECHNICAL COLLEGE



PANEL TYPES, FRAME TYPES, AND DOOR SCHEDULE

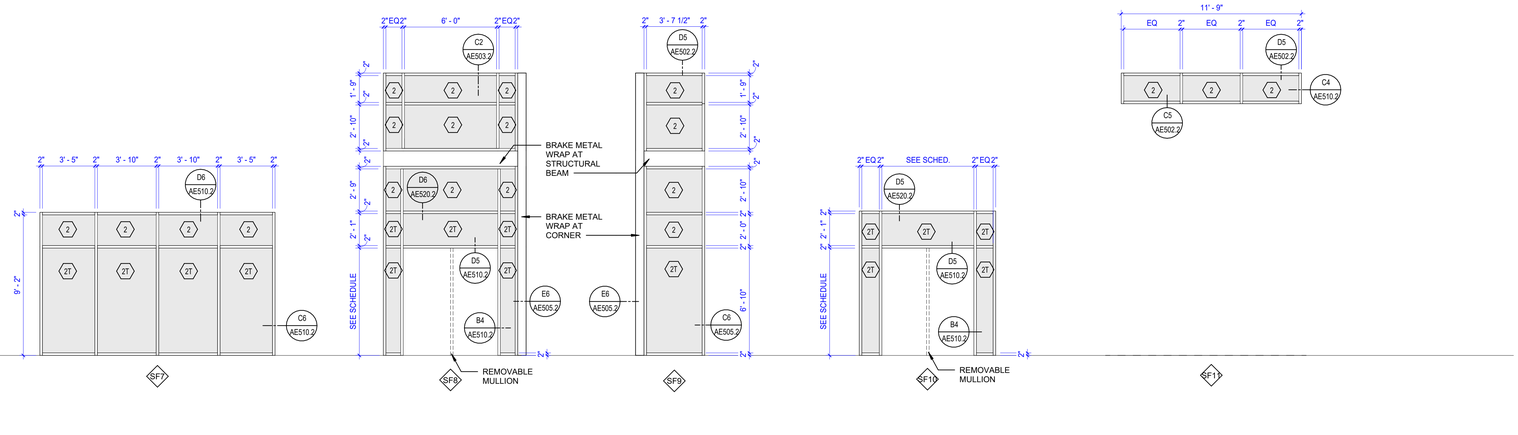
AE601.2

E



STOREFRONT TYPES

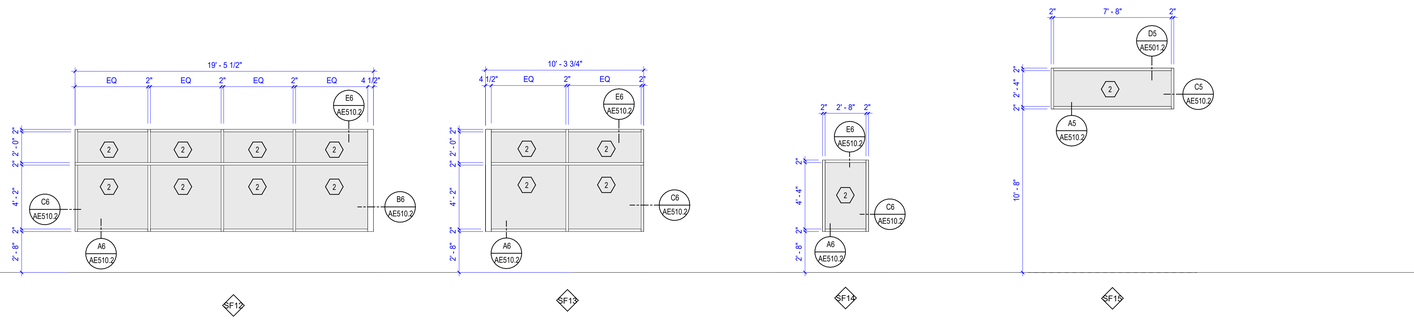
D



STOREFRONT TYPES

C

B



STOREFRONT TYPES

A

GLAZING TYPE LEGEND

1	1/4" CLEAR GLASS
1T	1/4" CLEAR GLASS TEMPERED
2	1" INSULATED GLASS SYSTEM
2T	1" INSULATED GLASS SYSTEM TEMPERED
3T	LAMINATED TEMPERED

CRSA

PROJECT **24-038**

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355 SOUTH 650 EAST
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DAVISTECH
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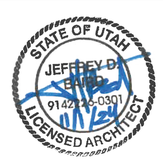

FRAME TYPES
AE602.2

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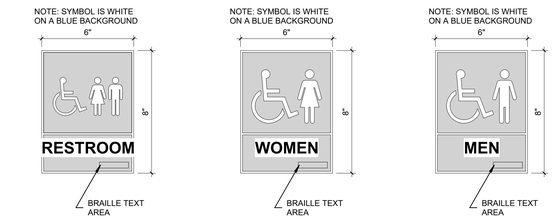
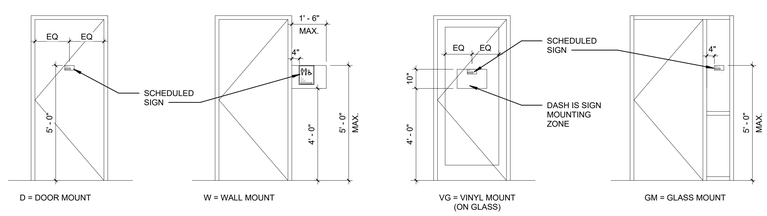
SIGNAGE SCHEDULE				
ASSOC. ROOM NAME	ASSOC. ROOM NUMBER	SIGN MESSAGE	COMMENTS	CODE REQUIRED
FDC		FDC	EXTERIOR	X
KNOX BOX		KNOX BOX	EXTERIOR	X
VESTIBULE	100		NO SIGNAGE	
LOBBY	101		NO SIGNAGE	
STUDENT REFRESH	102	STUDENT REFRESH		
MENS RR	103	MEN'S		
CUSTODIAL	104			
WOMENS RR	106	WOMEN'S		
GENDER NEUTRAL RR	107	GENDER NEUTRAL		
CLASSROOM	108	CLASSROOM		
CLASSROOM	108	MAXIMUM OCCUPANCY: 41		X
FACULTY	109	FACULTY REFRESH		
MOTHER	110	MOTHER'		
CONFERENCE	111	CONFERENCE		
FIRE RISER	112	FIRE RISER	EXTERIOR	
IT ROOM	113	IT		
OFFICE	114	OFFICE		
FABRICATION	115	SHOP		
FABRICATION	115	MAXIMUM OCCUPANCY: 75		X
CARBON ARC WELDING	116	CARBON ARC WELDING		
STORAGE	117		NO SIGNAGE	
AWS TESTING	118	AWS TESTING		
COMPRESSOR	119	ROOF ACCESS		X
WELDING	120		NO SIGNAGE	
SANDING/GRINDING	121	SANDING/GRINDING		
WELDING	122		NO SIGNAGE	
HALL	123			



A5 AE610.2 ADA RESTROOM SIGNS

3" = 1'-0"



A3 AE610.2 SIGN MOUNTING TYPES - TYPICAL

3/8" = 1'-0"

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

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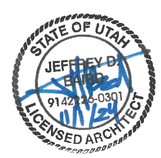
355 SOUTH 650 EAST
KAYSVILLE, UT 84037

DAVISTECH
DAVIS TECHNICAL COLLEGE



TYPICAL SIGNAGE

AE610.2

11/15/2024 10:13:03 PM

GAS FIRED DOMESTIC WATER HEATER

SYMBOL	SERVICE	TYPE	FUEL TYPE	RECOVERY RATE (90° RISE) (GPH)	INPUT CAPACITY (BTUH)	STORAGE (GALLONS)	WATER TEMP. °F		ELECTRICAL			MANUFACTURER / MODEL	EFF.	OVERALL SIZE	VENT CONNECTION SIZE	OPERATING WEIGHT (LBS.)	REMARKS
							EWT	LWT	VOLTS	HERTZ	PHASE						
DWH-1	DOMESTIC HOT WATER	POWER DIRECT VENT	NATURAL GAS	45	40,000	40	50	140	120	60	1	A.O. SMITH GPDL-40	96%	22"Ø x 58-1/4" H	3" PVC INTAKE 3" PVC EXHAUST	500	PROVIDE VENT TERMINATION KIT
SEE SPECIFICATION 221100																	

DOMESTIC WATER CIRCULATION PUMP

SYMBOL	GPM	FEET HEAD	HP	RPM	DUTY	TYPE	MOTOR ELECTRICAL CHARACTERISTICS			B&G SERIES	SIZE	REMARKS
							VOLTS	HERTZ	PHASE			
DCP-1	2	10	1/6	3450	DOMESTIC HOT WATER (140°) BUILDING RECIRC.	IN-LINE	115	60	1	PR	1-1/4" FLANGE	ALL BRONZE
SEE SPECIFICATION 221123												

DOMESTIC WATER SOFTENER (SIMPLEX)

SYMBOL	MAXIMUM CAPACITY GRAINS	CONT. FLOW GPM	PEAK FLOW GPM	ELECTRICAL			TANK DIMENSIONS		MANIFOLD SIZE	MANUFACTURER / MODEL #	REMARKS
				VOLTS	HERTZ	PHASE	SOFTENER	BRINE			
WS-1	600,000	51	69	120	60	1	14"Ø	24"Ø	2"	CALLIGAN CTM-60	
SEE SPECIFICATION 223100											

DOMESTIC EXPANSION TANK

SYMBOL	TANK VOLUME (GAL.)	ACCEPT VOLUME (GAL.)	AMTROL MODEL	ARRANGEMENT	DUTY	REMARKS
DET-1	2	0.9	ST-5	VERTICAL	DOMESTIC WATER SYSTEM	
SEE SPECIFICATION 221100						

AIR COMPRESSOR

SYMBOL	CAPACITY (AFCM)	TANK SIZE (GALLONS)	ELECTRICAL CHARACTERISTICS					QUINCY MODEL (QR-25 SERIES)	REMARKS
			VOLTS	HERTZ	PHASE	H.P.	RPM		
AC-1	84.5	200	460	60	3	25	940	FF5120HP	200 PSI SERVICE
SEE SPECIFICATION 221500									

REFRIGERATED AIR DRYER

SYMBOL	CAPACITY (SFCM)	CHARACTERISTICS				MANUFACTURER / MODEL NO.	REMARKS
		VOLTS	HERTZ	PHASE	DIAMETER W x D x H		
RAD-1	175	120	60	1		MK-U5-175	-
SEE SPECIFICATION 236213							

HOSE REELS

SYMBOL	PRESSURE (PSI)	SIZE	LENGTH (FT.)	MANUFACTURER / MODEL	SERVICE	REMARKS
HR-1	300	1/2"	50	REELCRAFT 7850 OLP	LOW PRESSURE COMPRESSED AIR (CA)	OR EQUAL BY COX REELS
HR-2	100	1/2"	50	REELCRAFT 7850 OLP	DOMESTIC WATER	OR EQUAL BY COX REELS
SEE SPECIFICATION						

THERMOSTATIC MIXING VALVE SCHEDULE

SYMBOL	MANUFACTURER / MODEL NO.	LOCATION	FLOW RATE (GPM)	ALLOWABLE PRESSURE DIFFERENTIAL (PSI)	OUTLET HOT WATER TEMP. (°F)	INLET SIZE	OUTLET SIZE	ACCESSORIES AND REMARKS
MV-1	WATTS LFUSG-B-M2	UNDER LAVATORIES	0.5	5	105°	1/2"	1/2"	ADJUSTABLE / ASSE 1070
MV-2	GUARDIAN - G3600	EMERGENCY EYEWASH	2.5-4.0	10	85°	3/4"	3/4"	ADJUSTABLE / ASSE 2358.1
SEE SPECIFICATION 221100								

WATER HAMMER ARRESTER SCHEDULE

MARK	MANUFACTURER / MODEL #	FIXTURE UNITS	INLET SIZE	REMARKS
WHA-A	PPP SC-500	1-11	1/2"	PER PDI STANDARD PDI-WH 201
WHA-B	PPP SC-750	12-32	3/4"	PER PDI STANDARD PDI-WH 201
WHA-C	PPP SC-1000	33-60	1"	PER PDI STANDARD PDI-WH 201
SEE SPECIFICATION 224200				

BACKFLOW PREVENTER SCHEDULE

SYMBOL	SERVICE	QTY.	SIZE	MANUFACTURER / MODEL #
BFP-1	CUSTODIAL SOLUTION STATION	1	1/2"	WATTS LF0095
BFP-2	WATER ENTRY	1	2"	WATTS LF0095
SEE SPECIFICATION 230523				

PLUMBING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	PIPE SIZE						COMMENTS
		TRAP	WASTE	VENT	C.W.	H.W.	AIR	
P-1	WATER CLOSET, FLUSH VALVE, FLOOR MOUNTED, ADA COMPLIANT	INT.	3"	2"	1"	-	-	-
P-2A	URINAL, WALL MOUNTED, STANDARD	INT.	2"	2"	3/4"	-	-	-
P-2B	URINAL, WALL MOUNTED, ADA COMPLIANT	INT.	2"	2"	3/4"	-	-	-
P-3	LAVATORY, WALL MOUNTED, ADA COMPLIANT	1-1/4"	1-1/2"	1-1/2"	1/2"	1/2"	-	-
P-4A	MOTHERS SINK, STAINLESS STEEL, SINGLE COMPARTMENT, MANUAL FAUCET	1-1/2"	2"	2"	1/2"	1/2"	-	-
P-4B	BREAK ROOM SINK, STAINLESS STEEL, SINGLE COMPARTMENT, MANUAL FAUCET	1-1/2"	2"	2"	1/2"	1/2"	-	-
P-4C	HAND SINK, STAINLESS STEEL, DOUBLE COMPARTMENT AND FILTERED WATER FAUCET	1-1/4"	1-1/2"	1-1/2"	1/2"	1/2"	-	-
P-4D	WASH SINK, SIX PERSON, FOOT ACTUATED	2"	2"	2"	1"	1"	-	-
P-5	SERVICE SINK, FLOOR MOUNTED	3"	3"	2"	1/2"	1/2"	-	-
P-6	NOT USED							
P-7A	ELECTRIC WATER COOLER, BI-LEVEL WITH BOTTLE FILLER	1-1/2"	1-1/2"	1-1/2"	1/2"	-	-	-
P-7B	ELECTRIC WATER COOLER BOTTLE FILLER ONLY	1-1/2"	1-1/2"	1-1/2"	1/2"	-	-	-
P-8	EMERGENCY EYEWASH	-	-	-	1/2" (TEPID)	-	-	-
P-9	COMPRESSED AIR OUTLET	-	-	-	-	-	1/2"	-
RH	ROOF HYDRANT				3/4"			
HB	HOSE BIBB, INTERIOR, INTEGRALVACUUM BREAKER	-	-	-	1/2"	-	-	-
WH	WALL HYDRANT, NON-FREEZE, EXTERIOR	-	-	-	3/4"	-	-	-
WHA	WATER HAMMER ARRESTER	-	-	-	-	-	-	-
FS-1	FLOOR SINK	-	3"	-	-	-	-	-
FD-1	FLOOR DRAIN, 6" DIAMETER GRATE	2"	2"	2"	-	-	-	
FD-2	FLOOR DRAIN, 9" DIAMETER GRATE WITH SEDIMENT BUCKET		3"	2"	-	-	-	
RD	ROOF DRAIN	SEE DRAWINGS FOR SIZES			-	-	-	-
SRD	SECONDARY ROOF DRAIN	SEE DRAWINGS FOR SIZES			-	-	-	-
DSN	DOWNSPOUT NOZZLE	SEE DRAWINGS FOR SIZES			-	-	-	-
CO	CLEANOUT	-	-	-	-	-	-	-
WCO	SHOWER TRIM	-	-	-	1/2"	1/2"	-	-
FCO	SHOWER TRIM	-	-	-	1/2"	1/2"	-	-
COTG	INSTRUCTION SINK	1-1/2"	1-1/2"	1-1/2"	-	1/2"	-	-
		-	-	-	-	-	3/4"	-
CB-1	CATCH BASIN 24"x24"x30"	3"	3"	2"	-	-	-	-
CB-2	CATCH BASIN 36"x36"x40"	4"	4"	2"	-	-	-	-
SEE SPECIFICATION 224200								

PLUMBING SYMBOL LEGEND

SYMBOL	DESCRIPTION
	NEW CONNECTION
	DROP IN PIPE
	RISE IN PIPE
	VALVE IN RISE
	UNION
	GAS SHUT OFF VALVE (GAS COCK)
	BALL VALVE
	CAP
WHA	GAS TYPE WATER HAMMER ARRESTOR
	THERMOMETER
	PRESSURE REDUCING VALVE - (PRV)
FD, FS, RD	FLOOR DRAIN, FLOOR SINK OR ROOF DRAIN
FCO	FLOOR CLEAN OUT
WCO	WALL CLEAN OUT
CO	CLEAN OUT
VTR	VENT THROUGH ROOF
— — —	COLD WATER
— — —	DOMESTIC HOT WATER
— - - - —	DOMESTIC HOT WATER RETURN
———	SEWER OR WASTE
- - - - -	VENT
—G—	GAS (NATURAL GAS)
—TW—	TEPID WATER
	SAFETY OR RELIEF VALVE
(E)	EXISTING
(FC #)	FIXTURE COUNT
—AR—	ARGAN GAS
—CO2—	CARBON DIOXIDE
—MG—	MIXED GASES
—CA—	COMPRESSED AIR

GENERAL PLUMBING NOTES

1. THE CONTRACTOR SHALL VERIFY ALL PLUMBING FIXTURES, EQUIPMENT REQUIREMENTS AND LOCATIONS, AND ALL RELATED UTILITIES WITH THE MECHANICAL AND ARCHITECTURAL PLANS AND SPECIFICATIONS AND SHALL PROVIDE ALL SERVICES AS REQUIRED.
2. ALL WALL-HUNG PLUMBING FIXTURES SHALL BE SECURELY ATTACHED TO AND SUPPORTED BY FLOOR-MOUNTED CARRIERS OF ALL-METAL CONSTRUCTION. FIXTURE HANGERS OR ARMS SHALL BE SUPPORTED FREE OF THE FINISHED WALL. HANGERS SHALL BE BY WADE, SMITH, JOSAM, OR ZURN.
3. EACH INDIVIDUAL FIXTURE SUPPLY SHALL BE PROVIDED WITH A CHROME-PLATED STOP VALVE WITH HAND WHEEL. VALVE SHALL BE BALL TYPE, QUARTER TURN AS APPROVED BY ENGINEER. STOPS SHALL BE ON BOTH HOT AND COLD WATER LINES.
4. FIXTURES AND ACCESSORIES SHALL BE AS SPECIFIED. EACH ITEM SHALL BE COMPLETE WITH CHROME-PLATED BRASS TRIM. SEE PLUMBING FIXTURE SCHEDULE.
5. CAULK WITH SILICONE COMPOUND AROUND ALL FIXTURES AT INTERFACE WITH WALLS AND/OR FLOOR.
6. ALL PLUMBING SHALL BE DONE IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE UTAH PLUMBING CODE AND/OR LOCAL ORDINANCES.

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION
1	10.21.24	BP1 ADD 3

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 270895
ROBERT JACK KESLER
9/2025
STATE OF UTAH

PLUMBING SCHEDULES AND SYMBOL LEGEND

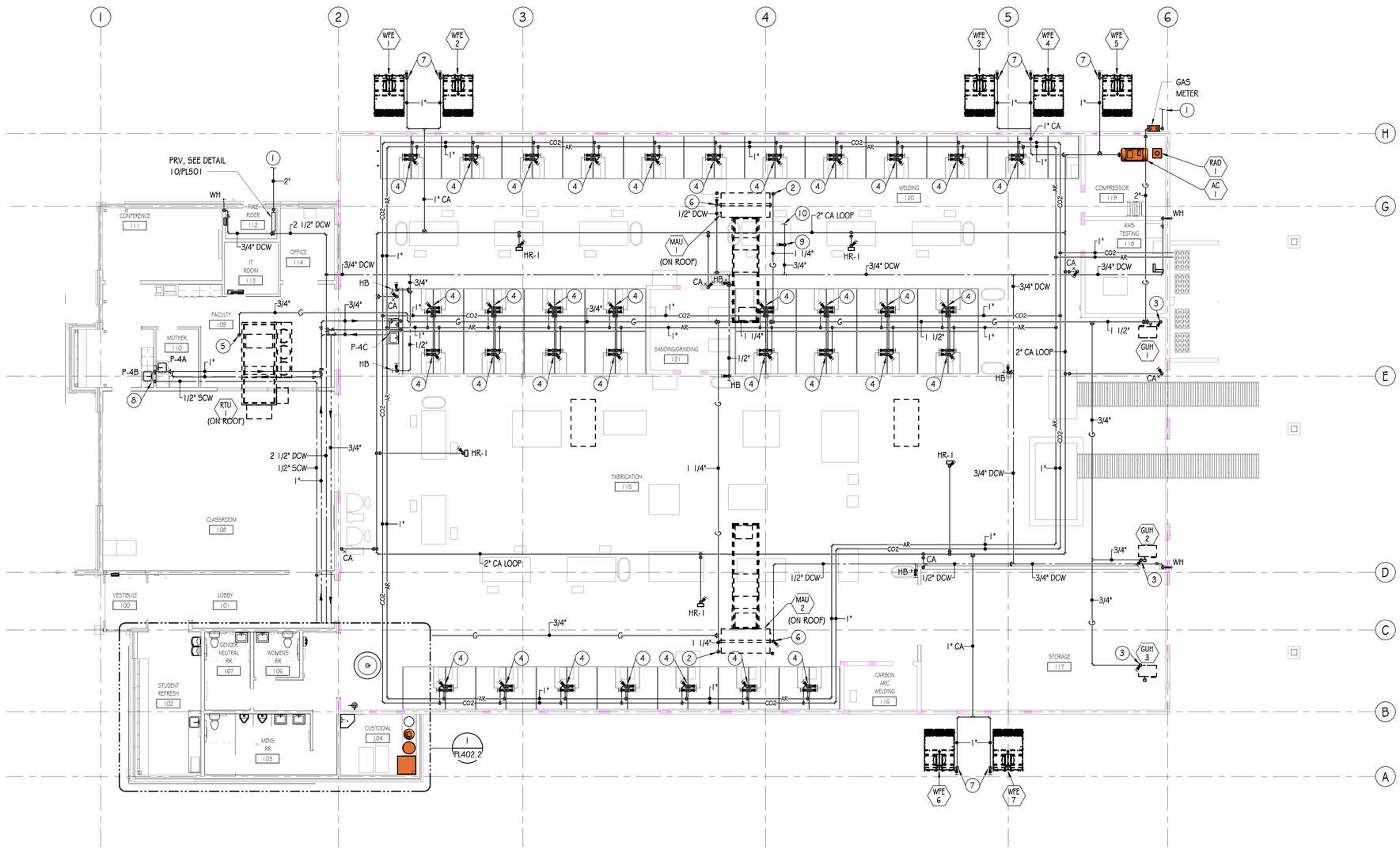
P-001.2

(801) 355-5915

11/7/2024 11:04:25 AM

DRAWING NOTES

NOTE #	DESCRIPTION
1	SEE CIVIL SITE UTILITY PLAN FOR CONTINUATION.
2	RISE 1-1/4" GAS UP THROUGH ROOF TO CONNECT TO UNIT ON ROOF ABOVE. SEE PL121.2 FOR CONTINUATION.
3	CONNECT 3/4" GAS TO EQUIPMENT PER MANUFACTURER'S WRITTEN INSTRUCTIONS AND PER DETAIL 9/PL501.
4	DROP 1/2" CO2 AND AR WELDING GAS DOWN ON WALL. SEE DETAIL 5/PL502.
5	RISE 3/4" GAS UP THROUGH ROOF TO CONNECT TO UNIT ON ROOF ABOVE. SEE PL121.2 FOR CONTINUATION.
6	RISE 1/2" DCW UP THROUGH ROOF TO CONNECT TO UNIT ON ROOF ABOVE. SEE PL121.2 FOR CONTINUATION.
7	CONNECT 1" CA TO FUME EXTRACTOR PER MANUFACTURER'S WRITTEN INSTRUCTIONS AND PER DETAIL 9/PL501.
8	EXTEND 1/2" DCW LINE UNDER COUNTER SPACE AND CONNECT TO CARBON FILTER BEFORE CONNECTING WATER LINE TO SECONDARY FAUCET.
9	RISE 3/4" DCW UP THROUGH ROOF AND CONNECT TO ROOF HYDRANT (RH). SEE DETAIL 10/PL502.
10	1/2" DRAIN FROM ROOF HYDRANT (RH). SEE PL111.2 FOR CONTINUATION.



1 PL112.2 **PLUMBING PLAN - WATER, GAS & COMPRESSED AIR**
SCALE: 1/8" = 1'-0"

10 5 0 10 20

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 270896
ROBERT JACK KESLER
STATE OF UTAH

PLUMBING PLAN - WATER, GAS & COMPRESSED AIR

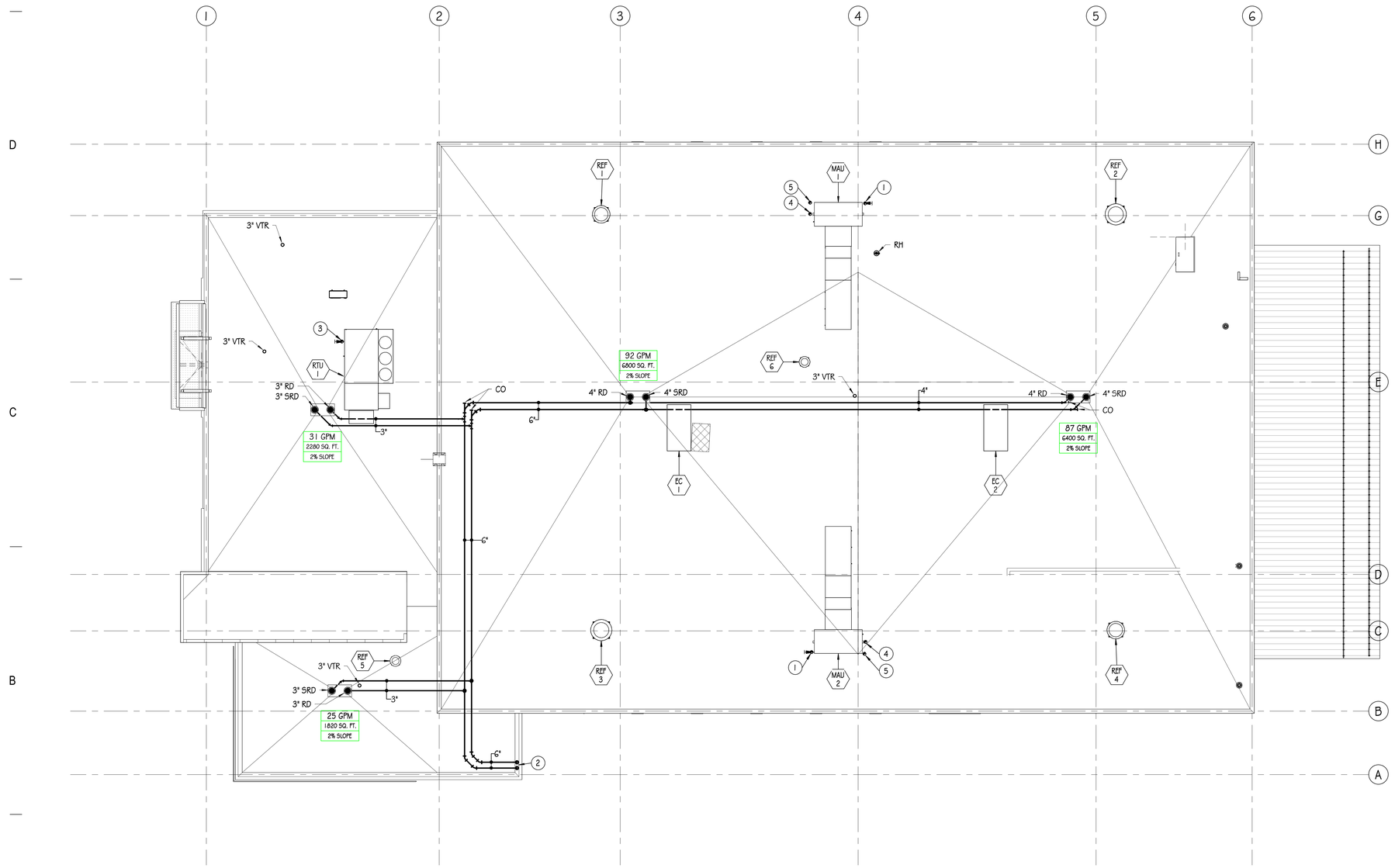
PL112.2

(801) 355-5915

11/1/2024 11:04:29 AM

DRAWING NOTES

NOTE #	DESCRIPTION
1	RISE 1-1/4" GAS UP THROUGH ROOF AND CONNECT TO EQUIPMENT PER MANUFACTURER'S WRITTEN INSTRUCTIONS AND PER DETAIL 9/PL501.
2	DROP 6" RD AND 6" SRD DOWN ON WALL OF LEVEL BELOW. SEE 1/PL401.1 FOR CONTINUATION.
3	RISE 3/4" GAS UP THROUGH ROOF AND CONNECT TO EQUIPMENT PER MANUFACTURER'S WRITTEN INSTRUCTIONS AND PER DETAIL 9/PL501.
4	RISE 1/2" DCW UP THROUGH ROOF AND CONNECT TO EQUIPMENT PER MANUFACTURER'S WRITTEN INSTRUCTIONS AND PER DETAIL 9/PL501.
5	DROP 1" DRAIN FROM EVAPORATIVE COOLER DOWN THROUGH ROOF. SEE DETAIL 9/PL502 AND PL111.1 FOR CONTINUATION.



ROOF PLUMBING PLAN

1 / PL121.2 SCALE: 1/8" = 1'-0"

10 5 0 10 20

ROOF DRAIN DESIGN NOTES	
DESIGN RAINFALL RATE: 1.3 IN / HR	
xx GPM	DESIGN GALLON PER MINUTE
xx SQ. FT.	DESIGN ROOF DRAIN AREA (SQ. FT.)
2% SLOPE	MINIMUM DESIGN PIPE SLOPE

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER No. 270896 ROBERT JACK KESLER 11/01/24 STATE OF UTAH

ROOF PLUMBING PLAN

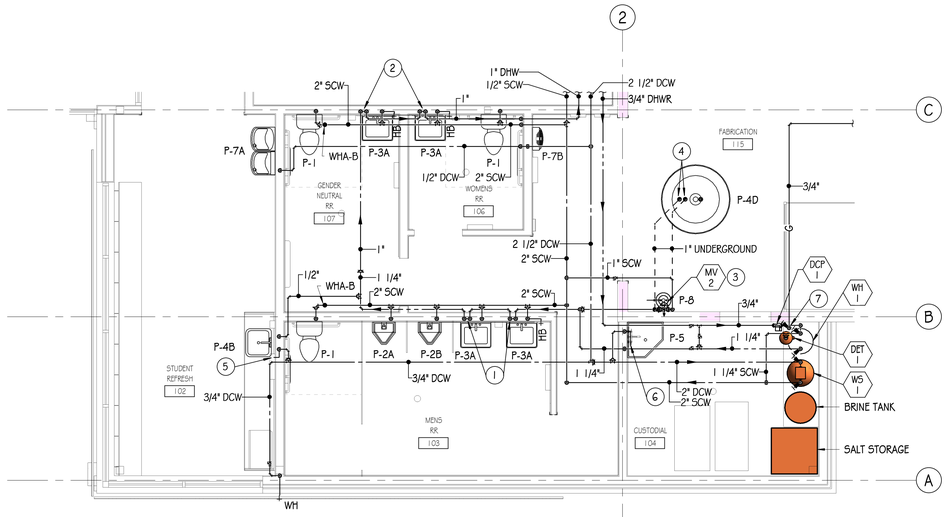
PL121.2

(801) 355-5915

11/1/2024 11:04:32 AM

DRAWING NOTES

NOTE #	DESCRIPTION
1	DROP 1-1/4" DHW LOOP DOWN IN WALL TO WITHIN 2 FEET OF LAVATORY AND RISE 1-1/4" DHW LOOP UP IN WALL AND ROUTE AS SHOWN.
2	DROP 1" DHW LOOP DOWN IN WALL TO WITHIN 2 FEET OF LAVATORY AND RISE 1" DHW LOOP UP IN WALL AND ROUTE AS SHOWN.
3	DROP 1" DHW AND 1" DCW DOWN ON WALL. CONNECT TO MIXING VALVE (MV-2) MOUNTED HIGH ON WALL AND CONTINUE DROPPING 1" DHW AND 1" DCW DOWN TO BELOW FLOOR. CONNECT TEPID WATER TO EYEWASH PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
4	RISE WATER PIPING UP FROM UNDER FLOOR AND CONNECT TO WASH SINK (P-4D) PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
5	EXTEND 1/2" DCW LINE UNDER COUNTER SPACE AND CONNECT TO CARBON FILTER BEFORE CONNECTING WATER LINE TO SECONDARY FAUCET.
6	EXTEND 1/2" DCW TO BACKFLOW PREVENTER (BFP-1) FOR CUSTODIAL SOLUTION STATION CONNECTION. SEE DETAIL 8/PL502.
7	DROP 3/4" GAS TO CONNECT TO WATER HEATER PER MANUFACTURER'S WRITTEN INSTRUCTIONS.



1 PL402.2 ENLARGED PLUMBING PLAN - WATER

SCALE: 1/4" = 1'-0"

5 2.5 0 5 10

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

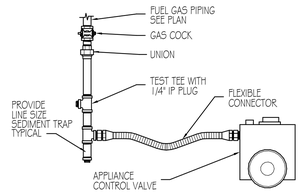
LICENSED PROFESSIONAL ENGINEER
No. 270895
ROBERT JACK KESLER
11/2024
STATE OF UTAH

ENLARGED PLUMBING PLAN

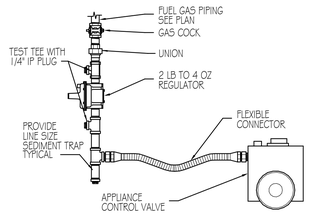
PL402.2

(801) 355-5915

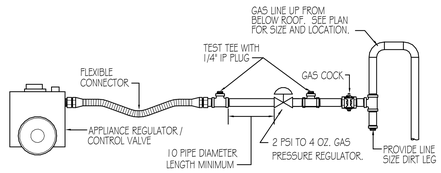
11/7/2024 11:04:31 AM



GAS CONNECTION TO APPLIANCE / EQUIPMENT DETAIL (WITHOUT GAS PRESSURE REGULATOR)



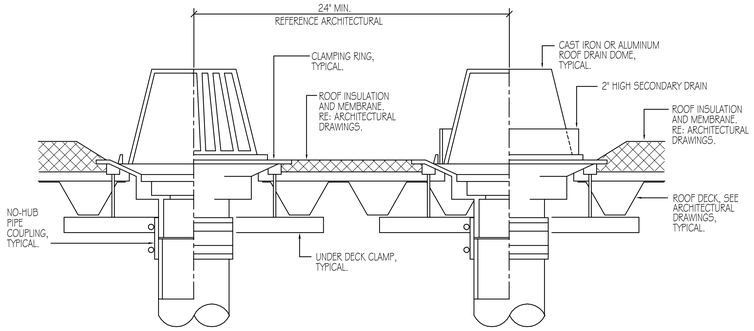
GAS CONNECTION TO APPLIANCE / EQUIPMENT DETAIL (WITH GAS PRESSURE REGULATOR)



GAS CONNECTION TO RTU DETAIL

9 PL501.2 GAS CONNECTION DETAILS

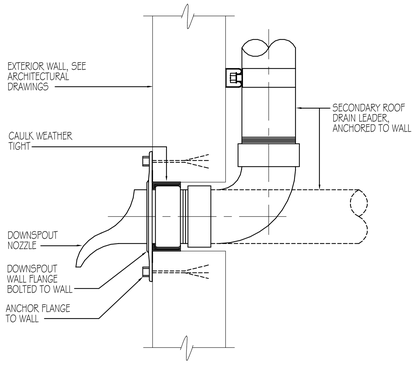
SCALE: NONE



ROOF DRAIN SECONDARY ROOF DRAIN

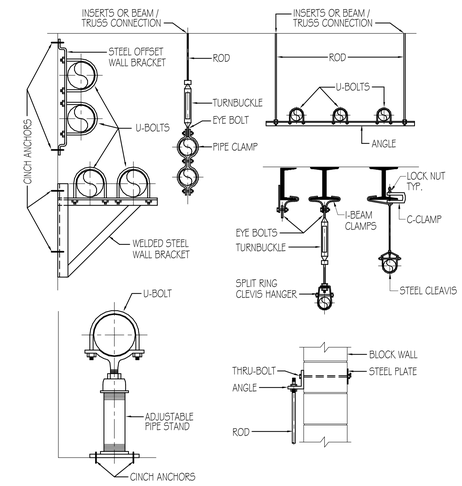
5 PL501.2 ROOF DRAIN DETAIL

SCALE: NONE



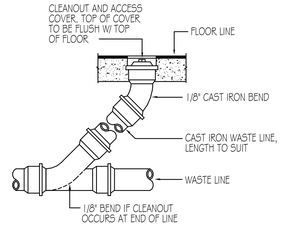
6 PL501.2 DOWNSPOUT NOZZLE AT WALL DETAIL

SCALE: NONE

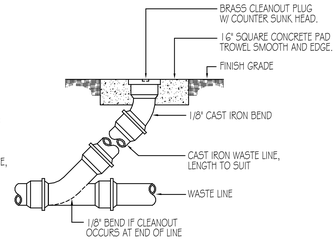


1 PL501.2 TYPICAL PIPE SUPPORTS DETAIL

SCALE: NONE



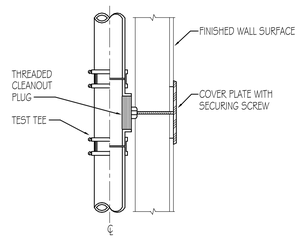
FLOOR CLEANOUT (FCO)



CLEANOUT TO GRADE (COTG)

2 PL501.2 CLEANOUT DETAILS

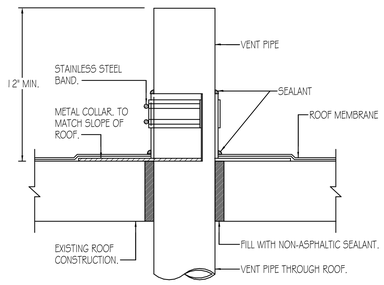
SCALE: NONE



MOUNTING HEIGHT CHART	
LOCATION DESCRIPTION	CENTERLINE HEIGHT
URINAL	48"
LAVATORY	12"
SINK	12"
GENERAL WALL	12"
NOTE: COORDINATE WITH ARCHITECT PRIOR TO INSTALLING AT A HEIGHT OTHER THAN THAT LISTED ABOVE.	

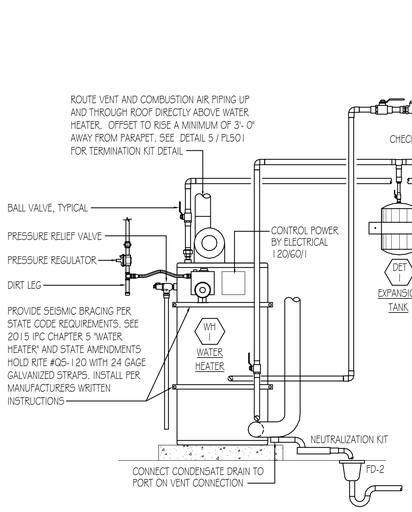
3 PL501.2 WALL CLEANOUT DETAIL

SCALE: NONE



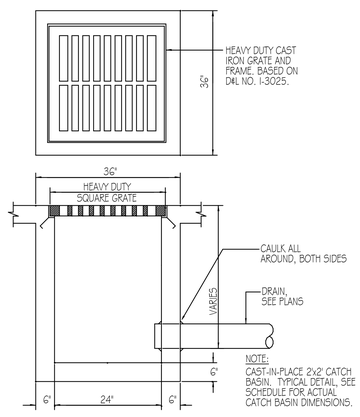
4 PL501.2 VENT THRU ROOF DETAIL

SCALE: NONE



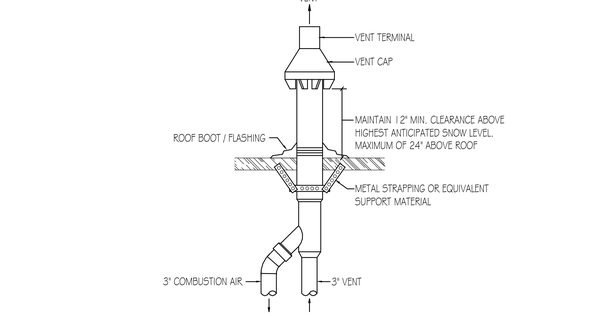
10 PL501.2 GAS FIRED WATER HEATER DETAIL

SCALE: NONE



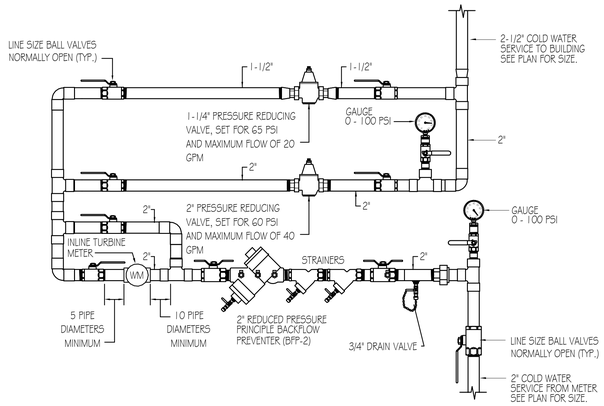
11 PL501.2 CATCH BASIN (CB-1) DETAIL

SCALE: NONE



7 PL501.2 CONCENTRIC VENT KIT AT ROOF DETAIL

SCALE: NONE



8 PL501.2 BUILDING WATER ENTRY DETAIL

SCALE: NONE

11/7/2024 11:04:32 AM

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION
1	10.21.24	BP1 ADD 3

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

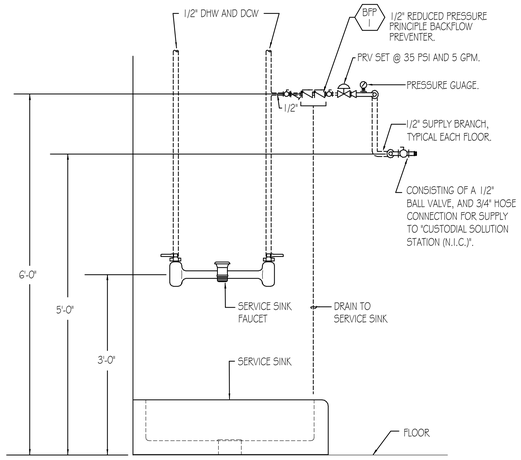
355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER No. 270895 ROBERT JACK KESLER 11/01/24 STATE OF UTAH

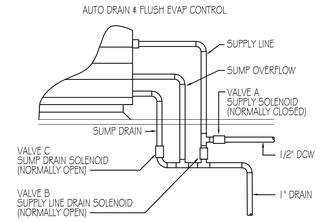
PLUMBING DETAILS

PL501.2

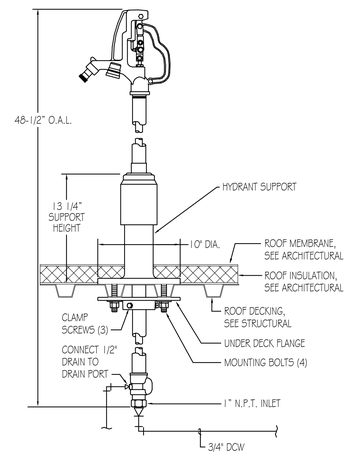
(801) 355-5915



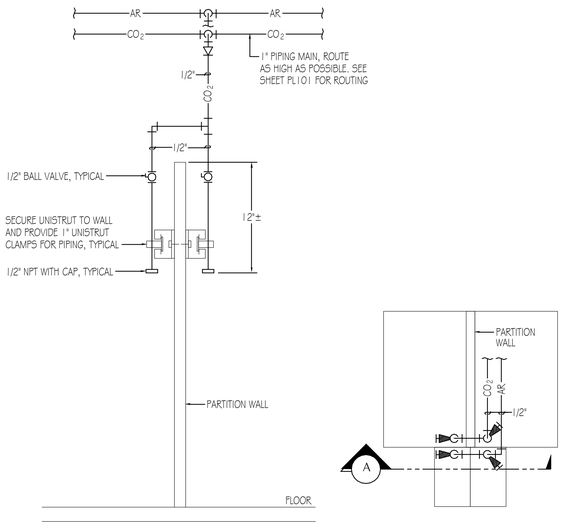
8 PL502.2 **SERVICE SINK DETAIL**
SCALE: NONE



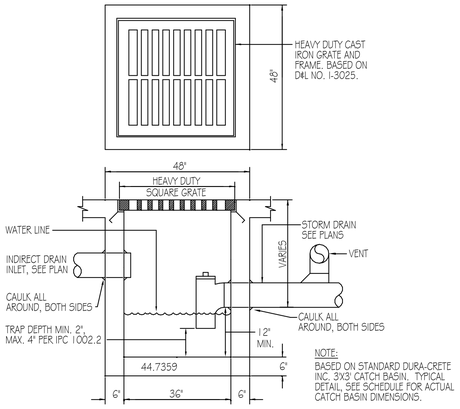
9 PL502.2 **EVAPORATIVE COOLING CONNECTIONS DETAIL**
SCALE: NONE



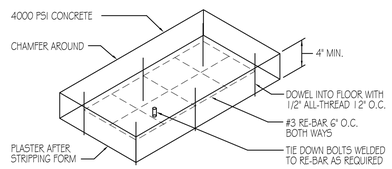
10 PL502.2 **ROOF HYDRANT DETAIL**
SCALE: NONE



5 PL502.2 **CO2 AND AR WELDING GAS DETAIL**
SCALE: NONE

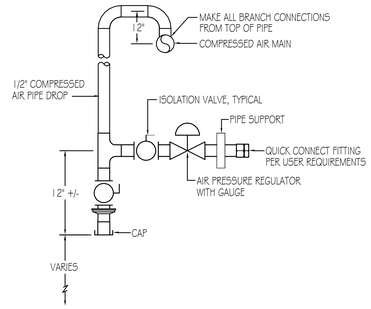


6 PL502.2 **CATCH BASIN (CB-2) DETAIL**
SCALE: NONE

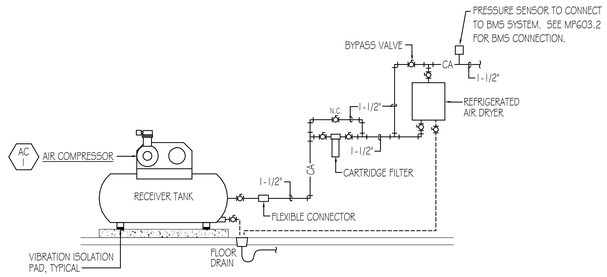


NOTES:
1. OVERALL SIZE AS REQUIRED BY EQUIPMENT, 12'x12' MIN.
2. USE SPECIAL BASES WHERE CALLED FOR.

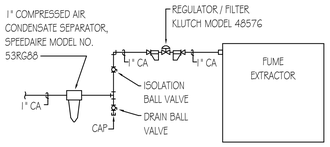
7 PL502.2 **GENERAL CONCRETE BASE DETAIL**
SCALE: NONE



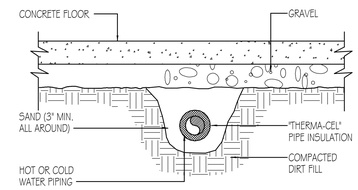
1 PL502.2 **COMPRESSED AIR DROP WITH TEE DETAIL**
SCALE: NONE



2 PL502.2 **COMPRESSED AIR PIPING DETAIL**
SCALE: NONE



3 PL502.2 **COMPRESSED AIR SUPPLY CONNECTION DETAIL**
SCALE: NONE



4 PL502.2 **UNDERFLOOR WATER PIPE DETAIL**
SCALE: NONE

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION
1	10.21.24	BP1 ADD 3

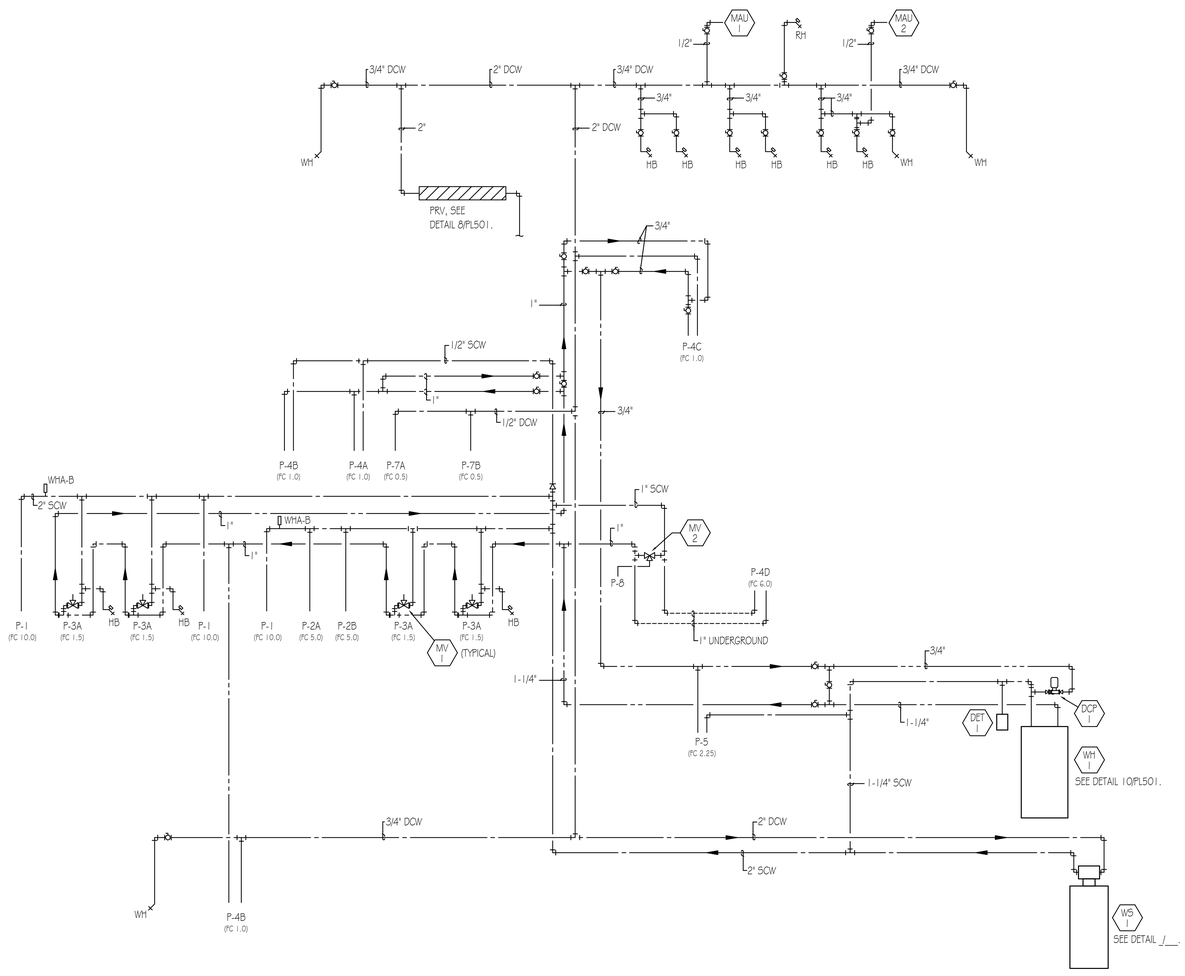
DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING
355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 270896
ROBERT JACK KESLER
STATE OF UTAH

PLUMBING DETAILS
PL502.2

(801) 355-5915

11/1/2024 11:04:32 AM



1/PL601.2 DOMESTIC WATER FLOW DIAGRAM

SCALE: NONE

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

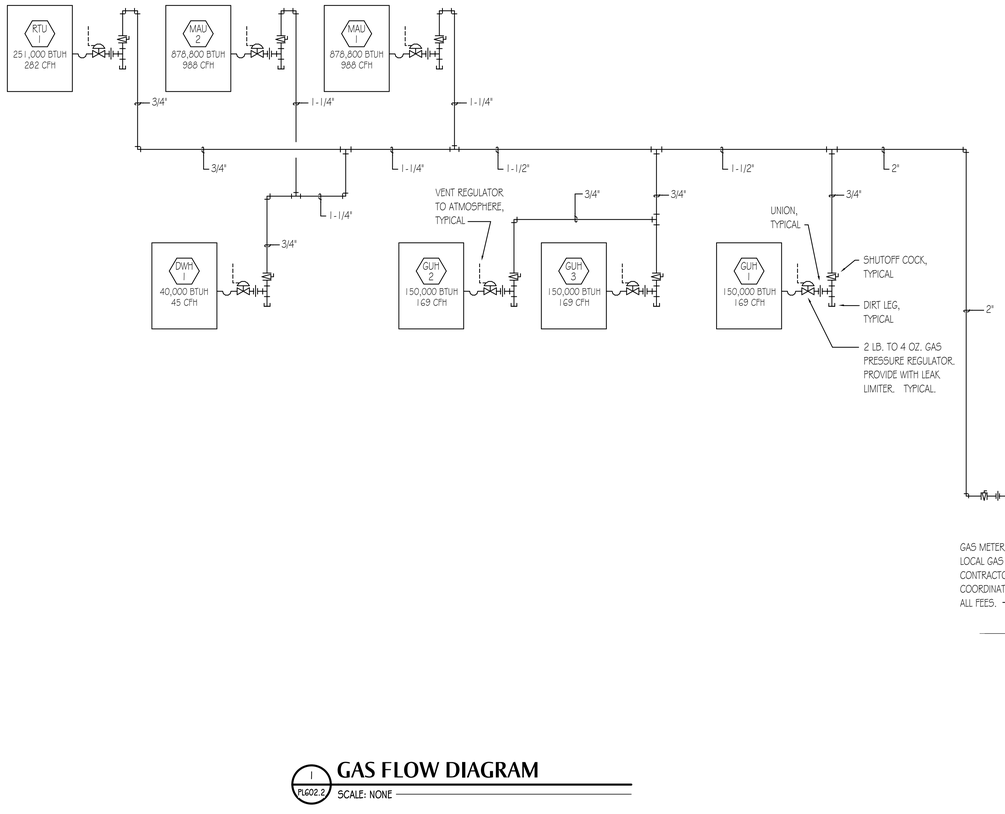
LICENSED PROFESSIONAL ENGINEER
No. 270896
ROBERT JACK KESLER
STATE OF UTAH

DOMESTIC WATER FLOW DIAGRAM

PL601.2

(801) 355-5915

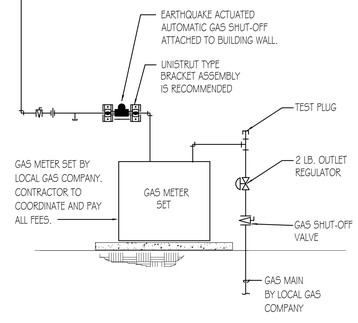
11/1/2024 11:04:32 AM



GAS DESIGN NOTES

LENGTH = 280 FT.
DESIGN BTUH = 2,498,600
BTU / CU. FT. = 890
DESIGN CFH = 2,810
BUILDING PRESSURE = 2 LB.
BRANCH SIZE = 2"

BASED ON 2 PSI SERVICE WITH 1 PSI PRESSURE DROP



1 PL602.2 GAS FLOW DIAGRAM
SCALE: NONE

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

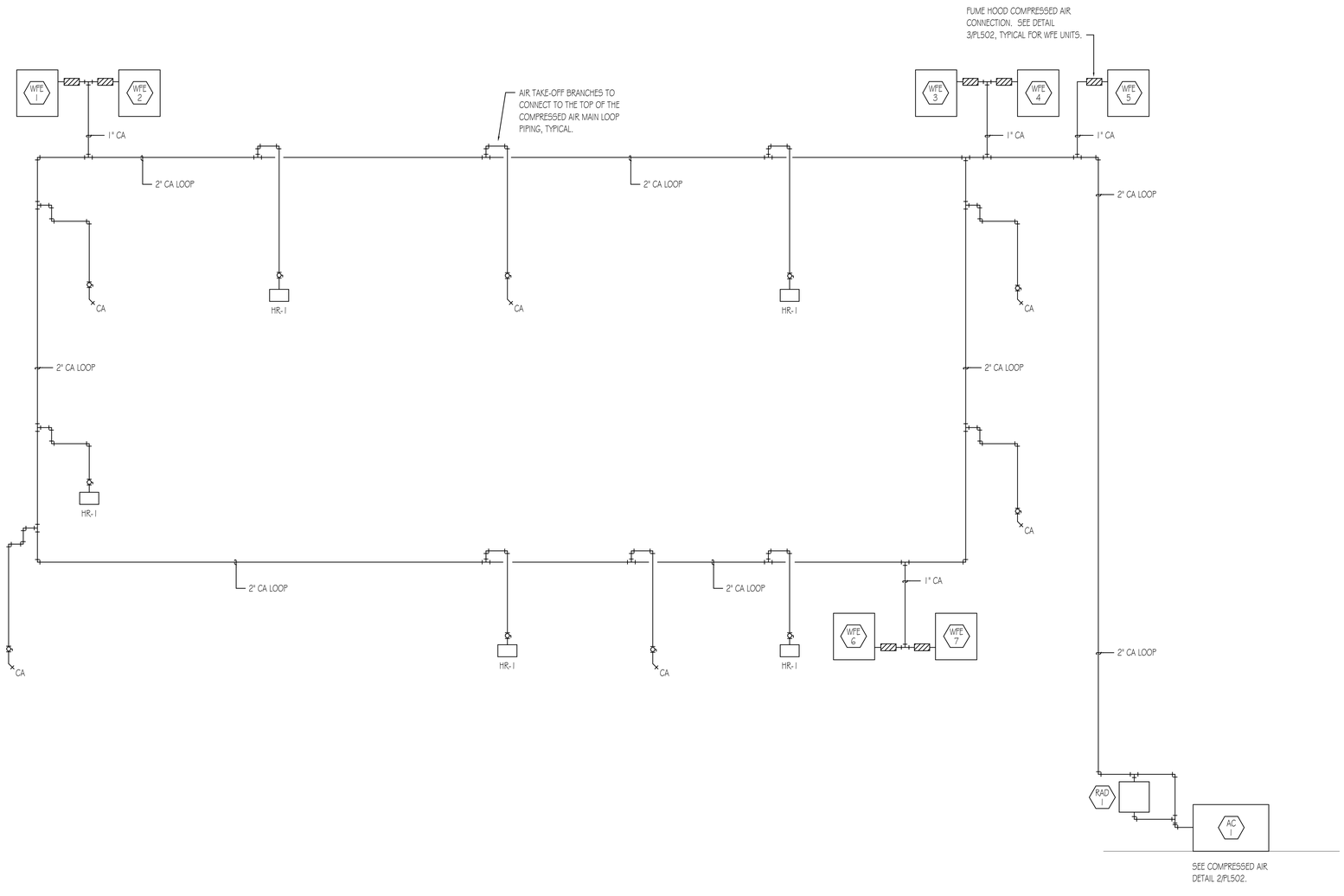
LICENSED PROFESSIONAL ENGINEER
No. 270896
ROBERT JACK KESLER
NINJA
STATE OF UTAH

GAS FLOW DIAGRAM

PL602.2

(801) 355-5915

11/1/2024 11:04:32 AM



1/PL603.2 COMPRESSED AIR FLOW DIAGRAM

SCALE: NONE

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

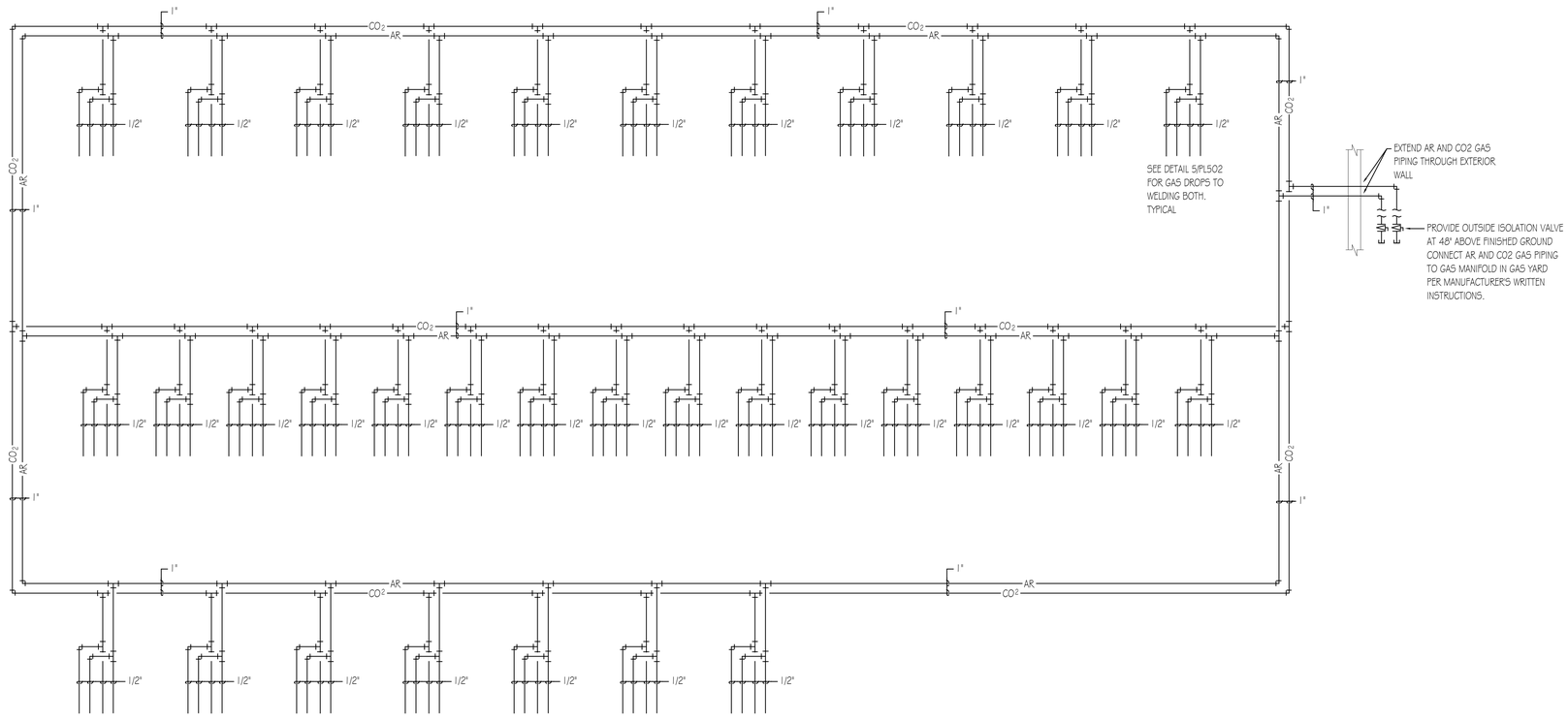
LICENSED PROFESSIONAL ENGINEER
No. 270896
ROBERT JACK KESLER
STATE OF UTAH

COMPRESSED AIR FLOW DIAGRAM

PL603.2

(801) 355-5915

11/1/2024 11:04:32 AM



1 PL604.2 CO2 AND AR GAS FLOW DIAGRAM

SCALE: NONE

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 270896
ROBERT JACK KESLER
11/01/24
STATE OF UTAH

CO2 AND AR GAS FLOW DIAGRAM

PL604.2

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11/1/2024 11:04:32 AM

SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	DIGITAL THERMOMETER		SUPPLY DUCT (CROSS SECTION)
	THERMOMETER		RETURN AIR OR EXHAUST DUCT (CROSS SECTION)
	PRESSURE/TEMPERATURE TEST PLUG (PETE'S PLUG)		ROUND DUCT (CROSS SECTION)
	PRESSURE REDUCING VALVE - (PRV)		RISE OR DROP IN ROUND OVAL DUCT
	SAFETY OR RELIEF VALVE	24"x12"	DUCT SIZE, INSIDE CLEAR DIMENSION IN INCHES
	PIPE ANCHOR	RISE	DUCT RISE
	BLIND FLANGE		DROP OR RISE IN SUPPLY DUCT
D	DRAIN	24"x18"+1"L	ACCOUSTICAL LINING IN DUCT, INSIDE CLEAR DIMENSION IN INCHES
	GLOBE VALVE		TURNING VANES IN DUCT
	SOLENOID VALVE	H.D.	HAND DAMPER
FD	FLOOR DRAIN, FLOOR SINK OR ROOF DRAIN	R.D.	REMOTE DAMPER
	STEAM TRAP	F.S.D.	COMBINATION SMOKE/FIRE DAMPER
	DIRT LEG	A.D.	ACCESS DOOR FOR FIRE DAMPER
SHWS	SNOWMELT HEATING WATER SUPPLY		FACTORY MADE DUCT CONNECTION
SHWR	SNOWMELT HEATING WATER RETURN		SUPPLY AIR DIRECTION
HWS	BUILDING HOT (HEATING) WATER SUPPLY		RETURN AIR OR EXHAUST DIRECTION
HWR	BUILDING HOT (HEATING) WATER RETURN		SUPPLY DIFFUSER
GHWS	GLYCOL HEATING WATER SUPPLY		RETURN AIR GRILLE
GHWR	GLYCOL HEATING WATER RETURN		EXHAUST GRILLE
CHWS	CHILLED WATER SUPPLY		BRANCH DUCT TAKE-OFF
CHWR	CHILLED WATER RETURN		PARALLEL BLADE DAMPER
	LOW PRESSURE STEAM		OPPOSED BLADE DAMPER
	LOW PRESSURE CONDENSATE	S	TEMPERATURE SENSOR
	MEDIUM PRESSURE STEAM		DROP IN PIPE
	MEDIUM PRESSURE CONDENSATE		RISE IN PIPE
	HIGH PRESSURE STEAM		VALVE IN RISE
	HIGH PRESSURE CONDENSATE		UNION
A	AIR		GATE VALVE
	COLD WATER		BALL VALVE
	DOMESTIC HOT WATER		2 WAY CONTROL VALVE
	SOIL OR WASTE		3 WAY CONTROL VALVE
	VENT		CONTROL VALVE (PLAN VIEW)
G	GAS		CHECK VALVE
CA	COMPRESSED AIR		BUTTERFLY VALVE
W	WATER MAIN - (OUTSIDE)		PLUG VALVE
SD	DUCT SMOKE DETECTOR		CAP
SCW	SOFT COLD WATER		CONCENTRIC REDUCER
S.A.	SUPPLY AIR DUCTWORK		ECCENTRIC REDUCER
R.A.	RETURN AIR DUCTWORK	OR	GAUGE COCK (COCK TO BE BALL VALVE)
EXH.	EXHAUST AIR DUCTWORK		GAUGE WITH GAUGE COCK (COCK TO BE BALL VALVE)
O.A.	OUTSIDE AIR DUCTWORK		FLOW CONTROLLER OR BALANCE VALVE
F.O.	FLAT OVAL DUCTWORK		STRAINER
NK.	NECK, DIFFUSER OR GRILLE		THERMOMETER OR GAUGE WELL

SITE CONDITIONS

LOCATION	ELEVATION (FEET)	SUMMER DESIGN TEMPERATURES (°F)		WINTER DESIGN TEMPERATURES (°F)	REMARKS
		DRY BULB	WET BULB	DRY BULB	
KAYSVILLE, UTAH	4,357	94.3	60.8	9.4	-

PROJECT NOTES

GENERAL PROJECT NOTES:

A. ALL ITEMS LOCATED ABOVE THE CEILING PLENUM SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABLED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 50 WHEN TESTED WITH ASTM E84 OR UL-723.

GENERAL COMISSIONING NOTES:

A. THE BUILDING SHALL BE COMMISSIONED IN COMPLIANCE WITH THE INTENT AND APPLICABLE COMPONENTS OF THE FOLLOWING:
   1. BUILDING COMMISSIONING ASSOCIATION'S NEW CONSTRUCTION BUILDING COMMISSIONING BEST PRACTICES
   2. ASHRAE GUIDELINE 0 – THE COMMISSIONING PROCESS
   3. ASHRAE STANDARD 202 - THE COMMISSIONING PROCESS FOR BUILDING SYSTEMS.
   4. IEEC CODE REQUIREMENTS – SEE BELOW
B. IEEC CODE REQUIREMENTS
   1. BUILDING COMMISSIONING AND SYSTEM BALANCING IS REQUIRED. COMISSIONING PLAN SHALL BE DEVELOPED BY AN APPROVED AGENCY THAT INCLUDES THE FOLLWOING ITEMS:
      a. A NARRATIVE DESCRIPTION OF THE ACTIVITIES THAT WILL BE ACCOMPLISHED DURING EACH PHASE OF COMMISSIONING, INCLUDING THE PERSONNEL INTENDED TO ACCOMPLISH EACH OF THE ACTIVITIES.
      b. A LISTING OF THE SPECIFIC EQUIPMENT, APPLIANCES OR SYSTEMS TO BE TESTED AND A DESCRIPTION OF THE TESTS TO BE PERFORMED.
      c. FUNCTIONS TO BE TESTED INCLUDING, BUT NOT LIMITED TO, CALIBRATIONS AND ECONOMIZER CONTROLS.
      d. CONDITIONS UNDER WHICH THE TEST WILL BE PERFORMED. TESTING SHALL AFFIRM WINTER AND SUMMER DESIGN CONDITIONS AND FULL OUTSIDE AIR.
      e. MEASURABLE CRITERIA FOR PERFORMANCE.
   2. FUNCTIONAL TESTING SHALL BE PROVIDED FOR ALL APPLICABLE SYSTEMS LISTED IN THE INTERNATIONAL ENERGY CONSERVATION CODE SECTIONS C408.2.3.1 THROUGH C408.2.3.3. FUNCTIONAL PERFORMANCE TESTING SPECIFIED IN THESE SECTIONS SHALL BE WITNESSED AND DOCUMENTED BY AN APPROVED AGENCY. THE REPORTING COMMISSIONING PROFESSIONAL SHALL BE PRESENT FOR ANY FUNCTIONAL PERFORMANCE TESTS BEING CONDUCTED.
   3. THE BUILDINGS OPERATIONS AND MAINTENANCE DOCUMENTS SHALL BE PROVIDED TO THE OWNER AND SHALL CONSIST OF MANUFACTURER'S INFORMATION, SPECIFICATIONS, AND RECOMMENDATIONS, PROGRAMMING PROCEDURES AND DATA POINTS, NARRATIVES, AND OTHER MEANS OF ILLUSTRATING TO THE OWNER HOW THE BUILDING EQUIPMENT AND SYSTEMS ARE INTENDED TO BE INSTALLED, MAINTAINED AND OPERATED. REQUIRED REGULAR MAINTENANCE ACTIONS FOR EQUIPMENT AND SYSTEMS SHALL BE CLEARLY STATED ON A READILY ACCESSIBLE LABEL. THE LABEL SHALL INCLUDE THE TITLE OR PUBLICATION NUMBER FOR THE OPERATION AND MAINTENANCE MANUAL FOR THAT PARTICULAR MODEL AND TYPE OF PRODUCT. SEE SPECIFICATION SECTION 230550.
   4. A PRELIMINARY REPORT OF COMMISSIONING TEST PROCEDURES AND RESULTS SHALL BE COMPLETED AND CERTIFIED BY THE APPROVED AGENCY AND PROVIDED TO THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT. THE REPORT SHALL BE ORGANIZED WITH MECHANICAL AND SERVICE HOT WATER FINDINGS IN SEPARATE SECTIONS TO ALLOW INDEPENDENT REVIEW. THE REPORT SHALL BE IDENTIFIED AS "PRELIMINARY COMMISSIONING REPORT" AND SHALL IDENTIFY:
      a. ITEMIZATION OF DEFICIENCIES FOUND DURING TESTING REQUIRED BY THIS SECTION THAT HAVE NOT BEEN CORRECTED AT THE TIME OF REPORT PREPARATION.
      b. DEFERRED TESTS THAT CANNOT BE PERFORMED AT THE TIME OF REPORT PREPARATION BECAUSE OF CLIMATIC CONDITIONS.
      c. CLIMATIC CONDITIONS REQUIRED FOR THE PERFORMANCE OF THE DEFERRED TESTS.
      d. A COPY OF THE PRELIMINARY COMMISSIONING REPORT BE MADE AVAILABLE FOR REVIEW BY THE CODE OFFICIAL.
   5. A REPORT OF TEST PROCEDURES AND RESULTS IDENTIFIED AS "FINAL COMMISSIONING REPORT" SHALL BE DELIVERED TO THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT. THE REPORT SHALL BE ORGANIZED WITH MECHANICAL SYSTEM AND SERVICE HOT WATER SYSTEM FINDINGS IN SEPARATE SECTIONS TO ALLOW INDEPENDENT REVIEW. THE REPORT SHALL INCLUDE THE FOLLOWING:
      a. RESULTS OF FUNCTIONAL PERFORMANCE TESTS.
      b. DISPOSITION OF DEFICIENCIES FOUND DURING TESTING, INCLUDING DETAILS OF CORRECTIVE MEASURES USED OR PROPOSED.
      c. FUNCTIONAL PERFORMANCE TEST PROCEDURES USED DURING THE COMMISSIONING PROCESS INCLUDING MEASURABLE CRITERIA FOR TEST ACCEPTANCE, PROVIDED HEREIN FOR REPEATABILITY.

