NMSU AGRICULTURAL MODERNIZATION: BIOMEDICAL RESEARCH BUILDING EXPANSION

95% CONSTRUCTION DOCUMENTS
DECEMBER 4, 2023

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003

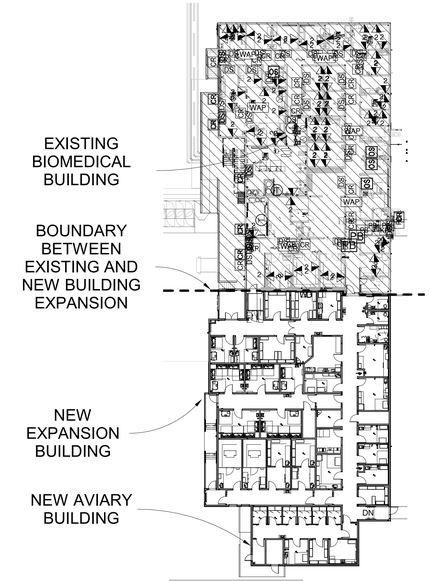
PROJECT NARRATIVE

THIS PROJECT INCLUDES THE CONSTRUCTION OF AN EXPANSION TO EXISTING BIOMEDICAL RESEARCH BUILDING INCLUDING A NEW ANIMAL VIVARIUM, AVIARY AND INSECTARY THAT IS A NIH FUNDED FACILITY EXPANSION FOR THE NEW MEXICO STATE UNIVERSITY "NMSU" CAMPUS.

WORK FOR THIS PROJECT INCLUDES:
DEMOLITION, SITE AND UTILITY IMPROVEMENTS, AND NEW BUILDING CONSTRUCTION. BUILDING SPACES INCLUDE BUT ARE NOT LIMITED TO: ANIMAL HOLDING ROOMS, STORAGE ROOMS, POSTMORTEM, DRY- HEAT STERILIZER, INSECTARY WITH ENVIRONMENTAL CHAMBERS, LABORATORY SPACES, AND SUPPORT SPACES INCLUDING RESTROOMS, JANITOR, BREAK ROOM, AND CORRIDORS, AND AVIARY WITH BIRD CAGES, STORAGE ROOM, EXAM AND FOOD PREP SPACES. WORK INCLUDES MINOR RENOVATION OF PHASE 2 TO SUPPORT NEW CONNECTION.

THIS PROJECT ACTS AS AN "EXPANSION" TO THE PHASE 1 SHELL AND PHASE 2 "INFILL" BUILDING (CURRENTLY UNDER CONSTRUCTION AT THE TIME THESE DRAWINGS WERE DONE) IMMEDIATLEY NORTH OF THIS BUILDING. EXISTING BUILDING UTILITIES AND CONNECTIONS WERE INCLUDED IN THE PHASE 1 AND PHASE 2 PROJECTS FOR THE CONNECTION OF THIS EXPANSION.THIS "EXPANSION" WILL COMPLETE THE BIOMEDICAL BUILDING AND SITE.

THIS DIAGRAM BELOW SHOWS THE PHASE 1 & PHASE 2 BUILDING, ALONG WITH THE EXPANSION BUILDING, FOR REFERENCE ONLY.



PROJECT TEAM

OWNER

New Mexico State University
Facilities & Services
1530 Wells St
Las Cruces, NM 88003
Ashley Burkholder
p_505.948.0756

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
p_505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy NE Ste. 350
p_505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy NE Ste. 301
Albuquerque, NM 87110
p_505.881.3008

M/E/P/FP/T
Bridgers and Paxton
4600-C Montgomery Blvd. NE
Albuquerque, New Mexico 87109
p_505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd. #420
Littleton, Colorado 80120
p_720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, New Mexico 87107
p_505.242.2852

INTERIORS
Studio M
6501 Americas Parkway #302
Albuquerque, New Mexico 87110

DRAWING INDEX

ALTERNATES

ALTERNATE A: FLOOR AND WALL FINISHES
BASE BID:
1. Epoxy paint at restroom walls
2. Paint at drinking fountain wall and epoxy paint at wing walls
3. FRP at emergency shower walls
4. Sealed concrete floor at Insectary and Aviary Exterior Anterooms
5. Sealed concrete floor at entry main door C700
6. No paint at exposed ductwork and grilles in rooms with no ceilings (i.e., open to structure)
7. Epoxy paint at IT walls
8. Epoxy paint at Janitor walls
9. Crash railing installed in following spaces:
   - 179 Aviary Suite
   - 177 Anteroom
   - 173 Insectary Suite
   - 171 Anteroom 300
   - H105 Corridor
   - 165F Anteroom
   - 165 Animal Holding Suite
   - 154 Anteroom 3

ADDITIVE ALTERNATE BID:
1. Wall tile at restroom at walls
2. Wall tile at drinking fountains / epoxy paint at wing walls
3. Wall tile at emergency showers – all sides
4. Walk – Off carpet tile at Insectary and Aviary Exterior Anterooms (4'x6')
5. Walk – Off carpet tile at main entry door C700 (4'x6')
6. Paint exposed ductwork and grilles in rooms with no ceiling (i.e., open to structure)
7. FRP at IT walls
8. FRP at Janitor walls
9. Crash railing installed in the following spaces:
   - 154D Food & Bedding Quarantine
   - 156 Clean Cage Stg
   - 158 Food Prep
   - 154A Quarantine/Procedure 1
   - 154B Quarantine / Procedure 2
   - 154C Gen Stg
   - 165C Wild Animal Housing 1
   - 165B Wild Animal Housing 2
   - 165A Wild Animal Housing 5
   - 165D Wild Animal Housing 3
   - 165D Wild Animal Housing 4
   - 167 Microscopy
   - 173BB Anthropod Chamber Rearing Room 3
   - 173AA Anthropod Chamber Rearing Room 4
   - 173B Prep Anteroom 3
   - 173A Prep Anteroom 4
   - 173D Prep Anteroom 1
   - 173C Prep Anteroom 2
   - 179F Bird Rm A
   - 179E Bird Rm B
   - 179D Bird Rm C
   - 179C Bat Rm A
   - 179B Bat Rm B
   - 179A Bat Rm C
   - 179 Procedure
   - 179H Storage
   - 178I Aviary Food Prep
   - 174 Insectary Equip Stg
   - 172 Procedure / Behavioral 3
   - 170 Procedure / Behavioral 2
   - 168 Procedure / Behavioral 1

ALTERNATE B: CASEWORK
BASE BID:
1. No upper / lower casework in Work Area 161A or Break Rm 161
2. Wall mounted sink in Break Rm 161
3. No upper or lower casework in "Flex Room" area
4. No lockers or change bench in Gender Neutral Shower

ADDITIVE ALTERNATE BID:
1. Upper and lower casework in Work Area 161A and Break Rm 161
2. In-counter sink installed in Break Rm 161
3. Upper and lower casework in "Flex Room"
4. Lockers and change bench in Gender Neutral Shower

ALTERNATE C: ROOF
BASE BID:
1. Fabric-Reinforced Thermoplastic Polyolefin Sheet (TPO)
   a. 60 mils, nominal
   b. Exposed Face Color: White
   c. Substrate Board: glass-mat, water resistant gypsum substrate, 1/2" thick

ADDITIVE ALTERNATE BID:
1. Fabric-Reinforced Thermoplastic Polyolefin Sheet (TPO)
   a. 80 mils, nominal
   b. Exposed Face Color: White
   c. Substrate Board: glass-mat, water resistant gypsum substrate, 5/8" thick

ALTERNATE D: SITE
BASE BID:
1. Basecourse drive @ 147,323 S.F.

ADDITIVE ALTERNATE BID:
1. Asphalt pavement drive and pavement markings @ 147,323 SF
2. Loading dock lift and concrete pad @ 102 SF
   a. power and all associated components for a fully functional lift system

BIM MODEL REQUIREMENTS

BIM MODEL SUBMITTAL & COORDINATION REQUIREMENTS

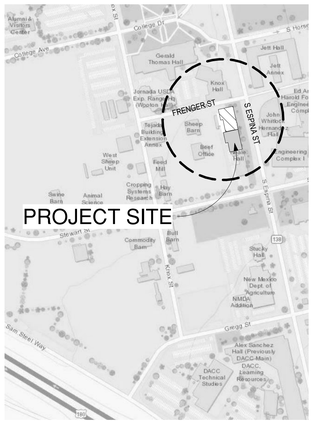
All requirements noted in individual specification sections for submittal of coordination drawings and shop drawings shall be strictly followed. Item or Equipment fabrications and installations that occur prior to the approval of these drawings shall be subject to removal and replacement at no additional cost to the owner.

In addition to the required drawings noted above, contractor shall prepare BIM (Building Information Model) for the systems noted below. The intent of this BIM model is to determine conflicts and coordinate solutions that will resolve final system installation. The contractor may use the overall BIM model to generate the coordination drawings and vice-versa.
1. HVAC
2. Plumbing
3. Electrical
4. Fire Protection
5. Special Systems
6. Structural

GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE ALL CONTRACT DRAWINGS AND SPECIFICATIONS FOR COORDINATION OF ALL SITE AND BUILDING COMPONENTS.
2. CONTRACTOR SHALL PROVIDE COORDINATION DRAWINGS AS PART OF SUBMITTAL PROCESS AND IS RESPONSIBLE FOR ACCURACY AND COMPLETENESS OF DOCUMENTS.
3. DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS NOT PROVIDED. IF ADDITIONAL DIMENSIONS ARE REQUIRED, NOTIFY ARCHITECT.
4. CONTRACTOR SHALL VERIFY ALL EXISTING SITE CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL NOTIFY ARCHITECT IMMEDIATELY OF ANY ERRORS, OMISSIONS, OR CONFLICTS IN THE CONSTRUCTION DOCUMENTS.
6. ALL MANUFACTURERS INSTALLATION INSTRUCTIONS, ASTM STANDARDS AND ICBO AND ICC ER REPORTS SHALL BE PROVIDED TO THE INSPECTOR AT THEIR REQUEST AND AT THE TIME OF INSPECTION.
7. CONTRACTOR SHALL COORDINATE ALL MATERIALS AND TRADES WITH THE LIFE SAFETY PLAN. IN THE CASE OF ANY DISCREPANCIES IN FIRE-RESISTANCE, SMOKE-RESISTANCE OR OTHER LIFE SAFETY FACTOR, THE MOST RESTRICTIVE SHALL GOVERN.
8. ALL MATERIALS USED IN RATED ASSEMBLIES SHALL BEAR THE UL CLASSIFICATION MARK AS REQUIRED BY THE UL DESIGN OF THE ASSEMBLY IN WHICH THEY OCCUR.
9. ALL ASSEMBLIES AND PENETRATIONS TO BE COORDINATED WITH RATINGS INDICATED IN CODE ANALYSIS/ LIFE SAFETY PLANS. CONTRACTOR TO PROVIDE UL RATED ASSEMBLIES AS REQUIRED. CONTRACTOR TO PROVIDE UL RATINGS IN SUBMITTALS FOR ALL PENETRATIONS AS REQUIRED.
10. CONTRACTOR SHALL COORDINATE WITH MANUFACTURER REQUIREMENTS FOR PROPER INSTALLATION OF ALL MATERIALS AND COMPONENTS.

VICINITY MAP



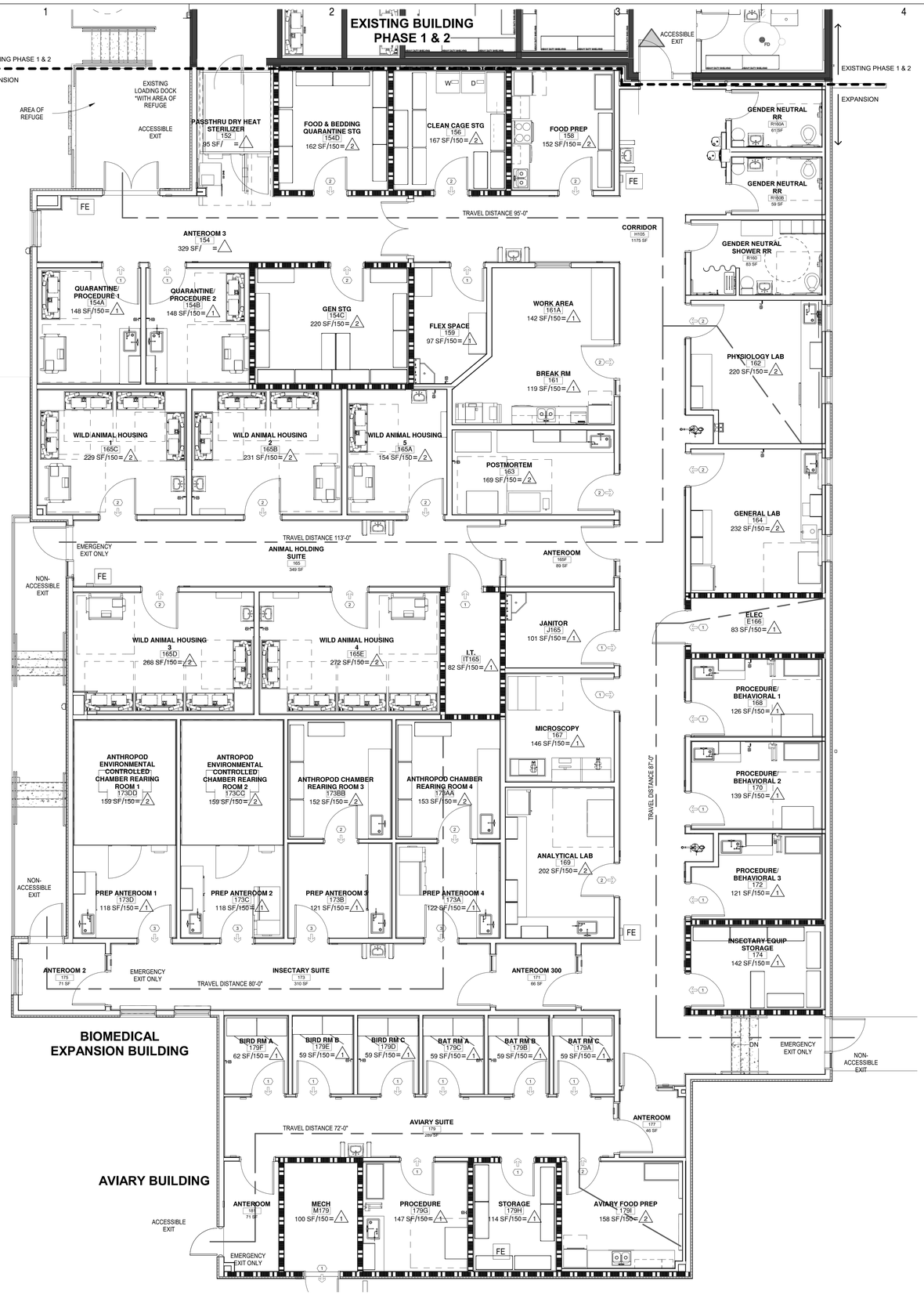
fbt | architects

MAIL: 6501 Americas Pkwy NE Ste. 300
Albuquerque, NM 87110

PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building



A1 OVERALL CODE FLOOR PLAN
3/16" = 1'-0"

CODE ANALYSIS

REFERENCES

2021 INTERNATIONAL BUILDING CODE (2015 IBC)
2021 INTERNATIONAL EXISTING BUILDING CODE (2015 IEBC)
2017 ANSI AMERICAN NATIONAL STANDARDS (ADA CODE)
2018 NEW MEXICO COMMERCIAL ENERGY CONSERVATION CODE (2015 IECC)
2018 INTERNATIONAL ENERGY CODE
2021 NEW MEXICO MECHANICAL CODE
2017 NEW MEXICO ELECTRICAL CODE
2021 NEW MEXICO PLUMBING CODE
2015 INTERNATIONAL FIRE CODE (IFC)
2021 INTERNATIONAL MECHANICAL CODE OF THE ICC
2009 INTERNATIONAL ENERGY CONSERVATION CODE
2015 INTERNATIONAL FUEL GAS CODE OF THE ICC
2012 NEW MEXICO ELECTRICAL SAFETY CODE
2007 NATIONAL FIRE PROTECTION ASSOCIATION 10
1999 NATIONAL FIRE PROTECTION ASSOCIATION 101 LIFE SAFETY CODE

ADDRESS

3020 SOUTH ESPINA ST, LAS CRUCES, NM 88003
NMSU CAMPUS, CORNER OF S ESPINA ST AND FRENGER ST

LOCATION ON PROPERTY

REFERENCE SITE PLAN ON COVER SHEET.

OCCUPANCY CLASSIFICATION

IBC 309.1, IBC 304.4: OCCUPANCY GROUP B - BUISNESS (HIGHER EDUCATION)

BUILDING HEIGHT — TABLE 504.3

B 75FT ACTUAL APPROX. 30'-6" FT

NUMBER OF STORIES — TABLE 504.4

ALLOWABEL STORIES 2 ; ACTUAL 1

ALLOWABLE AREA: — TABLE 506.2

ALLOWABLE AREA = 92,000SF
ACTUAL AREA FIRST FLOOR = 10,604 SF NEW, 11,634 SF EXISTING = 22,238 TOTAL SF
NO AREA INCREASE REQUIRED.

PLUMBING FIXTURE CALCULATIONS

NEW ADDITION

TOTAL NEW ADDITION GROSS SQUARE FOOTAGE 10,604 SF

B OCCUPANT LOAD 1 PERSON PER 150 SQUARE FEET

150 / 10, 604 = **71 OCCUPANTS**

71 OCCUPANTS / 2 = 36 MALE OCCUPANTS, 36 FEMALE OCCUPANTS

- MENS WATER CLOSET (WC) PER 25 FIRST 50; 1 PER 50 REMAINING
  2 REQUIRED - 1 PROVIDED
  SEE TOTAL BUILDING FIXTURE COUNT
- WOMENS WATER CLOSET (WC) 1 PER 25 FIRST 50; 1 PER 50 FOR THE REMAINDER EXCEEDING 50
  2 REQUIRED - 1 PROVIDED
  SEE TOTAL BUILDING FIXTURE COUNT
- MENS LAVATORIES (LAV) 1 PER 40 FIRST 80; 1 PER 80 FOR THE REMAINDER EXCEEDING 80
  1 REQUIRED - 1 PROVIDED
  ADDITIONAL FIXTURES PROVIDED IN GENDER NEUTRAL RESTROOMS
- WOMENS LAVATORIES (LAV) 1 PER 40 FIRST 80; 1 PER 80 FOR THE REMAINDER EXCEEDING 80
  1 REQUIRED - 1 PROVIDED
  ADDITIONAL FIXTURES PROVIDED IN GENDER NEUTRAL RESTROOMS
- MENS URINAL
  0 PROVIDED
  SEE TOTAL BUILDING FIXTURE COUNT
- GENDER NEUTRAL SHOWER & RESTROOM
  1 PROVIDED
- 1 / 100 = DRINKING FOUNTAINS
  1 REQUIRED -1 PROVIDED
- EMERGENCY SHOWER WASH
  1 PROVIDED
- DELUGE HOSE AND EYE WASH STATIONS PROVIDED IN VARIOUS ROOMS THROUGHOUT

TOTAL BUILDING INCLUDING EXISTING AND NEW ADDITION

EXISTING BUILDING GROSS SQUARE FOOTAGE 10,050 GSF
NEW ADDITION GROSS SQUARE FOOTAGE 10,604 GSF
TOTAL BUILDING GROSS SQUARE FOOTAGE 20,654 GSF

B OCCUPANT LOAD 1 PERSON PER 150 SQUARE FEET

150 / 20,654 = **138 OCCUPANTS**

138 OCCUPANTS / 2 = 69 MALE OCCUPANTS, 69 FEMALE OCCUPANTS

- MENS WATER CLOSET (WC)1 PER 25 FIRST 50; 1 PER 50 REMAINING
  3 REQUIRED - 2 PROVIDED
  3RD FIXTURE PROVIDED IN GENDER NEUTRAL RESTROOM
- WOMENS WATER CLOSET (WC) 1 PER 25 FIRST 50; 1 PER 50 FOR THE REMAINDER EXCEEDING 50
  3 REQUIRED - 2 PROVIDED
  3RD FIXTURE PROVIDED IN GENDER NEUTRAL RESTROOM
- MENS LAVATORIES (LAV) 1 PER 40 FIRST 80; 1 PER 80 FOR THE REMAINDER EXCEEDING 80
  2 REQUIRED - 2 PROVIDED
  ADDITIONAL FIXTURE PROVIDED IN GENDER NEUTRAL RESTROOM
- WOMENS LAVATORIES (LAV) 1 PER 40 FIRST 80; 1 PER 80 FOR THE REMAINDER EXCEEDING 80
  2 REQUIRED - 2 PROVIDED
  ADDITIONAL FIXTURE PROVIDED IN GENDER NEUTRAL RESTROOM
- MENS URINAL
  1 PROVIDED
- GENDER NEUTRAL RESTROOM
  1 PROVIDED
- GENDER NEUTRAL SHOWER & RESTROOM
  1 PROVIDED
- SHOWER ROOM
  1 PROVIDED
- 1 / 100 = DRINKING FOUNTAINS
  1 REQUIRED - 2 PROVIDED
- EMERGENCY SHOWER WASH
  3 PROVIDED
- DELUGE HOSE AND EYE WASH STATIONS PROVIDED IN VARIOUS ROOMS THROUGHOUT

FIRE SPRINKLER SYSTEM — 2021 IBC SECTION 903.2.1

EQUIPPED THROUGHOUT WITH AND AUTOMATIC SPRINKLER SYSTEM.

FIRE RATED CONSTRUCTION — TABLE 601

TYPE IIB:
STRUCTURAL FRAME = 0
BEARING WALLS = 0
NON BEARING WALLS = 0
FLOOR CONSTRUCTION = 0
ROOF CONSTRUCTION = 0

EXIT ACCESS TRAVEL DISTANCE — 2021 IBC TABLE 1017.2

MAXIMUM LENGTH OF EXIT ACCESS TRAVEL:
300 FT. MAXIMUM - OCCUPANCY B

SEE PLAN FOR ACTUAL MAXIMUM TRAVEL DISTANCES

CORRIDOR FIRE RESISTANCE RATING — 2021 IBC TABLE 1020.1

CORRIDOR FIRE RATING WITH SPRINKLER= NONE

DEAD END CORRIDOR — 2021 IBC SECTION 1020.4

50 FT. MAXIMUM B OCCUPANCY

FIRE EXTINGUISHERS (FE) — NFPA 101/ NFPA 10

SEE CODE ANALYSIS PLAN FOR LOCATIONS -
MAX.75' TRAVEL DISTANCE.

EXITING REQUIREMENTS/FIXTURE LOADS:
ADDITION ONLY — 2021 IBC CHAPTER 10

EGRESS WITH REDUCTIONS NOT TAKEN

REQUIRED EXIT WIDTH (DOORS)
(OCC. LOAD) x (0.2) = DOOR WIDTH IN INCHES
71 x 0.2 = 14.2 REQUIRED, 43/2" PROVIDED

REQUIRED EXIT WIDTH (HALLWAYS)
(OCC. LOAD) x (0.2) = CORRIDOR WIDTH IN INCHES
(96 OCCUPANTS) x (0.2) = 19.2" REQUIRED; 60" PROVIDED

CODE SYMBOL LEGEND

- ONE HOUR FIRE BARRIER
- A — AREA OCCUPANT LOAD
- FE — SEMI RECESSED FIRE EXTINGUISHER CABINET
- FE — WALL MOUNTED FIRE EXTINGUISHER
- EXIT TRAVEL DISTANCE
- EXIT OCCUPANT LOAD (ARROW INDICATES DIRECTION TO EXIT)

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE

BUILDING CODE ANALYSIS

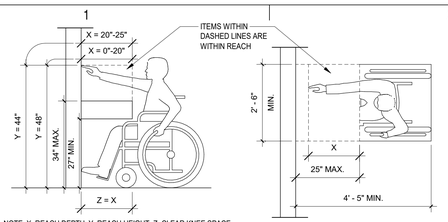
G-001

NMSU Agricultural Modernization: Biomedical Research Building Expansion

12/4/2023 12:12:44 PM

Biomedical Research Building Expansion

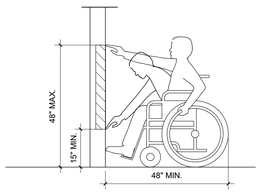
NMSU Agricultural Modernization: Biomedical Research Building Expansion



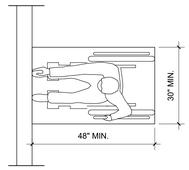
SECTION
ALL DIMENSIONS ARE FROM FINISHED FACE

PLAN
ALL DIMENSIONS ARE FROM FINISHED FACE

E1 OBSTRUCTED FORWARD REACH
1/2" = 1'-0"

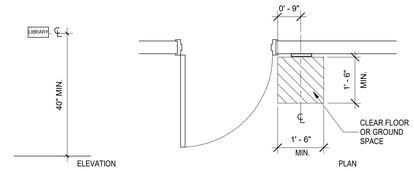


SECTION
ALL DIMENSIONS ARE FROM FINISHED FACE



PLAN
ALL DIMENSIONS ARE FROM FINISHED FACE

E2 UNOBSTRUCTED FORWARD REACH
1/2" = 1'-0"



E4 SIGNAGE MOUNTING HEIGHT/LOCATION
1/2" = 1'-0"

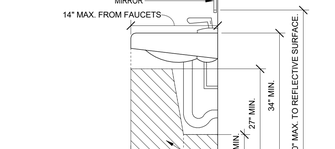
GENERAL NOTES

ALL FIXTURES AND ACCESSORIES SHALL COMPLY WITH ADA, ANSI, UFAS, AND LOCAL AND STATE BUILDING CODE REQUIREMENTS. ALL HEIGHTS, DIMENSIONS AND CLEARANCES FOR PLUMBING FIXTURES, CASEWORK, COUNTERTOPS, ACCESSORIES, SIGNAGE, ACCESSIBLE ROUTES, ETC. SHALL BE STRICTLY HELD TO ADA, ANSI, AND LOCAL AND STATE REQUIREMENTS. IN THE EVENT OF CONFLICTING REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENTS SHALL APPLY.

SECTION
ALL DIMENSIONS ARE FROM FINISHED FACE

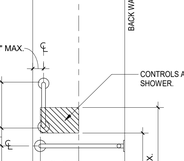
PLAN
ALL DIMENSIONS ARE FROM FINISHED FACE

D1 OBSTRUCTED SIDE REACH
1/2" = 1'-0"



NOTE
ALL DIMENSIONS ARE FROM FINISHED FACE
ARROW INDICATES DIRECTION OF APPROACH

D2 MINIMUM DOOR CLEARANCES
1/4" = 1'-0"



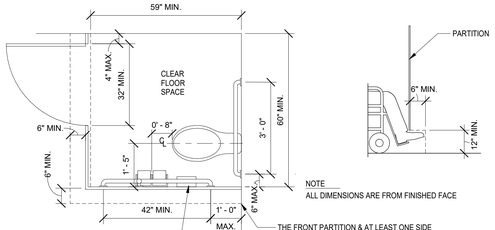
D4 FIRE EXTINGUISHER
1/2" = 1'-0"

SECTION
ALL DIMENSIONS ARE FROM FINISHED FACE
SPOUT AND CONTROLS SHALL BE LOCATED AT FRONT.
CONTROLS SHALL BE PUSH BAR, ELECTRONIC TYPE & HAND OPERABLE

C1 DRINKING FOUNTAIN CLEARANCES
1/2" = 1'-0"

SECTION
ALL DIMENSIONS ARE FROM FINISHED FACE

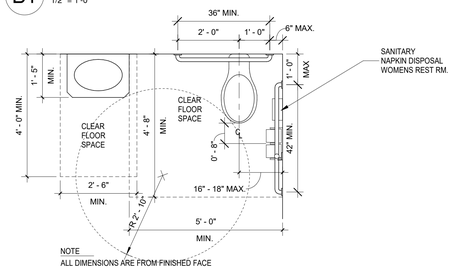
C2 ACCESSIBLE URINAL
1/2" = 1'-0"



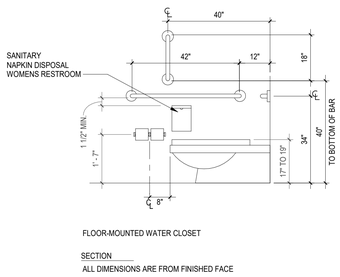
B1 ACCESSIBLE STALL CLEARANCES
1/2" = 1'-0"

SECTION
ALL DIMENSIONS ARE FROM FINISHED FACE.