MINIMUM VENTILATION REQUIREMENTS:
VENTILATION CALCULATIONS ARE PER IMC 2021
APPLICABLE OCCUPANCY CLASSIFICATIONS:

EDUCATION CLASSROOM (AGE 9 PLUS)
PEOPLE OUTDOOR AIRFLOW RATE: 10 CFM/PERSON
AREA OUTDOOR AIRFLOW RATE: 0.12 CFM/SQFT

OFFICE SPACES AND CONFERENCE ROOMS
PEOPLE OUTDOOR AIRFLOW RATE: 5 CFM/PERSON
AREA OUTDOOR AIRFLOW RATE: 0.06 CFM/SQFT

METAL SHOP
PEOPLE OUTDOOR AIRFLOW RATE: 10 CFM/PERSON
AREA OUTDOOR AIRFLOW RATE: 0.18CFM/SQFT
EXHAUST AIRFLOW RATE: 0.5 CFM/SQFT

CLASSROOM / OFFICE AREA
CLASSROOM OCCUPANCY: 42 PEOPLE
SQUARE FOOTAGE: 1,134 SQFT
CALCULATED CLASSROOM MINIMUM VENTILATION RATE: 975 CFM

OFFICE / CONFERENCE OCCUPANCY: 30 PEOPLE
SQUARE FOOTAGE: 2,440 SQFT
CALCULATED CLASSROOM MINIMUM VENTILATION RATE: 300 CFM

CALCULATED AREA BUILDING LEAKANGE RATE: 1725 CFM
REQUIRED MAKEUP FOR EXHAUST: 400 CFM

PROVIDED MIN. OUTSIDE AIR: 2,125 CFM

WELDING & FABRICATION AREA
OCCUPANCY: 70 PEOPLE SQUARE FOOTAGE: 12,874 SQFT
CALCULATED MINIMUM VENTILATION RATE: 2,390 CFM

CALCULATED AREA BUILDING LEAKANGE RATE: 2,975 CFM
CALCULATED AREA MIN. EXHAUST AIRFLOW RATE: 6,440 CFM
REQUIRED MAKEUP FOR EXHAUST: 7,300 CFM

PROVIDED MIN. OUTSIDE AIR: 7,400 CFM

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

HEATH
Engineering Company

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

PROFESSIONAL ENGINEER
10403362
JEFFREY BRIAN ANDERSON
01/21/21
STATE OF UTAH

PROJECT NOTES

MH000.2

(801) 355-5915

11/15/2024 1:54:18 PM

E D C B A

1 2 3 4 5 6

SPLIT SYSTEM AIR CONDITIONING UNITS

SYMBOL	COOLING @ 95 DEG. F			OUTDOOR UNIT										INDOOR UNIT										AREA SERVED	REMARKS
	MAXIMUM CAPACITY - BTU/H	MINIMUM CAPACITY - BTU/H	CONNECTED CAPACITY - BTU/H	MANUFACTURER	MODEL	MCA	FUSE SIZE - AMPS	AHRI SEER RATING	EER	UNIT WEIGHT - LBS	ELECTRICAL			SYMBOL	AIR FLOW CFM	MANUFACTURER	MODEL	FLA	UNIT WEIGHT - LBS	ELECTRICAL				
											VOLTS	PHASE	HERTZ							VOLTS	PHASE	HERTZ		
SAC-1	24,00	5,500	21,200	DAIKIN	RK24AXVJU	13.4	20	19	12.2	106	208	1	60	IDU-1	700	DAIKIN	FTK24AXVJU	0.5	31	208	1	60	IT ROOM - 115	PROVIDE OUTDOOR UNIT WITH WIND BAFFLE. PROVIDE INDOOR UNIT WITH WIRED REMOTE CONTROLLER. PROVIDE CONDENSATE LIFT PUMP.
SEE SPECIFICATION SECTION 232300																									

ROOFTOP EXHAUST FAN

SYMBOL	AIRFLOW CFM	TOTAL STATIC PRESSURE IN. W.C.	FAN RPM	BHP	ELECTRICAL				DRIVE TYPE	MANUFACTURER	MODEL	DUTY	SYSTEM WEIGHT	MAXIMUM INLET SOUND LEVELS - dB									REMARKS
					VOLTS	PHASE	HERTZ	MOTOR HP						OCTAVE BAND									
														1	2	3	4	5	6	7	8	LWA	dBA	
REF-1	3,500	0.25	978	0.48	115	1	60	1	DIRECT	GREENHECK	G-180-VG	WELDING - 125	175	79	77	79	74	68	69	60	52	76	65	INTERLOCKED WITH MAU-1
REF-2	10,000	0.35	840	2	460	3	60	5	DIRECT	GREENHECK	G-300-VG	WELDING - 120	355	83	90	83	75	72	69	61	56	80	69	INTERLOCKED WITH EC-1
REF-3	10,000	0.35	840	2	460	3	60	5	DIRECT	GREENHECK	G-300-VG	FABRICATION - 124	355	83	90	83	75	72	69	61	56	80	69	INTERLOCKED WITH EC-2
REF-4	3,500	0.25	978	0.48	115	1	60	1	DIRECT	GREENHECK	G-180-VG	WELDING - 125	175	79	77	79	74	68	69	60	52	76	65	INTERLOCKED WITH MAU-2
REF-5	400	0.5	1563	0.07	115	1	60	1/10	DIRECT	GREENHECK	G-090-VG	RESTROOMS	75	79	74	68	63	58	54	50	43	66	55	-
REF-6	300	0.65	1657	0.08	115	1	60	1/10	DIRECT	GREENHECK	CUE-090-VG	SANDING / GRINDING 121	30	81	76	70	65	60	56	51	44	68	56	-
SEE SPECIFICATION SECTION 233423																									

IN-LINE TRANSFER FAN

SYMBOL	AIRFLOW CFM	TOTAL STATIC PRESSURE IN. W.C.	FAN RPM	BHP	ELECTRICAL				DRIVE TYPE	MANUFACTURER	MODEL	DUTY	SYSTEM WEIGHT	MAXIMUM INLET SOUND LEVELS - dB									REMARKS
					VOLTS	PHASE	HERTZ	MOTOR HP						OCTAVE BAND									
														1	2	3	4	5	6	7	8	LWA	dBA	
ITF-1	750	0.5	1378	0.1	115	60	1	1/4	DIRECT	GREENHECK	SQ-100-VG	STORAGE - 117	80	-	-	-	-	-	-	-	-	-	-	-
SEE SPECIFICATION SECTION 233423																									

EVAPORATIVE COOLER

SYMBOL	SUPPLY AIR (CFM)	ESP (IN. W.G.)	AIR TEMPERATURE (°F)			ELECTRICAL			MOTOR HP	MOTOR AMPS	LOCATION	CHAMPION MODEL #	WEIGHT (LBS.)	WEIGHT (LBS.)	REMARKS
			ENT. DB	ENT. WB	LAT	VOLTS	PHASE	HERTZ							
EC-1	10,000	0.4	95	65	68	460	3	60	3	4.8	FABRICATION - 124	AD-15012	1,250	1,250	-
EC-2	10,000	0.4	95	65	68	460	3	60	3	4.8	FABRICATION - 124	AD-15012	1,250	1,250	-
SEE SPECIFICATION SECTION 237350															

GAS FIRED UNIT HEATER

SYMBOL	GAS INPUT (BTUH)	HEAT OUTPUT (BTUH)	NOMINAL AIRFLOW (CFM)	ELECTRICAL					MODINE MODEL	DUTY	REMARKS
				VOLTS	HETRZ	PHASE	AMPS	HP			
GUH-1	150,000	121,000	2140	115	60	1	5.1	1/6	PTX-150	WELDING - 125	PROVIDE HIGH ALTITUDE KIT
GUH-2	150,000	121,000	2140	115	60	1	5.1	1/6	PTX-150	FABRICATION - 124	PROVIDE HIGH ALTITUDE KIT
GUH-3	150,000	121,000	2140	115	60	1	5.1	1/6	PTX-150	STORAGE - 117	PROVIDE HIGH ALTITUDE KIT
SEE SPECIFICATION SECTION 238300											

ELECTRICAL CABINENT WALL HEATER

SYMBOL	HEATING CONDITIONS		ELECTRICAL				MARLEY MODEL	TYPE	DUTY	REMARKS
	HEAT OUTPUT (KW)	BTU/H	AMPS	VOLTS	HETRZ	PHASE				
ECH-1	1.5	5,118	12.5	120	60	1	AWH3150F	ARCHITECTURAL HEAVY-DUTY WALL HEATER	FIRE RISER - 114	-
ECH-2	1.5	5,118	12.5	120	60	1	AWH3150F	ARCHITECTURAL HEAVY-DUTY WALL HEATER	VESTIBULE - 123	-
SEE SPECIFICATION SECTION 230514										

INLINE ELECTRIC DUCT HEATER

SYMBOL	HEAT OUTPUT (KW)	DUCT DIMENSIONS	ELECTRICAL				GREENHECK MODEL	HEATER CONTROL	DUTY	REMARKS
			AMPS	VOLTS	HETRZ	PHASE				
IDH-2	5.5	14" x 14"	26.442	208	60	1	IDHE	SCR	ITF-1	-
SEE SPECIFICATION SECTION 230514										

VARIABLE VOLUME WITH ELECTRIC REHEAT

SYMBOL	ROOM SERVED	BALANCE AIRFLOW CLG. CFM	MINIMUM AIRFLOW CFM	MAX. AIRFLOW HTG. CFM.	ENT. AIR TEMP (°F)	ELECTRIC REHEAT COIL					PRICE SIZE	MIN. INLET SIZE IN.	REMARKS
						HTG. CAPACITY KW	VOLTS	PHASE	MCA	MOP			
VAVR-101	LOBBY	700	135	135	55	1.5	208	1	9.0	15	9	9	-
VAVR-102	STUDENT REFRESH	1,485	320	320	55	3.5	208	1	21.0	25	14	14	-
VAVR-108	CLASSROOM	1,980	450	450	55	4.0	208	1	24.0	25	16	16	-
VAVR-109	FACULTY	1,100	235	235	55	2.5	208	1	15.0	15	12	12	-
VAVR-111	CONFERENCE	1,000	235	235	55	2.5	208	1	15.0	15	12	12	-
VAVR-114	OFFICE	150	60	100	55	1.0	208	1	6.0	15	6	6	-

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PROJECT **24-038**

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HEATH
Engineering Company

DAVIS TECHNICAL COLLEGE
WELDING TECHNOLOGY BUILDING
355 SOUTH 650 EAST
KAYSVILLE, UT 84037

PROFESSIONAL ENGINEER
10408362
JEFFREY BRIAN ANDERSON
01/24/25
STATE OF UTAH

MECHANICAL SCHEDULES

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PACKAGED MAKE-UP AIR UNIT

PACKAGED MAKE-UP AIR UNIT

SYMBOL	MAX UNIT DIMENSIONS (INCHES)			DUTY	MINIMUM OUTSIDE AIR FLOW (CFM)	MAX UNIT WEIGHT (LBS)	MANUFACTURER	MODEL	MAXIMUM CASING RADIATED SOUND LEVELS - dB										REMARKS
	L	W	H						63 Hz	125 Hz	250 Hz	500 Hz	1kHz	2kHz	4kHz	8kHz	LwA	dBA	
MAU-1	257	97	50	FABRIACTION - 124	3,700	3,375	GREENHECK	IGX-P127-H32-MF3-S	84	83	83.1	85.1	81.9	79	74.9	69	87	76	-
MAU-2	257	97	50	WELDING - 125	3,700	3,375	GREENHECK	IGX-P127-H32-MF3-S	84	83	83.1	85.1	81.9	79	74.9	69	87	76	-
SEE SPECIFICATION SECTION 237300																			

SUPPLY AIR FAN

SERVICE	TOTAL AIRFLOW (CFM)	STATIC PRESSURE (IN. W.C.)		FAN RPM	QNTY OF FANS	MOTOR HP	MOTOR BHP	MOTOR ELECTRICAL (V/C/P)	REMARKS
		EXTERNAL	TOTAL						
MAU-1	10,000	0.75	2.3	1187	1	7.5	6.3	460/3/60	SHAFT GROUNDED MOTOR
MAU-2	10,000	0.75	2.3	1187	1	7.5	6.3	460/3/60	SHAFT GROUNDED MOTOR
SEE SPECIFICATION SECTION 237300									

UNIT ELECTRICAL

SERVICE	VOLT.	HERTZ.	PHASE	MCA	MOP	SCCR	REMARKS
MAU-1	460	60	3	16.3	25	5kA	-
MAU-2	460	60	3	16.3	25	5kA	-
SEE SPECIFICATION SECTION 237300							

COOLING SECTION

SERVICE	ENTERING BULB (°F)		LEAVING BULB (°F)		COIL TYPE	COOLING MEDIA	COOLING CONTROL	FILTER TYPE	REMARKS
	DRY	WET	DRY	WET					
MAU-1	94.3	60.8	63.8	60.8	EVAPORATIVE	GLASDEK	AUTOMATIC DRAIN FLUSH VALVE	2 IN. ALUMINUM MESH	-
MAU-2	94.3	60.8	63.8	60.8	EVAPORATIVE	GLASDEK	AUTOMATIC DRAIN FLUSH VALVE	2 IN. ALUMINUM MESH	-
SEE SPECIFICATION SECTION 237300									

HEATING SECTION

SERVICE	TYPE	TEMPERATURE (°F)		ENERGY CHARACTERISTICS			GAS PRESSURE		GAS CONNECTION SIZE (IN)	BUILDING GAS PRESSURE	REMARKS
		WINTER DB	MAX LAT	GAS INPUT (MBH)	HEAT OUTPUT (MBH)	EFFICIENCY	MAX	MIN			
MAU-1	INDIRECT NATURAL GAS	9.0	86.7	878.8	711.8	80%	0.6 PSI	6 IN. W.G.	3/4"	1 TO 2 PSI	-
MAU-2	INDIRECT NATURAL GAS	9.0	86.7	878.8	711.8	80%	0.6 PSI	6 IN. W.G.	3/4"	1 TO 2 PSI	-
SEE SPECIFICATION SECTION 237300											

ROOFTOP UNIT

PACKAGED VENTILATOR

SYMBOL	UNIT DIMENSIONS (INCHES)			UNIT WEIGHT (LBS)	MIN. OUTSIDE AIR FLOW (CFM)	ASHRAE 90.1 MIN REQ.		CALCULATED EFFICIENCY		FAN POWER - W/CFM	LOCATION	MANUFACTURER	MODEL	MAXIMUM CASING RADIATED SOUND LEVELS - dB								REMARKS
	L	W	H			EER	IEER	EER	IEER					63 Hz	125 Hz	250 Hz	500 Hz	1kHz	2kHz	4kHz	8kHz	Lw	LwA	
RTU-1	190.3	98.3	76.2	3,850	2125	10.8	14.0	11.34	19.0	0.58	OUTDOOR	GREENHECK	RV-45-151-J-G2	84	88	90	85	85	81	80	79	95	90	-
SEE SPECIFICATION SECTION 237300																								

SUPPLY AIR FAN

SERVICE	TOTAL AIRFLOW (CFM)	EXTERNAL STATIC PRESSURE (IN. W.C.)	TOTAL STATIC PRESSURE (IN. W.C.)	FAN RPM	QNTY OF FANS	MOTOR HP	MOTOR BHP	REMARKS
RTU-1	6,500	1.1	3.0	1750	1	5	4.8	SHAFT GROUNDED MOTOR
SEE SPECIFICATION SECTION 237300								

EXHAUST AIR FAN

SERVICE	TOTAL AIRFLOW (CFM)	EXTERNAL STATIC PRESSURE (IN. W.C.)	TOTAL STATIC PRESSURE (IN. W.C.)	FAN RPM	QNTY OF FANS	MOTOR HP	MOTOR BHP	REMARKS
RTU-1	5,200	0.5	0.7	1145	1	1-1/2	1.28	SHAFT GROUNDED MOTOR
SEE SPECIFICATION SECTION 237300								

COOLING SECTION

SERVICE	TOTAL COIL CAPACITY (MBH)	SENSIBLE COIL CAPACITY (MBH)	AIR TEMP. (°F)		FACE AREA - SQFT	ROWS	FINS PER INCH	FACE VELOCITY (FPM)	COIL PRESSURE DROP (IN. W.C.)	COMPRESSOR TYPE	NOMINAL TONS	COMPRESSOR RLA / MRC	COMPRESSOR QUANTITY	REFRIGERANT TYPE	REMARKS
			ENT. DB / WB	LVG. DB / WB											
RTU-1	174.8	171	81.3 / 61.5	51.9 / 51.1	20.2	5	14	321	0.182	INVERTER SCROLL	15	27.9	1	R-454B	-
SEE SPECIFICATION SECTION 237300															

HEATING SECTION

SERVICE	TYPE	ENERGY CHARACTERISTICS		AIR TEMP. (°F)		FURNACE CONTROL	TEMP RISE (°F)		REMARKS
		GAS INPUT (MBH)	HEAT OUTPUT (MBH)	ENT.	LVG.		MIN.	MAX.	
RTU-1	NAT. GAS	251	203	51.5	85.5	12:1 MODULATING	3	34	80% MIN. EFFICIENCY
SEE SPECIFICATION SECTION 237300									

HOT GAS REHEAT

SERVICE	HOT GAS REHEAT CAPACITY (MBH)	LEAVING AIR TEMPERATURE (°F)	REMARKS
RTU-1	193.2	82.9	-
SEE SPECIFICATION SECTION 237300			

UNIT ELECTRICAL

SERVICE	VOLT.	HERTZ.	PHASE	MCA	MOP	REMARKS
RTU-1	460	60	3	47.8	60	-
SEE SPECIFICATION SECTION 237300						

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PROJECT **24-038**

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Engineering Company

DAVIS TECHNICAL COLLEGE
WELDING TECHNOLOGY BUILDING
355 SOUTH 650 EAST
KAYSVILLE, UT 84037

PROFESSIONAL ENGINEER
10403362
JEFFREY BRIAN ANDERSON
01/24/24
STATE OF UTAH

MECHANICAL SCHEDULES

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GRILLE AND DIFFUSER SCHEDULE

SYMBOL	NOM. FACE SIZE	DESCRIPTION	MANUFACTURER	MODEL	REMARKS
S-1	12"x12"	SURFACE MOUNT	TITUS	OMNI	PROVIDE RAPID FRAME MOUNT
S-2	VARIES	SIDEWALL	TITUS	300RL	-
S-3	-	DRUM LOUVER	TITUS	DL	-
S-4	-	HIGH CAPACITY VENT. MODULE	TITUS	TVM-6	10,000 CFM CAPACITY - 21"x15" OUTLET SIZE x 6
R-1	VARIES	SIDEWALL	TITUS	25RL	FIXED DEFLECTION
T-1	VARIES	CEILING	TITUS	25RL	FIXED DEFLECTION
T-2	VARIES	SIDEWALL	TITUS	25RL	FIXED DEFLECTION
E-1	12"x12"	SURFACE MOUNT	TITUS	25RL	FIXED DEFLECTION
E-2	12"x8"	SIDEWALL	TITUS	25RL	FIXED DEFLECTION

SEE SPECIFICATION SECTION 233713

MOTORIZED DAMPERS

SYMBOL	SIZE (IN)		BLADE ORIENTATION	MANUFACTURER	MODEL	NORMAL POSITION	SERVICE	LEAKAGE CLASS	LOCATION	REMARKS
	WIDTH	HEIGHT								
MD-1	24	24	OPPOSED	GREENHECK	VCD-43	CLLOSED	REF-1 ISOLATION	1A-3CFM/SQFT	REF-1 ROOF CURB	-
MD-2	34	34	OPPOSED	GREENHECK	VCD-43	CLLOSED	REF-2 ISOLATION	1A-3CFM/SQFT	REF-2 ROOF CURB	-
MD-3	34	34	OPPOSED	GREENHECK	VCD-43	CLLOSED	REF-3 ISOLATION	1A-3CFM/SQFT	REF-3 ROOF CURB	-
MD-4	24	24	OPPOSED	GREENHECK	VCD-43	CLLOSED	REF-4 ISOLATION	1A-3CFM/SQFT	REF-4 ROOF CURB	-
MD-5	10	10	OPPOSED	GREENHECK	VCD-43	CLLOSED	REF-5 ISOLATION	1A-3CFM/SQFT	REF-5 ROOF CURB	-
MD-6	10	10	OPPOSED	GREENHECK	VCD-43	CLLOSED	REF-6 ISOLATION	1A-3CFM/SQFT	REF-6 ROOF CURB	-
MD-7	27	27	OPPOSED	GREENHECK	VCD-43	CLLOSED	EC-1 ISOLATION	1A-3CFM/SQFT	EC-1 SUPPLY DUCT AT ROOF PLANE	-
MD-8	27	27	OPPOSED	GREENHECK	VCD-43	CLLOSED	EC-2 ISOLATION	1A-3CFM/SQFT	EC-2 SUPPLY DUCT AT ROOF PLANE	-

SEE SPECIFICATION SECTION 233300

WELDING FUME EXTRACTOR

SYMBOL	AIRFLOW - CFM		ELECTRICAL					MANUFACTURER	MODEL	DUTY	REMARKS
	MINIMUM	MAXIMUM	HP	INPUT AMPS	VOLTS	HETRZ	PHASE				
WFE-1	4,000	10,500	30	40.5	460	60	3	MILLER	FILTAIR 12000	WEST-CENTRAL WELDING BOOTHS	-
WFE-2	4,000	10,500	30	40.5	460	60	3	MILLER	FILTAIR 12000	PROJECT WORK TABLES	-
WFE-3	4,000	10,500	30	40.5	460	60	3	MILLER	FILTAIR 12000	NORTHWEST WELDING BOOTHS	-
WFE-4	4,000	10,500	30	40.5	460	60	3	MILLER	FILTAIR 12000	NORTHEAST WELDING BOOTHS	-
WFE-5	4,000	10,500	30	40.5	460	60	3	MILLER	FILTAIR 12000	EAST-CENTRAL WELDING BOOTHS	-
WFE-6	4,000	10,500	30	40.5	460	60	3	MILLER	FILTAIR 12000	SOUTH WELDING BOOTHS	-
WFE-7	4,000	10,500	30	40.5	460	60	3	MILLER	FILTAIR 12000	EXTRACTION HOODS	-

SPARK COOLER

SYMBOL	SIZE (IN)	MANUFACTUER	MODEL	SERVICE	FABRICATION MATERIAL	REMARKS
SC-1	24"Ø	MILLER	SC-24-C-4	WFE-1	PAINTED CARBON STEEL	-
SC-2	24"Ø	MILLER	SC-24-C-4	WFE-2	PAINTED CARBON STEEL	-
SC-3	24"Ø	MILLER	SC-24-C-4	WFE-3	PAINTED CARBON STEEL	-
SC-4	24"Ø	MILLER	SC-24-C-4	WFE-4	PAINTED CARBON STEEL	-
SC-5	24"Ø	MILLER	SC-24-C-4	WFE-5	PAINTED CARBON STEEL	-
SC-6	24"Ø	MILLER	SC-24-C-4	WFE-6	PAINTED CARBON STEEL	-
SC-7	24"Ø	MILLER	SC-24-C-4	WFE-7	PAINTED CARBON STEEL	-

EXTRACTION HOOD

SYMBOL	HOOD SIZE (FT)		MANUFACTUER	MODEL	SERVICE	OUTLET SIZE	REMARKS
	WIDTH	HEIGHT					
EH-1	6'	8'	MILLER	LOW PROFILE MODULAR HOOD	TRACK CUTTER	10"Ø	-
EH-2	5'	7'	MILLER	LOW PROFILE MODULAR HOOD	SMALL CUTTING TABLE	10"Ø	-
EH-3	7'	7'	MILLER	LOW PROFILE MODULAR HOOD	CUTTING TABLE	10"Ø	-
EH-4	6'	9'	MILLER	LOW PROFILE MODULAR HOOD	PLASMA TABLE	10"Ø	-
EH-5	4'	6'	MILLER	LOW PROFILE MODULAR HOOD	LASER CUTTER	10"Ø	-
EH-6	7'	7'	MILLER	LOW PROFILE MODULAR HOOD	CARBON ARC WELDING	10"Ø	-

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PROJECT **24-038**

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HEATH
Engineering Company

DAVIS TECHNICAL COLLEGE
WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

PROFESSIONAL ENGINEER
10408342
JEFFREY BRIAN ANDERSON
01/24/25
STATE OF UTAH

MECHANICAL SCHEDULES

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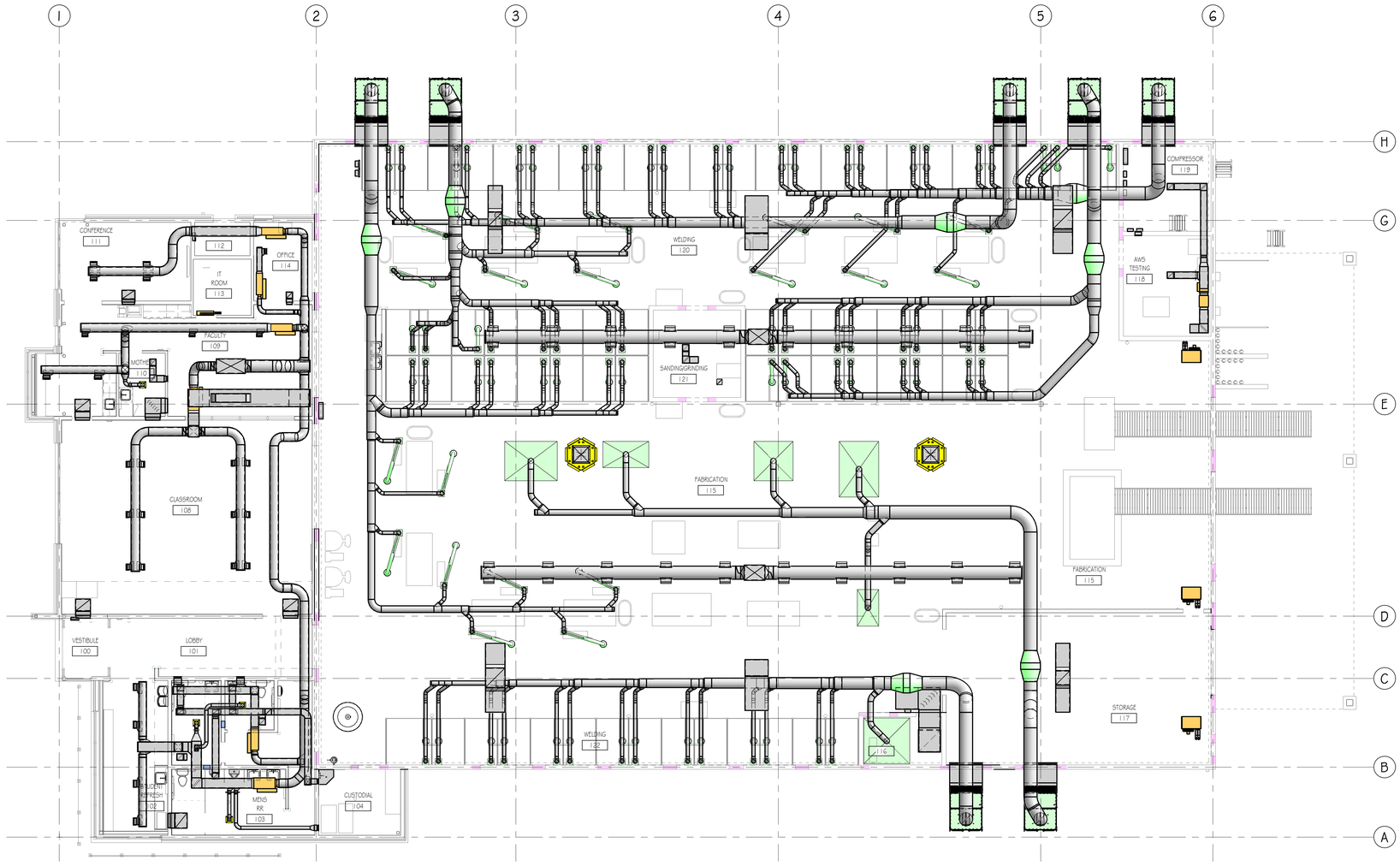

1 MH110.2 **LEVEL 1 OVERALL MECHANICAL PLAN**

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

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LEVEL 1 OVERALL MECHANICAL PLAN

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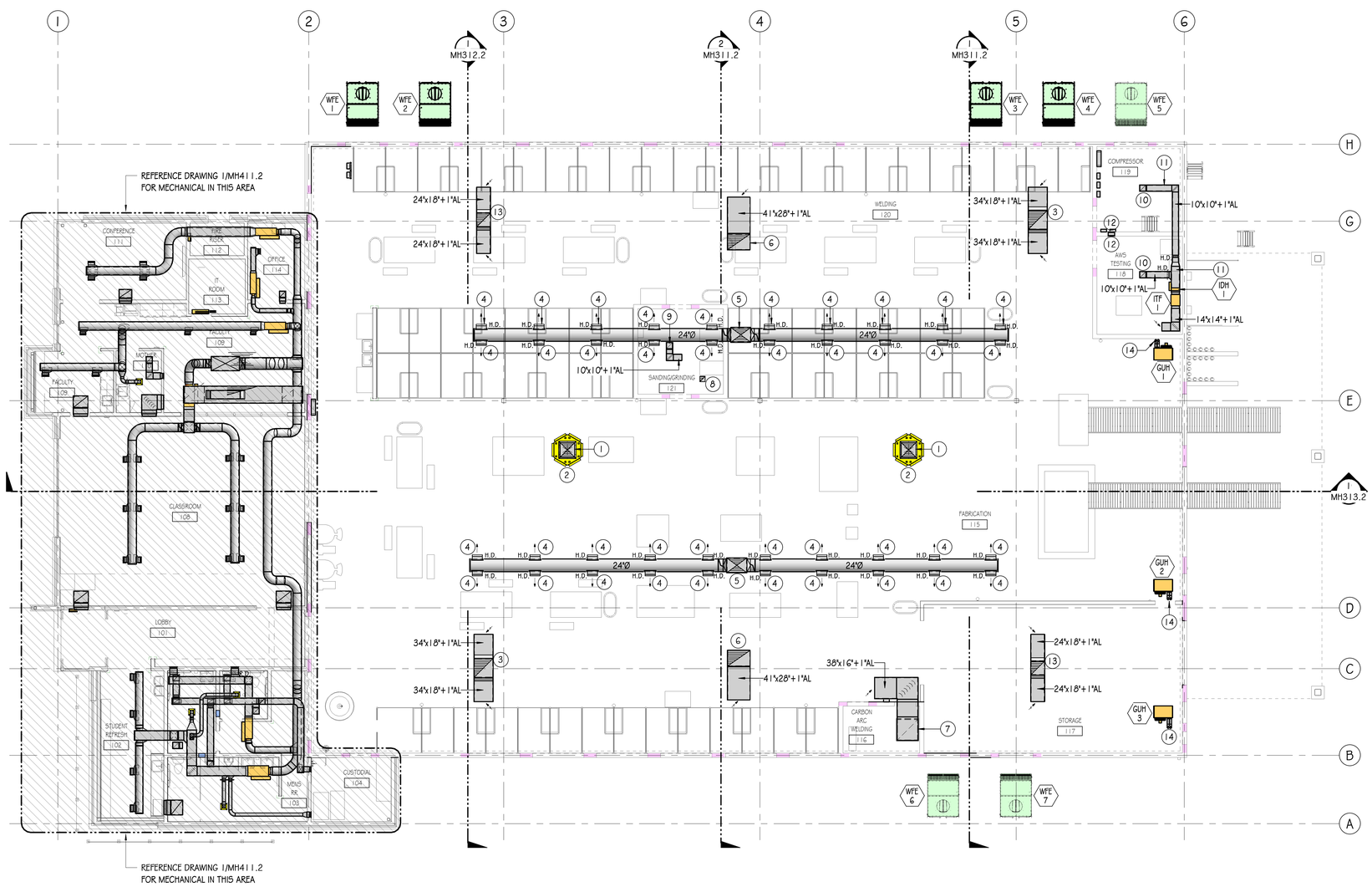

LEVEL 1 MECHANICAL PLAN

1 / MH111.2 SCALE: 1/8" = 1'-0"

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DRAWING NOTES

1		DROP 27"x27" SUPPLY AIR DUCT FROM EVAPORATIVE COOLER ON ROOF. TRANSITION AND CONNECT TO HIGH CAPACITY VENTILATION MODULE. REFERENCE DRAWING 1/MH121.2 FOR CONTINUATION.
2	S-4	10,000 CFM, SIX (6) OUTLET HIGH CAPACITY VENTILATION MODULE.
3		RISE 34"x34"+1"AL EXHAUST AIR DUCT TO EXHAUST FAN ABOVE. REFERENCE DRAWING 1/MH121.2 FOR CONTINUATION.
4	S-3	1,000 CFM, 20"x12" NECK, SUPPLY AIR DIFFUSER.
5		DROP 36"x26"+1"AL SUPPLY AIR DUCT FROM MAKE-UP AIR UNIT ON ROOF. REFERENCE DRAWING 1/MH121.2 FOR CONTINUATION.
6		RISE 41"x28"+1"AL RETURN AIR DUCT TO MAKE-UP AIR UNIT ON ROOF. REFERENCE DRAWING 1/MH121.2 FOR CONTINUATION.
7	T-1	38"x38" NECK, TRANSFER AIR GRILLE.
8		RISE 10"x10" EXHAUST AIR DUCT TO EXHAUST FAN ABOVE, FROM CEILING OF SANDING / GRINDING ROOM BELOW. REFERENCE DRAWING 1/MH121.2 FOR CONTINUATION.
9		DROP 10"x10"+1"AL TRANSFER AIR DUCT INTO CEILING OF SANDING / GRINDING ROOM. ROUTE TRANSFER AIR DUCT LOW ACROSS ROOF OF ROOM.
10		DROP 10"x10"+1"AL TRANSFER AIR DUCT INTO CEILING OF ROOM BELOW.
11		ROUTE TRANSFER AIR DUCT LOW ACROSS ROOF OF ROOM.
12	T-2	12"x12" NECK, TRANSFER AIR OPENING WITH GRILLE ON BOTH SIDES OF OPENING.
13		RISE 24"x24"+1"AL EXHAUST AIR DUCT TO EXHAUST FAN ABOVE. REFERENCE DRAWING 1/MH121.2 FOR CONTINUATION.
14		4" FLUE AND 4" COMBUSTION AIR PIPES. CONNECT TO CONCENTRIC VENT ADAPTER BOX AND RISE UP THROUGH ROOF. REFERENCE DETAIL 6/MH502.

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355 SOUTH 650 EAST
KAYSVILLE, UT 84037

PROFESSIONAL ENGINEER 10403362 JEFFREY BRIAN ANDERSON 01/31/25 STATE OF UTAH

LEVEL 1
MECHANICAL PLAN

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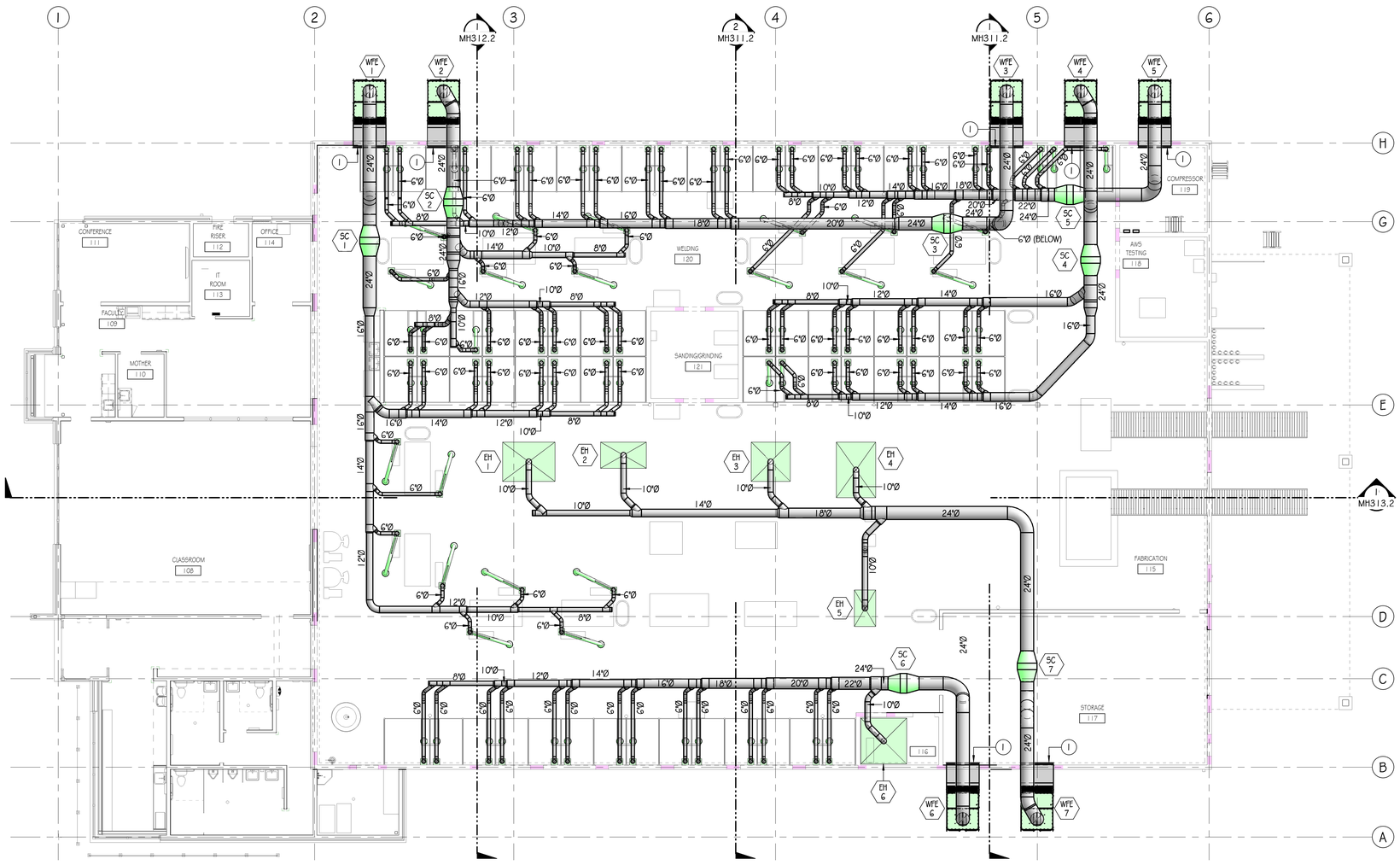
DRAWING NOTES

1	5-3	10,500 CFM, 60"x36" NECK, SUPPLY AIR DIFFUSER. PROVIDE TRIM PIECE TO SEAL AROUND DUCT OPENING.



1 LEVEL 1 MECHANICAL PLAN - EXTRACTOR SYSTEM

1 MH112.2 SCALE: 1/8" = 1'-0"

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10403362
JEFFREY BRIAN ANDERSON
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LEVEL 1 MECH PLAN - EXTRACTOR

MH112.2

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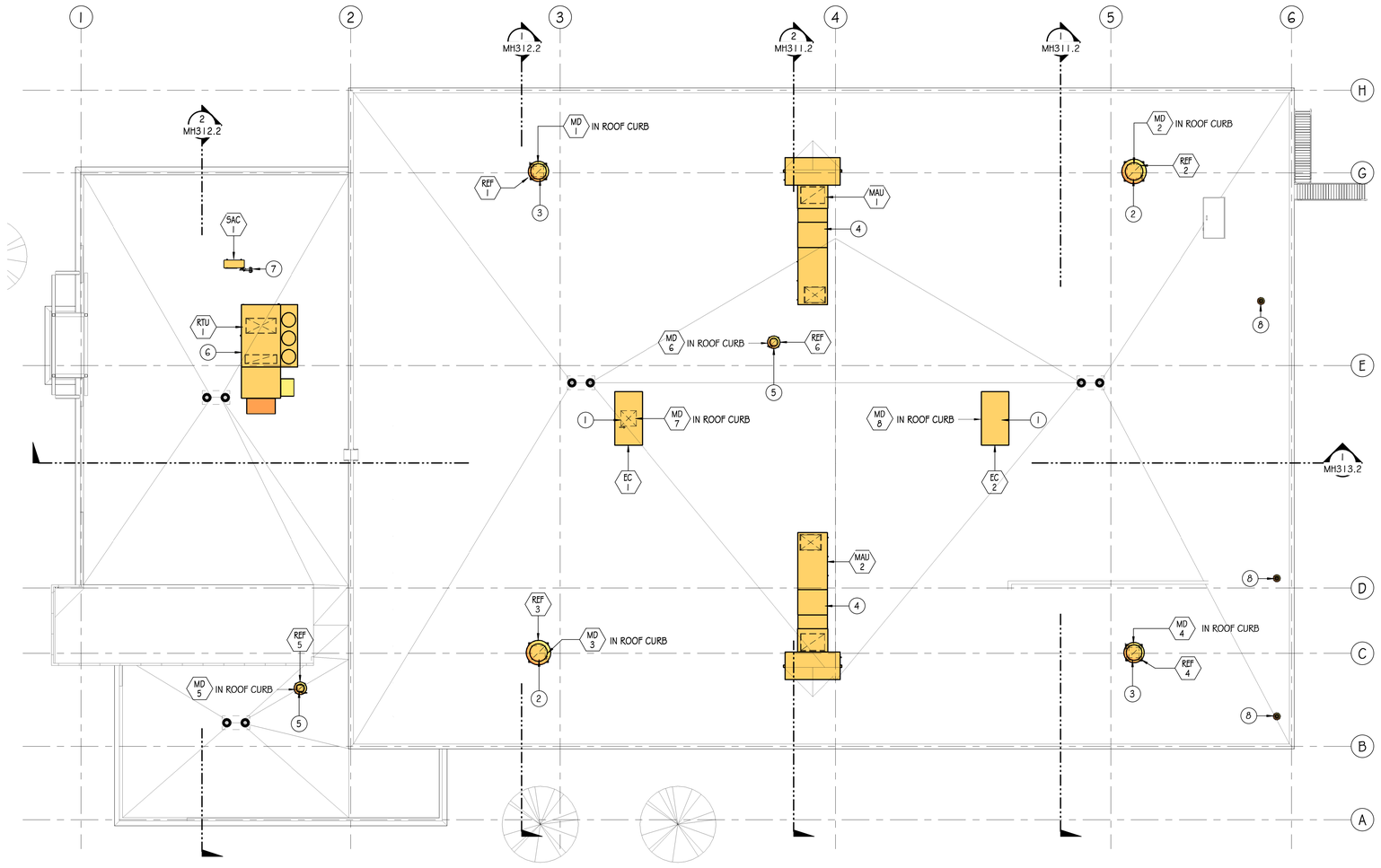

1 MH121.2 ROOF LEVEL MECHANICAL PLAN

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

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DRAWING NOTES

1	DROP 27"x27" SUPPLY AIR DUCT DOWN TO BELOW. TRANSITION AND CONNECT TO EVAPORATIVE COOLER AS REQUIRED. REFERENCE DRAWING 1/MH111.2 FOR CONTINUATION AND DETAIL 7/MH502 FOR ROOF CURB REQUIREMENTS.
2	RISE 34"x34" EXHAUST AIR DUCT FROM BELOW. TRANSITION AND CONNECT TO EXHAUST FAN CURB AS REQUIRED. REFERENCE DRAWING 1/MH111.2 FOR CONTINUATION AND DETAIL 7/MH502.2 FOR ROOF CURB REQUIREMENTS.
3	RISE 24"x24" EXHAUST AIR DUCT FROM BELOW. TRANSITION AND CONNECT TO EXHAUST FAN CURB AS REQUIRED. REFERENCE DRAWING 1/MH111.2 FOR CONTINUATION AND DETAIL 7/MH502.2 FOR ROOF CURB REQUIREMENTS.
4	DROP 36"x36"+1"AL SUPPLY AIR DUCT AND RISE 41"x28"+1"AL RETURN AIR DUCT TO / FROM BELOW. TRANSITION AND CONNECT TO MAKE-UP AIR UNIT AS REQUIRED. REFERENCE DRAWING 1/MH111.2 FOR CONTINUATION AND DETAIL 7/MH502.2 FOR ROOF CURB REQUIREMENTS.
5	RISE 10"x10"+1"AL EXHAUST AIR DUCT FROM BELOW. TRANSITION AND CONNECT TO EXHAUST FAN CURB AS REQUIRED. REFERENCE DRAWING 1/MH411.2 FOR CONTINUATION AND DETAIL 7/MH502 FOR ROOF CURB REQUIREMENTS.
6	DROP 53"x27" SUPPLY AIR DUCT AND RISE 56"x18"+1"AL RETURN AIR DUCT TO / FROM BELOW. TRANSITION AND CONNECT TO ROOFTOP UNIT AS REQUIRED. REFERENCE DRAWING 1/MH411.2 FOR CONTINUATION AND DETAIL 2/MH502.2 FOR ROOF CURB REQUIREMENTS.
7	ROUTE REFRIGERATION PIPING BETWEEN INDOOR AND OUTDOOR SPLIT SYSTEM AS REQUIRED. SEAL ROOF PENETRATIONS WATER TIGHT. REFERENCE DRAWING 1/MH411.2 FOR CONTINUATION.
8	CONCENTRIC VENT ADAPTER, REFERENCE DRAWING 1/MH111.2 FOR CONTINUATION.

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10408342
JEFFREY BRIAN ANDERSON
01/24/25
STATE OF UTAH

ROOF LEVEL MECHANICAL PLAN

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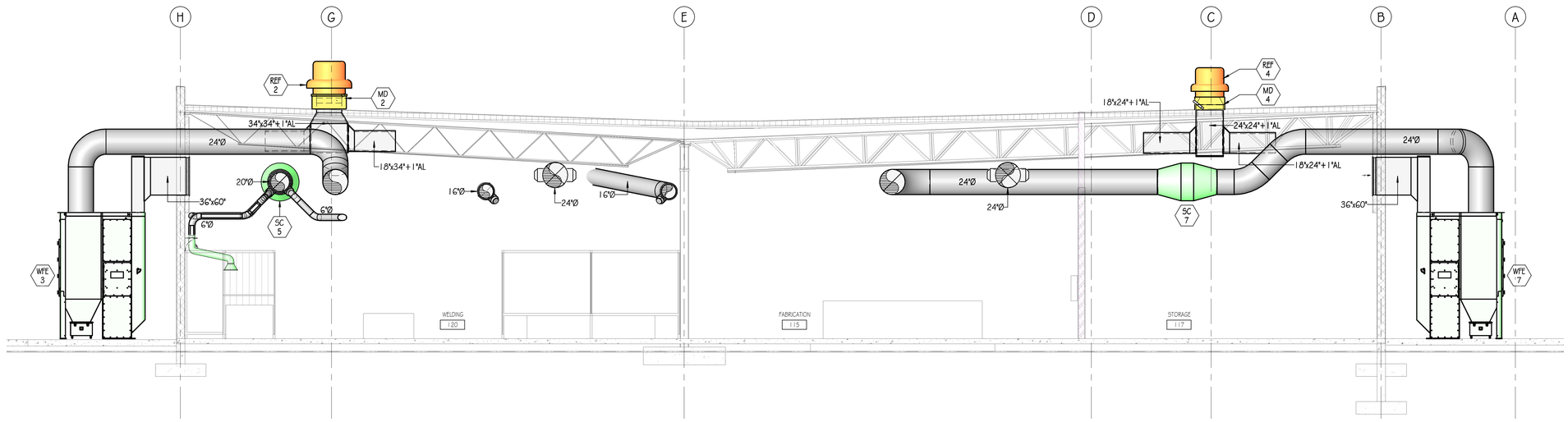
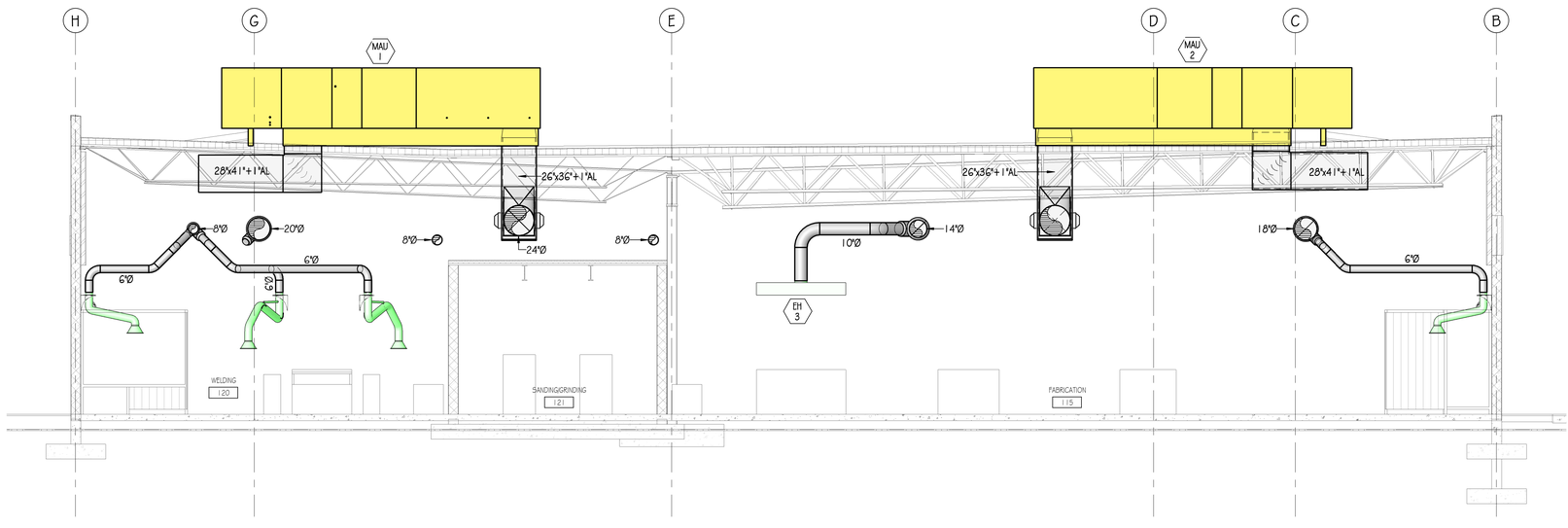


1 MH311.2 **MECHANICAL BUILDING SECTION**

SCALE: 1/4" = 1'-0"

5 2.5 0 5 10



2 MH311.2 **MECHANICAL BUILDING SECTION**

SCALE: 1/4" = 1'-0"

5 2.5 0 5 10

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PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

HEATH
Engineering Company

DAVIS TECHNICAL COLLEGE
WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

PROFESSIONAL ENGINEER
10408362
JEFFREY BRIAN ANDERSON
01/24/25
STATE OF UTAH

MECHANICAL SECTIONS

MH311.2

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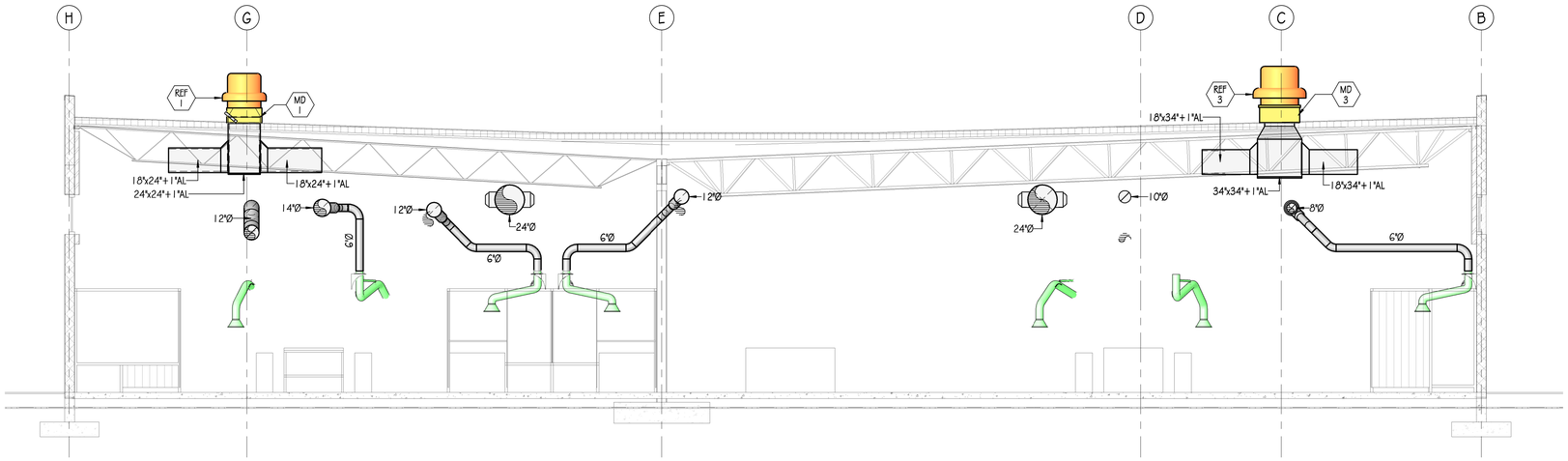

1 MH312.2 **MECHANICAL BUILDING SECTION**

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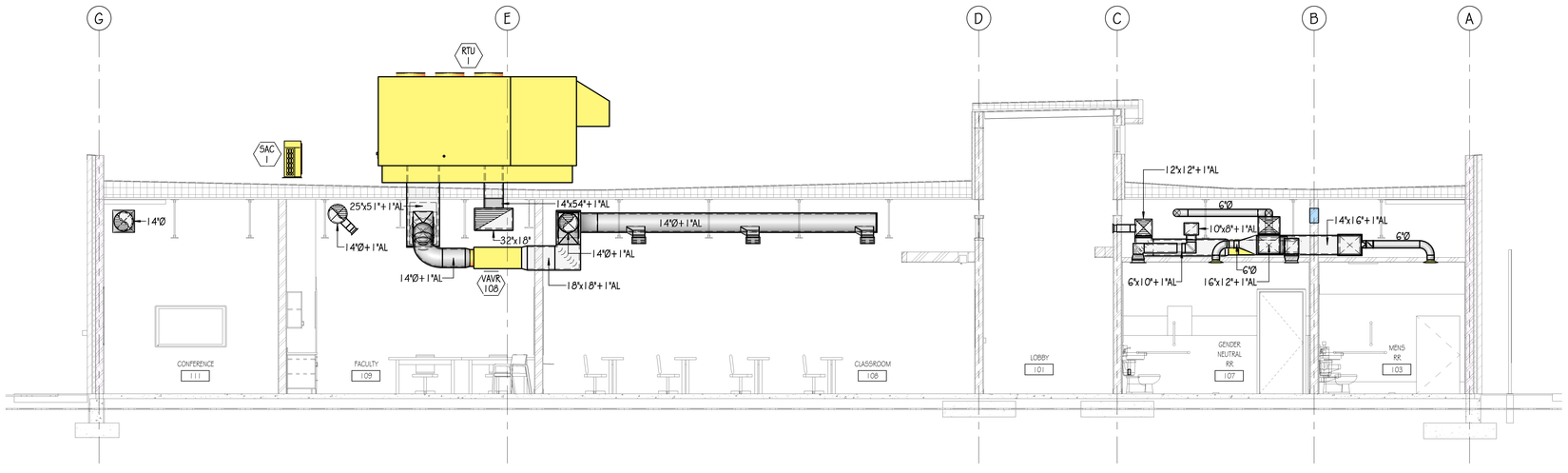

2 MH312.2 **MECHANICAL BUILDING SECTION**

SCALE: 1/4" = 1'-0"

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10408362
JEFFREY BRIAN ANDERSON
01/24/25
STATE OF UTAH

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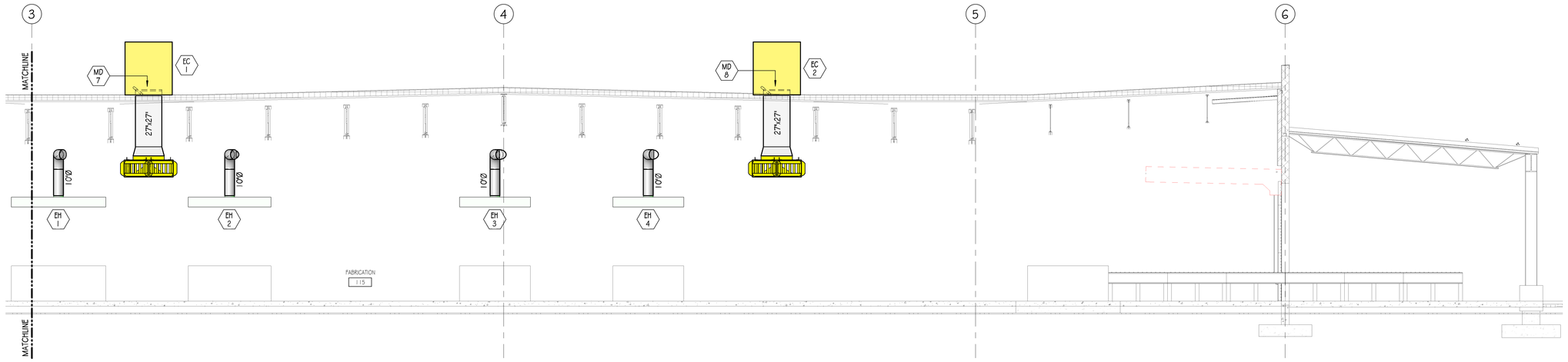

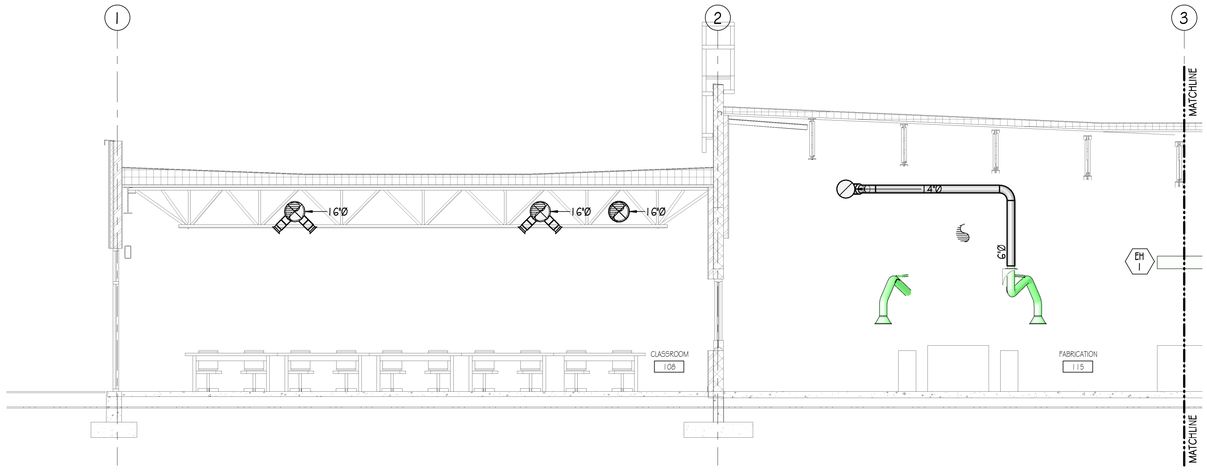

1 / MH313.2 **MECHANICAL BUILDING SECTION**

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KAYSVILLE, UT 84037

PROFESSIONAL ENGINEER
10405342
JEFFREY BRIAN ANDERSON
01/24/25
STATE OF UTAH

MECHANICAL SECTIONS

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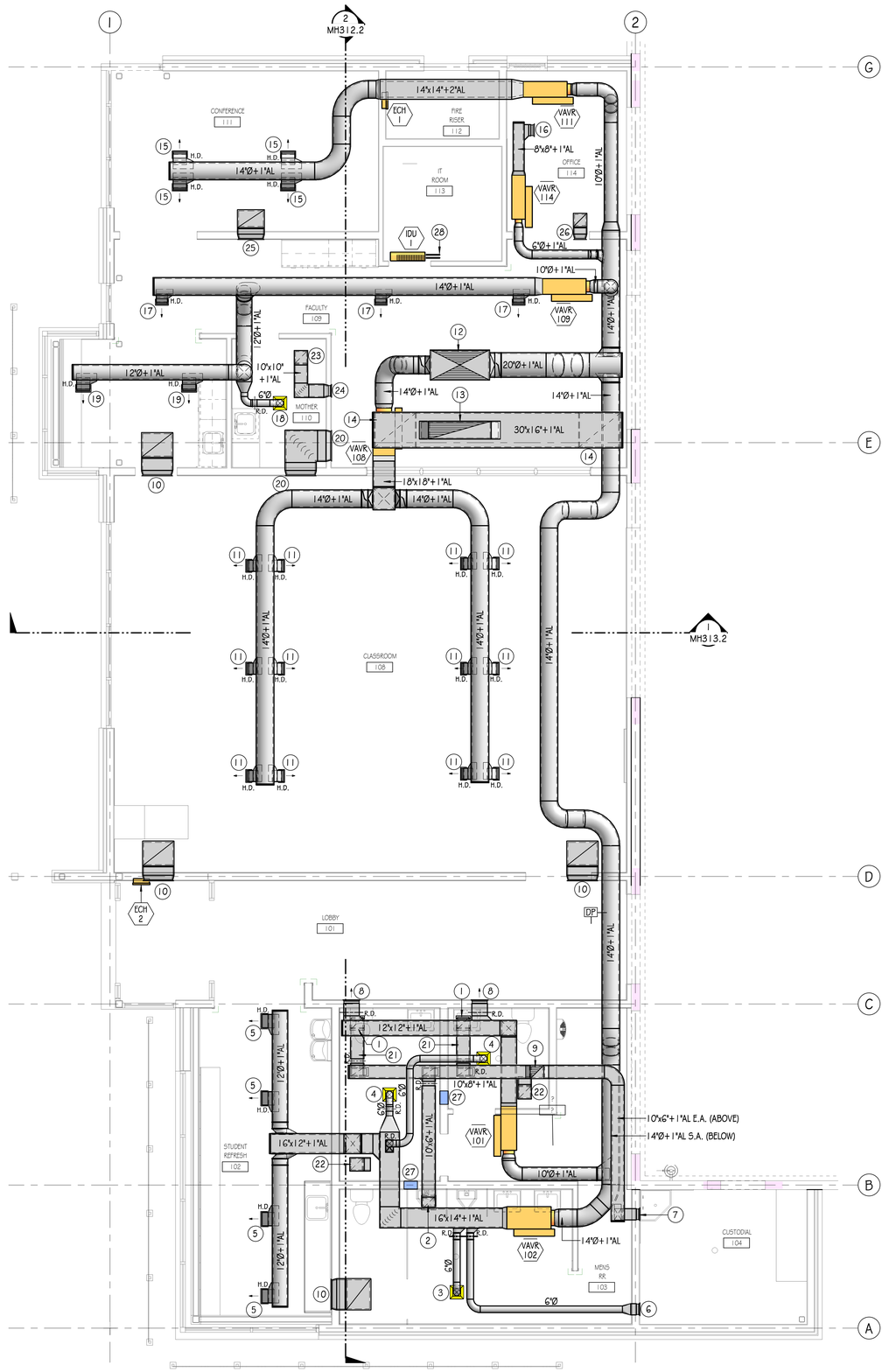
(801) 355-5915



LEVEL 1 OFFICE AREA MECHANICAL PLAN

1 MH411.2 SCALE: 1/4" = 1'-0"

5 2.5 0 5 10

DRAWING NOTES

1	E-1	75 CFM, 10"x10" NECK, EXHAUST AIR GRILLE.
2	E-1	150 CFM, 10"x10" NECK, EXHAUST AIR GRILLE.
3	S-1	125 CFM, 6"Ø NECK, SUPPLY AIR DIFFUSER.
4	S-1	50 CFM, 6"Ø NECK, SUPPLY AIR DIFFUSER.
5	S-2	290 CFM, 12"x8" NECK, SUPPLY AIR DIFFUSER ANGLED DOWN 45 DEG.
6	S-2	100 CFM, 10"x6" NECK, SUPPLY AIR DIFFUSER.
7	E-2	100 CFM, 10"x6" NECK, EXHAUST AIR GRILLE.
8	S-2	350 CFM, 14"x6" NECK, SUPPLY AIR DIFFUSER.
9		RISE 10"x10"+1"AL EXHAUST AIR DUCT TO EXHAUST FAN ABOVE. REFERENCE DRAWING 1/MH121.2 FOR CONTINUATION.
10	R-1	26"x20" NECK, RETURN AIR GRILLE WITH UP-TURNED 1" ACOUSTICALLY LINED SOUND BOOT.
11	S-2	165 CFM, 10"x6" NECK, SUPPLY AIR DIFFUSER ANGLED DOWN 45 DEG.
12		DROP 53"x27" SUPPLY AIR DUCT FROM ROOF TOP UNIT ON ROOF. REFERENCE DRAWING 1/MH121.2 FOR CONTINUATION.
13		RISE 56"x18"+1"AL RETURN AIR DUCT TO ROOF TOP UNIT ON ROOF. REFERENCE DRAWING 1/MH121.2 FOR CONTINUATION.
14	R-1	36"x30" NECK, DUCT MOUNTED RETURN AIR GRILLE.
15	S-2	250 CFM, 12"x8" NECK, SUPPLY AIR DIFFUSER ANGLED DOWN 45 DEG.
16	S-2	150 CFM, 10"x6" NECK, SUPPLY AIR DIFFUSER.
17	S-2	150 CFM, 10"x6" NECK, SUPPLY AIR DIFFUSER ANGLED DOWN 45 DEG.
18	S-1	100 CFM, 6"Ø NECK, SUPPLY AIR DIFFUSER.
19	S-2	275 CFM, 12"x8" NECK, SUPPLY AIR DIFFUSER ANGLED DOWN 45 DEG.
20	R-1	26"x20" NECK, RETURN AIR GRILLE.
21		10"x6"+1"AL EXHAUST DUCT.
22	T-1	10"x10" NECK, TRANSFER AIR GRILLE WITH SOUND BOOT.
23	T-1	10"x10" NECK, TRANSFER AIR GRILLE.
24	T-2	10"x10" NECK, TRANSFER AIR GRILLE.
25	R-1	22"x14" NECK, RETURN AIR GRILLE WITH UP-TURNED 1" ACOUSTICALLY LINED SOUND BOOT.
26	R-1	10"x10" NECK, RETURN AIR GRILLE WITH UP-TURNED 1" ACOUSTICALLY LINED SOUND BOOT.
27		12"x12" TRANSFER AIR OPENING IN WALL ABOVE CEILING.
28		ROUTE REFRIGERATION PIPING BETWEEN INDOOR AND OUTDOOR SPLIT SYSTEM AS REQUIRED. SEAL ROOF PENETRATIONS WATER TIGHT. REFERENCE DRAWING 1/MH121.2 FOR CONTINUATION.

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PROFESSIONAL ENGINEER 10408362 JEFFREY BRIAN ANDERSON 01/24/25 STATE OF UTAH

LEVEL 1 OFFICE AREA MECH PLAN

MH411.2

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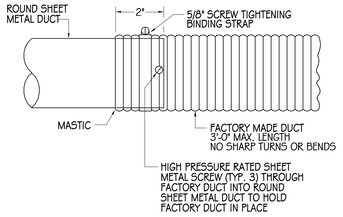

9 MH501.2 FACTORY MADE DUCT CONNECTION DETAIL

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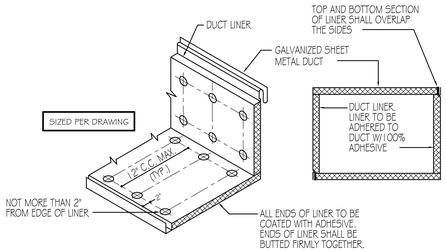

10 MH501.2 DUCT LINER DETAIL

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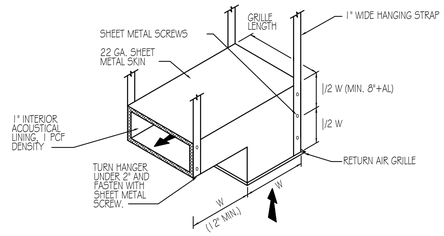
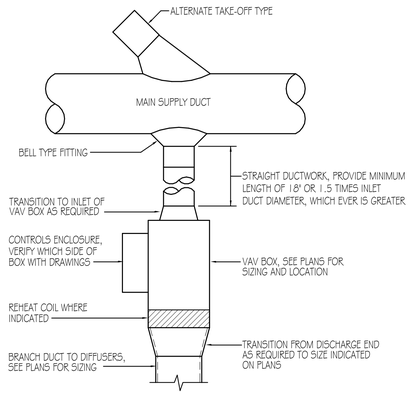


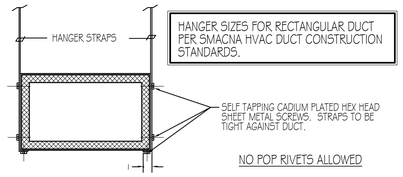
11 MH501.2 RETURN AIR GRILLE WITH SOUND BOOT DETAIL

SCALE: NONE



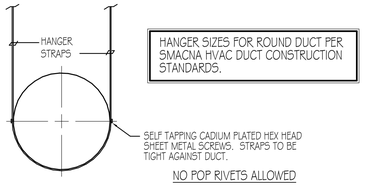
12 MH501.2 VAVR BOX DETAIL

SCALE: NONE



4 MH501.2 DUCT HANGER DETAIL

SCALE: NONE



5 MH501.2 ROUND DUCT HANGER DETAIL

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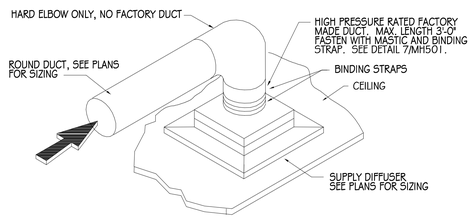
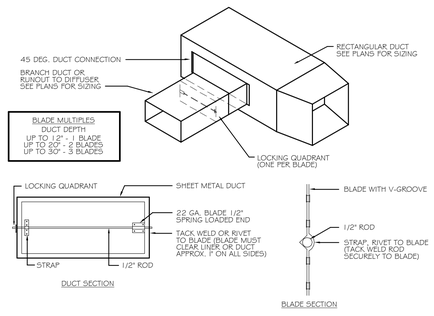


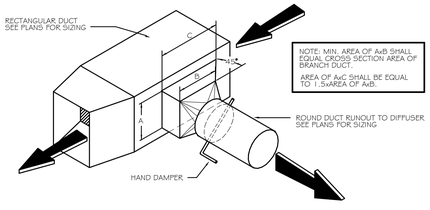
6 MH501.2 DUCT CONNECTION TO DIFFUSER DETAIL

SCALE: NONE



7 MH501.2 BRANCH DUCT AND DAMPER DETAIL

SCALE: NONE



8 MH501.2 DUCT CONNECTION DETAIL

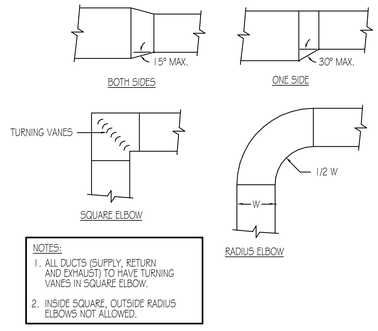
SCALE: NONE

DIMENSION OF LONGEST SIDE, (INCHES)	SHEET METAL GAGE (ALL FOUR SIDES)	• TRANSVERSE REINFORCING										
		MINIMUM REINFORCING ANGLE SIZE & MAXIMUM LONGITUDINAL SPACING BETWEEN TRANSVERSE JOINTS &/OR INTERMEDIATE REINFORCING	AT JOINTS									
			MIN H, IN.	DRIVE SLIP / PLAIN S SLIP	HEMMED S SLIP	ALT. BAR SLIP	REIN-FORCED BAR SLIP	BAR SLIP / ANGLE SLIP	STD. SEAM / ANGLE REINFORCED STD. SEAM	POCKET LOCK / ANGLE REINFORCED POCKET LOCK		
				RECOM-MENDED GAGE	RECOM-MENDED GAGE	RECOM-MENDED GAGE	RECOM-MENDED GAGE	RECOM-MENDED GAGE	REINFORCED ANGLE SIZE	REINFORCED ANGLE SIZE	RECOM-MENDED GAGE	REINFORCED ANGLE SIZE
UP THRU 12	24	NONE REQUIRED	1	26	26	24	24	24	NOT REQUIRED	NOT REQUIRED	24	NOT REQUIRED
13-18	24	NONE REQUIRED	1	24	24	24	24	24	NOT REQUIRED	NOT REQUIRED	24	NOT REQUIRED
19-30	24	1 x 1 x 1/8 @60in.	1	-	24	24	24	24	NOT REQUIRED	NOT REQUIRED	24	NOT REQUIRED
31-42	22	1 x 1 x 1/8 @60in.	1	-	-	22	22	22	NOT REQUIRED	NOT REQUIRED	22	NOT REQUIRED
43-54	22	1-1/2 x 1-1/2 x 1/8 @60in.	1-1/2	-	-	22	22	22	1-1/2 x 1-1/2 x 1/8	NOT REQUIRED	22	NOT REQUIRED
55-60	20	1-1/2 x 1-1/2 x 1/8 @60in.	1-1/2	-	-	-	22	22	1-1/2 x 1-1/2 x 1/8	NOT REQUIRED	22	NOT REQUIRED
61-84	20	1-1/2 x 1-1/2 x 1/8 @60in.	1-1/2	-	-	-	22	22	1-1/2 x 1-1/2 x 1/8	1-1/2 x 1-1/2 x 1/8	22	1-1/2 x 1-1/2 x 1/8

• TRANSVERSE REINFORCING SIZE IS DETERMINED BY DIMENSION OF SIDE TO WHICH ANGLE IS APPLIED.

1 MH501.2 DUCT CONSTRUCTION DETAIL

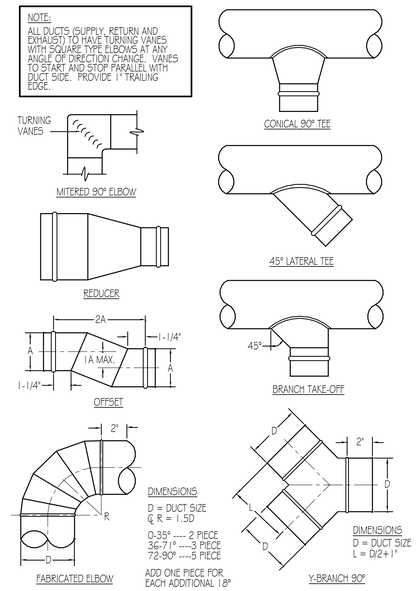
SCALE: NONE



NOTES:
1. ALL DUCTS (SUPPLY, RETURN AND EXHAUST) TO HAVE TURNING VANES IN SQUARE ELBOW.
2. INSIDE SQUARE, OUTSIDE RADIUS ELBOWS NOT ALLOWED.

2 MH501.2 RECTANGULAR DUCT FITTINGS DETAIL

SCALE: NONE



3 MH501.2 MEDIUM VELOCITY DUCT FITTINGS DETAIL

SCALE: NONE

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355 SOUTH 650 EAST
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PROFESSIONAL ENGINEER 10402342 JEFFREY BRIAN ANDERSON STATE OF UTAH 01/24/25

MECHANICAL DETAILS

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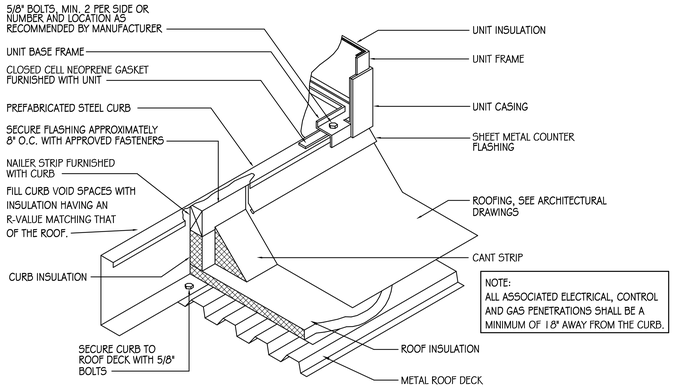
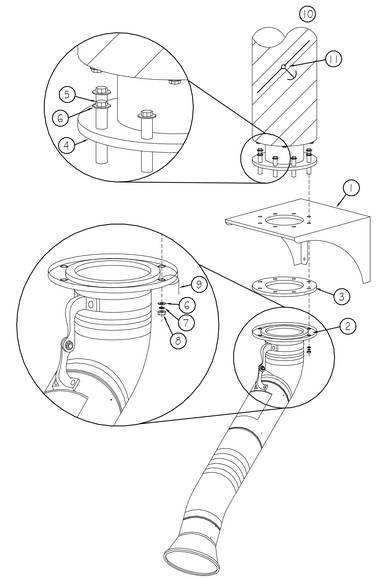


7 ROOFTOP EQUIPMENT CURB DETAIL

7 / MH502.2 — SCALE: NONE



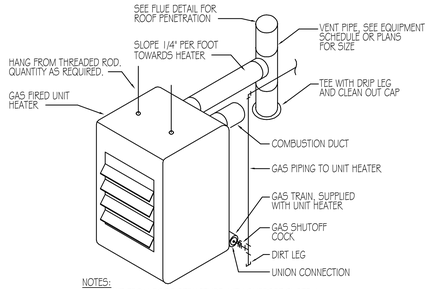
DETAIL NOTES

THE FOLLOWING COMPONENTS (NOTES 1-9) ARE PROVIDED BY OWNER AND INSTALLED BY CONTRACTOR.

1. EXTRACTION ARM MOUNTING BRACKET
2. EXTRACTION ARM BASE
3. UPPER BEARING
4. DUCTWORK ADAPTER
5. 3/8-16 x 2" SCREW
6. 3/8" FLAT WASHER
7. 3/8" LOCK WASHER
8. 3/8" NUT
9. CABLE TIE
10. 6" SPIRAL WELDING EXHAUST DUCT PROVIDED AND INSTALLED BY CONTRACTOR.
11. HAND DAMPER WITH LOCKING QUADRANT

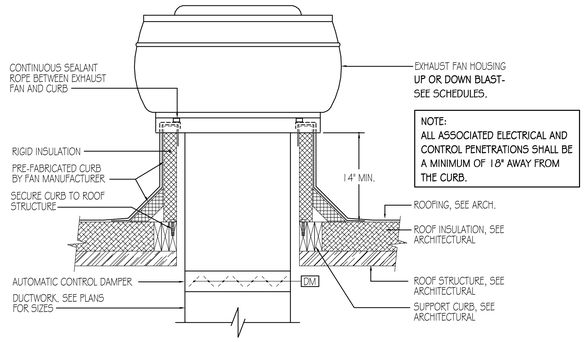
8 WELDING EXTRACTION ARM PICKUP DETAIL

8 / MH502.2 — SCALE: NONE



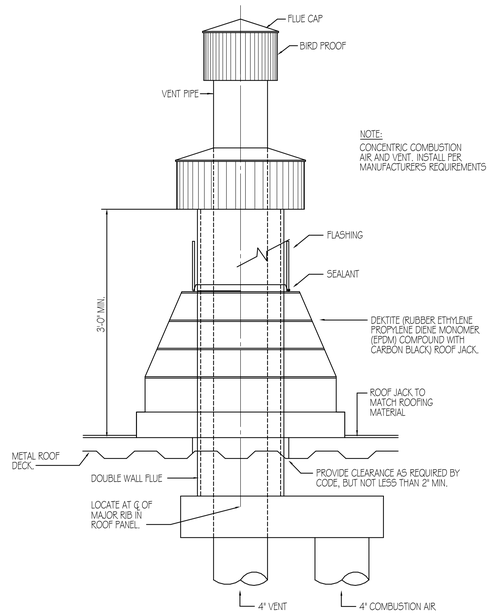
4 GAS FIRED UNIT HEATER DETAIL

4 / MH502.2 — SCALE: NONE



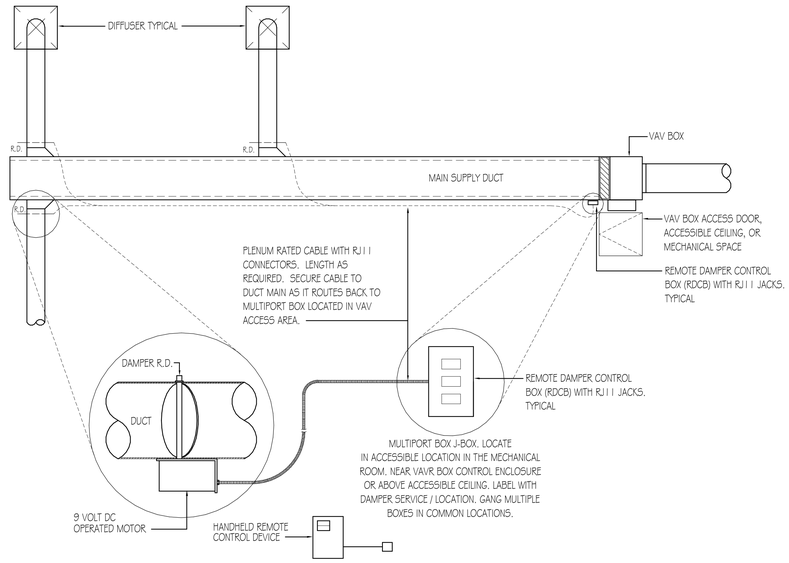
5 EXHAUST FAN AND CURB DETAIL

5 / MH502.2 — SCALE: NONE



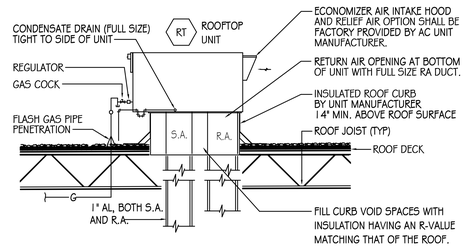
6 FLUE THROUGH ROOF DETAIL

6 / MH502.2 — SCALE: NONE



1 REMOTE ELECTRONIC ADJUSTABLE DAMPER DETAIL

1 / MH502.2 — SCALE: NONE



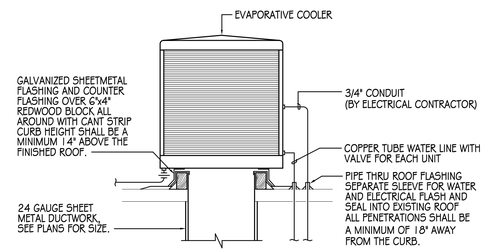
NOTES:

A. SECTION INDICATES TYPICAL AC UNITS ACTUAL DUCT CONNECTION BETWEEN UNIT AND SUPPLY DUCT SHALL BE BASED ON ACTUAL AC UNIT OPENING SIZE AND CONFIGURATION.

B. ALL ASSOCIATED ELECTRICAL, CONTROL AND GAS PENETRATIONS SHALL BE A MINIMUM OF 18" AWAY FROM THE CURB.

2 AC UNIT DETAIL

2 / MH502.2 — SCALE: NONE



3 EVAPORATIVE COOLER DETAIL

3 / MH502.2 — SCALE: NONE

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PROFESSIONAL ENGINEER 10400342 JEFFREY BRIAN ANDERSON 01/24/24 STATE OF UTAH

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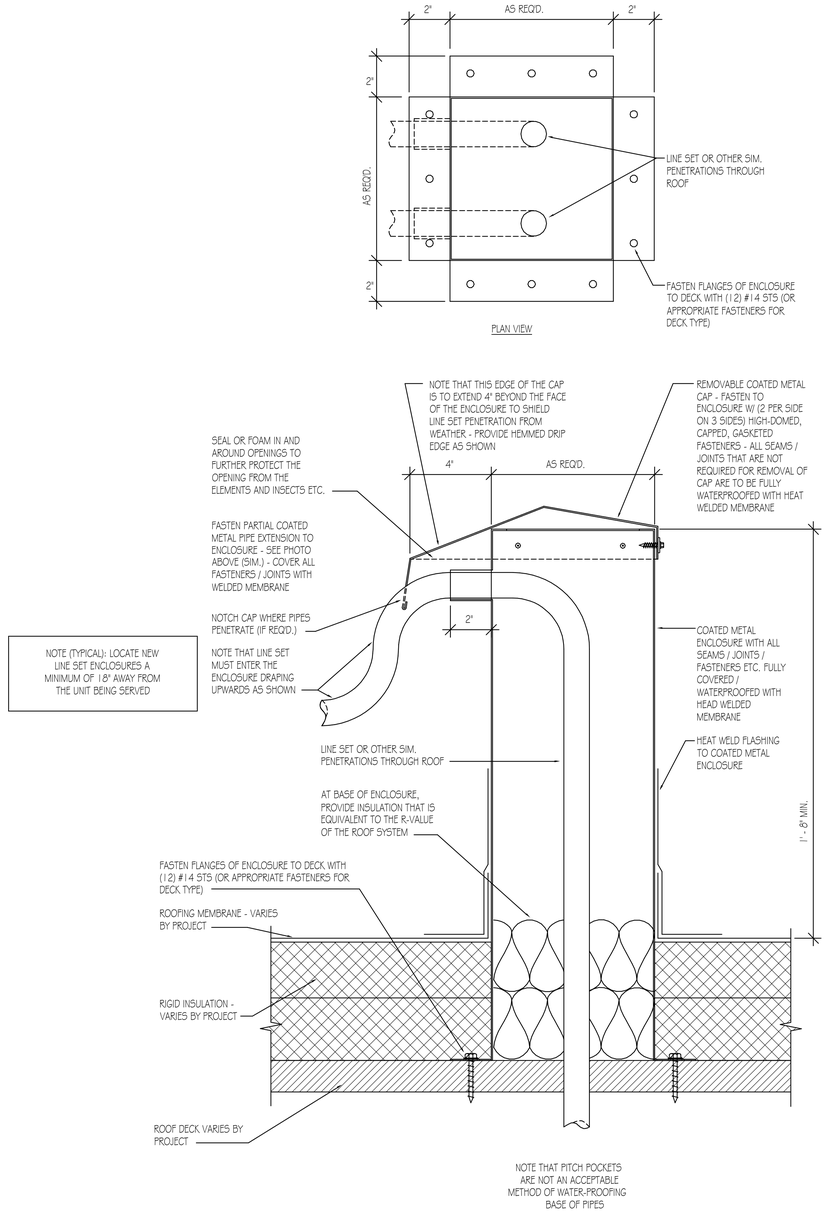
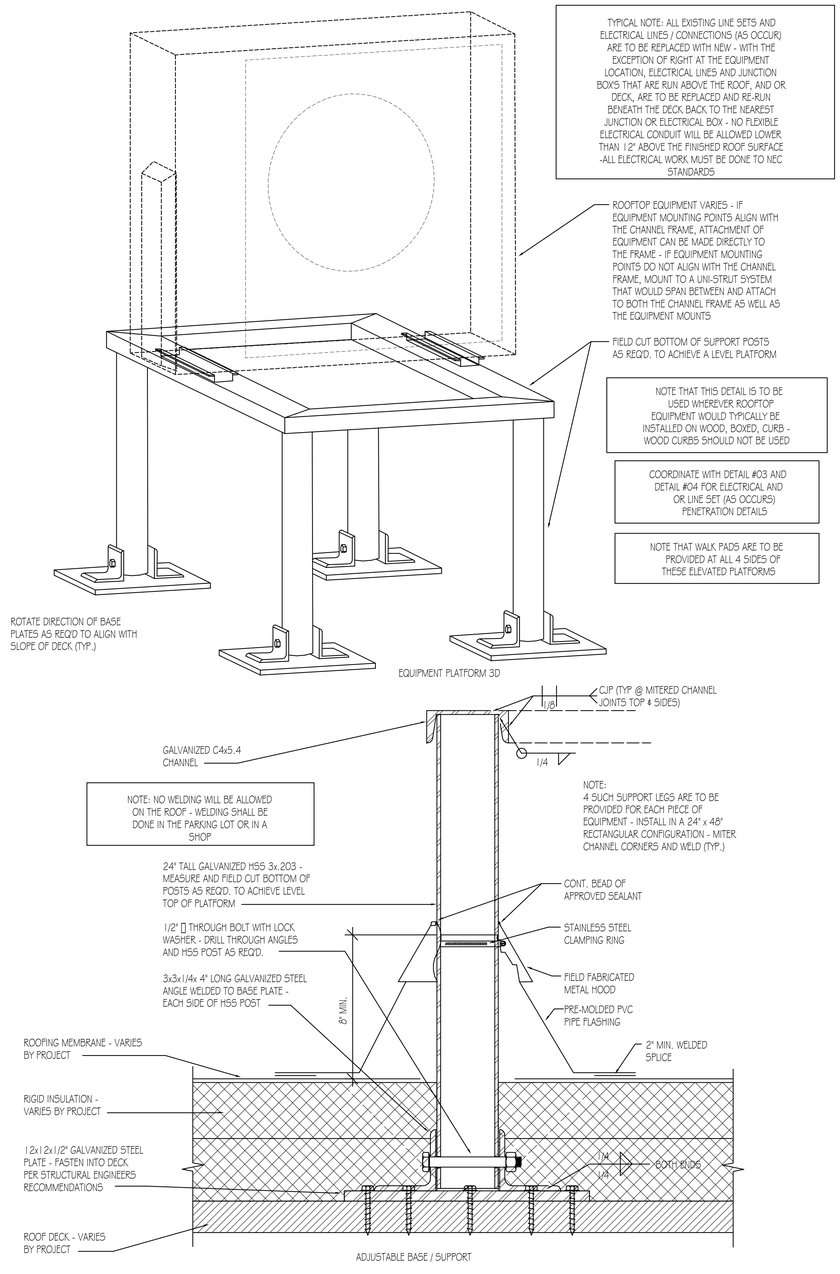


2 MH503.2 **LINE SET ENCLOSURE DETAIL**

SCALE: NONE



1 MH503.2 **CONDENSING UNIT PLATFORM DETAIL**

SCALE: NONE

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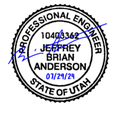

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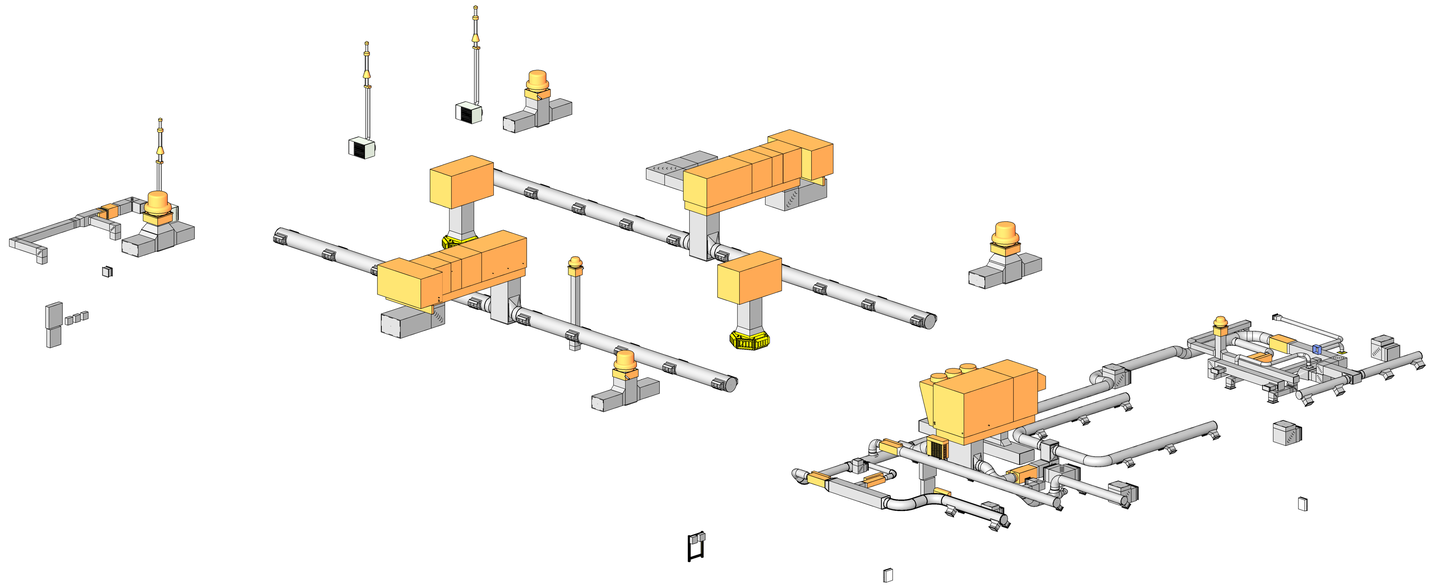
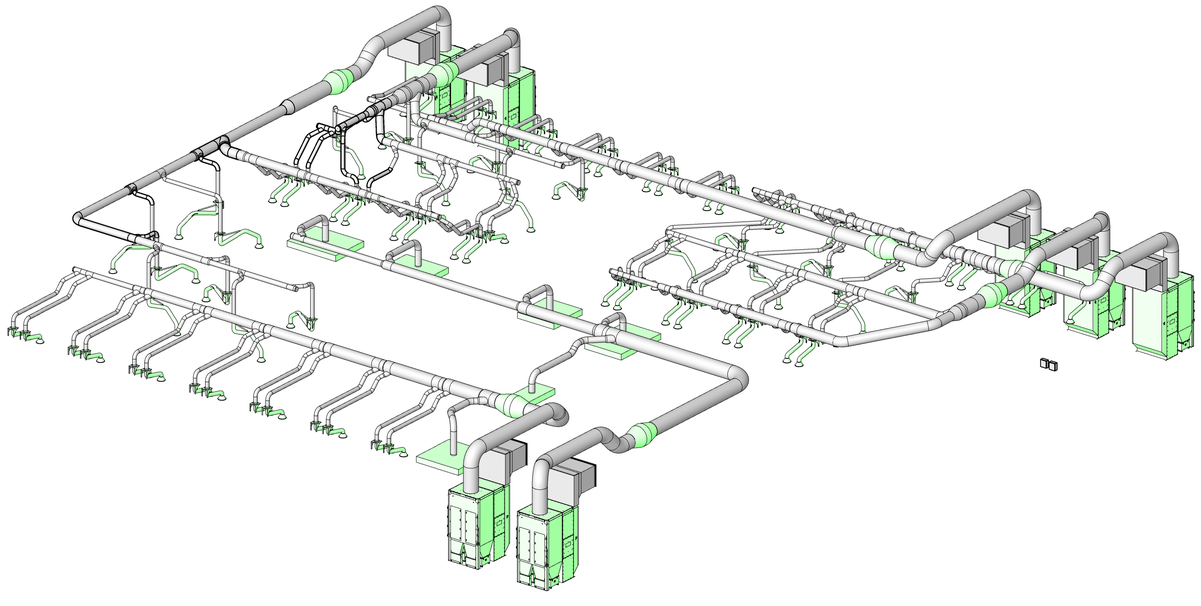


1 MH611.2 MECHANICAL DIAGRAM
SCALE: NONE



2 MH611.2 MECHANICAL DIAGRAM - EXTRACTOR SYSTEM
SCALE: NONE

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PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

HEATH
Engineering Company

DAVIS TECHNICAL COLLEGE
WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

PROFESSIONAL ENGINEER
10408362
JEFFREY BRIAN ANDERSON
01/24/25
STATE OF UTAH

MECHANICAL DIAGRAMS

MH611.2

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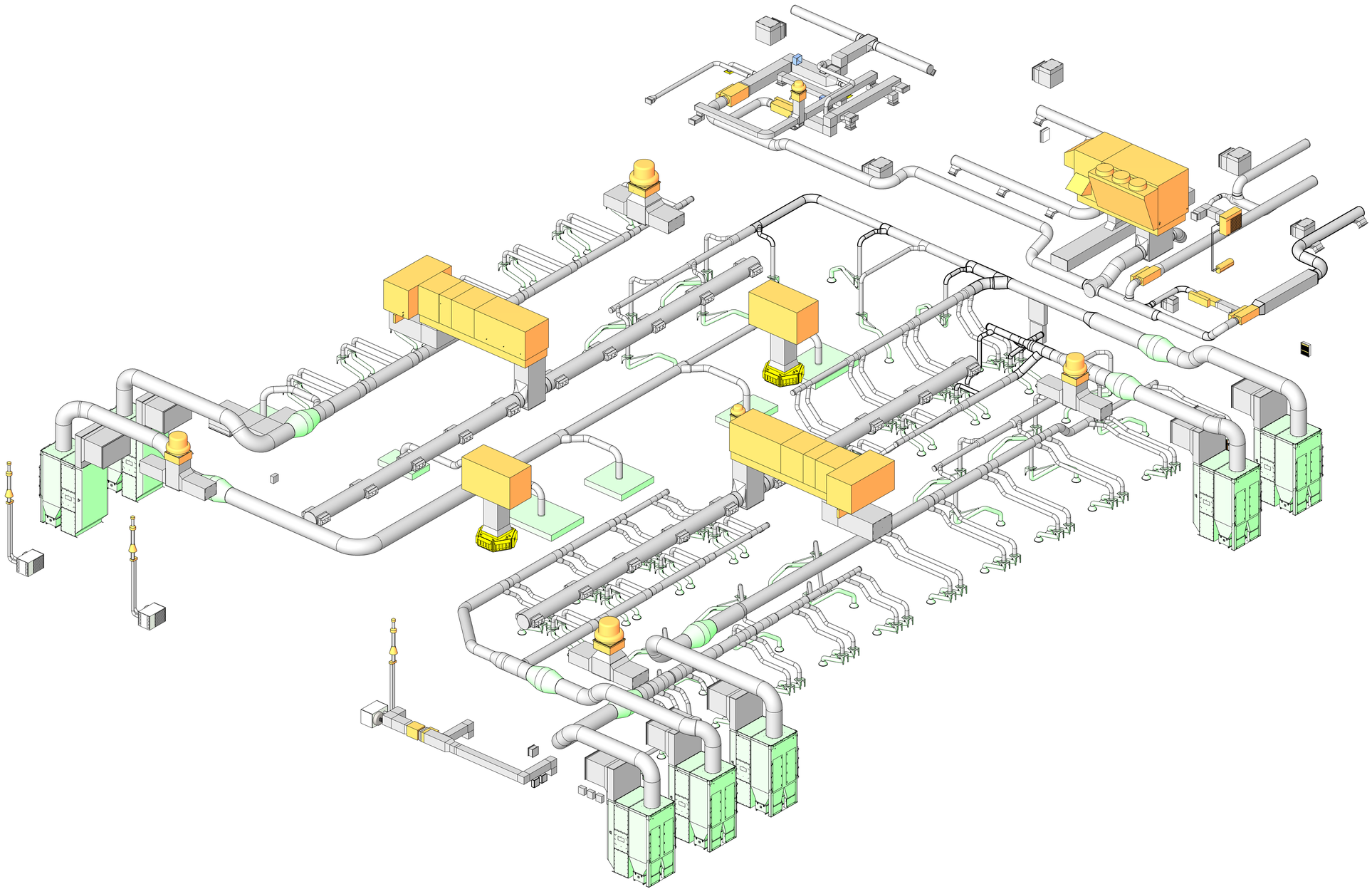

1 MH612.2 MECHANICAL DIAGRAM OVERALL
SCALE: NONE

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PROJECT **24-038**

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DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

PROFESSIONAL ENGINEER
10408342
JEFFREY BRIAN ANDERSON
01/24/25
STATE OF UTAH

MECHANICAL OVERALL DIAGRAM

MH612.2

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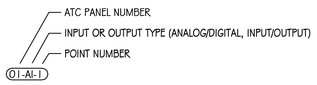
SYMBOL LEGEND

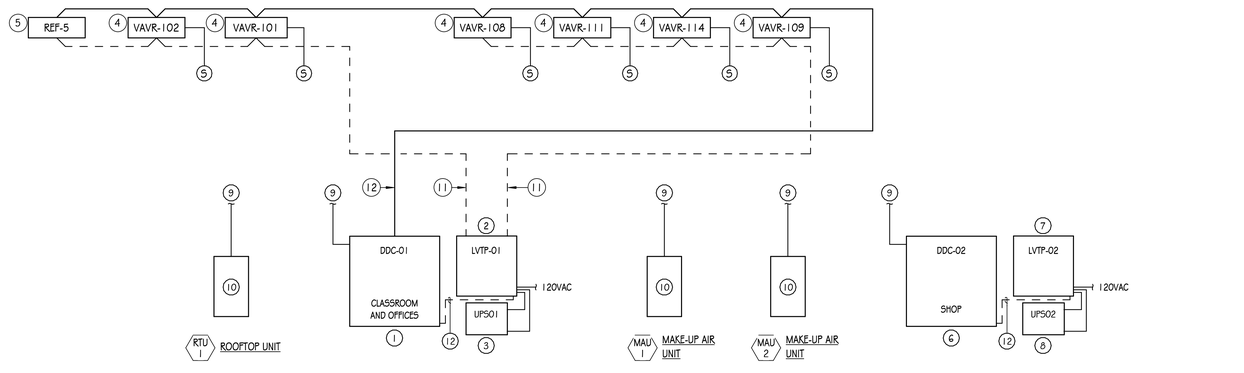
SYMBOL	DESCRIPTION
AI	ANALOG INPUT
AO	ANALOG OUTPUT
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
(J) OR [J]	JUNCTION BOX
[S] OR (S)	SENSOR
[FS]	FLOW CONDUCTIVITY SENSOR
(R)	RELAY
	STARTER OR HAND-OFF-AUTO SWITCH
[FS]	FLOW SWITCH
[P]	PRESSURE SENSOR/SWITCH
	PILOT LIGHT
[M] OR [AD]	DAMPER ACTUATOR
OR	3-WAY OR 2-WAY CONTROL VALVE
(M)	MOTOR
	DIFFERENTIAL FILTER GAUGE
	FLOAT SWITCH
[H]	HUMIDITY SENSOR
(H)	HUMIDITY SENSOR OR STAT
	SOLENOID VALVE
H.O.A.	HAND / OFF / AUTO
	DUCT SMOKE DETECTOR
D.P.	DIFFERENTIAL PRESSURE
CT	CURRENT TRANSDUCER
	CONDUIT WITH WIRING
LVTP-	LOW VOLTAGE TRANSFORMER PANEL



BUILDING AUTOMATION POINT CALLOUT

GENERAL NOTES

A	CONTROLLERS SHALL BE WIRED [COLOR CODED] TO THE TERMINAL STRIP BY THE CONTROL MANUFACTURER. COMPLETE WIRING IS TO BE INCLUDED IN THE CONTRACT. ALL WIRING TO BE COLOR CODED. COLOR CODING TO BE DETERMINED BY CONTROL PANEL MANUFACTURER
B	RUN ALL FIELD WIRING LOCATED WITH-IN PANELS IN WIRE CONDUIT SUCH AS PANDUIT.
C	ONLY 24V POWER TO BE WITHIN CONTROL PANEL. MOUNT TRANSFORMERS FOR 120V / 24V POWER IN A LOW VOLTAGE TRANSFORMER PANEL ADJACENT / NEAR TO THE CONTROL PANEL BOX. MOUNT RELAYS FOR MOTOR CONTROL OR POWER CIRCUITS IN REMOTE PANELS ADJACENT TO CONTROL PANEL BOX.
D	POINTS FROM A PARTICULAR SYSTEM SHALL BE GROUPED TOGETHER.
E	ALL FIELD WIRING TO THE TERMINAL STRIPS WITHIN THE CONTROL PANELS SHALL BE INSTALLED AND TERMINATED BY THE CONTROLS SUB-CONTACTOR.
F	COLOR CODING OF FIELD WIRING SHALL MATCH COLOR CODING OF PANEL [CONTROLLER] WIRING.
G	ALL FIELD WIRING FROM CONTROL PANELS, FROM LVTP PANELS, ETC TO RELAY PANELS, OTHER CONTROLLERS, CONTROL DEVICES, ETC. IS THE RESPONSIBILITY OF THE CONTROLS SUB-CONTRACTOR
H	ALL FIELD WIRING SHALL BE INSTALLED IN CONDUIT. FURNISH REQUIRED NUMBER OF CONDUCTORS TO ALL DEVICES
I	FOLLOW AND COMPLY WITH CONTROL MANUFACTURER'S REQUIREMENTS FOR FIELD WIRING TYPES AND SIZES
J	DO NOT IMPOSE ANY EXTERNAL VOLTAGE OTHER THAN ANALOG OUTPUTS DIRECTLY ON THE CONTROLLER.
K	PROVIDE PANEL DERIVED VOLTAGE / CURRENT FOR ALL CONTROL RELATED DEVICES.
L	LOAD TRANSFORMERS TO NO MORE THAN 75% OF RATED CAPACITY.
M	USE HORSEPOWER RATED RELAYS FOR DIRECT MOTOR STARTING.
N	COORDINATE FAN SHUTDOWN WITH FIRE ALARM CONTRACTOR.



CONTROL SYSTEM ONE-LINE DIAGRAM

1 / MI001.2 — SCALE: NONE

DRAWING NOTES

1	DDC01: BUILDING AUTOMATION SERVER FOR BACNET MSTP NETWORK INTEGRATION, GLOBAL CONTROL LOGIC, TREND LOGGING AND ALARM SUPERVISION LOCATE IN HINGED NEMA 1 PANEL WITH KEYED LOCK.
2	LVTP01: LOW VOLTAGE TRANSFORMER PANEL. PROVIDE QUANTITY OF TRANSFORMERS AS REQUIRED. LOCATE IN HINGED NEMA 1 PANEL WITH KEYED LOCK.
3	UPS01: 1500VA / 900W BATTERY BACK UP AND SURGE PROTECTION. PROVIDE EXTERNAL MOUNTING SHELF AS REQUIRED.
4	BACNET-MSTP VAV BOX CONTROLLER WITH BUILT-IN DAMPER ACTUATOR. SEE DRAWING MI601.2 FOR REQUIRED POINTS.
5	BACNET-MSTP TERMINAL DEVICE CONTROLLER. SEE DRAWING MI601.2 FOR REQUIRED POINTS.
6	DDC02: MULTIPURPOSE BACNET-IP CONTROLLER. SEE DRAWING MI603.2 FOR REQUIRED POINTS. PROVIDE THE REQUIRED 10 MODULES TO ACCOMODATE THE REQUIRED POINT QUANTITY. LOCATE IN HINGED NEMA 1 PANEL WITH KEYED LOCK.
7	LVTP02: LOW VOLTAGE TRANSFORMER PANEL. PROVIDE QUANTITY OF TRANSFORMERS AS REQUIRED. LOCATE IN HINGED NEMA 1 PANEL WITH KEYED LOCK.
8	UPS02: 1500VA / 900W BATTERY BACK UP AND SURGE PROTECTION. PROVIDE EXTERNAL MOUNTING SHELF AS REQUIRED.
9	BUILDING NETWORK DATA DROP. INTEGRATE INTO CAMPUS SUPERVISORY SOFTWARE. PROVIDE NEW SUPERVISOR PARTITION AND DEDICATED GRAPHICAL PACKAGE. COORDINATE WITH CAMPUS IT FOR NETWORK INEGRATION.
10	BACNET-IP EQUIPMENT INTERFACE TO SUPERVISORY SOFTWARE. SEE DRAWING MI601.2 FOR REQUIRED INTEGRATION POINTS.
11	24 VAC POWER.
12	BACNET-MSTP NETWORK.

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PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

HEATH Engineering Company

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

PROFESSIONAL ENGINEER 10408342 JEFFREY BRIAN ANDERSON 07/24/24 STATE OF UTAH

CONTROL SCHEDULES

MI001.2

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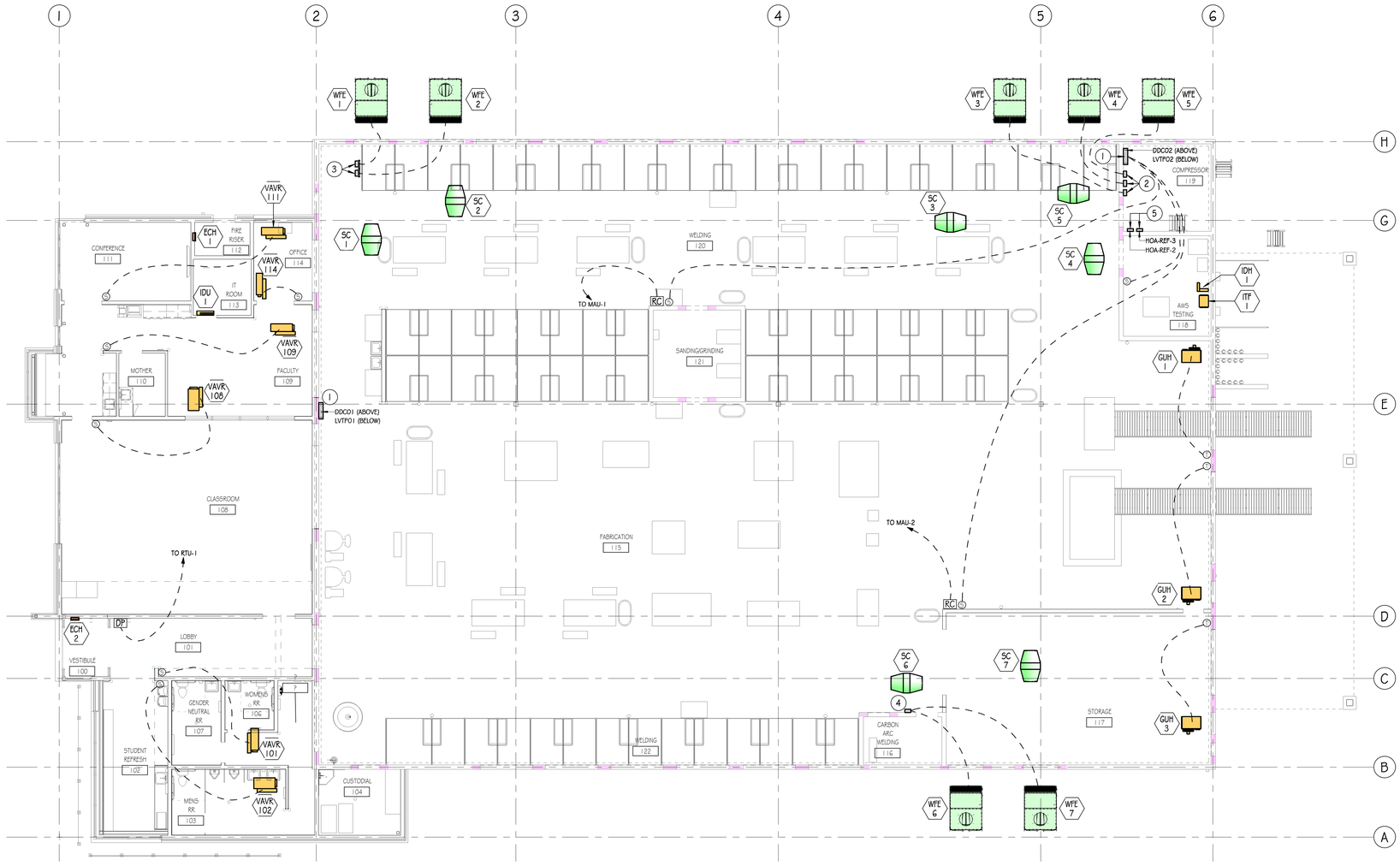
DRAWING NOTES

NOTE #	DESCRIPTION
1	BUILDING DATA DROP TO DDC AND 120 V POWER TO LVTP REQUIRED.
2	WELDING FUME EXTRACTOR CONTROL PANEL MOUNTED ON THE WALL.
3	WELDING FUME EXTRACTOR CONTROL PANEL MOUNTED UNISTRUT SUPPORT STAND.
4	TWO WELDING FUME EXTRACTOR CONTROL PANELS MOUNTED ON THE WALL, ONE ABOVE THE OTHER.
5	120 V POWER TO REF HOA CONTROLLER REQUIRED.



1 / MI110.2 LEVEL 1 MECHANICAL CONTROL PLAN

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

10 5 0 10 20

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PROJECT **24-038**

BID PACKAGE #2 2024-11-01

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HEATH
Engineering Company

DAVIS TECHNICAL COLLEGE
WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

PROFESSIONAL ENGINEER
10403342
JEFFREY BRIAN ANDERSON
01/24/25
STATE OF UTAH

LEVEL 1
MECHANICAL
CONTROL PLAN

MI110.2

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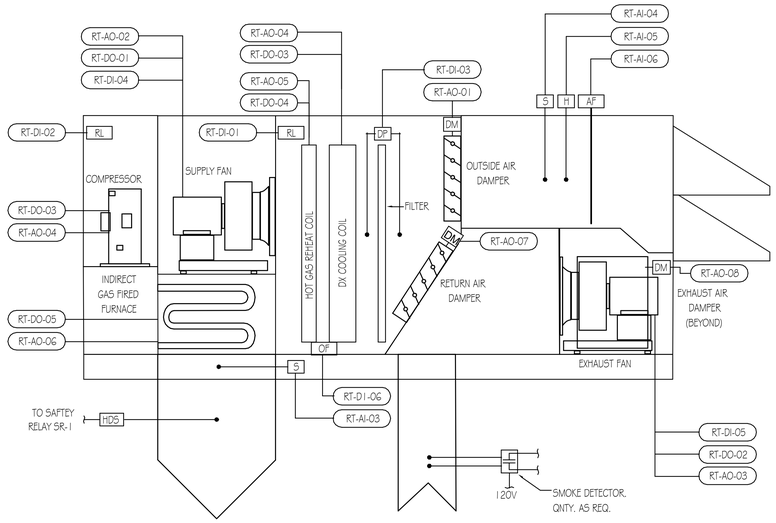
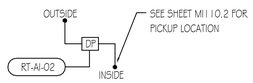
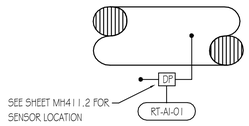
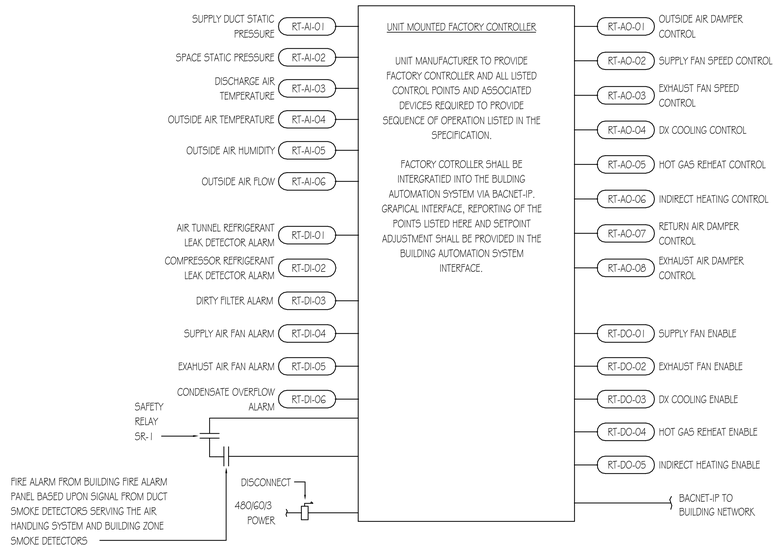


BUILDING STATIC PRESSURE DIAGRAM



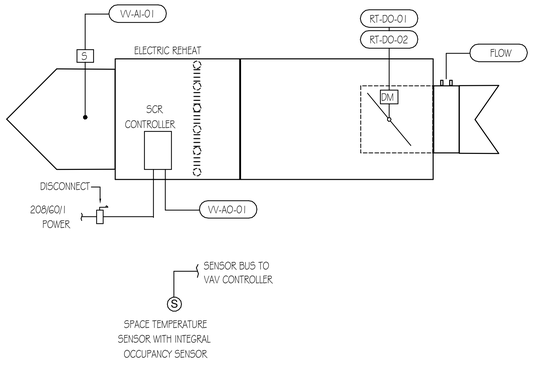


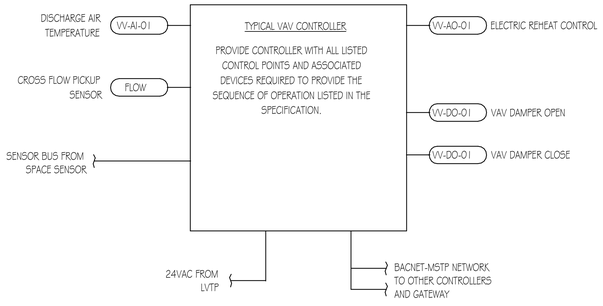
SUPPLY DUCT STATIC PRESSURE



1 MI601.2 ROOFTOP UNIT RTU-1 CONTROL DIAGRAM

SCALE: NONE

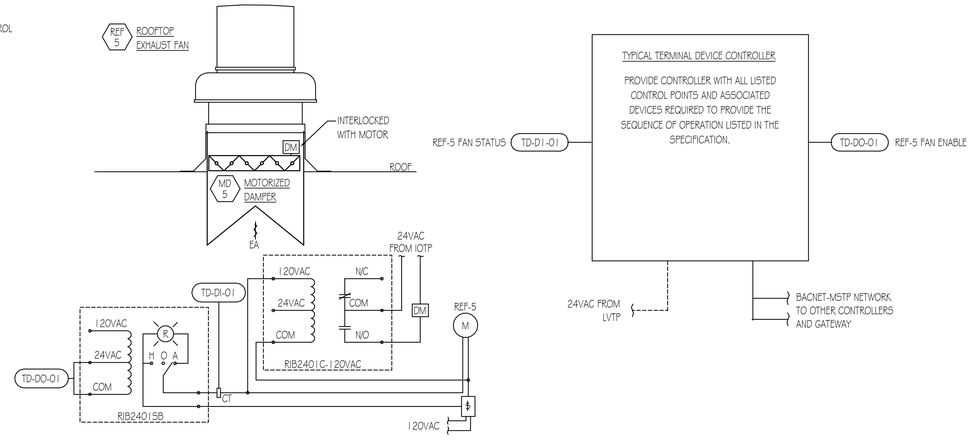




3 MI601.2 TYPICAL VAV BOX CONTROL DIAGRAM

SCALE: NONE

TYPICAL OF VAVR-101, VAVR-102, VAVR-108, VAVR-109, VAVR-111 AND VAVR-114



2 MI601.2 ROOFTOP EXHAUST FAN REF-5 CONTROL DIAGRAM

SCALE: NONE

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PROJECT **24-038**

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HEATH Engineering Company

DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

PROFESSIONAL ENGINEER 10408362 JEFFREY BRIAN ANDERSON 01/24/25 STATE OF UTAH

CONTROL DIAGRAMS - RTU-1

MI601.2

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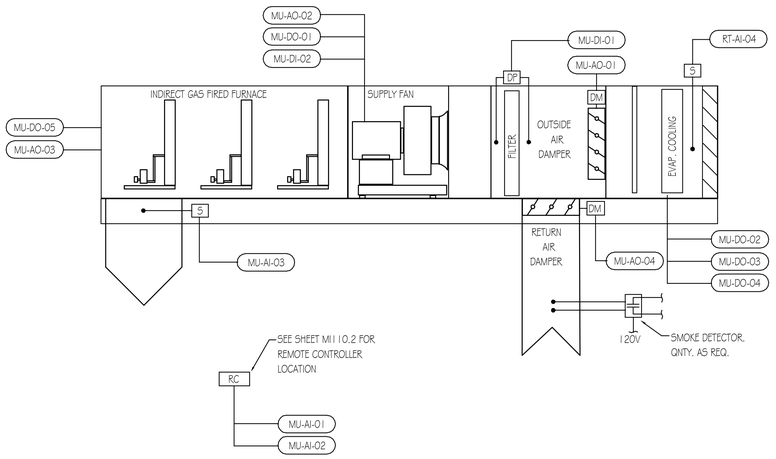

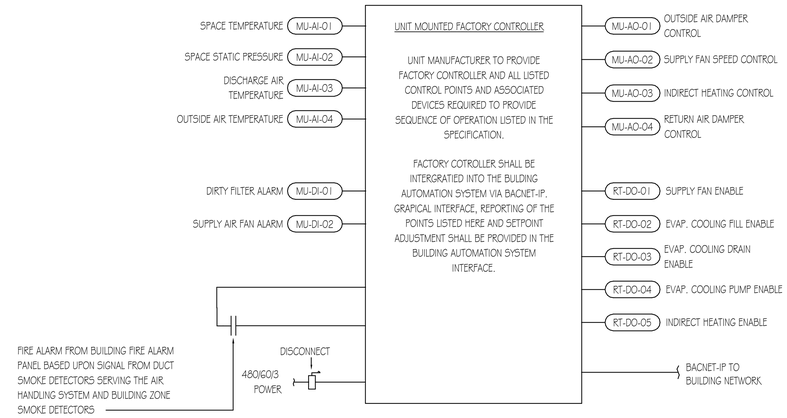

TYPICAL MAKEUP AIR UNIT CONTROL DIAGRAM

1 / MI602.2 SCALE: NONE

TYPICAL OF MAU-1 AND MAU-2

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PROJECT **24-038**

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355 SOUTH 650 EAST
KAYSVILLE, UT 84037

PROFESSIONAL ENGINEER 10408342 JEFFREY BRIAN ANDERSON 01/24/25 STATE OF UTAH

CONTROL DIAGRAMS - MAU

MI602.2

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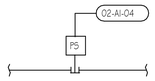
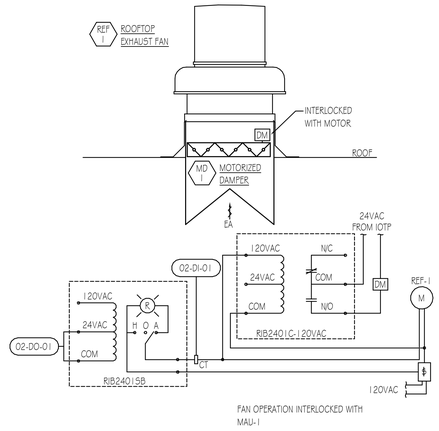


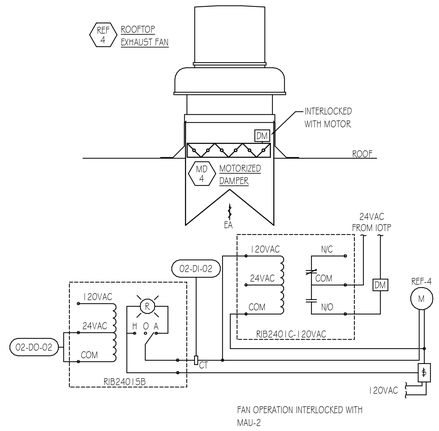
3 MI603.2 COMPRESSED AIR MONITORING CONTROL DIAGRAM

SCALE: NONE



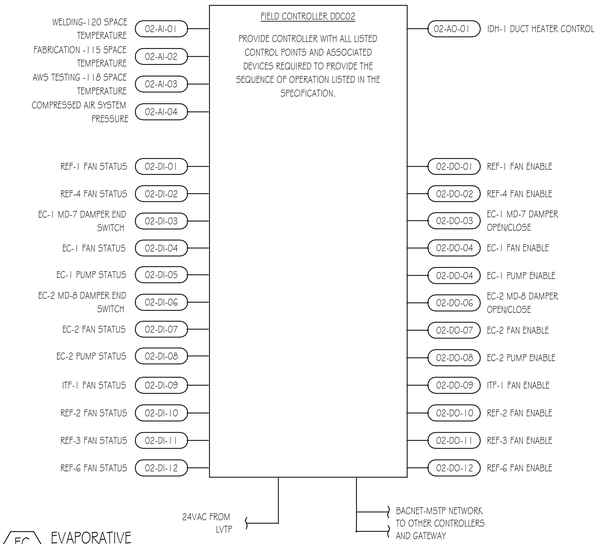
2 MI603.2 ROOFTOP EXHAUST FAN REF-1 DIAGRAM

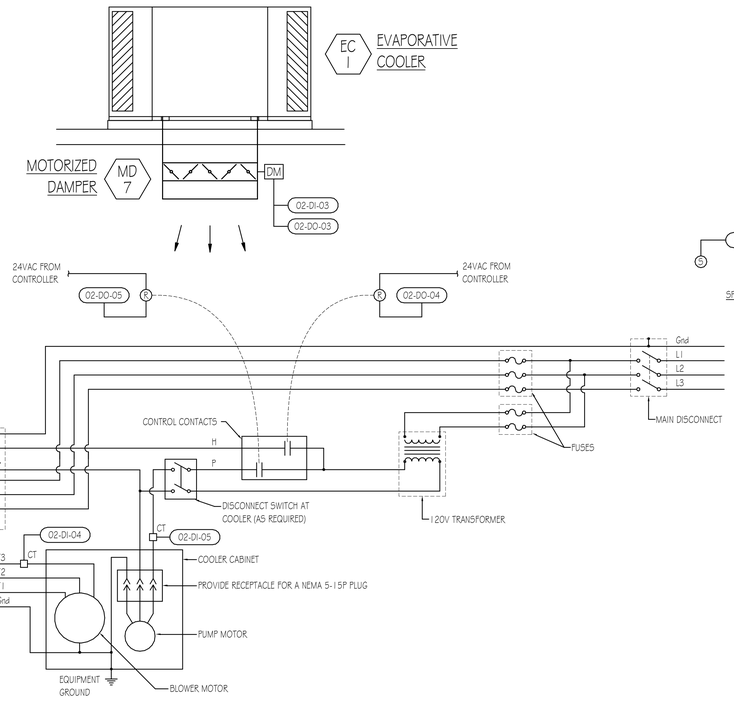
SCALE: NONE

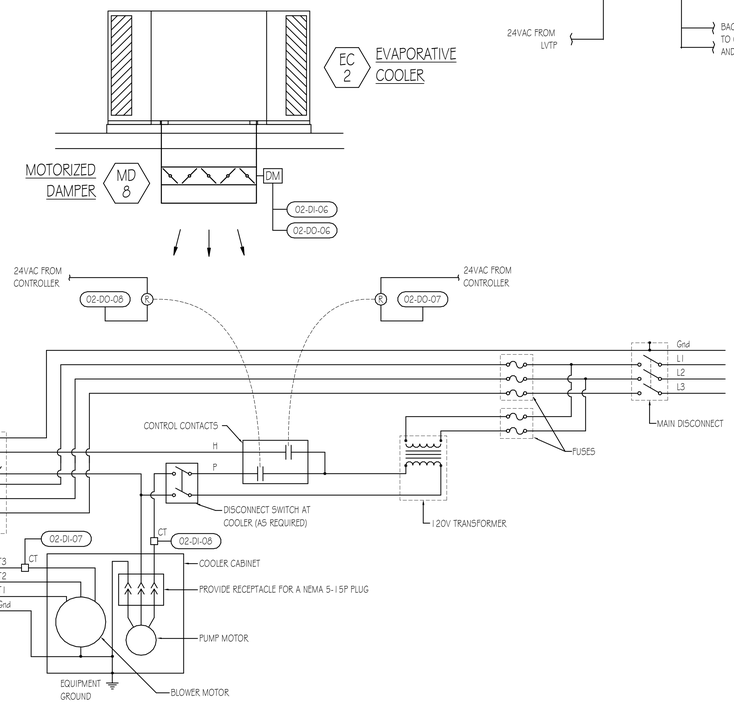


1 MI603.2 ROOFTOP EXHAUST FAN REF-4 DIAGRAM

SCALE: NONE

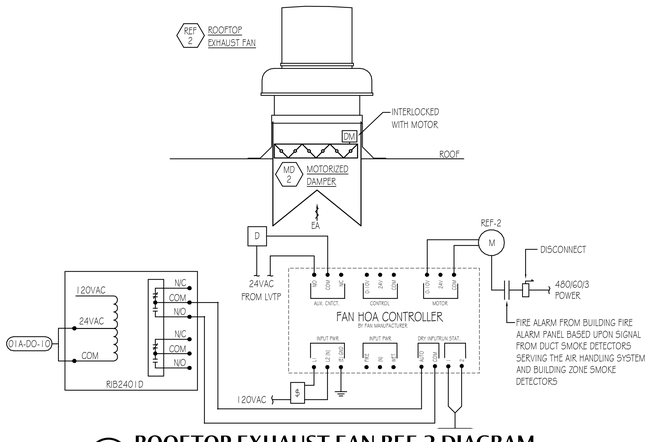






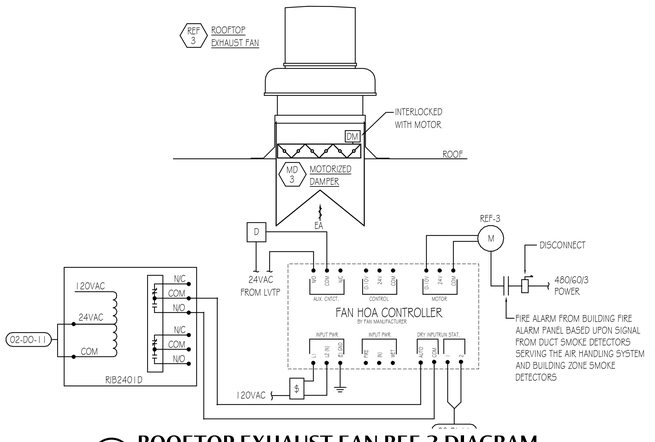
4 MI603.2 EVAPORATIVE COOLER EC-1 AND EC-2 DIAGRAM

SCALE: NONE



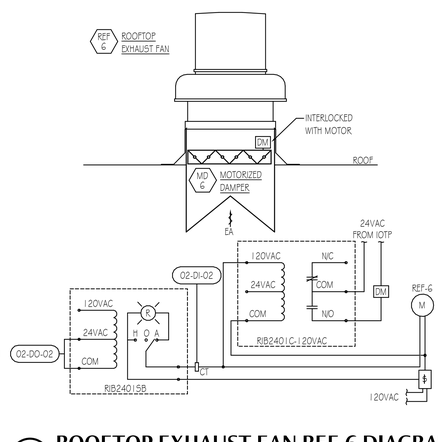
8 MI603.2 ROOFTOP EXHAUST FAN REF-2 DIAGRAM

SCALE: NONE



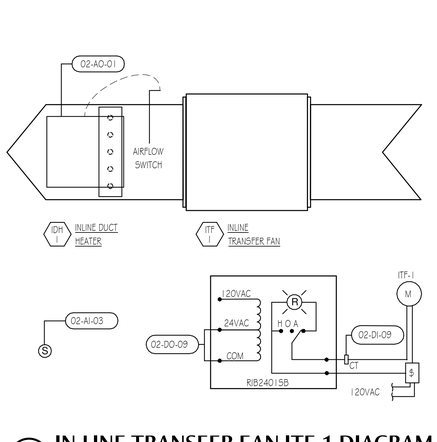
7 MI603.2 ROOFTOP EXHAUST FAN REF-3 DIAGRAM

SCALE: NONE



6 MI603.2 ROOFTOP EXHAUST FAN REF-6 DIAGRAM

SCALE: NONE



5 MI603.2 IN-LINE TRANSFER FAN ITF-1 DIAGRAM

SCALE: NONE

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PROJECT **24-038**

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HEATH Engineering Company

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355 SOUTH 650 EAST
KAYSVILLE, UT 84037

PROFESSIONAL ENGINEER 10408362 JEFFREY BRIAN ANDERSON 07/24/24 STATE OF UTAH

CONTROL DIAGRAMS - MISCELLANEOUS

MI603.2

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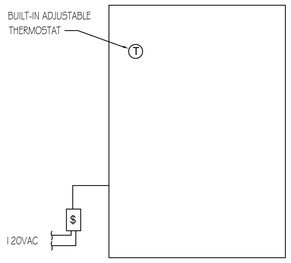
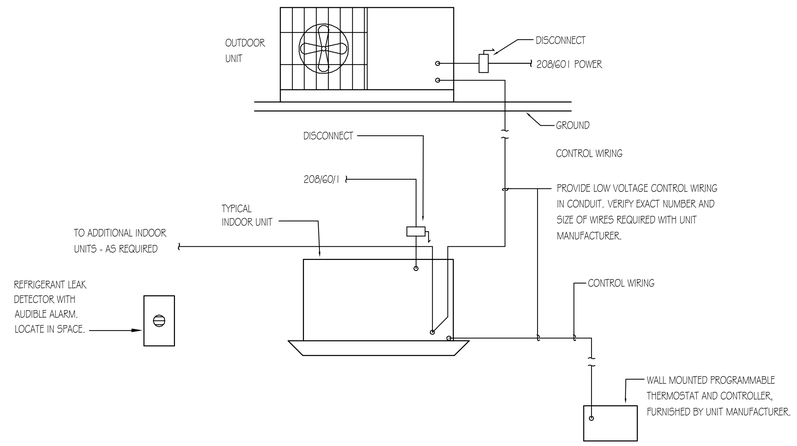


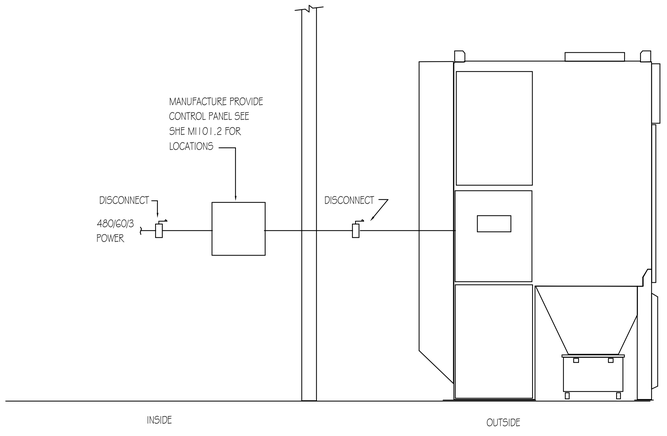
3 M1604.2 ELECTRIC CABINETWALL HEATER ECH-1 AND ECH-2 CONTROL DIAGRAM

SCALE: NONE



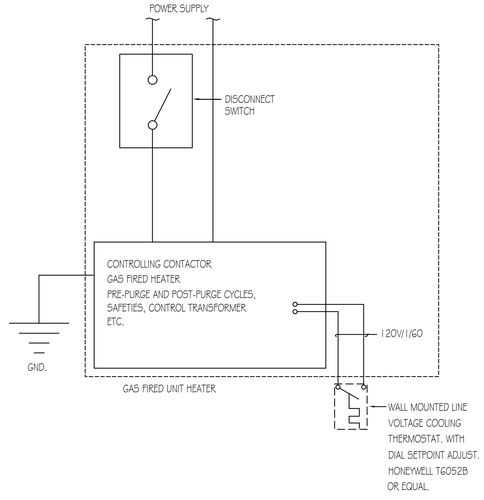
1 M1604.2 SPLIT SYSTEM AIR CONDITIONING SAC-1 UNIT CONTROL DIAGRAM

SCALE: NONE



4 M1604.2 TYPICAL WELDING FUME EXTRACTOR CONTROL DIAGRAM

SCALE: NONE



2 M1604.2 GAS FIRED HEATER CONTROL DIAGRAM

SCALE: NONE — TYPICAL FOR GUH-1, GUH-2 AND GUH-3

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PROJECT **24-038**

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DAVIS TECHNICAL COLLEGE WELDING TECHNOLOGY BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

PROFESSIONAL ENGINEER
10408342
JEFFREY
BRIAN
ANDERSON
07/24/25
STATE OF UTAH

CONTROL DIAGRAMS - MISCELLANEOUS

MI604.2

(801) 355-5915

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SYMBOLS LEGEND

SYMBOL	DESCRIPTION
ELECTRICAL POWER AND DISTRIBUTION	
	FUSE WITH RATING (ONE-LINE DIAGRAM).
	DISCONNECT, FUSED (ONE-LINE DIAGRAM).
	DISCONNECT, NONFUSED (ONE-LINE DIAGRAM).
	DISCONNECT WITH FUSE AND MOTOR STARTER COMBINATION (ONE-LINE DIAGRAM).
	OVERLOAD RELAY (ONE-LINE DIAGRAM).
	STARTER (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER, MOLDED CASE (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER, MOLDED CASE WITH SHUNT TRIP (ONE-LINE DIAGRAM).
MCP	CIRCUIT BREAKER, MOTOR CIRCUIT PROTECTION (ONE-LINE DIAGRAM).
#AF #AT	CIRCUIT BREAKER, ADJUSTABLE TRIP. "225AF" REPRESENTS THE RATING AND "150AT" REPRESENTS THE TRIP SETTING. (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER, SOLID STATE (ONE-LINE DIAGRAM).
GFP	CIRCUIT BREAKER, SOLID STATE WITH GROUND FAULT PROTECTION (ONE-LINE DIAGRAM).
	MOTOR.
	TRANSFORMER (ONE-LINE DIAGRAM).
"1DPHA"	DISTRIBUTION PANELBOARD, MOTOR CONTROL CENTER, PLUG-IN BUSWAY, MEDIUM VOLTAGE SWITCHBOARD (ONE-LINE DIAGRAM).
"1H"	PANELBOARD (ONE-LINE DIAGRAM).
225/3 "1H"	PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
225/3 "1H"	PANELBOARD WITH MAIN CIRCUIT BREAKER. SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
225/3 "1H" 60/3	PANELBOARD WITH MAIN AND SUB FEED CIRCUIT BREAKER (ONE-LINE DIAGRAM).
REFERENCE AND LINE SYMBOLS	
A5 E-501	DETAIL INDICATOR: A5 INDICATES DETAIL NUMBER, E-501 INDICATES DRAWING SHEET WHERE DETAIL IS SHOWN.
A5 E-201	ELEVATION OR SECTION INDICATOR, EXTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
A5 E-201	ELEVATION OR SECTION INDICATOR, INTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
ROOM NAME 100	ROOM IDENTIFIER WITH ROOM NAME AND NUMBER.
1	KEYNOTE INDICATOR.
1	REVISION INDICATOR.
CU-1	EQUIPMENT INDICATOR.
X-X XMDP	MECHANICAL EQUIPMENT INDICATOR. "X-X" INDICATES EQUIPMENT MARK SHOWN ON EQUIPMENT SCHEDULE. "XMDP" IDENTIFIES PANEL EQUIPMENT IS CIRCUITED TO. REFER TO EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
	BREAK, STRAIGHT: TO BREAK PARTS OF DRAWING
	BREAK, ROUND
MATCH LINE SEE XXX-XXX	MATCH LINE INDICATOR: CENTER, EXTRA WIDE LINE.
	NEW LINE: MEDIUM LINE.
	HIDDEN FEATURES LINE: HIDDEN, THIN LINE
	EXISTING TO REMAIN LINE: THIN LINE.
	DEMOLITION LINE: DASHED, MEDIUM LINE
	PROPERTY LINE: DASHED, WIDE LINE.
	CONTRACT LIMIT LINE: DASHDOT, WIDE LINE.
XXX EF-X	ELECTRICAL EQUIPMENT INDICATOR. "XXX" INDICATES TYPE OF EQUIPMENT OR EQUIPMENT ID. "EF-X" IDENTIFIES MECHANICAL EQUIPMENT BEING SERVED. REFER TO EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
X-X 1LA-3	EQUIPMENT INDICATOR. "X-X" INDICATES EQUIPMENT MARK SHOWN ON EQUIPMENT SCHEDULE. "1LA-3" IDENTIFIES PANEL EQUIPMENT IS CIRCUITED TO. REFER TO EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.

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SYMBOLS LEGEND

SYMBOL	DESCRIPTION
ELECTRICAL POWER AND DISTRIBUTION	
225/3 "1H" 225/3	PANELBOARD WITH MAIN LUGS ONLY AND SURGE PROTECTION WITH CIRCUIT BREAKER (ONE-LINE DIAGRAM).
225/3 "1H" 225/3 "1H"	PANELBOARD WITH SUB FEED LUGS (ONE-LINE DIAGRAM).
225/3 "1H" "1H"	PANELBOARD WITH CIRCUIT BREAKER AND SUB FEED LUGS (ONE-LINE DIAGRAM).
	CT CABINET PER UTILITY'S REQUIREMENTS (ONE-LINE DIAGRAM).
DMM	DIGITAL MULTIMETER (ONE-LINE DIAGRAM).
	EARTH GROUND (ONE-LINE DIAGRAM).
	SERVICE ENTRANCE SURGE PROTECTION (ONE-LINE DIAGRAM).
ANN	GENERATOR, ANNUNCIATOR (ONE-LINE DIAGRAM).
EPO	PUSH BUTTON, REMOTE EMERGENCY STOP.
G	GENERATOR, POWER (ONE-LINE DIAGRAM).
M	METER.
VFC VFD	VARIABLE FREQUENCY MOTOR CONTROLLER (ONE-LINE DIAGRAM).
	DISCONNECT SWITCH, FUSED.
	DISCONNECT SWITCH, UNFUSED.
	STARTER, COMBINATION WITH DISCONNECT SWITCH.
	STARTER OR MOTOR CONTROLLER.
	PUSHBUTTON.
	PUSHBUTTONS, MOTOR CONTROL.
	PANELBOARD CABINET, FLUSH MOUNTED.
	PANELBOARD CABINET, SURFACE MOUNTED, 1 SECTION.
	PANELBOARD CABINET, SURFACE MOUNTED, 2 SECTION.
DP#	DISTRIBUTION PANEL OR SWITCHBOARD.
LP	LIGHTING RELAY, CONTACTOR PANEL, OR DIMMING ENCLOSURE.
$ST	SWITCH, TOGGLE MOTOR STARTER WITH OVERLOAD PROTECTION.
	TRANSFORMER (SEE ONE-LINE FOR SIZE)
	SWITCH, SINGLE BREAK (ONE-LINE DIAGRAM).
	ARC ENERGY REDUCTION
WIRING METHODS	
	WIRING.
	WIRING TURNED UP OR TOWARDS OBSERVER.
	WIRING TURNED DOWN OR AWAY FROM OBSERVER.
A-1	SINGLE BRANCH CIRCUIT HOME RUN TO PANELBOARD WITH DEDICATED NEUTRAL CONDUCTOR. LETTER AND NUMBER NOTATION IDENTIFY PANEL AND CIRCUIT NUMBER.
A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS.
1 A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. NUMBER IN BOX REFERS TO THE CONDUCTOR AND CONDUIT SCHEDULE.
	LOW VOLTAGE WIRING: DIVIDE, MEDIUM LINE.
	CONDUIT STUB. DIMENSION RECORD DRAWINGS AND MARK.
1	CONDUCTOR & CONDUIT ("CC") SCHEDULE INDICATOR. REFER TO ONE-LINE DIAGRAM.
HC	ADA ACCESS PUSH PLATE
	JUNCTION BOX.
C	JUNCTION BOX, CEILING.
SC	JUNCTION BOX, SYSTEMS FURNITURE COMMUNICATION CONNECTION.
SP	JUNCTION BOX, SYSTEMS FURNITURE POWER CONNECTION.
PB	PULL BOX.
	MECHANICAL EQUIPMENT CONNECTION. REFER TO EQUIPMENT SCHEDULE FOR REQUIREMENTS.
EV	ELECTRIC VEHICLE CHARGING STATION.
	GROUND BUSBAR. REFER TO GROUNDING RISER DIAGRAM FOR ADDITIONAL INFORMATION.

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
FIRE ALARM	
FAA	FIRE ALARM ANNUNCIATOR PANEL.
FACP	FIRE ALARM CONTROL PANEL, SEMI-RECESSED.
CM	CONTROL MODULE.
MM	MONITOR MODULE.
F	FIRE ALARM MANUAL PULL STATION.
R	SHUT DOWN RELAY: INSTALL RELAY IN CONTROL CIRCUIT OF EQUIPMENT TO BE CONTROLLED IN THE EVENT OF A FIRE.
FS	WATER FLOW SWITCH. FLOW SWITCHES SHALL BE PROVIDED AND INSTALLED BY FIRE SPRINKLER CONTRACTOR AND SHALL BE CONNECTED TO LOCATIONS SHOWN ON THE FIRE SPRINKLER SHOP DRAWINGS.
VS	VALVE SUPERVISORY SWITCH, TAMPER SWITCH. TAMPER SWITCHES SHALL BE PROVIDED AND INSTALLED BY FIRE SPRINKLER CONTRACTOR AND SHALL BE CONNECTED TO LOCATIONS SHOWN ON THE FIRE SPRINKLER SHOP DRAWINGS.
PS	PRESSURE SUPERVISORY SWITCH. PRESSURE SWITCHES SHALL BE PROVIDED AND INSTALLED BY FIRE SPRINKLER CONTRACTOR AND SHALL BE CONNECTED TO LOCATIONS SHOWN ON THE FIRE SPRINKLER SHOP DRAWINGS.
	DETECTOR, SMOKE.
	DETECTOR, SMOKE, DUCT WITH HOUSING AND SAMPLING TUBE.
SD	SMOKE DAMPER. 120V POWER FROM ELECTRICAL SYSTEM.
FSD	COMBINATION FIRE/SMOKE DAMPER. 120V POWER FROM ELECTRICAL SYSTEM.
	DETECTOR, HEAT.
CO	DETECTOR, CARBON MONOXIDE.
	STROBE, WALL MOUNTED.
75	STROBE, WALL MOUNTED. SUBSCRIPT INDICATES CANDELA RATING.
	ALARM, HORN/STROBE, WALL MOUNTED, ONE ASSEMBLY.
75	ALARM, HORN/STROBE, WALL MOUNTED, ONE ASSEMBLY. SUBSCRIPT INDICATES CANDELA RATING.
	SPEAKER, WALL MOUNTED, EVACUATION, COMBINATION STROBE.
75	SPEAKER, WALL MOUNTED, EVACUATION, COMBINATION STROBE. SUBSCRIPT INDICATES CANDELLA RATING.
75	ALARM, HORN/STROBE, ONE ASSEMBLY, CEILING MOUNTED. SUBSCRIPT INDICATES CANDELA RATING.
75	SPEAKER/STROBE, CEILING MOUNTED. SUBSCRIPT INDICATES CANDELA RATING.
75	ALARM, STROBE, CEILING MOUNTED. SUBSCRIPT INDICATES CANDELA RATING.
WIRING DEVICES	
	RECEPTACLE, SINGLE: NEMA 5-20R.
	RECEPTACLE, DUPLEX: NEMA 5-20R.
A	RECEPTACLE, DUPLEX, ABOVE COUNTER: NEMA 5-20R.
C	RECEPTACLE, DUPLEX, CEILING: NEMA 5-20R.
DF	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, DRINKING FOUNTAIN: CONCEAL WATER COOLER RECEPTACLE BEHIND WATER COOLER. SEE MECHANICAL/PLUMBING SHOP DRAWINGS FOR INSTALLATION REQUIREMENTS.
IG	RECEPTACLE, DUPLEX, ISOLATED GROUND: NEMA 5-20R.
W	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, WET LABEL, "WEATHERPROOF IN USE": NEMA 5-20R.
	RECEPTACLE, DUPLEX ON EMERGENCY POWER: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R.
WP	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, WEATHERPROOF: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R.
	RECEPTACLE, SPECIAL PURPOSE. PROVIDE RECEPTACLE TO MATCH EQUIPMENT PLUG.
D	DROP CORD. SEE DETAIL.
FB#	FLUSH FLOOR BOX. "#" SHOWN ON DRAWINGS. REFER TO WIRING DEVICE SCHEDULE IN THE ELECTRICAL SPECIFICATIONS FOR CONFIGURATION AND DEVICES.

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
LIGHTING	
(W-3)	FIXTURE IDENTIFICATION: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
(W-3E)	FIXTURE IDENTIFICATION: EMERGENCY LIGHTING FIXTURE WITH BATTERY PACK AND/ OR GENERATOR AND/ OR CENTRALIZED INVERTER AND/ OR CENTRALIZED UPS CONNECTION AS INDICATED IN PLANS. (W-3E) INDICATES FIXTURE TYPE AS SCHEDULED.
EM	EMERGENCY.
	EXIT SIGN: SINGLE FACE; CEILING MOUNTED
	EXIT SIGN: SINGLE FACE; WALL MOUNTED
	EXIT SIGN: DOUBLE FACE; CEILING MOUNTED
	EXIT SIGN: DOUBLE FACE; WALL MOUNTED
LIGHTING CONTROL	
	OCCUPANCY SENSOR, DUAL TECHNOLOGY, OMNI-DIRECTIONAL, CEILING.
P	PHOTOCELL.
P	PHOTOCELL, WALL MOUNTED.
	VACANCY SENSOR, DUAL TECHNOLOGY, OMNI-DIRECTIONAL, CEILING.
	SWITCH/OCCUPANCY SENSOR COMBO, DUAL TECHNOLOGY, WALL.
	SWITCH/VACANCY SENSOR COMBO, DUAL TECHNOLOGY, WALL.
	DIMMER SWITCH/OCCUPANCY SENSOR COMBO, DUAL TECHNOLOGY, WALL.
	DIMMER SWITCH/VACANCY SENSOR COMBO, DUAL TECHNOLOGY, WALL.
RC	DIGITAL LIGHTING ROOM CONTROLLER
DC	DIGITAL LIGHTING DIMMING CONTROLLER
ET	LIGHTING EMERGENCY TRANSFER DEVICE
X	LIGHTING SPACE CONTROL TYPE. X INDICATES TYPE. SEE SCHEDULE / DIAGRAM.
SECURITY	
ACC	ACCESS CONTROL HEADEND EQUIPMENT.
CR	CARD READER
KCR	KEYPAD/CARD READER COMBINATION.
	CONTACT INDICATOR
EH	ELECTRIC HINDGE
ES	ELECTRIC STRIKE
EPT	ELECTRIC POWER TRANSFER
ML	TYPICAL MAGNETIC LOCK
MS	TYPICAL MOTION SENOR

DEFINITIONS

NOTE: ALL DEFINITIONS MAY NOT BE USED.

INDICATED: THE TERM "INDICATED" REFERS TO GRAPHIC REPRESENTATIONS, NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER PARAGRAPHS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR REQUIREMENTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH AS "SHOWN", "NOTED", "SCHEDULED", AND "SPECIFIED" ARE USED, IT IS TO HELP THE READER LOCATE THE REFERENCE, NO LIMITATION ON LOCATION IS INTENDED.

DIRECTED: TERMS SUCH AS "DIRECTED", "REQUESTED", AUTHORIZED", "SELECTED", "APPROVED", "REQUIRED", AND "PERMITTED" MEAN "DIRECTED BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND SIMILAR PHRASES.

APPROVED: THE TERM "APPROVED", WHERE USED IN CONJUNCTION WITH THE ENGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES AND RESPONSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY CONDITIONS.

FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."

INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

INSTALLER: AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY ENGAGED BY THE CONTRACTOR, EITHER AS AN EMPLOYEE, SUBCONTRACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A PARTICULAR CONSTRUCTION ACTIVITY, INCLUDING INSTALLATION, ERECTION, APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE REQUIRED TO BE EXPERIENCED IN THE OPERATIONS THEY ARE ENGAGED TO PERFORM.

TECHNOLOGY SYSTEMS: THE TERM "TECHNOLOGY SYSTEMS" IS USED TO DESCRIBE ALL LOW VOLTAGE SYSTEMS GENERALLY REFERRED TO AS "SPECIAL SYSTEMS". THESE SYSTEMS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO ALL SYSTEMS WHICH UTILIZE VOLTAGES OF LESS THAN 71 VOLTS SUCH AS SOUND SYSTEMS, VIDEO SYSTEMS, TV SYSTEMS, SECURITY SYSTEMS, VOICE AND DATA CABLING SYSTEMS, ETC...

ABBREVIATIONS

NOTE: ALL ABBREVIATIONS MAY NOT BE USED.

1P	SINGLE POLE	kVA	KILOVOLT AMPERE
1PH	SINGLE-PHASE	kVAR	KILOVOLT AMPERE REACTIVE
1WAY	ONE-WAY	kW	KILOWATT
2/C	TWO-CONDUCTOR	kWh	KILOWATT HOUR
2WAY	TWO-WAY	LED	LIGHT EMITTING DIODE
3/C	THREE-CONDUCTOR	LFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT
3WAY	THREE-WAY	LFNC	LIQUID TIGHT FLEXIBLE NONMETALLIC CONDUIT
4OUT	QUADRUPLE RECEPTACLE OUTLET	LPS	LOW PRESSURE SODIUM
4PDT	FOUR-POLE DOUBLE THROW	LRA	LOCKED ROTOR AMPS
4PST	FOUR-POLE SINGLE THROW	LTG	LIGHTING
4W	FOUR-WIRE	LV	LOW VOLTAGE
4WAY	FOUR-WAY	MATV	MASTER ANTENNA TELEVISION SYSTEM
A	ABOVE COUNTER	MAX	MAXIMUM
AC	ARMORED CABLE	MC	METAL CLAD
ACS	ACCESS CONTROL SYSTEM	MCA	MINIMUM CIRCUIT AMPS
ADA	AMERICANS WITH DISABILITIES ACT	MCB	MAIN CIRCUIT BREAKER
ADJ	ADJACENT	MCC	MOTOR CONTROL CENTER
AFF	ABOVE FINISHED FLOOR	MCP	MOTOR CIRCUIT PROTECTION
AFG	ABOVE FINISHED GRADE	MDP	MAIN DISTRIBUTION PANEL
AIC	AMPERE INTERRUPTING CAPACITY	MG	MOTOR GENERATOR
ALUM	ALUMINUM	MH	MANHOLE
AMP	AMPERE	MIN	MINIMUM
ANN	ANNUNCIATOR	MLO	MAIN LUGS ONLY
AP	ACCESS POINT (WIRELESS DATA)	MOCP	MAXIMUM OVERCURRENT PROTECTION
AR	AS REQUIRED	MTS	MANUAL TRANSFER SWITCH
ASC	AMPS SHORT CIRCUIT	NA	NOT APPLICABLE
ATS	AUTOMATIC TRANSFER SWITCH	NC	NORMALLY CLOSED
AV	AUDIO VISUAL	NEC	NATIONAL ELECTRICAL CODE
AWG	AMERICAN WIRE GAGE	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
BB	BUCK-BOOST TRANSFORMER	NFC	NATIONAL FIRE CODE
XFMR		NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
BFF	BELOW FINISHED FLOOR	NIC	NOT IN CONTRACT
BFG	BELOW FINISHED GRADE	NL	NIGHT LIGHT
C	CEILING MOUNTED	NO	NORMALLY OPEN
CAT	CATEGORY	NTS	NOT TO SCALE
CATV	COMMUNITY ANTENNA TELEVISION	OC	ON CENTER
CB	CIRCUIT BREAKER	OCP	OVER CURRENT PROTECTION
CCBA	CUSTOM COLOR AS SELECTED BY ARCHITECT	OE	OWNER ELECTRONICS
CCTV	CLOSED CIRCUIT TELEVISION	OF/CI	OWNER FURNISHED/ CONTRACTOR INSTALLED
CF/CI	CONTRACTOR FURNISHED/ CONTRACTOR INSTALLED	OF/OI	OWNER FURNISHED/ OWNER INSTALLED
CF/OI	CONTRACTOR FURNISHED/ OWNER INSTALLED	OFP	OBTAIN FROM PLANS
CFBA	CUSTOM FINISH AS SELECTED BY ARCHITECT	OH DR	OVERHEAD (COILING) DOOR
CI	CONTACT INDICATOR	OL	OVERLOAD
CKT	CIRCUIT	PB	PUSHBUTTON
CM	CONSTRUCTION MANAGER	PF	POWER FACTOR
CND	CONDUIT	PH	PHASE
CO	CONVENIENCE OUTLET	PNL	PANEL
COR	CONTRACTING OFFICER'S REPRESENTATIVE	PNM	PLENUM
CP	CONTROL PANEL	PR	PAIR
CR	CARD READER	PS	POWER SUPPLY
CT	CURRENT TRANSFORMER	PT	POTENTIAL TRANSFORMER
CTV	CABLE TELEVISION	PTZ	PAN/TILT/ZOOM
CU	COPPER	PV	PHOTO VOLTAIC
dBA	UNIT OF SOUND LEVEL	QTY	QUANTITY
DPDT	DOUBLE POLE, DOUBLE THROW	R	REMOVE
DS	DISCONNECT SWITCH	RCP	REFLECTED CEILING PLAN
E	ENHANCED	RMC	RIGID METAL CONDUIT
EA	EACH	RNC	RIGID NONMETAL CONDUIT
EM	EMERGENCY	RO	REMOTE DOOR OPEN
EMT	ELECTRICAL METALLIC TUBING	RPM	REVOLUTIONS PER MINUTE
ENT	ELECTRIC NONMETALLIC TUBING	RPP	RISER PATCH PANEL
EPO	EMERGENCY POWER OFF	RR	REMOVE AND RELOCATE
EQUIP	EQUIPMENT	S/S	START/STOP
ER	EQUIPMENT ROOM	SCA	SHORT CIRCUIT AMPS
EX	EXISTING	SCBA	STANDARD COLOR AS SELECTED BY ARCHITECT
F	FURNITURE MOUNTED	SF	SQUARE FOOT (FEET)
FA	FIRE ALARM	SFBA	STANDARD FINISH AS SELECTED BY ARCHITECT
FCP	FIRE ALARM CONTROL PANEL	SPD	SURGE PROTECTIVE DEVICE
FLA	FULL LOAD AMPS	SPDT	SINGLE POLE, DOUBLE THROW
FMC	FLEXIBLE METAL CONDUIT	SPEC	SPECIFICATION
FOB	FREIGHT ON BOARD	SPP	STATION PATCH PANEL
FPP	FIBER PATCH PANEL	SPST	SINGLE POLE, SINGLE THROW
FVNR	FULL VOLTAGE NON-REVERSING	ST	SINGLE THROW
FVR	FULL VOLTAGE REVERSING	SWBD	SWITCHBOARD
GEN	GENERATOR	SWGR	SWITCHGEAR
GFCI	GROUND FAULT INTERRUPTER	TL	TWIST LOCK
GFP	GROUND FAULT PROTECTION	TP	TELEPHONE POLE
GIG	GIGA HERTZ	TP	TWISTED PAIR
GND	GROUND	TR	TELECOMMMUNICATIONS ROOM
HD	HEAVY DUTY	TTB	TELEPHONE TERMINAL BOARD
HID	HIGH INTENSITY DISCHARGE	TV	TELEVISION
HOA	HAND-OFF-AUTOMATIC	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
HP	HORSE POWER	TYP	TYPICAL
HPF	HIGH POWER FACTOR	UF	UNDERFLOOR
HPS	HIGH PRESSURE SODIUM	UGND	UNDERGROUND
HV	HIGH VOLTAGE	UPS	UNINTERRUPTIBLE POWER SUPPLY
HWM	HORIZONTAL WIRE MANAGEMENT	V	VOLTS
HZ	HERTZ	VA	VOLT AMPERE
I/O	INPUT/ OUTPUT	VFC/VF D	VARIABLE FREQUENCY MOTOR CONTROLLER
IG	ISOLATED GROUND	VIC	VIDEO INTERCOM SYSTEM
IMC	INTERMEDIATE METAL CONDUIT	VSS	VIDEO SURVEILLANCE SYSTEM
IN/IS	INSULATED/ ISOLATED	VWM	VERTICAL WIRE MANAGEMENT
IR	INFRARED	W/	WITH
J-BOX	JUNCTION BOX	W/O	WITHOUT
KCP	KAYSVILLE CITY POWER	WP	WEATHERPROOF
kV	KILOVOLT	WPP	WIRELESS PATCH PANEL
		XFMR	TRANSFORMER

SYSTEM RESPONSIBILITY MATRIX

	DESIGNED BY	FURNISHED BY	INSTALLED BY	NOTES
POWER				
MEDIUM VOLTAGE RACEWAYS	A/E	CONTRACTOR	CONTRACTOR	
MEDIUM VOLTAGE CABLING/EQUIPMENT	NIC	NIC	NIC	By Kaysville City Power
RACK MOUNTED UPS SYSTEM	OWNER	OWNER	OWNER	Eaton
EV CHARGERS	NIC	NIC	NIC	Rough-in for (1) EV Dual Port
LIGHTNING PROTECTION	A/E	CONTRACTOR	CONTRACTOR	
TELECOMM				
RACEWAYS (CONDUIT AND CABLETRAY)	A/E	CONTRACTOR	CONTRACTOR	
BACKBONE FIBER	A/E	CONTRACTOR	CONTRACTOR	24ST SMF
FIBER TERMINATION SHELVES (FPP)	A/E	CONTRACTOR	CONTRACTOR	
RISER PATCH PANELS (RPP)	A/E	CONTRACTOR	CONTRACTOR	
HORIZONTAL CABLING	A/E	CONTRACTOR	CONTRACTOR	CAT 6A
RJ45 INSERTS AND FACEPLATES	A/E	CONTRACTOR	CONTRACTOR	
PATCH PANELS/INSERTS SPP	A/E	CONTRACTOR	CONTRACTOR	
FIBER AND CAT 6A PATCH CORDS	OWNER	OWNER	OWNER	
MDF RACKS & WIRE MANAGERS	A/E	CONTRACTOR	CONTRACTOR	2-2 POST RACKS PER ER/TR
MDF CABINET	NIC	NIC	NIC	NA
MDF LADDER TRAY	A/E	CONTRACTOR	CONTRACTOR	
ACTIVE NETWORK ELECTRONICS	OWNER	OWNER	OWNER	WIRELESS AP's, L2/L3 SWITCHES, ETC.
EMERGENCY DAS SYSTEM TESTING	A/E	CONTRACTOR	CONTRACTOR	Performance Spec
EMERGENCY & CELLULAR DAS SYSTEM	NIC	NIC	NIC	
SECURITY AND MISC. SYSTEMS				
RACEWAYS	A/E	CONTRACTOR	CONTRACTOR	
CCTV SYSTEMS	A/E	CONTRACTOR	CONTRACTOR	MILESTONE & AXIS
ACCESS CONTROLS SYSTEMS	A/E	CONTRACTOR	CONTRACTOR	S2 SYSTEM
INTRUSION DETECTION SYSTEMS	NIC	NIC	NIC	
WIRELESS CLOCKS	NIC	NIC	NIC	
FIRE ALARM	A/E	CONTRACTOR	CONTRACTOR	SILENT KNIGHT
AUDIO VISUAL				
RACEWAYS	A/E	CONTRACTOR	CONTRACTOR	
AUDIO SYSTEM	A/E	CONTRACTOR	CONTRACTOR	
VIDEO SYSTEM	A/E	CONTRACTOR	CONTRACTOR	Crestron
FLAT SCREENS & MOUNTS	A/E	OWNER	CONTRACTOR	
PROJECTORS, MOUNTS & SCREENS	A/E	CONTRACTOR	CONTRACTOR	

GENERAL ELECTRICAL NOTES

1. CLARIFICATION METHODS: AT THE TIME OF BIDDING, BIDDERS SHALL FAMILIARIZE THEMSELVES WITH THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS, MISUNDERSTANDINGS, CONFLICTS, DELETIONS, DISCONTINUED PRODUCTS, CATALOG NUMBER DISCREPANCIES, DISCREPANCIES BETWEEN THE EQUIPMENT SUPPLIED AND THE INTENT OR FUNCTION OF THE EQUIPMENT, ETC, SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER IN WRITING FOR CLARIFICATION PRIOR TO ISSUANCE OF THE FINAL ADDENDUM AND BIDDING OF THE PROJECT. WHERE DISCREPANCIES OR MULTIPLE INTERPRETATIONS OCCUR, THE MOST STRINGENT (WHICH IS GENERALLY RECOGNIZED AS THE MOST COSTLY) THAT MEETS THE INTENT OF THE DOCUMENTS SHALL BE ENFORCED.
2. OWNER FURNISHED ITEMS: THE OWNER WILL FURNISH MATERIAL AND EQUIPMENT AS INDICATED IN THE CONTRACT DOCUMENTS TO BE INCORPORATED INTO THE WORK. THESE ITEMS ARE ASSIGNED TO THE INSTALLER AND COSTS FOR RECEIVING, HANDLING, STORAGE, IF REQUIRED, AND INSTALLATION ARE INCLUDED IN THE CONTRACT SUM.
   A. THE INSTALLER'S RESPONSIBILITIES ARE THE SAME AS IF THE INSTALLER FURNISHED THE MATERIALS OR EQUIPMENT.
   B. THE OWNER WILL ARRANGE AND PAY FOR DELIVERY OF OWNER FURNISHED ITEMS FREIGHT ON BOARD JOB SITE AND THE INSTALLER WILL INSPECT DELIVERIES FOR DAMAGE. IF OWNER FURNISHED ITEMS ARE DAMAGED, DEFECTIVE OR MISSING, DOCUMENT DAMAGED ITEMS WITH THE TRANSPORT COMPANY AND THE OWNER WILL ARRANGE FOR REPLACEMENT. THE OWNER WILL ALSO ARRANGE FOR MANUFACTURER'S FIELD SERVICES, AND THE DELIVERY OF MANUFACTURER'S WARRANTIES AND BONDS TO THE INSTALLER.
   C. THE INSTALLER IS RESPONSIBLE FOR DESIGNATING THE DELIVERY DATES OF OWNER FURNISHED ITEMS AND FOR RECEIVING, UNLOADING AND HANDLING OWNER FURNISHED ITEMS AT THE SITE.THE INSTALLER IS RESPONSIBLE FOR PROTECTING OWNER FURNISHED ITEMS FROM DAMAGE, INCLUDING DAMAGE FROM EXPOSURE TO THE ELEMENTS, AND TO REPAIR OR REPLACE ITEMS DAMAGED AS A RESULT OF HIS OPERATIONS.
3. EXPOSED STRUCTURE AREAS (EXCLUDING MECHANICAL, ELECTRICAL, AND COMMUNICATION SPACES): INSTALL RACEWAYS BETWEEN DECK AND STRUCTURE WHEREVER POSSIBLE IN EXPOSED STRUCTURE CEILING AREAS. ROUTE RACEWAYS IN CONCEALED AREAS WHEREVER POSSIBLE. REFER ALL CONDITIONS WHERE RACEWAYS MUST BE INSTALLED WHICH CANNOT COMPLY WITH THESE REQUIREMENTS TO THE ARCHITECT.
4. SUBMITTALS: PROVIDE ORIGINAL ELECTRONIC PDF FORMAT, BOUND, BOOKMARKED (EACH SECTION AND PRODUCT), AND HIGHLIGHTED, JOB NAME AND SUBCONTRACTOR SHALL BE ON THE FRONT COVER. PREPARE INDEX OF EQUIPMENT SUBMITTED IN EACH TAB.
5. REFLECTED CEILING PLANS: COORDINATE THE LOCATION OF LIGHT FIXTURES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS. REFER ALL DISCREPANCIES TO THE ARCHITECT AND ENGINEER.
6. ALL WORK SHALL BE DONE ACCORDING TO THE CURRENT NATIONAL ELECTRIC CODE (NEC), IBC, NFPA, AND IFC. COMPLIANCE AND FINAL APPROVAL IS SUBJECT TO THE ON SITE FIELD INSPECTION OF THE AHJ.