B2 ACCESSIBLE SINK
1/2" = 1'-0"

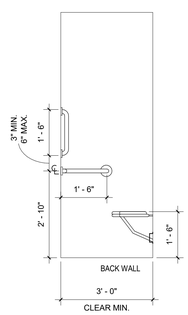


A1 ACCESSIBLE RESTROOM
1/2" = 1'-0"



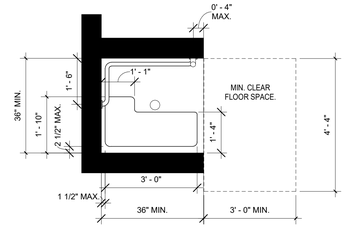
SECTION
ALL DIMENSIONS ARE FROM FINISHED FACE

A2 W.C. SIDE ELEVATION
1/2" = 1'-0"



STANDARD TRANSFER TYPE SHOWER COMPARTMENT

A4 ACCESSIBLE TRANSFER SHOWER ELEVATION
1/2" = 1'-0"



STANDARD TRANSFER TYPE SHOWER COMPARTMENT

A5 ACCESSIBLE TRANSFER SHOWER PLAN
1/2" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

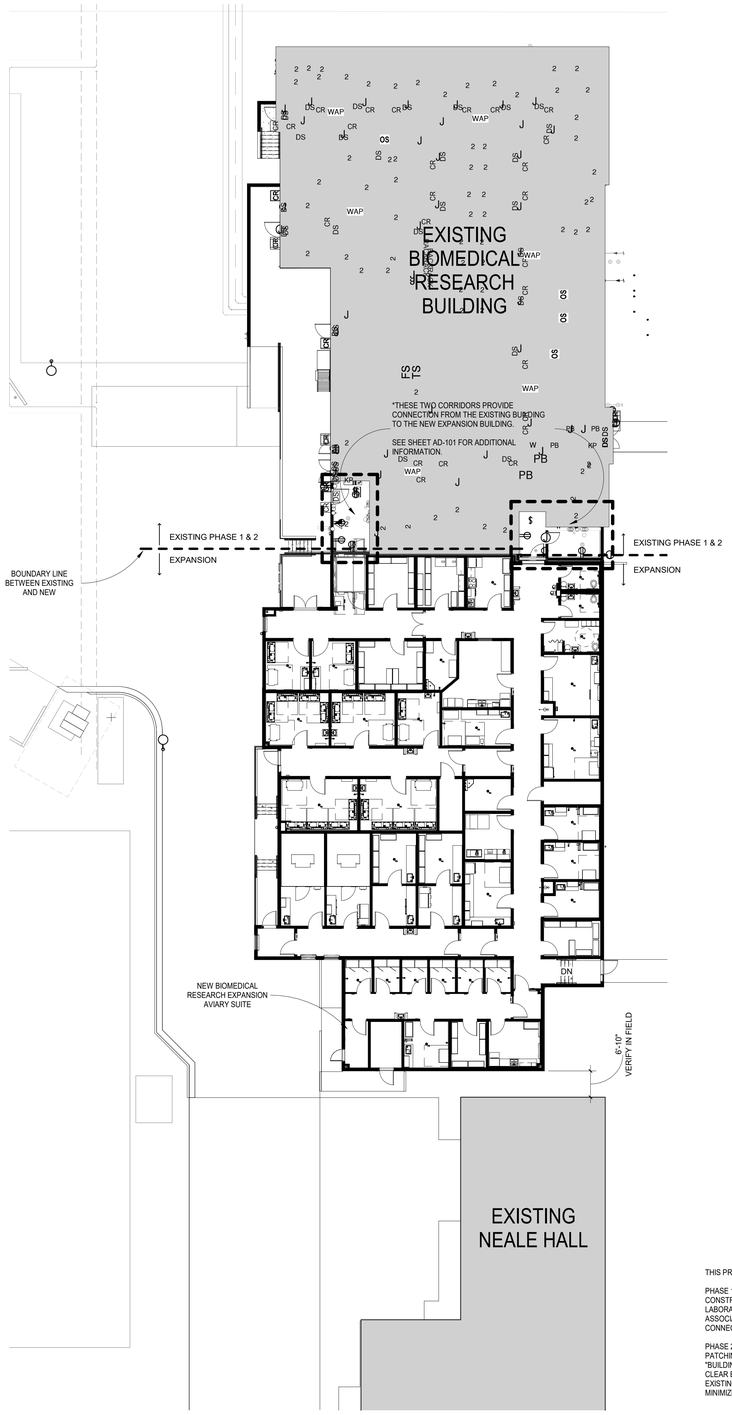
DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE
ACCESSIBILITY GUIDELINES

G-010

Biomedical Research Building Expansion

12/4/2023 12:12:45 PM



THIS PROJECT INCLUDES PHASED WORK.

PHASE 1 OF THIS PROJECT INCLUDES: CONSTRUCTION OF THE NEW BIOMEDICAL LABORATORY EXPANSION BUILDING AND ASSOCIATED SITE IMPROVEMENTS AND UTILITY CONNECTIONS.

PHASE 2 OF THIS PROJECT INCLUDES: DEMOLITION, PATCHING AND CONNECTION OF THE EXISTING "BUILDING" TO THIS NEW EXPANSION. MAINTAIN CLEAR ENVIRONMENTAL SEPARATION WITH EXISTING BIOMEDICAL RESEARCH BUILDING MINIMIZING NOISE AND VIBRATION.

A5 OVERALL FLOOR PLAN — CONNECTION OF EXISTING TO NEW EXPANSION BUILDING
1/16" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

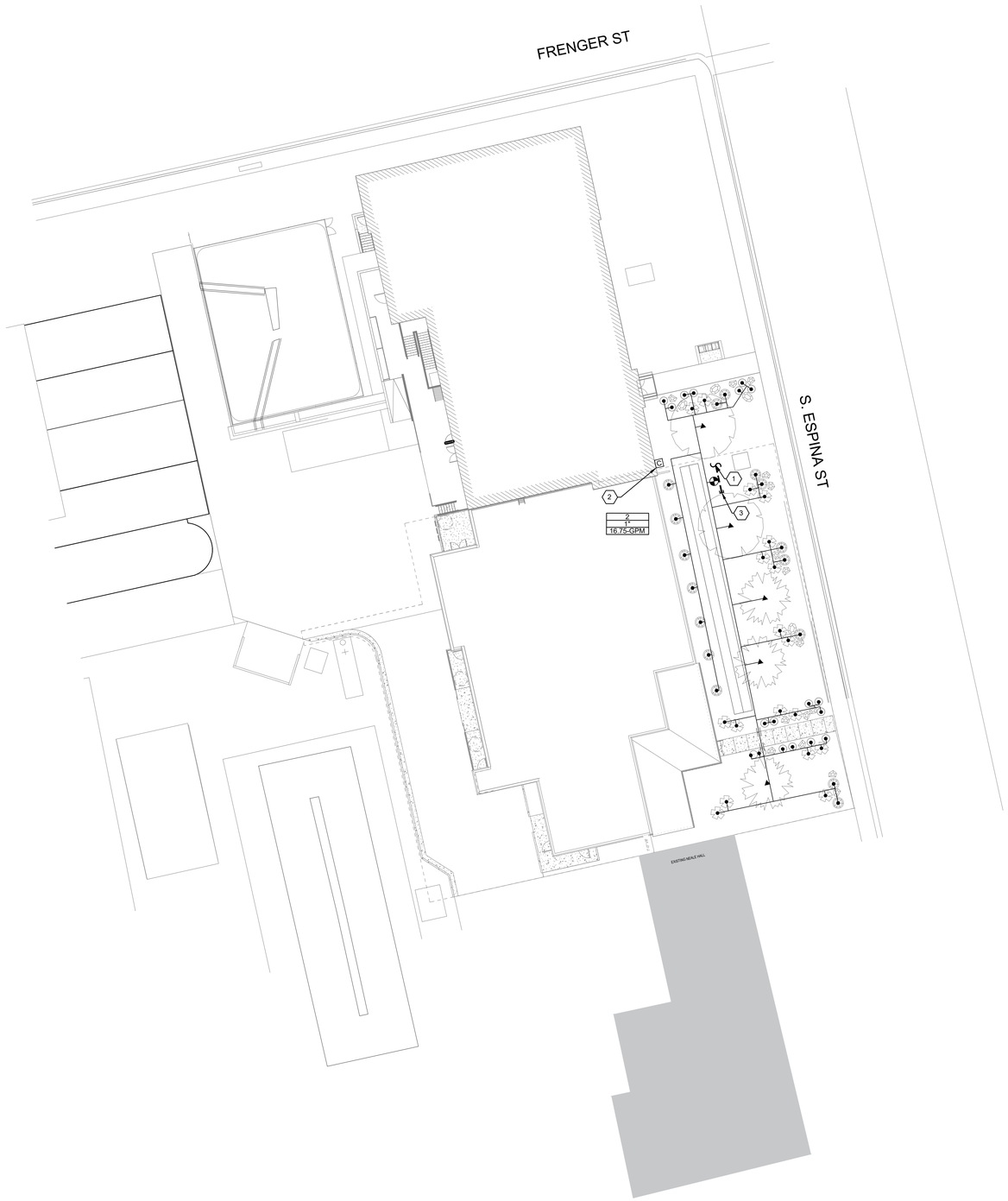
MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE

PHASING PLAN

G-030



IRRIGATION LEGEND

- MAIN LINE, LATERAL, AND DRIP LINE SLEEVE PIPING: CLASS 200, SDR-21, BELL-END, SOLVENT WELD PVC, SEE IRRIGATION NOTE C.
- IRRIGATION MAIN LINE: SCHEDULE 40, BELL END, SOLVENT WELD PVC, SIZE 2". DEPTH OF BURY 36" FOR CONTINUOUS PRESSURE IRRIGATION MAIN, 18" FOR NON-CONTINUOUS.
- IRRIGATION LATERAL LINE, SCH. 40, BELL-END, SOLVENT WELD PVC. DEPTH OF BURY 18". SIZE AS SHOWN ON PLAN. PIPE CONVEYING LESS THAN 5 GPM SHALL BE 3/4".
- REMOTE CONTROL VALVE ASSEMBLY, RAINBIRD PEB SERIES, PLASTIC BODY 24-VOLT AUTOMATIC VALVE (OR APPROVED EQUAL), SIZE AS SHOWN ON PLAN. SEE DETAIL A1/LS-501.
- SOLVENT WELD CAP: SCH. 40 PVC, LINE SIZE.

PRESSURE COMPENSATING BUBBLER ASSEMBLIES, RAIN BIRD 1400 SERIES, SEE DETAIL A3/LI-501.

	MODEL NO.	GPM	PSI	NOTE
●	1401	.25	30	
▲	1401	.75	30	3 PER TREE. SEE DETAIL A5/LI-501

IRRIGATION GENERAL NOTES

A. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO CONSTRUCT THE PROPOSED IRRIGATION SYSTEM IN ACCORDANCE WITH THE PLANS, DETAILS, AND SPECIFICATIONS.

B. THIS SYSTEM WAS DESIGNED TO OPERATE AT A MINIMUM STATIC PRESSURE OF 40 PSI AT THE POINT OF CONNECTION. THE CONTRACTOR SHALL VERIFY ACTUAL PSI AND DELIVER RESULTS TO LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION. IN THE EVENT THE ACTUAL PSI IS LESS THAN 40 PSI THE CONTRACTOR SHALL RECEIVE DIRECTION FROM LANDSCAPE ARCHITECT REGARDING POSSIBLE DESIGN MODIFICATIONS PRIOR TO INSTALLATION OF ANY IRRIGATION COMPONENTS. THE PRESSURE READING SHALL BE PERFORMED IN THE PRESENCE OF THE OWNER'S AUTHORIZED REPRESENTATIVE. RESULTS SHALL BE INCLUDED IN THE CONTRACTOR'S IRRIGATION EQUIPMENT SUBMITTAL INDICATING DATE AND TIME OF PRESSURE READING AND THE NAME OF ATTENDING OWNER'S REPRESENTATIVE.

C. CONTRACTOR SHALL INSTALL MAIN LINE AND LATERAL LINES IN SLEEVE PIPING AT ALL LOCATIONS WHERE LINES CROSS BENEATH PAVING OR RETAINING WALLS. SLEEVES SHALL BE CLASS 200, SDR-21, BELL END SOLVENT WELD PVC, TWO SIZES LARGER THAN PIPE TO BE CONTAINED (UNLESS OTHERWISE NOTED ON PLAN). SLEEVES FOR PVC SHALL BE AT LINE BURY DEPTH. COORDINATE IRRIGATION SLEEVE INSTALLATION WITH ALL TRADES TO ENSURE SLEEVES ARE INSTALLED PRIOR TO INSTALLATION OF CURB AND GUTTER, CONCRETE AND ASPHALT PAVEMENT, SIDEWALKS, SLABS, WALLS, ETC.

D. IRRIGATION PIPE ROUTING IS SHOWN DIAGRAMMATICALLY AND MAY REQUIRE MINOR FIELD ADJUSTMENTS. IN THE CASE OF MAJOR ADJUSTMENTS OR CHANGES TO THE DESIGN, CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING PRIOR TO PROCEEDING WITH THE WORK. ACTUAL PIPE ROUTING AND EQUIPMENT LOCATIONS SHALL BE COMPLETELY AND ACCURATELY NOTED IN THE PROJECT AS-BUILTS TO BE PROVIDED BY THE CONTRACTOR.

E. IRRIGATION PIPING SHALL NOT BE INSTALLED WITHIN THE DRIP LINE OF TREES. ALL ELBOWS AND TEES SHALL BE INSTALLED IN LANDSCAPE AREAS UNLESS OTHERWISE NOTED. IRRIGATION EQUIPMENT SHALL BE LOCATED IN LANDSCAPE AREAS.

IRRIGATION KEYED NOTES

1. CONNECT TO EXISTING MAINLINE.
2. EXISTING IRRIGATION CONTROLLER.
3. INSTALL MAIN LINE CAP IN APPLIED ENGINEERING 1320 VALVE BOX, COLOR: TAN, PER DETAIL A1/LI-501, SIM. EXTEND ONE COMMON WIRE AND FIVE CONTROL WIRES FROM EXISTING CONTROLLER TO VALVE BOX. PROVIDE AN ADDITIONAL 10' - 0" LENGTH OF EACH WIRE COILED NEATLY IN THE VALVE BOX.

VALVE TAG KEY

1	VALVE NUMBER
2"	VALVE SIZE
44.43-GPM	GALLONS PER MINUTE

A1 PLANTING PLAN

SCALE: 1" = 20'

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

LANDSCAPE ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: TW
CHECKED BY: WM

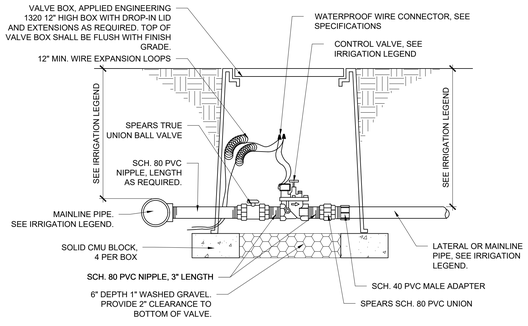
SHEET TITLE
IRRIGATION PLAN

LI-101

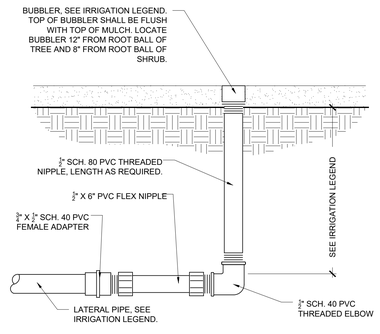
NMSU Agricultural Modernization: Biomedical Research Building Expansion

11/29/2023 4:18 PM

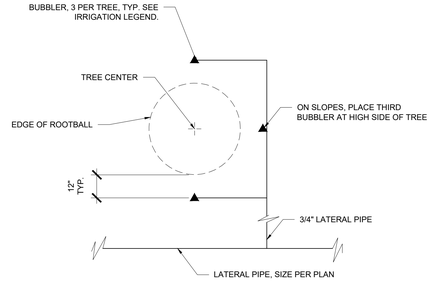
NMSU Agricultural Modernization: Biomedical Research Building Expansion



A1 AUTOMATIC VALVE ASSEMBLY
SCALE: N.T.S.



A3 BUBBLER ASSEMBLY
SCALE: N.T.S.



A5 BUBBLER LAYOUT AT TREES (3)
SCALE: N.T.S.

11/29/2023 4:19 PM

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

LANDSCAPE ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

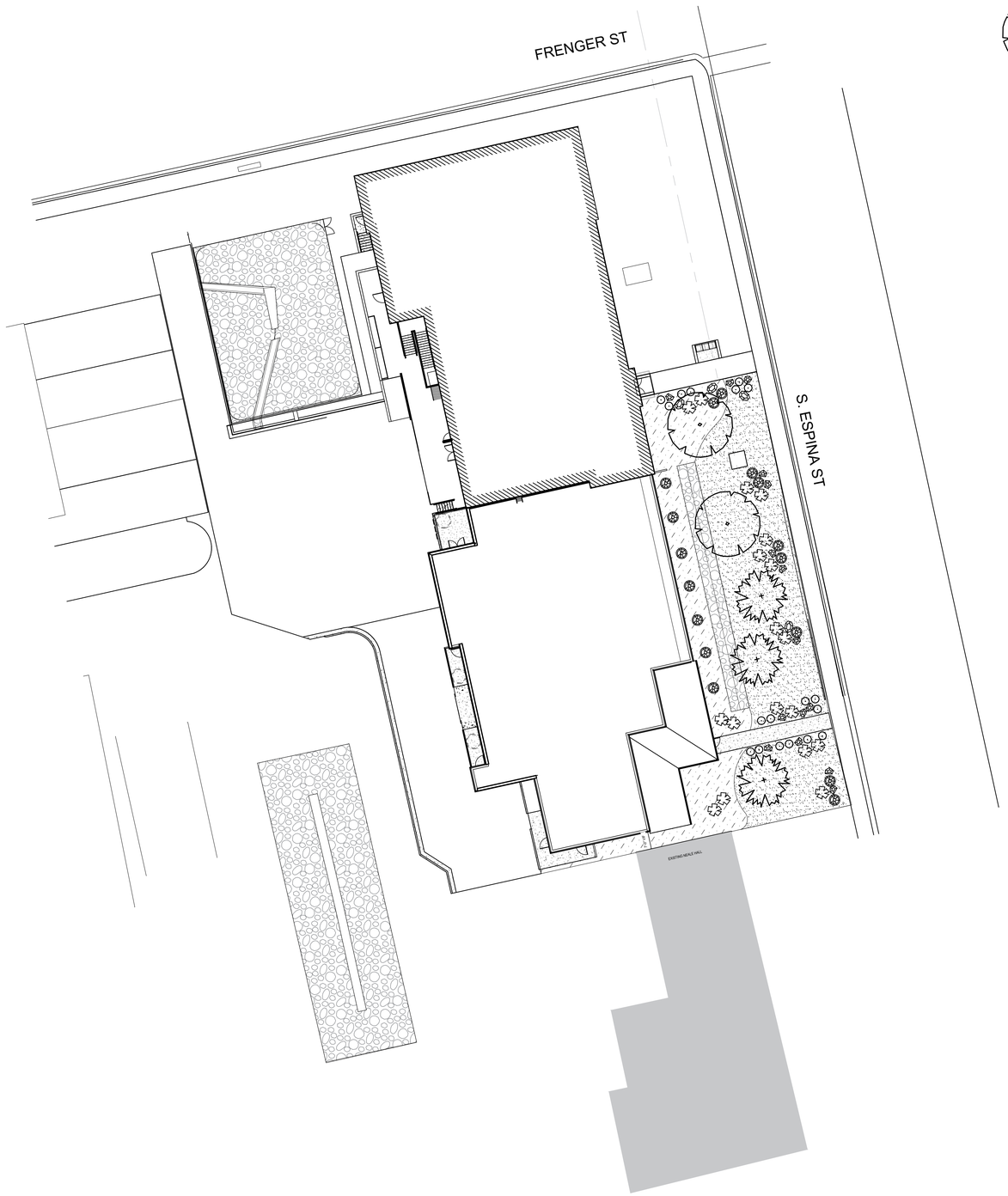
3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: TW
CHECKED BY: WM

SHEET TITLE
IRRIGATION DETAILS

LI-501



PLANT LEGEND

SYMBOL	COMMON NAME	BOTANICAL NAME	QTY	MIN. INSTALLED SIZE	CONTAINER	MATURE SIZE
TREES						
	'BUBBA' DESERT WILLOW	CHILOPSIS LINEARIS 'BUBBA'	2	2" CAL, 12'-14' HT	B&B	25' HT & 25' SPD
	ROCKY MOUNTAIN JUNIPER* *FEMALE ONLY	JUNIPERUS SCOPULORUM*	3	8' MIN. HT	B&B	30' HT X 20' SPD
SHRUBS						
	RIO BRAVO TEXAS SAGE	LEUCOPHYLLUM LANGMANIAE 'RIO BRAVO'	18	MIN 18" HT	5-GAL	5' HT & SPD
	LIONHEART HESPERALOE	HESPERALOE CAMPANULATA 'MSWM NUEVO LEON'	16	MIN 12" HT	5-GAL	4' HT & SPD
	TURPENTINE BUSH	ERICAMERIA LARICIFOLIA	18	MIN 12" HT	5-GAL	3' HT & SPD

HATCH LEGEND

- 4" DEPTH 3/4" GRAVEL MULCH OVER FILTER FABRIC. SEE GENERAL NOTE C.
- 4" DEPTH 2"-4" GRAVEL MULCH OVER FILTER FABRIC. SEE GENERAL NOTE B.
- RIP-RAP. SEE GENERAL NOTE G.
- BOULDER. SEE GENERAL NOTE F. QTY: 19

GENERAL NOTES

A. IF THERE IS A DISCREPANCY BETWEEN PLANT QUANTITIES LISTED IN THE PLANT SCHEDULE AND THOSE SHOWN ON THE PLANTING PLAN, QUANTITIES SHOWN ON THE PLAN SHALL GOVERN. CONTRACTOR SHALL VERIFY ALL QUANTITIES PRIOR TO BID. ADDITIONAL PAYMENT WILL NOT BE MADE FOR ANY DISCREPANCY IN QUANTITIES BETWEEN THE PLANTING PLAN AND THE PLANT SCHEDULE.

B. CONTRACTOR SHALL INSTALL A 4" DEPTH OF 2" - 4" 'FRANKLIN RED' GRAVEL MULCH AS AVAILABLE FROM GARDEN CENTER OF LAS CRUCES (575-805-4911). FILTER FABRIC SHALL BE MIN 4. OZ/SY NONWOVEN NEEDLE PUNCHED POLYPROPLYENE (MIRAFI 140N). OVERLAP ENDS 3", TURN DOWN EDGES 6". TOP OF MULCH SHALL BE 1" BELOW TOP OF ADJACENT PAVING. SEE DETAIL B1/LS-501.

C. CONTRACTOR SHALL INSTALL A 4" DEPTH OF 3/4" 'RAINBOW' GRAVEL MULCH AS AVAILABLE FROM CN LANDSCAPING (575-915-6864). FILTER FABRIC SHALL BE MIN 4. OZ/SY NONWOVEN NEEDLE PUNCHED POLYPROPLYENE (MIRAFI 140N). OVERLAP ENDS 3", TURN DOWN EDGES 6". TOP OF MULCH SHALL BE 1" BELOW TOP OF ADJACENT PAVING. SEE DETAIL B1/LS-501.

D. IF THERE IS A DISCREPANCY IN THE FIELD OR NURSERY BETWEEN THE CONTAINER SIZE LISTED UNDER "CONTAINER" AND HEIGHT & SPREAD LISTED UNDER "INSTALLED SIZE", THE SPECIFIED PLANT SHALL MEET HEIGHT & SPREAD REQUIREMENTS SPECIFIED UNDER "INSTALLED SIZE". IF A LARGER CONTAINER SIZE IS REQUIRED TO MEET THESE SPECIFICATIONS, IT SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

E. TREES AND SHRUBS SHALL BE PLANTED PER DETAILS A3/LP-501 AND A5/LP-501.

F. FURNISH AND INSTALL BOULDERS PER DETAIL A1/LP-501. BOULDERS SHALL BE MIN. 12-18 CUBIC FEET LOCALLY AVAILABLE GRANITE. BURY BOULDER TO MIN. 8" DEPTH. COMPACT SUBGRADE BELOW BOULDER TO 85% PROCTOR.

G. RIP-RAP SHALL BE NMDOT CLASS B RIP RAP.

A1 PLANTING PLAN
SCALE: 1" = 20'

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

LANDSCAPE ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

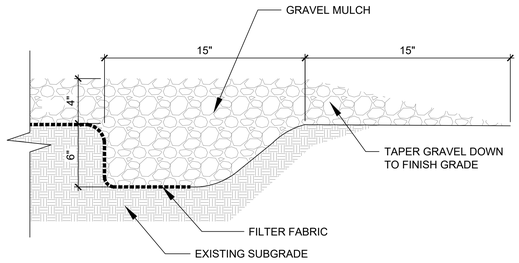
DRAWN BY: TW
CHECKED BY: WM

SHEET TITLE
PLANTING PLAN

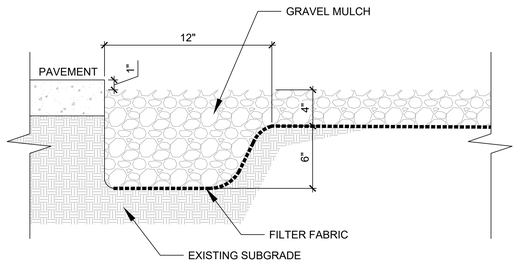
LP-101

NMSU Agricultural Modernization: Biomedical Research Building Expansion

11/29/2023 4:19 PM

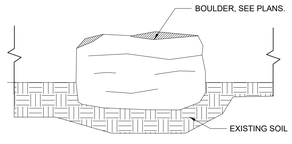


UNCONTAINED EDGE



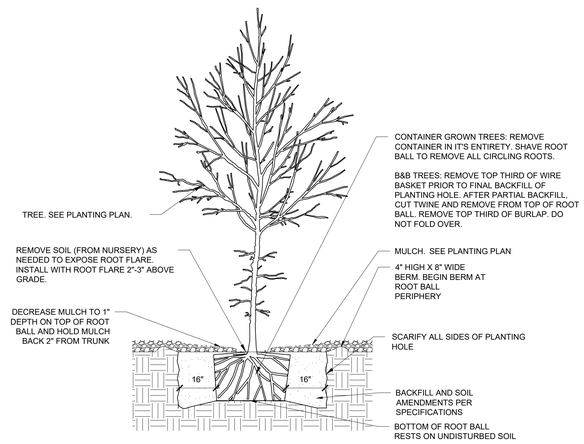
EDGE AT PAVEMENT

B1 GRAVEL EDGE FINISH CONDITION
SCALE: N.T.S.

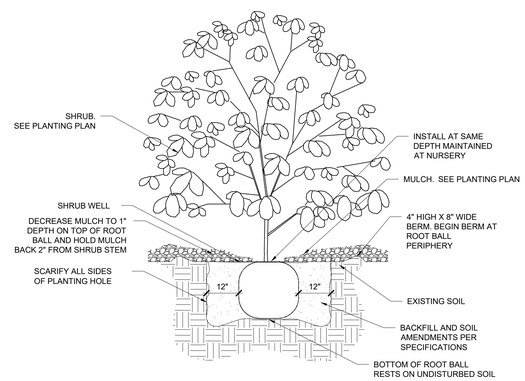


NOTE:
1. BURY APPROXIMATELY ⅓ BOULDER MASS.

A1 LANDSCAPE BOULDER
N.T.S.



A3 TREE PLANTING
SCALE: N.T.S.