SITE COORDINATION

THE LOCATION, CAPACITY, AND VOLTAGE OF THE LINES ARE ALL IN ACCORDANCE WITH DATA GIVEN THIS OFFICE BY THE UTILITY COMPANY. COORDINATE WITH THE LOCAL UTILITY COMPANY FOR THE INSTALLATION OF THE ELECTRICAL SERVICE. COMPLY WITH UTILITY REGULATIONS. REPORT DISCREPANCIES TO THE ENGINEER.

ELECTRIC UTILITY

	PERSON CONTACTED: BRIAN JOHNSON
	DATE: 8/22/2024
	PHONE NUMBER: 801-544-8925
KAYSVILLE CITY POWER	EMAI

OUTLET COLOR SCHEDULE

WHITE	DATA	
YELLOW	WIRELESS DATA	
VIOLET	SECURITY	

EQUIPMENT/ CABLE LIST

THE ITEMS INDICATED BELOW SHALL NOT BE CONSTRUED AS A "BILL OF MATERIALS". THIS LIST IDENTIFIES ITEMS OF SIGNIFICANCE USED DURING THE DESIGN OF THE CABLING INSTALLATION. WHERE THE ITEMS INDICATED ARE ONE PORTION OF AN ASSEMBLY, THE ENTIRE ASSEMBLY SHALL BE PROVIDED UNLESS SPECIFIED OTHERWISE. PROVIDE ALL MISCELLANEOUS HARDWARE AND SUPPORTS WHICH MAY NOT BE LISTED HERE, FOR A COMPLETE INSTALLATION. COMPARE CATALOG NUMBERS WITH DESCRIPTIONS AND NOTIFY ENGINEER OF DISCREPANCIES PRIOR TO BID. IF CATALOG NUMBERS

SYMBOL	ITEM DESCRIPTION	ACCEPTABLE TYPES
	STATION CABLE, DATA - CATEGORY 6A PLENUM, BLUE, DATA	COMMSCOPE 760107201
	STATION CABLE, DATA - CATEGORY 6A PLENUM, VIOLET SECURITY	COMMSCOPE UN874041614/10
	STATION CABLE, DATA - CATEGORY 6A PLENUM, YELLOW, WIRELESS	COMMSCOPE 760107276
	FIBER OPTIC CABLE, SINGLE-MODE, 24 STRAND, LOOSE TUBE, BLACK	CORNING 024ZM4-T4F22A20
▼	DATA OUTLET, SINGLE GANG FACEPLATE, WHITE, 2 POSITION	COMMSCOPE 108168469
	CATEGORY 6A JACK - DATA, WHITE	COMMSCOPE 760092429
	BLANK INSERT, WHITE	COMMSCOPE 107067928
4 4 ▼▼A	DATA OUTLET, SINGLE GANG FACEPLATE, WHITE, 4 POSITION ("A"=ABOVE COUNTER HEIGHT)	COMMSCOPE 108168543
	CATEGORY 6A JACK - DATA, WHITE	COMMSCOPE 760092429
6 6 ▼▼A	DATA OUTLET, SINGLE GANG FACEPLATE, WHITE, 6 POSITION ("A"=ABOVE COUNTER HEIGHT)	COMMSCOPE 108168584
	CATEGORY 6A JACK - DATA, WHITE	COMMSCOPE 760092429
C A	DATA OUTLET, SURFACE MOUNT BOX, WHITE, 1 POSITION.	COMMSCOPE 760248521
	CATEGORY 6A JACK - DATA, WHITE	COMMSCOPE 760092429
2C A	DATA OUTLET, SURFACE MOUNT BOX, WHITE, 2 POSITION.	COMMSCOPE 760248525
	CATEGORY 6A JACK - DATA, WHITE	COMMSCOPE 760092429
	DATA OUTLET, SURFACE MOUNT BOX, WHITE, 1 POSITION.	COMMSCOPE 760248521
	CATEGORY 6A JACK - SECURITY, VIOLET	COMMSCOPE 760092460
S C	DATA OUTLET, SURFACE MOUNT BOX, WHITE, 2 POSITION.	COMMSCOPE 107984056
	CATEGORY 6A JACK - DATA, YELLOW	COMMSCOPE 760092387
SPP2	STATION PATCH PANEL, MODULAR ANGLED, 48-PORT, 2RU, BLACK	COMMSCOPE 760207308
	CATEGORY 6A JACK - DATA, WHITE	COMMSCOPE 760092429
	CATEGORY 6A JACK - SECURITY, VIOLET	COMMSCOPE 760092460
	CATEGORY 6A JACK - WIRELESS, YELLOW	COMMSCOPE 760092387
FPP4	FIBER PATCH PANEL, RACK MOUNT, 4RU, BLACK	CORNING CCH-04U
	FIBER SPLICE CASSETTE, 12 FIBER, 6 POSITION, DUPLEX LC CONNECTOR	CORNING CCH-CS12-A9-P00RE
VWM	VERTICAL WIRE MANAGER, BLACK, 10", FRONT AND REAR W/DOORS	PANDUIT PR2VD10
HWM	HORIZONTAL WIRE MANAGER, BLACK, 2RU, FRONT	PANDUIT NMF2
PS	HORIZONTAL POWER DISTRIBUTION UNIT, 30A, 208V, W/12 C13 OUTLETS	PANDUIT P12B47M OR EQUAL
	EQUIPMENT RACK, 2-POST, 7' 45RU, BLACK	CHATSWORTH 55053-703
	CABLE BASKET TRAY, GALVANIZED (REFER TO FLOOR PLANS FOR CABLE TRAY SIZING)	
	CABLE RUNWAY, 18", BLACK W/ ALL REQUIRED MOUNTING ACCESSORIES	CHATSWORTH 11252-718
	WALL ANGLE KIT, 18", BLACK	CHATSWORTH 11312-718
	BUTT SPLICE KIT, BLACK	CHATSWORTH 11301-001
	JUNCTION SPLICE KIT, BLACK	CHATSWORTH 11302-001
	FOOT KIT, BLACK	CHATSWORTH 10595-712
	END CLOSING KIT, CABLE RUNWAY, BLACK	CHATSWORTH 11700-712
	CABLE RUNWAY ELEVATION KIT, 6"	CHATSWORTH 10506-706
	PLYWOOD BACKBOARD, 4'x8', GRADE A, FIRE-TREATED & PAINTED	
	TELECOMMUNICATIONS MAIN GROUNDING BUS BAR	PANDUIT OR EQUAL
	TELECOMMUNICATIONS GROUNDING BUS BAR	PANDUIT OR EQUAL

NOTE: ALL RACKS, LADDER, PATCH PANELS AND ACCESSORIES SHALL BE BLACK IN COLOR.

GENERAL PROJECT NOTES

1. UNLESS OTHERWISE NOTED, INSTALL ALL CABLE INSIDE RACEWAY SYSTEMS. WHERE RACEWAY SYSTEMS HAVE NOT BEEN PROVIDED OR SPECIFIED, INSTALL CABLE THROUGH THE SPECIFIED "CADDY" CLIPS AT THE MINIMUM INTERVALS IDENTIFIED IN THE SPECIFICATIONS. SUPPORT "CADDY" CLIPS DIRECTLY FROM THE BUILDING STRUCTURE, NOT FROM OTHER BUILDING SYSTEM SUPPORT WIRES OR CABLE.
2. PROVIDE PLENUM RATED CABLE FOR ALL SPECIFIED CABLE.
3. LABEL ALL CABLE INSTALLED UNDER THIS CONTRACT REGARDLESS OF LENGTH. ACCORDING TO WRITTEN SPECIFICATION.
4. THE EQUIPMENT LABELING IDENTIFIED ON DETAILS IN THESE DRAWINGS ARE EXAMPLES ONLY OF THE ACTUAL LABELING WHICH IS REQUIRED AS PART OF THIS CONTRACT. PRIOR TO FABRICATION, SUBMIT THE NOMENCLATURE FOR ALL LABELS TO THE OWNER FOR REVIEW. THIS REQUIREMENT INCLUDES BUT IS NOT LIMITED TO ALL CABLE LABELING, AND ALL EQUIPMENT LABELING.
5. GROUND ALL EQUIPMENT RACKS LADDER RACK, AND EQUIPMENT INSTALLED UNDER THIS CONTRACT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND WRITTEN SPECIFICATION.
6. PROVIDE THE QUANTITY OF PATCH PANELS REQUIRED +20% FOR THE TOTAL VOICE AND DATA OUTLETS SHOWN ON FLOOR PLANS FOR THE PARTICULAR LEVEL.
7. COORDINATE WITH OWNER I.T. PERSONNEL ON RACK PATCH PANEL DENSITY PRIOR TO ANY CABLE TERMINATION.
8. FOR EVERY CABLE PULL SPECIFIED, COIL 10'-0" OF EXCESS CABLE AT STATION END FOR FUTURE USE. NEATLY COIL AND SECURE CABLE ABOVE CEILING OR BELOW THE FLOOR, WHERE APPLICABLE.
9. COORDINATE WITH ALL SUBS TO ENSURE THAT ALL CABLES ARE PROTECTED FROM ANY DIRECT PAINT, OR INCIDENTAL OVERSPRAY.
10. FACEPLATE COLOR WILL BE DETERMINED BY THE ARCHITECT AND OWNER. FACEPLATE COLOR SHOULD MATCH ELECTRICAL FACEPLATE COLOR, UNLESS OTHERWISE NOTED.

ABBREVIATIONS

NOTE: ALL ABBREVIATIONS MAY NOT BE USED.

A	AUGMENTED
ER	EQUIPMENT ROOM
CAT	CATEGORY
E	ENHANCED
EA	EACH
FPP	FIBER PATCH PANEL
GIG	GIGA HERTZ
HWM	HORIZONTAL WIRE MANAGEMENT
NIC	NOT IN CONTRACT
OE	OWNER ELECTRONICS
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
PNM	PLENUM
PR	PAIR
PS	POWER SUPPLY
RPP	RISER PATCH PANEL
SPP	TYPE S PATCH PANEL
TYP	TYPICAL
VWM	VERTICLE WIRE MANAGEMENT

DEFINITIONS

NOTE: ALL DEFINITIONS MAY NOT BE USED.

INDICATED: THE TERM "INDICATED" REFERS TO GRAPHIC REPRESENTATIONS, NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER PARAGRAPHS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR REQUIREMENTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH AS "SHOWN", "NOTED", "SCHEDULED", AND "SPECIFIED" ARE USED, IT IS TO HELP THE READER LOCATE THE REFERENCE, NO LIMITATION ON LOCATION IS INTENDED.

DIRECTED: TERMS SUCH AS "DIRECTED", "REQUESTED", AUTHORIZED", "SELECTED", "APPROVED", "REQUIRED", AND "PERMITTED" MEAN "DIRECTED BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND SIMILAR PHRASES.

APPROVE: THE TERM "APPROVED", WHERE USED IN CONJUNCTION WITH THE ENGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES AND RESPONSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY CONDITIONS.

FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."

INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

INSTALLER: AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY ENGAGED BY THE CONTRACTOR, EITHER AS AN EMPLOYEE, SUBCONTRACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A PARTICULAR CONSTRUCTION ACTIVITY, INCLUDING INSTALLATION, ERECTION, APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE REQUIRED TO BE EXPERIENCED IN THE OPERATIONS THEY ARE ENGAGED TO PERFORM.

ELECTRONIC SYSTEMS: THE TERM "ELECTRONIC SYSTEMS" IS USED TO DESCRIBE ALL LOW VOLTAGE SYSTEMS GENERALLY REFERRED TO AS "SPECIAL SYSTEMS". THESE SYSTEMS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO ALL SYSTEMS WHICH UTILIZE VOLTAGES OF LESS THAN 71 VOLTS SUCH AS SOUND SYSTEMS, VIDEO SYSTEMS, TV SYSTEMS, SECURITY SYSTEMS, VOICE AND DATA CABLING SYSTEMS, ETC...

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PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

SPECTRUM ENGINEERS
324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH & FABRICATION BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN
STATE OF UTAH
11/14/2024

TELECOM SYMBOLS AND ABBREVIATIONS

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AV DISPLAY DEVICE SCHEDULE

DISPLAY TYPE / ORIENTATION ABBREVIATIONS:	AVIXA STANDARD USED ABBREVIATIONS:
M = MONITOR L = LANDSCAPE P = PORTRAIT PM = POLE MOUNT PS = PROJECTION SCREEN VW = VIDEO WALL LED = DIRECT VIEW LED	NA = NOT APPLICABLE NC = NOT COMPLIANT WITH AVIXA STANDARDS OC = OBSERVING CONTENT (GENERAL VIEWING, DETAILS NOT CRITICAL) IC = INSPECTING CONTENT (SPREADSHEETS, WEB PAGES, PRESENTATIONS) ICC = INSPECTING CRITICAL CONTENT (ENGINEERING DRAWINGS, MEDICAL IMAGES)

ROOM NAME	ROOM #	LEVEL	CEILING HEIGHT	FURTHEST ON AXIS VIEWING DISTANCE	DISPLAY TYPE / ORIENTATION	IMAGE HEIGHT	IMAGE WIDTH	APPROX. PROJECTOR THROW DISTANCE	FLAT PANEL SIZE (Diagonal)	ASPECT RATIO	MATRIX SIZE	AVIXA STANDARD USED
CLASSROOM	110	LEVEL 1	19' - 0"	25' - 0"	PS	78"	139"	17' - 0"		16:9		
CONFERENCE	113	LEVEL 1	19' - 0"	0' - 0"	M/L				75"	16:9		

AV RACEWAY SYSTEMS SCHEDULE

SYMBOL	DESCRIPTION	MOUNTING (UNLESS OTHERWISE NOTED ON DRAWINGS)
2B	4-11/16" BOX, MAXIMUM DEPTH FOR STUD SPACE, W/ 2-GANG MUD RING.	FLUSH IN WALL AT ELECTRICAL SWITCH HEIGHT
14B	14.5" SQUARE JUNCTION BOX w/ COVER	RECESSED IN WALL AT 8" AFF TO THE BOTTOM OF THE BOX
TP7	4-11/16" BOX, MAXIMUM DEPTH FOR STUD SPACE, W/ 1-GANG MUD RING.	FLUSH IN WALL AT ELECTRICAL SWITCH HEIGHT
FB#	FLOOR BOX, REFER TO ELECTRICAL SCHEDULES (EP SHEETS) FOR REQUIREMENTS	RECESSED IN FLOOR
	RACEWAY, 3/4" MINIMUM, SEE DIV. 26 FOR FULL REQUIREMENTS. REFER TO RISER DIAGRAMS FOR EXACT SIZES	CONCEALED BEHIND FINISHED SURFACES
	VOICE/DATA EQUIPMENT RACK, FURNISHED AND INSTALLED BY THE VOICE/DATA CONTRACTOR	FLOOR
M#	LARGE CAPACITY JUNCTION BOX W/ FRAME & COVER, CHIEF PAC 526 FCW (FOR MONITORS)	RECESSED IN THE WALL, CENTERED HORIZONTALLY AND VERTICALLY BEHIND MONITORS WHERE SHOWN IN ARCHITECTURAL ELEVATIONS
	GROUND BUS BAR, 4" X 12" X .25", COPPER W/ WALL MOUNT BRACKET, CHATSWORTH 10622-012	SURFACE MOUNTED TO WALL WHERE SHOWN IN DETAILS
	#6 THHN W/ GREEN INSULATION	
S P	JUNCTION BOX, 2-GANG, FOR FULL RANGE PENDENT MOUNTED, FULL RANGE SPEAKER	MOUNTED TO STRUCTURE ABOVE
	JUNCTION BOX, 4-11/16" BOX W/ 2-GANG MUD RING, FOR PROJECTOR	FLUSH IN FINISHED CEILING INSTALLED WITHIN 6" OF THE PROJECTOR MOUNT
	PROJECTION SCREEN, FURNISHED AND INSTALLED BY THE AV CONTRACTOR	FLUSH IN FINISHED CEILING
UD	JUNCTION BOX FOR PROJECTION SCREEN UP/DOWN SWITCH, 4-11/16" BOX WITH A 1-GANG MUD RING, MAXIMUM DEPTH FOR STUD SPACE	FLUSH IN WALL AT ELECTRICAL SWITCH HEIGHT. COORDINATE INSTALLATION LOCATIONS WITH LIGHT SWITCHES AND WRITING SURFACES

GENERAL PROJECT AV NOTES

1. IF THE BOXES, ENCLOSURES, & CABINETS SPECIFIED ARE NOT PROVIDED FROM THE MANUFACTURER WITH THE REQUIRED KNOCK OUTS FOR THE SPECIFIED CONDUIT, FIELD CUT ALL REQUIRED KNOCK OUTS TO TERMINATE THE QUANTITY AND SIZES OF THE SPECIFIED CONDUITS.
2. MAINTAIN MAXIMUM SEPARATION BETWEEN A/V SYSTEM CONDUIT AND ALL POWER CONDUIT.
3. INSTALL NYLON PULL STRINGS IN ALL A/V SYSTEM CONDUIT.
4. INSTALL ALL CONDUIT IN A CONCEALED FASHION. SURFACE MOUNTED CONDUIT WILL NOT BE ACCEPTED UNLESS SPECIFICALLY IDENTIFIED IN DRAWINGS.
5. IDENTIFY ALL CONDUIT, BOXES, AND PULL STRINGS IN COMPLIANCE WITH THE SPECIFICATIONS.
6. ABBREVIATIONS:
   AFF - ABOVE FINISHED FLOOR
   C - CONDUIT (EMT)
   EA - EACH
   TYP - TYPICAL
7. COVER ALL INSTALLED JUNCTION BOXES, FLOOR BOX OPENINGS, AND SURFACE RACEWAY DEVICE PLATES WITH BLANK COVERS.
8. FIRE STOP ALL PENETRATIONS THROUGH FIRE RATED SURFACES.
9. FURNISH AND INSTALL ELECTRIC METALLIC TUBE (EMT) CONDUIT. DO NOT PROVIDE FLEXIBLE CONDUIT.
10. INSTALL ALL RACEWAY SYSTEM EQUIPMENT IN COMPLIANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS, INDUSTRY-WIDE ACCEPTED RIGGING PRACTICES AND THE SEISMIC DESIGN CODES AND STANDARDS APPLICABLE TO THE SEISMIC DESIGN CATEGORY FOR THE BUILDING GEOGRAPHICAL LOCATION. DURING THE SUBMITTAL PROCESS, PROVIDE SHOP DRAWINGS WHICH DETAIL PROPOSED MOUNTING SOLUTIONS.
11. INSTALL ALL RACEWAY SYSTEMS IN COMPLIANCE WITH ANSI/EIA/TIA 569-B WHICH INCLUDES, BUT IS NOT LIMITED TO, ANY CONDUIT HAVING NO MORE THAN TWO 90 DEGREE BENDS.
12. INSTALL ALL CONDUIT USING THE SHORTEST POSSIBLE ROUTE BETWEEN THE ORIGIN AND DESTINATION POINTS.
13. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT PLACEMENT AND COORDINATION OF ALL CEILING MOUNTED FIXTURES AND DEVICES.

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324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH & FABRICATION BUILLDING
355 SOUTH 650 EAST
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AV ROUGH-IN SCHEDULE AND GENERAL NOTES

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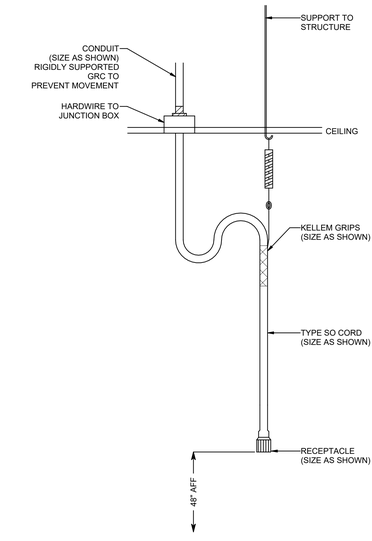
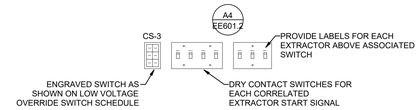


B4 DROP CORD DETAIL
SCALE: NTS



D5 WELDING BOOTH LIGHTING AND EXTRACTOR CONTROLS
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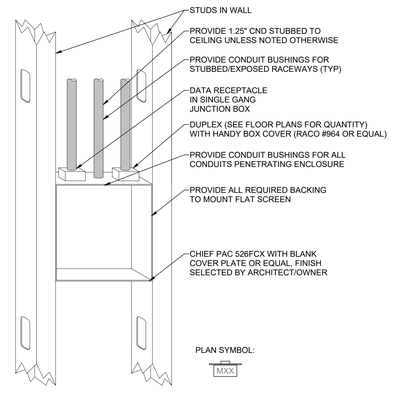

C5 TYPICAL FLAT PANEL RECEPTACLE ROUGH-IN DETAIL
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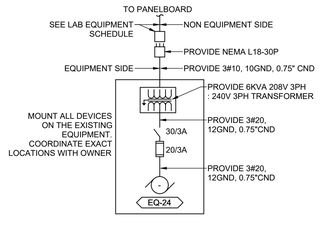
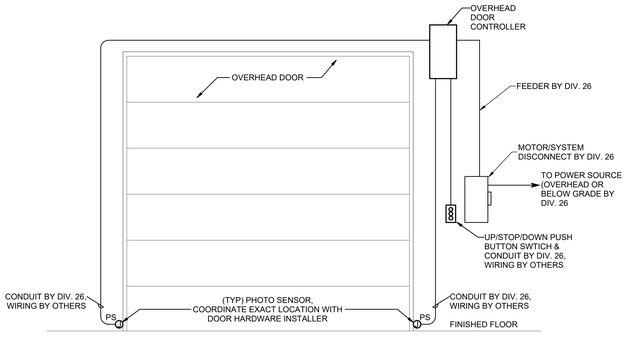


A4 EQ-24 LATHE WIRING DIAGRAM
SCALE: NTS

NOTES:
-CONTRACTOR SHALL COORDINATE WITH APPROVED OVERHEAD DOOR SUBMITTAL AND ADJUST AS REQUIRED.



A5 TYPICAL OVERHEAD DOOR DETAIL
SCALE: NTS

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ELECTRICAL DETAILS

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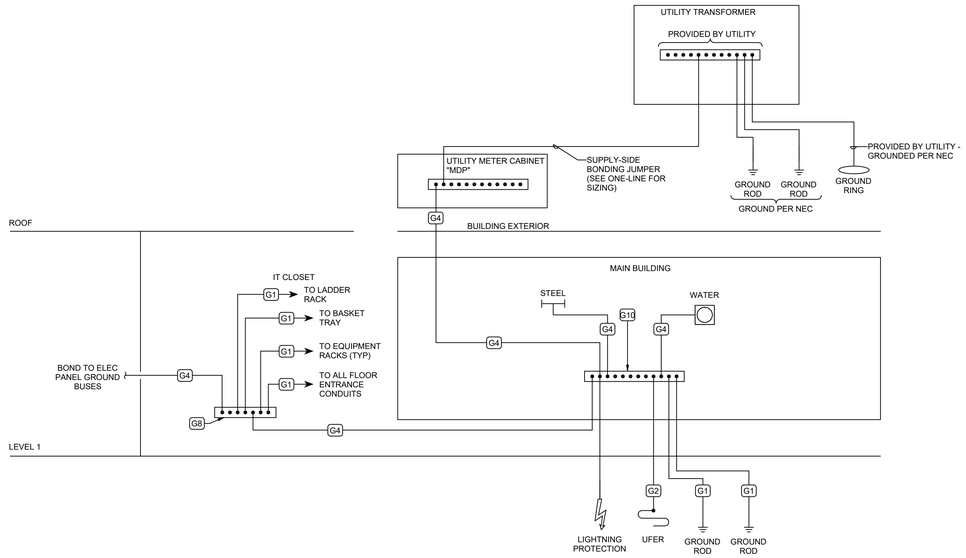
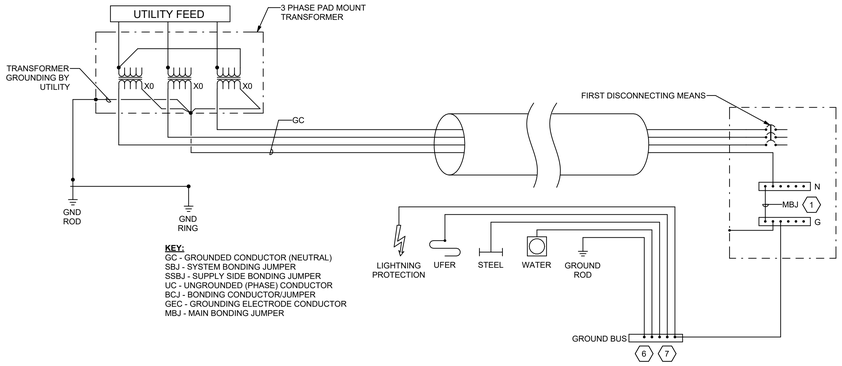


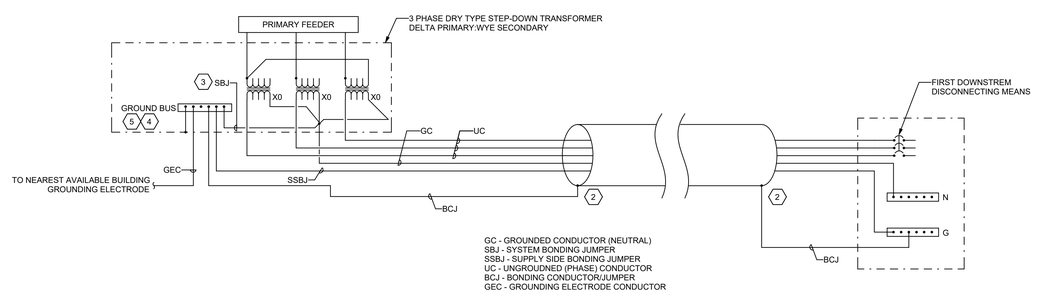
C1 GROUNDING RISER DIAGRAM

SCALE: NTS



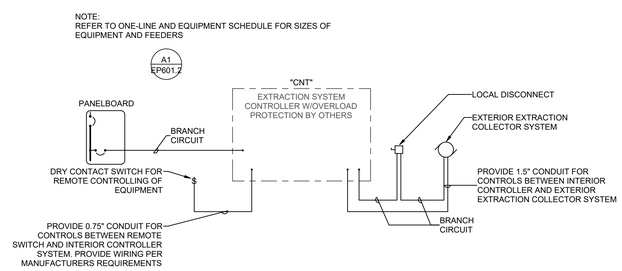
B1 TYPICAL OUTDOOR UTILITY TRANSFORMER SEPARATELY DERIVED SYSTEM GROUNDING AND BONDING DETAIL

SCALE: NTS



A1 TYPICAL INDOOR STEP-DOWN TRANSFORMER SEPARATELY DERIVED SYSTEM GROUNDING AND BONDING DETAIL

SCALE: NTS



A4 TYPICAL WELDING HOOD/EXTRACTION SYSTEM RISER

SCALE: NTS

SHEET KEYNOTES

1 NEUTRAL TO GROUND BOND HERE.

2 BOND METAL RACEWAY.

3 SYSTEM BONDING JUMPER BONDING TRANSFORMER X0 TERMINAL TO TRANSFORMER ENCLOSURE / GROUND BUS.

4 EQUIPMENT GROUND BOND TO ENCLOSURE.

5 BOND TO TRANSFORMER ENCLOSURE WITH #4/0 CU.

6 COMMON BUILDING GROUNDING ELECTRODE BUS.

7 BOND ALL AVAILABLE GROUNDING ELECTRODES AT BUILDING.

G# GROUNDING SCHEDULE NOTES

1. ALL CONDUCTORS ARE INSULATED UNLESS INDICATED OTHERWISE.
2. REFER TO ONE LINE AND ET SHEETS FOR ADDITIONAL GROUNDING REQUIREMENTS. WHERE DISCREPANCIES ARE FOUND, CONTRACTOR SHALL PROVIDE LARGEST GROUND CABLE SIZE.

SYMBOL	SIZE / DESCRIPTION
G1	#6 CU.
G2	#4 CU.
G4	#4/0 CU.
G5	#250 KCMIL CU
G6	#350 KCMIL CU
G7	#500 KCMIL CU
G8	12"X2"X1/4" COPPER BUS WITH PRE-DRILLED HOLES MOUNTED ON INSULATORS IN ELECTRICAL & TELECOMM CLOSETS. PART #: TMGB/TGB TYP.
G9	48"x4"X1/4" COPPER BUS WITH PRE-DRILLED HOLES MOUNTED ON INSULATORS IN MAIN ELECTRICAL ROOM
G10	16"X4"X1/4" COPPER BUS WITH PRE-DRILLED HOLES MOUNTED ON INSULATORS. PART #: TMGB
G11	#250 KCMIL BARE CU BURIED 30" IN DIRECT CONTACT WITH EARTH, ENCIRCLING THE DATA CENTER WITH GROUND RODS EVERY 30' ON CENTER.

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355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER No. 12735266 MARIO SEBASTIAN MARTINEZ STATE OF UTAH

11/14/2024

GROUNDING RISER DIAGRAM

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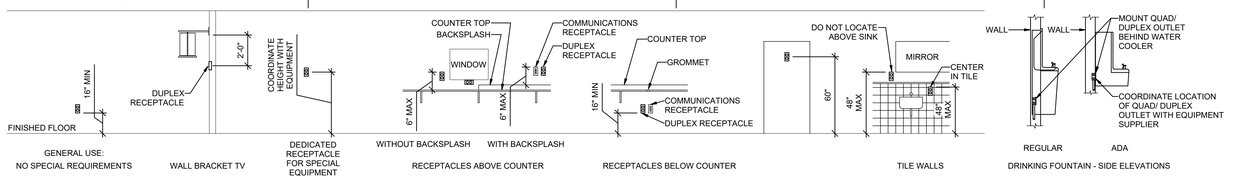
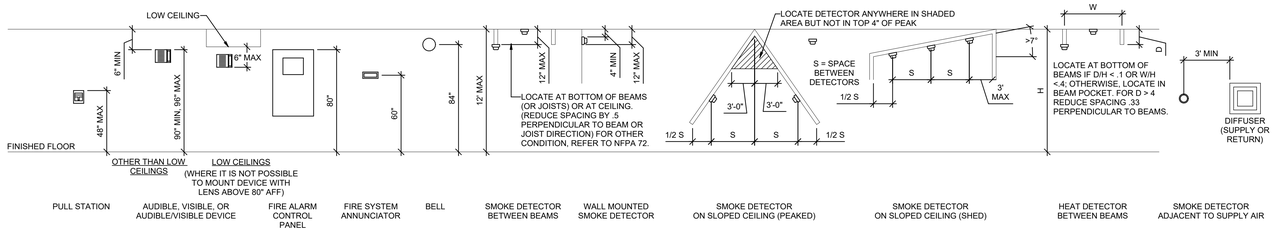


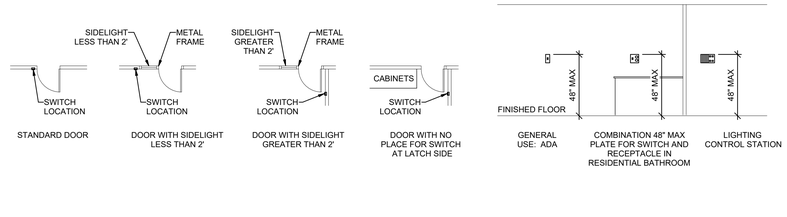
E2 RECEPTACLE MOUNTING DETAILS

SCALE: NTS



D2 FIRE ALARM MOUNTING DETAILS

SCALE: NTS

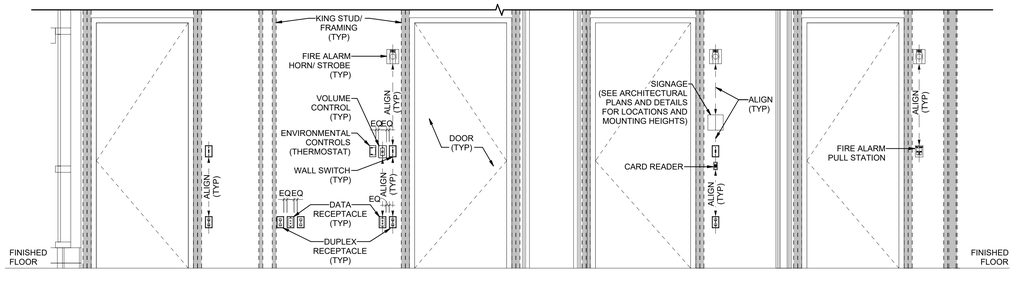


C2 SWITCH MOUNTING DETAILS

SCALE: NTS

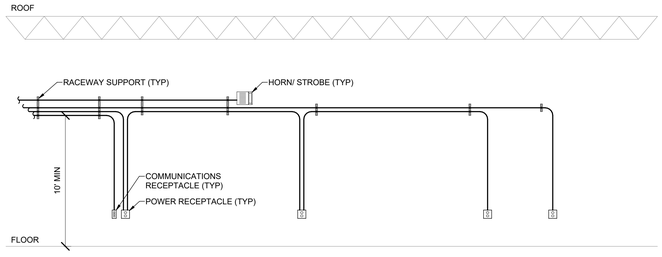
C4 COMMUNICATIONS MOUNTING DETAILS

SCALE: NTS



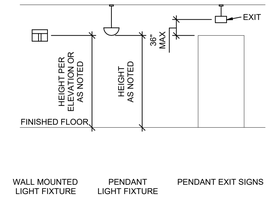
B4 TYPICAL WALL MOUNTED DEVICES ALIGNMENT DETAIL

SCALE: NTS



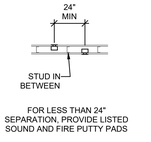
A3 TYPICAL LAB SURFACE MOUNTED RACEWAY ROUTE

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



A5 LIGHTING MOUNTING DETAILS

SCALE: NTS



A6 BOX MOUNTING DETAILS

SCALE: NTS

GENERAL SHEET NOTES

1 MOUNTING HEIGHTS OF ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE FOLLOWING ORDER OF PRIORITY:

A - ELEVATIONS (ARCHITECTURAL, ELECTRICAL, MECHANICAL, ETC).

B - EQUIPMENT SHOP DRAWINGS.

C - FIELD INSTRUCTIONS.

2 LOCATE RECEPTACLES SERVING THE SAME TYPE OF USE AT A UNIFORM HEIGHT UNLESS DIRECTED OTHERWISE.

3 MECHANICAL, ELECTRICAL, AND COMMUNICATION ROOMS: COORDINATE LOCATION OF LIGHTING AND POWER RECEPTACLES WITH EQUIPMENT, PIPING, AND DUCTWORK. DO NOT INSTALL RECEPTACLES BEHIND EQUIPMENT OR WHERE OTHERWISE INACCESSIBLE. POSITION LIGHTING REGARDLESS OF WHERE SHOWN ON DRAWING TO PROVIDE PROPER ILLUMINATION.

4 MOUNT RECEPTACLE BOXES FOR SWITCHES AND RECEPTACLES WITH LONG AXIS OF THE DEVICE VERTICAL UNLESS OTHERWISE INDICATED.

5 SET BOXES WITH PLASTER RINGS FLUSH WITH FINISHED SURFACE.

6 LOCATE BOX COVERS OR DEVICE PLATES SO THEY WILL NOT SPAN DIFFERENT TYPES OF BUILDING FINISHES EITHER VERTICALLY OR HORIZONTALLY.

7 VERIFY ALL DOOR CONDITIONS ON ARCHITECTURAL DRAWINGS PRIOR TO INSTALLING SWITCHES.

8 LOCATE WIRING DEVICES WHICH ARE ADJACENT AND ARE COMPATIBLE VOLTAGES IN ONE PLATE.

9 WHERE DEVICES ARE LOCATED IN CLOSE PROXIMITY OF THE SAME VERTICAL PLANE, ALIGN DEVICES VERTICALLY PER THE TYPICAL WALL MOUNTED DEVICES ALIGNMENT DETAIL, UNLESS OTHERWISE INDICATED.

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SPECTRUM ENGINEERS
324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

DTC WELDING TECH & FABRICATION BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER No. 12735266 MARIO SEBASTIAN MONTOYA STATE OF UTAH

11/14/2024

TYPICAL MOUNTING DETAILS

EE701.2

(801) 355-5915

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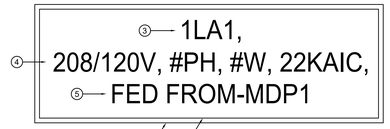
1. LABEL TO BE PROVIDED AT EACH SWITCHBOARD, PANELBOARD, DISCONNECT/STARTER. LABEL IS TO BE 3" X REQUIRED LENGTH X 1/16" LAMINATED 2-PLY PLASTIC LAMACOID. LETTERS SHALL BE FORMED BY ENGRAVING OUTER WHITE PLY, EXPOSING BLACK PLY BENEATH.
2. LABEL IS TO BE MOUNTED USING DOUBLE SIDED ADHESIVE TAPE COVERING THE BACK OF THE LABEL.
3. FIRST LINE: LETTERING IS TO BE 3/8" HIGH, CENTERED, AND FORMATTED AS SHOWN. REPLACE THE LETTER/NUMBER WITH THOSE FOUND ON THE ONE-LINE DIAGRAM.
4. SECOND LINE: LETTERING IS TO BE 3/8" HIGH, CENTERED, AND FORMATTED AS SHOWN. THE FOLLOWING SHALL BE PROVIDED, VOLTAGE, PHASE, NUMBER OF WIRES, AND AIC RATING OF DEVICE.
5. THIRD LINE: LETTERING IS TO BE 3/8" HIGH, CENTERED, AND FORMATTED AS SHOWN. PROVIDE "FED FROM-" AND REPLACE MDP1 WITH THE DEVICES NAME THAT FEEDS THE PANELBOARD.

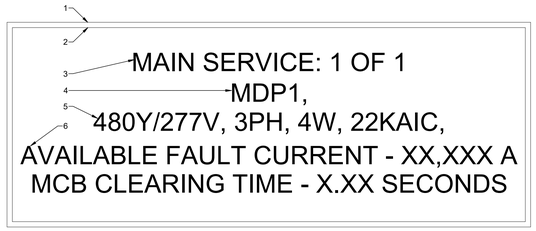


NOTE: EMERGENCY PANELS SHALL USE LAMACOID WITH RED OUTERPLY, EXPOSING WHITE LETTERING BENEATH. CONTRACTOR TO USE SAME LABEL SCHEME EXCEPT FIRST 'X' IS REPLACED WITH 'E' FOR EMERGENCY. SECOND 'X' TO BE 'L' FOR LOW OR 'H' FOR HIGH VOLTAGE (480/277V). LAST '#' TO BE REPLACED WITH LETTER INDICATING LOCATION OF PANEL.

D4 TYPICAL PANELBOARD/SWITCHBOARD LABEL

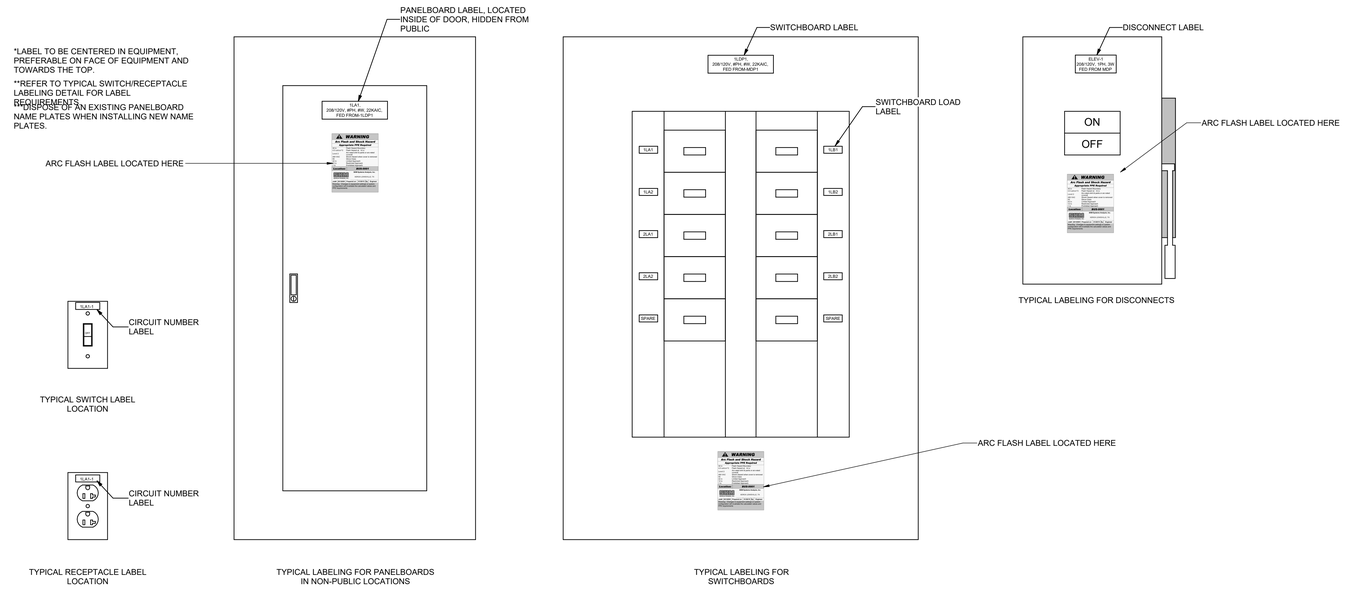
SCALE: NTS

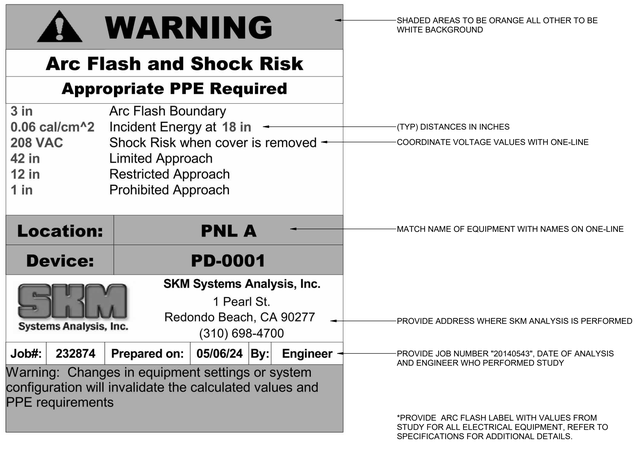
NOTES:
1. LABEL TO BE PROVIDED THAT IS TO BE 4" X REQUIRED LENGTH X 1/16" LAMINATED 2-PLY PLASTIC LAMACOID. LETTERS SHALL BE FORMED BY ENGRAVING OUTER WHITE PLY, EXPOSING BLACK PLY BENEATH
2. LABEL IS TO BE MOUNTED USING DOUBLE SIDED ADHESIVE TAPE COVERING THE BACK OF THE LABEL
3. FIRST LINE: LETTERING IS TO BE 3/8" HIGH, CENTERED, AND FORMATED AS SHOWN. LABEL WITH THE NUMBER OF SERVICES AS SHOWN ON THE ONE-LINE
4. SECOND LINE: LETTERING IS TO BE 3/8" HIGH, CENTERED, WITH THE EQUIPMENT ID MATCHIGN PLANS
5. THIRD LINE: LETTERING IS TO BE 3/8" HIGH, CENTERED, AND FORMATTED AS SHOWN. THE FOLLOWING SHALL BE PROVIDED, VOLTAGE, PHASE, NUMBER OF WIRES, AND AIC RATING OF GEAR
6. FOURTH & FIFTH LINES: LETTERING IS TO BE 3/8" HIGH, CENTERED, AND FORMATTED AS SHOWN. LABEL WITH ACTUAL AVAILABLE FAULT CURRENT AND ASSOCIATED CLEARING TIME



C4 TYPICAL MAIN SERVICE EQUIPMENT/GEAR LABEL

SCALE: NTS





A1 TYPICAL ARC FLASH LABEL

SCALE: NTS

A3 TYPICAL SWITCH, RECEPTACLE AND PANELBOARD/SWITCHBOARD LABELING LOCATION DETAIL

SCALE: NTS

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324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH FABRICATION BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

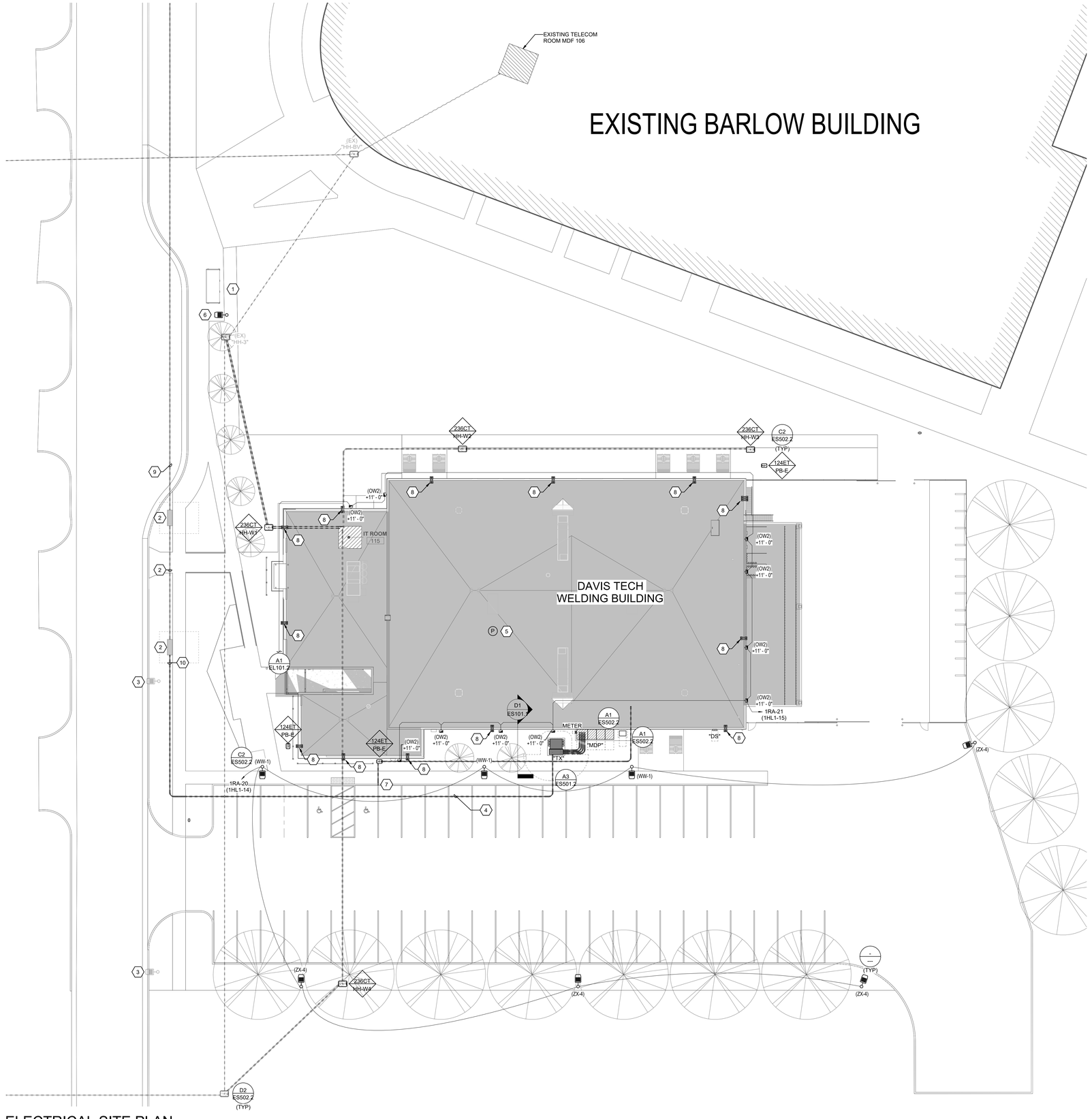
LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN
STATE OF UTAH

11/14/2024

TYPICAL LABELING DETAILS

EE702.2

(801) 355-5915



A1 ELECTRICAL SITE PLAN
SCALE: 1/16" = 1'-0"

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GENERAL SHEET NOTES

1 THE ELECTRICAL CONTRACTOR SHALL MEET WITH AND COORDINATE WITH ALL SERVICE PROVIDERS (POWER, COMMUNICATION, CABLE/SATELLITE, ETC.) TO THE FACILITY ON SITE PRIOR TO ANY WORK BEING PREFORMED. CONFIRM WITH EACH SERVICE PROVIDER EXACT LOCATIONS OF EQUIPMENT AND ROUTING. COMPLY WITH ALL SERVICE PROVIDER'S CURRENT STANDARDS AND REQUIREMENTS. PROVIDE THE REQUIRED EQUIPMENT, RACEWAYS, BOXES, CABLE, ETC. AS REQUIRED BY THE SERVICE PROVIDER WHETHER SHOWN ON THE DRAWINGS OR NOT.

2 CONTRACTOR IS RESPONSIBLE FOR ALL TRENCHING, BACKFILL, AND COMPACTION ASSOCIATED TO ALL ELECTRICAL UNDERGROUND RACEWAYS AND CABLES. COORDINATE WITH ARCHITECTURAL AND CIVIL DRAWINGS. SEE UNDERGROUND RACEWAY DETAILS FOR REQUIREMENTS FOR EACH TRENCH.

3 THE ELECTRICAL CONTRACTOR SHALL HAVE ANY AND ALL CONCRETE POLE BASES AND SLABS REVIEWED BY A STRUCTURAL ENGINEER AND SHALL MODIFY DESIGN PER STRUCTURAL ENGINEER'S AND OR AHJ'S RECOMMENDATIONS.

4 REFER TO PLANS FOR CONSTRAINTS ON PHYSICAL DIMENSIONS AND CLEARANCE REQUIREMENTS OF EQUIPMENT. PROVIDE EQUIPMENT DIMENSIONS THAT FALL WITHIN THE CONSTRAINTS OF EACH SPECIFIC LOCATION.

5 SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM AVAILABLE FAULT CURRENT. VERIFY OR RE-CALCULATE THE AVAILABLE FAULT CURRENT AT THE SERVICE WHERE MODIFICATIONS TO THE ELECTRICAL INSTALLATION OCCUR. PLEASE INCLUDE NOTES IN THE ELECTRICAL DRAWINGS OR SUPPLY CALCULATIONS WHERE APPLICABLE. SEE NEC 110.24. (B)

6 ALL UNDERGROUND RACEWAYS SHALL UTILIZE GRADUAL SWEEPS WHERE POSSIBLE. PROVIDE FACTORY LONG SWEEP BENDS ONLY WHERE ABSOLUTELY NECESSARY OR NOTED.

7 CONTRACTOR SHALL ADJUST DEPTH OF RACEWAYS DEEPER AS NECESSARY TO AVOID CONFLICTS WITH OTHER UTILITIES AND MAINTAIN A SEPARATION OF NO LESS THAN 1 FOOT FROM ALL OTHER UTILITIES CROSSINGS UNLESS NOTED OTHERWISE.

8 ALL ELECTRICAL GEAR AND EQUIPMENT (TRANSFORMER, SWITCHBOARDS, PANELBOARDS, DISCONNECTS, ENCLOSURES, ETC.) LOCATED OUTDOOR OR EXPOSED TO WEATHER SHALL BE NEMA 3R RATED UNLESS NOTED OTHERWISE.

9 FOR ALL LIGHT FIXTURES, POLE LIGHTS, AND ALL OTHER ELECTRICAL DEVICES THE CONTRACTOR SHALL COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS WITH ARCHITECT, OWNER, ENGINEER, AND ALL OF THE CONTRACT DOCUMENTS PRIOR TO ROUGH IN AND TRENCHING.

10 CONTRACTOR SHALL INSTALL POLE MOUNTED LIGHTS IN STRAIGHT LINES, SQUARE, AND PLUMB. COORDINATE WITH ARCHITECT AND CIVIL DRAWINGS.

11 ALL EXTERIOR RECEPTACLES SHOWN SHALL BE NEMA 5-20R GFCI "WEATHER RESISTANT" RECEPTACLE WITH "WEATHER PROOF IN-USE COVER."

SHEET KEYNOTES

1 PROVIDE 2 EA 4" CONDUITS WITH (1) 7 WAY 12.7X10 MM MICRODUCT, (2) WITH 3 EA. 1.25" INNERDUCT IN EACH CONDUIT.

2 EXISTING UTILITY MEDIUM VOLTAGE EQUIPMENT TO REMAIN AND BE PRESERVED.

3 EXISTING TO REMAIN CAMPUS SITE LIGHTING. PROTECT AND PRESERVE.

4 APPROXIMATE ROUTING OF PRIMARY CONDUIT TO TRANSFORMER.

5 PROVIDE PHOTOCELL ON ROOFTOP, CONTRACTOR SHALL FIELD LOCATE AND ASSURE PHOTOCELL IS NOT SUBJECT TO SHADOWING BY EQUIPMENT/STRUCTURES. ORIENT PHOTOCELL FACING NORTH AND TIED TO A LIGHTING CONTROL PANEL.

6 RELOCATE EXISTING SITE POLE. TRACE EXISTING CIRCUIT, MATCH AND EXTEND CONDUIT AND WIRING AS NEEDED. MATCH AND REPAIR LANDSCAPE AND HARD-SCAPE AS REQUIRED. PROVIDE PULL BOX AS NEEDED. CIRCUIT PRESUMED TO BE FED FROM MAIN BUILDING.

7 STUB CONDUITS UP FOR FUTURE ELECTRIC VEHICLE CHARGER.

8 TYP: 10" PVC SLEEVES FOR RACEWAYS OUTSIDE OF BUILDING.

9 PROTECT AND MAINTAIN EXISTING UTILITY CONDUIT.

10 CONTRACTOR TO PROVIDE CONDUIT 1 FOOT AWAY FROM EXISTING SECTIONALIZER. CONTRACTOR TO COORDINATE WITH KAYSVILLE CITY POWER ONCE COMPLETED. KAYSVILLE CITY POWER TO INSTALL ELBOW INTO SECTIONALIZER.

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324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH & FABRICATION BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN MARTINEZ
STATE OF UTAH

11/14/2024

ELECTRICAL SITE PLAN

ES101.2

(801) 355-5915



A1 TELECOM SITE PLAN
SCALE: 1" = 30'-0"

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SHEET KEYNOTES

1 SEE TELECOM CONDUIT RISER DIAGRAM AND TELECOM CABLE RISER DIAGRAM.

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801-328-5151
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355 SOUTH 650 EAST
KAYSVILLE, UT 84037

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No. 12735266
MARIO SEBASTIAN MARTINEZ
STATE OF UTAH

11/14/2024

TELECOM SITE PLAN

ES102.2

(801) 355-5915

GENERAL SHEET NOTES

1 CONTRACTOR SHALL COORDINATE WITH KAYSVILLE CITY POWER PRIOR TO INSTALLATION OF TRANSFORMER PAD.

2 CONTRACTOR SHALL VERIFY CONDUIT ENTRY POINTS WITH KAYSVILLE CITY POWER.

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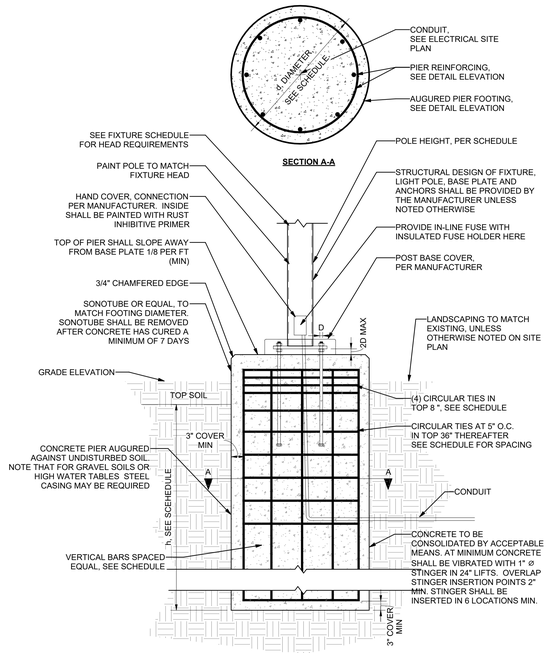


LIGHT POLE PIER FOOTING SCHEDULE[1]

LEGEND
X[2] — SUPERSCRIPT, SEE CORRESPONDING NOTE

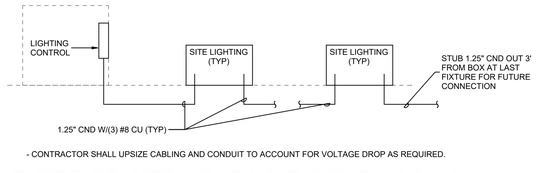
WIND SPEED (mph)	MAX EPA (FT²)	LIGHT POLE HEIGHT (ft)	LIGHT POLE DIA (in) max	FOOTING DIAMETER .d (in)	h=MIN FOUNDATION[2] EMBED. (ft)	VERTICAL REINF. BAR SIZE	VERTICAL BAR QUANTITY	CIRC.TIE BAR SIZE	CIRC. TIE SPACING (in)
120	2	30	8	24	7'-6"	#5	8	#4	12" O.C.
120	2	25	8	24	6'-6"	#5	8	#4	12" O.C.
120	2	20	8	24	6'-0	#5	8	#4	12" O.C.
120	2	15	8	24	5'-0"	#5	8	#4	12" O.C.
120	2	10	8	24	4'-6"	#5	8	#4	12" O.C.
120	2	30[3]	8	18	-	-	-	-	-
120	2	25[3]	8	18	-	-	-	-	-
120	2	20	8	18	6'-0"	#5	5	#4	12" O.C.
120	2	15	8	18	5'-0"	#5	5	#4	12" O.C.
120	2	10	8	18	4'-6"	#5	5	#4	12" O.C.
120	2	30[3]	6	16	-	-	-	-	-
120	2	25[3]	6	16	-	-	-	-	-
120	2	20	6	16	6'-6"	#5	4	#4	12" O.C.
120	2	15	6	16	5'-6"	#5	4	#4	12" O.C.
120	2	10	6	16	4'-6"	#5	4	#4	12" O.C.

NOTE:

1. CONTRACTOR SHALL SUBMIT DEFERRED SUBMITTAL FOR LIGHT POST FOOTING TO ENGINEER OF RECORD. SCHEDULE ABOVE IS FOR BIDDING PURPOSES ONLY.
2. SCHEDULE ABOVE ASSUMES CLAY OR SILT SOIL CONDITIONS WITH SEISMIC CLASS D AND DEFAULT SOIL PARAMETERS FROM IBC SECTION 1806.2
3. EXCEEDS THE MAXIMUM BEARING CAPACITY OF 1500 PSF. VERIFY ALLOWABLE SOIL BEARING WITH SOILS REPORT.
4. TOP SOIL SHALL NOT BE USED TO RESIST LATERAL LOAD IN FOOTING. THE EMBED DEPTH IN THE TABLE SHALL BE BEGIN BELOW THE BASE OF THE TOP SOIL AS SHOWN IN THE ELEVATION.
5. SECTION VIEW IS FOR VISUAL REPRESENTATION ONLY. VERIFY BAR QUANTITY WITH SCHEDULE60,000 PSI REBAR YIELD STRENGTH
6. CONCRETE MIX SHALL BE FOR EXTERIOR CONCRETE SUBJECT TO FREEZE THAW CONATIONS WITH THE MINIMUM PROPERTIES.
   A. 3000 PSI
   B. TYPE II PORTLAND CEMENT
   C. WATER TO CEMENT RATIO = 0.5%
   D. AIR ENTRAINMENT = 5%
   E. MAX AGGREGATE SIZE= 1"
   F. CONCRETE EXPOSURE CLASS= F2, S0, C1
   G. 4" SLUMP BEFORE ADDITION OF PLASTICIZER

C4 TYPICAL LIGHT POLE FOOTING SCHEDULE

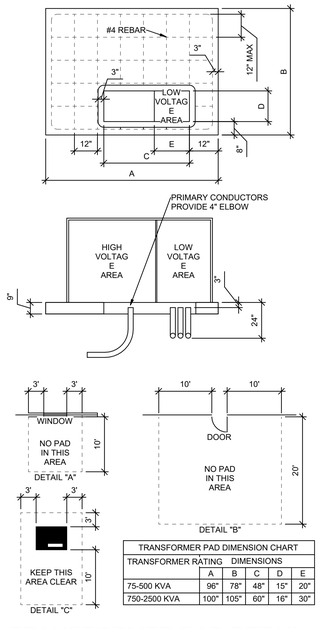
SCALE: NTS



- CONTRACTOR SHALL UPSIZE CABLING AND CONDUIT TO ACCOUNT FOR VOLTAGE DROP AS REQUIRED.

A1 EXTERIOR SITE LIGHTING RISER DIAGRAM

SCALE: NTS



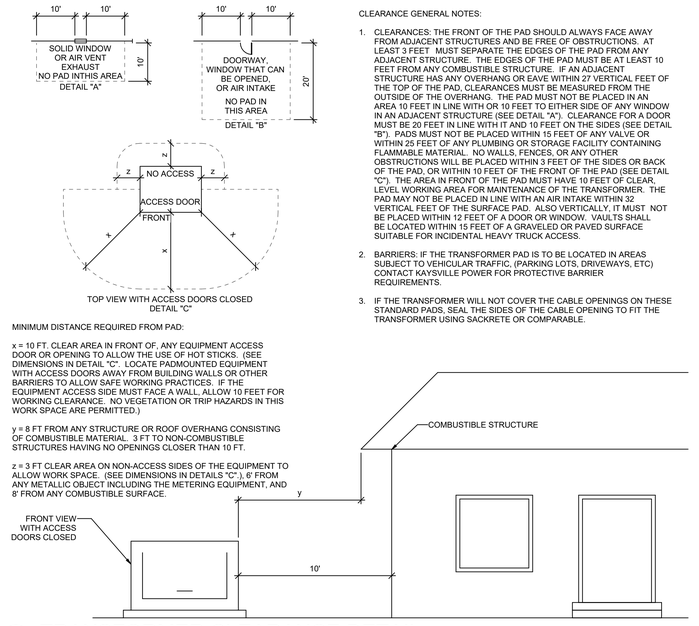
TRANSFORMER PAD DIMENSION CHART					
TRANSFORMER RATING	DIMENSIONS				
	A	B	C	D	E
75-500 KVA	96"	78"	48"	15"	20"
750-2500 KVA	100"	105"	60"	16"	30"

A3 TRANSFORMER PAD DETAIL

SCALE: NTS

CONTRACTOR GENERAL NOTES:

1. SITE PREPARATION. ALL SOIL BENEATH THE PAD SITE MUST BE COMPACTED AND LEVEL PRIOR TO SETTING OR POURING THE PAD TO PREVENT SETTLING.
2. CONCRETE. STEEL REINFORCEMENT SHALL BE #4 BARS, PLACED ACCORDING TO THE DRAWING. THE PAD MUST BE POURED AT LEAST SEVEN FULL DAYS PRIOR TO SETTING THE TRANSFORMER. THE FINISHED SURFACE MUST BE COMPLETELY FLAT AND LEVEL. SEE STANDARD 73 036 FOR CONCRETE SPECIFICATIONS.
3. PREFABRICATION. THE PAD MAY EITHER BE CONSTRUCTED ON THE SITE OR PREFABRICATED ACCORDING TO SPECIFICATIONS.
4. CONDUIT WINDOW LAYOUT. LOW VOLTAGE CONDUITS SHALL BE FORMED AS TIGHTLY AS POSSIBLE AGAINST THE RIGHT SIDE OF THE OPENING AND SHALL IN NO CASE EXTEND FURTHER THAN 20" FROM THE RIGHT SIDE OF THE CONDUIT WINDOW ON THE SMALL PAD OR 30" ON THE LARGE PAD. NO MORE THAN 8 CONDUITS WILL BE USED ON THE LOW VOLTAGE SIDE (NOT INCLUDING THE METERING CONDUIT). DO NOT PUT ANY CONCRETE IN OR UNDER THE CONDUIT WINDOW. USE SOIL TO SEPARATE CONDUITS. BELL ENDS ARE REQUIRED FOR ALL METAL CONDUIT, BUT NOT FOR PLASTIC CONDUIT.
5. CLEARANCES. THE FRONT OF THE PAD SHOULD ALWAYS FACE AWAY FROM ADJACENT STRUCTURES AND BE FREE OF OBSTRUCTIONS. AT LEAST 3 FEET MUST SEPARATE THE EDGES OF THE PAD FROM ANY ADJACENT STRUCTURE. THE EDGES OF THE PAD MUST BE AT LEAST 10 FEET FROM ANY COMBUSTIBLE STRUCTURE. IF AN ADJACENT STRUCTURE HAS ANY OVERHANG OR EAVE WITHIN 27 VERTICAL FEET OF THE TOP OF THE PAD, CLEARANCES MUST BE MEASURED FROM THE OUTSIDE OF THE OVERHANG. THE PAD MUST NOT BE PLACED IN AN AREA 10 FEET IN LINE WITH OR 3 FEET TO EITHER SIDE OF ANY WINDOW IN AN ADJACENT STRUCTURE (SEE DETAIL "A"). CLEARANCE FOR A DOOR MUST BE 20 FEET IN LINE WITH IT AND 10 FEET ON THE SIDES (SEE DETAIL "B"). PADS MUST NOT BE PLACED WITHIN 15 FEET OF ANY VALVE OR WITHIN 20 FEET OF ANY PLUMBING OR STORAGE FACILITY CONTAINING FLAMMABLE MATERIAL. NO WALLS, FENCES, OR ANY OTHER OBSTRUCTIONS WILL BE PLACED WITHIN 3 FEET OF THE SIDES OR BACK OF THE PAD, OR WITHIN 10 FEET OF THE FRONT OF THE PAD (SEE DETAIL "C"). THE AREA IN FRONT OF THE PAD MUST HAVE 10 FEET OF CLEAR, LEVEL WORKING AREA FOR MAINTENANCE OF THE TRANSFORMER. THE PAD MAY NOT BE PLACED IN LINE WITH AN AIR INTAKE WITHIN 32 VERTICAL FEET OF THE SURFACE PAD. ALSO VERTICALLY, IT MUST NOT BE PLACED WITHIN 12 FEET OF A DOOR OR WINDOW.
6. BARRIERS. IF THE TRANSFORMER PAD IS TO BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC, (PARKING LOTS, DRIVEWAYS, ETC) CONTACT UTAH POWER & LIGHT FOR PROTECTIVE BARRIER REQUIREMENTS.
7. IF THE TRANSFORMER WILL NOT COVER THE CABLE OPENINGS ON THESE STANDARD PADS, SEAL THE SIDES OF THE CABLE OPENING TO FIT THE TRANSFORMER USING SAKRETE OR COMPARABLE.



MINIMUM DISTANCE REQUIRED FROM PAD:

x = 10 FT. CLEAR AREA IN FRONT OF, ANY EQUIPMENT ACCESS DOOR OR OPENING TO ALLOW THE USE OF HOT STICKS. (SEE DIMENSIONS IN DETAIL "C". LOCATE PADMOUNTED EQUIPMENT WITH ACCESS DOORS AWAY FROM BUILDING WALLS OR OTHER BARRIERS TO ALLOW SAFE WORKING PRACTICES. IF THE EQUIPMENT ACCESS SIDE MUST FACE A WALL, ALLOW 10 FEET FOR WORKING CLEARANCE. NO VEGETATION OR TRIP HAZARDS IN THIS WORK SPACE ARE PERMITTED.)

y = 8 FT FROM ANY STRUCTURE OR ROOF OVERHANG CONSISTING OF COMBUSTIBLE MATERIAL. 3 FT TO NON-COMBUSTIBLE STRUCTURES HAVING NO OPENINGS CLOSER THAN 10 FT.

z = 3 FT CLEAR AREA ON NON-ACCESS SIDES OF THE EQUIPMENT TO ALLOW WORK SPACE. (SEE DIMENSIONS IN DETAILS "C"), 6' FROM ANY METALLIC OBJECT INCLUDING THE METERING EQUIPMENT, AND 8' FROM ANY COMBUSTIBLE SURFACE.

CLEARANCE GENERAL NOTES:

1. CLEARANCES: THE FRONT OF THE PAD SHOULD ALWAYS FACE AWAY FROM ADJACENT STRUCTURES AND BE FREE OF OBSTRUCTIONS. AT LEAST 3 FEET MUST SEPARATE THE EDGES OF THE PAD FROM ANY ADJACENT STRUCTURE. THE EDGES OF THE PAD MUST BE AT LEAST 10 FEET FROM ANY COMBUSTIBLE STRUCTURE. IF AN ADJACENT STRUCTURE HAS ANY OVERHANG OR EAVE WITHIN 27 VERTICAL FEET OF THE TOP OF THE PAD, CLEARANCES MUST BE MEASURED FROM THE OUTSIDE OF THE OVERHANG. THE PAD MUST NOT BE PLACED IN AN AREA 10 FEET IN LINE WITH OR 10 FEET TO EITHER SIDE OF ANY WINDOW IN AN ADJACENT STRUCTURE (SEE DETAIL "A"). CLEARANCE FOR A DOOR MUST BE 20 FEET IN LINE WITH IT AND 10 FEET ON THE SIDES (SEE DETAIL "B"). PADS MUST NOT BE PLACED WITHIN 15 FEET OF ANY VALVE OR WITHIN 25 FEET OF ANY PLUMBING OR STORAGE FACILITY CONTAINING FLAMMABLE MATERIAL. NO WALLS, FENCES, OR ANY OTHER OBSTRUCTIONS WILL BE PLACED WITHIN 3 FEET OF THE SIDES OR BACK OF THE PAD, OR WITHIN 10 FEET OF THE FRONT OF THE PAD, OR WITHIN 10 FEET OF THE FRONT OF THE PAD (SEE DETAIL "C"). THE AREA IN FRONT OF THE PAD MUST HAVE 10 FEET OF CLEAR, LEVEL WORKING AREA FOR MAINTENANCE OF THE TRANSFORMER. THE PAD MAY NOT BE PLACED IN LINE WITH AN AIR INTAKE WITHIN 32 VERTICAL FEET OF THE SURFACE PAD. ALSO VERTICALLY, IT MUST NOT BE PLACED WITHIN 12 FEET OF A DOOR OR WINDOW. VAULTS SHALL BE LOCATED WITHIN 15 FEET OF A GRAVELED OR PAVED SURFACE SUITABLE FOR INCIDENTAL HEAVY TRUCK ACCESS.
2. BARRIERS: IF THE TRANSFORMER PAD IS TO BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC, (PARKING LOTS, DRIVEWAYS, ETC) CONTACT KAYSVILLE POWER FOR PROTECTIVE BARRIER REQUIREMENTS.
3. IF THE TRANSFORMER WILL NOT COVER THE CABLE OPENINGS ON THESE STANDARD PADS, SEAL THE SIDES OF THE CABLE OPENING TO FIT THE TRANSFORMER USING SACKRETE OR COMPARABLE.

A5 TRANSFORMER CLEARANCE DETAIL

SCALE: NTS

DTC WELDING TECH & FABRICATION BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN MARTINEZ
STATE OF UTAH

11/14/2024

ELECTRICAL SITE DETAILS

ES501.2

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E

D

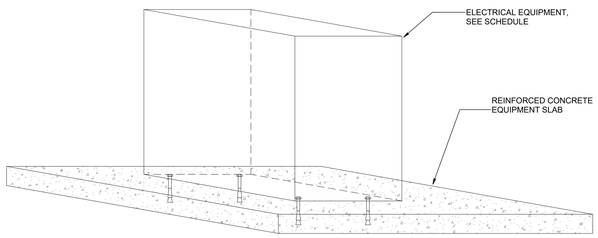
C

B

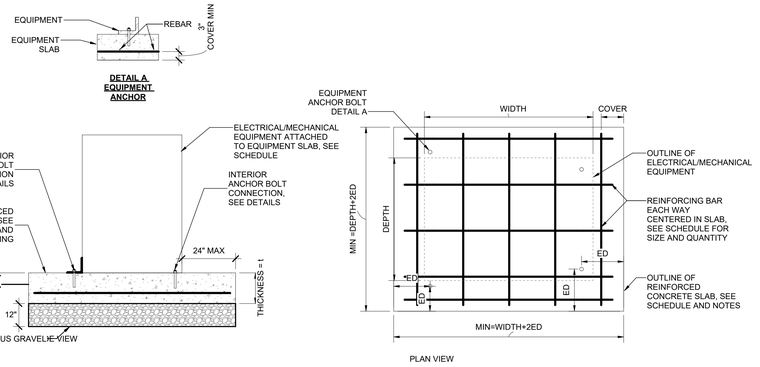
A

EQUIPMENT SLAB SCHEDULE							
LENGTH (in)	THICKNESS (in)	BAR SIZE (#)	QUANTITY	SPACING (in o.c.)	COVER (in)	EQUIPMENT ANCHOR DIAMETER	ANCHOR QTY[8]
24	6	4	2	18	2	3/8"	4
36	6	4	3	16	2	1/2"	4
48	8	5	4	15	2	1/2"	4
60	8	5	5	14	2	1/2"	4
72	8	5	5	17	2	1/2"	4
84	10	5	6	16	2	1/2"	6
96	10	5	6	18	2	5/8"	6
108[7]	12	5	7	17	2	5/8"	8

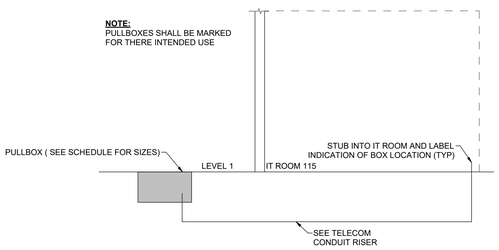
NOTE:
1. EDGE DISTANCE (ED) = 6" UNLESS NOTED OTHERWISE.
2. FOR REINFORCING IN THE WIDTH DIRECTION REFER TO SCHEDULE ABOVE AND SUBSTITUTE WIDTH DIMENSION FOR THE LENGTH.
3. ALL REINFORCING IS TO BE TIED IN PLACE AND CHAIRED TO THE CORRECT HEIGHT (CENTER OF SLAB) PRIOR TO PLACING CONCRETE.
4. ICC APPROVED ANCHOR BOLTS FOR USE IN CRACKED CONCRETE. ANCHOR SHALL BE HILTI KWIK BOLT TZ2 WEDGE ANCHOR, HILTI HY200 EPOXY ANCHOR, OR EQUAL
5. **THIS SCHEDULE OF FOR BIDDING PURPOSES ONLY! THE ACTUAL EQUIPMENT SLAB DESIGN, REINFORCING AND ANCHORAGE SHALL BE DESIGNED BY QUALIFIED STRUCTURAL/SEISMIC ENGINEER IN THE STATE WHERE THE PROJECT IS LOCATED VIA DEFERRED SUBMITTAL BY THE CONTRACTOR**.
6. 3000 PSI CONCRETE STRENGTH AT 28 DAYS MIN UNLESS NOTED OTHERWISE.
7. PROVIDE REINFORCING BARS TOP AND BOTTOM. BOTTOM STEEL TO PLACED WITH 3" COVER, TOP STEEL SHALL HAVE 1-1/2" COVER MIN.
8. ANCHOR SHALL BE PLACED IN EACH CORNER MINIMUM. DESIGN ASSUMES THAT THE EQUIPMENT MANUFACTURER HAS PROVIDED ANCHORAGE LOCATIONS ON EQUIPMENT. WHERE ANCHORAGE LOCATION IS NOT PROVIDED CONTRACTOR SHALL CONSULT QUALIFIED SEISMIC ENGINEER FOR QUANTITY AND LOCATION OF ANCHORAGE.



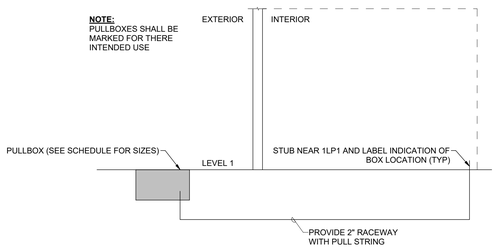
ISOMETRIC VIEW



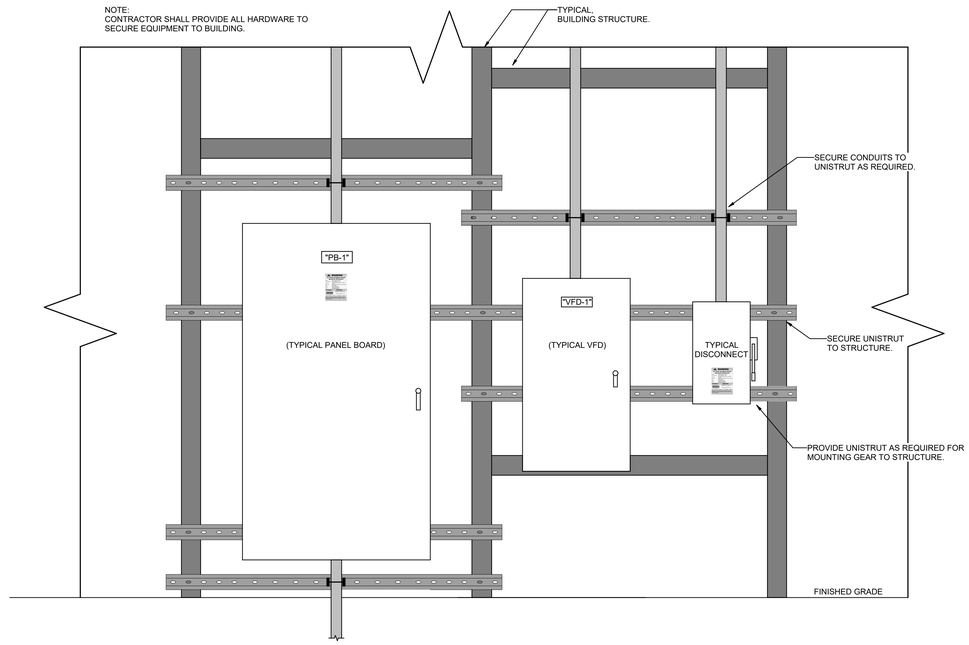
A1 EXTERIOR EQUIPMENT PAD
SCALE: NTS



D2 TYPICAL SITE TELECOM PULLBOX RISER
SCALE: NTS

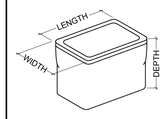


C2 TYPICAL SITE ELECTRICAL PULLBOX RISER
SCALE: NTS



C4 TYPICAL ELECTICAL EQUIPMENT MOUNTING DETAIL
SCALE: NTS

EXTERIOR PULLBOX SCHEDULE



LABELING SCHEME:

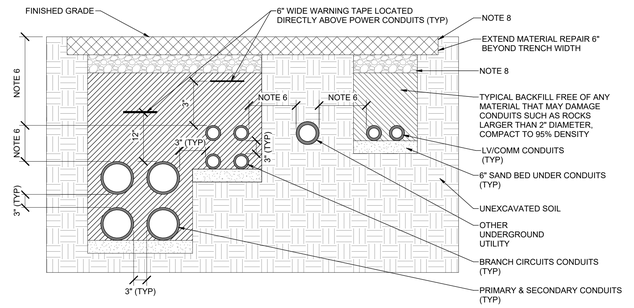
FIRST - 1 = SMALL, 2 = MEDIUM, 3 = LARGE, 4 = XLARGE
SECOND & THIRD DIGIT - LENGTH, NOMINAL INCHES
FOURTH DIGIT - SYSTEM TYPE
- E - ELECTRICAL
- C - COMMUNICATIONS
- M - MISC.

FIFTH DIGIT - TRAFFIC TIER
- BLANK - NO TRAFFIC RATING
- T - TRAFFIC RATED

NOTES:

1. CONTRACTOR SHALL PROVIDE A SUBMITTAL ON ALL UNDERGROUND ENCLOSURES FOR THIS PROJECT FOR FINAL APPROVAL.
2. ALL ENCLOSURES SHALL BE UL LISTED
3. CONTRACTOR SHALL COORDINATE THE TIER RATING WITH CIVIL ENGINEER AND ARCHITECT IN THE SUBMITTAL PROCESS.
4. CONTRACTOR SHALL ADJUST THE SIZE OF THE ENCLOSURE AS REQUIRED FOR INSTALLATION. SUBMIT AN RFI OR PROVIDE SOME OTHER DOCUMENTATION SO THAT THE DESIGN TEAM AND OWNER UNDERSTAND THIS MODIFICATION PRIOR TO MOVING FORWARD WITH ADJUSTED SIZE OF ENCLOSURE.
5. PROVIDE BASIS OF DESIGN (BOD) ENCLOSURE OR PRE-APPROVED EQUAL.

LABEL	DESCRIPTION	LENGTH (A)	WIDTH (B)	DEPTH (C)	COVER LABEL	MANUFACTURERS
124ET	DESCRIPTION: PRECAST CONCRETE PULLBOX INSTALLATION: FLUSH IN-GRADE BOX OPTIONS: OPEN BOTTOM COVER TYPE: BOLT DOWN COVER TRAFFIC TIER: TRAFFIC RATED	23"	15"	12"	"ELECTRICAL"	OLDCASTLE CHRISTY (B12) HUBBELL QUAZITE SERIES APPROVED EQUAL
236CT	DESCRIPTION: PRECAST CONCRETE PULLBOX INSTALLATION: FLUSH IN-GRADE BOX OPTIONS: OPEN BOTTOM COVER TYPE: BOLT DOWN COVER TRAFFIC TIER: HATCH TRAFFIC RATED	36"	24"	36"	"COMMUNICATIONS"	NEWBASIS (FCA24363690050) HUBBELL QUAZITE SERIES APPROVED EQUAL



NOTES:
1. INSTALL CONDUITS PER LOCAL UTILITY REQUIREMENTS AND NEC.
2. ALL BENDS SHALL BE LARGE RADIUS.
3. PROVIDE WIDE SWEEP FIBERGLASS ELBOWS FOR UTILITY POWER CONDUITS.
4. ALL ABOVEGROUND CONDUIT IN AREAS WHERE DAMAGE MAY OCCUR, ALL STUBUPS AND THE FIRST 10' UNDERGROUND SHALL BE PVC WRAPPED RMC. ALL OTHER UNDERGROUND CONDUIT SHALL BE PVC SCH 40.
5. PROVIDE 2500-LB POLYPROPYLENE PULL ROPE WITH MEASUREMENT MARKS IN EMPTY CONDUITS.
6. TYPICAL DEPTHS UNLESS NOTED OTHERWISE: PRIMARY AND SECONDARY POWER = 36" MIN DEPTH; BRANCH CIRCUITS & LV/COMM = 24" MIN DEPTH.
7. MAINTAIN UTILITY SEPARATION AS SHOWN BELOW UNLESS NOTED OTHERWISE. FOR ALL OTHER UTILITIES NOT SHOWN, MAINTAIN A MINIMUM 18" CLEARANCE. UTILIZE VERTICAL MEASUREMENT WHEN CROSSING UTILITIES.
8. REPAIR EXISTING ASPHALT OR SURFACE REFER TO CIVIL SPECIFICATIONS, WHERE SPECIFICATIONS DO NOT DEFINE CONTRACTOR SHALL REPAIR TO MATCH EXISTING CONDITIONS OR REQUIREMENTS BELOW, WHICHEVER IS GREATER.

TURF/ PLANTER/ LANDSCAPE REPAIR
- TURF/PLANTER/LANDSCAPE
- 12" TOPSOIL

SANITARY SEWER & NON-WATER
-60" HORIZONTALLY
-18" VERTICALLY

WATER
-36" HORIZONTALLY
-18" VERTICALLY

STORM DRAIN
-60" HORIZONTALLY
-18" VERTICALLY

LOW PRESSURE GAS LINE
-36" HORIZONTALLY
-18" VERTICALLY

HIGH PRESSURE GAS LINE
-0-600V - 24" VERTICALLY
-600V - 30" VERTICALLY
-600V - 22,000V - 30" VERTICALLY
-22,001V - 40,000V - 36" VERTICALLY

TELECOM & LOW VOLTAGE
-12" HORIZONTALLY
-12" VERTICALLY

CONCRETE REPAIR
- 5" CEMENT CONCRETE
- 6" UNTREATED BASE COURSE COMPACT TO 95% MODIFIED PROCTOR
- 6" PIT RUN GRAVE COMPACT TO 95% MODIFIED PROCTOR
-12" AGGREGATE BASE COURSE UNDER ROADS, COMPACT TO 95% MODIFIED PROCTOR

ASPHALT REPAIR
- 3" STANDARD ASPHALT
- 4" UNTREATED BASE COURSE COMPACT TO 95% MODIFIED PROCTOR
- 6" PIT RUN GRAVE COMPACT TO 95% MODIFIED PROCTOR

A4 TYPICAL POWER AND TELECOM CONDUIT DIRECT BURY DETAIL
SCALE: NTS

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

SPECTRUM ENGINEERS
324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH & FABRICATION BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER No. 12735266 MARIO SEBASTIAN MARTINEZ STATE OF UTAH

11/14/2024

PULLBOX SCHEDULE AND RISER DIAGRAM

ES502.2

(801) 355-5915

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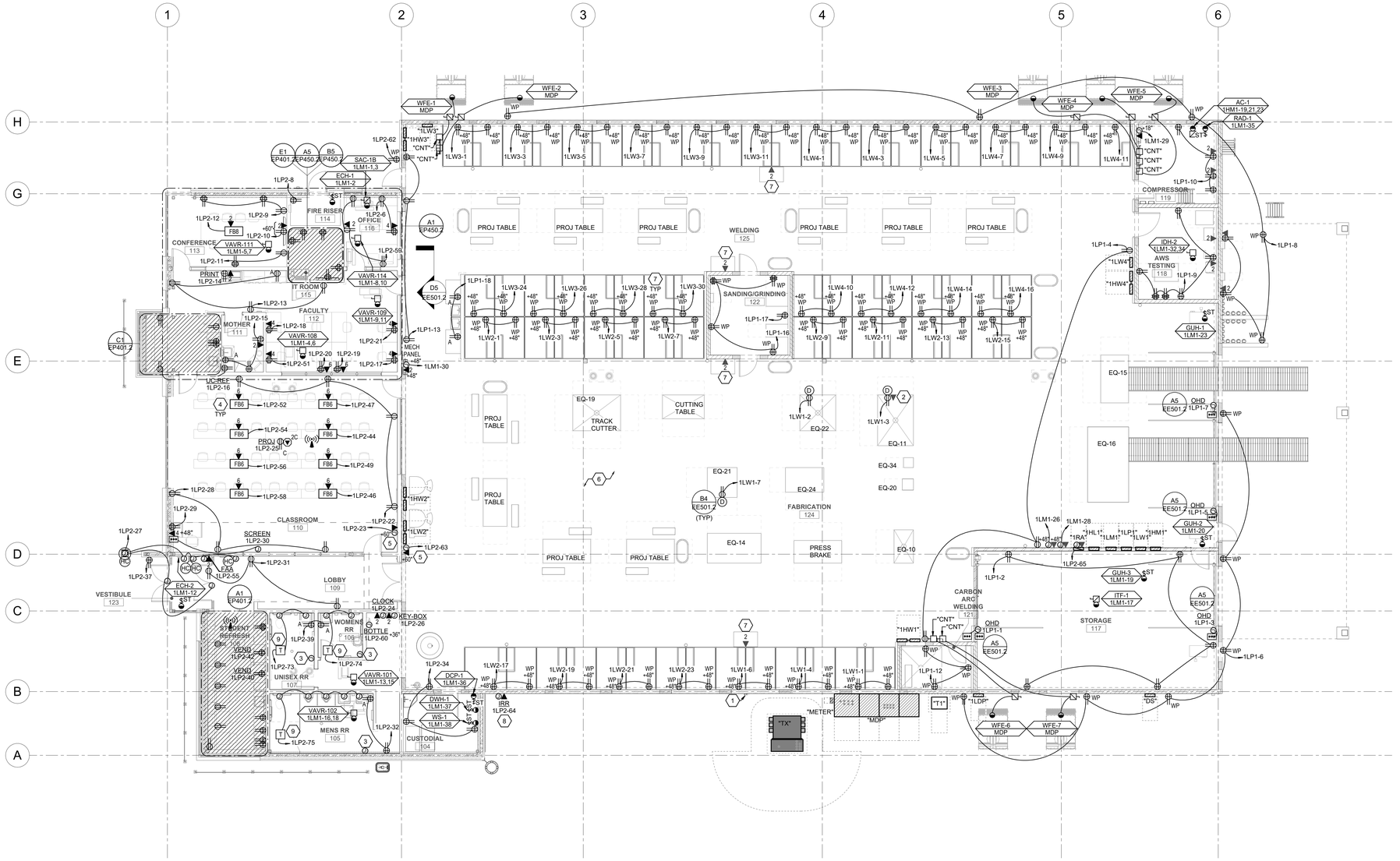
SHEET KEYNOTES

1. PROVIDE (2) 3" CONDUITS AND 1" CONDUIT TO OUTSIDE OF SWITCHBOARD PAD FOR FUTURE POWER FACTOR CORRECTING CAPACITORS WITH PULLSTRING AND CAP ALL CONDUITS.
2. PROVIDE DATA AT 4' AFF FROM BOTTOM OF HORIZONTAL CABLE.
3. PROVIDE 2 GANG JUNCTION BOX AT 48" AFF WITH 1" CONDUIT TO ABOVE CEILING FOR FUTURE HAND DRYER.
4. PROVIDE SPARE 3/4" CONDUIT TO ALL FLOORBOXES TO ABOVE CEILING.
5. POWER AND DATA FOR STUDENT CHECK-IN STATION. COORDINATE EXACT LOCATION WITH OWNER.
6. ALL POWER AND DATA DROPS SHALL SIT AT 4 FEET AFF FROM BOTTOM OF DEVICE.
7. CONTRACTOR SHALL INSTALL RECEPTACLES IN CONTRACTOR PROVIDED UNISTRUT ON WELDING BOOTH STRUCTURE.
8. COORDINATE EXACT LOCATION WITH IRRIGATION CONTROLLER.
9. 120V TO 24V TRANSFORMER FOR LAVATORY AUTO VALVES/FLUSH VALVES DIV22; 120V POWER BY DIVISION 26. COORDINATE EXACT LOCATION AND QUANTITIES OF TRANSFORMERS WITH ARCHITECT AND PLUMBING INSTALLER PRIOR TO ROUGH-IN. 'FV' REPRESENTS FLUSH VALVE. 'LV' REPRESENTS LAVATORY.

GENERAL SHEET NOTES

1. INDICATED LOCATION OF MECHANICAL EQUIPMENT IS APPROXIMATE AND PROVIDED BY OTHERS. COORDINATE EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
2. REFER TO EE701 FOR TYPICAL MOUNTING AND ALIGNMENT OF ELECTRICAL DEVICES.
3. LOCATE ALL EQUIPMENT DISCONNECTS IN ACCESSIBLE LOCATION ADJACENT TO EQUIPMENT AND POSITIONED TO COMPLY WITH NEC WORK SPACE CLEARANCES.
4. CONTRACTOR IS RESPONSIBLE FOR BECOMING FAMILIAR WITH EXISTING CONDITIONS AND VERIFYING THE CONDITIONS PRIOR TO BIDDING PROJECT. IF ANY DISCREPANCIES OCCUR BETWEEN THE EXISTING PHYSICAL CONDITIONS ON SITE AND THE CONDITIONS DESCRIBED IN THE DRAWINGS, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING.
5. CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE PUBLIC AND SAFEGUARDING THE CONSTRUCTION SITE AND ADJACENT PUBLIC SPACES PER IBC CHAPTER 33.
6. THE CAMPUS SITE AND ALL BUILDINGS WILL BE USED AND OCCUPIED THROUGHOUT THE DURATION OF THE PROJECT. CONTRACTOR SHALL MAINTAIN THE SITE AND BUILDINGS COMPLETELY USABLE DURING THE PROJECT.
7. CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN CITY AND/OR AUTHORITIES HAVING JURISDICTION PERMITS FOR WORK AS REQUIRED FOR PROJECT. THIS INCLUDES BUT IS NOT LIMITED TO TRAFFIC PLANS AND SIGNAGE.
8. TYPICAL FOR ALL OPEN TO STRUCTURE CEILING AREAS - POWER CABLING AND CONTROLS CABLING SHALL BE INSTALLED IN CONDUIT IN A NEAT AND PROFESSIONAL MANNER, PARALLEL AND PERPENDICULAR TO STRUCTURE WITH CONDUIT UP IN STUCTURE AND PAINTED TO MATCH SURFACE. ALL LOW VOLTAGE CABLING SHALL BE INSTALLED IN TRAY OR CONDUIT. INSTALLATION SHALL COMPLY WITH NECA STANDARDS.
9. COORDINATE EXACT LOCATIONS OF FLOORBOXES AND POKE THROUGH DEVICES WITH ARCHITECT AND BUILDING STRUCTURAL ELEMENTS PRIOR TO INSTALLATION AND ROUGH-IN.



A1 LEVEL 1 POWER PLAN
SCALE: 1/8" = 1'-0"

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PROJECT **24-038**

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REVISIONS

NO.	DATE	DESCRIPTION

SPECTRUM ENGINEERS
324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH & FABRICATION BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN MARTINEZ
STATE OF UTAH
11/14/2024

LEVEL 1 POWER PLAN

EP101.2

(801) 355-5915

SHEET KEYNOTES

1 CONTRACTOR SHALL INSTALL RECEPTACLES IN CONTRACTOR PROVIDED UNISTRUT ON WELDING BOOTH STRUCTURE.

2 NO POWER FOR EQUIPMENT.

3 ALL POWER AND DATA DROPS SHALL SIT AT 4 FEET AFF FROM BOTTOM OF DEVICE.

GENERAL SHEET NOTES

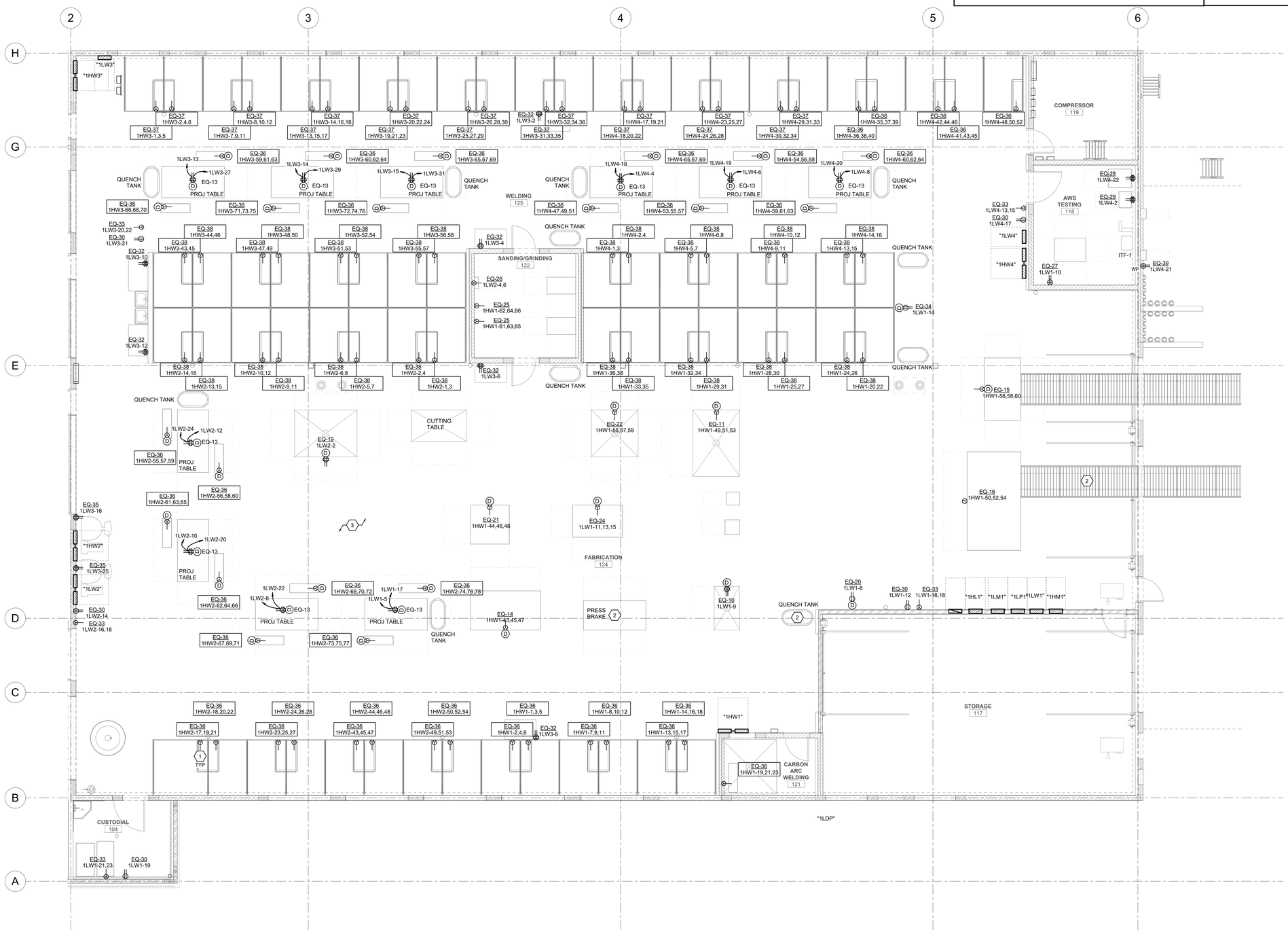
1 INDICATED LOCATION OF MECHANICAL EQUIPMENT IS APPROXIMATE AND PROVIDED BY OTHERS. COORDINATE EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

2 REFER TO EE701 FOR TYPICAL MOUNTING AND ALIGNMENT OF ELECTRICAL DEVICES.

3 LOCATE ALL EQUIPMENT DISCONNECTS IN ACCESSIBLE LOCATION ADJACENT TO EQUIPMENT AND POSITIONED TO COMPLY WITH NEC WORK SPACE CLEARANCES.

4 TYPICAL FOR ALL OPEN TO STRUCTURE CEILING AREAS - POWER CABLING AND CONTROLS CABLING SHALL BE INSTALLED IN CONDUIT IN A NEAT AND PROFESSIONAL MANNER, PARALLEL AND PERPENDICULAR TO STRUCTURE WITH CONDUIT UP IN STUCTURE AND PAINTED TO MATCH SURFACE. ALL LOW VOLTAGE CABLING SHALL BE INSTALLED IN TRAY OR CONDUIT. INSTALLATION SHALL COMPLY WITH NECA STANDARDS.

5 COORDINATE EXACT LOCATIONS OF FLOORBOXES AND POKE THROUGH DEVICES WITH ARCHITECT AND BUILDING STRUCTURAL ELEMENTS PRIOR TO INSTALLATION AND ROUGH-IN.



A1 LEVEL 1 EQUIPMENT PLAN
SCALE: 3/16" = 1'-0"

NORTH

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324 S. State St., Suite 400
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801-328-5151
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LICENSED PROFESSIONAL ENGINEER No. 12735266 MARIO SEBASTIAN MARTINEZ STATE OF UTAH
11/14/2024

LEVEL 1 LAB EQUIPMENT PLAN

EP102.2

(801) 355-5915

SHEET KEYNOTES

1 RELAY CONNECTED TO FIRE ALARM CONTROL MODULE AND AND BAS PANEL FOR FAN SHUTDOWN.

2 DUCT DETECTOR IN RETURN AND SUPPLY AIR RISER, INSTALL IN STRAIGHT SECTION OF DUCT AS PER NFPA 72 REQUIREMENTS. COORDINATE DUCT DETECTOR AND AIR HANDLER EVAPORATOR INTAKE MOISTURE SUCH THAT NO NUISANCE TRIPPING WILL OCCUR.

3 PROVIDE DATA INSIDE MECHANICAL EQUIPMENT. COORDINATE WITH EQUIPMENT FOR BACNET INTERFACE LOCATION.

4 DUCT DETECTOR IN SUPPLY AIR RISER, INSTALL IN STRAIGHT SECTION OF DUCT AS PER NFPA 72 REQUIREMENTS. COORDINATE DUCT DETECTOR AND AIR HANDLER EVAPORATOR INTAKE MOISTURE SUCH THAT NO NUISANCE TRIPPING WILL OCCUR.

GENERAL SHEET NOTES

1 INDICATED LOCATION OF MECHANICAL EQUIPMENT IS APPROXIMATE AND PROVIDED BY OTHERS. COORDINATE EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

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3 LOCATE ALL EQUIPMENT DISCONNECTS IN ACCESSIBLE LOCATION ADJACENT TO EQUIPMENT AND POSITIONED TO COMPLY WITH NEC WORK SPACE CLEARANCES.

4 CONTRACTOR IS RESPONSIBLE FOR BECOMING FAMILIAR WITH EXISTING CONDITIONS AND VERIFYING THE CONDITIONS PRIOR TO BIDDING PROJECT. IF ANY DISCREPANCIES OCCUR BETWEEN THE EXISTING PHYSICAL CONDITIONS ON SITE AND THE CONDITIONS DESCRIBED IN THE DRAWINGS, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING.

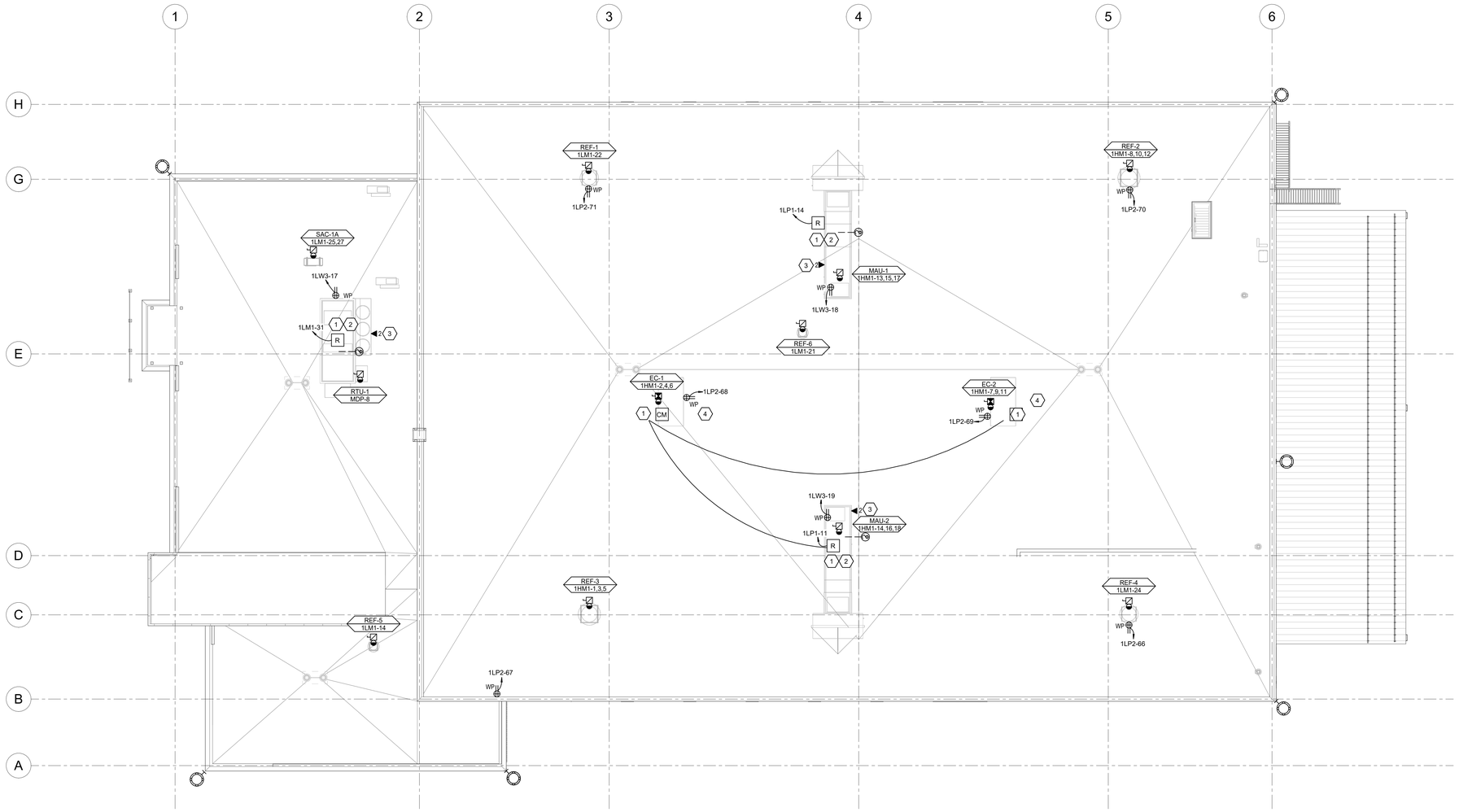
5 CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE PUBLIC AND SAFEGUARDING THE CONSTRUCTION SITE AND ADJACENT PUBLIC SPACES PER IBC CHAPTER 33.

6 THE CAMPUS SITE AND ALL BUILDINGS WILL BE USED AND OCCUPIED THROUGHOUT THE DURATION OF THE PROJECT. CONTRACTOR SHALL MAINTAIN THE SITE AND BUILDINGS COMPLETELY USABLE DURING THE PROJECT.

7 CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN CITY AND/OR AUTHORITIES HAVING JURISDICTION PERMITS FOR WORK AS REQUIRED FOR PROJECT. THIS INCLUDES BUT IS NOT LIMITED TO TRAFFIC PLANS AND SIGNAGE.

8 TYPICAL FOR ALL OPEN TO STRUCTURE CEILING AREAS - POWER CABLING AND CONTROLS CABLING SHALL BE INSTALLED IN CONDUIT IN A NEAT AND PROFESSIONAL MANNER, PARALLEL AND PERPENDICULAR TO STRUCTURE WITH CONDUIT UP IN STUCTURE AND PAINTED TO MATCH SURFACE. ALL LOW VOLTAGE CABLING SHALL BE INSTALLED IN TRAY OR CONDUIT. INSTALLATION SHALL COMPLY WITH NECA STANDARDS.

9 COORDINATE EXACT LOCATIONS OF FLOORBOXES AND POKE THROUGH DEVICES WITH ARCHITECT AND BUILDING STRUCTURAL ELEMENTS PRIOR TO INSTALLATION AND ROUGH-IN.



A1 ROOF POWER PLAN
SCALE: 1/8" = 1'-0"

NORTH

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PROJECT **24-038**

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324 S. State St., Suite 400
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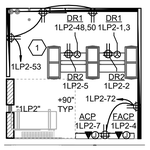
No. 12735266
MARIO SEBASTIAN MARTINEZ
STATE OF UTAH

11/14/2024

ROOF POWER PLAN

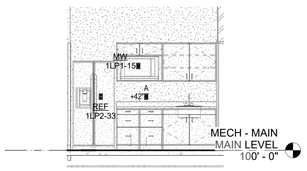
EP103.2

(801) 355-5915



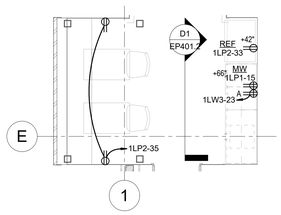
E1 ENLARGED - IT ROOM 115

SCALE: 1/4" = 1'-0"



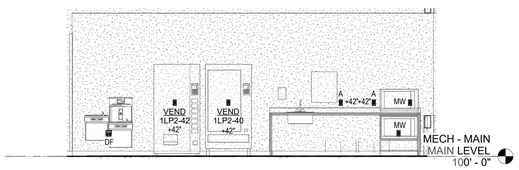
D1 ENLARGED FACULTY 112

SCALE: 1/4" = 1'-0"



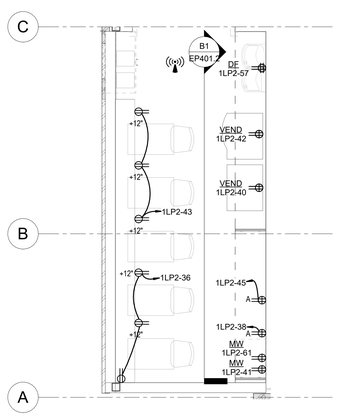
C1 ENLARGED FACULTY 112

SCALE: 1/4" = 1'-0"



B1 ENLARGED STUDENT REFRESH 108

SCALE: 1/4" = 1'-0"



A1 ENLARGED STUDENT REFRESH 108

SCALE: 1/4" = 1'-0"

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5 SHEET KEYNOTES

1 RECEPTACLES LOCATED DIRECTLY ABOVE RACKS.

6 GENERAL SHEET NOTES

1 INDICATED LOCATION OF MECHANICAL EQUIPMENT IS APPROXIMATE AND PROVIDED BY OTHERS. COORDINATE EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

2 REFER TO EE701 FOR TYPICAL MOUNTING AND ALIGNMENT OF ELECTRICAL DEVICES.

3 LOCATE ALL EQUIPMENT DISCONNECTS IN ACCESSIBLE LOCATION ADJACENT TO EQUIPMENT AND POSITIONED TO COMPLY WITH NEC WORK SPACE CLEARANCES.

4 CONTRACTOR IS RESPONSIBLE FOR BECOMING FAMILIAR WITH EXISTING CONDITIONS AND VERIFYING THE CONDITIONS PRIOR TO BIDDING PROJECT. IF ANY DISCREPANCIES OCCUR BETWEEN THE EXISTING PHYSICAL CONDITIONS ON SITE AND THE CONDITIONS DESCRIBED IN THE DRAWINGS, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING.

5 CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE PUBLIC AND SAFEGUARDING THE CONSTRUCTION SITE AND ADJACENT PUBLIC SPACES PER IBC CHAPTER 33.

6 THE CAMPUS SITE AND ALL BUILDINGS WILL BE USED AND OCCUPIED THROUGHOUT THE DURATION OF THE PROJECT. CONTRACTOR SHALL MAINTAIN THE SITE AND BUILDINGS COMPLETELY USABLE DURING THE PROJECT.

7 CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN CITY AND/OR AUTHORITIES HAVING JURISDICTION PERMITS FOR WORK AS REQUIRED FOR PROJECT. THIS INCLUDES BUT IS NOT LIMITED TO TRAFFIC PLANS AND SIGNAGE.

8 TYPICAL FOR ALL OPEN TO STRUCTURE CEILING AREAS - POWER CABLING AND CONTROLS CABLING SHALL BE INSTALLED IN CONDUIT IN A NEAT AND PROFESSIONAL MANNER, PARALLEL AND PERPENDICULAR TO STRUCTURE WITH CONDUIT UP IN STUCTURE AND PAINTED TO MATCH SURFACE. ALL LOW VOLTAGE CABLING SHALL BE INSTALLED IN TRAY OR CONDUIT. INSTALLATION SHALL COMPLY WITH NECA STANDARDS.

9 COORDINATE EXACT LOCATIONS OF FLOORBOXES AND POKE THROUGH DEVICES WITH ARCHITECT AND BUILDING STRUCTURAL ELEMENTS PRIOR TO INSTALLATION AND ROUGH-IN.

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

SPECTRUM ENGINEERS
324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH & FABRICATION BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN
MARTINEZ
STATE OF UTAH

11/14/2024

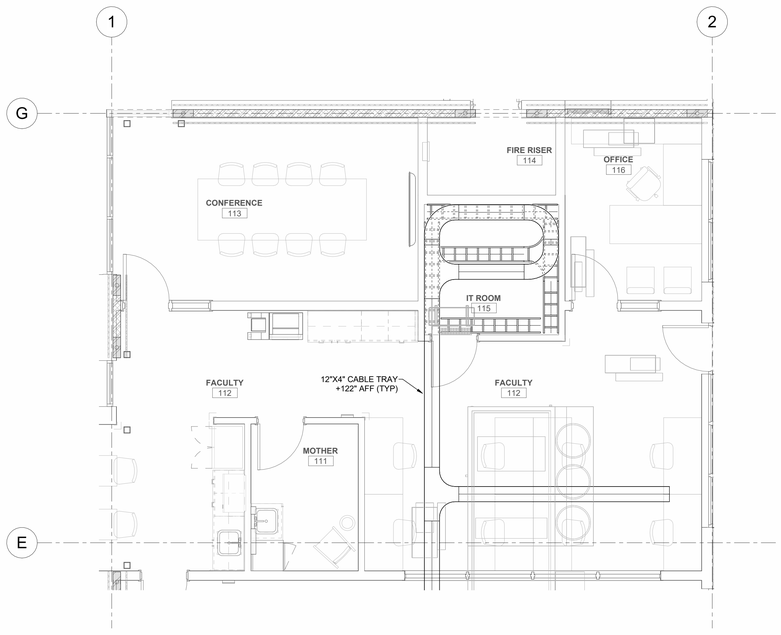
ENLARGED PLANS

EP401.2

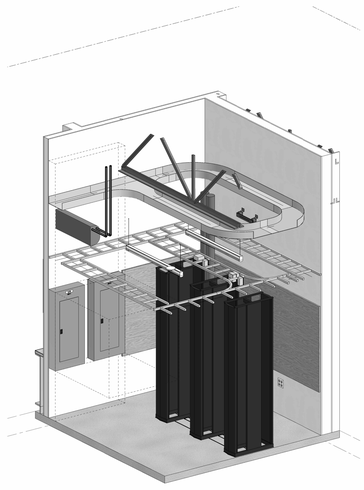
(801) 355-5915

DATA DEVICE DROP SCHEDULE - IDF 115

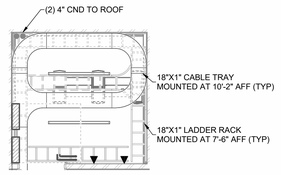
DATA DEVICE TYPE	DETAIL LOCATION	COMM ROOM LOCATION	TOTAL BY FLOOR	NUM. OF DROPS
LEVEL 1				
CEILING DATA (2-DROP)		IDF 115, RACK A-1	1	2
CEILING DATA - CAMERA (1-DROP)		IDF 115, RACK A-1	4	4
CEILING WIRELESS ACCESS POINT (2-DROP)		IDF 115, RACK A-1	3	6
WALL DATA (2-DROP)		IDF 115, RACK A-1	15	30
WALL DATA (4-DROP)		IDF 115, RACK A-1	6	24
WALL DATA (6-DROP)		IDF 115, RACK A-1	10	60
WALL DATA - CAMERA (1-DROP)		IDF 115, RACK A-1	7	7
ROOF				
WALL DATA (2-DROP)		IDF 115, RACK A-1	3	6
Grand total			49	139



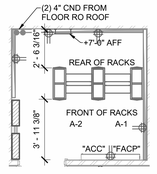
A1 CABLE TRAY PLAN
SCALE: 1/4" = 1'-0"



A4 ENLARGED IT ROOM 115 ISOMETRIC PLAN
SCALE:



B5 ENLARGED - IT ROOM 115 LADDER RACK PLAN
SCALE: 1/4" = 1'-0"



A5 ENLARGED - IT ROOM 115 EQUIPMENT RACK PLAN
SCALE: 1/4" = 1'-0"

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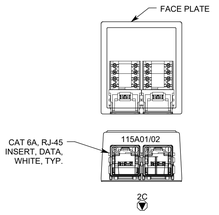
No. 12735266
MARIO SEBASTIAN
STATE OF UTAH
11/14/2024

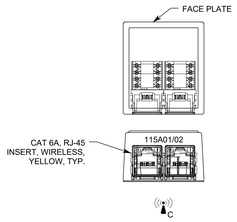
ENLARGED TELECOM PLANS AND DETAILS

EP450.2

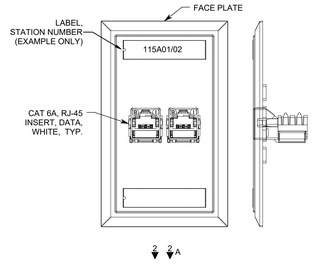
(801) 355-5915



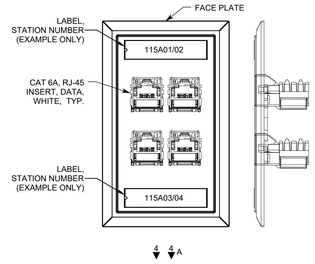
E1 CEILING DATA OUTLET
SCALE: NTS



E2 WIRELESS ACCESS POINT OUTLET
SCALE: NTS



E3 WALL DATA OUTLET (2 DROP)
SCALE: NTS



E4 WALL DATA OUTLET (4 DROP)
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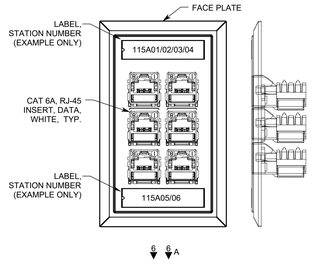

E5 WALL DATA OUTLET (6 DROP)
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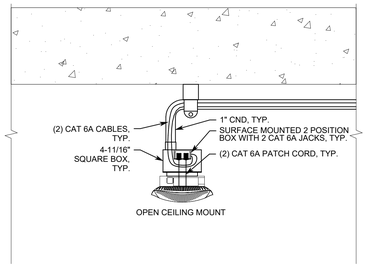

D1 WIRELESS AP MOUNTING DETAIL
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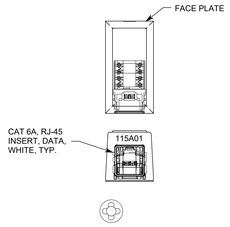

D2 CAMERA DATA OUTLET
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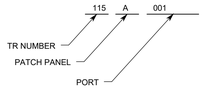

D3 CABLE ID EXAMPLE DETAIL
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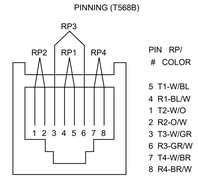

D4 VOICE/DATA OUTLET PINNING DETAIL
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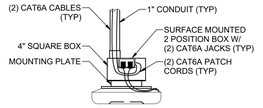

D5 WIRELESS ACCESS POINT MOUNTING DETAIL (OPEN CEILNG)
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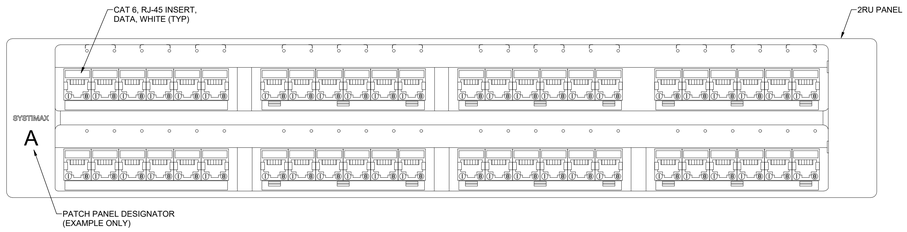
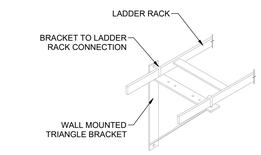


C1 STATION PATCH PANEL, SPP2, TYPICAL
SCALE: NTS



C3 TYPICAL LADDER RACK TRIANGLE BRACKET DETAIL
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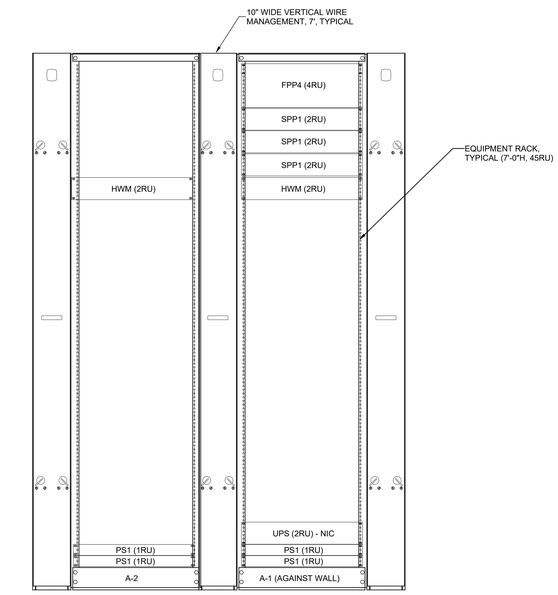

B5 TELECOM RACK ELEVATION, LEVEL 1, IT 115
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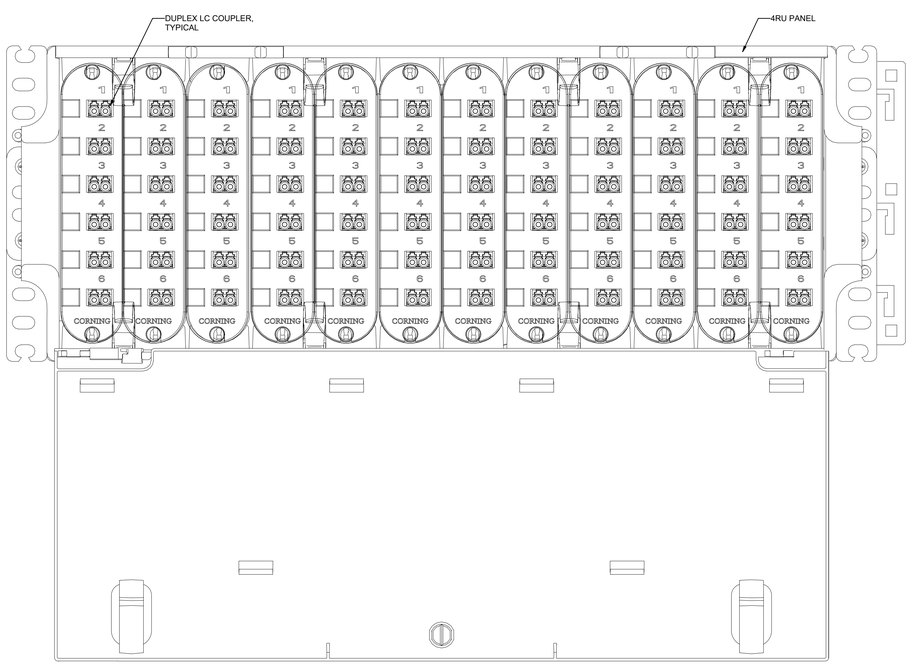
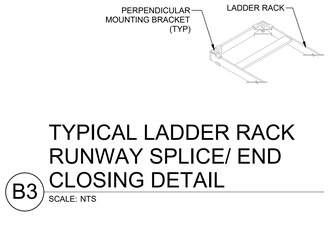


A1 FIBER PATCH PANEL, FPP4, TYPICAL
SCALE: 1/8" = 1'-0"



B3 TYPICAL LADDER RACK RUNWAY SPLICE/ END CLOSING DETAIL
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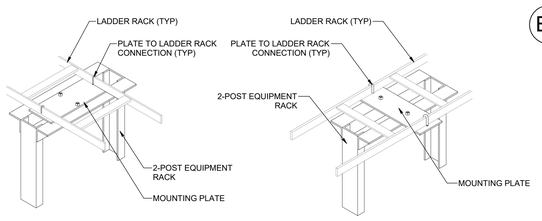

A3 TYPICAL 3" CHANNEL LADDER RACK-TO-RUNWAY MOUNTING PLATE DETAIL
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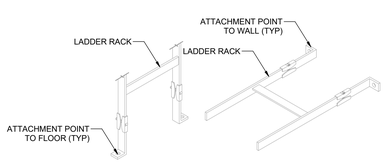

A5 TYPICAL LADDER RACK FLOOR/ WALL ATTACHMENT DETAIL
SCALE: NTS

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PROJECT **24-038**

BID PACKAGE #2 2024-11-01

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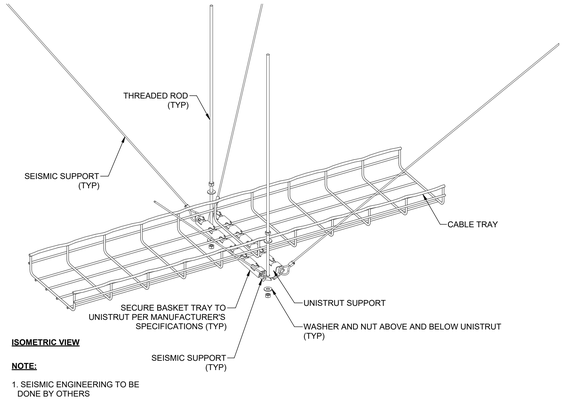
TELECOM DETAILS

EP550.2

(801) 355-5915



D3 TYPICAL CABLE TRAY W/ SEISMIC SUPPORTS DETAIL
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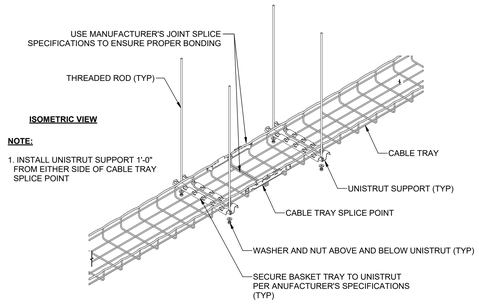

D5 TYPICAL CABLE TRAY W/ SUPPORT AT SPLICE POINT DETAIL
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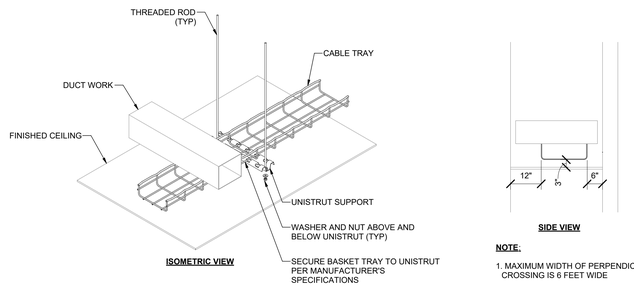

C3 TYPICAL CABLE TRAY W/ PERPENDICULAR CROSSING DETAIL
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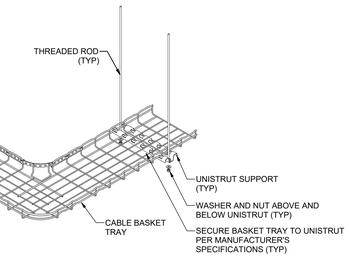

C5 TYPICAL CABLE TRAY 90 DEGREE BEND W/ SUPPORTS DETAIL
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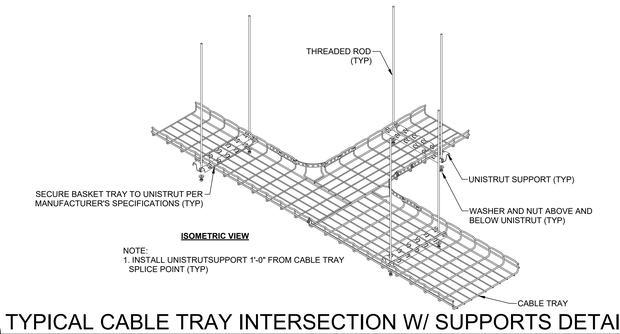

B3 TYPICAL CABLE TRAY INTERSECTION W/ SUPPORTS DETAIL
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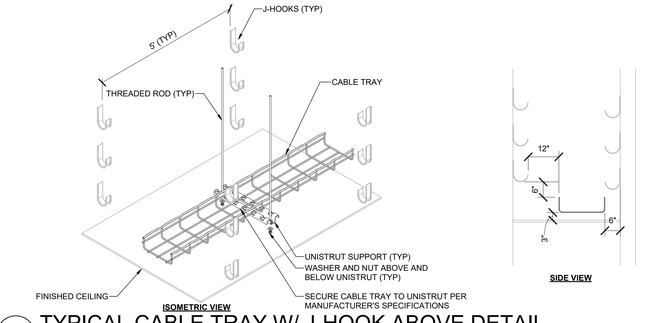

B5 TYPICAL CABLE TRAY W/ J-HOOK ABOVE DETAIL
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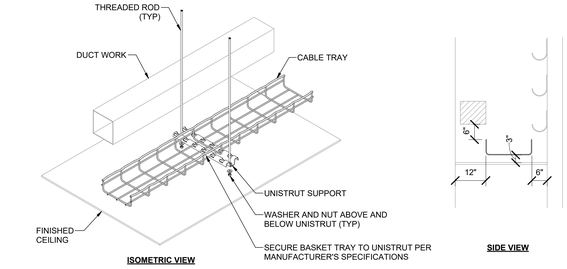
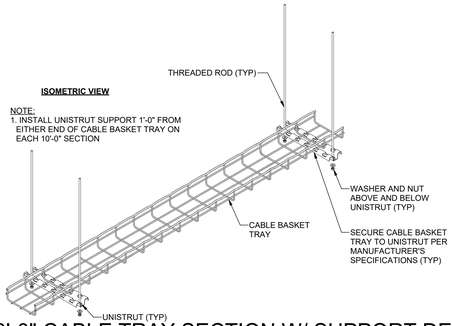


A3 TYPICAL CABLE TRAY W/ PARALLEL OBSTRUCTION DETAIL
SCALE: NTS



A5 TYPICAL 10'-0" CABLE TRAY SECTION W/ SUPPORT DETAIL
SCALE: NTS

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STATE OF UTAH

11/14/2024

TELECOM CABLE TRAY DETAILS

EP553.2

(801) 355-5915

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BRANCH CIRCUIT CONDUCTOR AND CONDUIT SIZING TABLE

CIRCUIT AMPACITY/VOLTAGE	CIRCUIT LENGTH	CONDUCTOR SIZE (PHASE, NEUTRAL AND GR)	CONDUIT SIZE
20A/120V	0' - 60'	#12 AWG	0.75" Ø
20A/120V	60' - 95'	#10 AWG	0.75" Ø
20A/120V	95' - 150'	#8 AWG	1" Ø
20A/120V	150' - 240'	#6 AWG	1.25" Ø
20A/277V	0' - 140'	#12 AWG	0.75" Ø
20A/277V	140' - 220'	#10 AWG	0.75" Ø
20A/277V	220' - 350'	#8 AWG	1" Ø
20A/277V	350' - 550'	#6 AWG	1.25" Ø

NOTES:

1. WIRE SIZING IS BASED ON COPPER CONDUCTORS SUPPLYING A 20A, 120V CIRCUIT AT THE INDICATED VOLTAGE, ASSUMED TO BE 80% LOADED (16A), WITH MAXIMUM VOLTAGE DROP OF 3% AT THE LOAD.
2. DOWN-SIZED WIRE AT DEVICE/LOAD AS REQUIRED AND TERMINATE CONDUCTORS IN A SAFE AND CODE COMPLIANT MANNER.
3. CONDUIT SIZE IS BASED ON A MAXIMUM OF 3 CIRCUITS PER CONDUIT, EACH WITH A SEPARATE NEUTRAL CONDUCTOR.

SERVICE LOAD CALCULATIONS

480Y/277 V SERVICE CALCULATION

NEW CONSTRUCTION AREA FT²	16,838
ELECTRICAL SERVICE VOLTAGE (V)	480
ELECTRICAL SERVICE PHASE (PH)	3

DESCRIPTION:	KW	VA/FT²	HP	PF	KVA	NEC DEMAND FACTOR	NEC DEMAND LOAD (KVA)	NEC DEMAND LOAD (A)	NOTES
A. LIGHTING LOAD		1.5			25.3	125%	32	38	1
B. MOTOR & HVAC LOAD					99.5	100%	99	120	3
C. MISCELLANEOUS LOAD		0.5			8.4	100%	8	10	
D. LARGEST MOTOR			30		29.1	25%	7	9	4
E. WELDERS					432.1	100%	432	520	
F. WELDING EQUIPMENT					112.1	100%	112	135	
G. EXTRATION SYSTEM					266.0	100%	266	320	
H. 208/120V LOAD					116.7	100%	117	140	
						TOTAL	1074	1291	
						BUILDING SERVICE SIZE (A)		2000	
						SERVICE SPARE CAPACITY (%)		35%	

208Y/120 V SERVICE CALCULATION

NEW CONSTRUCTION AREA FT²	16,838
ELECTRICAL SERVICE VOLTAGE (V)	208
ELECTRICAL SERVICE PHASE (PH)	3

DESCRIPTION:	KW	VA/FT²	HP	PF	KVA	NEC DEMAND FACTOR	NEC DEMAND LOAD (KVA)	NEC DEMAND LOAD (A)	NOTES
A. RECEPTACLE LOAD FIRST 10 KVA					10.0	100%	10	28	2
B. RECEPTACLE LOAD REMAINING >10 KVA		2			33.7	50%	17	47	2
C. MOTOR & HVAC LOAD					29.7	100%	30	82	3
D. SPECIFIC APPLIANCES OR LOADS		0.5			8.4	100%	8	23	
E. WELDING EQUIPMENT					43.4	100%	43	120	
F. MISCELLANEOUS LOAD		0.5			8.4	100%	8	23	
						TOTAL	117	324	
						BUILDING SERVICE SIZE (A)		400	
						SERVICE SPARE CAPACITY (%)		19%	

NOTES

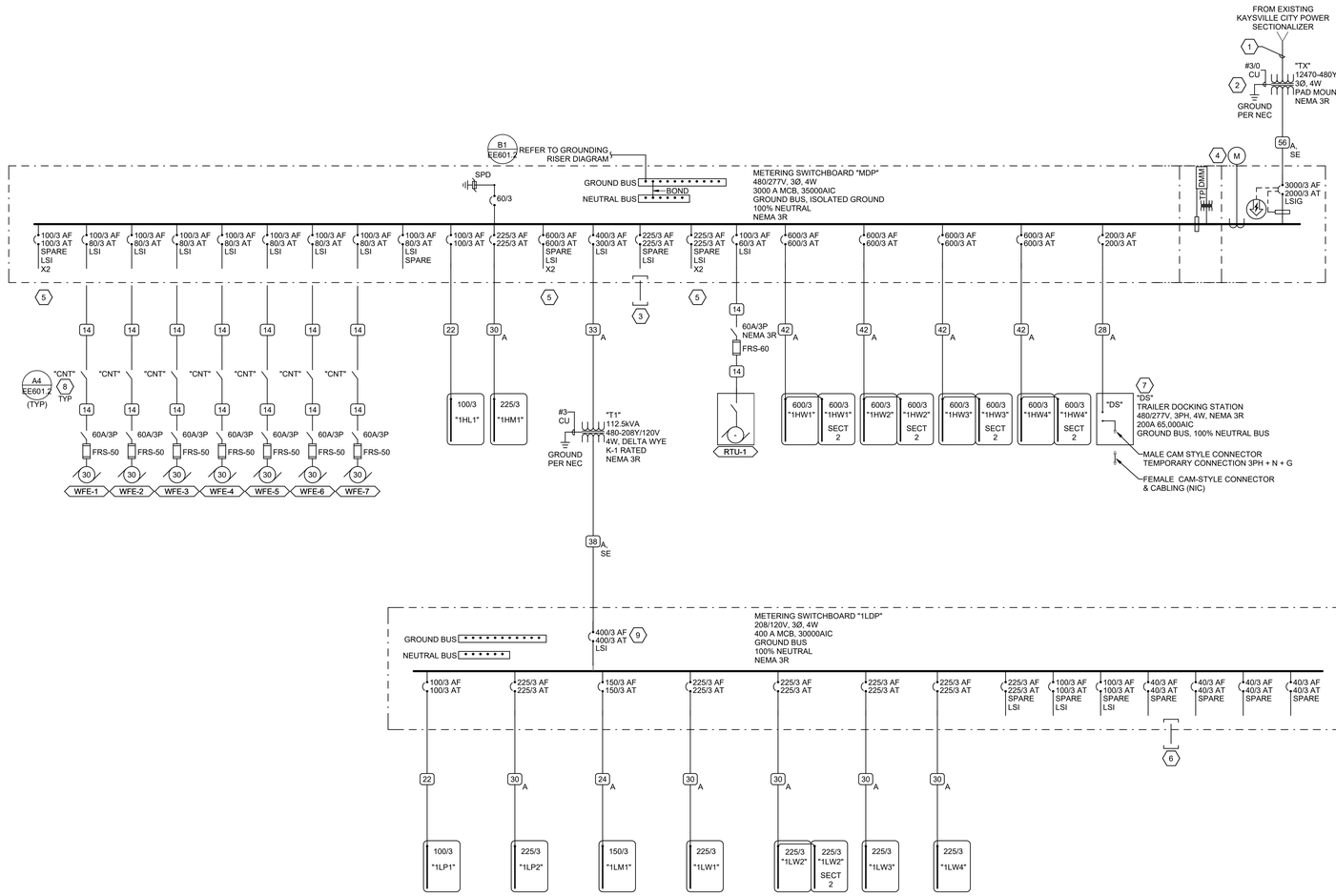
1. LIGHTING LOADS BASED ON NEC TABLE 220.12 VALUE FOR SCHOOLS OR ACTUAL LOAD WHICHEVER IS GREATER
2. LOAD BASED ON ACTUAL CALCULATED LOAD OR 1 VA/S.F. WHICHEVER IS GREATER. RECEPTACLE DEMAND FACTOR BASED ON NEC TABLE 220.44.
3. MOTOR LOAD CALCULATED AS PER NEC 220.50, 430.24, 430.25, 430.26, AND 440.6.
4. LARGEST MOTOR LOAD AS PER NEC 220.50, 430.24.

EQUIPMENT NAMEPLATE SCHEDULE

EQUIPMENT ID SCHEME	
	FIRST DIGIT - BUILDING LEVEL (0, 1, 2, ETC) SECOND DIGIT - PANEL TYPE L - (120/208) H - (277/480) THIRD DIGIT - M - MECHANICAL L - LIGHTING W - WELDING EQUIP FOURTH DIGIT - SEQUENCE # (1,2,3,...) OR DISTRIBUTION
LABEL FORMAT	[NAME] [SYSTEM] [VOLTAGE] [FED FROM] [SOURCE(S)]
LABEL EXAMPLE	PANEL "4LA1" STANDBY POWER 120/208V FED FROM BUS-A / XFMR 4TA
OTHER	

COLOR SCHEME

SYSTEM	EQUIPMENT	NAMEPLATE COLOR TEXT	BACKGROUND
NORMAL POWER	ALL GEAR NOT INCLUDED BELOW	WHITE	BLACK



A1 ONE-LINE DIAGRAM
SCALE: NTS

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ALUMINUM CONDUCTOR AND CONDUIT SCHEDULE

SCHEDULE NUMBER
SUBSCRIPT (NOTE 5)
(E.G. 5 IG)

SYM	AMP	CONDUIT SIZE	CONDUCTOR (NOTE 1) QTY	SIZE	G	IG	SE	NOTES
1A								
2A								
3A								
4A								
5A								
6A								
7A								
8A								
9A								
10A								
11A								
12A								
13A								
14A								
15A								
16A								
17A								
18A								
19A								
20A								
21A	130	2	3	2/0	4	1/0	4	2,7
22A	130	2	4	2/0	4	1/0	4	2,7
23A	150	2	3	3/0	4	1/0	4	2,7
24A	150	2	4	3/0	4	1/0	4	2,7
25A	175	2	3	4/0	4	1/0	2	2,7
26A	175	2.50	4	4/0	4	1/0	2	2,7
27A	200	2.50	3	250	4	1/0	2	2,7
28A	200	3	4	250	4	1/0	2	2,7
29A	230	2.50	3	300	2	1/0	1/0	2,7
30A	230	3	4	300	2	1/0	1/0	2,7
31A	250	3	3	350	2	2/0	1/0	2,7
32A	250	3	4	350	2	2/0	1/0	2,7
33A	310	3	3	500	1	3/0	1/0	2,7
34A	310	4	4	500	1	3/0	1/0	2,7
35A	380	2 EA 2.50	3	250	1	4/0	3/0	2,7
36A	380	2 EA 3	4	250	1	4/0	3/0	2,7
37A	400	2 EA 2.50	3	250	1/0	4/0	3/0	2,7
38A	400	2 EA 2.50	4	250	1/0	4/0	3/0	2,7
39A	500	2 EA 3	3	350	1/0	300	3/0	2,4,7
40A	500	2 EA 3	4	350	1/0	300	3/0	2,4,7
41A	620	2 EA 3	3	500	3/0	300	3/0	2,4,7
42A	620	2 EA 4	4	500	3/0	300	3/0	2,4,7
43A	750	3 EA 3	3	350	3/0	300	4/0	2,4,7
44A	750	3 EA 3	4	350	3/0	300	4/0	2,4,7
45A	810	3 EA 3	3	400	4/0	300	250	2,4,7
46A	810	3 EA 4	4	400	4/0	300	250	2,4,7
47A	1000	4 EA 3	3	350	4/0	300	250	4,7
48A	1000	4 EA 3	4	350	4/0	300	250	4,7
49A	-	-	-	-	-	-	-	-
50A	1140	4 EA 4	4	500	250	300	250	4,7
51A	1240	4 EA 4	3	500	350	300	250	4,7
52A	1240	4 EA 4	4	500	350	300	250	4,7
53A	1620	6 EA 4	4	400	400	350	250	4,7
54A	2170	7 EA 4	4	500	400	400	500	4,7
55A	2695	7 EA 4	4	750	600	750	750	4,7
56A	3080	8 EA 4	4	750	600	750	750	4,7
57A	4235	11 EA 4	4	750	800	750	750	4,7
58A	1200	5 EA 4	-	-	-	-	-	6
59A	3000	10 EA 6	-	-	-	-	-	6
60A	-	10 EA 4	-	-	-	-	-	6

CONDUCTOR AND CONDUIT SCHEDULE NOTES

1 CONDUCTORS SHOWN ARE SHOWN FOR EACH CONDUIT WITH MODIFICATIONS AS NOTED IN NOTE 5. ALL CONDUCTORS SHOWN ARE THWN UNLESS OTHERWISE NOTED.
2 PROVIDE EQUIPMENT GROUND CONDUCTORS PER TABLE 250-122 WHEN CIRCUIT BREAKERS ARE SIZED GREATER THAN AMPERE RATING SHOWN IN TABLE.
3 PROVIDE #10 NEUTRALS FOR MULTIWIRE BRANCH CIRCUITS SERVING COMPUTERS.
4 GROUND (G) CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE CONDUCTORS.
5 SYMBOL SUBSCRIPTS:
"2N": INCLUDE TWO NEUTRAL CONDUCTORS SIZED AS SCHEDULED FOR PHASE AND NEUTRAL CONDUCTORS WHERE THE CONDUCTOR IS #1/0 OR LARGER. INCLUDE A SINGLE 200% RATED CONDUCTOR THAT IS TWICE THE AMPACITY OF THE SCHEDULED PHASE AND NEUTRAL CONDUCTOR WHERE THE CONDUCTOR IS BELOW #1/0 IN SIZE.
"CI": PROVIDE CIRCUIT INTEGRITY CABLE: TYPE TWO-HOUR FIRE RESISTIVE CABLES IN CONDUIT OR PROVIDE FEEDER ENCASED IN CONCRETE.
"FG" FULL SIZE GROUND, SIZE EQUIPMENT GROUNDING CONDUCTOR TO BE SAME SIZE AS THE PHASE CONDUCTORS.
"HH": NEUTRAL CURRENTS EXIST DUE TO HIGH HARMONIC "NONLINEAR" LOADS. CURRENT CARRYING CONDUCTORS DERATED ACCORDINGLY. PROVIDE THE IG/HH SIZE FOR THE EQUIPMENT GROUNDING CONDUCTOR.
"IG": INCLUDE IG (INSULATED/ISOLATED GROUND CONDUCTOR) SCHEDULED ALONG WITH THE GROUND OF EQUIPMENT GROUND CONDUCTOR.
"MC": PROVIDE FEEDER IN METAL-CLAD CABLE; TYPE MC IN PLACE OF SINGLE CONDUCTORS IN CONDUIT.
"SE": SUBSTITUTE "SE" CONDUCTOR FOR "G" CONDUCTOR SHOWN, WHICH IS SIZED FOR THE GROUNDING OF THE SECONDARY OF THE SEPARATELY DERIVED SYSTEM.
"SER": PROVIDE SERVICE-ENTRANCE CABLE; TYPE SE OR SER IN PLACE OF SINGLE CONDUCTORS IN CONDUIT.
6 RACEWAY ONLY. CONDUCTORS PROVIDED BY UTILITY.
7 ALUMINUM CONDUCTORS NOT TO BE USED FOR CONNECTION TO MOTORS OR MOTOR DRIVEN EQUIPMENT.

GENERAL SHEET NOTES

1 PROVIDE NEMA 3R ENCLOSURES FOR EQUIPMENT LOCATED OUTDOORS. REFER TO PLANS FOR EQUIPMENT LOCATIONS.
2 REFER TO PLANS FOR CONSTRAINTS ON PHYSICAL DIMENSIONS AND CLEARANCE REQUIREMENTS OF EQUIPMENT. PROVIDE EQUIPMENT DIMENSIONS THAT FALL WITHIN THE CONSTRAINTS OF EACH SPECIFIC LOCATION.
3 ALL EQUIPMENT SHALL BE CONSTRUCTED AND BRACED FOR THE SEISMIC CONDITIONS OF THE PROJECT. REFER TO ELECTRICAL SPECIFICATIONS FOR REQUIREMENTS.
4 PROVIDE PERFORMANCE TESTING FOR GROUND-FAULT PROTECTION SYSTEMS ON SITE WITH A WRITTEN RECORD OF THIS TEST SUBMITTED TO THE AUTHORITY HAVING JURISDICTION PER NEC 230.95(C).

SHEET KEYNOTES

1 CONTRACTOR SHALL PROVIDE 4" CONDUIT WITH PULL STRING. UTILITY TO INSTALL CABLING. CONTRACTOR SHALL PROVIDE WIDE SWEEP FIBERGLASS ELBOWS.
2 CONTRACTOR TO INSTALL TRANSFORMER PAD. UTILITY TO PROVIDE TRANSFORMER. CONTRACTOR TO PROVIDE 1" CONDUIT FROM TRANSFORMER TO SWITCHBOARD.
3 PROVIDE (2) 3" CONDUITS AND 1" CONDUIT TO OUTSIDE OF SWITCHBOARD PAD FOR FUTURE POWER FACTOR CORRECTING CAPACITORS.
4 KCP WILL FURNISH METER BASE WITH CABLING. CONTRACTOR TO INSTALL THE METER BASE AND CONDUITS. KCP TO CONNECT AND TERMINATE ALL WIRING.
5 PROVIDE QUANTITY OF SPARE CIRCUIT BREAKERS AS SHOWN.
6 PROVIDE (4) 1.25" CONDUITS TO PULLBOX "PBEV" FOR FUTURE EV CHARGERS.
7 DISCONNECT EXISTING DOCKING STATION FROM EXISTING FACILITY AND INSTALL IN NEW LOCATION.
8 REFER TO TYPICAL WELDING HOOD/EXTRACTION SYSTEM RISER.
9 PROVIDE 100% RATED BREAKER.

COPPER CONDUCTOR AND CONDUIT SCHEDULE

SCHEDULE NUMBER
SUBSCRIPT (NOTE 5)
(E.G. 5 IG)

SYM	AMP	HH AMPS	CONDUIT SIZE	CONDUCTOR (NOTE 1) QTY	SIZE	G	IG/HH	SE	NOTES
1	20	-	.75	2	12	12	12	8	2
2	20	-	.75	3	12	12	12	8	2,3
3	20	24	.75	4	12	12	12	8	2,3
4	30	-	.75	2	10	10	10	8	2
5	30	-	.75	3	10	10	10	8	2
6	30	32	.75	4	10	10	10	8	2
7	40	-	1	2	8	10	8	6	2
8	40	-	1	3	8	10	8	6	2
9	40	44	1	4	8	10	8	6	2
10	55	-	1	2	6	10	8	4	2
11	55	-	1	3	6	10	8	4	2
12	55	60	1.25	4	6	10	8	4	2
13	70	-	1	2	4	8	4	2	2
14	70	-	1.25	3	4	8	4	2	2
15	70	76	1.25	4	4	8	4	2	2
16	85	-	1.25	2	3	8	3	2	2
17	85	-	1.25	3	3	8	3	2	2
18	85	92	1.25	4	3	8	3	2	2
19	95	-	1.25	3	2	8	2	2	2
20	95	104	1.50	4	2	8	2	2	2
21	130	-	1.50	3	1	6	2	2	2
22	130	116	1.50	4	1	6	2	2	2
23	150	-	2	3	1/0	6	2	1/0	2
24	150	136	2	4	1/0	6	2	1/0	2
25	175	-	2	3	2/0	6	2	2/0	2
26	175	156	2	4	2/0	6	2	2/0	2
27	200	-	2	3	3/0	6	2	2/0	2
28	200	180	2.50	4	3/0	6	2	2/0	2
29	230	-	2.50	3	4/0	4	2	2/0	2
30	230	208	2.50	4	4/0	4	2	2/0	2
31	255	-	2.50	3	250	4	1	2/0	2
32	255	232	2.50	4	250	4	1	2/0	2
33	310	-	3	3	350	3	1/0	3/0	2
34	310	280	3	4	350	3	1/0	3/0	2
35	380	-	3.50	3	500	3	3/0	3/0	2
36	380	344	4	4	500	3	3/0	3/0	2
37	400	-	2 EA 2	3	3/0	3	3/0	3/0	2
38	400	360	2 EA 2.50	4	3/0	3	3/0	3/0	2
39	510	-	2 EA 2.50	3	250	1	4/0	3/0	2
40	510	464	2 EA 3	4	250	1	4/0	3/0	2
41	620	-	2 EA 3	3	350	1/0	4/0	3/0	2,4
42	620	560	2 EA 3	4	350	1/0	4/0	3/0	2,4
43	760	-	2 EA 3.50	3	500	1/0	4/0	3/0	2,4
44	760	688	2 EA 4	4	500	1/0	4/0	3/0	2,4
45	855	-	3 EA 3	3	300	2/0	4/0	3/0	2,4
46	855	768	3 EA 3	4	300	2/0	4/0	3/0	2,4
47	1000	-	3 EA 3.50	3	400	2/0	4/0	3/0	4
48	1000	912	3 EA 3.50	4	400	2/0	4/0	3/0	4
49	1140	-	3 EA 4	3	500	3/0	4/0	3/0	4
50	1140	1032	3 EA 4	4	500	3/0	4/0	3/0	4
51	1240	-	4 EA 3	3	350	3/0	4/0	3/0	4
52	1240	1120	4 EA 3	4	350	3/0	4/0	3/0	4
53	1675	1520	5 EA 4	4	400	4/0	4/0	4/0	4
54	2010	1824	6 EA 4	4	400	250	250	250	4
55	2660	2408	7 EA 4	4	500	350	350	350	4
56	3040	2752	8 EA 4	4	500	500	500	500	4
57	4180	3784	11 EA 4	4	500	500	500	500	4
58	1200	-	5 EA 4	-	-	-	-	-	6
59	3000	-	10 EA 6	-	-	-	-	-	6
60	-	-	10 EA 4	-	-	-	-	-	6

CONDUCTOR AND CONDUIT SCHEDULE NOTES

1. CONDUCTORS SHOWN ARE SHOWN FOR EACH CONDUIT WITH MODIFICATIONS AS NOTED IN NOTE 5. ALL CONDUCTORS SHOWN ARE THWN UNLESS OTHERWISE NOTED.
2. PROVIDE EQUIPMENT GROUND CONDUCTORS PER TABLE 250-122 WHEN CIRCUIT BREAKERS ARE SIZED GREATER THAN AMPERE RATING SHOWN IN TABLE.
3. PROVIDE #10 NEUTRALS FOR MULTIWIRE BRANCH CIRCUITS SERVING COMPUTERS.
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"SER": PROVIDE SERVICE-ENTRANCE CABLE; TYPE SE OR SER IN PLACE OF SINGLE CONDUCTORS IN CONDUIT.
6. RACEWAY ONLY. CONDUCTORS PROVIDED BY UTILITY.

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

SPECTRUM ENGINEERS
324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH & FABRICATION BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

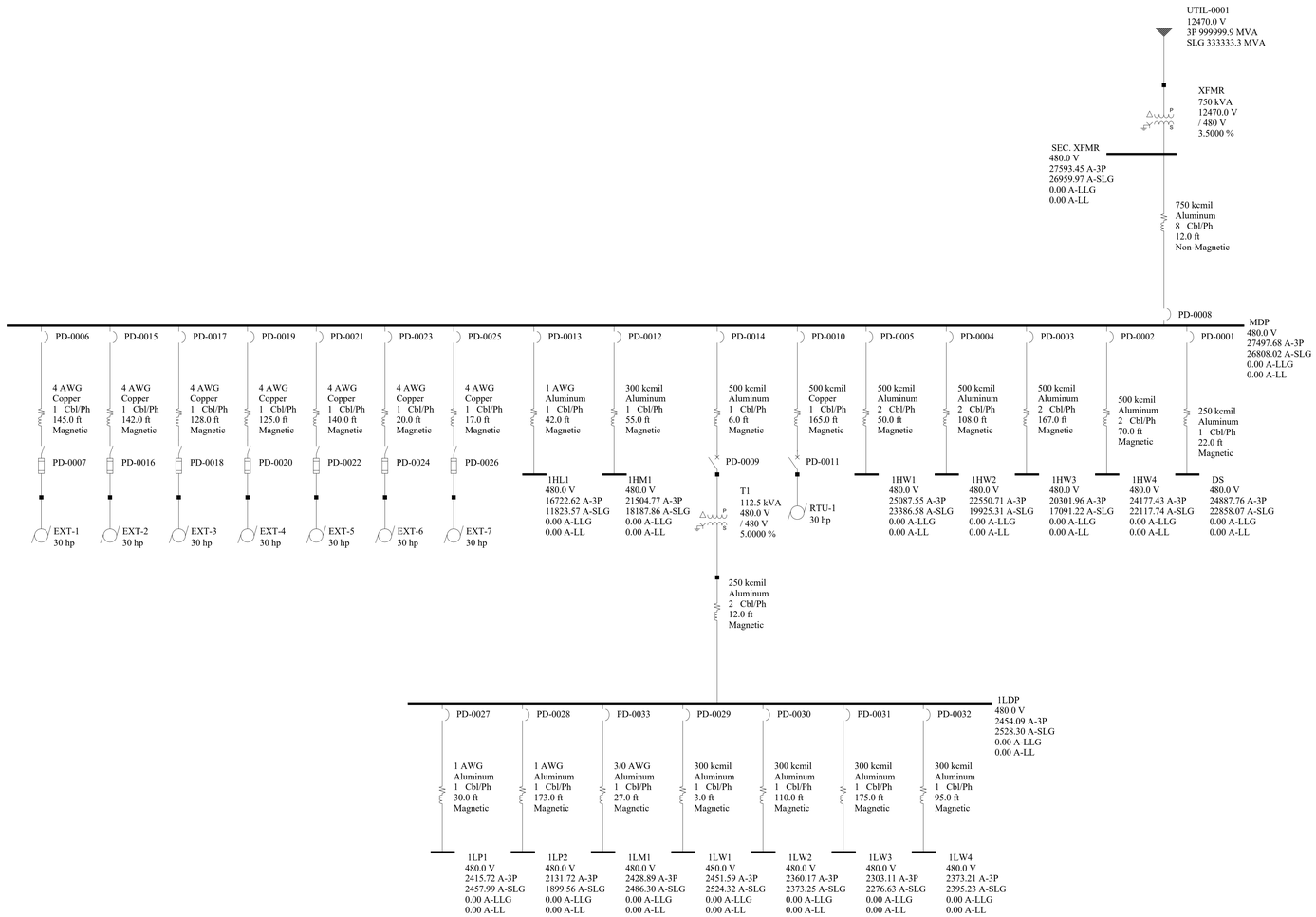
LICENSED PROFESSIONAL ENGINEER No. 12735266 MARIO SEBASTIAN MARTINEZ STATE OF UTAH

11/14/2024

ONE-LINE DIAGRAM

EP601.2

(801) 355-5915



A1 FAULT CURRENT CALCULATION - FOR REFERENCE ONLY

SCALE: NTS

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CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

SPECTRUM ENGINEERS

324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH & FABRICATION BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037



11/14/2024

FAULT CURRENT CALCULATION

EP602.2

(801) 355-5915

LAB ELECTRICAL FIXTURE SCHEDULE

EQUIPMENT SCHEDULE KEY
E - DIVISION 26
Q - FURNISHED WITH EQUIPMENT
* - COORDINATE WITH THE DIVISION 23 TEMPERATURE CONTROL INSTALLER
** - AUTOMATIC CONTROL WIRING BY DIVISION 23

NOTES:
1. NEMA 3R
2. TOGGLE SWITCH W/ THERMAL OVERLOAD
3. PROVIDE FUSED DISCONNECT ELEVATOR POWER MODULE WITH SHUNT TRIP
4. CONTRACTOR TO PERFORM FINAL CONNECTION TO LINE VOLTAGE THERMOSTATS
5. TOGGLE SWITCH W/BACNET INTERFACE.
6. INDOOR UNITS FED FROM OUTDOOR UNIT. PROVIDE DISCONNECTS FOR BOTH.
7. PROVIDE SWITCH WITH BACNET MS/TP CAPABILITY.
8. PROVIDE LABEL ON DISCONNECT "DISCONNECT OUTDOOR UNIT PRIOR TO INDOOR."
9. LINE VOLTAGE THERMOSTAT ON WALL.
10. PROVIDE EXPLOSION PROOF DEVICES AND WIRING METHODS.
11. PROVIDE DUAL-REDUNDANT 100% RATED VFD'S FOR AIR HANDLER.
12. PROVIDE MANUAL STARTER WITH THERMAL OVERLOAD AND RELAY FOR ATC/BAS CONTROL.