A5 SHRUB PLANTING
SCALE: N.T.S.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

LANDSCAPE ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: TW
CHECKED BY: WM

SHEET TITLE
PLANTING DETAILS

LP-501

11/29/2023 4:20 PM

LEGEND

- PROPERTY LINE
- 4925 — EXISTING INDEX CONTOUR
- 4924 — EXISTING INTERMEDIATE CONTOUR
- 4925.25 — EXISTING GROUND SPOT ELEVATION
- SURVEY CONTROL MONUMENT

SURVEY CONTROL				
MONUMENT ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
BH 20-396-01	465144.295	1482465.474	3883.020	2" ALUMINUM CAP
BH 20-396-02	464568.226	1483585.156	3815.049	2" ALUMINUM CAP
BH 20-396-03	465304.724	1484409.981	3902.292	2" ALUMINUM CAP

Tangent Table		
ID	BEARING	LENGTH
T1	S65°45'50"W	1799.71'
T2	S21°37'51"W	1414.45'
T3	S27°41'00"E	653.11'

FOR INFORMATION ONLY

N

20 10 0 20
1"=20'

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300
Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: BF
CHECKED BY: AP

SHEET TITLE

EXISTING CONDITIONS

C-001

NMSU Agricultural Modernization: Biomedical Research Building Expansion

A1 RIP-RAP SWALE

NTS

A. ±0.75" RADIUS
B. DIMENSIONS AT ROUNDED CORNERS MEASURED TO INTERSECTION OF STRAIGHT LINES.
C. ±2" RADIUS.
D. DIMENSIONS AT ROUNDED CORNERS MEASURED TO INTERSECTION OF STRAIGHT LINES.

CROSS SECTION

PLAN VIEW

A2 CONCRETE RUNDOWN

NTS

GRADING KEYNOTES

1. MATCH EXISTING ELEVATION.
2. INSTALL RIP-RAP SWALE PER DETAIL A1, SHEET GP01.
3. INSTALL 12" SIDEWALK CULVERT PER NMAPWA STD DWG 2236 WITH PEDESTRAIN RATED GRATE.
4. INSTALL RETAINING WALL. SEE SHEET STRUCTURAL PLANS FOR DETAILS.
5. INSTALL CONCRETE RUNDOWN. SEE DETAIL A2 ON SHEET GP01.
6. INSTALL HDPE (N12WT, OR APPROVED EQUAL). SEE PLAN FOR SIZE.
7. INSTALL PREFABRICATED STORM DRAIN FITTING. SEE PLAN FOR SIZE.
8. INSTALL STORM DRAIN TO WITHIN 5' OF BUILDING. CONNECT TO ROOF DRAIN OUTLET BELOW GRADE PER DETAIL A3 ON SHEET CP01.
9. INSTALL CMP END SECTION (CONTECH OR APPROVED EQUAL). SEE PLAN FOR SIZE.
10. LOCATION OF ROOF DRAIN DOWNSPOUT. SEE LANDSCAPING PLANS FOR PROPOSED SPLASH BLOCK.

A3 ROOF DRAIN CONNECTION

NTS

LEGEND

5025	EXISTING INDEX CONTOUR
5024	EXISTING INTERMEDIATE CONTOUR
● 18.50	PROPOSED FINISHED GRADE SPOT ELEVATION TOC=TOP OF CONCRETE, TC=TOP OF CURB, FL=FLOW LINE, TS=TOP OF SIDEWALK TG=TOP OF GRATE, FGH=FINISH GROUND HIGH, FGL=FINISH GROUND LOW
→ ←	DIRECTION OF FLOW
— SD — SD —	PROPOSED STORM DRAIN LINE
◎	PROPOSED STORM DRAIN MANHOLE
▦ ● ▦	PROPOSED STORM DRAIN INLETS
5025	PROPOSED INDEX CONTOUR
5025	PROPOSED INTERMEDIATE CONTOUR
— — —	PROPOSED LIMITS OF GRADING

N

20 10 0 20
1"=20'

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300
Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

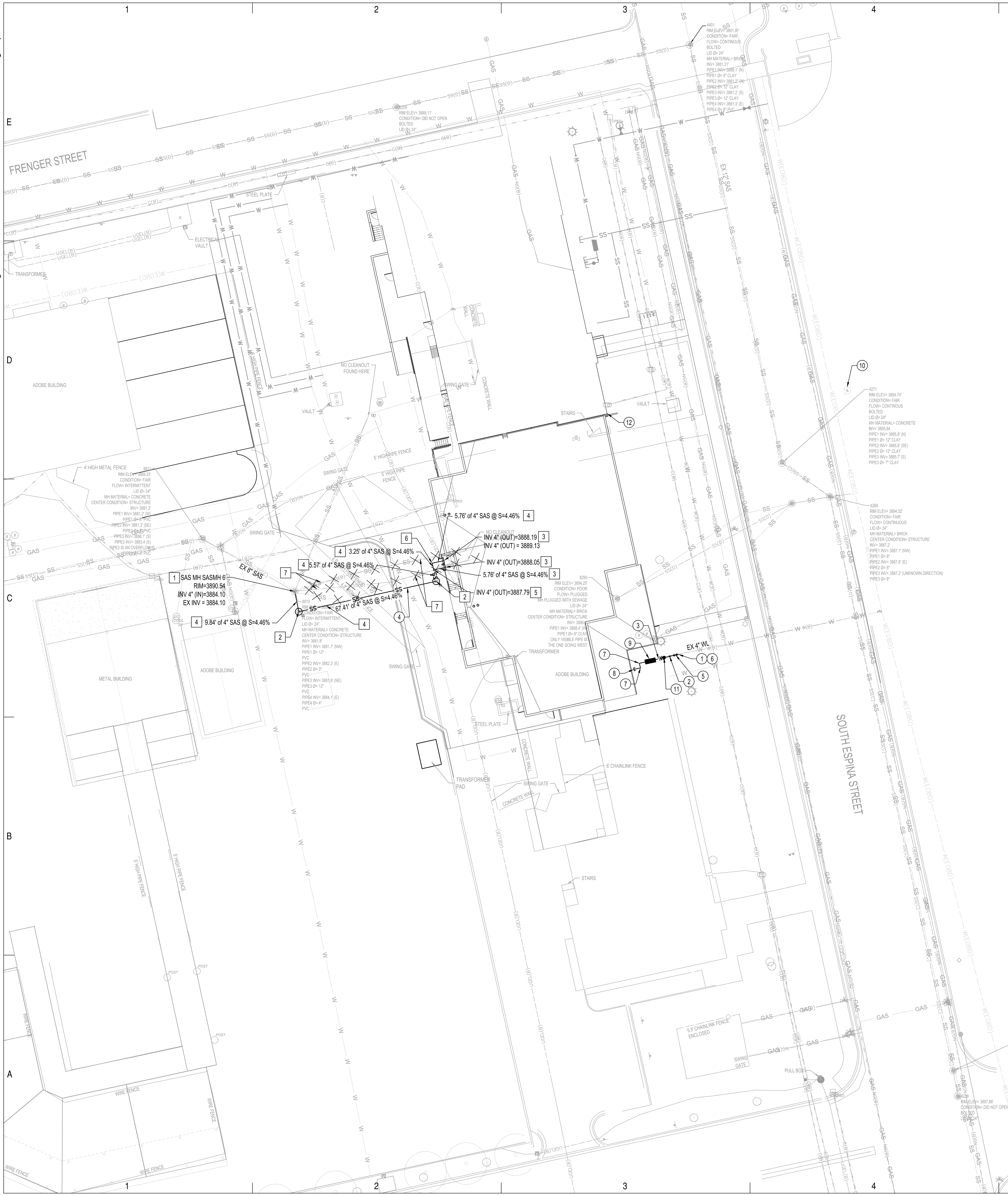
DRAWN BY: BF
CHECKED BY: AP

SHEET TITLE

GRADING PLAN

GP01

Biomedical Research Building Expansion



UTILITY GENERAL NOTES

A. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE INSTALLATION OF ALL WORK RELATED TO MECHANICAL UTILITIES AS SHOWN ON THIS PLAN INCLUDING: TRENCHING, BACKFILL, SUPPORTS, CLEANOUT PADS, SERVICE STOPS AND BOXES, SERVICE LINES, TESTING, CLEANING, AND STERILIZING. ANY WORK NOT ACCEPTED BY THE ARCHITECT OR ENGINEER DUE TO IMPROPER WORKMANSHIP OR LACK OF PROPER COORDINATION SHALL BE REMOVED AND CORRECTLY INSTALLED AT THE CONTRACTOR'S EXPENSE, AS DIRECTED.

B. MINIMUM DEPTHS OF COVER SHALL BE: 36" FOR WATERLINES AND 48" FOR SEWER, EXCEPT AT BUILDING CONNECTION.

C. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR PROVIDED OF HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE IAPMO UNIFORM PLUMBING CODE & NFPA 24, LATEST EDITION.

D. UTILITY LINES SHALL BE INSTALLED PRIOR TO PAVEMENT, CURB AND GUTTER, AND/OR SIDEWALK, AS APPLICABLE.

E. ROUGH GRADING OF SITE (±0.5') SHALL BE COMPLETED PRIOR TO INSTALLATION OF UTILITY LINES.

F. CONTRACTOR WILL BE RESPONSIBLE FOR CONNECTIONS TO BUILDING DRAIN LINES AND ALL NECESSARY FITTINGS.

G. ALL VALVES SHALL BE ANCHORED PER NMAPWA STANDARD DWG. 2333.

H. FIRE LINES SHALL USE PIPE MATERIALS UNDERWRITERS LABORATORIES LISTED AND APPROVED FOR FIRE SERVICE.

I. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WATER METER, FIRE LINE, AND SEWER HOOKUP FEES FOR INSTALLATIONS. OWNER SHALL BE RESPONSIBLE FOR UTILITY EXPANSION CHARGES, PRORATA AND OTHER SPECIAL ASSESSMENTS.

J. CONTRACTOR SHALL VERIFY INVERTS AND LOCATIONS OF EXISTING WATER/SAS LINES PRIOR TO BEGINNING WORK. ALL CONFLICTS SHALL BE BROUGHT TO ATTENTION OF THE ENGINEER AND RESOLVED PRIOR TO BEGINNING WORK.

K. CONTRACTOR SHALL NOTIFY THE AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION OF FIRE SERVICE LINES, AND PRIOR TO TESTING OF ALL WATERLINES. CONTRACTOR SHALL COMPLETE, SIGN, AND SUBMIT THE "CONTRACTOR'S MATERIAL & TEST CERTIFICATE FOR UNDERGROUND PIPING" IN ACCORDANCE WITH NFPA 24.

L. ADJUST ALL EXISTING DISTURBED UTILITY APPURTENANCES, INCLUDING, BUT NOT LIMITED TO CLEANOUTS, VALVE COVERS, ETC. TO FINISHED GRADE.

M. CONTRACTOR IS RESPONSIBLE FOR COMPLETING A FIRE PRESSURE/FLOW TEST PRIOR TO THE START OF CONSTRUCTION AND COORDINATING WITH NMSU AS NEEDED. CONTRACTOR TO PROVIDE RESULTS TO THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.

GENERAL SHEET NOTES

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN THE CITY OF LAS CRUCES RIGHT-OF-WAY.

2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE NEW MEXICO PUBLIC WORKS STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION.

3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM (260-1990) FOR LOCATION OF EXISTING UTILITIES.

4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS, SHOULD A CONFLICT EXIST. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.

5. FIVE (5) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO CONSTRUCTION COORDINATION DIVISION A DETAILED CONSTRUCTION SCHEDULED. TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A BARRICADING PERMIT FROM THE CONSTRUCTION COORDINATION DIVISION, CONTRACTOR SHALL NOTIFY THE DONA ANA COUNTY CONSTRUCTION COORDINATION ENGINEER PRIOR TO OCCUPYING AN INTERSECTION. REFER TO SECTION 19 OF THE GENERAL CONDITIONS OF THE STANDARD SPECIFICATIONS.

6. ALL WORK EFFECTING ARTERIAL ROADWAYS REQUIRES TWENTY-FOUR HOUR CONSTRUCTION.

7. ALL STREET STRIPING ALTERED OR DESTROYED SHALL BE REPLACED WITH PLASTIC REFLECTORIZED PAVEMENT MARKING BY CONTRACTOR TO THE SAME LOCATION AS WAS EXISTING, OR AS INDICATED BY THIS PLAN SET.

8. CONTRACTOR SHALL NOTIFY THE ENGINEER NOT LESS THAN SEVEN (7) DAYS PRIOR TO STARTING WORK IN ORDER THAT THE COUNTY SURVEYOR MAY TAKE NECESSARY MEASURES TO INSURE THE PRESERVATION OF SURVEY MONUMENTS. CONTRACTOR SHALL NOT DISTURB PERMANENT SURVEY MONUMENTS WITHOUT THE CONSENT OF THE COUNTY SURVEYOR AND SHALL NOTIFY THE COUNTY SURVEYOR AND BEAR THE EXPENSE OF REPLACING ANY THAT MAY BE DISTURBED WITHOUT PERMISSION. REPLACEMENT SHALL BE DONE ONLY BY THE CITY SURVEYOR. WHEN A CHANGE IS MADE IN THE FINISHED ELEVATIONS OF THE PAVEMENT OF ANY ROADWAY IN WHICH A PERMANENT SURVEY MONUMENT IS LOCATED, CONTRACTOR SHALL, AT HIS OWN EXPENSE, ADJUST THE MONUMENT COVER TO THE NEW GRADE UNLESS OTHERWISE SPECIFIED. REFER TO SECTION 4.4 OF THE GENERAL CONDITIONS OF THE STANDARD SPECIFICATIONS.

9. CONTRACTOR SHALL RECORD DATA ON ALL UTILITY LINES AND ACCESSORIES AS REQUIRED BY DONA ANA COUNTY FOR THE PREPARATION OF "AS CONSTRUCTED" DRAWINGS. CONTRACTOR SHALL NOT COVER UTILITY LINES AND ACCESSORIES UNTIL ALL DATA HAS BEEN RECORDED.

10. CONTRACTOR SHALL MAINTAIN A GRAFFITI-FREE WORK SITE. CONTRACTOR SHALL PROMPTLY REMOVE ANY GRAFFITI FROM ALL EQUIPMENT, WHETHER PERMANENT OR TEMPORARY.

11. CONTRACTOR SHALL COORDINATE WITH THE LAS CRUCES CITY WATER UTILITY AUTHORITY FIVE (5) WORKING DAYS IN ADVANCE OF ANY WORK THAT MAY AFFECT EXISTING PUBLIC WATER OR SEWER UTILITIES. EXISTING VALVES TO BE OPERATED BY CITY PERSONNEL ONLY. CONTRACTOR SHALL CONTACT THE WATER SYSTEMS DIVISION THREE (3) WORKING DAYS PRIOR TO NEEDING VALVES TURNED ON OR OFF.

SANITARY SEWER KEYED NOTES

1. CONNECT TO EXISTING SANITARY SEWER MANHOLE PER NMSU DETAIL UT-S6. CONTRACTOR TO VERIFY SIZE, LOCATION AND DEPTH OF EXISTING SANITARY SEWER LINE INVERTS PRIOR TO ORDERING MATERIALS. NOTIFY ENGINEER IMMEDIATELY IF THERE ARE ANY DISCREPANCIES WITH THE PROPOSED DESIGN.
2. INSTALL SANITARY SEWER CLEANOUT PER DETAIL UT-S3.
3. INSTALL SANITARY SEWER SERVICE TO WITHIN 5' OF BUILDING. INSTALL VERICAL SANITARY SEWER RISER. SEE PLUMBING PLANS FOR CONTINUATION.
4. INSTALL 6" PVC SDR 35 SAS LINE PER DETAIL UT-S1.
5. INSTALL WYE SANITARY SEWER FITTING.
6. INSTALL STANDARD SANITARY SEWER FITTING.
7. REMOVE AND DISPOSE OF EXISTING SANITARY SEWER SERVICE.

WATERLINE KEYED NOTES

1. INSTALL WET CONNECTION PER NMSU DETAIL UT-W2. CONNECT TO EXISTING WATERLINE LINE. CONTRACTOR TO VERIFY SIZE, DEPTH, AND LOCATION OF EXISTING WATERLINE PRIOR TO ORDERING MATERIALS. NOTIFY ENGINEER IMMEDIATELY IF THERE ARE ANY DISCREPANCIES WITH THE PROPOSED DESIGN.
2. INSTALL 4"x 2 $\frac{1}{2}$" REDUCER.
3. INSTALL 2$\frac{1}{2}$" DOMESTIC WATER LINE PER UT-W1 AND UT-W9
4. LOCATION OF PROPOSED UTILITY LINES CROSSING EXISTING UTILITY LINES. CONTRACTOR TO VERIFY SIZE, LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO ORDERING MATERIALS AND CONTRACT ENGINEER IMMEDIATELY IF THERE ARE ANY DISCREPANCIES. SEE MEP PLANS FOR VERTICAL DESIGN INFORMATION.
5. INSTALL GATE VALVE WITH BOX AND LID PER DETAIL UT-W3.
6. INSTALL COUPLINGS (SIZE PER PLAN).
7. INSTALL 90° BEND (SIZE PER PLAN) WITH RESTRAINED JOINTS.
8. INSTALL DOMESTIC SERVICE LINE TO WITHIN 5' OF BUILDING. SEE PLUMBING PLANS FOR CONTINUATION.
9. INSTALL 2$\frac{1}{2}$" DOMESTIC BACKFLOW PREVENTION DEVICE WITHIN HEATED ENCLOSURE PER LOCAL REQUIREMENTS.
10. APPROXIMATE LOCATION OF EXISTING FIRE HYDRANT TO REMAIN.
11. INSTALL 2$\frac{1}{2}$" WATER METER PER NMSU DETAIL UT-W4.
12. APPROXIMATE LOCATION OF EXISTING MOUNTED FDC. MOUNTED FDC WAS INSTALLED DURING PHASE 2 CONSTRUCTION AND WILL BE UTILIZED FOR THE PHASE 3 BUILDING.

NOTE:
CONTRACTOR TO FIELD VERIFY SIZE, LOCATION, DEPTH AND TYPE OF EXISTING UTILITY PRIOR TO ORDERING ANY MATERIALS.

LEGEND

Symbol	Description
SS(OC)	EXISTING SANITARY SEWER
W(OC)	EXISTING WATER LINE
NG(B)	EXISTING GAS LINE
C(B)	EXISTING COMMUNICATION LINE
UGEL(B)	EXISTING UGEL LINE
	EXISTING WATER METER
	EXISTING CAP
W	EXISTING VALVE
FP	EXISTING FIRE HYDRANT
	EXISTING SANITARY SEWER MANHOLE
SS	PROPOSED SANITARY SEWER LINE
W	PROPOSED WATER LINE
	PROPOSED VALVE
FP	PROPOSED FIRE HYDRANT
	PROPOSED BACKFLOW PREVENTION DEVICE
SS SS	EXISTING UTILITY TO BE REMOVED

N

20 10 0 20
1"=20'

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300
Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS
3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

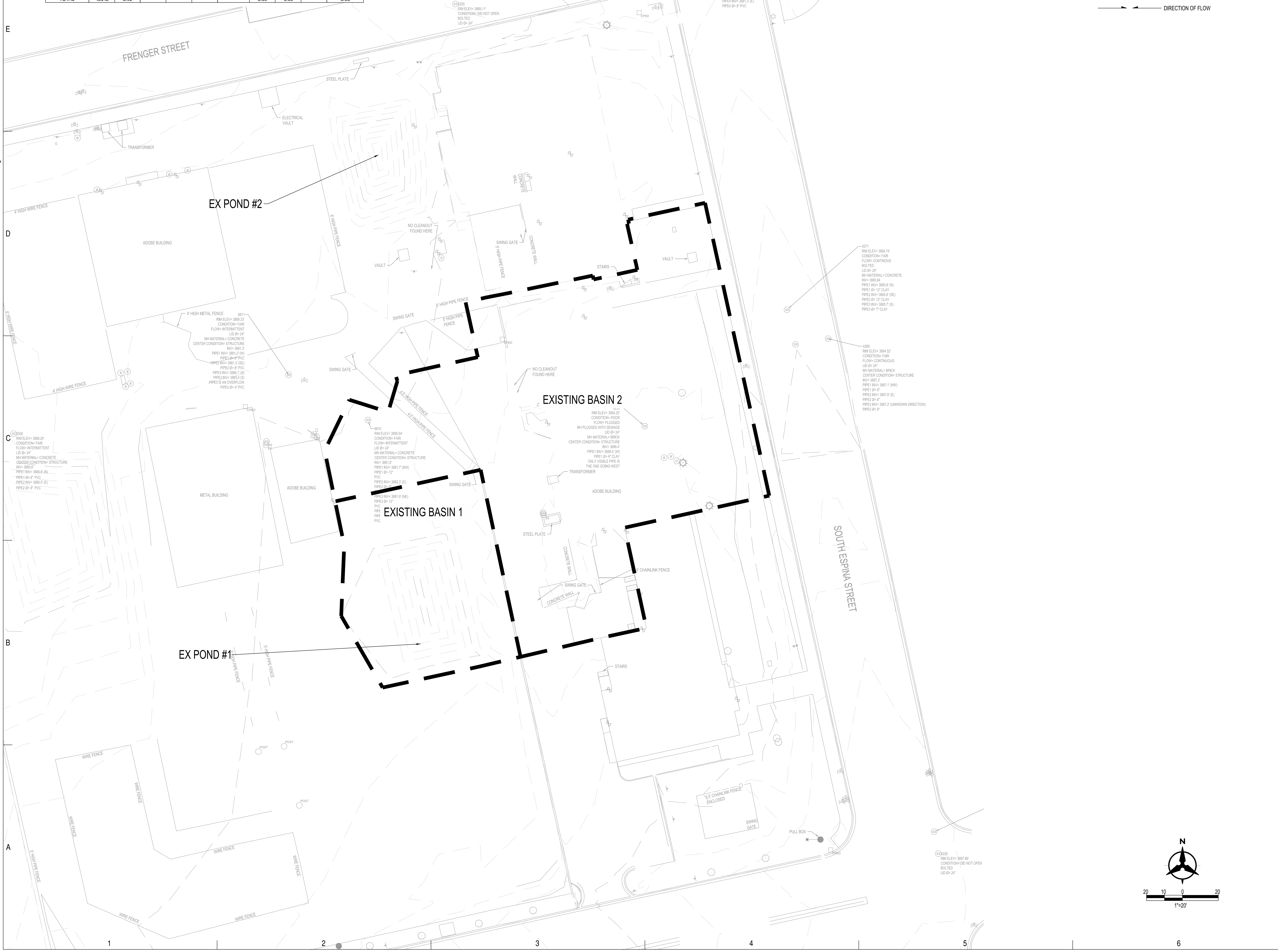
DRAWN BY: BF
CHECKED BY: AP

SHEET TITLE
UTILITY PLAN

UP01

NMSU Agricultural Modernization: Biomedical Research Building Expansion

	Area	Area	T_c	TL	SCS Curve	Percent	Q_{10yr} (24 HR)	Q_{100yr} (24 HR)	Q/Acre	Volume $_{100YR}$ (24HR)
	(sq ft)	(ac)	(min)	(min)	Number	Impervious	(cfs)	(cfs)	(cfs/acre)	(ac-ft)
EXISTING BASIN 1	9176	0.21	6.0	3.6	63	0%	0.02	0.24	1.14	0.01
EXISTING BASIN 2	30966	0.71	6.0	3.6	63	0%	0.07	0.81	1.14	0.05
TOTAL	40142	0.92					0.09	1.05		0.06



fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: BF
CHECKED BY: AP

SHEET TITLE

EXISTING DRAINAGE MANAGEMENT PLAN

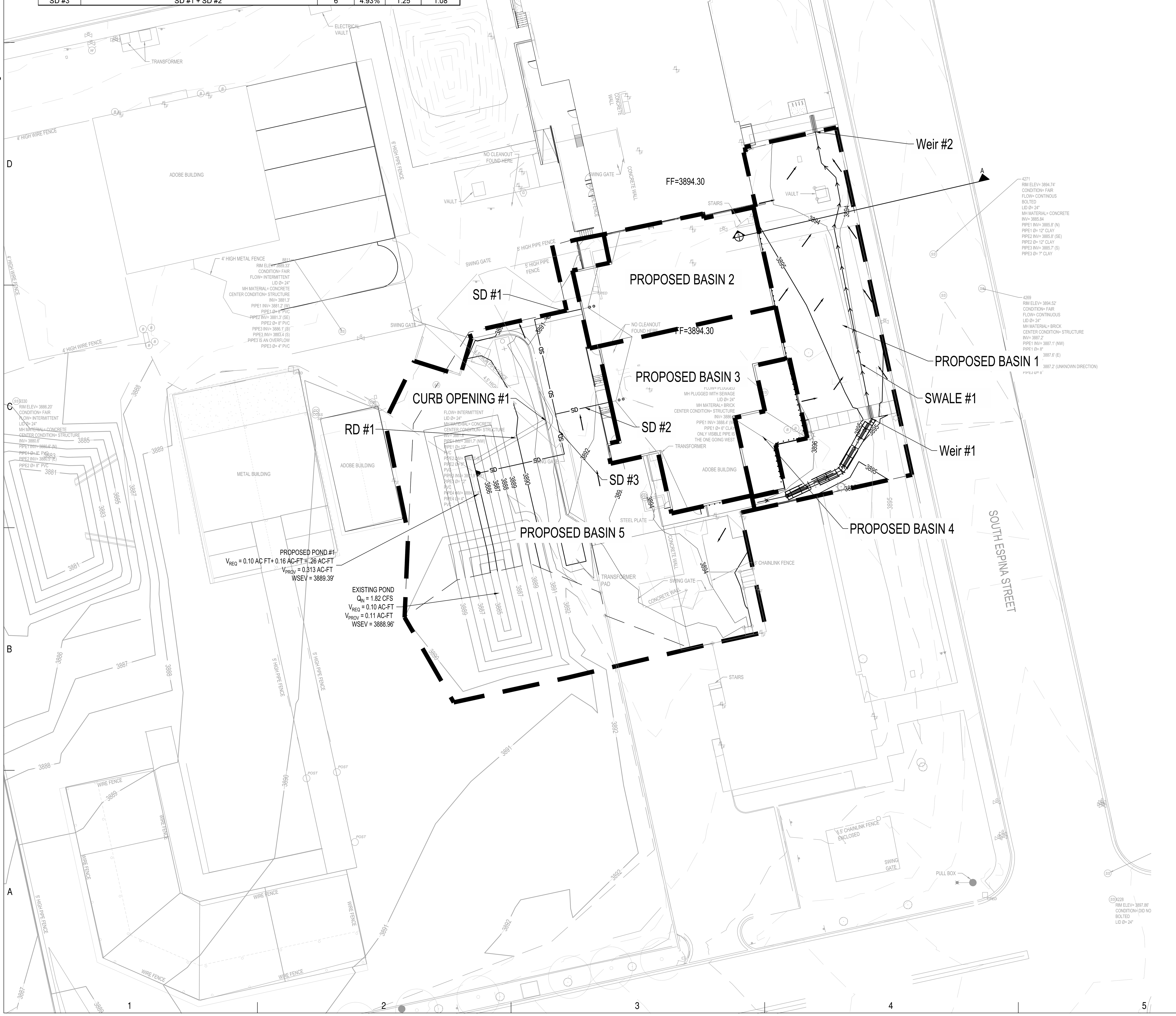
DMP001

Biomedical Research Building Expansion

	Area	Area	T_c	TL	SCS Curve	Percent	Q_{10yr} (24 HR)	Q_{100yr} (24 HR)	Q/Acre	Volume $_{100YR}$ (24 HR)
	(sq ft)	(ac)	(min)	(min)	Number	Impervious	(cfs)	(cfs)	(cfs/acre)	(ac-ft)
PROPOSED BASIN 1	8048	0.18	6.0	3.6	77	15%	0.21	0.54	2.92	0.03
PROPOSED BASIN 2	4235	0.10	6.0	3.6	77	100%	0.28	0.48	4.94	0.03
PROPOSED BASIN 3	5297	0.12	7.0	4.2	77	100%	0.35	0.60	4.93	0.04
PROPOSED BASIN 4	1226	0.03	8.0	4.8	77	100%	0.08	0.14	4.97	0.01
PROPOSED BASIN 5	21336	0.49	9.0	5.4	77	60%	1.00	1.95	3.98	0.12
TOTAL	40142	0.92					1.92	3.71		0.22

STORM DRAIN PIPE TABLE

PIPE #	Contributing Basins and Storm Drains	Size in.	Slope	Capacity[1] cfs	ACTUAL FLOW cfs
ONSITE					
SD #1	PROPOSED BASIN 2	6	4.93%	1.25	0.48
SD #2	PROPOSED BASIN 3	6	12.71%	2.00	0.60
SD #3	SD #1 + SD #2	6	4.93%	1.25	1.08



LEGEND

- 5025 — EXISTING INDEX CONTOUR
- 5024 — EXISTING INTERMEDIATE CONTOUR
- PROPOSED BASIN BOUNDARY
- DIRECTION OF FLOW
- 5025 — PROPOSED INDEX CONTOUR
- 5024 — PROPOSED INTERMEDIATE CONTOUR

INTRODUCTION:

THE PROPOSED BIOMEDICAL RESEARCH BUILDING (PHASE 3) IS LOCATED NEAR THE SOUTHWEST CORNER OF FRENGER STREET AND S ESPINA STREET WITHIN THE NMSU CAMPUS. THE PROJECT SCOPE IS TO DO A BUILDING ADDITION ADDED TO THE SOUTH SIDE OF THE EXISTING BIOMEDICAL BUILDING. A PORTION OF NEALE HALL WILL BE DEMOLISHED AS PART OF A SEPERATE SCOPE. THE SITE IS CURRENTLY DEVELOPED WITH THE MAJORITY OF THE PROPOSED IMPROVEMENTS BEING INSTALLED ON TOP OF EXISTING BUILDINGS TO BE DEMOLISHED.