ITEM NO.	QTY	DESCRIPTION	MOUNTING HEIGHT (AFF)	LOAD DATA				LOAD DATA	WIRE AND CONDUIT SIZE	CONNECTION TYPE		ELECTRICAL REMARKS
				VOLT	PHASE	AMPS	kW	HP		FURN BY	DEVICE	
EQ-10	1	LASER CUTTER	+48"	120	1	16	1.9	-	2#12, 12GR 0.75" CND	E	(2)NEMA 5-20R	-
EQ-11	1	PLASMA TABLE	+48"	480	3	33	27.4	-	4#8, 10GR 1.25" CND	E	NEMA L16-50R	-
EQ-13	10	PROJECT TABLE	+48"	120	1	8	1.0	-	2#12, 12GR 0.75" CND	E	(2)NEMA 5-20R	-
EQ-14	1	IRON WORKER	+48"	480	3	18	14.9	-	4#10, 10GR 0.75" CND	E	NEMA L16-30R	-
EQ-15	1	HORIZONTAL BANDSAW	+48"	480	3	5	4.2	-	4#12, 12GR 0.75" CND	E	NEMA L16-20R	-
EQ-16	1	HYDRAULIC SHEAR	+48"	480	3	40	33.2	-	4#4, 8GR 1.25" CND	E	HW	60A/3P, FRS-60
EQ-19	1	TRACK CUTTER	+48"	120	1	3	0.4	-	2#12, 12GR 0.75" CND	E	(2)NEMA 5-20R	-
EQ-20	1	ROD OVEN	+48"	120	1	8	1.0	-	2#12, 12GR 0.75" CND	E	NEMA 5-20R	-
EQ-21	1	VERTICAL MILL	+48"	480	3	16	13.3	-	4#10, 10GR 0.75" CND	E	NEMA L16-20R	-
EQ-22	1	PLASMA CUTTER	+48"	480	3	18	14.9	-	4#10, 10GR 0.75" CND	E	NEMA L16-30R	-
EQ-24	1	LATHE	+48"	208	3	17	3.5	-	2#10, 10GR 0.75" CND	E	NEMA 6-20	-
EQ-25	2	BELT SANDER	+48"	480	3	6	4.9	-	4#12, 12GR 0.75" CND	E	NEMA L18-30R	-
EQ-26	1	BENCH GRINDER	+48"	208	1	10	2.1	-	2#12, 12GR 0.75" CND	E	NEMA 6-20R	-
EQ-27	1	HYDRAULIC TEST TABLE	+48"	120	1	10	1.2	-	2#12, 12GR 0.75" CND	E	(4) NEMA 5-20R	-
EQ-28	1	UNITED TESTING MACHINE	+18"	120	1	8	1.0	-	2#12, 12GR 0.75" CND	E	(2) NEMA 5-20R	-
EQ-29	1	COMPUTER TESTING	+18"	120	1	5	0.6	-	2#12, 12GR 0.75" CND	E	(2) NEMA 5-20R	-
EQ-30	5	FLOOR SCRUBBER	+48"	120	1	10	1.2	-	2#12, 12GR 0.75" CND	E	NEMA 5-20R	-
EQ-32	6	STAINELSS STEEL TABLE	+48"	120	1	5	0.6	-	2#12, 12GR 0.75" CND	E	(2) NEMA 5-20R	-
EQ-33	5	PRESSURE WASHER	+48"	208	1	24	5.0	-	2#10, 10GR .75" CND	E	NEMA 6-50R	-
EQ-34	1	WELDING POSITIONER	+48"	120	1	4	0.5	-	2#12, 12GR 0.75" CND	E	NEMA 5-20R	-
EQ-35	2	WELDING SIMULATOR	+18"	120	1	5	0.6	-	2#12, 12GR 0.75" CND	E	(2) NEMA 5-20R	-
EQ-36	40	WELDER 1	+48"	480	3	14	11.6	-	4#12, 12GR 0.75" CND	E	NEMA L16-20R	-
EQ-37	18	WELDER 2	+48"	480	3	12	10.0	-	4#12, 12GR 0.75" CND	E	NEMA L16-20R	-
EQ-38	32	WELDER 3	+48"	480	1	17	14.1	-	3#10, 10GR 0.75" CND	E	NEMA L8-30R	-
EQ-39	1	GAS MANIFOLD CONTROLLER	+18"	120	1	10	1.2	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-

ELECTRICAL FIXTURE SCHEDULE

EQUIPMENT SCHEDULE KEY
E - DIVISION 26
Q - FURNISHED WITH EQUIPMENT
* - COORDINATE WITH THE DIVISION 23 TEMPERATURE CONTROL INSTALLER
** - AUTOMATIC CONTROL WIRING BY DIVISION 23

NOTES:
1. NEMA 3R
2. TOGGLE SWITCH W/ THERMAL OVERLOAD
3. PROVIDE FUSED DISCONNECT ELEVATOR POWER MODULE WITH SHUNT TRIP
4. CONTRACTOR TO PERFORM FINAL CONNECTION TO LINE VOLTAGE THERMOSTATS
5. TOGGLE SWITCH W/BACNET INTERFACE.
6. INDOOR UNITS FED FROM OUTDOOR UNIT. PROVIDE DISCONNECTS FOR BOTH.
7. PROVIDE SWITCH WITH BACNET MS/TP CAPABILITY.
8. PROVIDE LABEL ON DISCONNECT "DISCONNECT OUTDOOR UNIT PRIOR TO INDOOR."
9. LINE VOLTAGE THERMOSTAT ON WALL.
10. PROVIDE EXPLOSION PROOF DEVICES AND WIRING METHODS.
11. PROVIDE DUAL-REDUNDANT 100% RATED VFD'S FOR AIR HANDLER.
12. PROVIDE MANUAL STARTER WITH THERMAL OVERLOAD AND RELAY FOR ATC/BAS CONTROL.

ITEM NO.	QTY	DESCRIPTION	MOUNTING HEIGHT (AFF)	LOAD DATA				LOAD DATA	WIRE AND CONDUIT SIZE	CONNECTION TYPE		ELECTRICAL REMARKS
				VOLT	PHASE	AMPS	kW	HP		FURN BY	DEVICE	
1RA PANEL	1	RELAY PANEL POWER	+18"	120	1	10	1.2	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-
ACP	1	ACCESS CONTROL PANEL	+42"	120	1	10	1.2	-	2#12, 12GR 0.75" CND	E	2G J-BOX	-
BOTTLE	1	BOTTLE FILLER	+36"	120	1	10	1.2	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-
CLOCK	1	TIME CLOCK	+72"	120	1	10	1.2	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-
DF	1	DRINK FOUNTAIN	+18"	120	1	6	0.7	-	2#12, 12GR 0.75" CND	E	(2) NEMA 5-20	-
DR1	2	DATA RACK RECEPT	+90"	208	1	10	2.1	-	2#12, 12GR 0.75" CND	E	NEMA 6-20	-
DR2	2	DATA RACK QUAD	+90"	120	1	10	1.2	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-
FAA	1	ANNUNCIATOR	+42"	120	1	1	0.1	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-
FACP	1	FIRE ALARM CONTROL PANEL	+42"	120	1	3	0.4	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-
IRR	1	IRRIGATION	+18"	120	1	10	1.2	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-
KEY-BOX	1	KEYBOX	+72"	120	1	10	1.2	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-
MW	3	MICROWAVE	<varies>	120	1	10	1.2	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-
OHD	4	OVERHEAD DOOR	+42"	120	1	12	1.4	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-
PRINT	1	PRINTER	+18"	120	1	10	1.2	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-
PROJ	1	PROJECTOR	+18"	120	1	4	0.5	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-
REF	1	REFRIGERATOR	+42"	120	1	10	1.2	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-
SCREEN	1	SCREEN POWER	+42"	120	1	3	0.4	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-
UC-REF	1	UNDERCABINET REFRIGERATOR	+18"	120	1	10	1.2	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-
VEND	2	VENDING	+42"	120	1	6	0.7	-	2#12, 12GR 0.75" CND	E	NEMA 5-20	-

MECHANICAL EQUIPMENT SCHEDULE

EQUIPMENT SCHEDULE KEY
E - DIVISION 26
Q - FURNISHED WITH EQUIPMENT, INSTALLED BY DIV.26
I - INTEGRAL TO EQUIPMENT

NOTES:
1. PROVIDE MANUAL STARTER WITH THERMAL OVERLOAD AND RELAY FOR ATC/BAS CONTROL.
2. PROVIDE COMBINATION STARTER WITH DISCONNECT.
3. INDOOR UNITS FED FROM OUTDOOR UNIT. PROVIDE DISCONNECTS FOR BOTH.
4. REFER TO TYPICAL WELDING HOOD/EXTRACTION SYSTEM RISER.

GENERAL NOTES:
1. LOCATE ELECTRICAL EQUIPMENT IN ACCESSIBLE LOCATION, SUCH THAT IT IS WITHIN SIGHT OF THE EQUIPMENT IT IS SERVING, AND COMPLIES WITH N.E.C. REQUIRED CLEARANCES.
2. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE AND SIZE FEEDER, STARTER, DISCONNECT AND OVERCURRENT PROTECTION IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OF ACTUAL EQUIPMENT SUPPLIED.
3. ELECTRICAL CONTRACTOR SHALL REVIEW OTHER DIVISION DRAWINGS FOR ANY ADDITIONAL REQUIREMENTS PRIOR TO BID.
4. ELECTRICAL CONTRACTOR SHALL REVIEW OTHER DIVISION SUBMITTALS FOR ANY EQUIPMENT REQUIRING CONNECTION BY ELECTRICAL CONTRACTOR AND COORDINATE ALL REQUIREMENTS PRIOR TO ROUGH-IN.

LABEL	QTY	DESCRIPTION	LOAD DATA						WIRE AND CONDUIT SIZE	OCPD		DISCONNECT		MOTOR CONTROLLER			NEMA ENCLOSURE RATING	NOTES
			HP	KW	MCA	FLA	V	PH		DEVICE	FED FROM	PROVIDED BY	DEVICE	PROVIDED BY	DEVICE	SIZES		
AC-1	1	AIR COMPRESSOR	25	-	42.5	34	480	3	3 #4, #10 GR 1.25" CND	60/3 CB	1HM1	E	60A/3P FRS-60	E	-	-	-	-
DCP-1	1	DOMESTIC WATER CIRCULATION PUMP	1/6	-	5.5	4.4	120	1	2 #12, #12 GR 0.75" CND	20/1 CB	1LM1	E	TOGGLE SWITCH	E	-	-	-	1
DWH-1	1	DOMESTIC HOT WATER HEATER	-	-	6.25	5	120	1	2 #12, #12 GR 0.75" CND	20/1 CB	1LM1	E	TOGGLE SWITCH	E	-	-	-	1
EC-1	1	EVAPORATIVE COOLER	3	-	6	4.8	480	3	3 #12, #12 GR 0.75" CND	15/3 CB	1HM1	E	SEE NOTES	E	FVNR	0	-	2
EC-2	1	EVAPORATIVE COOLER	3	-	6	4.8	480	3	3 #12, #12 GR 0.75" CND	15/3 CB	1HM1	E	SEE NOTES	E	FVNR	0	-	2
ECH-1	1	WALL HEATER	-	1.5	16	13	120	1	2 #12, #12 GR 0.75" CND	20/1 CB	1LM1	E	TOGGLE SWITCH	E	-	-	-	-
ECH-2	1	WALL HEATER	-	1.5	16	13	120	1	2 #12, #12 GR 0.75" CND	20/1 CB	1LM1	E	TOGGLE SWITCH	E	-	-	-	-
GUH-1	1	GAS FIRED UNIT HEATER	1/6	-	6	5.1	120	1	2 #12, #12 GR 0.75" CND	15/1 CB	1LM1	E	TOGGLE SWITCH	I	-	-	-	-
GUH-2	1	GAS FIRED UNIT HEATER	1/6	-	6	5.1	120	1	2 #12, #12 GR 0.75" CND	15/1 CB	1LM1	E	TOGGLE SWITCH	I	-	-	-	-
GUH-3	1	GAS FIRED UNIT HEATER	1/6	-	6	5.1	120	1	2 #12, #12 GR 0.75" CND	15/1 CB	1LM1	E	TOGGLE SWITCH	I	-	-	-	-
IDH-2	1	INLINE ELECTRIC DUCT HEATER	-	5.5	33	26.5	208	1	2 #8, #10 GR 0.75" CND	35/2 CB	1LM1	E	60A/2P NF	E	-	-	-	3
ITF-1	1	IN-LINE TRANSFER FAN	1/4	-	12.25	4	120	1	2 #12, #12 GR 0.75" CND	15/1 CB	1LM1	E	SEE NOTES	E	-	-	-	1
MAU-1	1	MAKE UP AIR UNIT	7.5	-	16.3	14	480	3	3 #10, #10 GR 0.75" CND	25/3 CB	1HM1	E	30A/3P FRS-25	I	-	-	3R	-
MAU-2	1	MAKE UP AIR UNIT	7.5	-	16.3	14	480	3	3 #10, #10 GR 0.75" CND	25/3 CB	1HM1	E	30A/3P FRS-25	I	-	-	3R	-
RAD-1	1	REFIGERATED AIR DRYER	-	-	6.25	5	120	1	2 #12, #12 GR 0.75" CND	20/1 CB	1LM1	E	TOGGLE SWITCH	E	-	-	-	1
REF-1	1	ROOFTOP EXHAUST FAN	1	-	10.5	8.4	120	1	2 #12, #12 GR 0.75" CND	20/1 CB	1LM1	E	SEE NOTES	E	-	-	3R	1
REF-2	1	ROOFTOP EXHAUST FAN	5	-	9.5	7.6	480	3	3 #12, #12 GR 0.75" CND	15/3 CB	1HM1	E	30A/3P FRS-15	Q	-	-	3R	-
REF-3	1	ROOFTOP EXHAUST FAN	5	-	9.5	7.6	480	3	3 #12, #12 GR 0.75" CND	15/3 CB	1HM1	E	30A/3P FRS-15	Q	-	-	3R	-
REF-4	1	ROOFTOP EXHAUST FAN	1	-	9.5	8.4	120	1	2 #12, #12 GR 0.75" CND	20/1 CB	1LM1	E	SEE NOTES	E	-	-	3R	1
REF-5	1	ROOFTOP EXHAUST FAN	1/10	-	5.5	4.4	120	1	2 #12, #12 GR 0.75" CND	15/1 CB	1LM1	E	SEE NOTES	E	-	-	3R	1
REF-6	1	ROOFTOP EXHAUST FAN	1/10	-	5.5	4.4	120	1	2 #12, #12 GR 0.75" CND	15/1 CB	1LM1	E	SEE NOTES	E	-	-	3R	1
RTU-1	1	ROOFTOP UNIT	1	-	48	45	480	3	SEE ONELINE	SEE ONELINE	MDP	E	SEE ONELINE	I	-	-	3R	-
SAC-1A	1	SPLIT SYSTEM (OUTDOOR UNIT)	-	-	18	15	208	1	2 #12, #12 GR 0.75" CND	20/2 CB	1LM1	E	30A/2P FRS20	I	-	-	3R	3
SAC-1B	1	SPLIT SYSTEM (INDOOR UNIT)	-	-	18	2	208	1	2 #12, #12 GR 0.75" CND	20/1 CB	1LM1	E	30A/2P FRS20	I	-	-	-	3
VAVR-101	1	VAV ELECTRIC REHEAT	-	1.5	9	7	208	1	2 #12, #12 GR 0.75" CND	15/2 CB	1LM1	E	30A/2P NF	I	-	-	-	-
VAVR-102	1	VAV ELECTRIC REHEAT	-	3.5	21	16.8	208	1	2 #10, #10 GR 0.75" CND	25/2 CB	1LM1	E	30A/2P NF	I	-	-	-	-
VAVR-108	1	VAV ELECTRIC REHEAT	-	4	24	19	208	1	2 #12, #12 GR 0.75" CND	30/2 CB	1LM1	E	30A/2P NF	I	-	-	-	-
VAVR-109	1	VAV ELECTRIC REHEAT	-	2.5	15	12	208	1	2 #10, #10 GR 0.75" CND	20/2 CB	1LM1	E	30A/2P NF	I	-	-	-	-
VAVR-111	1	VAV ELECTRIC REHEAT	-	2.5	15	12	208	1	2 #12, #12 GR 0.75" CND	20/2 CB	1LM1	E	30A/2P NF	I	-	-	-	-
VAVR-114	1	VAV ELECTRIC REHEAT	-	1	6	4.8	208	1	2 #12, #12 GR 0.75" CND	15/2 CB	1LM1	E	30A/2P NF	I	-	-	-	-
WFE-1	1	EXTRACTOR	30	-	50	40	480	3	SEE ONELINE	SEE ONELINE	MDP	E	SEE ONELINE	I	-	-	3R	4
WFE-2	1	EXTRACTOR	30	-	50	40	480	3	SEE ONELINE	SEE ONELINE	MDP	E	SEE ONELINE	I	-	-	3R	4
WFE-3	1	EXTRACTOR	30	-	50	40	480	3	SEE ONELINE	SEE ONELINE	MDP	E	SEE ONELINE	I	-	-	3R	4
WFE-4	1	EXTRACTOR	30	-	50	40	480	3	SEE ONELINE	SEE ONELINE	MDP	E	SEE ONELINE	I	-	-	3R	4
WFE-5	1	EXTRACTOR	30	-	50	40	480	3	SEE ONELINE	SEE ONELINE	MDP	E	SEE ONELINE	I	-	-	3R	4
WFE-6	1	EXTRACTOR	30	-	50	40	480	3	SEE ONELINE	SEE ONELINE	MDP	E	SEE ONELINE	I	-	-	3R	4
WFE-7	1	EXTRACTOR	30	-	50	40	480	3	SEE ONELINE	SEE ONELINE	MDP	E	SEE ONELINE	I	-	-	3R	4
WS-1	1	DOMESTIC WATER SOFTENER	-	-	6.25	5	120	1	2 #12, #12 GR 0.75" CND	20/1 CB	1LM1	E	TOGGLE SWITCH	E	-	-	-	1

FLOORBOX SCHEDULE
ABBREVIATIONS

COMPARTMENT GANG
- - NOT APPLICABLE
A/V - A/V CONNECTIONS, REFER TO A/V DRAWINGS/SPECIFICATIONS
D - DATA RECEPTACLE
DR - DUPLEX RECEPTACLE
QR - QUADRAPLEX RECEPTACLE

RATINGS
- - 2-HOUR FIRE RATED, UL LISTED

USE
CF - CONCRETE FLOOR

FINISH
SCBA - SELECT COLOR BY ARCHITECT

CONNECTION
C1 - RECESSED CABLE CONNECTIONS BELOW FLOOR WITH HINGED LID FOR ACCESS THAT CAN BE CLOSED WHILE IN USE.

COVER
CV1 - COVER TO MATCH AREA LOCATED. I.E. STANDARD, TILE COVER, FLOOR COVER, ETC. CONFIRM WITH ARCHITECT.

NOTES:
1 PROVIDE ALL REQUIRED HARDWARE FOR COMPLETE INSTALLATION.
2 INCLUDE SEPARATION BARRIER BETWEEN SYSTEMS AND POWER.

ID	DESCRIPTION	DIMENSIONS			COMPARTMENTS								RATINGS	USE	CONNECTION	COVER	FINISH	MANUFACTURER 1	PART #	MANUFACTURER 2	PART #	NOTES
		LENGTH	WIDTH	DEPTH	GANG 1	GANG 2	GANG 3	GANG 4	GANG 5	GANG 6	GANG 7	GANG 8										
FB6	6 GANG POWER/DATA AND A/V FLOORBOX	12"	10"	6"	DR	DR	D	D	A/V	A/V	A/V	-	-	-	CF	C1	CV1	SCB A	FSR	FL-500 P-6 & FL-FR K-500 P	WIREMOLD HUBBEL	-	
FB8	8 GANG POWER/DATA AND A/V FLOORBOX	12"	10"	6"	DR	DR	D	D	A/V	A/V	A/V	A/V	-	CF	C1	CV1	SCB A	FSR	FL-500 P-6 & FL-FR K-500 P	WIREMOLD HUBBEL	-	

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS
NO. DATE DESCRIPTION

SPECTRUM ENGINEERS
324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH & FABRICATION BUILLDING
355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN
STATE OF UTAH
11/14/2024

EQUIPMENT SCHEDULES
EP603.2

(801) 355-5915

11/15/2024 3:59:24 PM

PANEL: "1LP1"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE AND TYPE:	FED FROM:	CABINET:	LOCATION:	NOTES:
120/208V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	100 AMPERE MAIN LUGS		RECESSED	FABRICATION 124	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR — **AIC RATING:** 25,000

CKT	OCP			LOAD (kVA)				PHASE LOAD						LOAD (kVA)			OCP			CKT
NO	AMP	POLE	BKR	LTG	PWR	CO	DESCRIPTION	A		B		C		DESCRIPTION	CO	PWR	LTG	BKR	POLE	AMP	NO
1	20	1		0.0	1.4	0.0	OVERHEAD DOOR	1.4	0.9					CO STORAGE 117	0.9	0.0	0.0		1	20	2
3	20	1		0.0	1.4	0.0	OVERHEAD DOOR			1.4	0.5			CO HALL 126	0.5	0.0	0.0		1	20	4
5	20	1		0.0	1.4	0.0	POWER					1.4	1.1	EXTERIOR WP OUTLETS	1.1	0.0	0.0		1	20	6
7	20	1		0.0	1.4	0.0	OVERHEAD DOOR	1.4	1.3					EXT WP CO	1.3	0.0	0.0		1	20	8
9	20	1		0.0	0.0	1.4	CO AWS TESTING 118			1.4	0.7			CO COMPRESSOR 119	0.7	0.0	0.0		1	20	10
11	20	1		0.0	0.0	0.0	MAU-2 RELAY					0.0	0.5	CO CARBON ARC WELDING 121	0.5	0.0	0.0		1	20	12
13	20	1		0.0	0.0	0.5	CO FABRICATION 124	0.5	0.0					MAU-1 RELAY	0.0	0.0	0.0		1	20	14
15	20	1		0.0	1.2	0.0	FACULTY 112 MW			1.2	1.1			CO SANDING/GRINDING 122	1.1	0.0	0.0		1	20	16
17	20	1		0.0	0.0	0.2	WP SANDING/GRINDING 122					0.2	0.4	CO WELDING 125	0.4	0.0	0.0		1	20	18
19	20	1	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	1	20	20
21	20	1	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	1	20	22
23	20	1	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	1	20	24
25	20	1	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	1	20	26
27	20	1	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	1	20	28
29	20	1	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	1	20	30
31	20	1	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	1	20	32
33	20	1	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	1	20	34
35	20	2	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	2	20	36
37	--	--	--	--	--	--	--	0.0	0.0					--	--	--	--	--	--	--	38
39	20	2	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	2	20	40
41	--	--	--	--	--	--	--					0.0	0.0	--	--	--	--	--	--	--	42
TOTALS:							CONNECTED kVA PER PHASE	**6**		**6**		**4**		CONNECTED TOTAL kVA =		**16**					
							CONNECTED AMPS PER PHASE	**49**		**56**		**30**		AVERAGE CONNECTED AMPS PER PHASE =		**43**					

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING & CONTINUOUS LOADS:
RECEPTACLES: **8.6 kVA @ 100% = 8.6 kVA**
ALL OTHER LOADS @ 100% : **7.0 kVA**

- 100% CONNECTED LOAD PLUS 25%
- FIRST 10kVA @ 100%, REMAINDER @ 50%
- MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC

DIVERSIFIED TOTAL kVA = **16**
AVERAGE AMPS PER PHASE = **43**

BKR: GF=GFCI, GF3=30mA GFCI CAPABLE OF BEING LOCKED OUT IN OPEN POSITION, IG=ISOLATED GROUND, AF=AFCI, ST=SHUNT TRIP, RED=PROVIDE RED COLORED BREAKER, AF=ARC FAULT CURRENT INTERRUPTER, GA=COMBINATION OF GROUND FAULT AND ARC FAULT CIRCUIT INTERRUPTER, GS=COMBINATION OF SHUNT TRIP WITH GFCI

PANEL: "1LM1"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE AND TYPE:	FED FROM:	CABINET:	LOCATION:	NOTES:
120/208V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	150 AMPERE MAIN LUGS		RECESSED	FABRICATION 124	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR — **AIC RATING:** 30,000

CKT	OCP			LOAD (kVA)				PHASE LOAD						LOAD (kVA)			OCP			CKT
NO	AMP	POLE	BKR	LTG	PWR	CO	DESCRIPTION	A		B		C		DESCRIPTION	CO	PWR	LTG	BKR	POLE	AMP	NO
1	20	2		0.0	0.4	0.0	SAC-1B	0.2	1.6					ECH-1	0.0	1.6	0.0		1	20	2
3	--	--	--	--	--	--	--			0.2	2.0			VAR-108	0.0	4.0	0.0		2	30	4
5	20	2		0.0	2.5	0.0	VAR-111					1.2	2.0	--	--	--	--	--	--	--	6
7	--	--	--	--	--	--	--	1.2	0.5					VAR-114	0.0	1.0	0.0		2	15	8
9	20	2		0.0	2.5	0.0	VAR-109			1.2	0.5			--	--	--	--	--	--	--	10
11	--	--	--	--	--	--	--					1.2	1.6	ECH-2	0.0	1.6	0.0		1	20	12
13	15	2		0.0	1.5	0.0	VAR-101	0.7	0.5					REF-5	0.0	0.5	0.0		1	15	14
15	--	--	--	--	--	--	--			0.7	1.7			VAR-102	0.0	3.5	0.0		2	25	16
17	15	1		0.0	0.5	0.0	ITF-1					0.5	1.7	--	--	--	--	--	--	--	18
19	15	1		0.0	0.6	0.0	GUH-3	0.6	0.6					GUH-2	0.0	0.6	0.0		1	15	20
21	15	1		0.0	0.5	0.0	REF-6			0.5	1.0			REF-1	0.0	1.0	0.0		1	20	22
23	15	1		0.0	0.6	0.0	GUH-1					0.6	1.0	REF-4	0.0	1.0	0.0		1	20	24
25	15	2		0.0	3.1	0.0	SAC-2	1.6	0.2					MECH PANEL PWR	0.0	0.2	0.0		1	20	26
27	--	--	--	--	--	--	--			1.6	0.2			MECH PANEL PWR	0.0	0.2	0.0		1	20	28
29	20	1		0.0	0.2	0.0	MECH PANEL PWR					0.2	0.2	MECH PANEL PWR	0.0	0.2	0.0		1	20	30
31	20	1		0.0	0.0	0.0	RTU RELAY	0.0	2.8					IDH-2	0.0	5.5	0.0		2	30	32
33	20	1	--	0.0	0.0	0.0	SPARE			0.0	2.8			--	--	--	--	--	--	--	34
35	20	1		0.0	0.6	0.0	RAD-1					0.6	0.5	DCP-1	0.0	0.5	0.0		1	20	36
37	20	1		0.0	0.6	0.0	DWH-1	0.6	0.6					WS-1	0.0	0.6	0.0		1	20	38
39	20	2	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	2	20	40
41	--	--	--	--	--	--	--					0.0	0.0	--	--	--	--	--	--	--	42
TOTALS:							CONNECTED kVA PER PHASE	**12**		**12**		**11**		CONNECTED TOTAL kVA =		**35**					
							CONNECTED AMPS PER PHASE	**98**		**104**		**95**		AVERAGE CONNECTED AMPS PER PHASE =		**99**					

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING & CONTINUOUS LOADS:
RECEPTACLES:
ALL OTHER LOADS @ 100% : **35.9 kVA**

- 100% CONNECTED LOAD PLUS 25%
- FIRST 10kVA @ 100%, REMAINDER @ 50%
- MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC

DIVERSIFIED TOTAL kVA = **36**
AVERAGE AMPS PER PHASE = **100**

BKR: GF=GFCI, GF3=30mA GFCI CAPABLE OF BEING LOCKED OUT IN OPEN POSITION, IG=ISOLATED GROUND, AF=AFCI, ST=SHUNT TRIP, RED=PROVIDE RED COLORED BREAKER, AF=ARC FAULT CURRENT INTERRUPTER, GA=COMBINATION OF GROUND FAULT AND ARC FAULT CIRCUIT INTERRUPTER, GS=COMBINATION OF SHUNT TRIP WITH GFCI

PANEL: "1HL1"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE AND TYPE:	FED FROM:	CABINET:	LOCATION:	NOTES:
480/277 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	100 AMPERE MAIN LUGS		RECESSED	FABRICATION 124	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR — **AIC RATING:** 22,000

CKT	OCP			LOAD (kVA)				PHASE LOAD						LOAD (kVA)			OCP			CKT
NO	AMP	POLE	BKR	LTG	PWR	CO	DESCRIPTION	A		B		C		DESCRIPTION	CO	PWR	LTG	BKR	POLE	AMP	NO
1	20	1		0.0	0.0	0.0	BATHROOM CORR. LTG (1RA-1)	0.0	0.0					LTG WELDING LAB ROW 4 (1RA-2)	0.0	0.0	0.0		1	20	2
3	20	1		0.0	0.0	0.0	LTG WELDING LAB ROW 1 (1RA-4)			0.0	0.0			LTG WELDING LAB EAST (1RA-3)	0.0	0.0	0.0		1	20	4
5	20	1		0.1	0.0	0.0	EXIT SIGN LIGHTING					0.1	0.4	LIGHTING S.	0.0	0.0	0.4		1	20	6
7	20	1		0.2	0.0	0.0	LIGHTING CLASSROOM 110	0.2	0.0					LIGHTING SANDING/GRINDING 122	0.0	0.0	0.0		1	20	8
9	20	1		0.0	0.0	0.0	LIGHTING HALL 126 (1RA-6)			0.0	0.0			LTG RM 117 & 121	0.0	0.0	0.0		1	20	10
11	20	1		0.1	0.0	0.0	LTG RM 118 & 119					0.1	0.0	LIGHTING WELDING 125 (1RA-7)	0.0	0.0	0.0		1	20	12
13	20	1		0.0	0.0	0.0	S. WELDING BOOTHS (1RA-8)	0.0	1.4					EXT PARKING LTG (1RA-20)	0.0	0.0	1.4		1	20	14
15	20	1		0.0	0.0	0.0	EXT WALL LTG (1RA-21)			0.3	0.0			MID WELD BOOTH (1RA-11)	0.0	0.0	0.0		1	20	16
17	20	1		0.0	0.0	0.0	LTG WELDING LAB ROW 2 (1RA-5)					0.0	0.0	MID WELD BOOTH (1RA-13)	0.0	0.0	0.0		1	20	18
19	20	1		0.0	0.0	0.0	MID N.E. WELD BOOTHS (1RA-9)	0.0	0.0					MID N.W. WELD BOOTHS (1RA-10)	0.0	0.0	0.0		1	20	20
21	20	1		0.0	0.0	0.0	N.W. WELD BOOTHS (1RA-12)			0.0	0.2			LIGHTING LOBBY 109 (1RA-16)	0.0	0.0	0.2		1	20	22
23	20	1		0.0	0.0	0.0	N.E. WELD BOOTHS (1RA-14)					0.0	0.0	LIGHTING STUDENT REFRESH 108...	0.0	0.0	0.0		1	20	24
25	20	1		0.0	0.0	0.0	S. WELDING BOOTHS (1RA-15)	0.0	0.2					EXT CANOPY LTG (1RA-17)	0.0	0.0	0.2		1	20	26
27	20	1		0.2	0.0	0.0	STUDENT REFRESH 108 (1RA-22)			0.2	0.0			MID S.W. WELD BOOTHS (1RA-11)	0.0	0.0	0.0		1	20	28
29	20	1		0.0	0.0	0.0	MID S.E. WELD BOOTHS (1RA-13)					0.0									30
31								0.0						SPARE	0.0	0.0	0.0	--	1	20	32
33	20	1	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	1	20	34
35	20	1	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	1	20	36
37	20	1	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	1	20	38
39	20	1	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	1	20	40
41	20	1	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	1	20	42
TOTALS:							CONNECTED kVA PER PHASE	**2**		**1**		**1**		CONNECTED TOTAL kVA =		**3**					
							CONNECTED AMPS PER PHASE	**7**		**3**		**2**		AVERAGE CONNECTED AMPS PER PHASE =		**4**					

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING & CONTINUOUS LOADS: **2.8 kVA @ 125% = 3.5 kVA**
RECEPTACLES:
ALL OTHER LOADS @ 100% : **0.0 kVA**

- 100% CONNECTED LOAD PLUS 25%
- FIRST 10kVA @ 100%, REMAINDER @ 50%
- MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC

DIVERSIFIED TOTAL kVA = **4**
AVERAGE AMPS PER PHASE = **5**

BKR: GF=GFCI, GF3=30mA GFCI CAPABLE OF BEING LOCKED OUT IN OPEN POSITION, IG=ISOLATED GROUND, AF=AFCI, ST=SHUNT TRIP, RED=PROVIDE RED COLORED BREAKER, AF=ARC FAULT CURRENT INTERRUPTER, GA=COMBINATION OF GROUND FAULT AND ARC FAULT CIRCUIT INTERRUPTER, GS=COMBINATION OF SHUNT TRIP WITH GFCI

PANEL: "1LP2"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE AND TYPE:	FED FROM:	CABINET:	LOCATION:	NOTES:
120/208V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	225 AMPERE MAIN LUGS		SURFACE	IT ROOM 115	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR — **AIC RATING:** 25,000

CKT	OCP			LOAD (kVA)				PHASE LOAD						LOAD (kVA)			OCP			CKT
NO	AMP	POLE	BKR	LTG	PWR	CO	DESCRIPTION	A		B		C		DESCRIPTION	CO	PWR	LTG	BKR	POLE	AMP	NO
1	20	2		0.0	2.1	0.0	DATA RACK PWR	1.0	0.6					DATA RACK PWR	0.0	0.6	0.0		1	20	2
3	--	--	--	--	--	--	--			1.0	0.4			FIRE ALARM CONTROL PANEL	0.0	0.4	0.0		1	20	4
5	20	1		0.0	0.6	0.0	CO IT ROOM 115					0.6	0.5	CO OFFICE 116	0.5	0.0	0.0		1	20	6
7	20	1		0.0	1.2	0.0	ACCESS CONTROL PANEL	1.2	0.2					CO FIRE RISER 114	0.2	0.0	0.0		1	20	8
9	20	1		0.0	0.0	0.9	CO CONFERENCE 113			0.9	0.2			CO CONFERENCE 113	0.2	0.0	0.0		1	20	10
11	20	1		0.0	0.0	0.5	CO CONFERENCE 113					0.5	0.4	CO CONFERENCE 113 FB8	0.4	0.0	0.0		1	20	12
13	20	1		0.0	0.0	0.7	CO FACULTY 112	0.7	1.2					FAULTY 112 - PRINT	0.0	1.2	0.0		1	20	14
15	20	1		0.0	0.0	0.5	CO MOTHER 111			0.5	1.2			MOTHER 111 REF	0.0	1.2	0.0		1	20	16
17	20	1		0.0	0.0	0.4	CO FACULTY 112					0.4	0.4	CO FACULTY 112	0.4	0.0	0.0		1	20	18
19	20	1		0.0	0.0	0.4	CO FACULTY DESK 112	0.4	0.4					CO FACULTY DESK 112	0.4	0.0	0.0		1	20	20
21	20	1		0.0	0.0	0.4	CO FACULTY DESK 112			0.4	0.7			CO CLASSROOM 110	0.7	0.0	0.0		1	20	22
23	20	1		0.0	0.2	0.0	STUDENT CHECK IN					0.2	1.2	CLOCK PWR	0.0	1.2	0.0		1	20	24
25	20	1		0.0	0.5	0.0	CO CLASSROOM 110 CEILING	0.5	1.2					CLOCK PWR	0.0	1.2	0.0		1	20	26
27	20	1		0.0	1.1	0.0	ADA PUSHPLATES			1.1	0.5			CO CLASSROOM 110	0.5	0.0	0.0		1	20	28
29	20	1		0.0	0.0	0.4	CO CLASSROOM 110 - TEACHER...					0.4	0.4	CO CLASSROOM 110 - SCREEN	0.0	0.4	0.0		1	20	30
31	20	1		0.0	0.0	0.5	CO LOBBY 109	0.5	0.4					CO MENS RR 105	0.4	0.0	0.0		1	20	32
33	20	1		0.0	1.2	0.0	POWER FACULTY 112 - REF			1.2	0.5			CO HALL 126	0.5	0.0	0.0		1	20	34
35	20	1		0.0	0.0	0.4	CO FACULTY 112					0.4	0.5	CO STUDENT REFRESH 108	0.5	0.0	0.0		1	20	36
37	20	1		0.0	0.0	0.2	EXT WP OUTLET	0.2	0.2					CO STUDENT REFRESH 108	0.2	0.0	0.0		1	20	38
39	20	1		0.0	0.0	0.4	CO UNISEX RR 107			0.4	0.7			VENDING	0.0	0.7	0.0		1	20	40
41	20	1		0.0	1.2	0.0	STUDENT REFRESH MW					1.2	0.7	VENDING	0.0	0.7	0.0		1	20	42
43	20	1		0.0	0.0	0.5	CO STUDENT REFRESH 108	0.5	0.4					CO CLASSROOM 110 PB6	0.4	0.0	0.0		1	20	44
45	20	1		0.0	0.0	0.2	CO STUDENT REFRESH 108			0.2	0.4			CO CLASSROOM 110 PB6	0.4	0.0	0.0		1	20	46
47	20	1		0.0	0.0	0.4	CO CLASSROOM 110 PB6					0.4	1.0	POWER IT ROOM 115	0.0	2.1	0.0		2	20	48
49	20	1		0.0	0.0	0.4	CO CLASSROOM 110 PB6	0.4	1.0					--	--	--	--	--	--	--	50
51	20	1		0.0	0.0	0.4	CO FACULTY 112			0.4	0.4			WEST FB6 ROW 1	0.4	0.0	0.0		1	20	52
53	20	1		0.0	0.0	1.1	CO IT ROOM 115					1.1	0.4	WEST FB6 ROW 2	0.4	0.0	0.0		1	20	54
55	20	1		0.0	0.1	0.0	ANNUNCIATOR	0.1	0.4					WEST FB6 ROW 3	0.4	0.0	0.0		1	20	56
57	20	1		0.0	0.4	0.0	STUDENT REFRESH DF			0.4	0.4			WEST FB6 ROW 4	0.4	0.0	0.0		1	20	58
59	20	1		0.0	0.0	0.5	CO OFFICE 116					0.5	1.2	WATER BOTTLE FILLER PWR	0.0	1.2	0.0		1	20	60
61	20	1		0.0	1.2	0.0	STUDENT REFRESH MW	1.2	0.2					EXT WP CO	0.2	0.0	0.0		1	20	62
63	20	1		0.0	0.2	0.0	STUDENT CHECK IN PWR			0.2	1.2			IRRIGATION PWR CONTROLLER	0.0	1.2	0.0		1	20	64
65	20	1		0.0	1.2	0.0	1RA PANEL PWR					1.2	0.2	REF-4 EXT WP CO	0.2	0.0	0.0		1	20	66
67	20	1		0.0	0.0	0.2	REF3/5 WP ROOF CO	0.2	0.2					EC-1 EXT ROOF WP CO	0.2	0.0	0.0		1	20	68
69	20	1		0.0	0.0	0.2	EC-2 EXT WP ROOF CO			0.2	0.2			REF-2 EXT ROOF WP CO	0.2	0.0	0.0		1	20	70
71	20	1		0.0	0.0	0.2	REF-1 EXT ROOF WP CO					0.2	0.7	CO IT ROOM 115	0.7	0.0	0.0		1	20	72
73	20	1		0.0	0.4	0.0	UNISEX RR 107 FLUSH VALVES	0.4	0.4					WOMENS RR 106 FLUSH VALVES	0.0	0.4	0.0		1	20	74
75	20	1		0.0	0.9	0.0	MENS RR 105 FLUSH VALVES			0.9	0.0			SPARE	0.0	0.0	0.0	--	1	20	76
77	20	1	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	1	20	78
79	20	1	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	1	20	80
81	20	2	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	2	20	82
83	--	--	--	--	--	--	--					0.0	0.0	--	--	--	--	--	--	--	84
TOTALS:							CONNECTED kVA PER PHASE	**14**		**14**		**15**		CONNECTED TOTAL kVA =		**43**					
							CONNECTED AMPS PER PHASE	**115**		**120**		**122**		AVERAGE CONNECTED AMPS PER PHASE =		**119**					

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING & CONTINUOUS LOADS:
RECEPTACLES: **18.0 kVA @ 78% = 14.0 kVA**
ALL OTHER LOADS @ 100% : **24.7 kVA**

- 100% CONNECTED LOAD PLUS 25%
- FIRST 10kVA @ 100%, REMAINDER @ 50%
- MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC

DIVERSIFIED TOTAL kVA = **39**
AVERAGE AMPS PER PHASE = **108**

BKR: GF=GFCI, GF3=30mA GFCI CAPABLE OF BEING LOCKED OUT IN OPEN POSITION, IG=ISOLATED GROUND, AF=AFCI, ST=SHUNT TRIP, RED=PROVIDE RED COLORED BREAKER, AF=ARC FAULT CURRENT INTERRUPTER, GA=COMBINATION OF GROUND FAULT AND ARC FAULT CIRCUIT INTERRUPTER, GS=COMBINATION OF SHUNT TRIP WITH GFCI

PANEL: "1HM1"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE AND TYPE:	FED FROM:	CABINET:	LOCATION:	NOTES:
480/277 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	225 AMPERE MAIN LUGS		RECESSED	FABRICATION 124	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR — **AIC RATING:** 24,000

CKT	OCP			LOAD (kVA)				PHASE LOAD						LOAD (kVA)			OCP			CKT
NO	AMP	POLE	BKR	LTG	PWR	CO	DESCRIPTION	A		B		C		DESCRIPTION	CO	PWR	LTG	BKR	POLE	AMP	NO
1	15	3		0.0	6.3	0.0	REF - 3	2.1	1.3					EC-1	0.0	4.0	0.0		3	15	2
3	--	--	--	--	--	--	--			2.1	1.3			--	--	--	--	--	--	--	4
5	--	--	--	--	--	--	--					2.1	1.3	--	--	--	--	--	--	--	6
7	15	3		0.0	4.0	0.0	EC-2	1.3	2.1					REF-2	0.0	6.3	0.0		3	15	8
9	--	--	--	--	--	--	--			1.3	2.1			--	--	--	--	--	--	--	10
11	--	--	--	--	--	--	--					1.3	2.1	--	--	--	--	--	--	--	12
13	25	3		0.0	11.6	0.0	MAU-1	3.9	3.9					MAU-2	0.0	11.6	0.0		3	25	14
15	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	16
17	--	--	--	--	--	--	--					3.9	3.9	--	--	--	--	--	--	--	18
19	60	3		0.0	28.2	0.0	AC-1	9.4	0.0					SPARE	0.0	0.0	0.0	--	3	20	20
21	--	--	--	--	--	--	--			9.4	0.0			--	--	--	--	--	--	--	22
23	--	--	--	--	--	--	--					9.4	0.0	--	--	--	--	--	--	--	24
25	20	3	--	0.0

PANEL: "1HW1"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE AND TYPE:	FED FROM:	CABINET:	LOCATION:	NOTES:
480/277 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	600 AMPERE MAIN LUGS		SURFACE	FABRICATION 124	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR — **AIC RATING:** 30,000

CKT	OCP			LOAD (kVA)				PHASE LOAD						LOAD (kVA)				OCP			CKT
NO	AMP	POLE	BKR	LTG	PWR	CO	DESCRIPTION	A		B		C		DESCRIPTION	CO	PWR	LTG	BKR	POLE	AMP	NO
1	20	3		0.0	11.6	0.0	SOUTH WELDING ROW 4	3.9	3.9					SOUTH WELDING ROW 4	0.0	11.6	0.0		3	20	2
3	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	4
5	--	--	--	--	--	--	--					3.9	3.9	--	--	--	--	--	--	--	6
7	20	3		0.0	11.6	0.0	SOUTH WELDING ROW 4	3.9	3.9					SOUTH WELDING ROW 4	0.0	11.6	0.0		3	20	8
9	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	10
11	--	--	--	--	--	--	--					3.9	3.9	--	--	--	--	--	--	--	12
13	20	3		0.0	11.6	0.0	SOUTH WELDING ROW 4	3.9	3.9					SOUTH WELDING ROW 4	0.0	11.6	0.0		3	20	14
15	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	16
17	--	--	--	--	--	--	--					3.9	3.9	--	--	--	--	--	--	--	18
19	20	3		0.0	11.6	0.0	CARBON ARC WELDING	3.9	7.1					SE CENTER WELDING ROW 3	0.0	14.1	0.0		2	30	20
21	--	--	--	--	--	--	--			3.9	7.1			--	--	--	--	--	--	--	22
23	--	--	--	--	--	--	--					3.9	7.1	SE CENTER WELDING ROW 3	0.0	14.1	0.0		2	30	24
25	30	2		0.0	14.1	0.0	SE CENTER WELDING ROW 3	7.1	7.1					--	--	--	--	--	--	--	26
27	--	--	--	--	--	--	--			7.1	7.1			SE CENTER WELDING ROW 3	0.0	14.1	0.0		2	30	28
29	30	2		0.0	14.1	0.0	SE CENTER WELDING ROW 3					7.1	7.1	--	--	--	--	--	--	--	30
31	--	--	--	--	--	--	--	7.1	7.1					SE CENTER WELDING ROW 3	0.0	14.1	0.0		2	30	32
33	30	2		0.0	14.1	0.0	SE CENTER WELDING ROW 3			7.1	7.1			--	--	--	--	--	--	--	34
35	--	--	--	--	--	--	--					7.1	7.1	SE CENTER WELDING ROW 3	0.0	14.1	0.0		2	30	36
37	20	3	--	0.0	0.0	0.0	SPARE	0.0	7.1					--	--	--	--	--	--	--	38
39	--	--	--	--	--	--	--			0.0	0.0			SPARE	0.0	0.0	0.0	--	2	20	40
41	--	--	--	--	--	--	--					0.0	0.0	--	--	--	--	--	--	--	42
43	30	3		0.0	14.9	0.0	EQ-14 - IRON WORKER	5.0	4.4					EQ-21 - VERTICAL MILL	0.0	13.3	0.0		3	20	44
45	--	--	--	--	--	--	--			5.0	4.4			--	--	--	--	--	--	--	46
47	--	--	--	--	--	--	--					5.0	4.4	--	--	--	--	--	--	--	48
49	50	3		0.0	27.4	0.0	EQ-11 - PLASMA TABLE	9.1	11.1					EQ-16 - SHEAR	0.0	33.2	0.0		3	60	50
51	--	--	--	--	--	--	--			9.1	11.1			--	--	--	--	--	--	--	52
53	--	--	--	--	--	--	--					9.1	11.1	--	--	--	--	--	--	--	54
55	30	3		0.0	14.9	0.0	EQ-22 - PLASMA CUTTER	5.0	1.4					EQ-15 - HORIZONTAL BANDSAW	0.0	4.2	0.0		3	20	56
57	--	--	--	--	--	--	--			5.0	1.4			--	--	--	--	--	--	--	58
59	--	--	--	--	--	--	--					5.0	1.4	--	--	--	--	--	--	--	60
61	30	3		0.0	4.9	0.0	EQ-25 - BELT SANDER	1.6	1.6					EQ-25 - BELT SANDER	0.0	4.9	0.0		3	30	62
63	--	--	--	--	--	--	--			1.6	1.6			--	--	--	--	--	--	--	64
65	--	--	--	--	--	--	--					1.6	1.6	--	--	--	--	--	--	--	66
67	20	3	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	3	20	68
69	--	--	--	--	--	--	--			0.0	0.0			--	--	--	--	--	--	--	70
71	--	--	--	--	--	--	--					0.0	0.0	--	--	--	--	--	--	--	72
73	20	3	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	3	20	74
75	--	--	--	--	--	--	--			0.0	0.0			--	--	--	--	--	--	--	76
77	--	--	--	--	--	--	--					0.0	0.0	--	--	--	--	--	--	--	78
79	20	3	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	3	20	80
81	--	--	--	--	--	--	--			0.0	0.0			--	--	--	--	--	--	--	82
83	--	--	--	--	--	--	--					0.0	0.0	--	--	--	--	--	--	--	84
TOTALS:							CONNECTED kVA PER PHASE	**109**		**102**		**102**		CONNECTED TOTAL kVA =					**312**		
							CONNECTED AMPS PER PHASE	**393**		**367**		**367**		AVERAGE CONNECTED AMPS PER PHASE =					**375**		

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING & CONTINUOUS LOADS: - 100% CONNECTED LOAD PLUS 25% — DIVERSIFIED TOTAL kVA = **312**

RECEPTACLES: - FIRST 10kVA @ 100%, REMAINDER @ 50% — AVERAGE AMPS PER PHASE = **375**

ALL OTHER LOADS @ 100% : **312.1 kVA** - MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC

BKR: GF=GFCI, GF3=30mA GFCI CAPABLE OF BEING LOCKED OUT IN OPEN POSITION, IG=ISOLATED GROUND, AF=AFCI, ST=SHUNT TRIP, RED=PROVIDE RED COLORED BREAKER, AF=ARC FAULT CURRENT INTERRUPTER, GA=COMBINATION OF GROUND FAULT AND ARC FAULT CIRCUIT INTERRUPTER, GS=COMBINATION OF SHUNT TRIP WITH GFCI

PANEL: "1HW2"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE AND TYPE:	FED FROM:	CABINET:	LOCATION:	NOTES:
480/277 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	600 AMPERE MAIN LUGS		SURFACE	FABRICATION 124	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR — **AIC RATING:** 30,000

CKT	OCP			LOAD (kVA)				PHASE LOAD						LOAD (kVA)				OCP			CKT
NO	AMP	POLE	BKR	LTG	PWR	CO	DESCRIPTION	A		B		C		DESCRIPTION	CO	PWR	LTG	BKR	POLE	AMP	NO
1	30	2		0.0	14.1	0.0	SW CENTER WELDING ROW 3	7.1	7.1					SW CENTER WELDING ROW 3	0.0	14.1	0.0		2	30	2
3	--	--	--	--	--	--	--			7.1	7.1			--	--	--	--	--	--	--	4
5	30	2		0.0	14.1	0.0	SW CENTER WELDING ROW 3					7.1	7.1	SW CENTER WELDING ROW 3	0.0	14.1	0.0		2	30	6
7	--	--	--	--	--	--	--	7.1	7.1					--	--	--	--	--	--	--	8
9	30	2		0.0	14.1	0.0	SW CENTER WELDING ROW 3			7.1	7.1			SW CENTER WELDING ROW 3	0.0	14.1	0.0		2	30	10
11	--	--	--	--	--	--	--					7.1	7.1	--	--	--	--	--	--	--	12
13	30	2		0.0	14.1	0.0	SW CENTER WELDING ROW 3	7.1	7.1					SW CENTER WELDING ROW 3	0.0	14.1	0.0		2	30	14
15	--	--	--	--	--	--	--			7.1	7.1			--	--	--	--	--	--	--	16
17	20	3		0.0	11.6	0.0	SOUTH WELDING ROW 4					3.9	3.9	SOUTH WELDING ROW 4	0.0	11.6	0.0		3	20	18
19	--	--	--	--	--	--	--	3.9	3.9					--	--	--	--	--	--	--	20
21	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	22
23	20	3		0.0	11.6	0.0	SOUTH WELDING ROW 4					3.9	3.9	SOUTH WELDING ROW 4	0.0	11.6	0.0		3	20	24
25	--	--	--	--	--	--	--	3.9	3.9					--	--	--	--	--	--	--	26
27	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	28
29	20	2	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	2	20	30
31	--	--	--	--	--	--	--	0.0	0.0					--	--	--	--	--	--	--	32
33	20	2	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	2	20	34
35	--	--	--	--	--	--	--					0.0	0.0	--	--	--	--	--	--	--	36
37	20	3	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	3	20	38
39	--	--	--	--	--	--	--			0.0	0.0			--	--	--	--	--	--	--	40
41	--	--	--	--	--	--	--					0.0	0.0	--	--	--	--	--	--	--	42
43	20	3		0.0	11.6	0.0	SOUTH WELDING ROW 4	3.9	3.9					SOUTH WELDING ROW 4	0.0	11.6	0.0		3	20	44
45	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	46
47	--	--	--	--	--	--	--					3.9	3.9	--	--	--	--	--	--	--	48
49	20	3		0.0	11.6	0.0	SOUTH WELDING ROW 4	3.9	3.9					SOUTH WELDING ROW 4	0.0	11.6	0.0		3	20	50
51	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	52
53	--	--	--	--	--	--	--					3.9	3.9	--	--	--	--	--	--	--	54
55	20	3		0.0	11.6	0.0	PROJECT TABLE WELDING	3.9	3.9					PROJECT TABLE WELDING	0.0	11.6	0.0		3	20	56
57	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	58
59	--	--	--	--	--	--	--					3.9	3.9	--	--	--	--	--	--	--	60
61	20	3		0.0	11.6	0.0	PROJECT TABLE WELDING	3.9	3.9					PROJECT TABLE WELDING	0.0	11.6	0.0		3	20	62
63	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	64
65	--	--	--	--	--	--	--					3.9	3.9	--	--	--	--	--	--	--	66
67	20	3	--	0.0	11.6	0.0	PROJECT TABLE WELDING	3.9	3.9					PROJECT TABLE WELDING	0.0	11.6	0.0		3	20	68
69	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	70
71	--	--	--	--	--	--	--					3.9	3.9	--	--	--	--	--	--	--	72
73	20	3		0.0	11.6	0.0	PROJECT TABLE WELDING	3.9	3.9					PROJECT TABLE WELDING	0.0	11.6	0.0		3	20	74
75	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	76
77	--	--	--	--	--	--	--					3.9	3.9	--	--	--	--	--	--	--	78
79	20	3	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	3	20	80
81	--	--	--	--	--	--	--			0.0	0.0			--	--	--	--	--	--	--	82
83	--	--	--	--	--	--	--					0.0	0.0	--	--	--	--	--	--	--	84
TOTALS:							CONNECTED kVA PER PHASE	**104**		**104**		**90**		CONNECTED TOTAL kVA =					**299**		
							CONNECTED AMPS PER PHASE	**385**		**385**		**326**		AVERAGE CONNECTED AMPS PER PHASE =					**360**		

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING & CONTINUOUS LOADS: - 100% CONNECTED LOAD PLUS 25% — DIVERSIFIED TOTAL kVA = **299**

RECEPTACLES: - FIRST 10kVA @ 100%, REMAINDER @ 50% — AVERAGE AMPS PER PHASE = **360**

ALL OTHER LOADS @ 100% : **298.9 kVA** - MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC

BKR: GF=GFCI, GF3=30mA GFCI CAPABLE OF BEING LOCKED OUT IN OPEN POSITION, IG=ISOLATED GROUND, AF=AFCI, ST=SHUNT TRIP, RED=PROVIDE RED COLORED BREAKER, AF=ARC FAULT CURRENT INTERRUPTER, GA=COMBINATION OF GROUND FAULT AND ARC FAULT CIRCUIT INTERRUPTER, GS=COMBINATION OF SHUNT TRIP WITH GFCI

PANEL: "1HW3"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE AND TYPE:	FED FROM:	CABINET:	LOCATION:	NOTES:
480/277 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	600 AMPERE MAIN LUGS		SURFACE	WELDING 125	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR — **AIC RATING:** 25,000

CKT	OCP			LOAD (kVA)				PHASE LOAD						LOAD (kVA)				OCP			CKT
NO	AMP	POLE	BKR	LTG	PWR	CO	DESCRIPTION	A		B		C		DESCRIPTION	CO	PWR	LTG	BKR	POLE	AMP	NO
1	20	3		0.0	10.0	0.0	NORTH WELDING ROW 1	3.3	3.3					NORTH WELDING ROW 1	0.0	10.0	0.0		3	20	2
3	--	--	--	--	--	--	--			3.3	3.3			--	--	--	--	--	--	--	4
5	--	--	--	--	--	--	--					3.3	3.3	--	--	--	--	--	--	--	6
7	20	3		0.0	10.0	0.0	NORTH WELDING ROW 1	3.3	3.3					NORTH WELDING ROW 1	0.0	10.0	0.0		3	20	8
9	--	--	--	--	--	--	--			3.3	3.3			--	--	--	--	--	--	--	10
11	--	--	--	--	--	--	--					3.3	3.3	--	--	--	--	--	--	--	12
13	20	3		0.0	10.0	0.0	NORTH WELDING ROW 1	3.3	3.3					NORTH WELDING ROW 1	0.0	10.0	0.0		3	20	14
15	--	--	--	--	--	--	--			3.3	3.3			--	--	--	--	--	--	--	16
17	--	--	--	--	--	--	--					3.3	3.3	--	--	--	--	--	--	--	18
19	20	3		0.0	10.0	0.0	NORTH WELDING ROW 1	3.3	3.3					NORTH WELDING ROW 1	0.0	10.0	0.0		3	20	20
21	--	--	--	--	--	--	--			3.3	3.3			--	--	--	--	--	--	--	22
23	--	--	--	--	--	--	--					3.3	3.3	--	--	--	--	--	--	--	24
25	20	3		0.0	10.0	0.0	NORTH WELDING ROW 1	3.3	3.3					NORTH WELDING ROW 1	0.0	10.0	0.0		3	20	26
27	--	--	--	--	--	--	--			3.3	3.3			--	--	--	--	--	--	--	28
29	--	--	--	--	--	--	--					3.3	3.3	--	--	--	--	--	--	--	30
31	20	3		0.0	10.0	0.0	NORTH WELDING ROW 1	3.3	3.3					NORTH WELDING ROW 1	0.0	10.0	0.0		3	20	32
33	--	--	--	--	--	--	--			3.3	3.3			--	--	--	--	--	--	--	34
35	--	--	--	--	--	--	--					3.3	3.3	--	--	--	--	--	--	--	36
37	20	3	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	3	20	38
39	--	--	--	--	--	--	--			0.0	0.0			--	--	--	--	--	--	--	40
41	--	--	--	--	--	--	--					0.0	0.0	--	--	--	--	--	--	--	42
43	30	2		0.0	14.1	0.0	NW CENTER WELDING ROW 2	7.1	7.1					NW CENTER WELDING ROW 2	0.0	14.1	0.0		2	30	44
45	--	--	--	--	--	--	--			7.1	7.1			--	--	--	--	--	--	--	46
47	30	2		0.0	14.1	0.0	NW CENTER WELDING ROW 2					7.1	7.1	NW CENTER WELDING ROW 2	0.0	14.1	0.0		2	30	48
49	--	--	--	--	--	--	--	7.1	7.1					--	--	--	--	--	--	--	50
51	30	2		0.0	14.1	0.0	NW CENTER WELDING ROW 2			7.1	7.1			NW CENTER WELDING ROW 2	0.0	14.1	0.0		2	30	52
53	--	--	--	--	--	--	--					7.1	7.1	--	--	--	--	--	--	--	54
55	30	2		0.0	14.1	0.0	NW CENTER WELDING ROW 2	7.1	7.1					NW CENTER WELDING ROW 2	0.0	14.1	0.0		2	30	56
57	--	--	--	--	--	--	--			7.1	7.1			--	--	--	--	--	--	--	58
59	20	3		0.0	11.6	0.0	PROJECT TABLE WELDING					3.9	3.9	PROJECT TABLE WELDING	0.0	11.6	0.0		3	20	60
61	--	--	--	--	--	--	--	3.9	3.9					--	--	--	--	--	--	--	62
63	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	64
65	20	3		0.0	11.6	0.0	PROJECT TABLE WELDING					3.9	3.9	PROJECT TABLE WELDING	0.0	11.6	0.0		3	20	66
67	--	--	--	--	--	--	--	3.9	3.9					--	--	--	--	--	--	--	68
69	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	70
71	20	3		0.0	11.6	0.0	PROJECT TABLE WELDING					3.9	3.9	PROJECT TABLE WELDING	0.0	11.6	0.0		3	20	72
73	--	--	--	--	--	--	--	3.9	3.9					--	--	--	--	--	--	--	74
75	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	76
77	20	3	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	3	20	78
79	--	--	--	--	--	--	--	0.0	0.0					--	--	--	--	--	--	--	80
81	--	--	--	--	--	--	--			0.0	0.0			--	--	--	--	--	--	--	82
83																					84
TOTALS:							CONNECTED kVA PER PHASE	**105**		**105**		**91**		CONNECTED TOTAL kVA =					**302**		
							CONNECTED AMPS PER PHASE	**389**		**389**		**330**		AVERAGE CONNECTED AMPS PER PHASE =					**364**		

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING & CONTINUOUS LOADS: - 100% CONNECTED LOAD PLUS 25% — DIVERSIFIED TOTAL kVA = **302**

RECEPTACLES: - FIRST 10kVA @ 100%, REMAINDER @ 50% — AVERAGE AMPS PER PHASE = **364**

ALL OTHER LOADS @ 100% : **302.3 kVA** - MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC

BKR: GF=GFCI, GF3=30mA GFCI CAPABLE OF BEING LOCKED OUT IN OPEN POSITION, IG=ISOLATED GROUND, AF=AFCI, ST=SHUNT TRIP, RED=PROVIDE RED COLORED BREAKER, AF=ARC FAULT CURRENT INTERRUPTER, GA=COMBINATION OF GROUND FAULT AND ARC FAULT CIRCUIT INTERRUPTER, GS=COMBINATION OF SHUNT TRIP WITH GFCI

PANEL: "1HW4"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE AND TYPE:	FED FROM:	CABINET:	LOCATION:	NOTES:
480/277 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	600 AMPERE MAIN LUGS		SURFACE	WELDING 125	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR — **AIC RATING:** 30,000

CKT	OCP			LOAD (kVA)				PHASE LOAD						LOAD (kVA)				OCP			CKT
NO	AMP	POLE	BKR	LTG	PWR	CO	DESCRIPTION	A		B		C		DESCRIPTION	CO	PWR	LTG	BKR	POLE	AMP	NO
1	30	2		0.0	14.1	0.0	NE CENTER WELDING ROW 2	7.1	7.1					NE CENTER WELDING ROW 2	0.0	14.1	0.0		2	30	2
3	--	--	--	--	--	--	--			7.1	7.1			--	--	--	--	--	--	--	4
5	30	2		0.0	14.1	0.0	NE CENTER WELDING ROW 2					7.1	7.1	NE CENTER WELDING ROW 2	0.0	14.1	0.0		2	30	6
7	--	--	--	--	--	--	--	7.1	7.1					--	--	--	--	--	--	--	8
9	30	2		0.0	14.1	0.0	NE CENTER WELDING ROW 2			7.1	7.1			NE CENTER WELDING ROW 2	0.0	14.1	0.0		2	30	10
11	--	--	--	--	--	--	--					7.1	7.1	--	--	--	--	--	--	--	12
13	30	2		0.0	14.1	0.0	NE CENTER WELDING ROW 2	7.1	7.1					NE CENTER WELDING ROW 2	0.0	14.1	0.0		2	30	14
15	--	--	--	--	--	--	--			7.1	7.1			--	--	--	--	--	--	--	16
17	20	3		0.0	10.0	0.0	NE WELDING ROW 1					3.3	3.3	NE WELDING ROW 1	0.0	10.0	0.0		3	20	18
19	--	--	--	--	--	--	--	3.3	3.3					--	--	--	--	--	--	--	20
21	--	--	--	--	--	--	--			3.3	3.3			--	--	--	--	--	--	--	22
23	20	3		0.0	10.0	0.0	NE WELDING ROW 1					3.3	3.3	NE WELDING ROW 1	0.0	10.0	0.0		3	20	24
25	--	--	--	--	--	--	--	3.3	3.3					--	--	--	--	--	--	--	26
27	--	--	--	--	--	--	--			3.3	3.3			--	--	--	--	--	--	--	28
29	20	3		0.0	10.0	0.0	NE WELDING ROW 1					3.3	3.3	NE WELDING ROW 1	0.0	10.0	0.0		3	20	30
31	--	--	--	--	--	--	--	3.3	3.3					--	--	--	--	--	--	--	32
33	--	--	--	--	--	--	--			3.3	3.3			--	--	--	--	--	--	--	34
35	20	3		0.0	11.6	0.0	NE WELDING ROW 1					3.9	3.9	NE WELDING ROW 1	0.0	11.6	0.0		3	20	36
37	--	--	--	--	--	--	--	3.9	3.9					--	--	--	--	--	--	--	38
39	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	40
41	20	3		0.0	11.6	0.0	NE WELDING ROW 1					3.9	3.9	NE WELDING ROW 1	0.0	11.6	0.0		3	20	42
43	--	--	--	--	--	--	--	3.9	3.9					--	--	--	--	--	--	--	44
45	--	--	--	--	--	--	--			3.9	3.9			--	--	--	--	--	--	--	46
47	20	3		0.0	11.6	0.0	NE PROJECT TABLE WELDER					3.9	3.9	NE PROJECT TABLE WELDER	0.0	11.6	0.0		3	20	48
49	--	--	--	--	--	--	--	3.9	3.9					--	--	--	--	--	--	--	50
51	--	--	--	--	--	--	--	

PANEL: "1LW1"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE AND TYPE:	FED FROM:	CABINET:	LOCATION:	NOTES:
120/208V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	225 AMPERE MAIN LUGS		RECESSED	FABRICATION 124	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR — **AIC RATING:** 30,000

CKT	OCP			LOAD (kVA)				PHASE LOAD				LOAD (kVA)			OCP			CKT
NO	AMP	POLE	BKR	LTG	PWR	CO	DESCRIPTION	A	B	C	DESCRIPTION	CO	PWR	LTG	BKR	POLE	AMP	NO
1	20	1		0.0	0.0	0.4	DED WELDING BOOTH SOUTH 14	0.4	2.4		EQ-22 GENERAL PWR	0.0	2.4	0.0		1	20	2
3	20	1		0.0	2.4	0.0	EQ-11 GENERAL CO			2.4	0.4	DED WELDING BOOTH SOUTH 11	0.4	0.0	0.0		1	20	4
5	20	1		0.0	1.0	0.0	PROJECT TABLE DC				1.0	0.4	DED WELDING BOOTH SOUTH 9	0.4	0.0	0.0		1	20	6
7	20	1		0.0	2.4	0.0	POWER FABRICATION 124	2.4	1.0				EQ-20 - ROD OVEN	0.0	1.0	0.0		1	20	8
9	20	1		0.0	1.9	0.0	EQ-10 - LASER CUTTER			1.9	1.2		POWER AWS TESTING 118	0.0	1.2	0.0		1	20	10
11	20	3		0.0	3.5	0.0	EQ-24 - LATHE					1.2	1.2	SE FLOOR SCRUBBER	0.0	1.2	0.0		1	20	12
13	--	--	--	--	--	--	--	1.2	0.5					EQ-34 - WELDING POSITIONER	0.0	0.5	0.0		1	20	14
15	--	--	--	--	--	--	--			1.2	2.5			SE PRESSURE WASHER	0.0	5.0	0.0		2	50	16
17	20	1		0.0	1.0	0.0	PROJECT TABLE DC					1.0	2.5		--	--	--	--	--	--	18
19	20	1		0.0	1.2	0.0	EQ-30 - JAN. FLOOR SCRUBBER	1.2	0.0					SPARE	0.0	0.0	0.0	--	2	20	20
21	50	2		0.0	5.0	0.0	EQ-33 - JA. PRESSURE WASHER			2.5	0.0			--	--	--	--	--	--	--	22
23	--	--	--	--	--	--	--					2.5	0.0	SPARE	0.0	0.0	0.0	--	2	20	24
25	20	2	--	0.0	0.0	0.0	SPARE	0.0	0.0					--	--	--	--	--	--	--	26
27	--	--	--	--	--	--	--			0.0	0.0			SPARE	0.0	0.0	0.0	--	1	20	28
29	20	1	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	1	20	30
31	20	1	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	1	20	32
33	20	1	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	1	20	34
35	20	1	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	1	20	36
37	20	1	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	1	20	38
39	20	1	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	1	20	40
41	20	1	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	1	20	42
TOTALS:							CONNECTED kVA PER PHASE	**9**		**12**		**10**		CONNECTED TOTAL kVA =		**31**					
							CONNECTED AMPS PER PHASE	**75**		**101**		**81**		AVERAGE CONNECTED AMPS PER PHASE =		**85**					

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING & CONTINUOUS LOADS:
RECEPTACLES: **1.1 kVA @ 100% = 1.1 kVA**
ALL OTHER LOADS @ 100% : **29.6 kVA**

- 100% CONNECTED LOAD PLUS 25%
- FIRST 10kVA @ 100%, REMAINDER @ 50%
- MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC

DIVERSIFIED TOTAL kVA = **31**
AVERAGE AMPS PER PHASE = **85**

BKR: GF=GFCI, GF3=30mA GFCI CAPABLE OF BEING LOCKED OUT IN OPEN POSITION, IG=ISOLATED GROUND, AF=AFCI, ST=SHUNT TRIP, RED=PROVIDE RED COLORED BREAKER, AF=ARC FAULT CURRENT INTERRUPTER, GA=COMBINATION OF GROUND FAULT AND ARC FAULT CIRCUIT INTERRUPTER, GS=COMBINATION OF SHUNT TRIP WITH GFCI

PANEL: "1LW2"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE AND TYPE:	FED FROM:	CABINET:	LOCATION:	NOTES:
120/208V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	225 AMPERE MAIN LUGS		SURFACE	FABRICATION 124	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR — **AIC RATING:** 30,000

CKT	OCP			LOAD (kVA)				PHASE LOAD				LOAD (kVA)			OCP			CKT
NO	AMP	POLE	BKR	LTG	PWR	CO	DESCRIPTION	A	B	C	DESCRIPTION	CO	PWR	LTG	BKR	POLE	AMP	NO
1	20	1		0.0	0.0	0.4	CENTER WELDING BOOTH CO	0.4	0.4		EQ-19 - TRACK CUTTER	0.0	0.4	0.0		1	20	2
3	20	1		0.0	0.0	0.4	CENTER WELDING BOOTH CO			0.4	1.0	EQ-26 - BENCH GRINDER	0.0	2.1	0.0		2	20	4
5	20	1		0.0	0.0	0.4	CENTER WELDING BOOTH CO					0.4	1.0	--	--	--	--	--	--	--	6
7	20	1		0.0	0.0	0.4	CENTER WELDING BOOTH CO	0.4	1.0					PROJECT TABLE PWR	0.0	1.0	0.0		1	20	8
9	20	1		0.0	0.0	0.4	CENTER WELDING BOOTH CO			0.4	1.0			PROJECT TABLE PWR	0.0	1.0	0.0		1	20	10
11	20	1		0.0	0.0	0.4	CENTER WELDING BOOTH CO					0.4	1.0	PROJECT TABLE PWR	0.0	1.0	0.0		1	20	12
13	20	1		0.0	0.0	0.4	CENTER WELDING BOOTH CO	0.4	1.2					SW FLOOR SCRUBBER	0.0	1.2	0.0		1	20	14
15	20	1		0.0	0.0	0.4	CENTER WELDING BOOTH CO			0.4	2.5			SW PRESSURE WASHER	0.0	5.0	0.0		2	50	16
17	20	1		0.0	0.0	0.4	SOUTH WELDING BOOTH CO					0.4	2.5	--	--	--	--	--	--	--	18
19	20	1		0.0	0.0	0.4	SOUTH WELDING BOOTH CO	0.4	1.0					PROJECT TABLE PWR	0.0	1.0	0.0		1	20	20
21	20	1		0.0	0.0	0.4	SOUTH WELDING BOOTH CO			0.4	1.0			PROJECT TABLE PWR	0.0	1.0	0.0		1	20	22
23	20	1		0.0	0.0	0.4	SOUTH WELDING BOOTH CO					0.4	1.0	PROJECT TABLE PWR	0.0	1.0	0.0		1	20	24
25	20	2	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	2	20	26
27	--	--	--	--	--	--	--			0.0	0.0			--	--	--	--	--	--	--	28
29	20	2	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	2	20	30
31	--	--	--	--	--	--	--	0.0	0.0					--	--	--	--	--	--	--	32
33	20	1	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	1	20	34
35	20	1	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	1	20	36
37	20	1	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	1	20	38
39	20	1	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	1	20	40
41	20	1	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	1	20	42
TOTALS:							CONNECTED kVA PER PHASE	**5**		**7**		**7**		CONNECTED TOTAL kVA =		**19**					
							CONNECTED AMPS PER PHASE	**41**		**60**		**60**		AVERAGE CONNECTED AMPS PER PHASE =		**52**					

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING & CONTINUOUS LOADS:
RECEPTACLES: **4.3 kVA @ 100% = 4.3 kVA**
ALL OTHER LOADS @ 100% : **14.4 kVA**

- 100% CONNECTED LOAD PLUS 25%
- FIRST 10kVA @ 100%, REMAINDER @ 50%
- MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC

DIVERSIFIED TOTAL kVA = **19**
AVERAGE AMPS PER PHASE = **52**

BKR: GF=GFCI, GF3=30mA GFCI CAPABLE OF BEING LOCKED OUT IN OPEN POSITION, IG=ISOLATED GROUND, AF=AFCI, ST=SHUNT TRIP, RED=PROVIDE RED COLORED BREAKER, AF=ARC FAULT CURRENT INTERRUPTER, GA=COMBINATION OF GROUND FAULT AND ARC FAULT CIRCUIT INTERRUPTER, GS=COMBINATION OF SHUNT TRIP WITH GFCI

PANEL: "1LW3"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE AND TYPE:	FED FROM:	CABINET:	LOCATION:	NOTES:
120/208V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	225 AMPERE MAIN LUGS		SURFACE	WELDING 125	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR — **AIC RATING:** 30,000

CKT	OCP			LOAD (kVA)				PHASE LOAD				LOAD (kVA)			OCP			CKT
NO	AMP	POLE	BKR	LTG	PWR	CO	DESCRIPTION	A	B	C	DESCRIPTION	CO	PWR	LTG	BKR	POLE	AMP	NO
1	20	1		0.0	0.0	0.4	NORTH WELDING BOOTH CO	0.4	0.6		EQ-32 - STAINELSS STEEL TABLE	0.0	0.6	0.0		1	20	2
3	20	1		0.0	0.0	0.4	NORTH WELDING BOOTH CO			0.4	0.6	EQ-32 - STAINELSS STEEL TABLE	0.0	0.6	0.0		1	20	4
5	20	1		0.0	0.0	0.4	NORTH WELDING BOOTH CO				0.4	0.6	EQ-32 - STAINELSS STEEL TABLE	0.0	0.6	0.0		1	20	6
7	20	1		0.0	0.0	0.4	NORTH WELDING BOOTH CO	0.4	0.6				EQ-32 - STAINELSS STEEL TABLE	0.0	0.6	0.0		1	20	8
9	20	1		0.0	0.0	0.4	NORTH WELDING BOOTH CO			0.4	0.6		EQ-32 - STAINELSS STEEL TABLE	0.0	0.6	0.0		1	20	10
11	20	1		0.0	0.0	0.4	NORTH WELDING BOOTH CO				0.4	0.6	EQ-32 - STAINELSS STEEL TABLE	0.0	0.6	0.0		1	20	12
13	20	1		0.0	1.0	0.0	PROJECT TABLE DC	1.0	1.0				PROJECT TABLE DC	0.0	1.0	0.0		1	20	14
15	20	1		0.0	1.0	0.0	PROJECT TABLE DC			1.0	0.6		EQ-35 WELDING SIM	0.0	0.6	0.0		1	20	16
17	20	1		0.0	0.0	0.2	ROOF WP GFCI CO					0.2	0.2	ROOF WP GFCI CO	0.2	0.0	0.0		1	20	18
19	20	1		0.0	0.0	0.2	ROOF WP GFCI CO	0.2	2.5					NW PRESSURE WASHER	0.0	5.0	0.0		2	50	20
21	20	1		0.0	0.0	0.2	NW FLOOR SCRUBBER			1.2	2.5			--	--	--	--	--	--	--	22
23	20	1		0.0	0.0	0.2	CO FACULTY 112 ABOVE...					0.2	0.4	CENTER WELDING BOOTH CO	0.4	0.0	0.0		1	20	24
25	20	1		0.0	0.6	0.0	EQ-35 WELDING SIM	0.6	0.4					CENTER WELDING BOOTH CO	0.4	0.0	0.0		1	20	26
27	20	1		0.0	1.0	0.0	PROJECT TABLE DC			1.0	0.4			CENTER WELDING BOOTH CO	0.4	0.0	0.0		1	20	28
29	20	1		0.0	1.0	0.0	PROJECT TABLE DC					1.0	0.4	CENTER WELDING BOOTH CO	0.4	0.0	0.0		1	20	30
31	20	1		0.0	1.0	0.0	PROJECT TABLE DC	1.0	0.0					SPARE	0.0	0.0	0.0	--	1	20	32
33	20	1	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	1	20	34
35	20	1	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	1	20	36
37	20	1	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	1	20	38
39	20	1	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	1	20	40
41	20	1	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	1	20	42
TOTALS:							CONNECTED kVA PER PHASE	**8**		**8**		**4**		CONNECTED TOTAL kVA =		**21**					
							CONNECTED AMPS PER PHASE	**76**		**76**		**35**		AVERAGE CONNECTED AMPS PER PHASE =		**58**					

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING & CONTINUOUS LOADS:
RECEPTACLES: **4.3 kVA @ 100% = 4.3 kVA**
ALL OTHER LOADS @ 100% : **16.8 kVA**

- 100% CONNECTED LOAD PLUS 25%
- FIRST 10kVA @ 100%, REMAINDER @ 50%
- MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC

DIVERSIFIED TOTAL kVA = **21**
AVERAGE AMPS PER PHASE = **58**

BKR: GF=GFCI, GF3=30mA GFCI CAPABLE OF BEING LOCKED OUT IN OPEN POSITION, IG=ISOLATED GROUND, AF=AFCI, ST=SHUNT TRIP, RED=PROVIDE RED COLORED BREAKER, AF=ARC FAULT CURRENT INTERRUPTER, GA=COMBINATION OF GROUND FAULT AND ARC FAULT CIRCUIT INTERRUPTER, GS=COMBINATION OF SHUNT TRIP WITH GFCI

PANEL: "1LW4"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE AND TYPE:	FED FROM:	CABINET:	LOCATION:	NOTES:
120/208V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	225 AMPERE MAIN LUGS		SURFACE	WELDING 125	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR — **AIC RATING:** 30,000

CKT	OCP			LOAD (kVA)				PHASE LOAD				LOAD (kVA)			OCP			CKT
NO	AMP	POLE	BKR	LTG	PWR	CO	DESCRIPTION	A	B	C	DESCRIPTION	CO	PWR	LTG	BKR	POLE	AMP	NO
1	20	1		0.0	0.0	0.4	NORTH WELDING BOOTH CO	0.4	0.6		EQ-29	0.0	0.6	0.0		1	20	2
3	20	1		0.0	0.0	0.4	NORTH WELDING BOOTH CO			0.4	1.0	PROJECT TABLE DC	0.0	1.0	0.0		1	20	4
5	20	1		0.0	0.0	0.4	NORTH WELDING BOOTH CO					0.4	1.0	PROJECT TABLE DC	0.0	1.0	0.0		1	20	6
7	20	1		0.0	0.0	0.4	NORTH WELDING BOOTH CO	0.4	1.0					PROJECT TABLE DC	0.0	1.0	0.0		1	20	8
9	20	1		0.0	0.0	0.4	NORTH WELDING BOOTH CO			0.4	0.4			CENTER WELDING BOOTH CO	0.4	0.0	0.0		1	20	10
11	20	1		0.0	0.0	0.2	NORTH WELDING BOOTH CO					0.2	0.4	CENTER WELDING BOOTH CO	0.4	0.0	0.0		1	20	12
13	50	2		0.0	5.0	0.0	NE PRESSURE WASHER	2.5	0.4					CENTER WELDING BOOTH CO	0.4	0.0	0.0		1	20	14
15	--	--	--	--	--	--	--			2.5	0.4			CENTER WELDING BOOTH CO	0.4	0.0	0.0		1	20	16
17	20	1		0.0	1.2	0.0	NE FLOOR SCRUBBER					1.2	1.0	PROJECT TABLE DC	0.0	1.0	0.0		1	20	18
19	20	1		0.0	1.0	0.0	PROJECT TABLE DC	1.0	1.0					PROJECT TABLE DC	0.0	1.0	0.0		1	20	20
21	20	1		0.0	1.2	0.0	EQ-39 - VALVE			1.2	1.0			EQ-22 - PLASMA CUTTER	0.0	1.0	0.0		1	20	22
23	20	2	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	2	20	24
25	--	--	--	--	--	--	--	0.0	0.0					--	--	--	--	--	--	--	26
27	20	1	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	1	20	28
29	20	1	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	1	20	30
31	20	1	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	1	20	32
33	20	1	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	1	20	34
35	20	1	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	1	20	36
37	20	1	--	0.0	0.0	0.0	SPARE	0.0	0.0					SPARE	0.0	0.0	0.0	--	1	20	38
39	20	1	--	0.0	0.0	0.0	SPARE			0.0	0.0			SPARE	0.0	0.0	0.0	--	1	20	40
41	20	1	--	0.0	0.0	0.0	SPARE					0.0	0.0	SPARE	0.0	0.0	0.0	--	1	20	42
TOTALS:							CONNECTED kVA PER PHASE	**7**		**7**		**4**		CONNECTED TOTAL kVA =		**18**					
							CONNECTED AMPS PER PHASE	**63**		**63**		**34**		AVERAGE CONNECTED AMPS PER PHASE =		**50**					

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING & CONTINUOUS LOADS:
RECEPTACLES: **3.4 kVA @ 100% = 3.4 kVA**
ALL OTHER LOADS @ 100% : **14.7 kVA**

- 100% CONNECTED LOAD PLUS 25%
- FIRST 10kVA @ 100%, REMAINDER @ 50%
- MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC

DIVERSIFIED TOTAL kVA = **18**
AVERAGE AMPS PER PHASE = **50**

BKR: GF=GFCI, GF3=30mA GFCI CAPABLE OF BEING LOCKED OUT IN OPEN POSITION, IG=ISOLATED GROUND, AF=AFCI, ST=SHUNT TRIP, RED=PROVIDE RED COLORED BREAKER, AF=ARC FAULT CURRENT INTERRUPTER, GA=COMBINATION OF GROUND FAULT AND ARC FAULT CIRCUIT INTERRUPTER, GS=COMBINATION OF SHUNT TRIP WITH GFCI

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

SPECTRUM ENGINEERS
324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH & FABRICATION BUILLDING
355 SOUTH 650 EAST
KAYSVILLE, UT 84037

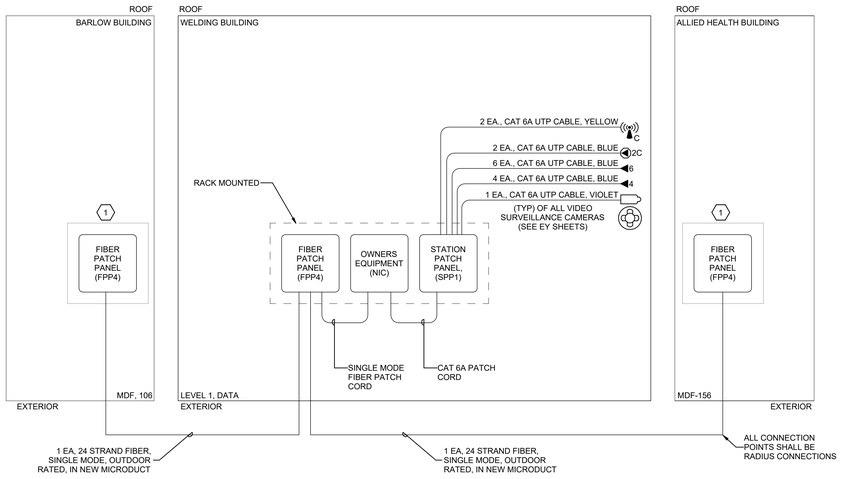


11/14/2024

PANEL SCHEDULES
EP606.2

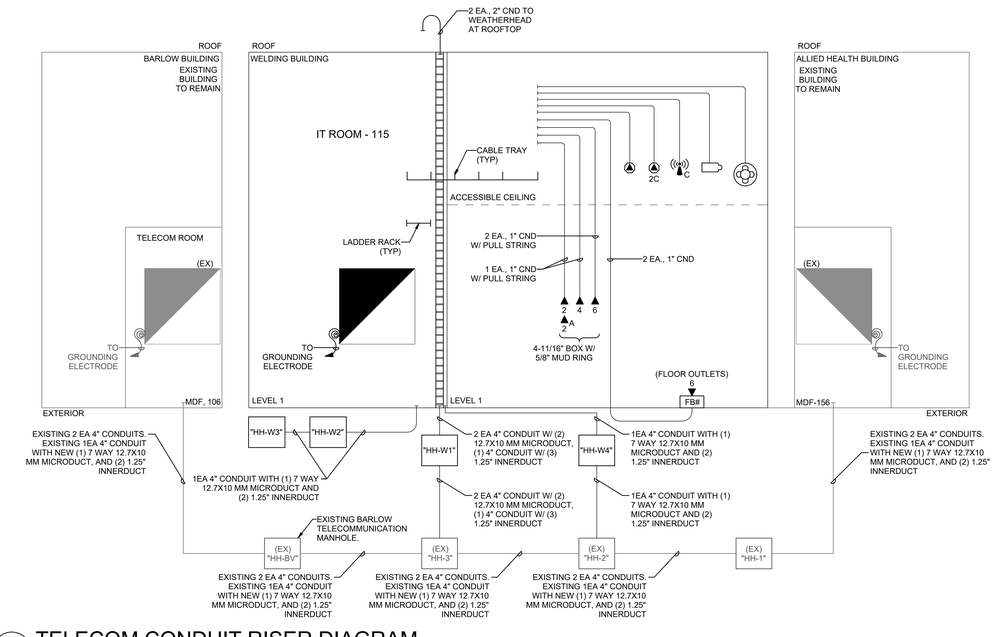
(801) 355-5915

11/15/2024 4:00:00 PM



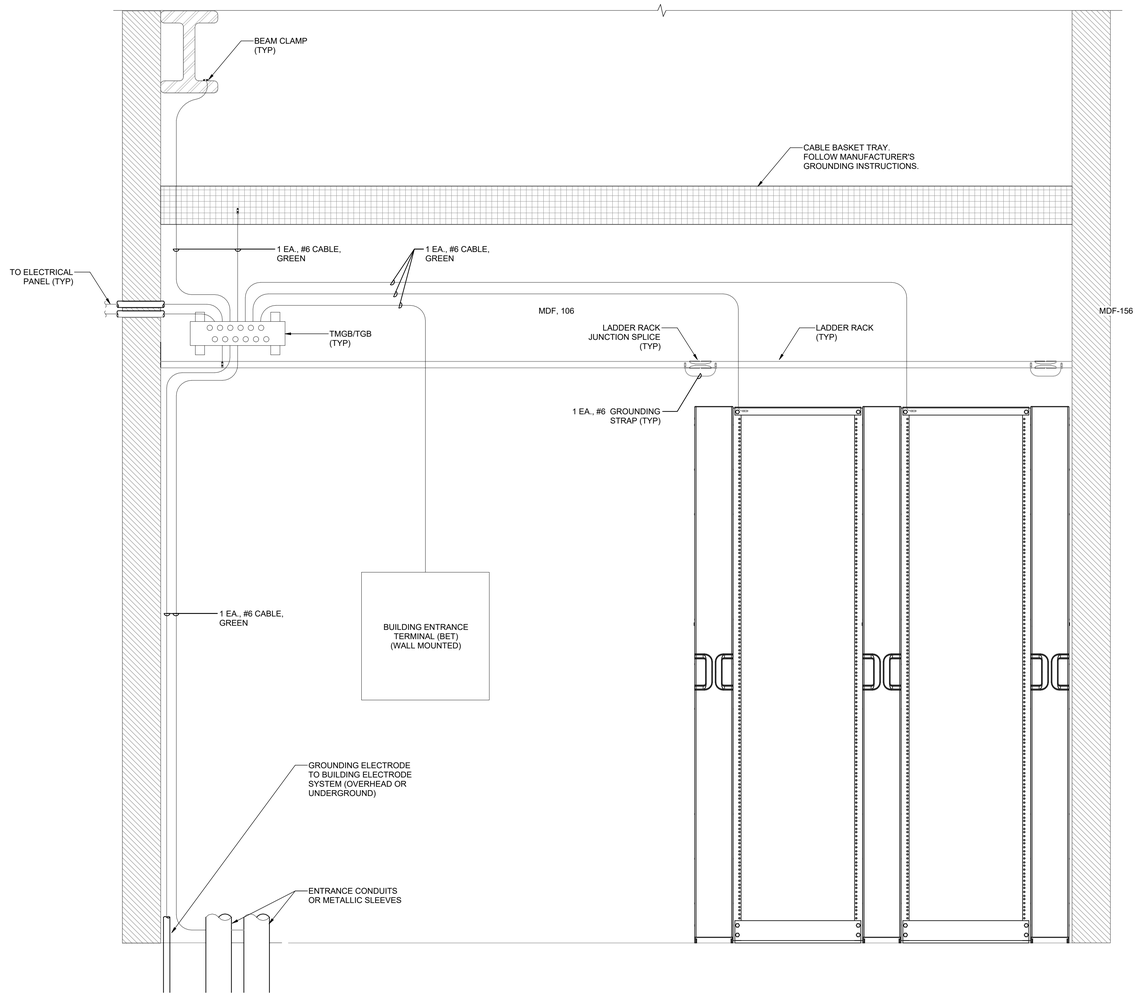
C1 TELECOM CABLE RISER DIAGRAM

SCALE: NTS



A1 TELECOM CONDUIT RISER DIAGRAM

SCALE: NTS



A4 TYPICAL TELECOM EQUIPMENT RACK GROUNDING DETAIL

SCALE: NTS

5	6
SHEET KEYNOTES	**GENERAL SHEET NOTES**
1 REPLACE EXISTING FIBER PATCH PANEL. ALL EXISTING FIBER TO BE RE-TERMINATED AND TESTED FROM END TO END. ADJUST EXISTING RACK SPACE AS NEEDED. TERMINATE AND TEST ALL NEW FIBER.	1 GROUNDING DETAIL SHOWN IS FOR DIAGRAMMATIC PURPOSES ONLY. ALL WIRE SIZES SHOWN IN COMMUNICATIONS ROOMS ARE TO BE USED. ANY WIRE SIZING TO GROUNDING BUS BAR AND BUILDING GROUND ARE SHOWN IN THE DIV. 26 SPECIFICATIONS. 2 ALL LOW VOLTAGE COMMUNICATIONS CONDUIT IN COMMUNICATIONS ROOM SHALL BE GROUNDED TO TELECOMMUNICATIONS GROUNDING BUS BAR. 3 "TMGB" SHOULD BE 1/4"x4"x24". 4 "TGB" SHOULD BE 1/4"x2"x24". 5 EMT CONDUIT GROUNDING CLAMP SHOULD BE ELECTROLYTIC CAST BRONZE (PANDUIT PART NUMBER GPL-"X"-"X", OR EQUAL). 6 RIGID CONDUIT GROUND CLAMP SHOULD BE PART NUMBER O-Z/GEDNEY BLG-XXXX, OR HBLG-XXXX, OR EQUAL. 7 GROUNDING LUGS SHOULD BE TWO-HOLE LONG BARREL LUGS (PANDUIT PART NUMBER LCC6, OR EQUAL).

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

SPECTRUM ENGINEERS
324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH & FABRICATION BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN MARTINEZ
STATE OF UTAH

11/14/2024

TELECOM DETAILS AND RISERS

EP651.2

(801) 355-5915

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SHEET KEYNOTES

1 THIS OPEN AREA WILL BE CONTROLLED BY A RELAY PANEL.

2 PROVIDE EXTERNAL BATTERY PACK FOR LP8E LIGHT FIXTURES.

GENERAL SHEET NOTES

1 COORDINATE LOCATIONS AND MOUNTING HEIGHTS OF ALL LIGHT FIXTURES ON THIS LEVEL WITH MECHANICAL EQUIPMENT, DUCT, PIPE, PLUMBING, ETC. PRIOR TO ROUGH-IN.

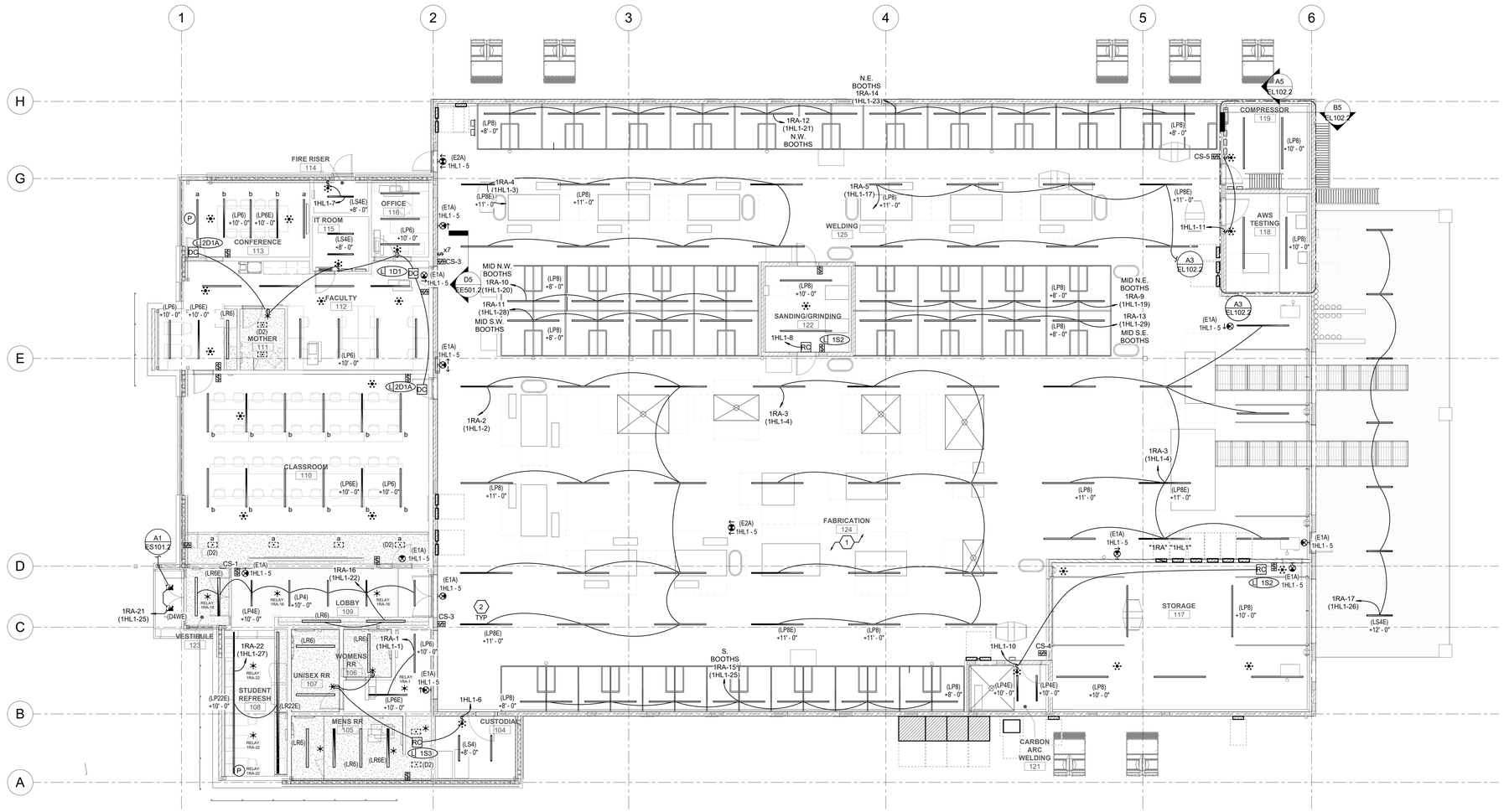
2 ALL EXPOSED CONDUITS ROUTED IN CEILING SHALL BE PAINTED TO MATCH CEILING.

3 LIGHTING CONTROL DIMMING AND ROOM CONTROLLER SHALL BE LOCATED AS FOLLOWS WHERE POSSIBLE UNLESS NOTED OTHERWISE. LOCATE ABOVE ACCESSIBLE CEILING NEAR THE DOOR THAT CONTROLLER SERVES BUT OUT OF THE PATH OF EGRESS, REFER TO DETAIL FOR ADDITIONAL INFORMATION.

4 REFER TO EE701 FOR TYPICAL MOUNTING AND ALIGNMENT OF ELECTRICAL DEVICES.

5 ALL PATHWAYS FOR LOW VOLTAGE CABLING NOT REQUIRED TO BE IN CONDUITS SHALL BE ROUTED IN J-HOOK PATHWAYS. CONCEAL ALL PATHWAYS ABOVE ACCESSIBLE CEILING SPACES. DO NOT RUN CABLES IN EXPOSED AREAS. WHERE CONCEALMENT IS NOT POSSIBLE IN EXPOSED AREAS, CONTRACTOR SHALL PROVIDE CONDUIT TO ROUTE CABLING WHERE VISIBLE. ALL CONDUIT SHALL BE PAINED TO MATCH CEILING AND PROVIDED WITH PROTECTIVE BUSHINGS.

6 PROVIDE UNITRUT TO STRADDLE MECHANICAL DUCTS AS REQUIRED FOR OPTIMAL LIGHT PLACEMENT & DISTRIBUTION.



A1 LEVEL 1 LIGHTING PLAN
SCALE: 1/8" = 1'-0"

NORTH

11/15/2024 4:29:39 PM

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

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LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN MARTINEZ
STATE OF UTAH
11/14/2024

LEVEL 1 LIGHTING PLAN

EL101.2

(801) 355-5915

GENERAL SHEET NOTES

1 COORDINATE LOCATIONS AND MOUNTING HEIGHTS OF ALL LIGHT FIXTURES ON THIS LEVEL WITH MECHANICAL EQUIPMENT, DUCT, PIPE, PLUMBING, ETC. PRIOR TO ROUGH-IN.

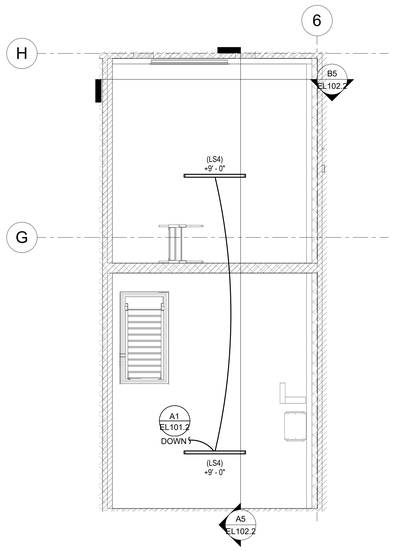
2 ALL EXPOSED CONDUITS ROUTED IN CEILING SHALL BE PAINTED TO MATCH CEILING.

3 LIGHTING CONTROL DIMMING AND ROOM CONTROLLER SHALL BE LOCATED AS FOLLOWS WHERE POSSIBLE UNLESS NOTED OTHERWISE. LOCATE ABOVE ACCESSIBLE CEILING NEAR THE DOOR THAT CONTROLLER SERVES BUT OUT OF THE PATH OF EGRESS, REFER TO DETAIL FOR ADDITIONAL INFORMATION.

4 REFER TO EE701 FOR TYPICAL MOUNTING AND ALIGNMENT OF ELECTRICAL DEVICES.

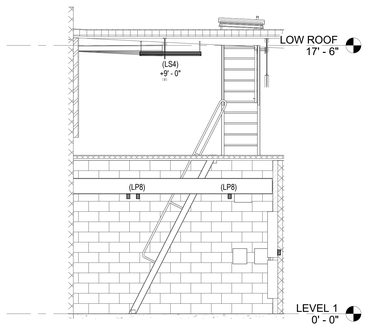
5 ALL PATHWAYS FOR LOW VOLTAGE CABLING NOT REQUIRED TO BE IN CONDUITS SHALL BE ROUTED IN J-HOOK PATHWAYS. CONCEAL ALL PATHWAYS ABOVE ACCESSIBLE CEILING SPACES. DO NOT RUN CABLES IN EXPOSED AREAS. WHERE CONCEALMENT IS NOT POSSIBLE IN EXPOSED AREAS, CONTRACTOR SHALL PROVIDE CONDUIT TO ROUTE CABLING WHERE VISIBLE. ALL CONDUIT SHALL BE PAINED TO MATCH CEILING AND PROVIDED WITH PROTECTIVE BUSHINGS.

6 PROVIDE UNITRUT TO STRADDLE MECHANICAL DUCTS AS REQUIRED FOR OPTIMAL LIGHT PLACEMENT & DISTRIBUTION.

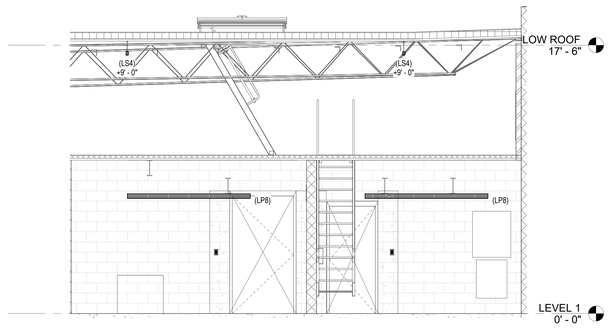


A3 ENLARGED MEZZANING LIGHTING PLAN
SCALE: 1/4" = 1'-0"

NORTH



B5 ENLARGED COMPRESSOR 119
SCALE: 1/4" = 1'-0"



A5 ENLARGED AWS TESTING 118
SCALE: 1/4" = 1'-0"

11/15/2024 4:00:18 PM

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

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LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN
STATE OF UTAH
11/14/2024

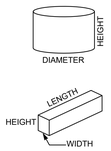
ENLARGED LIGHTING PLANS

EL102.2

(801) 355-5915

INTERIOR LIGHTING FIXTURE SCHEDULE

GENERAL NOTES



1. SUBSTITUTIONS AND/OR EQUAL FIXTURES MUST RECEIVE APPROVAL PRIOR TO BIDDING, THEY MUST BE SUBMITTED TO THE ENGINEER NO LESS THAN 2 WEEKS PRIOR TO BID OPENING.
2. SAMPLES MUST BE PROVIDED FOR ANY AND ALL FIXTURES UPON A/E REQUEST PRIOR TO RELEASING FIXTURES.
3. ALL FIXTURES SHALL BE LISTED AND APPROVED FOR THEIR INTENDED USE AND LOCATION.
4. VERIFY THE PROPER MOUNTING KITS OR ACCESSORIES TO FACILITATE INSTALLATION AS SHOWN AT EACH LOCATION ON THE DRAWINGS.
5. COMPLY WITH THE "INTERIOR LIGHTING" SECTION OF THE SPECIFICATIONS.
6. ALL LIGHT FIXTURES TO BE EITHER "DLC" OR "LIGHTING FACTS" LISTED OR TO BE APPROVED BY ARCHITECT/ENGINEER AND OWNER.
7. CONTRACTOR ALLOWANCE PRICES ARE ACCURATE WHEN THIS JOB WAS SPECIFIED, CONTRACTOR AND ELECTRICAL DISTRIBUTOR SHALL VERIFY THIS ALLOWANCE AND REPORT ANY PROBLEMS TO THE ENGINEER BEFORE THE BID. ALLOWANCE PRICE MAY OR MAY NOT INCLUDE LAMP(S) OR FREIGHT AS NOTED, AND DO NOT INCLUDE ANY TAXES.

			LUMINAIRE				DRIVER			
ID	DESCRIPTION	SIZE (NOMINAL)	DELIVERED DIRECT LUMENS	DELIVERED INDIRECT LUMENS	COLOR TEMP	CRI	TYPE	VOLTAGE	WATTS	MANUFACTURER (CATALOG SERIES)
(D2)	DESCRIPTION: 2" DOWNLIGHT MOUNTING: RECESSED, CEILING FINISH: SCBA OPTICS: 35° BEAM, CLEAR REFLECTOR, MATTE DIFFUSE OPTIONS: EM: NONE	LENGTH: 17" WIDTH: 9" HEIGHT: 7" DIAMETER: 2"	1,000		4000K	80	LED (0-10V DIMMING) 1%	120/277V	12	GOTHAM (ICO2) PORTFOLIO (LD2B) LIGHTOLIER (C2RDL)
(E1A)	DESCRIPTION: EXIT SIGN, EDGE LIT, SINGLE SIDED MOUNTING: CEILING, WALL FINISH: SCBA OPTICS: OPTIONS: EM: BATTERY	LENGTH: 11" WIDTH: 3" HEIGHT: 10"			GREEN		LED	120/277V	5	ISOLITE (UEL) EVENLITE (TEXZ) EMERGENSEE (SEEXLRN)
(E2A)	DESCRIPTION: EXIT SIGN, EDGE LIT, DOUBLE SIDED MOUNTING: CEILING, WALL FINISH: SCBA OPTICS: OPTIONS: EM: BATTERY	LENGTH: 11" WIDTH: 3" HEIGHT: 10"			GREEN		LED	120/277V	5	ISOLITE (UEL) EVENLITE (TEXZ) EMERGENSEE (SEEXLRN)
(LP4)	DESCRIPTION: LINEAR PENDANT MOUNTING: CEILING, PENDANT, WALL FINISH: SCBA OPTICS: DROP LENS OPTIONS: EM: NONE	LENGTH: 48" WIDTH: 2.5" HEIGHT: 3"	2,900		4000K	80	LED (0-10V DIMMING)	120/277V	28	FINELITE (HP4-P) NEORAY (S124FIP) AXIS (TB4DILED)
(LP4E)	DESCRIPTION: LINEAR PENDANT MOUNTING: CEILING, PENDANT, WALL FINISH: SCBA OPTICS: DROP LENS OPTIONS: EM: EMERGENCY BATTERY	LENGTH: 48" WIDTH: 2.5" HEIGHT: 3"	2,900		4000K	80	LED (0-10V DIMMING)	120/277V	28	FINELITE (HP4-P) NEORAY (S124FIP) AXIS (TB4DILED)
(LP6)	DESCRIPTION: LINEAR PENDANT MOUNTING: CEILING, PENDANT, WALL FINISH: SCBA OPTICS: DROP LENS OPTIONS: EM: NONE	LENGTH: 72" WIDTH: 2.5" HEIGHT: 3"	4,300		4000K	80	LED (0-10V DIMMING) 1%	120/277V	43	FINELITE (HP4-P) NEORAY (S124FIP) AXIS (TB4DILED)
(LP6E)	DESCRIPTION: LINEAR PENDANT MOUNTING: CEILING, PENDANT, WALL FINISH: SCBA OPTICS: DROP LENS OPTIONS: EM: EMERGENCY BATTERY	LENGTH: 72" WIDTH: 2.5" HEIGHT: 3"	4,300		4000K	80	LED (0-10V DIMMING) 1%	120/277V	43	FINELITE (HP4-P) NEORAY (S124FIP) AXIS (TB4DILED)
(LP8)	DESCRIPTION: LINEAR STRIP, DAMP LISTED MOUNTING: CEILING, PENDANT, WALL FINISH: SCBA OPTICS: DROP LENS OPTIONS: EM:	LENGTH: 96" WIDTH: 2.5" HEIGHT: 3"	10,000		4000K	80	LED (0-10V DIMMING)	120/277V	88	LITHONIA (CSS L96) CONTRACTOR PROVIDED
(LP8E)	DESCRIPTION: LINEAR STRIP, DAMP LISTED MOUNTING: CEILING, PENDANT, WALL FINISH: SCBA OPTICS: DROP LENS OPTIONS: EM: EMERGENCY BATTERY	LENGTH: 96" WIDTH: 2.5" HEIGHT: 3"	10,000		4000K	80	LED (0-10V DIMMING)	120/277V	88	LITHONIA (CSS L96) CONTRACTOR PROVIDED PROVIDE EXTERNAL BATTERY PACK
(LP22E)	DESCRIPTION: LINEAR PENDANT MOUNTING: CEILING, PENDANT, WALL FINISH: SCBA OPTICS: DROP LENS OPTIONS: EM: EMERGENCY BATTERY	LENGTH: 22' WIDTH: 2.5" HEIGHT: 3"	15,767		4000K	80	LED (0-10V DIMMING) 1%	120/277V	156	FINELITE (HP4-P) NEORAY (S124FIP) AXIS (TB4DILED)
(LR6)	DESCRIPTION: FLUSH LENS LINEAR MOUNTING: GRID CEILING, RECESSED FINISH: SCBA OPTICS: LOW GLOSS REFLECTOR, FLUSH LENS OPTIONS: EM: NONE	LENGTH: 72" WIDTH: 4" HEIGHT: 4"	2,400		4000K	80	LED (0-10V DIMMING) 1%	120/277V	54	FINELITE (HP4) NEORAY (S124DR) AXIS (BBRLED)
(LR6E)	DESCRIPTION: FLUSH LENS LINEAR MOUNTING: GRID CEILING, RECESSED FINISH: SCBA OPTICS: LOW GLOSS REFLECTOR, FLUSH LENS OPTIONS: EM: NONE	LENGTH: 72" WIDTH: 4" HEIGHT: 4"	2,400		4000K	80	LED (0-10V DIMMING) 1%	120/277V	54	FINELITE (HP4) NEORAY (S124DR) AXIS (BBRLED)
(LR22E)	DESCRIPTION: FLUSH LENS LINEAR MOUNTING: GRID CEILING, RECESSED FINISH: SCBA OPTICS: LOW GLOSS REFLECTOR, FLUSH LENS OPTIONS: EM BATTERY PACK	LENGTH: 22' WIDTH: 4" HEIGHT: 4"	8,800		4000K	80	LED (0-10V DIMMING) 1%	120/277V	198	FINELITE (HP4) NEORAY (S124DR) AXIS (BBRLED)
(LS4)	DESCRIPTION: LINEAR STRIP, DAMP LISTED MOUNTING: CEILING, PENDANT, WALL FINISH: SCBA OPTICS: DROP LENS OPTIONS: EM: NONE	LENGTH: 48" WIDTH: 2.5" HEIGHT: 3"	3,000		4000K	80	LED (0-10V DIMMING)	120/277V	30	LITHONIA (ZL1D) METALUX (4SNLED) DAYBRITE (FSS4)
(LS4E)	DESCRIPTION: LINEAR STRIP, DAMP LISTED MOUNTING: CEILING, PENDANT, WALL FINISH: SCBA OPTICS: DROP LENS OPTIONS: EM: EMERGENCY BATTERY	LENGTH: 48" WIDTH: 2.5" HEIGHT: 3"	3,000		4000K	80	LED (0-10V DIMMING)	120/277V	30	LITHONIA (ZL1D) METALUX (4SNLED) DAYBRITE (FSS4)

LIGHTING RELAY CONTROL CHANNELS

GENERAL NOTES:
1. PROGRAMMING OF SYSTEM SHALL COMPLY WITH CURRENT IECC REQUIREMENTS.
2. COORDINATE INITIAL PROGRAMMING WITH OWNER AND MODIFY CONTROL TIMES AND OPERATION AS REQUESTED BY OWNER.
3. PROVIDE FINE TUNING PROGRAMMING AND ADJUSTMENTS UPON REQUEST BY OWNER WITHIN FIRST 6 MONTHS AFTER SUBSTANTIAL COMPLETION.
4. ALL SPARE RELAYS AND CHANNELS SHALL BE INCLUDED WITH ORIGINAL SYSTEM INSTALLATION.
5. UPON LOSS OF NORMAL POWER, ALL EMERGENCY LIGHTING RELAYS SHALL TURN ON TO 100% UNTIL NORMAL POWER IS RESTORED, THEN GO BACK TO STANDARD MODE.
**CHANNEL SHALL BE PROGRAMMED WITH 10 MINUTE WARNING PRIOR TO TURNING LIGHTS OFF BY BLINKING THE LIGHTS OFF/ON/OFF/ON.

CONTROL CHANNEL	CHANNEL DESCRIPTION	CHANNEL PROGRAMMING REQUIREMENTS
(none)		
A	WELDING TASK LIGHTING	ON: MANUAL SWITCH; OFF: 9 PM.
B	CORRIDOR & COMMON SPACE	ON: 6:30AM/OCCUPANCY; ON AFTER 20 MIN VACANCY; DIM TO 50%; OFF: 9PM**
C	EXTERIOR LIGHTS OUT AT MIDNIGHT	ON: PHOTOCELL; DIM: 9PM TO 50% DIM; OFF: MIDNIGHT

LIGHTING RELAY PANEL "1RA"

LOCATION: FABRICATION 124 **MOUNTING: SURFACE** **ENCLOSURE:** NEMA 1

RELAY	DIMMING	PANEL CIRCUIT	DESCRIPTION	CONTROL CHANNEL	LOAD (WATTS)						CONTROL CHANNEL	DESCRIPTION	PANEL CIRCUIT	DIMMING	RELAY
1	YES	**1HL1-1**	BATHROOM CORR. LTG	B	0	0					A	LTG WELDING LAB ROW 4	**1HL1-2**	YES	2
3	YES	**1HL1-4**	LTG WELDING LAB EAST	A			0	0			A	LTG WELDING LAB ROW 1	**1HL1-3**	YES	4
5	YES	**1HL1-17**	LTG WELDING LAB ROW 2	A					0	0	B	LIGHTING HALL 126	**1HL1-9**	YES	6
7	YES	**1HL1-12**	LIGHTING WELDING 125	A	0	0					A	S. WELDING BOOTHS	**1HL1-13**	YES	8
9	YES	**1HL1-19**	MID N.E. WELD BOOTHS	A			0	0			A	MID N.W. WELD BOOTHS	**1HL1-20**	YES	10
11	YES	**1HL1-28**	MID S.W. WELD BOOTHS	A					0	0	A	N.W. WELD BOOTHS	**1HL1-21**	YES	12
13	YES	**1HL1-29**	MID S.E. WELD BOOTHS	A	0	0					A	N.E. WELD BOOTHS	**1HL1-23**	YES	14
15	YES	**1HL1-25**	S. WELDING BOOTHS	A			0	216			B	LIGHTING LOBBY 109	**1HL1-22**	YES	16
17	YES	**1HL1-26**	EXT CANOPY LTG	A					210	0	B	LIGHTING STUDENT REFRESH 108	**1HL1-24**	YES	18
19	YES	**1HL1-25**	EXT LIGHTING	D	0	1400					D	EXT PARKING LTG	**1HL1-14**	YES	20
21	YES	**1HL1-15**	EXT WALL LTG	D			280	198			B	STUDENT REFRESH 108	**1HL1-27**	YES	22
23	--	--	SPARE	--					0	0	--	SPARE	--	--	24
25	--	--	SPARE	--	0	0					--	SPARE	--	--	26
27	--	--	SPARE	--			0	0			--	SPARE	--	--	28
29	--	--	SPARE	--					0	0	--	SPARE	--	--	30
31	--	--	SPARE	--	0	0					--	SPARE	--	--	32
33	--	--	SPARE	--			0	0			--	SPARE	--	--	34
35	--	--	SPARE	--					0	0	--	SPARE	--	--	36
37	--	--	SPARE	--	0	0					--	SPARE	--	--	38
39	--	--	SPARE	--			0	0			--	SPARE	--	--	40
41	--	--	SPARE	--					0	0	--	SPARE	--	--	42

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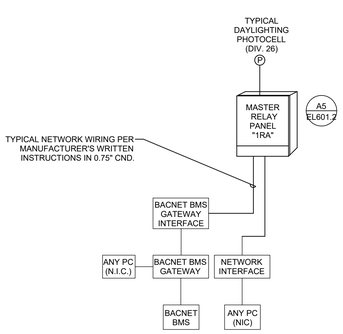
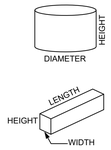


A3 NETWORKED LIGHTING CONTROL RISER DIAGRAM
SCALE: NTS

EXTERIOR LIGHTING FIXTURE SCHEDULE

GENERAL NOTES



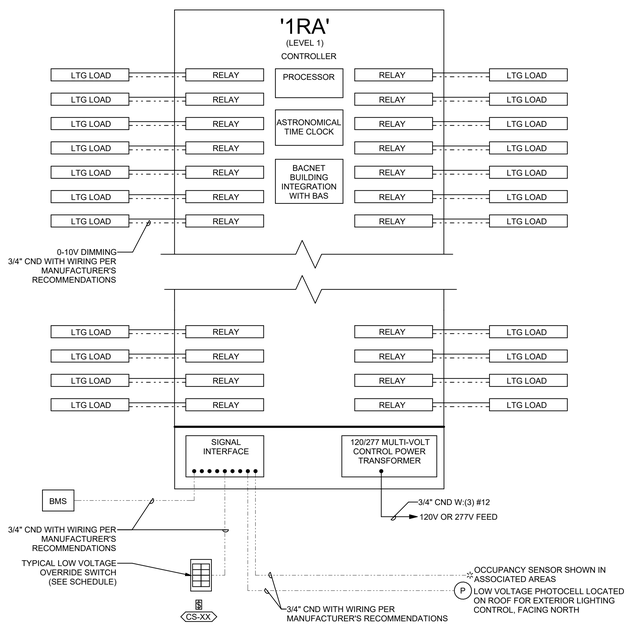
1. SUBSTITUTIONS AND/OR EQUAL FIXTURES MUST RECEIVE APPROVAL PRIOR TO BIDDING, THEY MUST BE SUBMITTED TO THE ENGINEER NO LESS THAN 2 WEEKS PRIOR TO BID OPENING.
2. SAMPLES MUST BE PROVIDED FOR ANY AND ALL FIXTURES UPON A/E REQUEST PRIOR TO RELEASING FIXTURES.
3. ALL FIXTURES SHALL BE LISTED AND APPROVED FOR THEIR INTENDED USE AND LOCATION.
4. VERIFY THE PROPER MOUNTING KITS OR ACCESSORIES TO FACILITATE INSTALLATION AS SHOWN AT EACH LOCATION ON THE DRAWINGS.
5. COMPLY WITH THE "INTERIOR LIGHTING" SECTION OF THE SPECIFICATIONS.
6. ALL LIGHT FIXTURES TO BE EITHER "DLC" OR "LIGHTING FACTS" LISTED OR TO BE APPROVED BY ARCHITECT/ENGINEER AND OWNER.
7. CONTRACTOR ALLOWANCE PRICES ARE ACCURATE WHEN THIS JOB WAS SPECIFIED, CONTRACTOR AND ELECTRICAL DISTRIBUTOR SHALL VERIFY THIS ALLOWANCE AND REPORT ANY PROBLEMS TO THE ENGINEER BEFORE THE BID. ALLOWANCE PRICE MAY OR MAY NOT INCLUDE LAMP(S) OR FREIGHT AS NOTED, AND DO NOT INCLUDE ANY TAXES.

			LUMINAIRE					DRIVER		
			BUG RATING							
ID	DESCRIPTION_MULTI	SIZE (NOMINAL)	BACK	UP	GLARE	LUMENS	COLOR TEMP	CRI	TYPE	VOLTAGE	WATTS	MANUFACTURER
(D4WE)	DESCRIPTION: 4" DOWNLIGHT MOUNTING: RECESSED, CEILING FINISH: SCBA OPTICS: 35° BEAM, CLEAR REFLECTOR, MATTE DIFFUSE OPTIONS: WET LISTED, IC RATED EM: EMERGENCY BATTERY	LENGTH: 12" WIDTH: 9" HEIGHT: 8" DIAMETER: 4"	1	0	1	1,500	4000K	80	LED (0-10V DIMMING)	120/277V	15	HE WILLIAMS (4DR) PORTFOLIO (LD4) SPECTRUM LIGHTING (SGECS4)
(OW2)	DESCRIPTION: WALL SCONCE MOUNTING: WALL FINISH: SCBA OPTICS: TYPE III DISTRIBUTION OPTIONS: - WIND RATING: - EM: EMERGENCY BATTERY	LENGTH: 17" WIDTH: 10.5" DEPTH: 8.5"	1	0	0	2,800	4000K	80	LED	120/277V	25	LITHONIA (DSXW1) MCGRAW-EDISON (GWC) KEENE (LPW32) NLS LTG (NV-W)
(WW-1)	DESCRIPTION: LIGHT POLE MOUNTING: POLE FINISH: SCBA OPTICS: TYPE III DISTRIBUTION OPTIONS: 120 WIND RATING EM: NONE	LENGTH: 32" WIDTH: 18" DEPTH: 7" POLE HEIGHT: 28' - 0"	1	0	1	6,000	4000K	80	LED	120/277V	200	LITHONIA (DSX0) LUMARK (PRV) OR PRIOR APPROVED EQUAL

LOW VOLTAGE OVERRIDE SWITCH SCHEDULE

1. COORDINATE INITIAL PROGRAMMING REQUIREMENTS AND SETTINGS WITH OWNER AND MODIFY PROGRAMMING, CONTROL TIMES, AND OPERATION AS DIRECTED BY OWNER.
2. PROVIDE FINE TUNING PROGRAMMING AND ADJUSTMENTS AS DIRECTED BY OWNER WITHIN THE FIRST 3 TO 6 MONTHS AFTER SUBSTATIAL COMPLETION AND BUILDING OCCUPANCY.
3. PROVIDE CUSTOMIZED PERMANENT BUTTON LABELING ON EACH OVERRIDE SWITCH. LABEL FOR EACH BUTTON SHALL CLEARLY INDICATE FUNCTION OF BUTTON OR ZONE SERVED.
4. PART NUMBERS SHOWN ARE BASED ON THE BASIS OF DESIGN MANUFACTURER NOTED.
5. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE A COMPLETE FUNCTIONING LIGHTING CONTROL SYSTEM MEETING ALL PROJECT REQUIREMENTS, DESIGN INTENT AND FEATURES/FUNCTIONS OF THE BASIS OF DESIGN PRODUCTS.
6. LIGHTING CONTROL PANEL SHALL EITHER BE FACTORY OR UL508 SHOP ASSEMBLED INCLUDING ALL REQUIRED COMPONENTS SUCH AS, BUT NOT LIMITED TO ENCLOSURE, POWER SUPPLIES, RELAYS, DIMMING MODULES, TERMINAL BLOCKS, SIGNAL INTERFACE, PROCESSOR, TIMECLOCK, WIRE MANAGEMENT, ETC. CONTRACTOR OR FIELD BUILT LIGHTING CONTROL PANELS WILL NOT BE PERMITTED.
7. THE LIGHTING CONTROL PANEL AND SEGMENT MANAGER MUST BE NETWORKED TOGETHER AND SHALL PROVIDE ALL FEATURES AND FUNCTIONS AVAILABLE TO THE LIGHTING CONTROL SYSTEM THROUGH THE NETWORK.

BUTTON	ZONE CONTROLLED	CONTROL DESCRIPTION	BUTTON ENGRAVING
CS-1			
1	WELDING LAB	OVERRIDE ON 2 HOURS	YES - "OPEN WLD ON"
2	BUILDING MOUNTED EXTERIOR	OVERRIDE ON 2 HOURS	YES - "BLDG EXT ON"
3	EXTERIOR SITE POLES	OVERRIDE ON 2 HOURS	YES - "SITE EXT ON"
4	CUSTOM BY OWNER	AS DIRECTED BY OWNER	AS DIRECTED BY OWNER
CS-3			
1	NORTH WEST TASK LIGHTING	MANUAL CONTROLS	YES - "NW BTH"
2	NORTH EAST TASK LIGHTING	MANUAL CONTROLS	YES - "NE BTH"
3	MIDDLE TASK LIGHTING	MANUAL CONTROLS	YES - "MID NW BTH"
4	SOUTH TASK LIGHTING	MANUAL CONTROLS	YES - "MID NE BTH"
5	LEVEL 3 CORRIDOR	MANUAL CONTROLS	YES - "MID EA BTH"
6	CUSTOM BY OWNER	MANUAL CONTROLS	YES - "SOUTH BTH"
CS-4			
1	SOUTH TASK LIGHTING	MANUAL CONTROLS	YES - "SOUTH BTH"
CS-5			
1	SOUTH TASK LIGHTING	MANUAL CONTROLS	YES - "NE BTH"
2	SITE LIGHTING	MANUAL CONTROLS	YES - "MID NE BTH"



A5 TYPICAL LIGHTING RELAY PANEL
SCALE: NTS

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

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SPECTRUM ENGINEERS
324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH & FABRICATION BUILDLING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER No. 12735266 MARIO SEBASTIAN MARTINEZ STATE OF UTAH
11/14/2024

LIGHTING FIXTURE SCHEDULES

EL601.2

(801) 355-5915

LIGHTING/SPACE CONTROL TYPE SCHEDULE

WIRING LEGEND

- LINE VOLTAGE WIRING
- 0-10V WIRING
- CAT5E CABLING
- WIRING BY OTHERS
- TMP SEGMENT NETWORK CABLING

APPROVED MANUFACTURERS

1. WATTSTOPPER (BASIS OF DESIGN)
2. NLIGHT
3. LEVITON
4. WAVELINX

LIGHTING CONTROL ID

1. # = NUMBER OF ZONES
2. D = DIMMING, S = SWITCHING
3. P = DAYLIGHT PHOTOCELL
4. L = PLUG LOAD CONTROLLER
5. # = INSTANCE

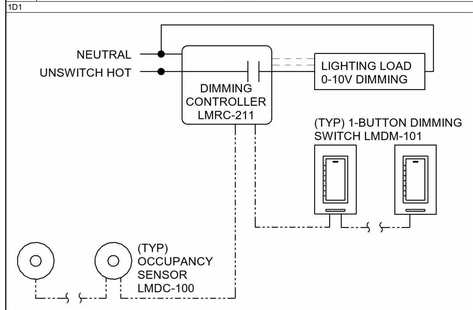
GENERAL NOTES

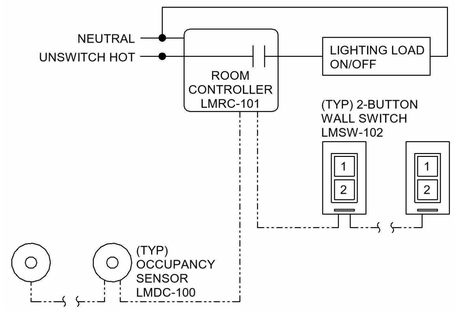
1. COORDINATE INITIAL PROGRAMMING WITH OWNER AND MODIFY CONTROL TIMES AND OPERATION AS REQUESTED BY OWNER.
2. PROVIDE FINE TUNING PROGRAMMING AND ADJUSTMENTS UPON REQUEST BY OWNER WITHIN FIRST 6 MONTHS AFTER SUBSTANTIAL COMPLETION.
3. PROVIDE CUSTOMIZED ENGRAVED PERMANENT BUTTON LABELS ON EACH SWITCH, LABEL TO MATCH BUTTON LABEL ID OR AS DIRECTED BY OWNER.
4. PART NUMBERS SHOWN ARE BASED ON WATTSTOPPER AS THE BASIS OF DESIGN. ALL APPROVED MANUFACTURERS ARE SUBJECT TO MEETING ALL FUNCTIONS AND CAPABILITIES OF THE BASIS OF DESIGN SYSTEM AND PRODUCTS. FAILURE TO MEET THESE SHALL REQUIRE THE CONTRACTOR TO PROVIDE A SYSTEM THAT DOES AT NOT ADDITIONAL COST.

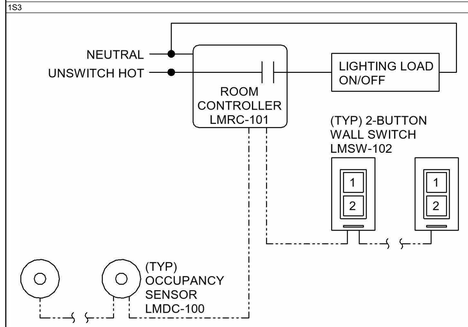
GENERAL NOTES

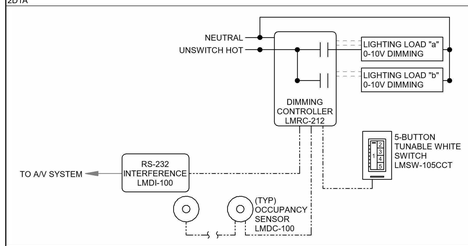
5. REFER TO PLANS FOR LOCATIONS AND QUANTITIES OF DEVICES.
6. INSTALL ONE OF EACH CONTROL TYPE WITH PROGRAMMING, ADJUST, AND OBTAIN OWNERS APPROVAL PRIOR TO PROGRAMMING THE REMAINING CONTROLS.
7. WIRING MAY VARY BETWEEN MANUFACTURERS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE REQUIRED WIRING THAT WILL BOTH MEET THE MANUFACTURERS REQUIREMENTS AND MATCH WITH THE SHOWN SYSTEM.
8. PROVIDE COMPLETE SHOP DRAWING SUBMITTALS INCLUDING OCCUPANCY SENSOR LAYOUT AND COVERAGE PATTERNS. PROVIDE ADDITIONAL SENSORS AS REQUIRED FOR 100% COVERAGE OF SPACES WITH OCCUPANCY SENSOR CONTROL.

ID / DETAIL	LIGHTS ON CONTROL	LIGHTS OFF CONTROL	LIGHTING CONTROL TYPE	DAYLIGHT SENSOR SETTING (FC)	TIME DELAY TO OFF (MIN.)	BAS AUX RELAY SIGNAL	PLUG LOAD CONTROLLER	NETWORKED CONTROLS	BUTTON_1	BUTTON_2	BUTTON_3	BUTTON_4	BUTTON_5	BUTTON_6	BUTTON_7	BUTTON_8	BUTTON_9	NOTES
1D1	MANUAL & OCCUPANCY	MANUAL OR OCCUPANCY	DIMMING 0-10V	-	15	-	-	-	FUNCTION: PRESS TOP-ON, HOLD TOP-RAISE LABEL ID: TOP-"ON/RAISE" BOTTOM-"OFF/ LOWER"	-	-	-	-	-	-	-	-	
1S2	MANUAL & OCCUPANCY	MANUAL OR OCCUPANCY	ON/OFF	-	20	-	-	-	FUNCTION: PRESS-ON LABEL ID: "ON"	FUNCTION: PRESS-OFF LABEL ID: "OFF"	-	-	-	-	-	-	-	
1S3	MANUAL OR OCCUPANCY	MANUAL OR OCCUPANCY	ON/OFF	-	20	-	-	-	FUNCTION: PRESS-ON LABEL ID: "ON"	FUNCTION: PRESS-OFF LABEL ID: "OFF"	-	-	-	-	-	-	-	
2D1A	MANUAL & OCCUPANCY	MANUAL OR OCCUPANCY	DIMMING 0-10V	-	15	-	-	-	TOGGLE PRESS TOP-ON, PRESS BOTTOM-OFF, HOLD TOP-RAISE, HOLD BOTTOM-"OFF/ LOWER"	FUNCTION: PRESS-PRESET SCENE #01 ZONE "a" 100% ZONE "b" 100% LABEL ID: "PRE #1"	FUNCTION: PRESS-PRESET SCENE #02 ZONE "a" 0% ZONE "b" 50% LABEL ID: "PRE #2"	FUNCTION: PRESS-SELECT ZONE "a" FOR DIMMING LABEL ID: "ZONE a"	FUNCTION: PRESS-SELECT ZONE "b" FOR DIMMING LABEL ID: "ZONE b"	-	-	-	-	









LINE VOLTAGE SENSOR CONTROL SCHEDULE3

SYMBOL	DESCRIPTION	WIRING DIAGRAM	LIGHTS ON CONTROL	LIGHTS OFF CONTROL	LIGHTING CONTROL TYPE	TIME DELAY TO OFF (MIN.)	BUTTON_1	BUTTON_2	BUTTON_3	APPROVED MANUFACTURERS
	DIMMER SWITCH/VACANCY SENSOR COMBO, DUAL TECHNOLOGY, WALL SWITCH	NEUTRAL, UNSWITCH HOT, (TYP) 1-BUTTON SWITCH SENSOR, 2|1|3, LIGHTING LOAD 0-10V DIMMING	MANUAL	MANUAL OR OCCUPANCY	DIMMING 0-10V	15	FUNCTION: PRESS-ON/OFF	FUNCTION: DIM DOWN LABEL: ARROW DOWN	FUNCTION: DIM UP LABEL: ARROW UP	SENSORWORX nLIGHT ILC
	DIMMER SWITCH/OCCUPANCY SENSOR COMBO, DUAL TECHNOLOGY, WALL SWITCH	NEUTRAL, UNSWITCH HOT, (TYP) 1-BUTTON SWITCH SENSOR, 2|1|3, LIGHTING LOAD 0-10V DIMMING	AUTO ON TO 50% MAXIMUM	MANUAL OR OCCUPANCY	DIMMING 0-10V	15	FUNCTION: PRESS-ON/OFF	FUNCTION: DIM DOWN LABEL: ARROW DOWN	FUNCTION: DIM UP LABEL: ARROW UP	SENSORWORX nLIGHT ILC

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LICENSED PROFESSIONAL ENGINEER No. 12735266 MARIO SEBASTIAN MARTINEZ STATE OF UTAH

11/14/2024

LIGHTING CONTROL SCHEDULES

EL602.2

(801) 355-5915

11/15/2024 4:00:23 PM

SHEET KEYNOTES

1 MULTI-POINT CAMERAS INSTALLED AT 10 FEET, TYPICAL.

2 HEAT DETECTOR PROVIDED IN PLACE OF SMOKE DETECTOR TO AVOID FALSE TRIPPING DUE TO THE USE OF THE SPACE.

GENERAL SHEET NOTES

1 FIRE ALARM NOTIFICATION DEVICES SHALL BE ADJUSTED AS REQUIRED TO PROVIDE PROPER COVERAGE AND SOUND LEVELS.

2 ALL FIRE ALARM DEVICES SHALL BE MOUNTED SUCH THAT THEY ARE VISIBLE FROM THE GROUND AND EASILY ACCESSIBLE FOR MAINTENANCE.

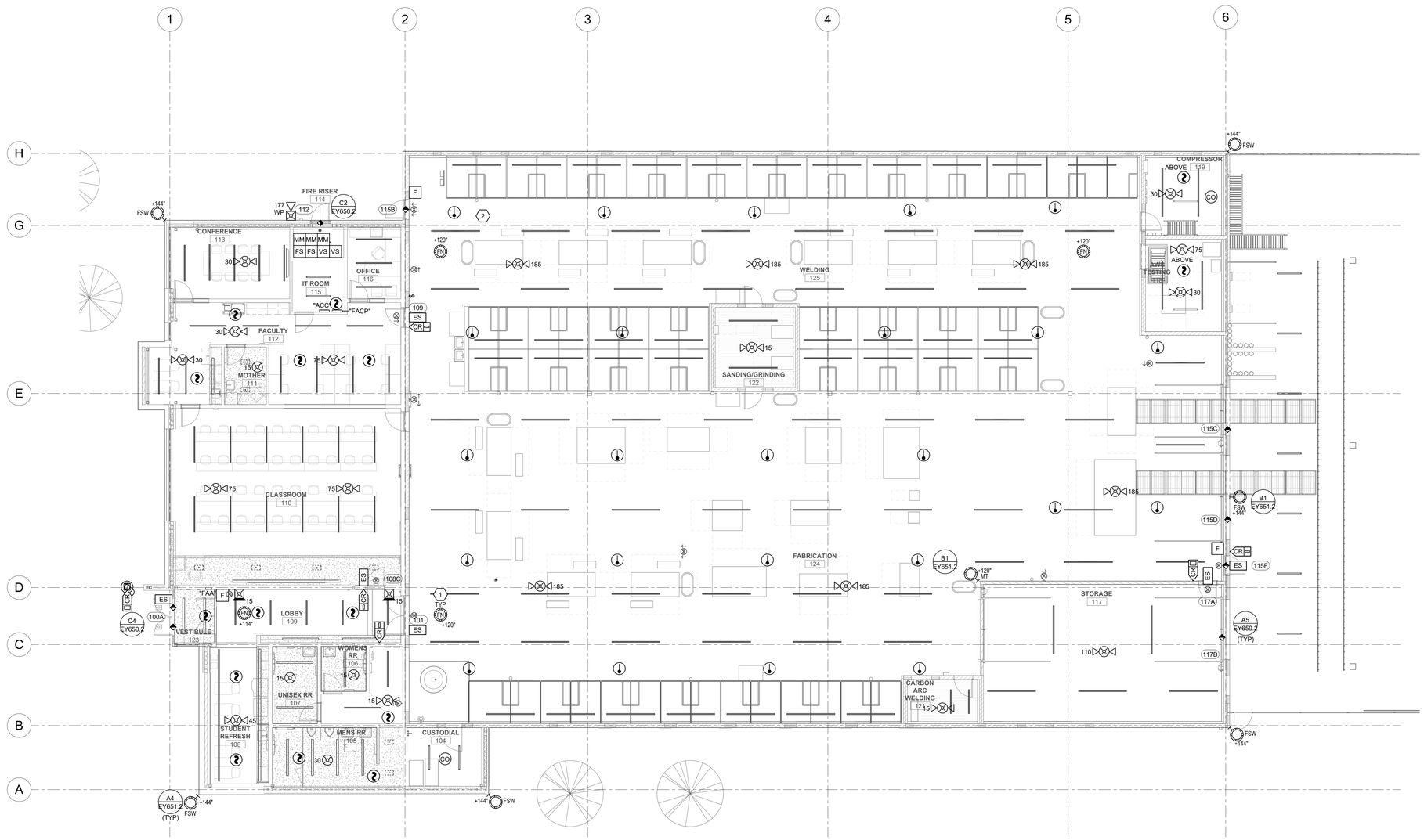
3 CONTROL MODULE AND RELAY TIED INTO BAS PANEL FOR INPUT TO FAN SHUTDOWN UPON ACTIVATION OF DUCT OR SMOKE DETECTORS. COORDINATE RELAY SIZE AND VOLTAGE WITH EQUIPMENT.

4 PROVIDE POTTER SASH-24 WEATHERPROOF EXTERIOR HORN/STROBE OR EQUAL AT FIRE DEPARTMENT CONNECTION LOCATION. DEVICE SHALL BE 24VDC POWERED BY FACP AND DIRECTLY WIRED THROUGH FLOW SWITCH SUCH THAT THE DEVICE WILL OPERATE UPON WATER FLOW AND SILENCE ONLY UPON CESSATION OF WATER FLOW. COORDINATE AND ADJUST LOCATION TO WITHIN 5 FEET OF FIRE DEPARTMENT CONNECTION LOCATION.

5 TYPICAL: CORRIDOR SMOKE DETECTOR SPACING SHALL NOT EXCEED 30FT ON CENTER.

6 ALL EXPOSED RACEWAYS LOCATED IN LABS SHALL BE ROUTED HORIZONTALLY 8FT OR HIGHER UNLESS NOTED OTHERWISE.

7 LOCATE DUCT DETECTORS SUCH THAT THEY ARE VISIBLE FROM FINISHED FLOOR WHERE POSSIBLE. PROVIDE REMOTE TEST SWITCH WHERE DUCT DETECTORS ARE CONCEALED FROM VIEW.



A1 LEVEL 1 AUXILIARY PLAN
SCALE: 1/8" = 1'-0"

NORTH

11/15/2024 4:00:31 PM

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MARIO SEBASTIAN
STATE OF UTAH
11/14/2024

LEVEL 1
AUXILIARY PLAN

EY101.2

(801) 355-5915

SHEET KEYNOTES

1 RELAY CONNECTED TO FIRE ALARM CONTROL MODULE AND AND BAS PANEL FOR FAN SHUTDOWN.

2 DUCT DETECTOR IN RETURN AND SUPPLY AIR RISER, INSTALL IN STRAIGHT SECTION OF DUCT AS PER NFPA 72 REQUIREMENTS. COORDINATE DUCT DETECTOR AND AIR HANDLER EVAPORATOR INTAKE MOISTURE SUCH THAT NO NUISANCE TRIPPING WILL OCCUR.

GENERAL SHEET NOTES

1 FIRE ALARM NOTIFICATION DEVICES SHALL BE ADJUSTED AS REQUIRED TO PROVIDE PROPER COVERAGE AND SOUND LEVELS.

2 ALL FIRE ALARM DEVICES SHALL BE MOUNTED SUCH THAT THEY ARE VISIBLE FROM THE GROUND AND EASILY ACCESSIBLE FOR MAINTENANCE.

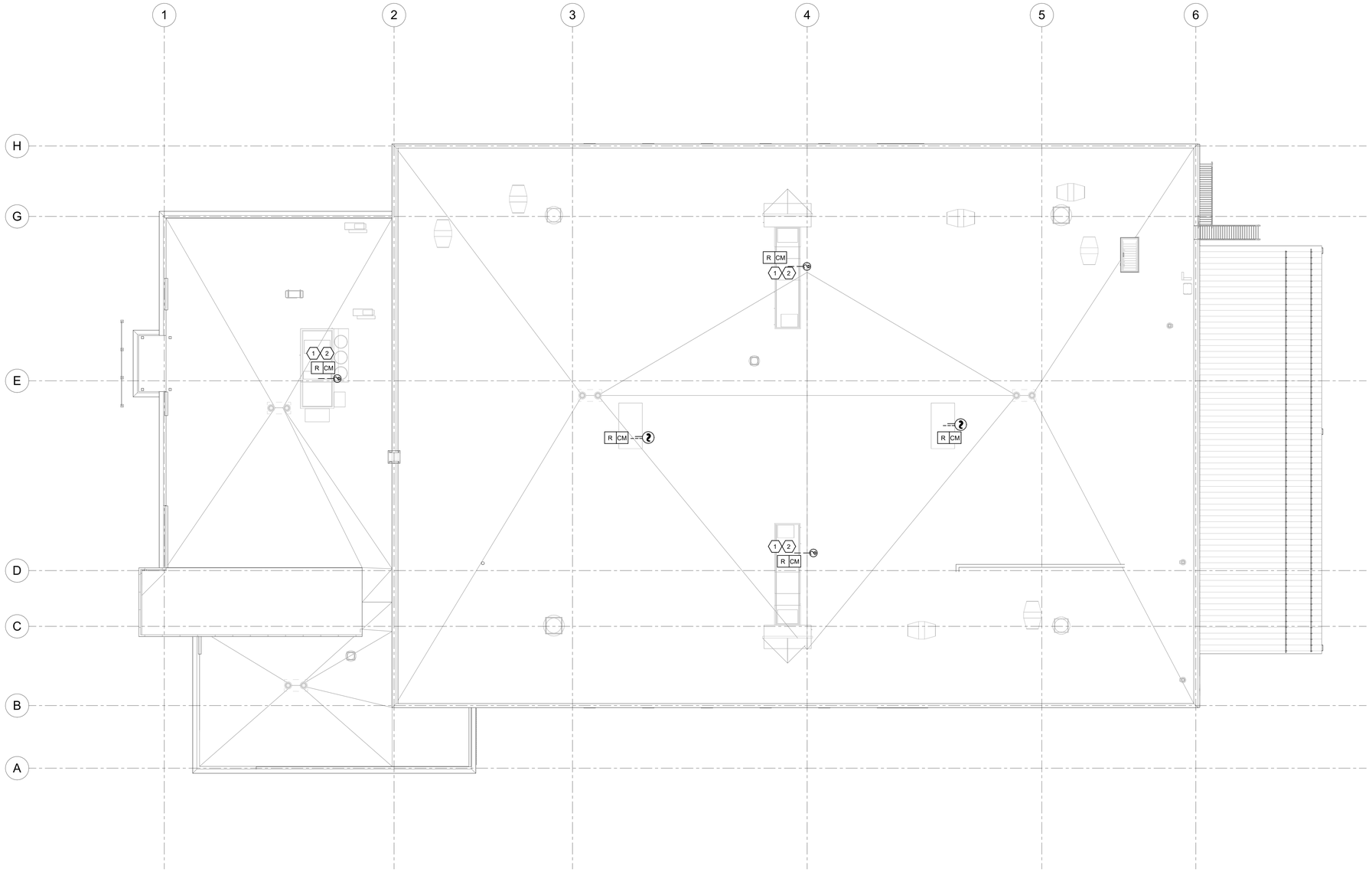
3 CONTROL MODULE AND RELAY TIED INTO BAS PANEL FOR INPUT TO FAN SHUTDOWN UPON ACTIVATION OF DUCT OR SMOKE DETECTORS. COORDINATE RELAY SIZE AND VOLTAGE WITH EQUIPMENT.

4 PROVIDE POTTER SASH-24 WEATHERPROOF EXTERIOR HORN/STROBE OR EQUAL AT FIRE DEPARTMENT CONNECTION LOCATION. DEVICE SHALL BE 24VDC POWERED BY FACP AND DIRECTLY WIRED THROUGH FLOW SWITCH SUCH THAT THE DEVICE WILL OPERATE UPON WATER FLOW AND SILENCE ONLY UPON CESSATION OF WATER FLOW. COORDINATE AND ADJUST LOCATION TO WITHIN 5 FEET OF FIRE DEPARTMENT CONNECTION LOCATION.

5 TYPICAL: CORRIDOR SMOKE DETECTOR SPACING SHALL NOT EXCEED 30FT ON CENTER.

6 ALL EXPOSED RACEWAYS LOCATED IN LABS SHALL BE ROUTED HORIZONTALLY 8FT OR HIGHER UNLESS NOTED OTHERWISE.

7 LOCATE DUCT DETECTORS SUCH THAT THEY ARE VISIBLE FROM FINISHED FLOOR WHERE POSSIBLE. PROVIDE REMOTE TEST SWITCH WHERE DUCT DETECTORS ARE CONCEALED FROM VIEW.



A1 ROOF AUXILLARY PLAN
SCALE: 1/8" = 1'-0"

NORTH

11/15/2024 4:00:36 PM

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PROJECT **24-038**

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STATE OF UTAH
11/14/2024

ROOF AUXILIARY PLAN

EY102.2

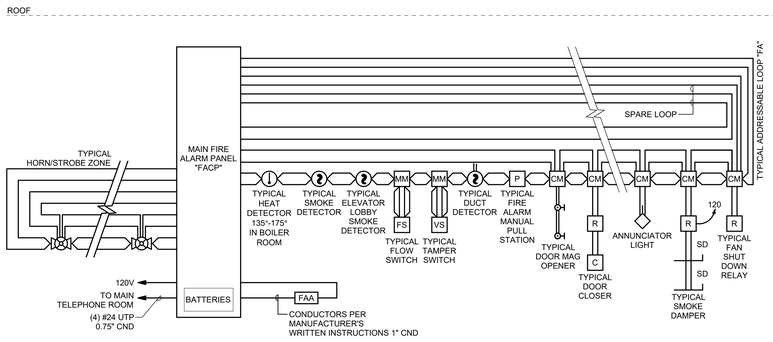
(801) 355-5915

WIRING SCHEDULE

FUNCTION	< 500'	< 1000'	1000'-3000'	> 3000'
ADDRESSABLE LOOP	#18 TSP	#18 TSP	#16 TSP	#14 TSP
POWER LOOP	#14 THWN	#14 THWN	#12 THWN	#10 THWN
SPARE LOOP	#14 THWN	#14 THWN	#12 THWN	#10 THWN
STROBE HORNS	#14 THWN	#14 THWN	#12 THWN	#10 THWN
MAGNETIC DOOR HOLDER	#12 THWN	#10 THWN		
SPEAKERS	#16 TSP	#16 TSP	#14 TSP	#14 TSP

NOTIFICATION SCHEDULE

SYMBOL	STROBE SIZE	COVERAGE	AVERAGE CURRENT	MAXIMUM PER CIRCUIT ALONE
15	15 CD	20'x20'	.085A	17
30	30 CD	30'x30'	.135A	11
75	75 CD	40'x40'	.200A	7
110	110 CD	50'x50'	.225A	6



A1 FIRE ALARM RISER

SCALE: NTS

11/15/2024 4:00:39 PM

GENERAL SHEET NOTES

1 PLANS ARE BASED UPON 99 MONITOR AND CONTROL DEVICES PER ADDRESSABLE LOOP. OTHER CONFIGURATIONS ARE ACCEPTABLE SUBJECT TO CONTRACTOR ALLOWING FOR INCREASED WIRING REQUIREMENTS AND SUBMITTAL DRAWINGS SHOWING NEW WIRING CONFIGURATION. MAXIMUM INITIAL DEVICES PER LOOP SHALL NOT EXCEED 75% MAXIMUM ALLOWABLE.

2 PLANS ARE BASED UPON THE WIRING SCHEDULE SHOWN. WHERE MANUFACTURER'S REQUIREMENTS EXCEED REQUIREMENTS SHOWN, INCLUDE ADDITIONAL ASSOCIATED COSTS AND SUBMITTAL DRAWINGS INDICATING NEW WIRING CONFIGURATION.

3 PLANS ARE BASED UPON 2 AMPS AT 24 VDC, NOT TO EXCEED 75% (1.50 AMPS AVAILABLE), POWER SUPPLY CAPACITY PER NOTIFICATION CIRCUIT. NOTIFICATION DEVICE LOADS ARE BASED UPON NOTIFICATION DEVICE SCHEDULE SHOWN. INCLUDE ADDITIONAL ASSOCIATED COSTS FOR INCREASED WIRING AND POWER SUPPLY CAPACITY IF LOADS OF ACTUAL DEVICES PROVIDED EXCEED CIRCUIT CAPACITY, OR IF LOAD OUTPUT OF ACTUAL POWER SUPPLIES PROVIDED IS SIZED DIFFERENTLY. PROVIDE SUBMITTAL DRAWINGS SHOWING NEW WIRING CONFIGURATION.

4 FLOW AND TAMPER CONFIGURATION BASED UPON FIRE SPRINKLER DESIGN CONCEPT. FIELD VERIFY ACTUAL REQUIREMENTS. INCLUDE ANY ADDITIONAL MONITOR MODULES REQUIRED BY ACTUAL DESIGN REQUIREMENTS.

5 HEAT DETECTORS WHEN INSTALLED IN ELEVATOR SHAFTS OR MECHANICAL ROOMS FOR ELEVATOR SHUT DOWN SHALL HAVE HEAT DETECTOR WITH LOWER RESPONSE TIME INDEX THAN SPRINKLER HEAD.

6 PROVIDE POWER SUPPLY CAPACITY AS REQUIRED FOR DOOR HOLD OPENS SHOWN.

7 BATTERY CAPACITY TO BE ADEQUATE TO OPERATE 15 MINUTES AFTER 24 HOURS PLUS 25% SPARE CAPACITY.

8 VFD REQUIRES TWO RELAYS, ONE FOR SMOKE CONTROL, ONE SPARE.

9 RUN SPARE LOOPS IN SAME CONDUIT. DO NOT EXCEED 40% AREA FILL OF CONDUITS.

10 PROVIDE DUCT DETECTORS FOR SUPPLY AND RETURN AIR SYSTEMS OVER 2000 CFM. INSTALL DUCT DETECTORS PER NFPA 72 REQUIREMENTS AND PROVIDE ADDITIONAL DUCT DETECTORS DEPENDING UPON FINAL DUCT ARRANGEMENT.

11 PROVIDE DUCT DETECTOR AT EACH FLOOR, PRIOR TO CONNECTION TO A COMMON RETURN AND PRIOR TO RECIRCULATING OR FRESH AIR INLET IN AIR RETURN SYSTEMS OVER 15,000 CFM CAPACITY AND SERVING MORE THAN ONE STORY.

12 PROVIDE MANUAL PULL STATIONS IN BOILER ROOMS AND KITCHENS.

13 PROVIDE ONE YEAR OFF SITE MONITORING INCLUDING ALL INTERFACE DEVICES AND MONITORING CHARGES. COORDINATE WITH BUILDING OWNER'S OFF SITE MONITORING COMPANY.

14 LOCATE SMOKE DETECTORS MINIMUM 3' FROM AIR SUPPLY AND RETURN LOUVERS.

15 PROVIDE SYNCHRONIZED STROBES THROUGHOUT FACILITY. PROVIDE SYNCHRONIZATION MODULES PER MANUFACTURER'S REQUIREMENTS. INCLUDE ADDITIONAL WIRING, IF REQUIRED.

16 INITIATING AND INDICATING LOOPS SHALL NOT SERVE AN AREA OF GREATER THAN 22,500 SQUARE FEET. PROVIDE ADDITIONAL LOOPS FOR AREAS LARGER THAN THIS.

17 ALL OUTPUT DEVICES ARE DESIGNED ON SYSTEMS WITH 2 AMP POWER SUPPLY.

18 HORN/STROBE BASED ON 120 MILLIAMPS, DOOR HOLDERS BASED ON 70 MILLIAMPS.

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FIRE ALARM RISER DIAGRAMS

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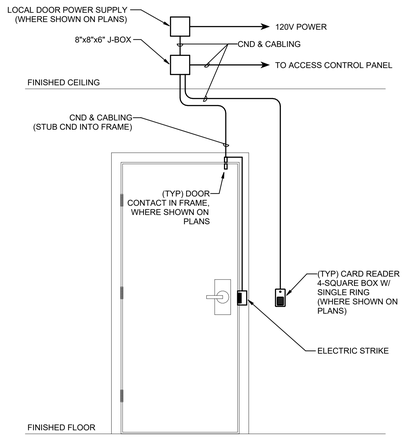
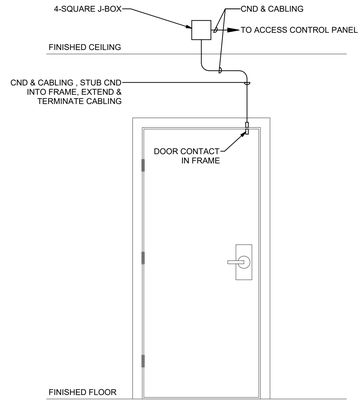
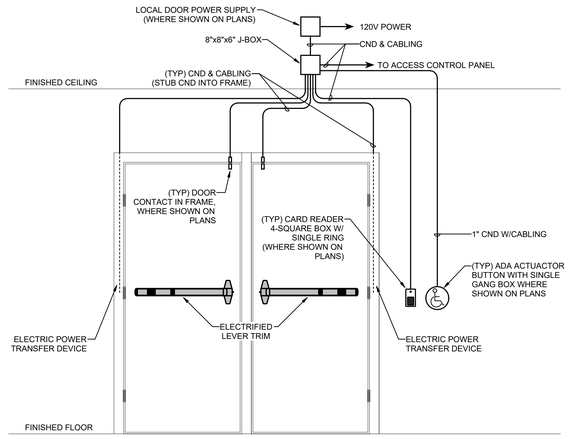


C1 SINGLE DOOR ELECTRIC STRIKE DETAIL
SCALE: NTS



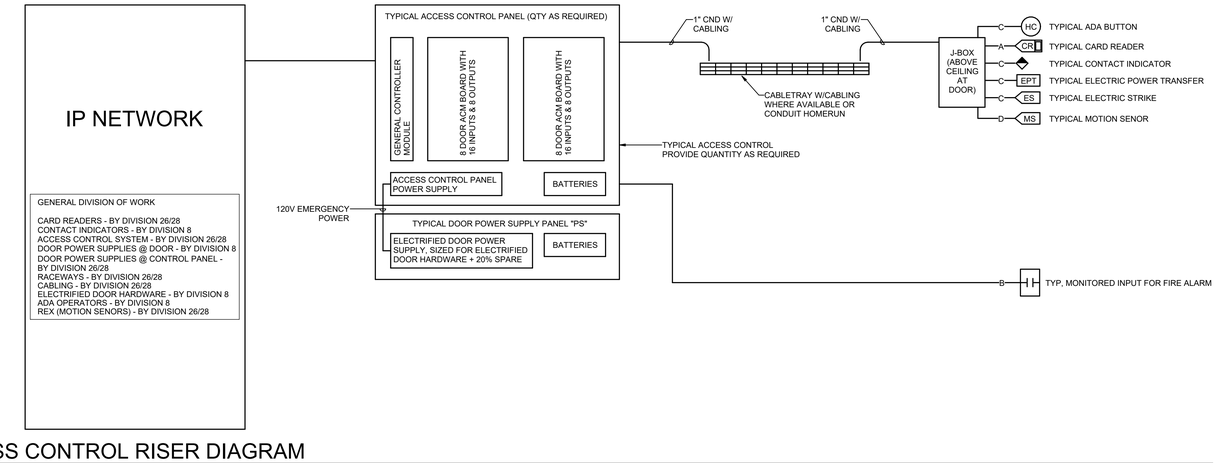
C2 SINGLE DOOR WITH DOOR CONTACT DETAIL
SCALE: NTS



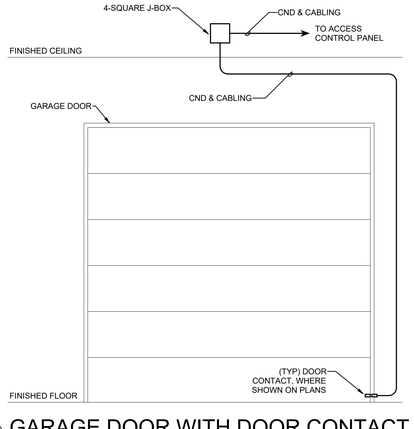
C4 DOUBLE DOOR ELECTRIFIED LATCH EXIT DEVICE DETAIL
SCALE: NTS

ACCESS CONTROL SYSTEM CONDUIT AND CABLING SCHEULE

A	1" CND W/ (1) #22/6 TWSP
B	0.75" CND W/ (1) #12/2 TWP
C	0.75" CND W/ (2) #22/2 TWP
D	0.75" CND W/ (2) #22/4 TWP



A1 ACCESS CONTROL RISER DIAGRAM
SCALE: NTS



A5 GARAGE DOOR WITH DOOR CONTACT DETAIL
SCALE: NTS

11/15/2024 4:00:42 PM

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ACCESS CONTROL RISER DIAGRAMS

EY650.2

(801) 355-5915

SECURITY CAMERA SCHEDULE

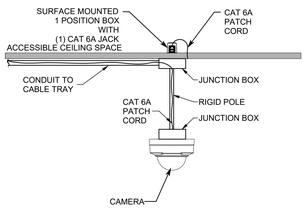
NOTES:

*** CAMERA HAS CAPABILITY OF AUDIO OR NO AUDIO**

GENERAL NOTES:

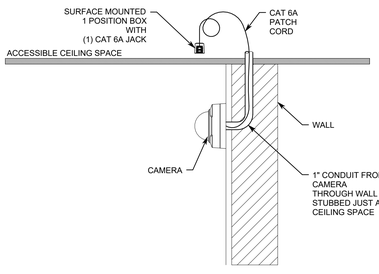
1. ELECTRICAL CONTRACTOR SHALL REVIEW OTHER DIVISION DRAWINGS FOR ANY ADDITIONAL REQUIREMENTS PRIOR TO BID.
2. ELECTRICAL CONTRACTOR SHALL REVIEW OTHER DIVISION SUBMITTALS FOR ANY EQUIPMENT REQUIRING CONNECTION BY ELECTRICAL CONTRACTOR AND COORDINATE ALL REQUIREMENTS PRIOR TO ROUGH-IN.