METHODOLOGY:

THE METHODOLOGY SELECTED TO COMPUTE RUNOFF VOLUMES IS BASED ON THE URBAN DRAINAGE CRITERIA PROVIDED BY NMSU. RAINFALL VALUES WERE DETERMINED FROM NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) ATLAS 14. THE BASINS WERE ANALYZED FOR THE 10 YEAR - 24 HOUR AND 100 YEAR - 24 HOUR STORM EVENTS USING THE US ARMY CORPS OF ENGINEERS HYDROLOGIC ENGINEERING CENTER'S HYDROLOGIC MODELING SYSTEM (HEC-HMS, VERSION 4.3) SURFACE CHARACTERISTICS AFFECTING INITIAL ABSTRACTION AND INFILTRATION RATES ARE REPRESENTED BY CURVE NUMBERS AND WERE DETERMINED USING THE NATURAL RESOURCES CONSERVATION SERVICE (NRCS) SOIL SURVEY DATABASE. CURVE NUMBERS FOR EACH DRAINAGE BASIN WERE ASSIGNED USING THE NRCS SOIL SURVEY GEOGRAPHIC DATABASE AND APPROPRIATE LAND TREATMENT TYPES AS ESTABLISHED IN THE NMDOT DRAINAGE MANUAL. FOR PURPOSED OF THIS ANALYSIS, TABLES 402-2 THROUGH 402-5 WERE UTILIZED.

EXISTING CONDITIONS:

THE EXISTING SITE CURRENTLY BROKEN UP INTO TWO DIFFERENT DRAINAGE BASINS. EXISTING BASIN 1 IS LOCATED AT THE WEST EDGE OF THE SITE AND CONSISTS OF LARGELY COMPACTED SOIL. THE BASIN GENERALLY FLOWS INTO EX POND #1.

EXISTING BASIN 2 IS LOCATED IN THE CENTER PORTION OF THE SITE AND CONSISTS OF ASPHALT PAVEMENT, SIDEWALK, COMPACTED SOIL, AND EXISTING BUILDINGS. THE BASIN GENERALLY FLOWS TO THE NORTHWEST WHERE THE FLOW GETS INTO EX POND #2. FOR SPECIFIC CURVE NUMBERS, AS WELL AS THE RUNOFF AND ACREAGE ASSOCIATED FOR EACH EXISTING BASIN PLEASE REFER TO THE EXISTING DRAINAGE MANAGEMENT PLAN.

IT IS OUR UNDERSTANDING THAT THE REGIONAL RETENTION FACILITY IS UNDERSIZED COMPARED TO THE TOTAL UPSTREAM TRIBUTARY AREA. IT IS OUR UNDERSTANDING THAT ANY WORK OR STUDY OUTSIDE OF THE PROPOSED LIMITS OF DISTURBANCE OF THIS PROJECT IS NOT INCLUDED AND THEREFORE EXCLUDED.

PROPOSED CONDITIONS:

BASED ON THE NMSU DRAINAGE CRITERIA DATED MAY 2011 AND OUR CONVERSATIONS WITH NMSU, IT IS OUR UNDERSTANDING THAT FOR THE PROPOSED BUILDING AND IMPROVEMENT AREAS, A RETENTION POND SHALL BE PROVIDED TO STORE THE INCREASED FLOW COMPARED TO THE PRE-DEVELOPED/HISTORIC CONDITIONS FOR THE 100-YR 24-HR STORM EVENT. IT IS ALSO OUR UNDERSTANDING THAT THE OFFSITE FLOWS COMING THROUGH THE ADJACENT ROADWAYS WILL ALSO HAVE TO BE ADDRESSED SINCE THERE ARE PAST INSTANCES OF FLOODING IN OTHER BUILDINGS WITHIN THE CAMPUS. TO ADDRESS THESE ITEMS, THE PROPOSED IMPROVEMENTS WILL PROVIDE AN ON-SITE RETENTION FACILITY TO MEET THE PRE-DEVELOPED/HISTORIC FLOWS OF THE 100-YR 24-HR STORM EVENT. IN ADDITION, SINCE THERE IS NOT AN UPDATED OR MORE RECENT DRAINAGE MANAGEMENT REPORT OF THE ENTIRE CAMPUS OTHER THAN THE ONE COMPLETED IN 1995, WE WILL UTILIZE THE OFFSITE ROADWAY FLOWS AS IDENTIFIED IN THE 1995 REPORT AND SET THE PROPOSED FINISHED FLOOR ELEVATIONS AT AN ELEVATION 1-FT HIGHER THAN THE HIGHEST ADJACENT WATER SURFACE ELEVATION AT THE 100-YR STORM EVENT.

IN THE PROPOSED CONDITIONS, THE SITE AREA IS BROKEN UP INTO FIVE DIFFERENT DRAINAGE BASINS AND ONE OFFSITE BASIN. BASIN 1 CONSISTS OF A PORTION OF THE SITE OF THE EASTERN EDGE. THE BASIN FLOWS TO THE NORTH WHERE IT IS CONVEYED THREW SWALE #1 AND TWO SIDEWALK CULVERTS (WEIR #1 AND WEIR #2) WHERE THE FLOW DISCHARGES TO THE NORTH AND CONTINUES ON HISTORICAL DRAINAGE PATH WHERE IT EVENTUALLY GET INTO EX POND #2.

BASIN 2 CONSISTS OF A SMALL NORTHERN PORTION OF THE ROOF. THE BASIN FLOWS TO THE WEST WHERE IT DISCHARGES INTO A ROOF DRAIN AND ENTER INTO SD #1 AND THEN IT DISCHARGES INTO PROPOSED POND #1.

BASIN 3 CONSISTS OF A SMALL SOUTHERN PORTION OF THE ROOF. THE BASIN FLOWS TO THE WEST WHERE IT DISCHARGES INTO A ROOF DRAIN AND ENTER INTO SD #2 AND THEN IT DISCHARGES INTO PROPOSED POND #1.

BASIN 4 CONSISTS OF A SMALL SOUTHERN PORTION OF THE ROOF. THE BASIN FLOWS TO THE EAST WHERE IT DISCHARGES INTO A SPLASH BLOCK AND ENTERS INTO SWALE #1 AND THEN IT DISCHARGES INTO EXISTING POND #2.

BASIN 5 IS LOCATED ON THE WESTERN PORTION OF THE SITE. THE BASIN SUFACE DRAINS INTO PROPOSED POND #1

CONCLUSION

COMPARING THE FLOWS OF THE BASINS FROM THE PRE-DEVELOPED/HISTORIC CONDITIONS TO THE PROPOSED CONDITIONS AT THE 100-YR 24-HR STORM EVENT, THE REQUIRED VOLUME VOLUME REQUIRED IS 0.26 AC-FT. THE PROPOSED RETENTION POND PROVIDES A TOTAL OF 0.31 AC-FT AT A HIGH WATER ELEVATION OF 3889.39' OF THE REQUIRED RETENTION VOLUME.

TO CALCULATE THE FINISHED FLOOR ELEVATION OF THE PROPOSED BUILDING, WE USED FLOWS WITHIN ESPINA AND FRENGER STREETS FROM THE 1995 DRAINAGE MANAGEMENT REPORT. BASED ON THE REPORT FOR ESPINA, 50% OF BASIN 111 HAD A TOTAL FLOW OF 21.5 CFS FOR THE 100-YR-24HR STORM EVENT. BASED ON THE CROSS SECTION A-A, THE HIGH WATER ELEVATION WITHIN ESPINA IS 3894.02. THE PROPOSED BUILDING FINISHED FLOOR ELEVATION IS SET AT 3894.30, HOWEVER THE LOWEST EXTERIOR ELEVATION ON THE EASTERN FACE IS 3895.02 WHICH IS AT OR ABOVE THE 1-FT FREEBOARD FROM THE HIGHEST HIGH WATER ELEVATION OF 3894.02.

1"=20'

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300 Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: BF
CHECKED BY: AP

SHEET TITLE

PROPOSED DRAINAGE MANAGEMENT PLAN

DMP002

Biomedical Research Building Expansion

GENERAL STRUCTURAL NOTES

1. CODES AND MANUALS:
INTERNATIONAL BUILDING CODE, 2021 EDITION
MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-16,
AISC MANUAL OF STEEL CONSTRUCTION, 9TH EDITION
SJI STANDARD SPECIFICATIONS, LOAD TABLES AND WEIGHT TABLES FOR STEEL JOISTS AND JOIST GIRDERS
SDI DIAPHRAGM DESIGN MANUAL, 2ND EDITION
AISI COLD FORMED STEEL MANUAL, CURRENT EDITION
ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI 318
AWS D1.1 AND D1.3

2. DESIGN CRITERIA:
A. VERTICAL:
LIVE LOAD
ROOF (SNOW) 20 PSF
MECHANICAL FLOOR 100 PSF

Is (IMPORTANCE FACTOR FOR SNOW) 1.1
* LOAD HAS NOT BEEN REDUCED
B. HORIZONTAL LOADS:
(1) WIND*
PROCEDURE PER SECTION 1609

P = WIND PRESSURE x λ Iw

WIND SPEED	V3s=115 MPH	
WIND PRESSURE - END ZONE	21.0 PSF	
INTERIOR ZONE	13.9 PSF	
HEIGHT & EXPOSURE ADJUSTMENT COEFFICIENT FROM FIGURE 6-2 IN ASCE		
IMPORTANCE FACTOR	Iw = 1.0	
HORIZONTAL WIND LOAD:	END	INTERIOR
0'-15'	25.41 PSF	16.82 PSF
15'-20'	27.09 PSF	17.93 PSF

(2) SEISMIC* V = Sds Ie W/ R
SPECTRAL ACCELERATIONS Ss=0.287
S1=0.089
SITE CLASS D
IMPORTANCE FACTOR Ie = 1.1
DESIGN SPECTRAL RESPONSE Sds = 0.301
ONE SECOND PERIOD RESPONSE ACCEL. Sd1 = 0.143
RESPONSE MODIFICATION COEFFICIENT R = 4.0
SEISMIC DESIGN CATEGORY C
SEISMIC FORCE V = 0.083 X W

* ALLOWABLE 1/3 STRESS INCREASE FOR SEISMIC LOADING
C. ALLOWABLE SOIL BEARING PRESSURE = 1500 PSF AT RETAINING STRUCTURES.

3. GENERAL:
A. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LAYOUT OF BOTH SITE AND BUILDING ELEMENTS. COORDINATE FIELD INFORMATION WITH ARCHITECTURAL PRIOR TO ANY CONSTRUCTION ACTIVITY .
B. SHOP DRAWINGS, IN HARD COPY FORM, SHALL BE FURNISHED AND REVIEWED BEFORE ANY FABRICATION OR ERECTION IS STARTED.
C. THE CONTRACTOR SHALL REVIEW AND APPROVE SHOP DRAWINGS PRIOR TO SUBMITTAL TO THE ARCHITECT FOR REVIEW. POORLY EXECUTED SHOP DRAWINGS WILL BE REJECTED AND REQUIRE RESUBMITTAL.
D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFE AND ADEQUATE SHORING FOR ALL PARTS OF THE STRUCTURE DURING CONSTRUCTION.
E. TEMPORARY PROVISIONS SHALL BE MADE FOR STRUCTURAL STABILITY DURING CONSTRUCTION. THE STRUCTURE SHOWN ON THE DRAWINGS HAS BEEN DESIGNED FOR STABILITY UNDER FINAL CONFIGURATION.
F. THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL OPENINGS IN FLOORS, ROOF, WALLS AND BEAMS WITH THE INDIVIDUAL TRADES.
G. NOTCHING OR CUTTING ANY STRUCTURAL MEMBER IN THE FIELD IS PROHIBITED.
H. THE CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF FOUNDATIONS UNDER MECHANICAL AND ELECTRICAL EQUIPMENT AS REQUIRED. NO CONCRETE PADS SHALL BE LOCATED ON ROOF UNLESS SHOWN ON STRUCTURAL DRAWINGS.
I. REMOVAL OF FORMS SHALL BE IN ACCORDANCE WITH ACI 347. WHERE CONCRETE MUST SUPPORT SUPERIMPOSED LOADS PRIOR TO ATTAINING THE SPECIFIED DESIGN STRENGTH, RESHORE CONCRETE IN ACCORDANCE WITH ACI 347. RESHORING SHALL NOT BE REMOVED SOONER THAN 28 DAYS FROM THE DATE OF POUR OR UNTIL CONCRETE HAS ATTAINED THE SPECIFIED DESIGN STRENGTH.

4. MATERIALS:
A. CAST-IN-PLACE CONCRETE:
(1) ALL CONCRETE SHALL CONFORM TO THE SPECIFICATIONS FOR STRUCTURAL CONCRETE, ACI 301-10.
(2) ALL EXPOSED EDGES OF CONCRETE SHALL HAVE A 3/4" CHAMFER UNLESS NOTED OTHERWISE.
(3) NORMALWEIGHT CONCRETE:
A. F'C = 4000 PSI @ 28 DAYS (AIR ENTRAINED) - ALL EXPOSED EXTERIOR CONCRETE FLAT WORK. (I.E. SLABS, EQUIPMENT PADS, ETC.).
B. F'C = 3000 PSI @ 28 DAYS - ALL INTERIOR CONCRETE (AIR ENTRAINED) IE. , FOOTINGS, PEDESTALS, STEM WALLS, ETC.)
C. F'C = 4000 PSI @ 28 DAYS - ALL INTERIOR SLABS ON GRADE.
D. F'C = 5000 PSI @ 28 DAYS - AUGER CAST PILES.
(4) THE CONTRACTOR SHALL NOT CAST FOUNDATIONS, STEM WALLS OR RETAINING WALLS AGAINST EXCAVATED VERTICAL SIDE SURFACES WITHOUT PRIOR WRITTEN APPROVAL FROM ARCHITECT AND STRUCTURAL ENGINEER.
(5) FLYASH ADDITIVES MAY NOT EXCEED 20% OF THE CEMENTITIOUS MATERIAL.
(6) THE MAXIMUM WATER TO CEMENTITIOUS MATERIAL RATIO, BY WEIGHT, MAY NOT EXCEED 50%.
(7) THE OWNER'S SPECIAL INSPECTOR SHALL MONITOR SAMPLING & TESTING PERFORMED BY THE CONTRACTOR'S TESTING AGENCY.
(8) MAXIMUM SLUMP FOR CONCRETE MIX DESIGN IS 4".
B. REINFORCING STEEL:
(1) ALL REINFORCING STEEL SHALL BE FABRICATED AND PLACED IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318) AND THE STANDARD MANUAL (ACI 315-99).
(2) ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60 EXCEPT STIRRUPS, TIES AND FIELD-BENT BARS WHICH SHALL CONFORM TO ASTM A615 GRADE 40.
(3) ALL SLABS SHALL BE REINFORCED AS SHOWN ON THE DRAWINGS.
(4) WHERE LAPPED SPLICES IN REINFORCING OCCUR, THE MINIMUM LAP SHALL BE MADE AS FOLLOWS UNLESS NOTED OTHERWISE ON DRAWINGS:
A. VERTICAL REINFORCING:30 BAR DIA. (18" MINIMUM)
B. HORIZONTAL REINFORCING:30 BAR DIA. (18" MINIMUM)
(5) ALL HORIZONTAL REINFORCING IN FOOTINGS, BEAMS, AND WALLS SHALL BE CONTINUOUS AROUND CORNERS OR HAVE CORNER BARS OF THE SAME SIZE AND SPACING AS THE HORIZONTAL BARS AND LAP A MINIMUM OF 30 BAR DIAMETERS, (18 INCHES MINIMUM).
(6) CONCRETE COVER FOR REINFORCING SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH...3"
B. CONCRETE EXPOSED TO EARTH OR WEATHER:
1. BARS LARGER THAN NO. 5.....2"
2. BARS NO. 5 OR SMALLER.....1 1/2"
(7) FORM TIES SHALL BE EITHER OF THE THREADED OR SNAP-OFF TYPE SO THAT NO METAL WILL BE LEFT WITHIN 1 INCH OF THE SURFACE OF THE WALL.
(8) BAR SUPPORTS AND SPACERS FOR REINFORCING SHALL BE PROVIDED IN ACCORDANCE WITH ACI 315-99. CHAIRS WITH 22 GA. SAND PLATES OR PRECAST BLOCKS SHALL BE PROVIDED FOR ALL REINFORCING OF CONCRETE IN CONTACT WITH GRADE. REINFORCING SHALL BE SECURELY TIED TO SUPPORTS.
(9) REINFORCING SHALL NOT BE TACK WELDED OR WELDED IN ANY MANNER UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL PLANS. IF DRAWINGS SHOW REBAR TO BE WELDED, USE ASTM A706 REBAR.

C. STRUCTURAL AND MISCELLANEOUS STEEL:
(1) ALL STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED IN ACCORDANCE WITH THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
(2) ALL W-SHAPED MEMBERS SHALL CONFORM TO ASTM A992 (Fy=50KSI). ALL CHANNELS, ANGLES, & PLATES SHALL BE ASTM A36 (Fy=36KSI). ALL PIPE STEEL SHALL BE ASTM A501 (Fy=36KSI).
(3) ALL COLD FORMED STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B. FY = 46 KSI.
(4) BOLTS SHALL CONFORM TO ASTM A325 TENSION CONTROL BOLTS UNLESS NOTED OTHERWISE, WITH SIZES AS SHOWN ON THE DRAWINGS. WHERE CLEARANCE WITHIN A CONNECTION DOES NOT PERMIT THE USE OF TENSION CONTROL BOLTS, STANDARD A325 BOLTS SHALL BE USED AND INSPECTED IN ACCORDANCE WITH THE AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS".
(5) ALL BOLTS SHALL BE TIGHTENED SO AS TO SHEAR THE SPLINE OFF THE BOLT.
(6) ANCHOR BOLTS EMBEDDED IN CONCRETE SHALL BE ASTM A307 BOLTS OR A36 THREADED BARS. PROVIDE FLAT WASHERS BETWEEN ALL NUTS AND BASEPLATES.
(7) ALL WELDING SHALL BE DONE IN ACCORDANCE WITH THE LATEST STANDARDS OF THE AWS STRUCTURAL WELDING CODE.
(8) ALL BOLT HOLES THAT ARE REQUIRED TO BE FIELD DRILLED SHALL BE DRILLED WITH A MAG DRILL. FLAME CUTTING OF HOLES OR ENLARGING OF UNFAIR HOLES WILL NOT BE ALLOWED.
(9) HEADED CONCRETE ANCHORS AND SHEAR CONNECTORS SHALL BE TYPE B, IN CONFORMANCE WITH AWS D1.1 "STRUCTURAL WELDING CODE-STEEL". STRUCTURAL STEEL TO RECEIVE SHEAR CONNECTIONS SHALL BE FREE OF PAINT. WELDING PRE QUALIFICATION REQUIRED.

D. STEEL JOISTS:
(1) STEEL JOISTS SHALL BE MANUFACTURED BY A MEMBER OF SJI.
(2) STEEL JOISTS SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE 2002 STEEL JOIST INSTITUTE SPECIFICATIONS.
(3) NO CONSTRUCTION LOADS OF ANY KIND SHALL BE PLACED ON UNBRIDGED JOISTS.
(4) WHERE COLUMNS ARE NOT FRAMED IN AT LEAST TWO DIRECTIONS WITH STRUCTURAL STEEL MEMBERS, JOISTS AT OR CLOSEST TO COLUMN LINES SHALL BE FIELD BOLTED TO ADD LATERAL STABILITY DURING CONSTRUCTION.
(5) PROVIDE BRIDGING IN ACCORDANCE WITH THE 42ND EDITION OF SJI STANDARD SPECIFICATIONS.

E. STEEL DECK:
(1) ALL STEEL DECK SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH STEEL DECK INSTITUTE SPECIFICATIONS.
(2) SEE PLAN FOR STEEL DECK GAGE, FINISH AND CONNECTIONS.
(3) PROVIDE A MINIMUM OF 1 1/2" BEARING FOR ALL STEEL DECKS.
(4) ALL SPLICES AND LAPS SHALL BE A MINIMUM OF 2" AND SHALL BE AT SUPPORTS.
(5) DECKING SHALL BE CONTINUOUS OVER TWO OR MORE SPANS UNLESS NOTED OTHERWISE ON THE PLANS.
(6) POWER DRIVEN FASTENERS SHALL HAVE A MIN. 0.177 INCH SHAFT DIAMETER AND BE EQUIVALENT TO HILTI ENP DECK FASTENERS.
(7) CONDUIT PARALLEL TO FLOOR DECK IN CONCRETE TOPPING IS PROHIBITED.

F. LIGHTGAGE STRUCTURAL STEEL FRAMING (20 GAGE OR HEAVIER):
(1) ALL LIGHTGAGE METAL FRAMING SHALL CONFORM TO AISI "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", 2007.
(2) WALLS TO BE PROVIDED WITH MANUFACTURER'S STANDARD BRIDGING: (EITHER WELDED 2 1/2" X 18 GA. STUD OR CLIPPED COLD-ROLLED CHANNEL 1 1/2" X 16 GA.). PROVIDE BRIDGING AT 4'-0" O.C. MAXIMUM.
(3) PROVIDE ALL MISCELLANEOUS ACCESSORIES AND FOLLOW ERECTION PROCEDURES AS PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
(4) LIGHTGAGE STEEL FRAMING SHALL MEET THE MINIMUM PROPERTIES AS SHOWN IN THE STEEL STUD SCHEDULE.
(5) ALL TRACK SHALL BE DEEP LEG (1 1/2" FLANGE), 18 GA. MINIMUM. TRACK SHALL BE ANCHORED TO SLAB WITH 1/2" DIA. X 3 1/2" EMBED EXPANSION SLEEVE OR EPOXY ANCHORS AT 4'-0" O.C. UNLESS SHOWN OTHERWISE ON PLANS.

5. POST INSTALLED ANCHORS
POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER-OF-RECORD PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN-PLACE ANCHORS. CARE SHALL BE TAKEN IN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH EXISTING REBAR. HOLES SHALL BE DRILLED AND CLEANED IN ACCORDANCE WITH THE MANUFACTURERE'S WRITTEN INSTRUCTIONS. SUBSTITUTION REQUESTS FOR PRODUCTS OTHER THAN THOSE SPECIFIED BELOW SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER-OF-RECORD ALONG WITH CALCULATIONS THAT ARE PREPARED & SEALED BY A REGISTERED PROFESSIONAL ENGINEER. THE CALCULATIONS SHALL DEMONSTRATE THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERTINENT EQUIVALENT PERFORMANCE VALUES (MINIMUM) OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARD(S) AS REQUIRED BY THE BUILDING CODE. PROVIDE CONTINUOUS SPECIAL INSPECTION FOR ALL ADHESIVES AND MECHANICAL ANCHORS PER THE PRODUCT'S APPLICABLE ICC-ES EVALUATION REPORT (ICC-ES-ESR). CONTACT MANUFACTURER'S REPRESENTATIVE FOR THE INITIAL TRAINING AND INSTALLATION OF ANCHORS AND FOR PRODUCT RELATED QUESTIONS AND AVAILABILITY. CALL SIMPSON STRONG-TIE AT (800) 999-5099 OR HILTI AT (866) 445-8827.

A. CONCRETE ANCHORS:
1. MECHANICAL ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 3552 AND ICC-ES AC193 FOR CRACKED AND UNCRACKED CONCRETE RECOGNITION. PRE-APPROVED MECHANICAL ANCHORS INCLUDE:
a. SIMPSON STRONG-TIE "TITEN HD" (ICC-ES ESR-2713)
b. SIMPSON STRONG-TIE "STRONG-BOLT" (ICC-ES ESR-1771) OR HILTI "KWIK BOLT TZ" (ICC-ES ESR-1917)
2. ADHESIVE ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC308 FOR CRACKED AND UNCRACKED CONCRETE RECOGNITION. PRE-APPROVED ADHESIVE ANCHORS INCLUDE:
a. SIMPSON STRONG-TIE "SET-XP" (ICC-ES ESR-2508) OR HILTI "HIT-RE 500-SD" (ICC-ES ESR-2322)

6. PER IBC SECTION 1705, SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING ITEMS:
A. CONCRETE:
(1) DURING THE TAKING ON TEST SPECIMENS.
(2) DURING THE PLACEMENT OF ALL REINFORCED CONCRETE.
B. BOLTS IN CONCRETE:
(1) DURING THE PLACEMENT OF CONCRETE AROUND BOLTS.
C. REINFORCING STEEL (PERIODIC):
(1) DURING THE PLACEMENT OF REINFORCING STEEL FOR ALL CONCRETE REQUIRED TO HAVE SPECIAL INSPECTION NOTED ABOVE.
D. WELDING:
(1) VISUAL INSPECTION OF ALL FIELD WELDS.
(2) NON-DESTRUCTIVE TESTING OF ALL COMPLETE PENETRATION WELDS.
E. HIGH STRENGTH BOLTING:
(1) VERIFICATION OF SNUG TIGHT BOLT INSTALLATION FOR A325N BOLTS.
(2) VERIFICATION OF SLIP CRITICAL (SC) BOLTS AT ALL BRACED FRAMES.
F. EXPANSION AND EPOXY BOLTS:
(1) DURING THE PLACEMENT OF ALL EXPANSION AND EPOXY BOLTS, FOR VISUAL VERIFICATION OF HOLE DIAMETER AND DEPTH AND PLACEMENT OF BOLT AND/OR EPOXY.
G. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:
(1) THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED TO BE CERTAIN IT CONFORMS WITH THE APPROVED DESIGN DRAWINGS AND SPECIFICATION.
(2) THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE ENGINEER OF RECORD.
H. SPECIAL INSPECTOR IS TO BE HIRED BY OWNER, NOT CONTRACTOR.

GENERAL FOUNDATION NOTES

1. GENERAL:
A. A SUBSURFACE SOIL INVESTIGATION HAS BEEN MADE BY SOUDER, MILLER & ASSOCIATES. A REPORT OF THAT INVESTIGATION DATED SEPTEMBER 18, 2020 IS AVAILABLE FOR VIEWING AT THE OFFICE OF THE ARCHITECT. SOILS INFORMATION PROVIDED ON THIS SHEET IS ONLY A SUMMARY OF THAT REPORT.
B. ADDITIONAL INFORMATION CONCERNING SPECIFIC SOIL CONDITIONS TO BE ENCOUNTERED IS AVAILABLE IN THE SOILS REPORT AND SHOULD BE REVIEWED.

2. FIELD OBSERVATION AND TESTS:
A. THE OWNER WILL EMPLOY THE SERVICES OF A REGISTERED, LICENSED GEOTECHNICAL ENGINEER TO OBSERVE ALL CONTROLLED EARTHWORK AND SHALL PROVIDE CONTINUOUS ON-SITE OBSERVATION BY EXPERIENCED PERSONNEL DURING CONSTRUCTION OF CONTROLLED EARTHWORK. THE CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER AT LEAST TWO WORKING DAYS IN ADVANCE OF ANY FIELD OPERATIONS OF THE CONTROLLED EARTHWORK .
B. TESTS OF MATERIALS SHALL BE MADE AT THE FOLLOWING RATES:
(1) ONE FIELD DENSITY TEST PER EACH 250 SQUARE YARDS OF COMPACTED SUBGRADE PRIOR TO PLACING STRUCTURAL FILL WITH A MINIMUM OF 3 TESTS.
(2) ONE FIELD DENSITY TEST PER EACH 150 CUBIC YARDS OF STRUCTURAL FILL PLACED OR EACH HORIZONTAL LAYER OF STRUCTURAL FILL, WHICHEVER IS GREATER.
(3) ONE MOISTURE-DENSITY CURVE FOR EACH TYPE OF MATERIAL USED, AS INDICATED BY SIEVE ANALYSIS AND PLASTICITY INDEX.
(4) FOUNDATION EXCAVATIONS SHALL BE OBSERVED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF REINFORCING AND CONCRETE.
C. THE GEOTECHNICAL ENGINEER SHALL SUBMIT THE RESULTS OF ALL REQUIRED TESTS.