ID	DESCRIPTION	IR	WDR	AUDIO	VANDAL	LOCATION	IP RATING	MANUFACTURER (SERIES)	NOTES
FN	TYPE: 6 MP PANORAMIC MOUNTING: TELESCOPIC PENDANT FOCAL LENGTH: 1.56mm RESOLUTION: 2016 X 2016* FRAME RATE: 25/30 OPTIONS: NONE	YES	YES	YES*	IK10	INDOOR/OUTDOOR	IP66	AXIS M3077-PLVE	
FSW	TYPE: 6 MP PANORAMIC MOUNTING: WALL FOCAL LENGTH: 1.56mm RESOLUTION: 2016 X 2016* FRAME RATE: 25/30 OPTIONS: NONE	YES	YES	YES*	IK10	INDOOR/OUTDOOR	IP66	AXIS M3077-PLVE	
MT	TYPE: 6 MP PANORAMIC MOUNTING: WALL FOCAL LENGTH: 1.56mm RESOLUTION: 2016 X 2016* FRAME RATE: 25/30 OPTIONS: NONE	NO	NO	NO	IK10	INDOOR/OUTDOOR	IP66	AXIS P3737-PLE	



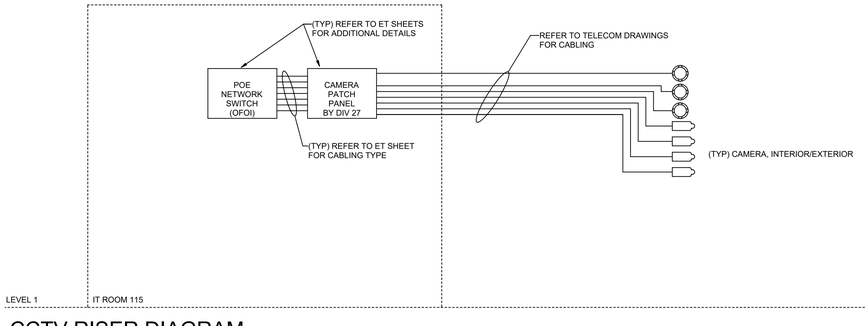
C1 CAMERA - POLE MOUNT DETAIL

SCALE: NTS



B1 CAMERA - WALL MOUNT DETAIL

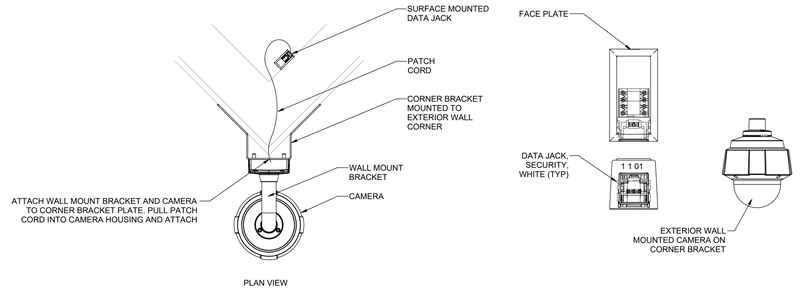
SCALE: NTS



A1 CCTV RISER DIAGRAM

SCALE: NTS

NOTE: REFER TO TELECOM DRAWINGS FOR EXACT PATCH CORD & DATA JACK REQUIREMENTS.



A4 WALL MOUNTED EXTERIOR CORNER CAMERA MOUNTING DETAIL

SCALE: NTS

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PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

SPECTRUM ENGINEERS
324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH & FABRICATION BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN MARTINEZ
STATE OF UTAH

11/14/2024

CCTV RISER DIAGRAM

EY651.2

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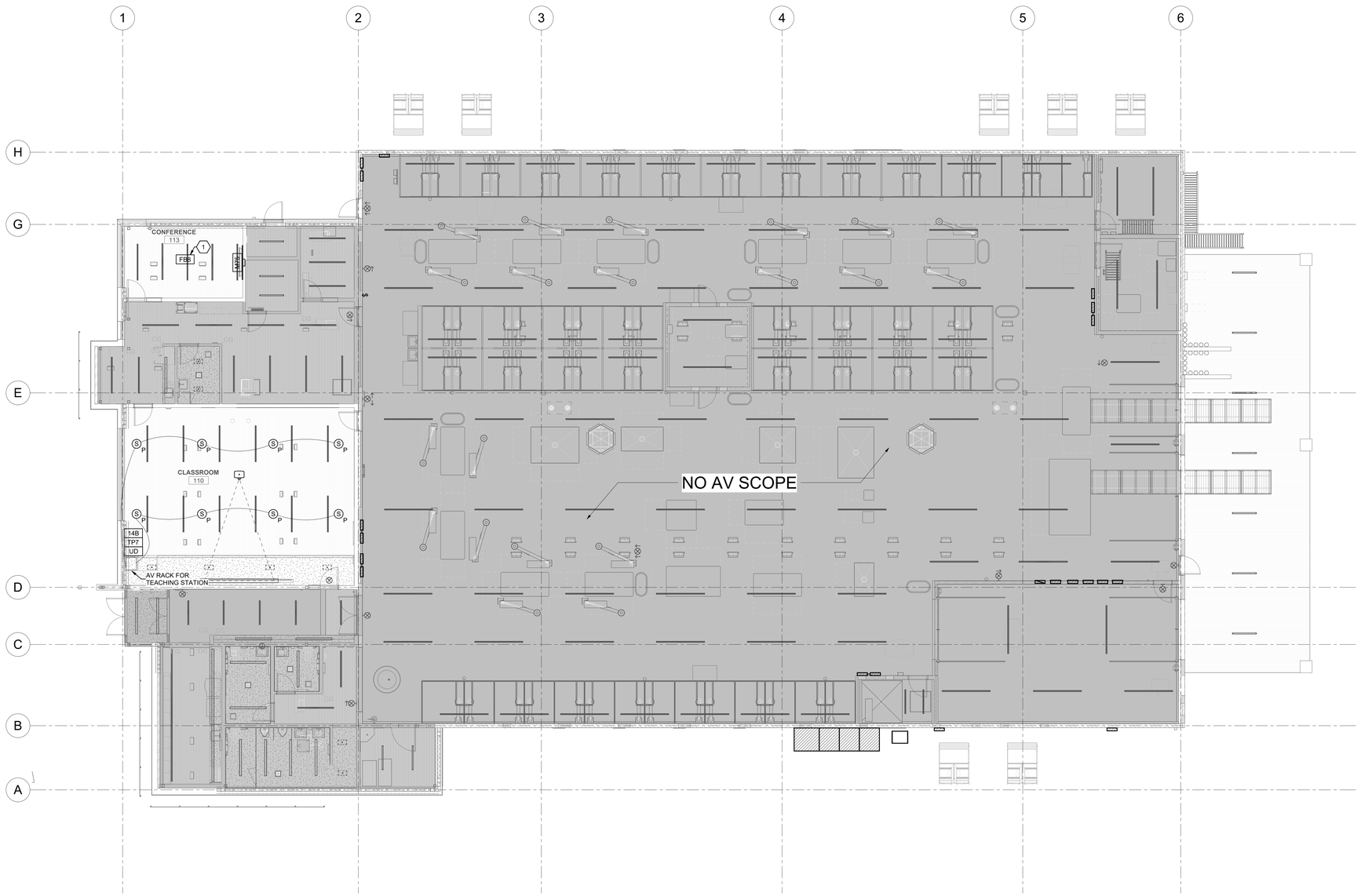

A1 LEVEL 1 AUDIO VISUAL ROUGH-IN RCP
SCALE: 1/8" = 1'-0"

NORTH

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SHEET KEYNOTES

1 INSTALL THE SPECIFIED FLOOR BOX FLUSH IN FINISHED FLOOR. CONFIRM EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO INSTALLATION.

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MARIO SEBASTIAN MARTINEZ
STATE OF UTAH

11/14/2024

LEVEL 1 AV ROUGH-IN PLAN

EJ101.2

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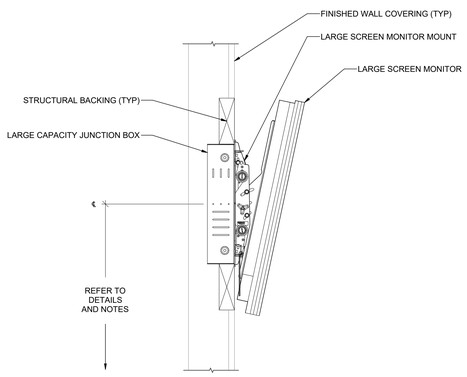
E

D

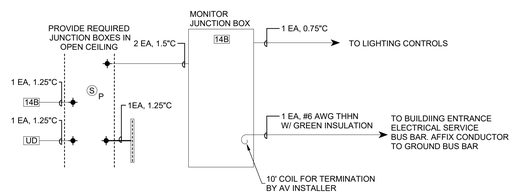
C

B

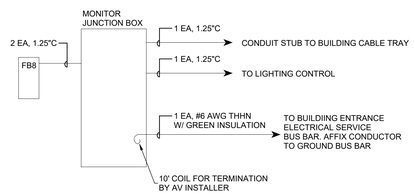
A



A1 LARGE SCREEN MONITOR MOUNTING DETAIL
SCALE: NTS



A2 AUDIO AND VIDEO SYSTEM SINGLE LINE DIAGRAM - CLASSROOM
SCALE: NTS



A4 AUDIO VIDEO AND CONTROL SYSTEMS SINGLE LINE DIAGRAM - SMALL CONFERENCE
SCALE: NTS

11/15/2024 4:01:11 PM

1 | 2 | 3 | 4 | 5 | 6

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Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
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355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN
STATE OF UTAH

11/14/2024

AV ROUGH-IN DETAILS & DIAGRAMS

EJ601.2

(801) 355-5915

LIGHTNING PROTECTION LEGEND

SYMBOL	DESCRIPTION
LP	CLASS 1 ALUMINUM CONDUCTOR
	NO. 4/∅ BARE COPPER
	CLASS 2 COPPER GROUNDING COUNTERPOISE (GROUND RING)
A	AIR TERMINAL
TR	THROUGH ROOF SPLICE
B	COPPER CLAD GROUND ROD WITH CADWELD CONNECTION
B	BOND TO EQUIPMENT

SHEET KEYNOTES

1 (TYP) GROUNDING COUNTERPOISE CLASS II COPPER MAIN CONDUCTORS 3' DEEP AND 6' FROM BUILD FOUNDATION.

2 TEST WELL, CONNECT ELECTROLYTIC GROUND ROD AND MAIN GROUND BAR.

GENERAL SHEET NOTES

1 INDICATED LOCATION OF MECHANICAL EQUIPMENT IS APPROXIMATE AND PROVIDED BY OTHERS. COORDINATE EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

2 REFER TO EE701 FOR TYPICAL MOUNTING AND ALIGNMENT OF ELECTRICAL DEVICES.

3 LOCATE ALL EQUIPMENT DISCONNECTS IN ACCESSIBLE LOCATION ADJACENT TO EQUIPMENT AND POSITIONED TO COMPLY WITH NEC WORK SPACE CLEARANCES.

4 CONTRACTOR IS RESPONSIBLE FOR BECOMING FAMILIAR WITH EXISTING CONDITIONS AND VERIFYING THE CONDITIONS PRIOR TO BIDDING PROJECT. IF ANY DISCREPANCIES OCCUR BETWEEN THE EXISTING PHYSICAL CONDITIONS ON SITE AND THE CONDITIONS DESCRIBED IN THE DRAWINGS, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING.

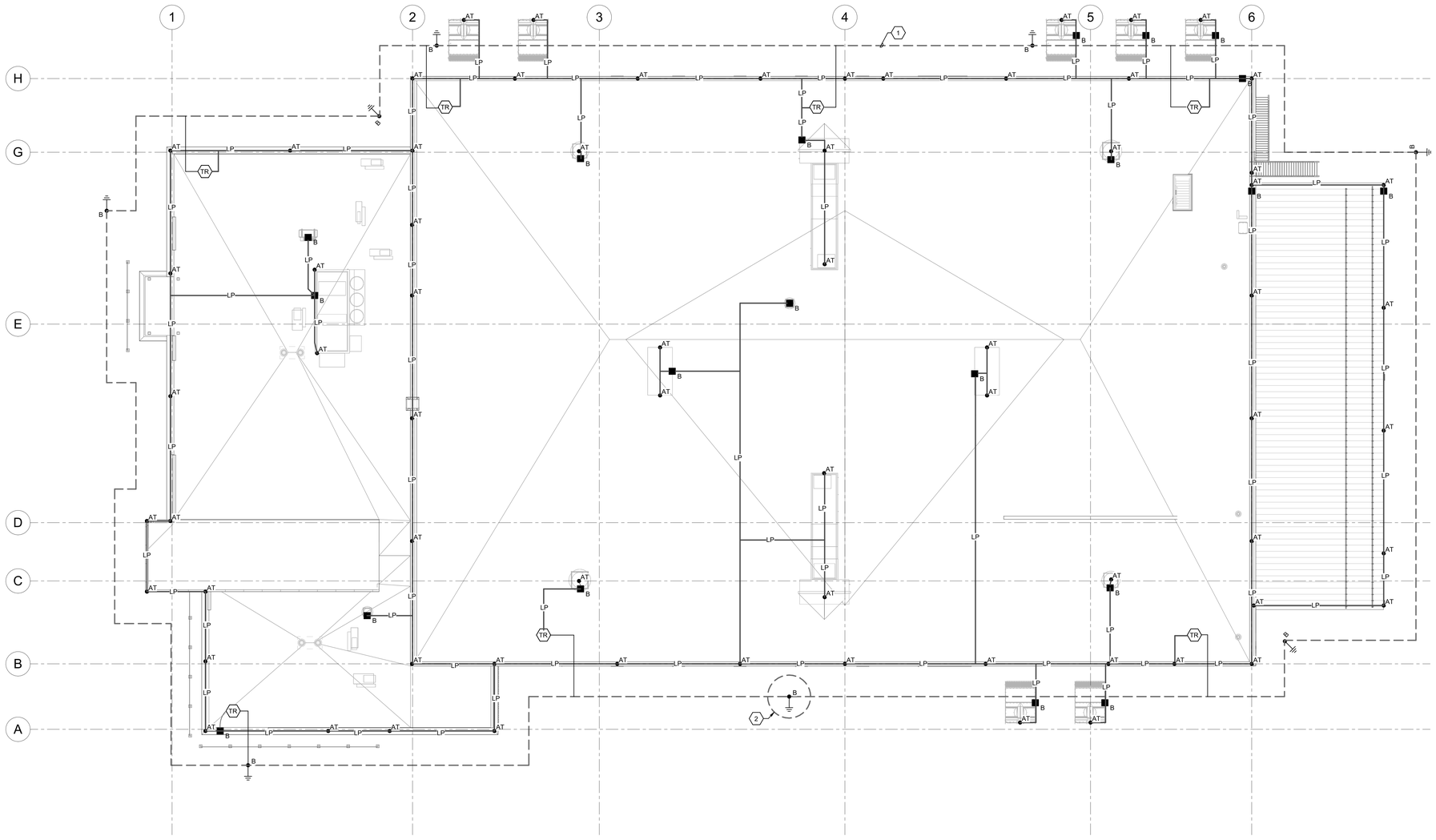
5 CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE PUBLIC AND SAFEGUARDING THE CONSTRUCTION SITE AND ADJACENT PUBLIC SPACES PER IBC CHAPTER 33.

6 THE CAMPUS SITE AND ALL BUILDINGS WILL BE USED AND OCCUPIED THROUGHOUT THE DURATION OF THE PROJECT. CONTRACTOR SHALL MAINTAIN THE SITE AND BUILDINGS COMPLETELY USABLE DURING THE PROJECT.

7 CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN CITY AND/OR AUTHORITIES HAVING JURISDICTION PERMITS FOR WORK AS REQUIRED FOR PROJECT. THIS INCLUDES BUT IS NOT LIMITED TO TRAFFIC PLANS AND SIGNAGE.

8 TYPICAL FOR ALL OPEN TO STRUCTURE CEILING AREAS - POWER CABLING AND CONTROLS CABLING SHALL BE INSTALLED IN CONDUIT IN A NEAT AND PROFESSIONAL MANNER, PARALLEL AND PERPENDICULAR TO STRUCTURE WITH CONDUIT UP IN STUCTURE AND PAINTED TO MATCH SURFACE. ALL LOW VOLTAGE CABLING SHALL BE INSTALLED IN TRAY OR CONDUIT. INSTALLATION SHALL COMPLY WITH NECA STANDARDS.

9 COORDINATE EXACT LOCATIONS OF FLOORBOXES AND POKE THROUGH DEVICES WITH ARCHITECT AND BUILDING STRUCTURAL ELEMENTS PRIOR TO INSTALLATION AND ROUGH-IN.



A1 LIGHTNING PROTECTION PLAN
SCALE: 1/8" = 1'-0"

NORTH

11/15/2024 4:01:19 PM

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PROJECT **24-038**

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KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN
MONTOYA
STATE OF UTAH

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LIGHTNING PROTECTION PLAN

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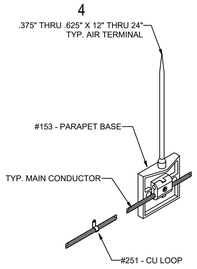
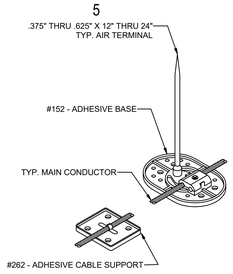
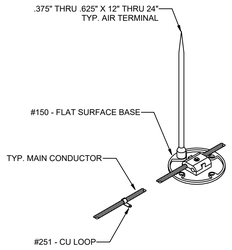


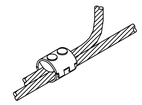
E4 #153 - PARAPET BASE
SCALE: NTS



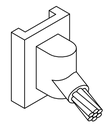
E5 #152 - ADHESIVE BASE
SCALE: NTS



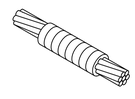
D4 #150 - FLAT SURFACE BASE
SCALE: NTS



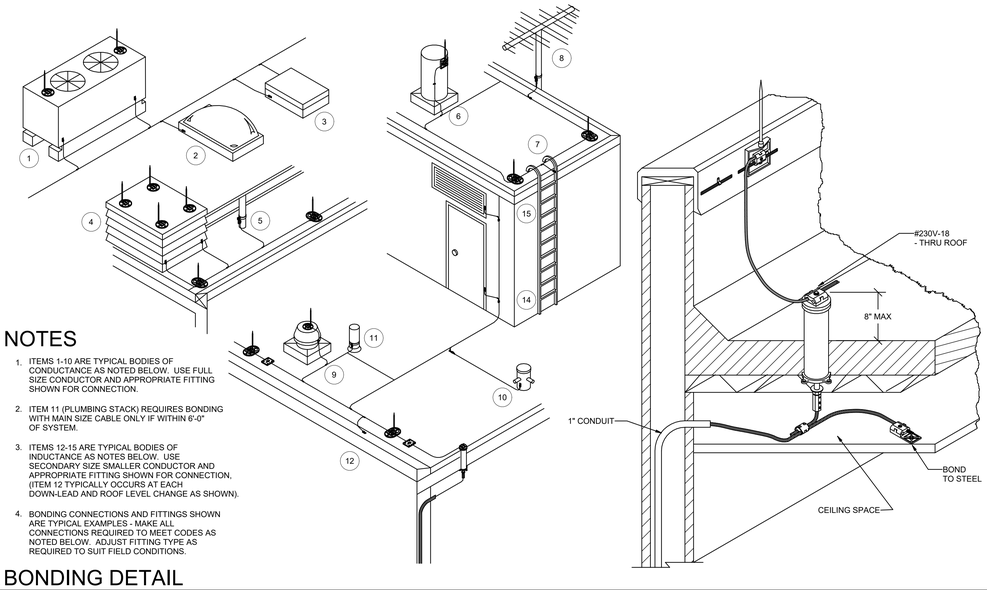
D5 #204 - PARALLEL CLAMP
SCALE: NTS



C4 VSC - 2Q - CADWELL MOLD
SCALE: NTS



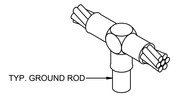
C5 BURNDEY YGH528
CONDUCTOR SPLICE
SCALE: NTS



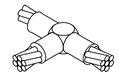
NOTES

1. ITEMS 1-10 ARE TYPICAL BODIES OF CONDUCTANCE AS NOTED BELOW. USE FULL SIZE CONDUCTOR AND APPROPRIATE FITTING SHOWN FOR CONNECTION.
2. ITEM 11 (PLUMBING STACK) REQUIRES BONDING WITH MAIN SIZE CABLE ONLY IF WITHIN 6'-0" OF SYSTEM.
3. ITEMS 12-15 ARE TYPICAL BODIES OF INDUCTANCE AS NOTES BELOW. USE SECONDARY SIZE SMALLER CONDUCTOR AND APPROPRIATE FITTING SHOWN FOR CONNECTION, (ITEM 12 TYPICALLY OCCURS AT EACH DOWN-LEAD AND ROOF LEVEL CHANGE AS SHOWN).
4. BONDING CONNECTIONS AND FITTINGS SHOWN ARE TYPICAL EXAMPLES - MAKE ALL CONNECTIONS REQUIRED TO MEET CODES AS NOTED BELOW. ADJUST FITTING TYPE AS REQUIRED TO SUIT FIELD CONDITIONS.

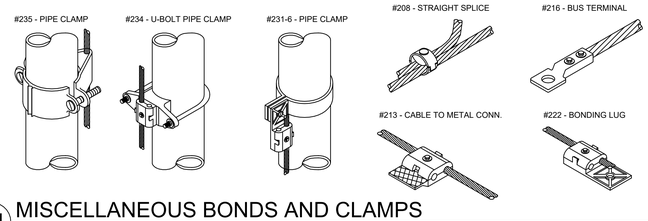
A1 BONDING DETAIL
SCALE: NTS



B4 GTC - 182Q CADWELD MOLD
SCALE: NTS



B5 TAC - 2Q2Q CADWELL MOLD
SCALE: NTS



A4 MISCELLANEOUS BONDS AND CLAMPS
SCALE: NTS

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GENERAL AND INSTALLATION NOTES (LPRO)

1. LOCATE AIR TERMINALS AS SHOWN. TAKE CARE TO ENSURE THAT ALL POINTS ARE WITHIN 2'-0" OF OUTSIDE BUILDING EDGE, OUTSIDE CORNERS, AND RIDGE ENDS, AND THAT MAXIMUM SPACING DOES NOT EXCEED 20'-0", AND THAT MINIMUM PROJECTION ABOVE OBJECT PROTECTED IS 10", (POINTS PROJECTING 24" MAY BE SPACED @ 25' MAX).
2. MAINTAIN HORIZONTAL OR DOWNWARD COURSING OF MAIN CONDUCTOR AND INSURE THAT ALL BENDS HAVE AT LEAST AND 8" RADIUS AND DO NOT EXCEED 90 DEGREES.
3. ATTACH ALL EXPOSED ROOF, DOWNLEAD AND BONDING CABLES AT 3'-0" ON CENTER MAXIMUM. VERIFY COMPATIBILITY OF ADHESIVE ON MEMBRANE ROOF APPLICATION PRIOR TO INSTALLATION.
4. BOND TO WATER SERVICE AND OTHER PIPING SYSTEMS AS SHOWN AND AS REQUIRED BY CODES.
5. INTERCONNECT LIGHTNING PROTECTION GROUND TO ELECTRIC, TELEPHONE, AND OTHER BUILDING GROUND SYSTEMS AS SHOWN OR AS REQUIRED BY CODE.
6. SYSTEM SHALL BE INSTALLED AS SHOWN TO ENSURE PROPER CODE COMPLIANCE AND SYSTEM CERTIFICATION. ANY MAJOR VARIANCE SHALL ENTAIL RESUBMITTAL AND NEW APPROVAL.
7. "AS BUILT" DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH CERTIFICATION PROCEDURES.
8. ALL MATERIALS TO BE UNDERWRITERS LABORATORIES APPROVED WITH "A" LABELS ON CONDUCTORS @ 10'-0" INTERVALS AND "B" LABELS ON ALL AIR TERMINALS.
9. COMPLETED INSTALLATION AS SHOWN SHALL BEAR U.L. MASTER LABEL "C" TO BE SECURED BY SYSTEM INSTALLER PER UL96A.
10. INSTALLATION SHALL COMPLY IN ALL RESPECTS TO L.P.I CODE 175. INSTALLATION SHALL BE MADE OR UNDER THE SUPERVISION OF AN L.P.I CERTIFIED MASTER INSTALLER.

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355 SOUTH 650 EAST
KAYSVILLE, UT 84037



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LIGHTNING PROTECTION DETAILS

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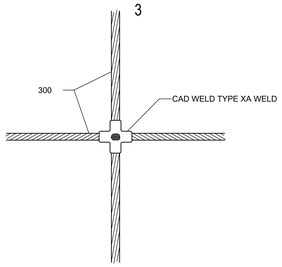
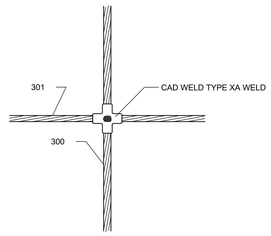
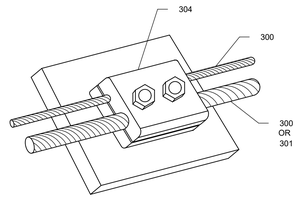


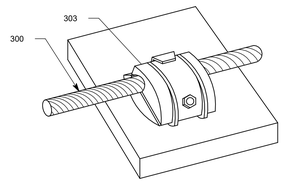
E3 #2/0 - #2/0 B.C. CONNECTION
SCALE: NTS



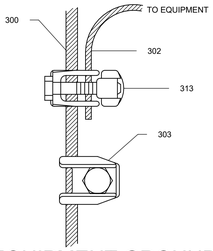
D3 #2/0 - #4/0 B.C. CONNECTION
SCALE: NTS



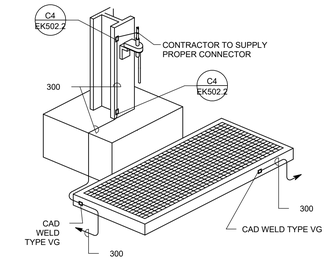
C3 STRUCTURE GROUNDING - 4/0 OR 2/0 RUN WITH 2/0 TAP
SCALE: NTS



C4 STRUCTURE GROUNDING - SINGLE RUN
SCALE: NTS



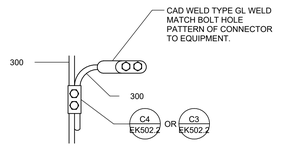
D5 EQUIPMENT GROUNDING 2/0 RUN WITH #2 TAP
SCALE: NTS



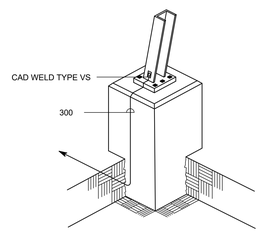
C5 SWITCH HANDLE & PLATFORM GROUNDING
SCALE: NTS

GROUND GRID EQUIPMENT LIST

EQUIP. NO.	QTY.	DESCRIPTION	MANUFACTURER	CATALOG NO.
300	AS REQ'D	# 2/0 AWG, STRANDED, SOFT DRAWN, COPPER CONDUCTOR	TBD	TBD
301	AS REQ'D	# 4/0 AWG, STRANDED, SOFT DRAWN, COPPER CONDUCTOR	TBD	TBD
302	AS REQ'D	# 2 AWG, SOLID, SOFT DRAWN COPPER CONDUCTOR TINNED	TBD	TBD
303	AS REQ'D	BRONZE GROUND CLAMP, 2/0 OR 4/0 CABLE TO FLAT GALVANIZED STEEL HARDWARE	TBD	TBD
304	AS REQ'D	BRONZE GROUND CLAMP, TWO EA. 2/0 OR 4/0 CABLES TO FLAT, GALVANIZED STEEL HARDWARE	TBD	TBD
305	AS REQ'D	BRONZE GROUND CLAMP - 1, 2, OR 3 CABLES TO 2-1/2" TUBE, 2/0 SOLID TO 250 MCM COPPER	TBD	TBD
306	AS REQ'D	BRONZE GROUND CLAMP - 1, 2, OR 3 CABLES TO 3" TUBE, 2/0 SOLID TO 250 MCM COPPER	TBD	TBD
307	AS REQ'D	BRONZE GROUND CLAMP - 1, 2, OR 3 CABLES TO 4" TUBE, 2/0 SOLID TO 250 MCM COPPER	TBD	TBD
308	AS REQ'D	BRONZE PARALLEL CONNECTOR - SPLIT BOLT TYPE C, FOR #2 SOLID COPPER	TBD	TBD
309	AS REQ'D	FLEXIBLE COPPER GROUNDING BRAID	TBD	TBD
310	AS REQ'D	BRONZE GROUND CLAMP - 1 CABLE TO 1 3/4" TUBE #4 SOLID TO 2/0 STRANDED COPPER	TBD	TBD
311	AS REQ'D	BRONZE PARALLEL CONNECTOR -SINGLE CENTER BOLT TYPE ST	TBD	TBD
312	AS REQ'D	3/8" 7 STRAND, GALVANIZED STEEL WIRE, B CODE	TBD	TBD
313	AS REQ'D	BRONZE PARALLEL CONNECTOR - TYPE KR WITH CABLE SEPARATOR 2/0 MAIN TO #2 TAP	TBD	TBD
314	AS REQ'D	BRONZE TERMINAL - CABLE TO TWO-HOLE FLAT PAD	TBD	TBD
315	AS REQ'D	-	TBD	TBD
316	AS REQ'D	-	TBD	TBD
317	AS REQ'D	-	TBD	TBD
318	AS REQ'D	-	TBD	TBD
319	AS REQ'D	-	TBD	TBD
320	AS REQ'D	-	TBD	TBD



B3 EQUIPMENT GROUNDING CONNECTION
SCALE: NTS



B4 STRUCTURE BASE GROUNDING TERMINATION
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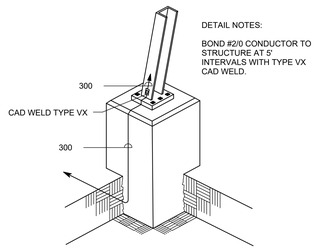

B5 STRUCTURE BASE GROUNDING TRANSITION
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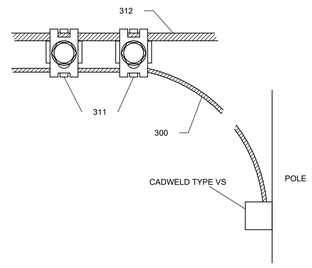

B6 OH STATIC WIRE GROUNDING
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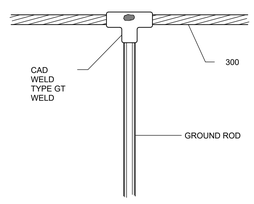
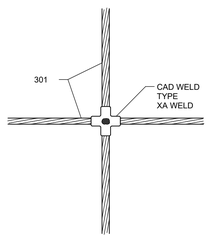
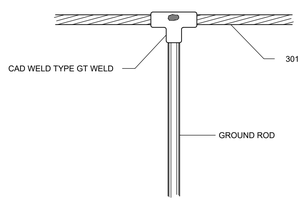


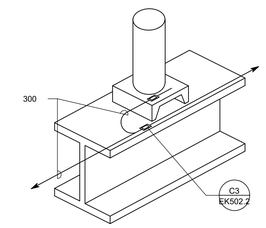
A3 #2/0 B.C. - GROUND ROD CONNECTION
SCALE: NTS



A4 #4/0 - #4/0 B.C. CONNECTION
SCALE: NTS



A5 #4/0 B.C. - GROUND ROD CONNECTION
SCALE: NTS



A6 CABLE TERMINATION, SURGE ARRESTOR, C.T. & P.T. GROUNDING
SCALE: NTS

GENERAL AND INSTALLATION NOTES (GROUNDING)

1. GROUND ELECTRODES SHALL BE INSTALLED AS SHOWN BUT IN NO INSTANCE SHALL THEY BE LESS THAN 1'-0" BELOW GRADE AND 2'-0" FROM FOUNDATION WALL. DRIVEN RODS SHALL PENETRATE EARTH AT LEAST 1'0-0".
2. BOND TO WATER SERVICE AND OTHER PIPING SYSTEMS AS SHOWN AND AS REQUIRED BY CODES.
3. SYSTEM SHALL BE INSTALLED AS SHOWN TO INSURE PROPER CODE COMPLIANCE AND SYSTEM CERTIFICATION. ANY MAJOR VARIANCE SHALL ENTAIL RESUBMITTAL AND NEW APPROVAL.
4. "AS BUILT" DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH CERTIFICATION PROCEDURES.
5. INSTALLATION SHALL COMPLY IN ALL RESPECTS TO L.P.I CODE 175. INSTALLATION SHALL BE MADE OR UNDER THE SUPERVISION OF AN L.P.I CERTIFIED MASTER INSTALLER.

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

SPECTRUM ENGINEERS
324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH & FABRICATION BUILDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN MARTINEZ
STATE OF UTAH
11/14/2024

GROUNDING DETAILS

EK502.2

(801) 355-5915

11/15/2024 4:01:30 PM

AV DISPLAY DEVICE SCHEDULE

DISPLAY TYPE / ORIENTATION ABBREVIATIONS:	AVIXA STANDARD USED ABBREVIATIONS:
M = MONITOR L = LANDSCAPE P = PORTRAIT PM = POLE MOUNT PS = PROJECTION SCREEN VW = VIDEO WALL LED = DIRECT VIEW LED	NA = NOT APPLICABLE NC = NOT COMPLIANT WITH AVIXA STANDARDS OC = OBSERVING CONTENT (GENERAL VIEWING, DETAILS NOT CRITICAL) IC = INSPECTING CONTENT (SPREADSHEETS, WEB PAGES, PRESENTATIONS) ICC = INSPECTING CRITICAL CONTENT (ENGINEERING DRAWINGS, MEDICAL IMAGES)

ROOM NAME	ROOM #	LEVEL	CEILING HEIGHT	FURTHEST ON AXIS VIEWING DISTANCE	DISPLAY TYPE / ORIENTATION	IMAGE HEIGHT	IMAGE WIDTH	APPROX. PROJECTOR THROW DISTANCE	FLAT PANEL SIZE (Diagonal)	ASPECT RATIO	MATRIX SIZE	AVIXA STANDARD USED
CLASSROOM	110	LEVEL 1	19' - 0"	25' - 0"	PS	78"	139"	17' - 0"		16:9		
CONFERENCE	113	LEVEL 1	19' - 0"	0' - 0"	M/L				75"	16:9		

AV CABLE SCHEDULE

SEE GENERAL NOTE 14

CABLE TYPE	DESCRIPTION	ACCEPTABLE TYPES	SPECIAL INSTRUCTIONS
M	MICROPHONE CABLE, 22 AWG, SHIELDED, TWISTED PAIR W/ DRAIN	LIBERTY 22-1P-CMP-EZ-WHY BELDEN 82761 WEST PENN D25454	
L	LINE LEVEL CABLE, 22 AWG, SHIELDED, TWISTED PAIR W/ DRAIN	LIBERTY 22-1P-CMP-EZ-WHY BELDEN 82761 WEST PENN D25454	
S	SPEAKER CABLE, 16 AWG, TWISTED PAIR, UNSHIELDED	LIBERTY 16-2C-TTP WEST PENN 25225	
Z	SPEAKER CABLE, 12 AWG, TWISTED PAIR, UNSHIELDED	LIBERTY 16-2C-TTP WEST PENN 25227	
C	CONTROL CABLE, 24 AWG, 4 PAIR, OVERALL SHIELD	BELDEN 88104 WEST PENN D252404	
D	DATA CABLE, CATEGORY 6, W/ BLUE JACKET	SYSTIMAX 2071E GIGASPEED XL	PROVIDE CABLE WITH BLUE JACKET ONLY
V	VIDEO CABLE, 75 OHM, COAXIAL, RG59	BELDED 1506A WEST PENN 25816	
P	DIGITAL VIDEO CABLE, CATEGORY 6, TWISTED PAIR, SHIELDED	EXTRON XTP DTP 24	
X	EMITTER PANEL CABLE, RG58, 50 OHM, COAXIAL	BELDEN 88240 WEST PENN 25843	
H	HDMI CABLE	BELDEN HD200X LIBERTY E-HDM-M-X	

AV SYSTEM CABLE INSTALLATION REQUIREMENTS SCHEDULE

THE REQUIREMENTS BELOW APPLY TO EACH LOCATION SHOWN ON LAYOUT DRAWINGS, AND DO NOT INCLUDE REQUIRED CABLE INSTALLATION INSIDE EQUIPMENT RACKS, LECTERNS, AND ENCLOSURES.

ER = EQUIPMENT RACK WHICH SERVES EACH ROOM
LCJB = LARGE CAPACITY JUNCTION BOX

ORIGIN	DESTINATION	CABLE TYPE	QUANTITY	SPECIAL INSTRUCTIONS
CPX	ER	M	1	
		L	2	
CPX	ER	D	1	
		P	1	
CPX	ER	P	1	
(S)	ER (S)	S	SEE INSTRUCTIONS	CIRCUIT SPEAKER SYSTEMS AND PROVIDE CABLE QUANTITIES AS SHOWN ON THE FLOOR PLAN DRAWINGS
	ER	P	1	
		D	1	
	ER UD	C	1	
M86	ER	P	1	
MOTORIZED WINDOW COVERING MOTOR CONTROL	ER	C OR D	1	
LIGHTING CONTROL SYSTEM	ER	C OR D	2	

AV SIGNAL TYPE ABBREVIATIONS SCHEDULE

ABBREVIATION	SIGNAL TYPE
AL	AUDIO, LEFT, (LINE LEVEL)
AR	AUDIO, RIGHT, (LINE LEVEL)
AA	ANALOG AUDIO
V	VIDEO, COMPOSITE-STANDARD RESOLUTION ANALOG VIDEO
YC	S-VIDEO-STANDARD RESOLUTION ANALOG VIDEO
YUV	COMPONENET VIDEO-STANDARD RESOLUTION ANALOG VIDEO
RGBHV	RED, GREEN, BLUE, HORIZONTAL & VERTICAL SYNC-HIGH RESOLUTION ANALOG VIDEO
XGA/VGA	EXTENDED GRAPHICS ARRAY/VIDEO GRAPHICS ARRAY - HIGH RESOLUTION ANALOG VIDEO
DVI	DIGITAL VIDEO INTERFACE - HIGH RESOLUTION DIGITAL VIDEO
HDMI	HIGH DEFENITION MULTI-MEDIA INTERFACE - HIGH RESOLUTION DIGITAL VIDEO
DP	DISPLAY PORT - HIGH RESOLUTION DIGITAL VIDEO
TP	TWISTED PAIR
IP	INTERNET PROTOCOL
ENET	ETHERNET
HDBT	HD BASE T

SPECIAL PROJECT NOTES

1. THE AUDIO AND VIDEO SYSTEM EQUIPMENT LISTS IDENTIFY EQUIPMENT ITEMS OF SIGNIFICANCE BY MANUFACTURER AND MODEL NUMBER. THE SOLE PURPOSE FOR THIS IS TO ESTABLISH LEVELS OF QUALITY AND INDIVIDUAL COMPONENT CAPABILITY FOR ALL EQUIPMENT ITEMS. IT IS NOT THE INTENT OF THE AUDIO AND VIDEO SYSTEM EQUIPMENT LIST TO PRECLUDE THE INSTALLATION OF EQUIPMENT ITEMS FABRICATED BY MANUFACTURERS OTHER THAN THOSE LISTED, SO FAR AS THEY ARE JUDGED TO BE EQUAL TO THOSE EQUIPMENT ITEMS IDENTIFIED IN THE LIST, PROVIDING THEY CAN GUARANTEE COMPATIBILITY WITH THE EXISTING SYSTEMS IN THE BUILDING IF APPLICABLE. THIS GUARANTEE SHALL INCLUDE REPLACEMENT OF EXISTING HEAD-END EQUIPMENT AND OTHER EXISTING DEVICES,COMPONENTS, WIRING AND SOFTWARE, TESTING THE ENTIRE SYSTEM FOR FUNCTIONALITY WHEN COMPLETE AND CORRECTING ALL DEFICIENCIES THROUGHOUT BUILDING(S). OTHER MANUFACTURERS WILL BE CONSIDERED ONLY IF SUBMITTED TO THE ENGINEER IN WRITING AT LEAST 7 DAYS PRIOR TO THE BID OPENING.

GENERAL SHEET NOTES

1. CONDUCT AN RF FREQUENCY AUDIT OF THE SITE PRIOR TO SELECTION OF WIRELESS RF OPERATING FREQUENCIES. SELECT FREQUENCIES TO ASSURE INTERFERENCE FREE OPERATION. INSTALL ANTENNAS/TRANCEIVERS OUTSIDE OF THE EQUIPMENT RACK. AT AN ARCHITECT APPROVED LOCATION, WHERE THE BEST PERFORMANCE IS ACHIEVED.
2. FILL ALL UNUSED RACK SPACE WITH BLANK/VENT PANELS.
3. INSTALL ALL EQUIPMENT IN COMPLIANCE WITH THE MANUFACTURERS WRITTEN INSTRUCTIONS, SEISMIC CODES, AND INDUSTRY WIDE ACCEPTED RIGGING PRACTICES. SUPPORT EQUIPMENT WEIGHT FROM THE BUILDING STRUCTURE. DURING THE SUBMITTAL PROCESS, PROVIDE SHOP DRAWINGS WHICH DETAIL PROPOSED MOUNTING FOR ALL SUCH EQUIPMENT.
4. PROVIDE MANUFACTURER RECOMMENDED POWER SUPPLIES, POE INJECTORS AND/OR TRANSFORMERS FOR ALL SPECIFIED EQUIPMENT.
5. FURNISH AND INSTALL ALL CABLE AND CONNECTORS REQUIRED FOR ALL AUDIO AND VIDEO SYSTEMS TO COMPLETE MANUFACTURER RECOMMENDED CABLE TO EQUIPMENT TERMINATION TO FORM A COMPLETE AND FULLY FUNCTIONAL SYSTEMS. SELECT CONNECTORS WHICH PASS FULL BANDWIDTH CAPABILITY OF SPECIFIED CABLE. PROVIDE CABLE TYPES AS IDENTIFIED IN THE AUDIO/VIDEO CABLE SCHEDULE.
6. PROVIDE PATCH CABLES TO FULLY INTERCONNECT ALL SPECIFIED CONNECTION PANELS, SYSTEM INTERFACES AND MISCELLANEOUS EQUIPMENT.
7. PROVIDE MANUFACTURER RECOMMENDED AND INDUSTRY STANDARD, SIGNAL LEVELS AND COMMUNICATION PROTOCOLS THROUGHOUT ENTIRE SYSTEM REGARDLESS OF CABLE LENGTHS. PROVIDE ALL REQUIRED DISTRIBUTION AND PROCESSING EQUIPMENT, INCLUDING BUT NOT LIMITED TO SIGNAL DISTRIBUTION AMPLIFIERS, LINE AMPLIFIERS, LINE DRIVERS, EQUALIZING AMPLIFIERS, GROUND/HUM ISOLATORS, MATCHING/ISOLATION TRANSFORMERS, CONTROL BUS DEVICES, COMMUNICATIONS COMMUNICATIONS CONVERTERS, ETC..., WHETHER SHOWN ON THE SINGLE LINE DIAGRAMS OR NOT.
8. PROVIDE POWER, CURRENT, AND/OR SIGNAL SENSORS FOR ALL EQUIPMENT WHERE IT IS NECESSARY FOR CORRECT CONTROL SYSTEM OPERATION.
9. PROVIDE PRE-MANUFACTURED ADAPTER CABLES WHERE REQUIRED FOR MATING CABLE TO CONNECTORS. THESE WILL INCLUDE, BUT ARE NOT LIMITED TO, ADAPTERS WHICH MAY MATE TO HDMI TO DISPLAY PORT, DVI TO HDMI CONNECTORS AND OTHER SIMILAR TERMINATION REQUIREMENT SCALE.
10. PROVIDE RACK MOUNT KITS FOR ALL RACK MOUNTED EQUIPMENT. WHERE MANUFACTURERS DO NOT PROVIDE RACK MOUNT KITS, PROVIDE CUSTOM RACK MOUNT KITS AS SPECIFIED.
11. WHERE ANY CABLE IS INSTALLED IN A FASHION WHERE EXPOSED TO PUBLIC VIEW, INSTALL CABLE INSIDE THE SPECIFIED NYLON LOOM EXPANDABLE SLEEVING. EXAMPLES OF SUCH LOCATIONS INCLUDE, BUT ARE NOT LIMITED TO, EQUIPMENT ITEMS ON LECTERNS AND CEILING MOUNTED PROJECTORS.
12. LOCATE AND INSTALL PROJECTOR AND MOUNT SUCH THAT AN IMAGE SIZE OF 116"X72" IS ACHIEVED. PROVIDE REQUIRED LENS FOR IMAGE SIZE AND THROW DISTANCE SHOWN IN DRAWINGS. PLEASE NOTE THIS MAY REQUIRE USE OF A NON-STANDARD LENS. SET UP PROJECTORS TO OPERATE IN A 16:9 ASPECT RATIO.
13. CONTROL SPECIFIED DEVICES UTILIZING THE MOST SOPHISTICATED COMMUNICATIONS PROTOCOL AVAILABLE ON THE DEVICE TO BE CONTROLLED. ALWAYS USE RS-232 OR ETHERNET WHEN AVAILABLE.
14. IF AN INSTANCE IS ENCOUNTERED WHERE CABLE MUST BE INSTALLED INSIDE OF AN AIR PLENUM, FURNISH THE PLENUM RATED EQUIVALENT TO THE CABLE SPECIFIED.
15. PROVIDE LECTERN EQUIPMENT RACKS WITH THE MAXIMUM VERTICAL HEIGHT THAT WILL FIT IN THE CUSTOM FABRICATED MILLWORK. CONFIRM VERTICAL MILLWORK OPENING WITH THE MILLWORK SHOP DRAWINGS PRIOR TO ORDERING. FIELD CUT RACK RAILS TO FIT IN VERTICAL OPENING IF REQUIRED.
16. PROVIDE POWER SUPPLIES FOR ALL ACTIVE CONNECTION PANELS AND REMOTE CONTROL PANELS. LOCATE POWER SUPPLIES IN EQUIPMENT RACK AND POWER DEVICES REMOTELY.
17. UNLESS OTHERWISE NOTED, SECURE EVERY PIECE OF A/V SYSTEM EQUIPMENT SUCH THAT IT CANNOT BE REMOVED BY UNAUTHORIZED PERSONS. SECURED EQUIPMENT SHALL INCLUDE, BUT IS NOT LIMITED TO, PROJECTORS, TOUCH PANELS, DOCUMENT CAMERAS, CAMERAS, OWNER FURNISHED CPU'S & MONITORS AND ALL EQUIPMENT INSTALLED IN/ON MILLWORK. UTILIZE THE SPECIFIED SECURITY CABLE AND PADDLE LOCK SYSTEM. SUBMIT PROPOSED ADHESIVE MOUNTING LOCATION DURING SUBMITTAL PROCESS. DO NOT SECURE KEYBOARDS AND MICE. ALWAYS USE KENSINGTON LOCKS WHEN PRESENT. IN ADDITION AFFIX ALL RACK MOUNTED EQUIPMENT NOT COVERED BY MILLWORK DOOR W/ TAMPER-PROOF RACK SCREWS.
18. PROVIDE ALL EQUIPMENT, CARDS, MEMORY, HARDWARE AND SOFTWARE TO NETWORK ALL CONTROL SYSTEM PROCESSORS TOGETHER USING THE OWNERS ETHERNET NETWORK. CONNECT EVERY CONTROL SYSTEM PROCESSOR TO THE OWNERS NETWORK AND MAKE FULLY FUNCTIONAL WITH THE EXISTING ROOM MANAGEMENT SYSTEM SOFTWARE PACKAGE.
19. INSTALL THE SPECIFIED DVD PLAYER ON A SHELF INSIDE THE LECTERN, NOT INSIDE THE EQUIPMENT RACK.
20. POPULATE CONTROL SYSTEM CENTRAL PROCESSORS WITH RS-232 AND/OR RELAY OUTPUT CARDS AS REQUIRED TO COMPLY WITH THE CONTROL SYSTEM REQUIREMENTS IDENTIFIED IN THE CONTROL SYSTEM SINGLE LINE DIAGRAMS SHOWN IN THE DRAWINGS & THE PROGRAMMING OUTLINE IN THE SPECIFICATIONS.
21. PROVIDE PERMANENT, MECHANICALLY PRODUCED LABELS ON ALL CABLES NEAR CONNECTORS AND TERMINATION POINTS.
22. DO NOT INSTALL CABLES WITH CHOKES, RIGID JACKETS OR OVERLY LARGE OUTSIDE DIAMETER INSIDE CABLE CUBBY CONNECTION PANEL. INSTALL CABLE CUBBY APPROVED CABLES ONLY.
23. INSTALL THE SPECIFIED CABLE CUBBY FLUSH IN THE HORIZONTAL WORK SURFACE OF ALL LECTERNS.
24. VERY CAREFULLY SUPPORT THE WEIGHT OF ALL HDMI CABLES CONNECTED TO EQUIPMENT USING LOCKIT CABLE LACING BRACKETS AND RACK MOUNTED LACING BARS. PROFESSIONALLY DRESS, LACE AND STRAIN RELIEF CABLES SO THAT NO WEIGHT FROM INDIVIDUAL HDMI CABLES TRANSFERS UNDUE STRESS TO SEATED CONNECTORS.
25. COVER JUNCTION BOXES WITH NO SPECIFIED AV DEVICES WITH BLANK NYLON COVER PLATES. COLOR TO MATCH ELECTRICAL DEVICES.
26. CONNECT ALL SPECIFIED AV EQUIPMENT TO 120 VAC VIA A SPECIFIED TRANSIENT VOLTAGE SURGE SUPPRESSOR INCLUDING ALL MONITORS AND PROJECTORS.
27. SET ALL PLAYBACK DEVICES (DVD, TUNERS, ETC.) TO RGB COLOR RANGE.
28. CONFIRM ALL CONNECTION PANEL LABELS WITH THE OWNER PRIOR TO FABRICATION.
29. SET LIMIT SWITCHES ON ALL PROJECTION SCREENS TO POSITION IMAGES VERTICALLY AS DIRECTED BY THE OWNER. DO NOT LOCATE THE BOTTOM OF PROJECTED IMAGES LOWER THAN 4'-0" AFF.
30. PROGRAM ALL NEW AV DEVICES WITH PASSWORDS WITH A NEW (NON-FACTORY DEFAULT) PASSWORD. PROVIDE A SPREADSHEET TO THE OWNER IDENTIFYING ALL PROGRAMMED PASSWORDS. WORK WITH THE OWNER'S I.T. STAFF TO PROGRAM THE SPECIFIED NETWORK SWITCH WITH SECURITY HARDENING.
31. PROVIDE COMPLETE NETWORK SWITCH CONFIGURATION AND PROGRAMMING SERVICES INCLUDING, BUT NOT LIMITED TO, UPDATING ALL NETWORK SWITCHES TO THE LATEST CODE, CONFIGURING ALL REQUIRED VLANS AND ASSIGNING ALL IP ADDRESS SCHEMES FOR SUBNET MASK GATEWAY AND DEVICE IP ADDRESS ASSIGNMENT. COORDINATE WITH THE OWNER'S NETWORK STAFF FOR ALL IP ADDRESS SCHEME.

AV SYSTEMS SHEET INDEX

TA001.2	SHEET INDEX, ABBREVIATIONS, AND NOTES
TA002.2	AV SYSTEMS EQUIPMENT SCHEDULE
TA101.2	LEVEL 1 AUDIO VISUAL SYSTEMS PLAN
TA601.2	AUDIO VISUAL SYSTEMS DETAILS & DIAGRAMS
TA602.2	AV SYSTEMS CONNECTION PANEL DETAILS

ABBREVIATIONS

NOTE: ALL ABBREVIATIONS MAY NOT BE USED.

A	AUDIO
A/R	AS REQUIRED
ADJ	ADJACENT
C	CONDUIT
CAT	CATEGORY
DP	DISPLAY PORT-HIGH RESOLUTION DIGITAL VIDEO
DVD	DIGITAL VERSATILE DISK
DVI	DIGITAL VIDEO INTERFACE-HIGH RESOLUTION DIGITAL VIDEO
E	ENHANCED
EA	EACH
ENET	ETHERNET
EX	EXISTING
F	OPTICAL FIBER
GR	GROUND
HDBT	HD BASE T
HDMI	HIGH DEFENITION MULTIMEDIA INTERFACE-HIGH RESOLUTION DIGITAL VIDEO
IP	INTERNET PROTOCOL
L	LEFT AUDIO CHANNEL, LINE LEVEL
MDP	MINI DISPLAY PORT
MIC	MIC LEVEL AUDIO
N.I.C	NOT IN CONTRACT
OFP	OBTAIN FROM PLANS
POE	POWER OVER ETHERNET
QTY	QUANTITY
R	RIGHT AUDIO CHANNEL, LINE LEVEL
RGBHV	RED, GREEN, BLUE, HORIZONTAL & VERTICAL SYNC-HIGH RESOLUTION ANALOG VIDEO
RMK	RACK MOUNT KIT
RU	RACK UNIT, 1.75"
SDI	SERIAL DIGITAL INTERFACE
TP	TWISTED PAIR
TYP	TYPICAL
V	VIDEO, COMPOSTIE-STANDARD RESOLUTION ANALOG VIDEO
W/	WITH
XGA/V	EXTENDED GRAPHICS
GA	ARRAY/VIDEO GRAPHICS ARRAY-HIGH RESOLUTION ANALOG VIDEO
YC	S-VIDEO-STANDARD RESOLUTION ANALOG VIDEO
YUV	COMPONENT VIDEO-STANDARD RESOLUTION ANALOG VIDEO

DEFINITIONS

NOTE: ALL DEFINITIONS MAY NOT BE USED.

INDICATED: THE TERM "INDICATED" REFERS TO GRAPHIC REPRESENTATIONS, NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER PARAGRAPHS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR REQUIREMENTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH AS "SHOWN", "NOTED", "SCHEDULED" AND "SPECIFIED" ARE USED, IT IS TO HELP THE READER LOCATE THE REFERENCE, NO LIMITATION ON LOCATION IS INTENDED.

DIRECTED: TERMS SUCH AS "DIRECTED", "REQUESTED", "AUTHORIZED", "SELECTED", "APPROVED", "REQUIRED", AND "PERMITTED" MEAN "DIRECTED BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND SIMILAR PHRASES.

APPROVED: THE TERM "APPROVED", WHERE USED IN CONJUNCTION WITH THE ENGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES AND RESPONSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY CONDITIONS.

FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."

INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

INSTALLER: AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY ENGAGED BY THE CONTRACTOR, EITHER AS AN EMPLOYEE, SUBCONTRACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A PARTICULAR CONSTRUCTION ACTIVITY, INCLUDING INSTALLATION, ERECTION, APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE REQUIRED TO BE EXPERIENCED IN THE OPERATIONS THEY ARE ENGAGED TO PERFORM.

TECHNOLOGY SYSTEMS: THE TERM "TECHNOLOGY SYSTEMS" IS USED TO DESCRIBE ALL LOW VOLTAGE SYSTEMS GENERALLY REFERRED TO AS "SPECIAL SYSTEMS". THESE SYSTEMS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO ALL SYSTEMS WHICH UTILIZE VOLTAGES OF LESS THAN 71 VOLTS SUCH AS SOUND SYSTEMS, VIDEO SYSTEMS, TV SYSTEMS, SECURITY SYSTEMS, VOICE AND DATA CABLING SYSTEMS, ETC...

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

SPECTRUM ENGINEERS
324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH & FABRICATION BUILLDING
355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN
STATE OF UTAH

11/14/2024

SHEET INDEX, ABBREVIATIONS, AND NOTES

TA001.2

(801) 355-5915

11/13/2024 4:01:38 PM

AUDIO AND VIDEO SYSTEM EQUIPMENT LIST

THE ITEMS INDICATED BELOW SHALL NOT BE CONSTRUED AS A "BILL OF MATERIALS". THIS LIST IDENTIFIES ITEMS OF SIGNIFICANCE USED DURING THE DESIGN OF THE ELECTRONIC SYSTEMS INSTALLATION. WHERE THE ITEMS INDICATED ARE ONE PORTION OF AN ASSEMBLY, THE ENTIRE ASSEMBLY SHALL BE PROVIDED UNLESS SPECIFIED OTHERWISE. PROVIDE ALL MISCELLANEOUS HARDWARE AND SUPPORTS WHICH MAY NOT BE LISTED HERE, FOR A COMPLETE INSTALLATION. COMPARE CATALOG NUMBERS WITH DESCRIPTIONS AND NOTIFY ENGINEER OF DISCREPANCIES PRIOR TO BID. IF CATALOG NUMBERS DO NOT MATCH DESCRIPTIONS, THE DESCRIPTIONS TAKE PRECEDENCE. PROVIDE COMPLETE SUBMITTAL FOR APPROVAL PRIOR TO PURCHASING ANY EQUIPMENT OR CABLE. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

SYMBOL	DESCRIPTION	QUANTITY	BASIS OF DESIGN
CS1	CONTROL SYSTEM CENTRAL PROCESSOR	OFP	CRESTRON CP4N
CS2	CONTROL SYSTEM PROCESSOR, SMALL FORM FACTOR	OFP	CRESTRON RMC4
NS	NETWORK SWITCH, POE, 8 OR 48 PORTS AS NEEDED COORDINATE WITH OWNER'S IT DEPARTMENT	0	OWNER FURNISHED
RXP	RELAY EXPANSION MODULE, ETHERNET, PoE	A/R	CRESTRON CEN-IO-RY-104
TP5	TOUCH PANEL, APPROXIMATELY 5" ACTIVE MATRIX COLOR LCD, WALL MOUNTED, WIRED, 1280 X 720 ARCHITECT TO SELECT COLOR	OFP	CRESTRON TSW-570-X-S
TP7	TOUCH PANEL, APPROXIMATELY 7" ACTIVE MATRIX COLOR LCD, WALL MOUNTED, WIRED, 1280 X 800 ARCHITECT TO SELECT COLOR	OFP	CRESTRON TSW-770-X-S
TPT	TOUCH PANEL, APPROXIMATELY 10" ACTIVE MATRIX COLOR LCD, DESK STAND, WIRED, 1280x800 ARCHITECT TO SELECT COLOR	OFP	CRESTRON TS-1070-X-S
DPS	DIGITAL PRESENTATION SWITCHER #1	OFP	CRESTRON DMPS3-4K-350-C
DTX	HDMI & XVGA TWISTED PAIR TRANSMITTER, FURNITURE MOUNT	OFP	CRESTRON DM-TX-4KZ-302-C
DRXS	TWISTED PAIR VIDEO RECEIVER, HDMI OUT, WITH MOUNTING HARDWARE	OFP	CRESTRON DM-RMC-4K-SCALER-C
M	MICROPHONE, CEILING RECESSED	OFP	SHURE MXA920
PC	COMPUTER, OWNER FURNISHED	0	CONTRACTOR TO INSTALL
	POWER AMPLIFIER, TWO CHANNEL, 150W PER CHANNEL, 70.7V	OFP	CROWN DCi 2|300N CRESTRON AMP-X300
	POWER AMPLIFIER, SINGLE CHANNEL, 75W, 70V W/RMK	OFP	CRESTRON AMP-X75
HDA	HDMI DISTRIBUTION AMPLIFIER, 1X2	OFP	CRESTRON HD-DA2-4KZ-E
S P	PENDANT SPEAKER ASSEMBLY: 6.5" SPEAKER, 70V TRANSFORMER, AND GRILLE ARCHITECT TO SELECT COLOR	OFP	JBL CONTROL 64P/T
	PROVIDE FASTENERS, CABLE WIRE ROPE, CLAMPS, ANCHORS AND ANY OTHER REQUIRED ACCESSORIES TO SUSPEND THE SPEAKER ASSEMBLY FROM THE BUILDING STRUCTURE. CONFIRM FINAL ELEVATION WITH THE ARCHITECT AND AV DESIGNER PRIOR TO INSTALLATION	A/R	
WVR	WIRELESS VIDEO RECEIVER	OFP	CRESTRON AM-3200-WF
AUB	AV USB BRIDGE	OFP	EXTRON MEDIAPORT 300
TUU	TABLETOP USER INTERFACE, BYOD	OFP	CRESTRON UC-MX50-U (MERCURY)
2	VIDEO CAMERA, HD, FIXED, USB		
TUR	HDMI OVER CATX RECEIVER		
DSP	AUDIO DIGITAL SIGNAL PROCESSOR, 4X4, FIXED, DANTE	OFP	BIAMP TESIRA FORTE DAN VT4
HS	HDMI SWITCH, 4X1	OFP	CRESTRON HD-MD4X1-4KZ-E
EXT	USB EXTENDER, TWISTED PAIR	OFP	CRESTRON USB-EXT-2-LOCAL
HUB	USB HUB, 4-PORT, TWISTED PAIR	OFP	CRESTRON USB-EXT-2-REMOTE
DP	DIGITAL SIGNAGE PLAYER, SMALL FORM-FACTOR PC	0	OWNER FURNISHED AND INSTALLED
US	USB SWITCH, 2X1, USB 2.0	OFP	BIAMP USB 200 SWITCH

A/R = AS REQUIRED OFP = OBTAIN FROM PLANS RMK = RACK MOUNT KIT

AUDIO AND VIDEO SYSTEM EQUIPMENT LIST (CON'T)

THE ITEMS INDICATED BELOW SHALL NOT BE CONSTRUED AS A "BILL OF MATERIALS". THIS LIST IDENTIFIES ITEMS OF SIGNIFICANCE USED DURING THE DESIGN OF THE ELECTRONIC SYSTEMS INSTALLATION. WHERE THE ITEMS INDICATED ARE ONE PORTION OF AN ASSEMBLY, THE ENTIRE ASSEMBLY SHALL BE PROVIDED UNLESS SPECIFIED OTHERWISE. PROVIDE ALL MISCELLANEOUS HARDWARE AND SUPPORTS WHICH MAY NOT BE LISTED HERE, FOR A COMPLETE INSTALLATION. COMPARE CATALOG NUMBERS WITH DESCRIPTIONS AND NOTIFY ENGINEER OF DISCREPANCIES PRIOR TO BID. IF CATALOG NUMBERS DO NOT MATCH DESCRIPTIONS, THE DESCRIPTIONS TAKE PRECEDENCE. PROVIDE COMPLETE SUBMITTAL FOR APPROVAL PRIOR TO PURCHASING ANY EQUIPMENT OR CABLE. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

SYMBOL	DESCRIPTION	QUANTITY	BASIS OF DESIGN
	BRAIDED, EXPANDABLE SLEEVING	A/R	PANDUIT TECHFLEX
WR	WIRELESS MICROPHONE SYSTEM, UHF TRANSMITTER, HAND HELD	OFP	SHURE ULXD2/ SM58
	TRANSMITTER, BODY WORN W/ LAPEL ELEMENT	OFP	SHURE ULXD1
	RECEIVER W/ RMK	OFP	SHURE ULXD4
	REMOTE ANTENNAS, CABLE & MOUNTS	A/R	SHURE MISC
ALS	ASSISTED LISTENING SYSTEM, RF, WITH RMK & POWER SUPPLY	4	LISTEN LS-55-072
CP3	CONNECTION PANEL #3, 2-GANG	OFP	CRESTRON HD-TX-4KZ-100-C-1G-X-T AS DETAILED
CP4	CONNECTION PANELS #4, TABLETOP W/ CABLES	OFP	CRESTRON FT2-1200-ELEC-B W/ CABLES AND MODULES AS DETAILED
CP5	CONNECTION PANELS #5, TABLETOP W/ CABLES AND CLOAK ACCESSORY	OFP	CRESTRON TT-100-T W/ CABLES AND MODULES AND CLOAK ACCESSORY AS DETAILED
CP#	CONNECTION PANEL #1, 2, 4-GANG	OFP	CUSTOM, SEE DETAIL
PS PoEI	POWER SUPPLIES AND POE INJECTORS	A/R	VARIOUS
	ADAPTOR CABLE	A/R	VARIOUS
	PATCH CORDS	A/R	VARIOUS
	CUSTOM RACK MOUNT KIT	A/R	MIDDLE ATLANTIC PRODUCTS RSH SERIES OR APPROVED EQUIVALENT
	LECTERN/CREDENZA MOUNTED EQUIPMENT RACK, 12RU, ROTATING/SLIDING	OFP	MIDDLE ATLANTIC SRSR-2-12
M75	LED 75" DISPLAY, 16:9 ASPECT RATIO, 4K RESOLUTION W/ TILTING WALL MOUNT BRACKET AND MATING PLATE	OFCI	LG 75UR340C
		OFCI	CHIEF LTM1U W/ REQUIRED ACCESSORIES
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR W/ PLUGSTRIP FOR RACK	A/R	SURGEX SA20 TRIPP LITE ISOBAR 12-20 ULTRA
	TRANSIENT VOLTAGE SURGE SUPPRESSOR ISA, FOR PROJECTORS AND MONITORS	A/R	TRIPP LITE ISOBAR 6 ULTRA / 4 ULTRA SURGEX SA82
	TRANSIENT VOLTAGE SURGE SUPPRESSOR, FURNITURE MOUNT	A/R	TRIPP LITE ISOBAR 8 ULTRA
	PROJECTOR, 1920 X 1080, 8000 LUMEN, WITH LENS REQUIRED FOR THROW DISTANCE	OFP	PANASONIC PT-MZ770U WITH LENS
	PROJECTOR CEILING MOUNT KIT, PROVIDE PIPE, COUPLERS, STEEL, ADAPTORS, UNISTRUT, THREADED ROD, FASTENERS, ANCHORS, AND ANY OTHER REQUIRED COMPONENTS TO SPAN STRUCTURE, AIR DUCTS, EXTEND/REDUCE SUPPORT SYSTEM FOR APPROPRIATE ELEVATION AS NEEDED FOR INSTALLATION OF THE SPECIFIED DEVICE. SECURE PROJECTORS TO MOUNTS UTILIZING SECURITY SCREWS.	OFP	CHIEF RPA SERIES PREMIER FTP SERIES
UD	PROJECTION SCREEN AND UP/ DOWN CONTROL, RECESSED MOUNTED, SEE DISPLAY DEVICE SCHEDULE FOR SIZES	OFP	DA-LITE TENSIONED ADVANTAGE W/ HD PROGRESSIVE 1.1 CONTRAST SCREEN SURFACE
	AUDIO AND VIDEO SYSTEM CABLE	A/R	SEE CABLE SCHEDULE

A/R = AS REQUIRED OFP = OBTAIN FROM PLANS RMK = RACK MOUNT KIT
OFCI - OWNER FURNISHED, CONTRACTOR INSTALLED

CRSA

PROJECT **24-038**

BID PACKAGE #2 2024-11-01

REVISIONS

NO.	DATE	DESCRIPTION

SPECTRUM ENGINEERS
324 S. State St., Suite 400
Salt Lake City, UT 84111
801-328-5151
www.spectrum-engineers.com
SE Project # 240296

DTC WELDING TECH & FABRICATION BUILDING
355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN
ANTUNEZ
STATE OF UTAH

11/14/2024

AV SYSTEMS EQUIPMENT SCHEDULE

TA002.2

(801) 355-5915

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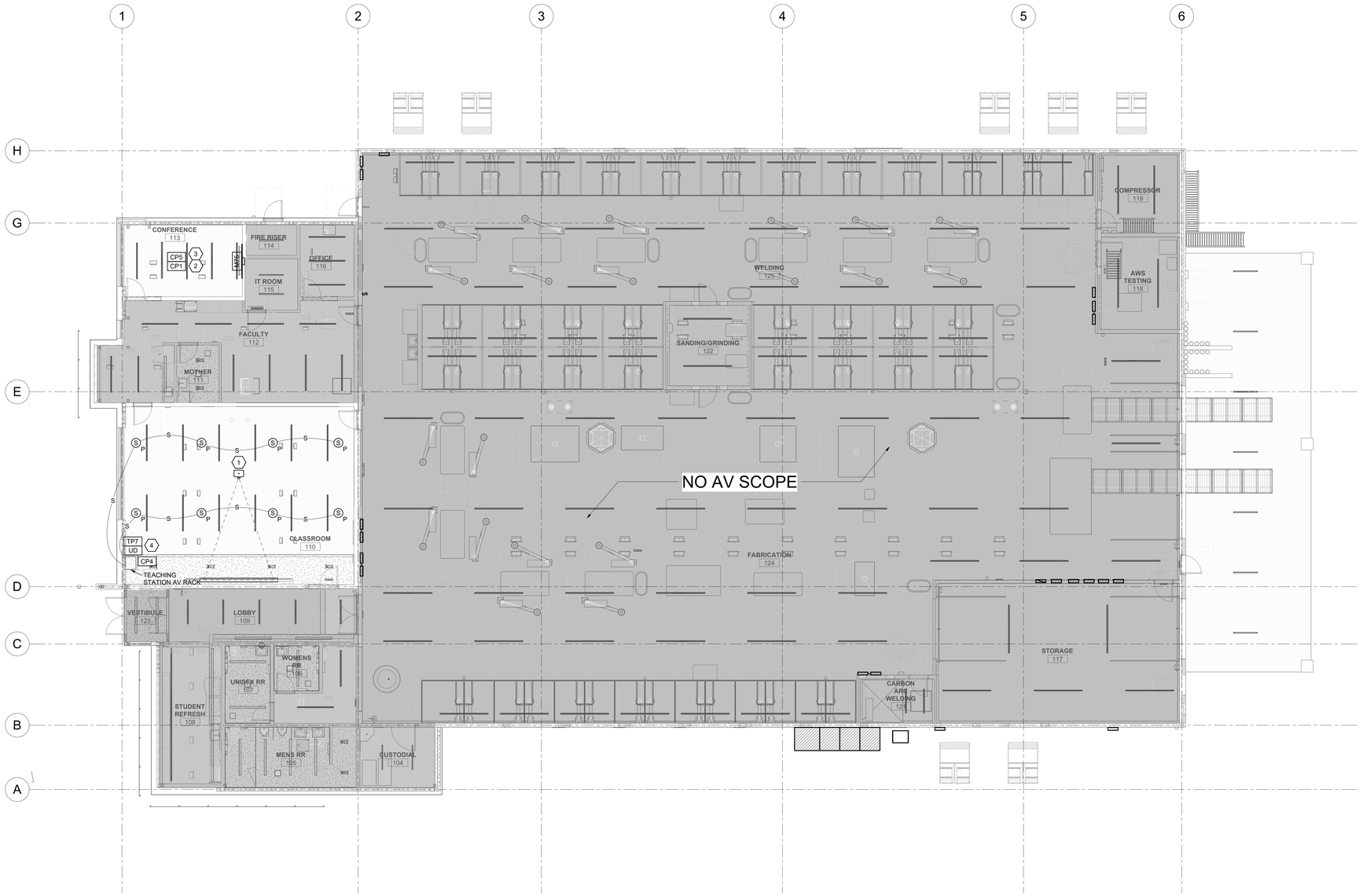

A1 LEVEL 1 AUDIO VISUAL ROUGH-IN RCP
SCALE: 1/8" = 1'-0"

NORTH

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SHEET KEYNOTES

1 INSTALL PROJECTOR ALONG CENTERLINE OF PROJECTION SCREEN. COORDINATE EXACT PROJECTOR LOCATION WITH ELECTRICAL PRIOR TO INSTALLATION.

2 INSTALL THE SPECIFIED CONNECTION PANEL FLUSH IN THE TABLE/LECTERN WORK SURFACE. CONFIRM EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO INSTALLATION.

3 INSTALL THE SPECIFIED CONNECTION PANEL IN FLOOR BOX.

4 INSTALL THE SPECIFIED CONNECTION PANEL FLUSH IN THE TABLE/LECTERN WORK SURFACE. CONFIRM EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO INSTALLATION.

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SE Project # 240296

DTC WELDING TECH & FABRICATION BUILLDING

355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER No. 12735266 MARIO SEBASTIAN MARTINEZ STATE OF UTAH
11/14/2024

LEVEL 1 AUDIO VISUAL SYSTEMS PLAN

TA101.2

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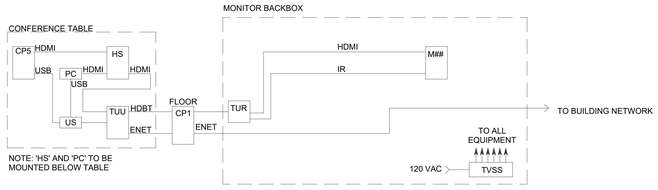
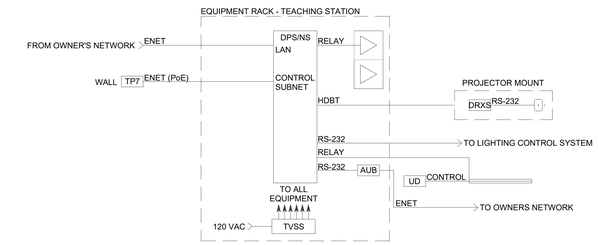
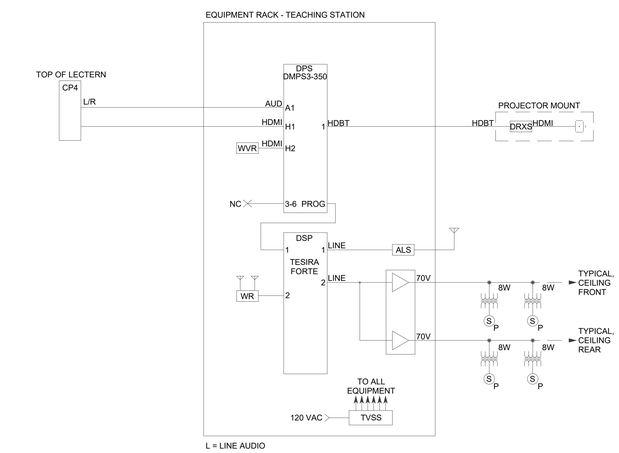


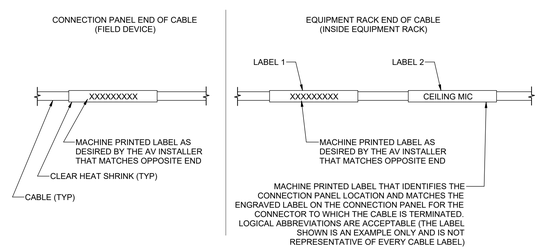
D1 AUDIO, VIDEO AND CONTROL SYSTEMS SINGLE LINE DIAGRAM - CONFERENCE 113
NTS



C1 CONTROL SYSTEM SINGLE LINE DIAGRAM - CLASSROOM
NTS



A1 AUDIO AND VIDEO SYSTEM SINGLE LINE DIAGRAM - CLASSROOM
NTS



A3 CABLE LABEL DETAIL
SCALE: NTS

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PROJECT **24-038**

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324 S. State St., Suite 400
Salt Lake City, UT 84111
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355 SOUTH 650 EAST
KAYSVILLE, UT 84037

LICENSED PROFESSIONAL ENGINEER
No. 12735266
MARIO SEBASTIAN MARTINEZ
STATE OF UTAH
11/14/2024

AUDIO VISUAL SYSTEMS DETAILS & DIAGRAMS

TA601.2

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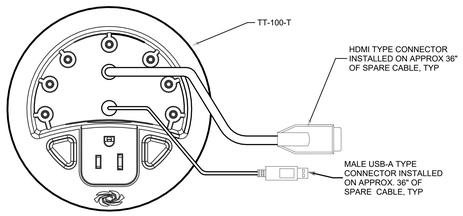
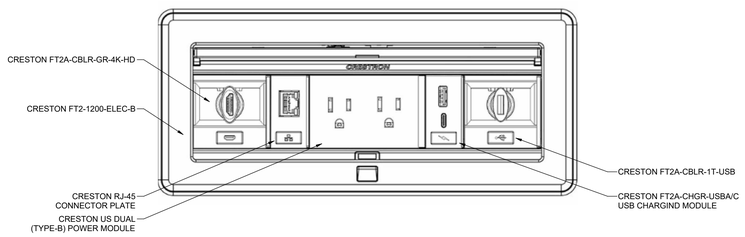


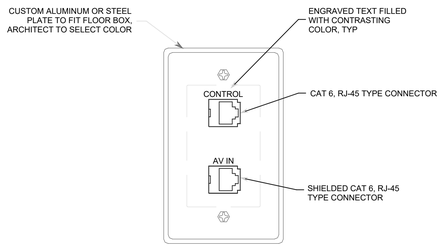
C1 TABLETOP CONNECTION PANEL #5 DETAIL
NTS

(MOUNTED IN TABLETOP) CP5



B1 TABLETOP CONNECTION PANEL #4 DETAIL
NTS

(MOUNTED IN LECTERN/TABLETOP) CP4



A1 CONNECTION PANEL #1 DETAIL
NTS

(MOUNTED IN FLOOR BOX) CP1

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355 SOUTH 650 EAST
KAYSVILLE, UT 84037



11/14/2024

AV SYSTEMS CONNECTION PANEL DETAILS

TA602.2

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