3. CLEARING AND GRUBBING:
A. REMOVE ALL BRUSH, RUBBISH, GRASS, AND GRASS ROOTS FROM THE CONSTRUCTION AREA.
B REMOVE STUMPS, MATTED ROOTS AND ROOTS LARGER THAN 2 INCHES IN DIAMETER WITHIN 12 INCHES OF THE SURFACE OF AREAS ON WHICH FILL AND/OR FOOTINGS ARE TO BE CONSTRUCTED
C REMOVE ALL TOPSOIL FROM THE CONSTRUCTION AREA. THIS MATERIAL SHALL NOT BE USED AS FILL MATERIAL, BUT MAY BE STOCKPILED AND LATER USED IN THE TOP 6 INCHES OF FILL OUTSIDE THE BUILDING PAD.

4. SITE, SUBFLOOR AND BEARING SURFACE PREPARATION:
A. A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHALL BE PRESENT TO CONFIRM COMPLETE EXCAVATION OF ANY UNCONTROLLED FILL OR SOFT AREAS.
B. BUILDING PADS SHOULD BE OVEREXCAVATED TO ALLOW THE PLACEMENT OF A MINIMUM 5'-0" OF NON-EXPANSIVE STRUCTURAL FILL BENEATH FOUNDATIONS AND SLABS ON GRADE. THE OVER-EXCAVATION SHALL EXTEND 5'-0" LATERALLY BEYOND THE EDGE OF THE FOUNDATIONS.
C. ON-SITE GRANULAR SOILS ARE GENERALLY SUITABLE FOR USE AS STRUCTURAL FILL MATERIAL, WHEN COMBINED WITH IMPORTED ENGINEERED FILL. SEE SOIL INVESTIGATION REPORT FOR RECOMMENDATIONS. DISPOSE OF ALL CLAY MATERIALS.
D. SCARIFY ALL EXPOSED SUBGRADE SOILS TO A DEPTH OF 8 INCHES, MOISTEN TO 0 TO 4% ABOVE OPTIMUM MOISTURE CONTENT AND COMPACT TO THE DENSITY SPECIFIED HEREINAFTER PRIOR TO PLACEMENT OF STRUCTURAL FILL.
E. PLACE ALL STRUCTURAL FILL IN APPROXIMATELY HORIZONTAL LAYERS NOT GREATER THAN SIX (6) INCHES IN THICKNESS, MOISTEN TO OPTIMUM MOISTURE CONTENT (PLUS/MINUS 2%) AND COMPACT TO DENSITY SPECIFIED HEREINAFTER.
F. RETAINING WALL FOOTINGS SHALL BE PLACED ON 5'-0" OF ENGINEERED FILL OVER SCARIFIED AND COMPACTED SUBGRADE.
5. STRUCTURAL FILL REQUIREMENTS:
A. GRADATION (ASTM C136):

SIEVE SIZE	PERCENT PASSING BY WEIGHT
3/4"	70-100
4"	85-100
6"	100
NO. 4	50-100
NO. 200	30 (MAX)

B. LIQUID LIMIT LESS THAN 40.
C. PLASTICITY INDEX LESS THAN 15.
D. MATERIAL LARGER THAN 3 INCHES SHALL NOT BE PLACED IN THE STRUCTURAL FILL.
E. NO BRUSH, SOD, FROZEN MATERIAL OR OTHER UNSUITABLE MATERIAL SHALL BE PLACED IN THE STRUCTURAL FILL. MATERIAL SHALL BE PLACED IN SUCH A MANNER AS TO RESULT IN A UNIFORMLY COMPACTED FILL.
F. PLACE ALL STRUCTURAL FILL IN APPROXIMATELY HORIZONTAL LAYERS NOT GREATER THAN SIX (6) INCHES IN THICKNESS, MOISTEN TO OPTIMUM MOISTURE CONTENT (PLUS/MINUS 2%) AND COMPACT TO DENSITY SPECIFIED HEREINAFTER.
6. COMPACTION REQUIREMENTS:
A. STRUCTURAL FILL MATERIALS SHALL BE COMPACTED TO THE FOLLOWING PERCENTAGES OF THE ASTM D1557 MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT (PLUS/MINUS 3%).

MATERIAL	MINIMUM PERCENT COMPACTION
STRUCTURAL FILL IN THE BUILDING AREA	95
SUBBASE FOR SLAB SUPPORT	95
SUBGRADE BELOW STRUCTURAL FILL	95
MISCELLANEOUS BACKFILL	90

LIGHTGAGE SCHEDULE

DEPTH	GAGE	AREA IN	Ix IN4	Sx IN3	Fy KSI
C 4"	20	0.275	0.692	0.346	33
C 4"	18	0.357	0.892	0.446	33
C 6"	18	0.447	2.316	0.772	33
C 8"	18	0.537	4.634	1.159	33
T 4"	20	0.225	0.549	0.346	33
T 4"	18	0.315	0.811	0.390	33
T 6"	18	0.405	2.072	0.673	33
T 8"	18	0.496	4.144	1.015	33

"C" INDICATES STUD, 1 5/8" FLANGES
"T" INDICATES DEEP LEG TRACK, 1 1/2" FLANGES

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ENGINEER

NM STATE

Biomedical Research Building - EXPANSION

95% Construction Documents

3020 South Espina St.
Las Cruces, New Mexico

NOVEMBER 30, 2023

MARK	DATE	DESCRIPTION

ISSUE:	
DATE:	
PROJECT NO:	
DRAWN BY:	KV
CHECKED BY:	MJW

SHEET TITLE
GENERAL STRUCTURAL NOTES

S-001

11/30/2023 8:19:31 AM

School Information

SCHEDULE OF STRUCTURAL SPECIAL INSPECTIONS

1. SPECIAL INSPECTIONS / TESTING - "SPECIAL STRUCTURAL INSPECTION" SHALL NOT RELIEVE THE OWNER OR THEIR AGENT FROM REQUESTING THE JURISDICTION BUILDING DEPARTMENT INSPECTIONS REQUIRED BY SECTION 110 OF THE IBC.
2. REPORTING FOR SPECIAL INSPECTION -
   SPECIAL INSPECTION AND TESTING REPORTS SHALL BE COMPLETED AND DISTRIBUTED AT THE COMPLETION OF EACH TASK. IF A TASK IS TO TAKE LONGER THAN (3) DAYS, PROVIDE REPORTS FOR EACH DAY. PROVIDE COPIES OF REPORTS TO: CONTRACTOR, OWNER, ARCHITECT AND STRUCTURAL ENGINEER OF RECORD. SPECIAL INSPECTOR TO KEEP A NON-COMPLIANCE LIST DOCUMENTING ITEMS INSPECTED NOT MEETING APPROVED CONSTRUCTION DOCUMENTS AND WHEN / HOW RESOLVED.
3. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING CONSTRUCTION DOCUMENTS FOR ADDITIONAL NON-STRUCTURAL SPECIAL INSPECTION ITEMS.

IN ACCORDANCE WITH IBC CHAPTER 17, THE FOLLOWING TYPES OF WORK REQUIRE SPECIAL INSPECTIONS AND TESTING:

SPECIAL INSPECTION AND VERIFICATION OF SOILS

SPECIAL INSPECTION REQUIRED Y/N	VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED	IBC REFERENCE
Y	1. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	-----	X	1705.6
Y	2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	-----	X	1705.6
Y	3. PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS.	-----	X	1705.6
Y	4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL.	X	-----	1705.6
Y	5. PRIOR TO PLACEMENT OF CONTROLLED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	-----	X	1705.6

SPECIAL INSPECTION AND VERIFICATION OF CONCRETE CONSTRUCTION

SPECIAL INSPECTION REQUIRED Y/N	VERIFICATION AND INSPECTION	FREQUENCY OF INSPECTION		REFERENCE FOR CRITERIA	
		CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED	IBC SECTION	REFERENCED STANDARD
Y	1. INSPECT REINFORCEMENT AND VERIFY PLACEMENT.	-----	X	1908.4	ACI 318: CH. 20, 25.2, 25.3, 26.6.1-26.6.3
N	2. REINFORCING BAR WELDING: a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706,	-----	X	-----	AWS D1.4 ACI 318: 26.6.4
N	b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM $\frac{5}{16}$", AND		X		
N	c. INSPECT ALL OTHER WELDS.	X			
Y	3. INSPECT ANCHORS CAST IN CONCRETE.	-----	X	-----	ACI 318: 17.8.2
Y	4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS. a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.	X	X	-----	ACI 318: 17.8.2.4 ACI 318: 17.8.2
Y	5. VERIFYING USE OF REQUIRED DESIGN MIX.	-----	X	1904.1, 1904.2, 1908.2, 1908.3	ACI 318: CH. 19, 26.4.3, 26.4.4
Y	6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TEST, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-----	1908.10	ASTM C172 ASTM C31 ACI 318: 26.4, 26.12
Y	7. INSPECT CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-----	1908.6, 1908.7 1908.8	ACI 318: 26.5
Y	8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-----	X	1908.9	ACI 318: 26.5.3 -26.5.5
N	9. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	-----	X	-----	ACI 318: 26.8
N	10. VERIFY IN-SITU CONCRETE STRENGTH PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	-----	X	-----	ACI 318: 26.11.2
Y	11. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-----	X	-----	ACI 318: 26.11.1.2(b)

CAST IN PLACE DEEP FOUNDATION ELEMENTS

SPECIAL INSPECTION REQUIRED Y/N	VERIFICATION AND INSPECTION TASK	FREQUENCY OF INSPECTION		REFERENCE FOR CRITERIA
		CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED	IBC SECTION
Y	1. INSPECT DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT	X	—	1705.8
Y	2. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM ELEMENT DIAMETERS, BELL DIAMETERS (IF APPLICABLE), LENGTHS, EMBEDMENT INTO BEDROCK (IF APPLICABLE), AND ADEQUATE END-BEARING STRATA CAPACITY. RECORD CONCRETE OR GROUT VOLUMES.	X	—	1705.8
Y	3. FOR CONCRETE ELEMENTS, PERFORM TESTS AND ADDITIONAL SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.3.	X	—	1705.8

SPECIAL INSPECTION AND VERIFICATION OF STEEL CONSTRUCTION

SPECIAL INSPECTION REQUIRED Y/N	VERIFICATION AND INSPECTION	FREQUENCY OF INSPECTION		REFERENCE FOR CRITERIA	
		CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED	IBC SECTION	REFERENCED STANDARD
	1. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS:				
Y	a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	-----	X	-----	APPLICABLE ASTM MATERIAL SPECIFICATIONS; AISC 360 SECTION A3.3
Y	b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	-----	X	-----	-----
	2. INSPECTION OF HIGH-STRENGTH BOLTING:				
Y	a. SNUG-TIGHT JOINTS	-----	X	1705.2.1	AISC 360, SECTION M2.5
Y	b. PRETENSIONED AND SLIP CRITICAL JOINTS USING TURN-OF-NUT WITH MATCHMARKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION	-----	X		
Y	c. PRETENSIONED AND SLIP CRITICAL JOINTS USING TURN-OF-NUT WITHOUT MATCHMARKING OR CALIBRATED WRENCH METHODS OF INSTALLATION	X	-----		
	3. MATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:				
Y	a. FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360	-----	X		AISC 360 SECTION M5.5
Y	b. FOR OTHER STEEL, IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	-----	X		APPLICABLE ASTM MATERIAL STANDARDS
Y	c. MANUFACTURERS CERTIFIED TEST REPORTS	-----	X		
	4. MATERIAL VERIFICATION OF WELD FILLER MATERIALS:				
Y	a. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS.	-----	-----	-----	AISC 360, SECTION A3.5
Y	b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	-----	-----	-----	-----
	5. INSPECTION OF WELDING: a. STRUCTURAL STEEL :				
Y	1) COMPLETE AND PARTIAL PENETRATION GROOVE WELDS.	X	-----	1705.2	AWS D1.1
N	2) MULTIPASS FILLET WELDS.	X	-----		
N	3) SINGLE-PASS FILLET WELDS > 5/16"	X	-----		
Y	4) PLUG & SLOT WELDS	X	-----		
Y	5) SINGLE-PASS FILLET WELDS < 5/16"	-----	X		
N	6) ROOF DECK WELDS.	-----	X	-----	AWS D1.3
N	b. REINFORCING STEEL:	-----	-----	-----	AWS D1.4 ACI 318 3.5.2
N	1) VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706.	-----	X		
N	2) REINFORCING STEEL-RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL REINFORCED CONCRETE SHEAR WALLS AND SHEAR REINFORCEMENT.	X	-----		
Y	3) SHEAR REINFORCEMENT.	X	-----		
Y	4) OTHER REINFORCING STEEL.	-----	X		
	6. INSPECTION OF STEEL FRAME JOINT DETAIL FOR COMPLI-ANCE WITH APPROVED CONSTRUCTION DOCUMENTS:				
N	a. DETAILS SUCH AS BRACING AND STIFFENING.	-----	X	1705.1.1	-----
Y	b. MEMBER LOCATIONS.	-----	X		
Y	c. APPLICATION OF JOINT DETAILS AT EACH CONNECTION.	-----	X		

SPECIAL INSPECTION AND VERIFICATION OF COLD FORMED METAL FRAMING

SPECIAL INSPECTION REQUIRED Y/N	VERIFICATION AND INSPECTION TASK	FREQUENCY OF INSPECTION		REFERENCE FOR CRITERIA
		CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED	IBC SECTION
Y	1. SEATING OF STUDS IN TRACK.	-----	X	-----
Y	2. WELDING OF ELEMENTS.	-----	X	1705.12.3
Y	3. SCREW ATTACHMENTS, BOLTING, ANCHORING, AND OTHER FASTENING OF COMPONENTS.	-----	X	1705.12.3
Y	4. STEEL STUD BRIDGING SPACING AND END ATTACHMENT.	-----	X	1705.12.3
Y	5. WELDED CONNECTIONS ARE TOUCHED UP WITH PAINT.	-----	X	1705.12.3
Y	6. VERIFY STRUCTURAL STUD SIZE, DEPTH, AND GAGE.	-----	X	1705.12.3

REQUIRED SPECIAL INSPECTION OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS

SPECIAL INSPECTION REQUIRED Y/N	VERIFICATION AND INSPECTION TASK	FREQUENCY OF INSPECTION		REFERENCE FOR CRITERIA
		CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED	IBC SECTION
	1. INSTALLATION OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS.			
Y	a. END CONNECTIONS - WELDED OR BOLTED.	-----	X	SJI SPECIFICATIONS LISTED IN SECTION 2207.1
	b. BRIDGING - HORIZONTAL OR DIAGONAL.	-----		
Y	1. STANDARD BRIDGING.	-----	X	SJI SPECIFICATIONS LISTED IN SECTION 2207.1
Y	2. BRIDGING THAT DIFFERS FROM THE SJI SPECIFICATIONS LISTED IN SECTION 2207.1.		X	

SPECIAL INSPECTION AND VERIFICATION OF STEEL DECK CONSTRUCTION

SPECIAL INSPECTION REQUIRED Y/N	VERIFICATION AND INSPECTION TASK	FREQUENCY OF INSPECTION		REFERENCE FOR CRITERIA
		CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED	IBC SECTION 1705.2.2
Y	VERIFY DECK MATERIALS AND MILL CERTIFICATIONS	-----	X	SDI-QA/QC
Y	VERIFY FIELD WELDING OF DECK	-----	X	AWS D1.3, SDI C, SDI NC, SDI RD
Y	VERIFY MECHANICAL FASTENERS	-----		SDI C, SDI NC, SDI RD
Y	VERIFY STEEL DECK INSTALLATION IN ACCORDANCE WITH CONSTRUCTION DOCUMENTS			SDI C, SDI NC, SDI RD

SPECIAL INSPECTION OF SEISMIC FORCE RESISTING SYSTEMS (REQUIRED WHEN SDC = C, D, E OR F) AND DESIGNATED SEISMIC SYSTEMS (REQUIRED WHEN SDC=D,E OR F)

SPECIAL INSPECTION REQUIRED Y/N	VERIFICATION AND INSPECTION TASK	FREQUENCY OF INSPECTION		REFERENCE FOR CRITERIA
		CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED	IBC SECTION
	1. STRUCTURAL STEEL:			
Y	a. STRUCTURAL WELDING REQUIRED BY AISC 341	X	-----	1705.2.1
	2. STRUCTURAL WOOD:			
Y	a. FIELD GLUING OPERATIONS OF ELEMENTS IN THE SEISMIC-FORCE-RESISTING SYSTEM.	X	-----	1705.11.1
Y	b. NAILING, BOLTING, ANCHORING, AND OTHER FASTENING OF COMPONENTS WITHIN THE SEISMIC-FORCE-RESISTING SYSTEM, INCLUDING WOOD SHEAR WALLS, WOOD DIAPHRAGMS, DRAG STRUTS, BRACES, AND HOLD DOWNS. (ENGINEERS NOTE: SEE SECTIONS 1707.3 & 1705.3 EXCEPTION.)	-----	X	1705.11.1
	3. COLD - FORMED STEEL FRAMING:			
Y	a. WELDING OF ELEMENTS IN SEISMIC-FORCE RESISTANCE	-----	X	1705.12.1.2
Y	b. SCREW ATTACHMENTS, BOLTING, ANCHORING, AND OTHER FASTENING OF COMPONENTS WITHIN THE SEISMIC-FORCE-RESISTING SYSTEM.	-----	X	1705.12.1.2
Y	4. ANCHORAGE.	-----	X	1705.12.7

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ENGINEER

NM STATE

Biomedical Research Building - EXPANSION

95% Construction Documents

3020 South Espina St.
Las Cruces, New Mexico

NOVEMBER 30, 2023

MARK	DATE	DESCRIPTION

ISSUE:	
DATE:	
PROJECT NO:	
DRAWN BY:	KV
CHECKED BY:	MJW

SHEET TITLE

SPECIAL INSPECTIONS

S-002

School Information

11/30/2023 8:19:33 AM

GENERAL NOTES

A. ALL PERIMETER DIMENSIONS ARE TO FACE OF CONCRETE STEMWALL /GRADE BEAM, UNLESS NOTED OTHERWISE.

B. CJ INDICATES CONTROL JOINT IN SLAB, SEE E5/S-201.

C. ⊗ FD INDICATES FLOOR DRAIN, SLOPE SLAB TO DRAIN.

D. TYPICAL AUGER CAST PIER IS 24" DIAMETER x 40' DEEP WITH A BEARING CAPACITY OF 90 KIPS.

KEYED NOTES

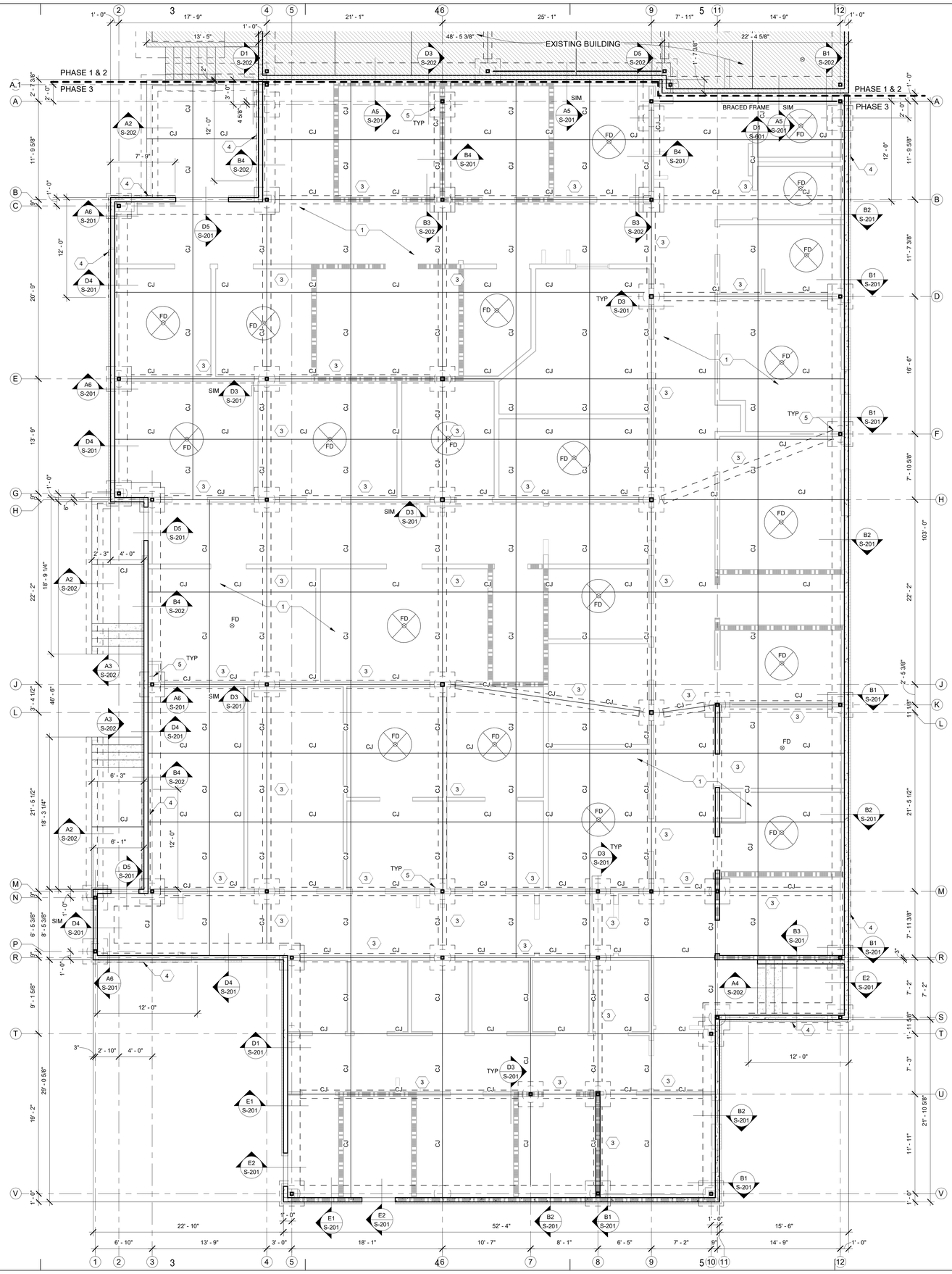
1 5" THICK CONCRETE SLAB W/ #4 @ 18" OC (CENTERED IN SLAB) OVER 4" AGGREGATE BASE COURSE OVER COMPACTED SUBGRADE. FINISH FLOOR EL = 100'-0" - MSLE - SEE CIVIL.

2 RECESS SLAB PER E6/S-201, MAINTAIN 5" TOTAL SLAB THICKNESS. SEE ARCHITECTURAL FOR EXTENT OF RECESS.

3 12"x12" CONCRETE TIE BEAM PER E3/S-201.

4 STRAPPED STEEL STUD SHEAR WALL WITH DIAGONAL 5"x12 GA STRAPS IN 'X' CONFIGURATION ON EACH FACE OF WALL, CONSTRUCT PER C3/S-505.

5 AUGER CAST PIERS INDICATED ARE 24" DIA x 40' DEEP WITH A 90 kip CAPACITY.



PLAN NORTH

A2 FOUNDATION PLAN
3/16" = 1'-0"

11/30/2023 8:19:36 AM

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ENGINEER

NM STATE

Biomedical Research Building - EXPANSION

95% Construction Documents

3020 South Espina St.
Las Cruces, New Mexico

NOVEMBER 30, 2023

MARK	DATE	DESCRIPTION

ISSUE:	
DATE:	
PROJECT NO:	
DRAWN BY:	KV
CHECKED BY:	MJW

SHEET TITLE

FOUNDATION PLAN

S-101

School Information

Biomedical Research Building - EXPANSION

GENERAL NOTES

A. PERIMETER DIMENSIONS ARE TO EXTERIOR FACE OF WALL.

B. L-# INDICATES WALL OPENING LINTEL, SEE xx/S-xxx FOR SCHEDULE AND DETAILS.

C. # INDICATES BASE PLATE MARK, SEE A1/S-202 FOR BASE PLATE SCHEDULE.

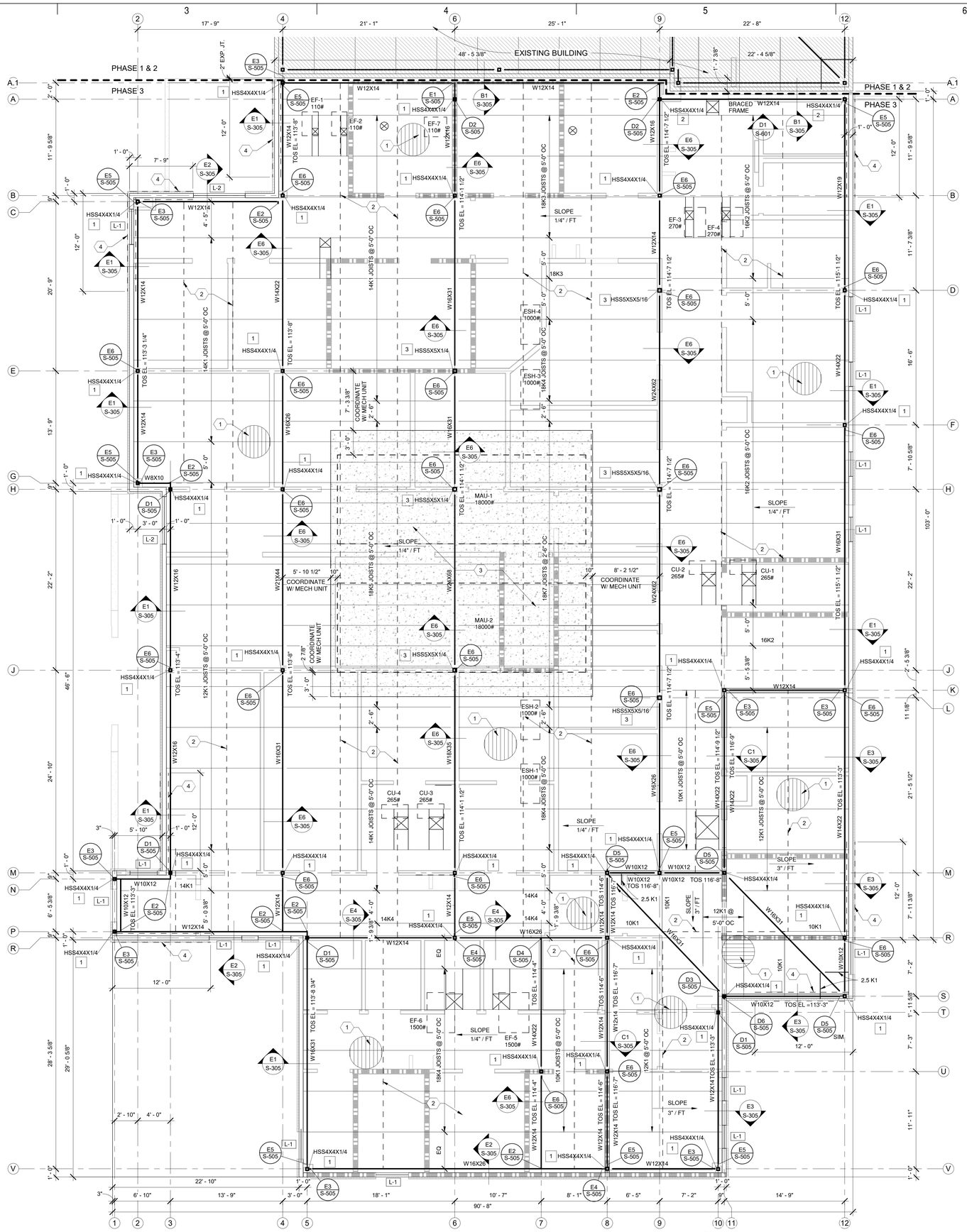
KEYED NOTES

1 1 1/2" TYPE "B", 20 GA PAINTED METAL DECK WITH NESTABLE SIDELAPS. ATTACH DECK TO SUPPORTS PERPENDICULAR TO RIBS WITH (5) 5/8" DIA PUDDLE WELDS PER 36" WIDE SHEET AND TO SUPPORTS PARALLEL TO RIBS WITH 5/8" DIA PUDDLE WELDS @ 12" OC ATTACH SIDELAPS WITH #10 TEK SCREWS @ 12" OC.

2 L1x1x7/64 HORIZONTAL BRIDGING EQUALLY SPACED AS SHOWN WELD TO TOP AND BOTTOM CHORDS OF JOISTS.

3 MECHANICAL HOUSEKEEPING PAD. 6" MINIMUM THICKNESS 3000 PSI CONCRETE REINFORCED W/ #5 @ 12" OC EACH WAY IN CENTER OF SLAB. COORDINATE PAD SIZE AND LOCATION WITH MECHANICAL UNITS PROVIDED.

4 STRAPPED STEEL STUD SHEAR WALL WITH DIAGONAL 5"x12 GA STRAPS IN 'X' CONFIGURATION ON EACH FACE OF WALL, CONSTRUCT PER C3/S-505.



A2 ROOF FRAMING PLAN
3/16" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ENGINEER

NM STATE

Biomedical Research Building - EXPANSION

95% Construction Documents

3020 South Espina St.
Las Cruces, New Mexico

NOVEMBER 30, 2023

MARK	DATE	DESCRIPTION

ISSUE:	
DATE:	
PROJECT NO:	
DRAWN BY:	KV
CHECKED BY:	MJW

SHEET TITLE

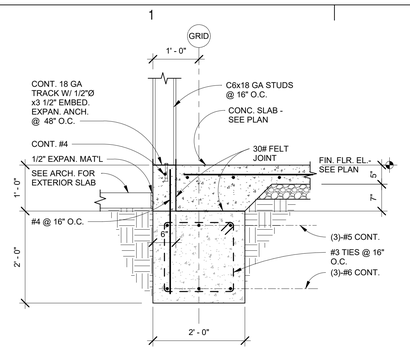
ROOF FRAMING PLAN

S-111

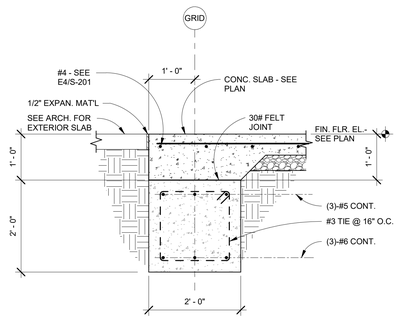
School Information

11/30/2023 8:19:40 AM

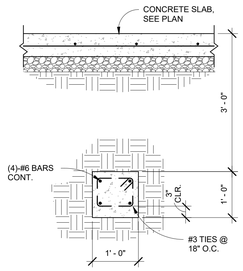
Biomedical Research Building - EXPANSION



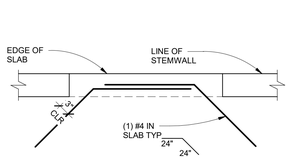
E1 SECTION
3/4" = 1'-0"



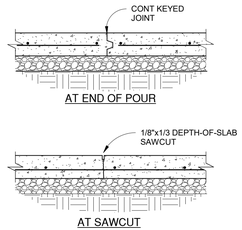
E2 SECTION AT DOOR
3/4" = 1'-0"



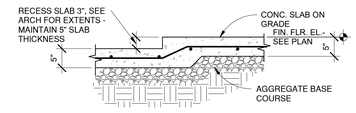
E3 SECTION AT TIE BEAM
3/4" = 1'-0"



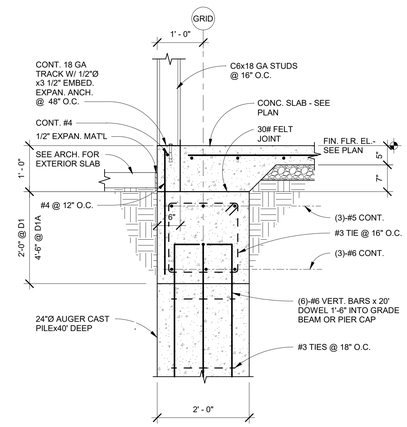
E4 TYP SLAB REINF AT DOOR OPENINGS
3/4" = 1'-0"



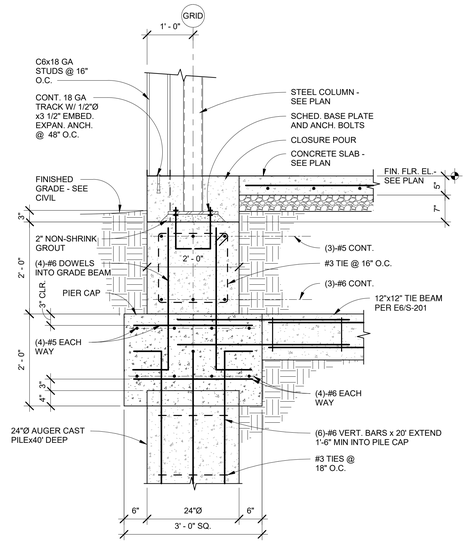
E5 TYP SLAB CONTROL JOINTS
3/4" = 1'-0"



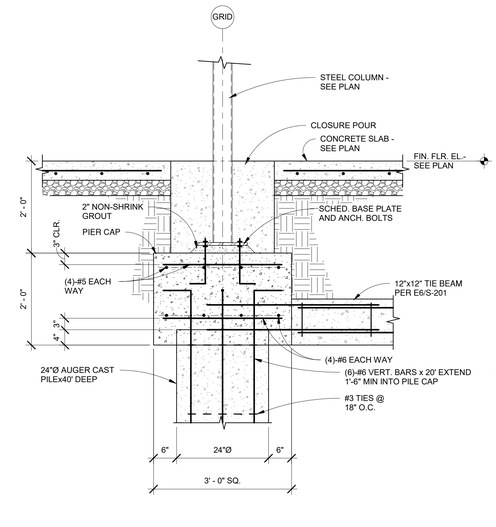
E6 TYPICAL RECESSED SLAB
3/4" = 1'-0"



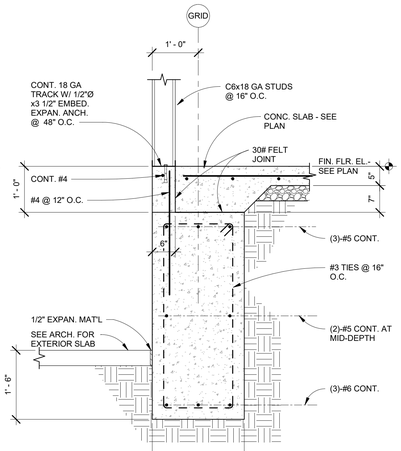
D1 SECTION AT INTERMEDIATE PILE
3/4" = 1'-0"



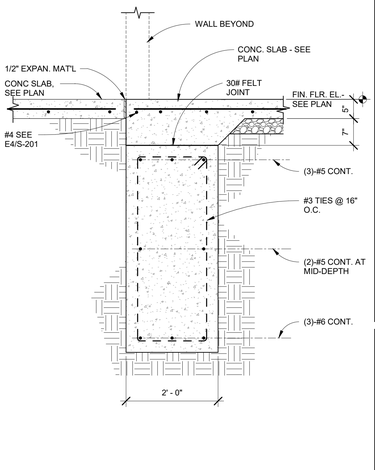
D2 SECTION AT PERIMETER COLUMNS
3/4" = 1'-0"



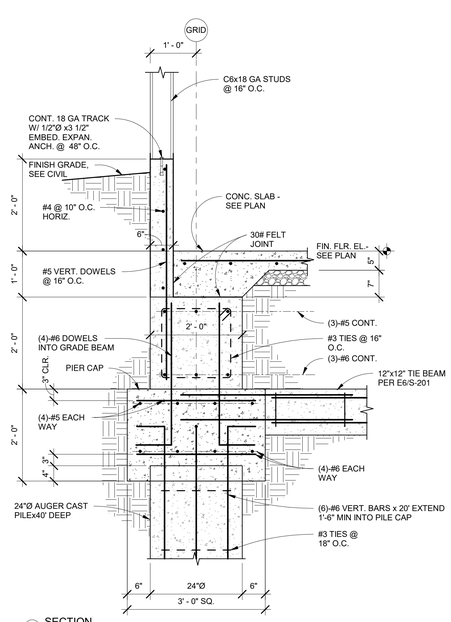
D3 SECTION AT INTERIOR COLUMNS
3/4" = 1'-0"



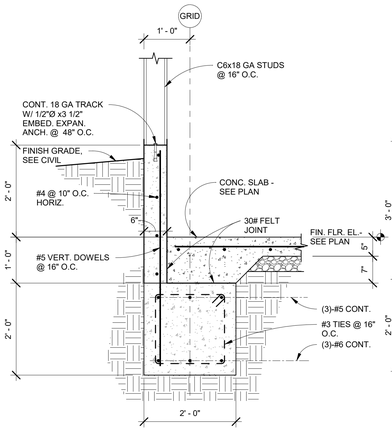
D4 SECTION
3/4" = 1'-0"



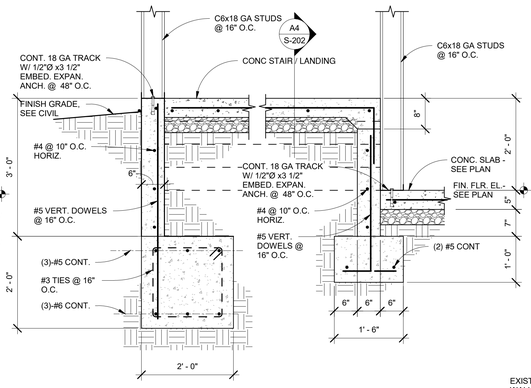
D5 SECTION
3/4" = 1'-0"



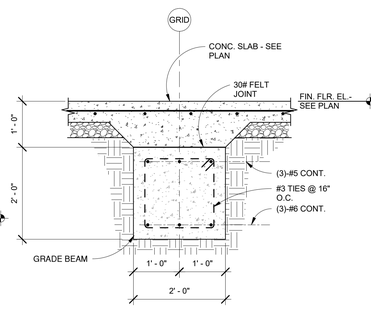
B1 SECTION
3/4" = 1'-0"



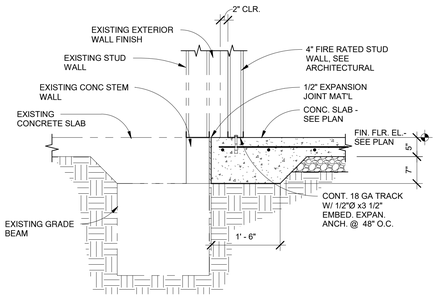
B2 SECTION
3/4" = 1'-0"



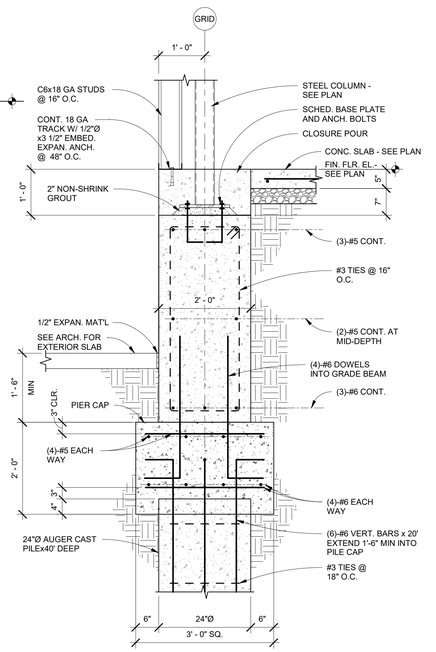
B3 SECTION
3/4" = 1'-0"



B4 SECTION
3/4" = 1'-0"



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



A6 SECTION
3/4" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ENGINEER

NM STATE

Biomedical Research Building - EXPANSION

95% Construction Documents

3020 South Espina St.
Las Cruces, New Mexico

NOVEMBER 30, 2023

MARK	DATE	DESCRIPTION

ISSUE:	
DATE:	
PROJECT NO:	
DRAWN BY:	KV
CHECKED BY:	MJW

SHEET TITLE

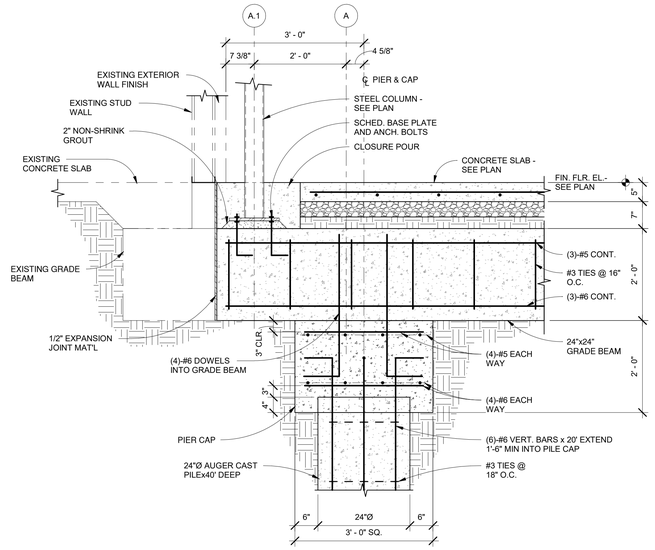
FOUNDATION SECTIONS

S-201

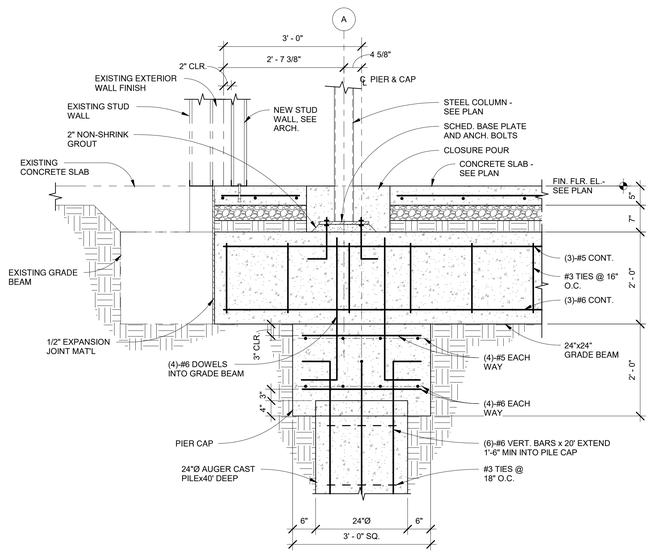
11/30/2023 8:19:40 AM

School Information

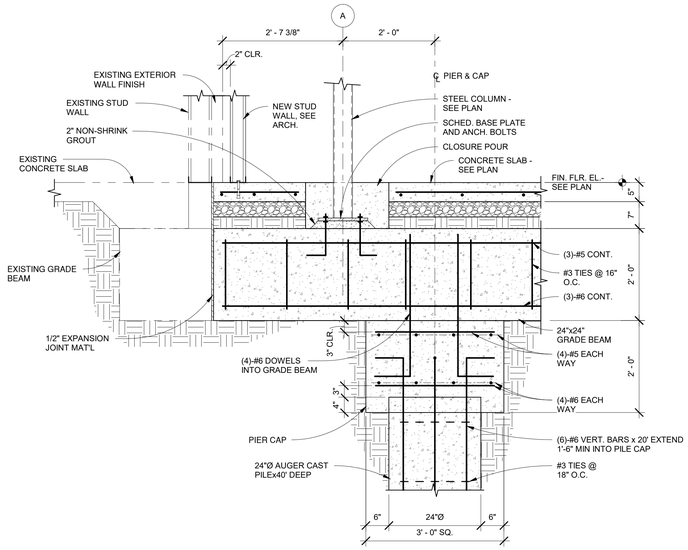
Biomedical Research Building - EXPANSION



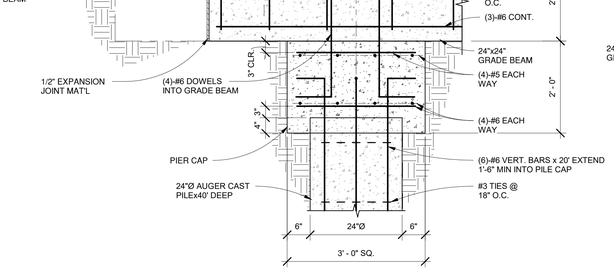
D1 SECTION
3/4" = 1'-0"



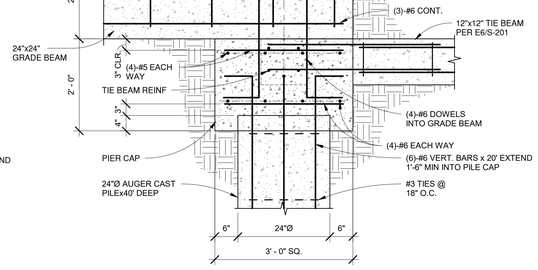
D3 SECTION
3/4" = 1'-0"



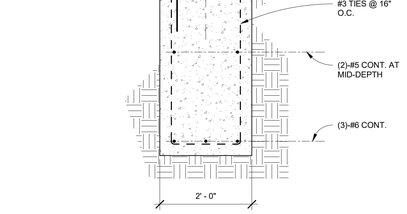
D5 SECTION
3/4" = 1'-0"



B1 SECTION
3/4" = 1'-0"



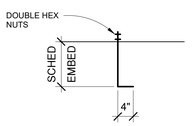
B3 SECTION
3/4" = 1'-0"



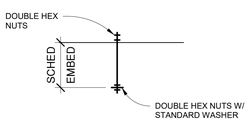
B4 SECTION
3/4" = 1'-0"

BASE PLATE SCHEDULE

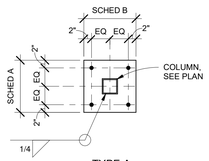
MARK	TYPE	SIZE "T"x"A"x"B"	A307 ANCHOR BOLTS	ANCHOR BOLT TYPE
1	A	3/4"x12"x1'-0"	(4)- 3/4"Øx9" EMBED	1
2	B	3/4"x12"x1'-0"	(4)- 3/4"Øx9" EMBED	2
3	A	3/4"x13"x1'-1"	(4)- 3/4"Øx9" EMBED	1



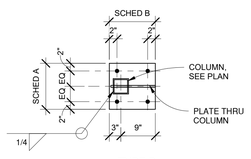
TYPE 1 ANCHOR BOLT



TYPE 2 ANCHOR BOLT

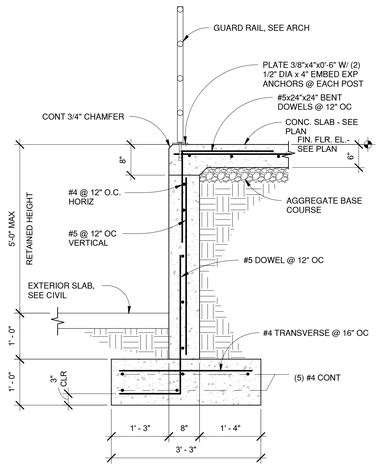


TYPE A

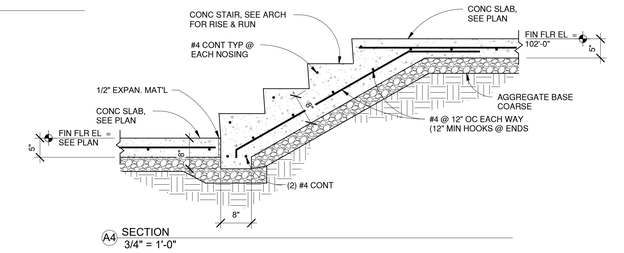


TYPE B

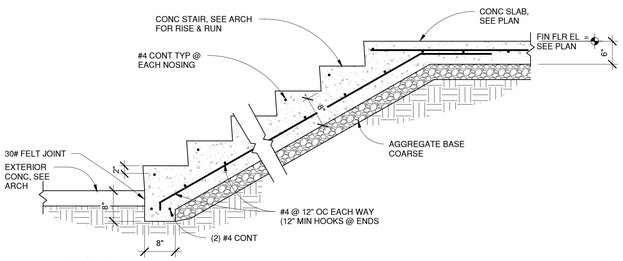
A1 BASE PLATE SCHEDULE
3/4" = 1'-0"



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



A4 SECTION
3/4" = 1'-0"



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

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ENGINEER

NM STATE

Biomedical Research Building - EXPANSION

95% Construction Documents

3020 South Espina St.
Las Cruces, New Mexico

NOVEMBER 30, 2023

MARK	DATE	DESCRIPTION

ISSUE:	
DATE:	
PROJECT NO:	
DRAWN BY:	KV
CHECKED BY:	MJW

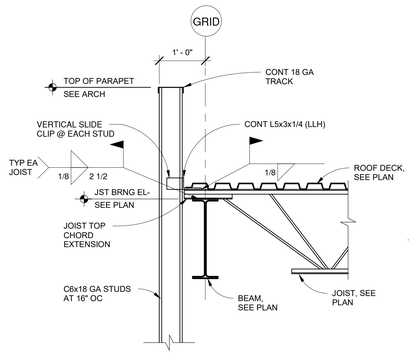
SHEET TITLE

FOUNDATION SECTIONS

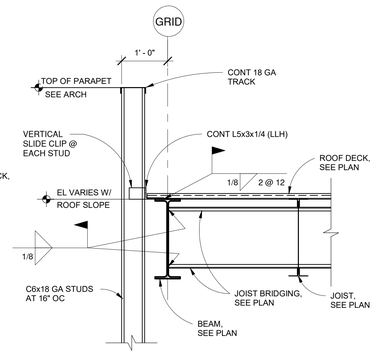
S-202

School Information

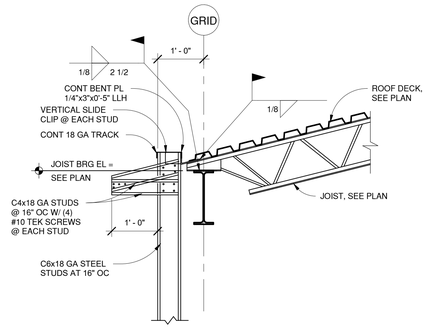
11/30/2023 8:19:41 AM



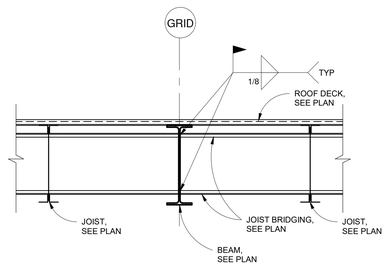
E1 SECTION
3/4" = 1'-0"



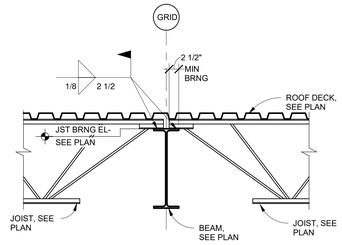
E2 SECTION
3/4" = 1'-0"



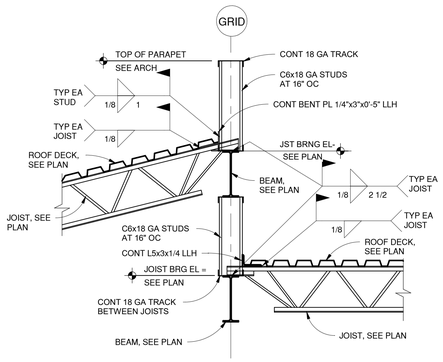
E3 SECTION
3/4" = 1'-0"



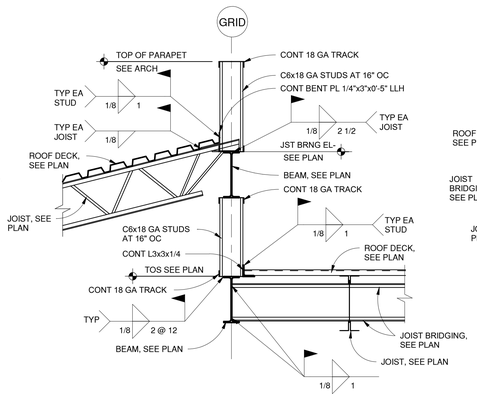
E4 SECTION
3/4" = 1'-0"



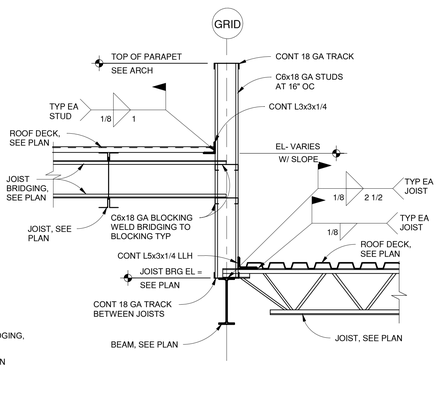
E6 SECTION
3/4" = 1'-0"



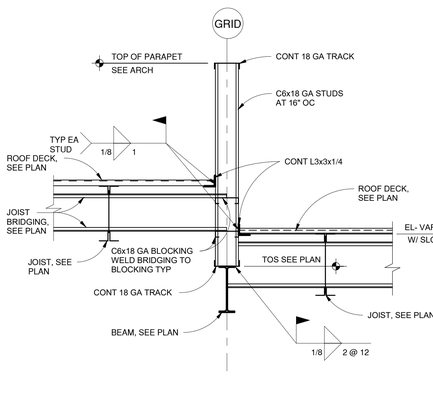
C1 SECTION
3/4" = 1'-0"



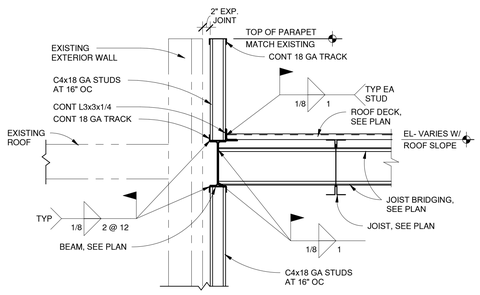
C2 SECTION
3/4" = 1'-0"



C3 SECTION
3/4" = 1'-0"



C4 SECTION
3/4" = 1'-0"



B1 SECTION
3/4" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ENGINEER

NM STATE

Biomedical Research Building - EXPANSION

95% Construction Documents

3020 South Espina St.
Las Cruces, New Mexico

NOVEMBER 30, 2023

MARK	DATE	DESCRIPTION

ISSUE:	
DATE:	
PROJECT NO:	
DRAWN BY:	KV
CHECKED BY:	MJW

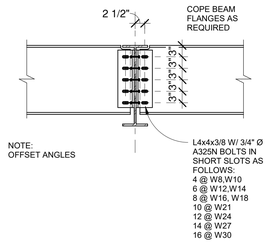
SHEET TITLE

FRAMING SECTIONS

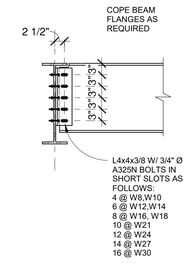
S-305

School Information

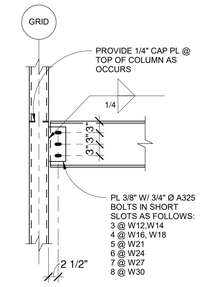
11/30/2023 8:19:43 AM



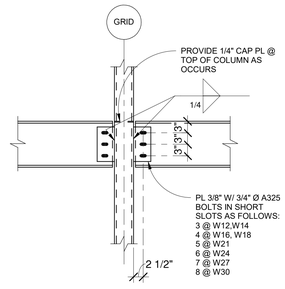
E1 BEAM TO BEAM ANGLE CONNECTION
3/4" = 1'-0"



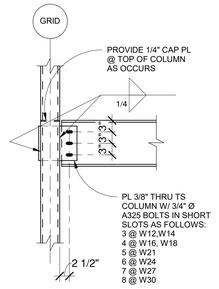
E2 BEAM TO BEAM CONN - ONE SIDED
3/4" = 1'-0"



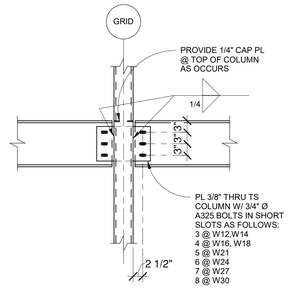
E3 BEAM TO HSS COLUMN CONN W - SHEAR TAB
3/4" = 1'-0"



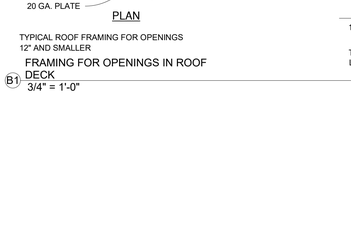
E4 BEAM TO HSS COLUMN W - SHEAR TAB - 2 SIDED
3/4" = 1'-0"



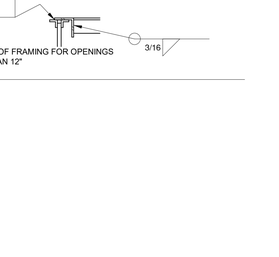
E5 BEAM TO HSS COLUMN CONN W - THRU PLATE
3/4" = 1'-0"



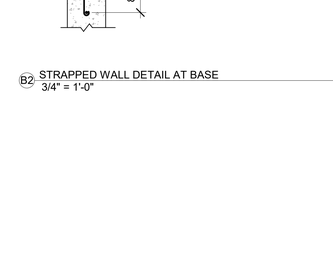
E6 BEAMS TO HSS COLUMN W - THRU PLATE
3/4" = 1'-0"



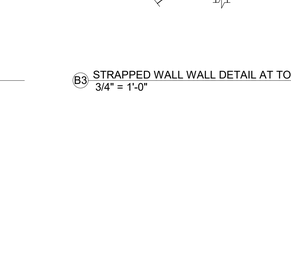
D1 BEAM OVER TOP OF COLUMN CONNECTION
3/4" = 1'-0"



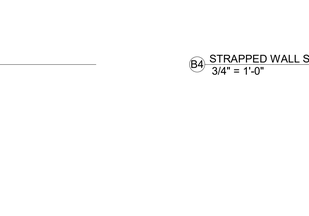
D2 COLUMN ON TOP OF BEAM CONNECTION
3/4" = 1'-0"



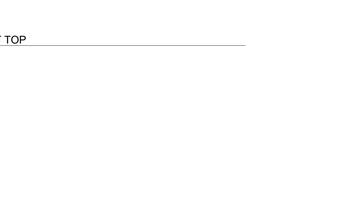
D3 SKEWED BEAM TO BEAM CONNECTION
3/4" = 1'-0"



D4 BEAM TO BEAM ANGLE CONNECTION
3/4" = 1'-0"



D5 MULTIPLE BEAMS TO COLUMN CONNECTION
1" = 1'-0"



D6 SKEWED BEAM TO COLUMN CONNECTION
1" = 1'-0"

STEEL LINTEL SCHEDULE				
OPENING WIDTH	SIZE	NO. BEARING STUDS	NO. FULL HEIGHT STUDS	WINDOW SILL STUDS
0'-0" TO 4'-0"	(2) C6x18 GA.	1	1	18 GA. TRACK
4'-1" TO 6'-4"	(3) C6x18 GA.	1	2	18 GA. TRACK 1-C6x18 GA
6'-5" TO 8'-0"	(3) C6x18 GA.	2	2	18 GA. TRACK 1-C6x18 GA
8'-1" TO 10'-0"	(3) C6x18 GA.	2	3	18 GA TRACK 2-C6x18 GA

C1 STEEL LINTEL SCHEDULE
3/4" = 1'-0"

C2 3/4"=1'-0"

C3 STRAPPED WALL ELEVATIONS
3/4" = 1'-0"

B1 FRAMING FOR OPENINGS IN ROOF DECK
3/4" = 1'-0"

B2 STRAPPED WALL DETAIL AT BASE
3/4" = 1'-0"

B3 STRAPPED WALL WALL DETAIL AT TOP
3/4" = 1'-0"

B4 STRAPPED WALL SECTION AT TOP
3/4" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ENGINEER

NM STATE

Biomedical Research Building - EXPANSION

95% Construction Documents

3020 South Espina St.
Las Cruces, New Mexico

NOVEMBER 30, 2023

MARK	DATE	DESCRIPTION

ISSUE:	
DATE:	
PROJECT NO:	
DRAWN BY:	KV
CHECKED BY:	MJW

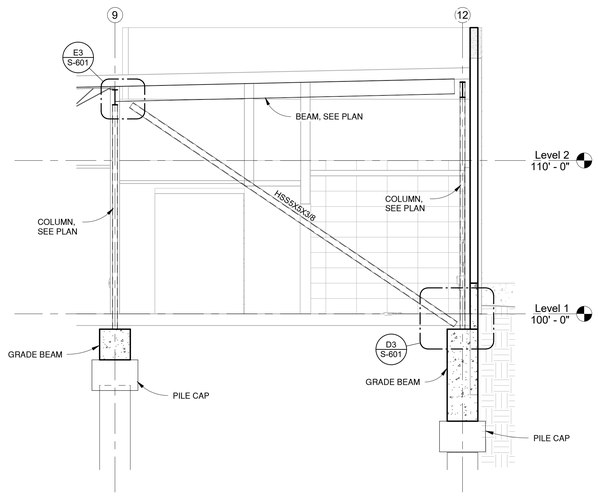
SHEET TITLE

FRAMING DETAILS

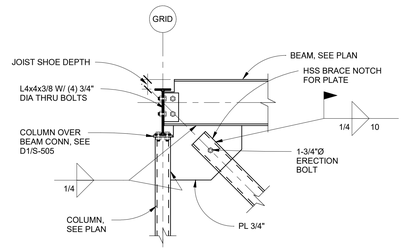
S-505

School Information

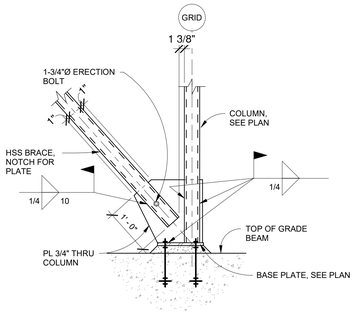
11/30/2023 8:19:45 AM



D1 BRACED FRAME ELEVATION ALONG GRID LINE A
1/4" = 1'-0"



E3 BRACED FRAME DETAIL AT ROOF FRAMING
3/4" = 1'-0"



D3 BRACED FRAME DETAIL AT FOUNDATION
3/4" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ENGINEER

NM STATE

Biomedical Research Building - EXPANSION

95% Construction Documents

3020 South Espina St.
Las Cruces, New Mexico

NOVEMBER 30, 2023

MARK	DATE	DESCRIPTION

ISSUE:	
DATE:	
PROJECT NO:	
DRAWN BY:	KV
CHECKED BY:	MJW

SHEET TITLE

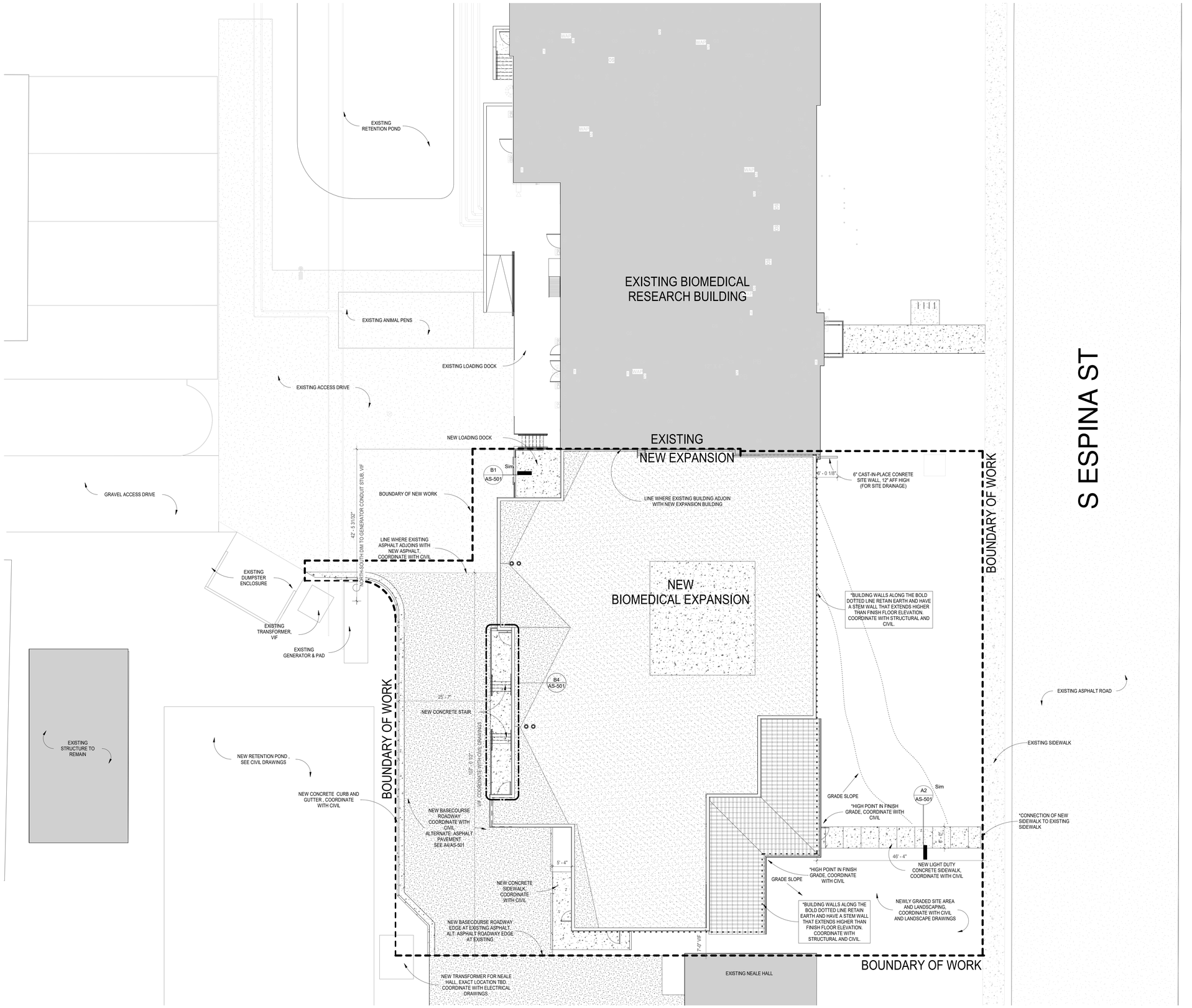
BRACED FRAME ELEVATION & DETAILS

S-601

School Information

11/30/2023 8:19:46 AM

NMSU Agricultural Modernization: Biomedical Research Building Expansion



A1 ARCHITECTURAL SITE PLAN
3/32" = 1'-0"

12/4/2023 12:11:45 PM

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

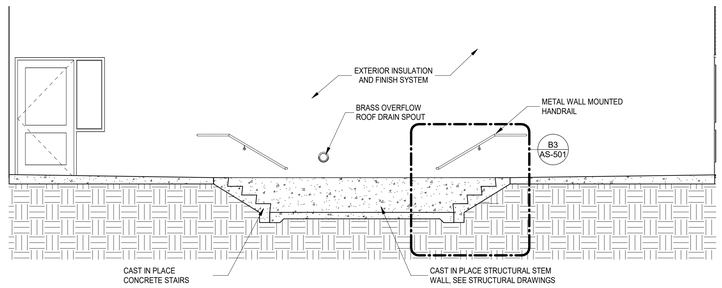
DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE

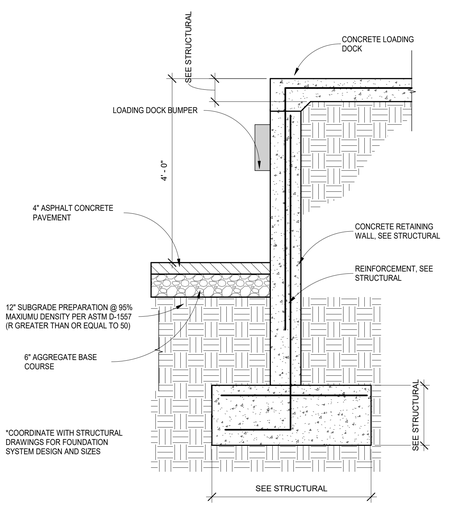
OVERALL SITE PLAN

AS-101

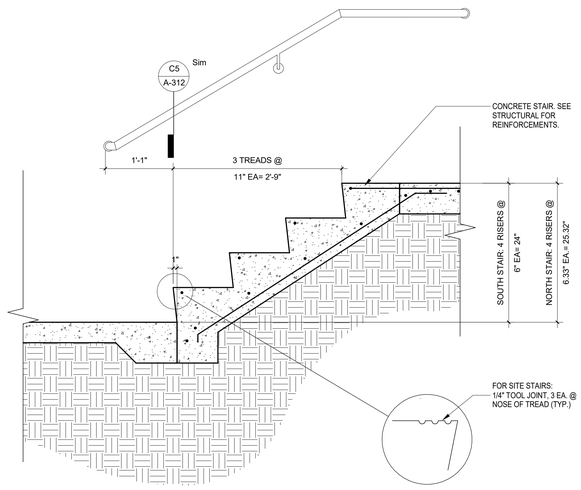
Biomedical Research Building Expansion



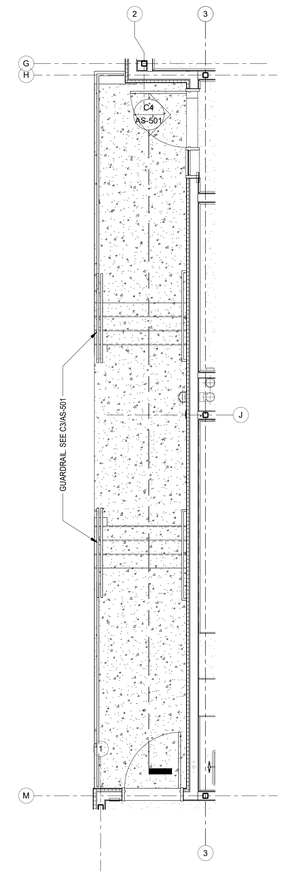
C4 SITE STAIR SECTION
1/4" = 1'-0"



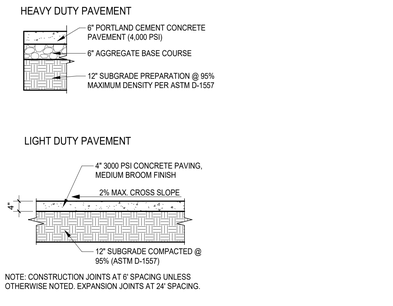
B1 LOADING DOCK WALL
3/4" = 1'-0"



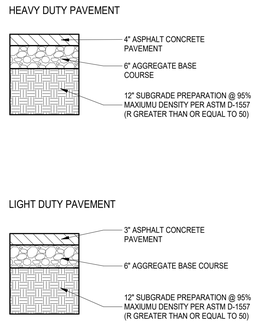
B3 SITE STAIR TYP SECTION
1" = 1'-0"



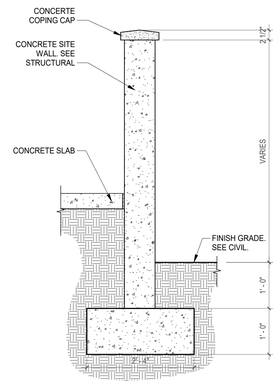
B4 ENLARGED SITE STAIR
1/4" = 1'-0"



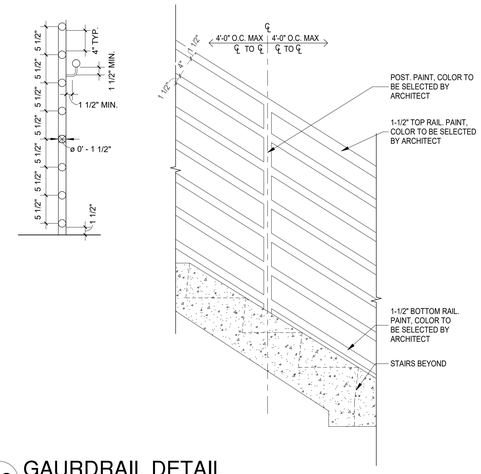
A2 CONCRETE PAVEMENT SECTION
1/2" = 1'-0"



A4 TYPICAL ASPHALT PAVEMENT DETAIL
3/4" = 1'-0"



A6 SITE WALL DETAIL
3/4" = 1'-0"



C3 GAURDRAIL DETAIL
1" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS
3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

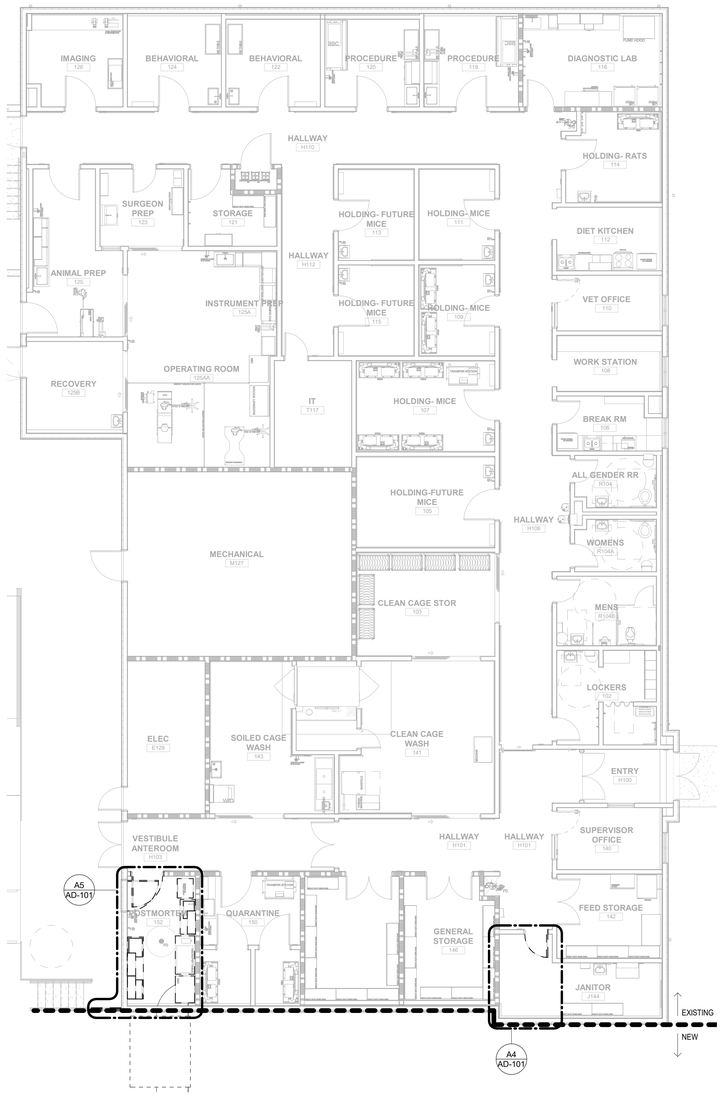
MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE
SITE DETAILS

AS-501

NMSU Agricultural Modernization: Biomedical Research Building Expansion



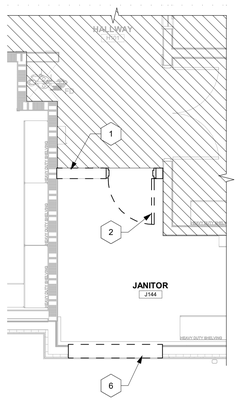
A1 DEMOLITION PLAN
1/8" = 1'-0"

GENERAL NOTES

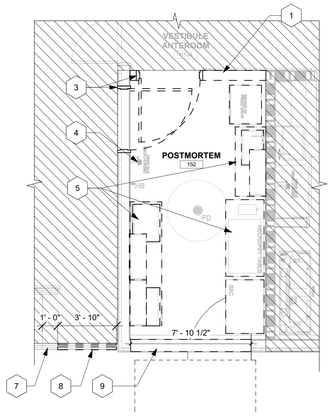
A. PATCH AND REPAIR CEILING GRID AND TILES IN THIS AREA WHERE WALL IS BEING DEMOLISHED. MATCH EXISTING CEILING HEIGHT AND TYPE.
B. CAP EXISTING UTILITY PLUMBING AND MECHANICAL CONNECTIONS TO EXISTING EQUIPMENT IN THIS AREA NOTED TO BE REMOVED AND/OR RELOCATED.
C. PATCH AND REPAIR EXISTING WALLS AND PAINT TO MATCH EXISTING.
D. REFER TO STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING SHEETS FOR ADDITIONAL DEMOLITION INSTRUCTIONS.
E. REFER TO SITE PLAN AND REFLECTED CEILING PLAN SHEETS FOR ADDITIONAL DEMOLITION INSTRUCTIONS.
F. COORDINATE ALL DEMOLITION WITH NEW WORK.

KEYED NOTES

1 DEMOLISH THIS PORTION OF THE EXISTING WALL, FULL HEIGHT. PATCH AND REPAIR ADJACENT WALLS, FLOOR AND CEILING TO MATCH EXISTING ADJACENT FINISHES.
2 REMOVE AND SALVAGE EXISTING DOOR AND FRAME AND RELOCATE AS SHOWN IN DETAIL A3/A-401
3 REMOVE EXISTING DOOR AND FRAME AND SALVAGE TO OWNER.
4 REMOVE AND CAP EXISTING PLUMBING FIXTURES.
5 REMOVE AND RELOCATE ALL EXISTING CASEWORK AND EQUIPMENT IN THIS ROOM TO NEW POSTMORTEM ROOM IN EXPANSION.
6 DEMOLISH THIS PORTION OF THE EXISTING WALL AND PREPARE TO RECIEVE NEW DOOR AND FRAME. SEE DOOR SCHEDULE
7 LEAVE 12" EXTENSION OF HANDRAIL AND GUARDRAIL AT TOP OF EXISTING STAIR, PER CODE REQUIREMENT.
8 DEMOLISH THIS PORTION OF METAL HAND RAIL AND GUARD RAIL. PATCH AND REPAIR CONCRETE AS REQUIRED TO PROVIDE FLUSH LEVEL SURFACE THAT MATCHES EXISTING LOADING DOCK SURFACE.
9 DEMOLISH THIS PORTION OF THE EXISTING WALL TO CREATE OPENING. COORDINATE WITH EQUIPMENT MANUFACTURER. PATCH AND REPAIR TO MATCH ADJACENT FINISHES.
PATCH AND REPAIR TO MATCH ADJACENT FINISHES.



A4 ENLARGED DEMO PLAN
1/4" = 1'-0"



A5 ENLARGED DEMO PLAN
1/4" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS
3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

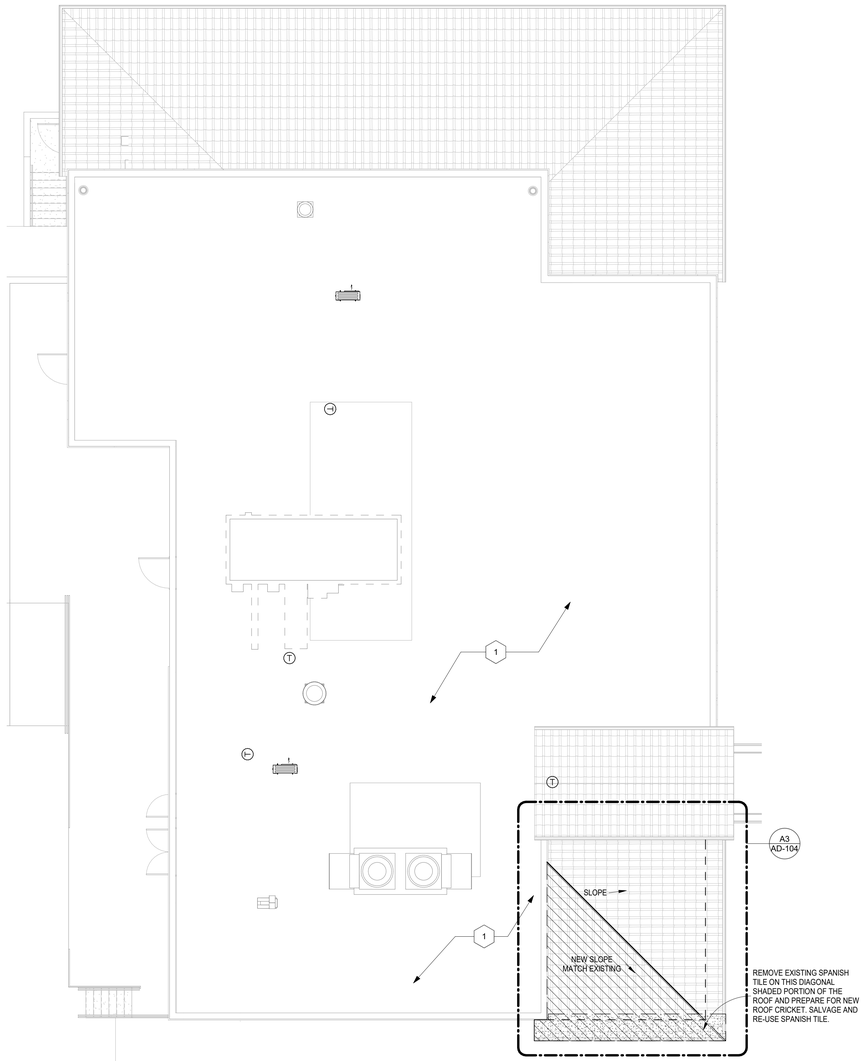
DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE
DEMOLITION PLANS

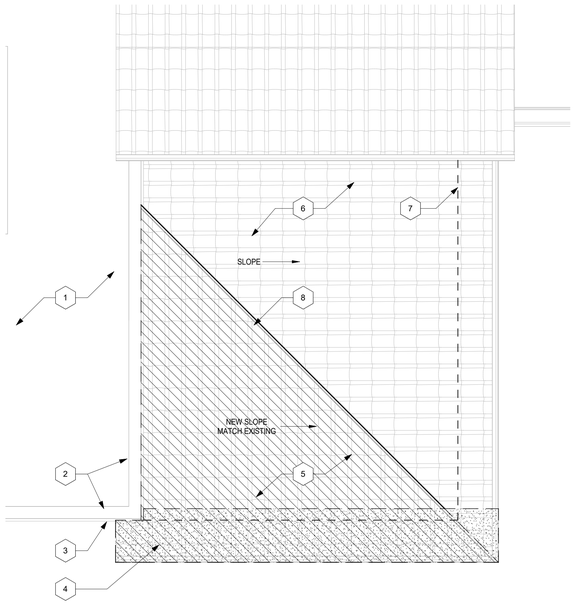
AD-101

12/4/2023 12:11:37 PM

Biomedical Research Building Expansion



A1 DEMO ROOF PLAN
1/8" = 1'-0"



A3 ENLARGED DEMO ROOF PLAN
1/4" = 1'-0"

GENERAL NOTES

A. PATCH AND REPAIR CEILING GRID AND TILES IN THIS AREA WHERE WALL IS BEING DEMOLISHED. MATCH EXISTING CEILING HEIGHT AND TYPE.
B. CAP EXISTING UTILITIY PLUMBING AND MECHANICAL CONNECTIONS TO EXISTING EQUIPMENT IN THIS AREA NOTED TO BE REMOVED AND/OR RELOCATED.
C. PATCH AND REPAIR EXISTING WALLS AND PAINT TO MATCH EXISTING.
D. REFER TO STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING SHEETS FOR ADDITIONAL DEMOLITION INSTRUCTIONS.
E. REFER TO SITE PLAN AND REFLECTED CEILING PLAN SHEETS FOR ADDITIONAL DEMOLITION INSTRUCTIONS.
F. COORDINATE ALL DEMOLITION WITH NEW WORK.

KEYED NOTES

1 EXISTING TPO ROOF
2 EXISTING PHASE 1 & 2 PARAPET AND EXTERIOR WALL
3 DEMOLISH PARAPET CORNICE BACK TO BASE LAYER OF 2" RIGID INSULATION AND PREP FOR EXPANTION JOINT.
4 DEMOLISH THIS PORTION OF ROOF TO INTERIOR SIDE OF STUD, PATCH AND PREPARE FOR EXTENSION OF EXTERIOR STUD WALL.
5 REMOVE EXISTING SPANISH TILE ON THIS SHADED PORTION OF THE EXISTING ROOF AND PREPARE FOR NEW ROOF CRICKET AND SPANISH TILE ROOF. SALVAGE AND RE-USE SPANISH TILE AS POSSIBLE.
6 EXISTING SPANISH TILE ROOF, TO REMAIN
7 LINE OF EXTERIOR WALL BELOW
8 EXISTING CLAY ROOF RIDGE LINE.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

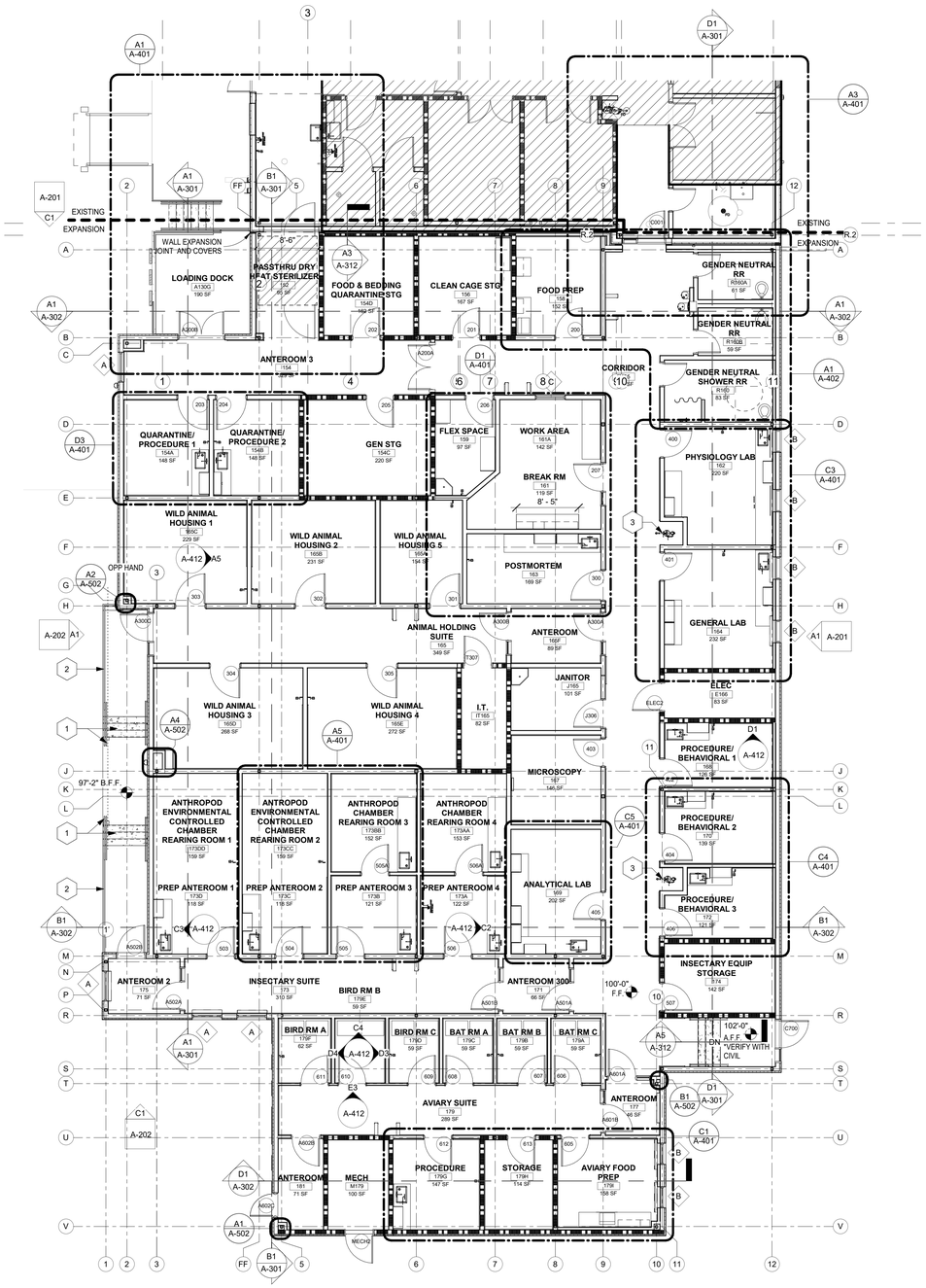
95% CONSTRUCTION DOCUMENTS
3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE
DEMO ROOF PLAN

AD-104



A1 OVERALL FLOOR PLAN
1/8" = 1'-0"

GENERAL NOTES

A. CONTRACTOR SHALL PERFORM DAILY CLEANUP WHEN FINISH GRADE WORK IS BEING PERFORMED.

B. SEE ENLARGED PLANS FOR ROOM LAYOUTS, CASEWORK, ETC.

C. SEE ROOM MATERIALS LEGEND ON ID SHEETS FOR FLOOR/ BASE,WALL AND CEILING MATERIAL INFORMATION.

D. PROVIDE WOOD BLOCKING IN ALL WALLS FOR SUPPORT OF PARTITIONS, SIGNAGE, ACCESSORIES, AND OTHER WALL SUPPORTED ITEMS AS REQUIRED.

E. SEE ANSI GUIDELINES FOR INFORMATION REGARDING ACCESSIBILITY REQUIREMENTS.

F. PROVIDE SEALANT AT INTERSECTIONS OF ALL DISSIMILAR MATERIALS.

G. COORDINATE ALL PLUMBING FIXTURES WITH THE PLUMBING DRAWINGS. IN CASE OF ANY DISCREPANCY, NOTIFY ARCHITECT AND ENGINEER PRIOR TO ROUGH-IN OF INSTALLATION.

H. PROVIDE WATER RESISTANT GYPSUM BOARD AT ALL WET LOCATIONS.

I. FURNISH AND INSTALL 5/8" ABUSE RESISTANT GYP. BOARD TO 8'-0" AFF AT ALL CORRIDOR AND VESTIBULE WALL LOCATIONS.

J. SEE A-601 FOR DOOR AND WINDOW SCHEDULE AND A-602/603 FOR DOOR AND WINDOW FRAME ELEVATIONS.

K. SEE PARTITION TYPES A-501.

L. SEAL ALL EXISTING PENETRATIONS, HOLES OR OTHER UNUSED DAMAGED EXISTING INTERIOR OR EXTERIOR WALL ASSEMBLIES.

SYMBOL LEGEND

- XX — DOOR TYPE (FOR INFORMATION SEE SHEET A-601)
- 1 Ref / A101 / 1 Ref — INTERIOR ELEVATION
- 1 / A101 SIM — BUILDING/ WALL SECTION
- x — STRUCTURAL GRID
- x — WINDOW TYPE (FOR INFORMATION SEE SHEET A-601)
- 1i / 1hr — PARTITION TYPE (FOR INFORMATION SEE SHEET A-621)
- FE — FIRE EXTINGUISHER
- ONE HOUR FIRE BARRIER

KEYED NOTES

1 NEW CONCRETE STEPS WITH HANDRAILS
2 NEW GUARDRAIL. SEE DETAILS
3 EMERGENCY SHOWER. SEE E1/A-412

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

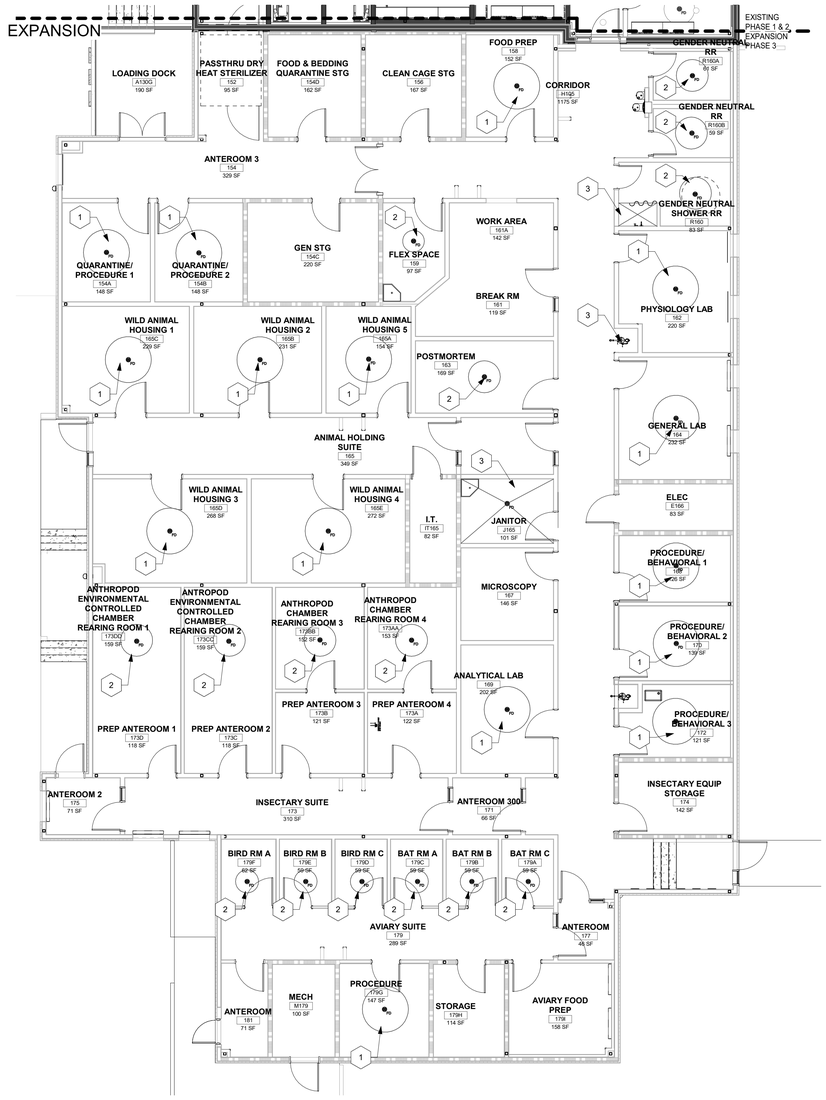
SHEET TITLE

FLOOR PLANS

A-101

12/4/2023 12:09:41 PM

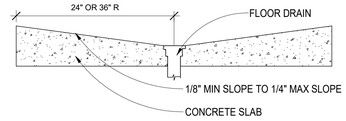
Biomedical Research Building Expansion



A1 SLAB PLAN
1/8" = 1'-0"

GENERAL NOTES

1. COORDINATE WITH PLUMBING DRAWINGS.
2. COORDINATE WITH STRUCTURAL DRAWINGS FOR MINIMUM REQUIRED SLAB THICKNESS.
3. UNLESS OTHERWISE NOTED, SLOPED FLOOR DRAIN SHALL BE 1/8" PER FOOT MIN TO 1/4" PER FOOT MAX SLOPE.



KEYED NOTES

1 36" RADIUS (72" DIAMETER) SLAB DEPRESSION AROUND FLOOR DRAIN.
2 24" RADIUS (48" DIAMETER) SLAB DEPRESSION AROUND FLOOR DRAIN
3 SLOPED SLAB INSTALLATION

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

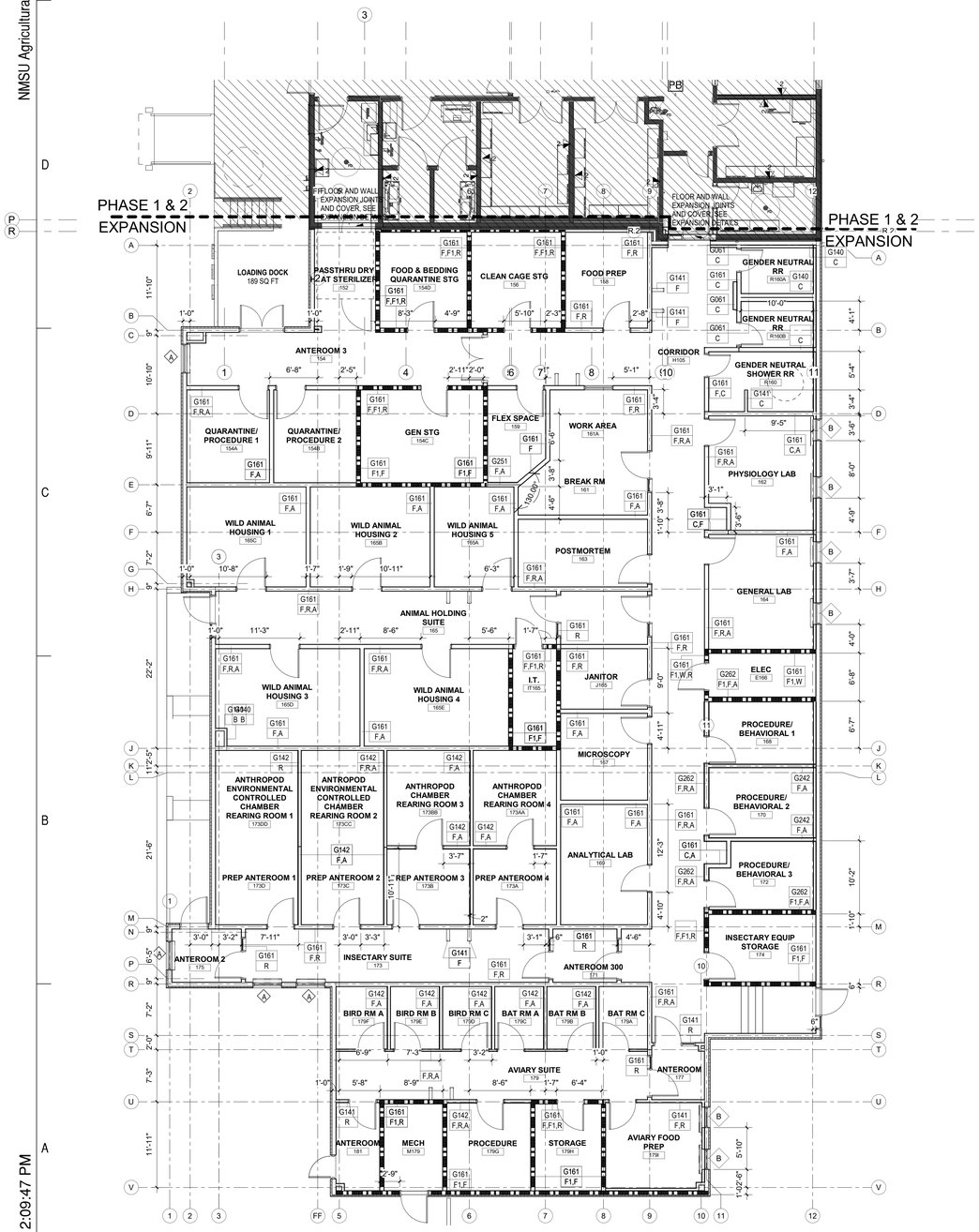
DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE

FLOOR PLAN- SLAB PLAN

A-101b

NMSU Agricultural Modernization: Biomedical Research Building Expansion



A1 DIMENSION PLAN
1/8" = 1'-0"

GENERAL NOTES

A. ALL DIMENSIONS ARE TO FACE OF STEEL STUDS OR MASONRY, UNLESS NOTED OTHERWISE.

B. REFER TO ENLARGED PLAN FOR ADDITIONAL DIMENSIONS & DETAILED SPACE LAYOUTS.

C. SEE SITE PLAN FOR BUILDING LOCATION LAYOUT.

D. SEE PARTITION SCHEDULE FOR PARTITION INFORMATION.

E. SEE ANSI GUIDELINES FOR INFORMATION REGARDING ACCESSIBILITY REQUIREMENTS.

F. SEE FLOOR PLANS, REFLECTED CEILING PLANS, AND ID SHEETS FOR FLOOR, WALL AND CEILING INFORMATION.

WALL TYPE LEGEND

	EXTERIOR:	STEEL STUD WALL WITH 2" RIGID BOARD INSULATION WITH 5/8" EXTERIOR SHEATHING & 3 COAT STUCCO SYSTEM
	EXTERIOR:	CMU WALL WITH 2" RIGID BOARD INSULATION WITH 5/8" EXTERIOR SHEATHING& 3 COAT STUCCO SYSTEM
	INTERIOR:	STEEL STUD PARTITION
	INTERIOR:	STEEL STUD PARTITION 1 HOUR FIRE RATED ASSEMBLY
	INTERIOR:	CMU WALL, INTERIOR

NOTE: SEE BUILDING AND WALL SECTIONS FOR DETAILED INFORMATION REGARDING EXTERIOR WALL ASSEMBLIES. SEE PARTITION SCHEDULE FOR DETAILED INFORMATION REGARDING INTERIOR PARTITIONS.

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

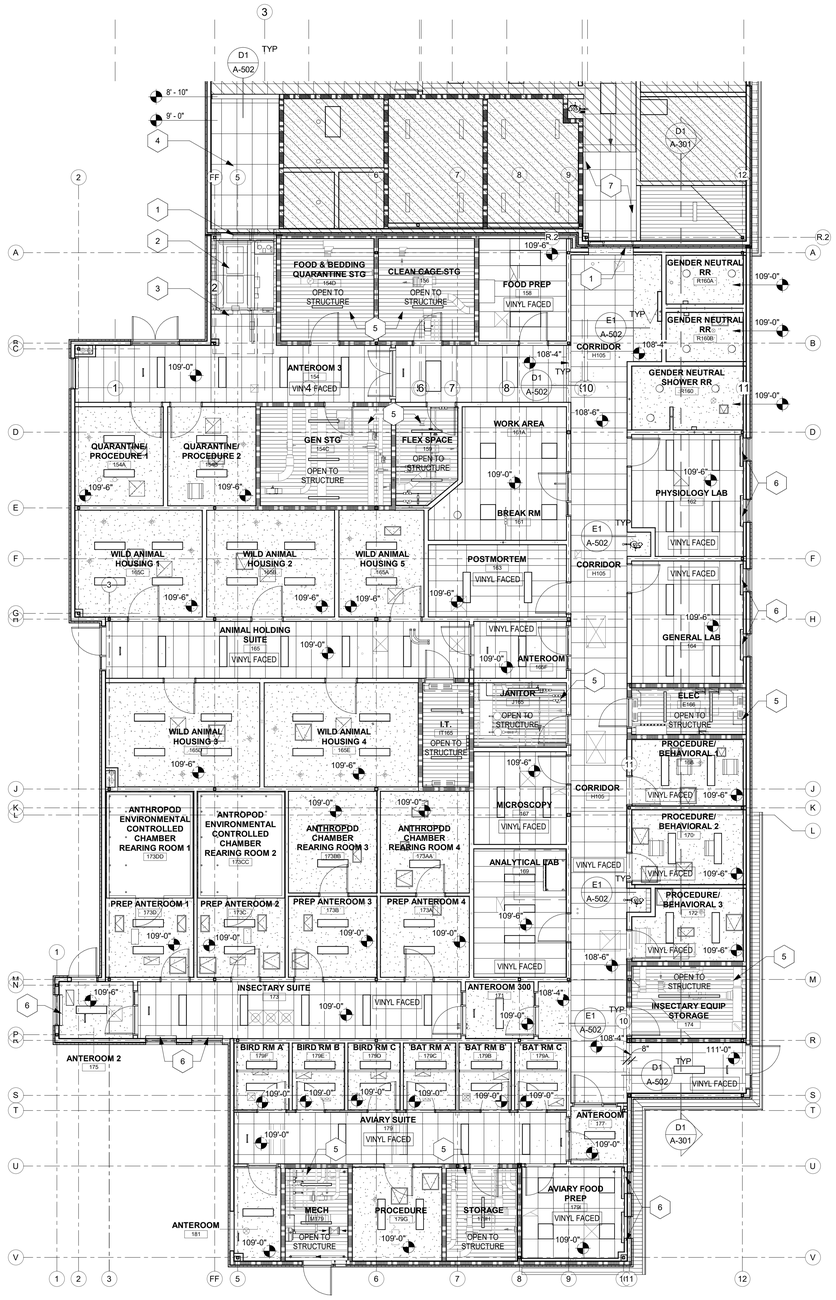
SHEET TITLE

DIMENSION FLOOR PLAN

A-102

12/4/2023 12:09:47 PM

Biomedical Research Building Expansion



A1 REFLECTED CEILING PLAN
1/8" = 1'-0"

GENERAL NOTES

A. ALL CEILING ELEVATIONS ARE ABOVE FINISH FLOOR UNLESS NOTED OTHERWISE.

B. CONTROL DRYWALL TEXTURE OVER SPRAY AT ALL LOCATIONS OF EXPOSED CEILING. ENSURE NO OVER SPRAY ON STRUCTURE AND/ORBATT INSULATION.

C. CONTRACTOR SHALL COORDINATE WITH MECHANICAL, ELECTRICAL, AND FIRE PROTECTION WORK TO ACCOMPLISH CEILING HEIGHTS. NOTIFY ARCHITECTS OF ANY CONFLICTS PRIOR TO INSTALLATION.

D. EXACT LOCATION OF SPRINKLER HEADS AND ALL SPECIAL SYSTEMS EQUIPMENT SHALL BE COORDINATED WITH ARCHITECT PRIOR TO SYSTEM INSTALLATION. SPRINKLER HEADS SHALL BE INSTALLED IN CENTER OF CEILING TILE.

E. SEE ID SHEETS FOR WALL ACCENT PAINT COLORS.

F. ALL PAINT COLORS TO BE SELECTED BY ARCHITECT UNLESS NOTED OTHERWISE.

G. COORDINATE LOCATIONS OF CEILING ACCESS PANELS WITH MECHANICAL AND PLUMBING.

H. ALL DIMENSIONS ARE TO FACE OF FINISH.

REFLECTED CEILING LEGEND

- 1 / A101 SIM — BUILDING /WALL SECTION
- SPOT ELEVATION
- GYPSUM BOARD CEILING, TAPE, TEXTURE AND PAINT PT1 TYPICAL.
- 2' X 4' ACOUSTIC. LAY-IN CEILING TILE. *VINYL FACED TYPE AT ALL LABORATORY, ANTEROOMS WHERE NOTED, FOOD PREP AND BREAK ROOMS.
- SUPPLY AIR DIFFUSER. SEE MECHANICAL.
- RETURN AIR DIFFUSER. SEE MECHANICAL.
- LIGHT FIXTURES. NOT ALL TYPES SHOWN IN THIS LEGEND. SEE ELECTRICAL FOR COMPLETE FIXTURE SCHEDULE

NOTE: REFER ALSO TO ELECTRICAL AND MECHANICAL DRAWINGS FOR REFLECTED CEILING PLAN ITEMS NOT SHOWN OR NOTED ON ARCHITECTURAL REFLECTED CEILING PLANS

KEYED NOTES

1 CEILING EXPANSION JOINT, SEE EXPANSION JOINT DETAIL
2 PASS THROUGH DRY HEAT STERILIZER. OPEN TO STRUCTURE ABOVE EQUIPMENT.
3 PROVIDE CEILING TRIM WHERE LAY-IN CEILING SYSTEM MEETS UP WITH DRY HEAT STERILIZER TO CLOSE OFF CEILING SPACE ABOVE FROM VIEW.
4 NEW LAY-IN CEILING IN EXISTING SPACE.
5 PAINT EXPOSED DUCTWORK AND GRILLES PT3 PER ALTERNATE. BASE BID NO PAINT.
6 MOTORIZED ROLLER SHADE
7 NEW LAY-IN, MATCH EXISTING CEILING TILE AND CEILING HEIGHT

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

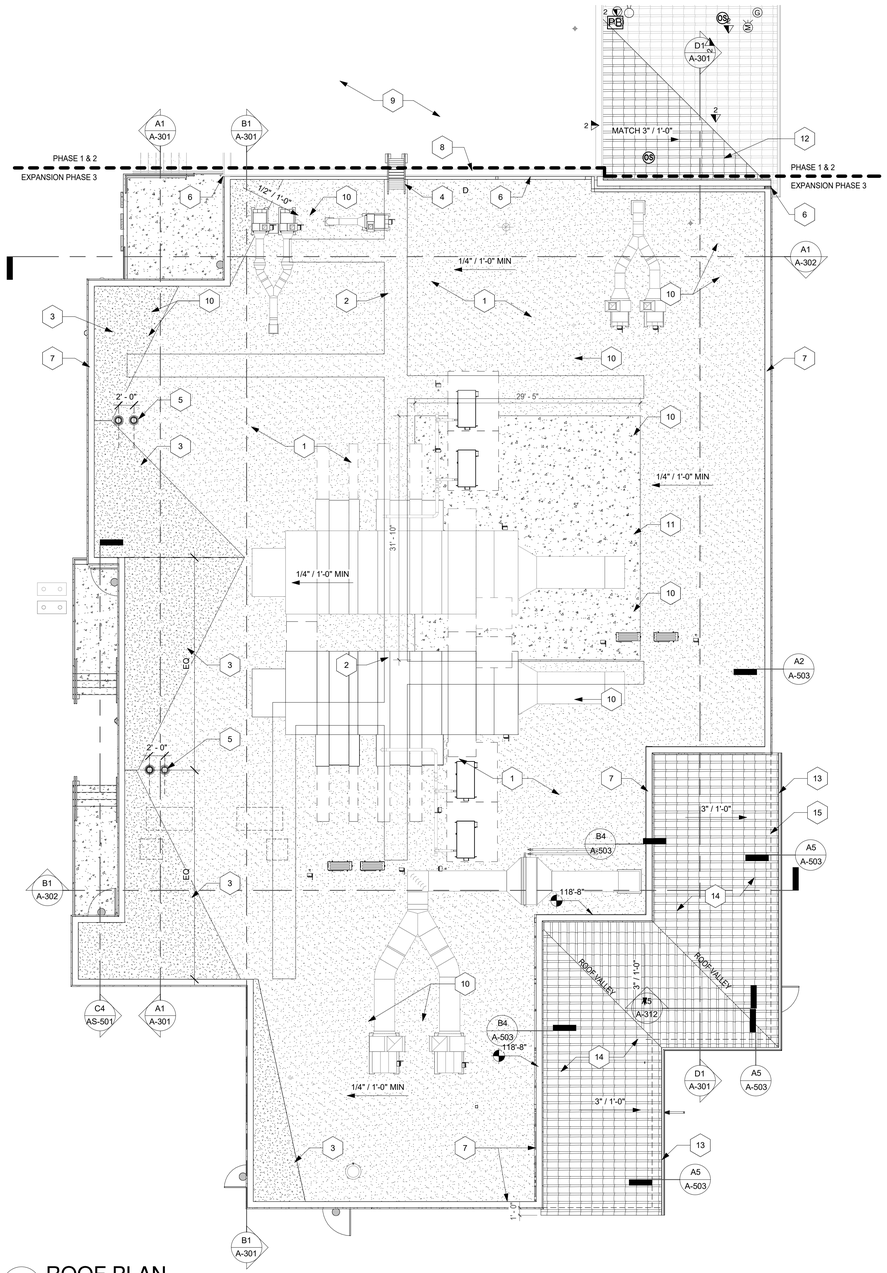
SHEET TITLE

REFLECTED CEILING PLANS

A-103

12/4/2023 12:09:52 PM

Biomedical Research Building Expansion



A1 ROOF PLAN
1/8" = 1'-0"

GENERAL NOTES

A. SLOPE DIRECTION INDICATED BY ARROW ON ROOF PLAN. MAINTAIN DRAINAGE AND SLOPES AS LISTED.

B. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LAYOUT OF BOTH SITE AND BUILDING ELEMENTS.

C. COORDINATE ALL ROOF PENETRATIONS BETWEEN ARCHITECTURAL, PLUMBING AND MECHANICAL WORK. NOTIFY ARCHITECT OF ANY CONFLICTS PRIOR TO PERFORMING WORK.

D. ROOFING AND FLASHING SYSTEM REQUIRED TO CONFORM TO ES-1 WIND DESIGN STANDARD FOR EDGE SYSTEM USED WITH LOW SLOPE ROOFING SYSTEMS.

KEYED NOTES

1 TPO ROOF SYSTEM
2 WALK PAD
3 TPO CRICKET
4 PARAPET CROSS-OVER LADDER, SEE DETAILS.
5 ROOF DRAIN AND OVERFLOW. SEE ROOF DETAIL
6 2" - 5" EXPANSION JOINT BETWEEN EXISTING BUILDING PARAPET AND NEW BUILDING PARAPET ALONG ENTIRE LENGTH OF SOUTH WALL. SEE EXPANSION DETAILS FOR ROOF EXPANSION JOINTS
7 PRE-FINISHED METAL PARAPET COPING
8 EXISTING PARAPET
9 EXISTING ROOF
10 MECHANICAL EQUIPMENT. SEE MECHANICAL DRAWINGS.
11 EQUIPMENT CURB , COORDINATE WITH MECHANICAL AND STRUCTURAL DRAWINGS
12 MODIFY EXISTING SPANISH TILE ROOF WITH NEW SPANISH TILE ROOF OVER CRICKET FOR PROPER ROOF DRAINAGE. COORDINATE WITH SHEET AD-101.
13 ROOF GUTTER
14 SPANISH TILE ROOF.
15 LINE OF WALL BELOW

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

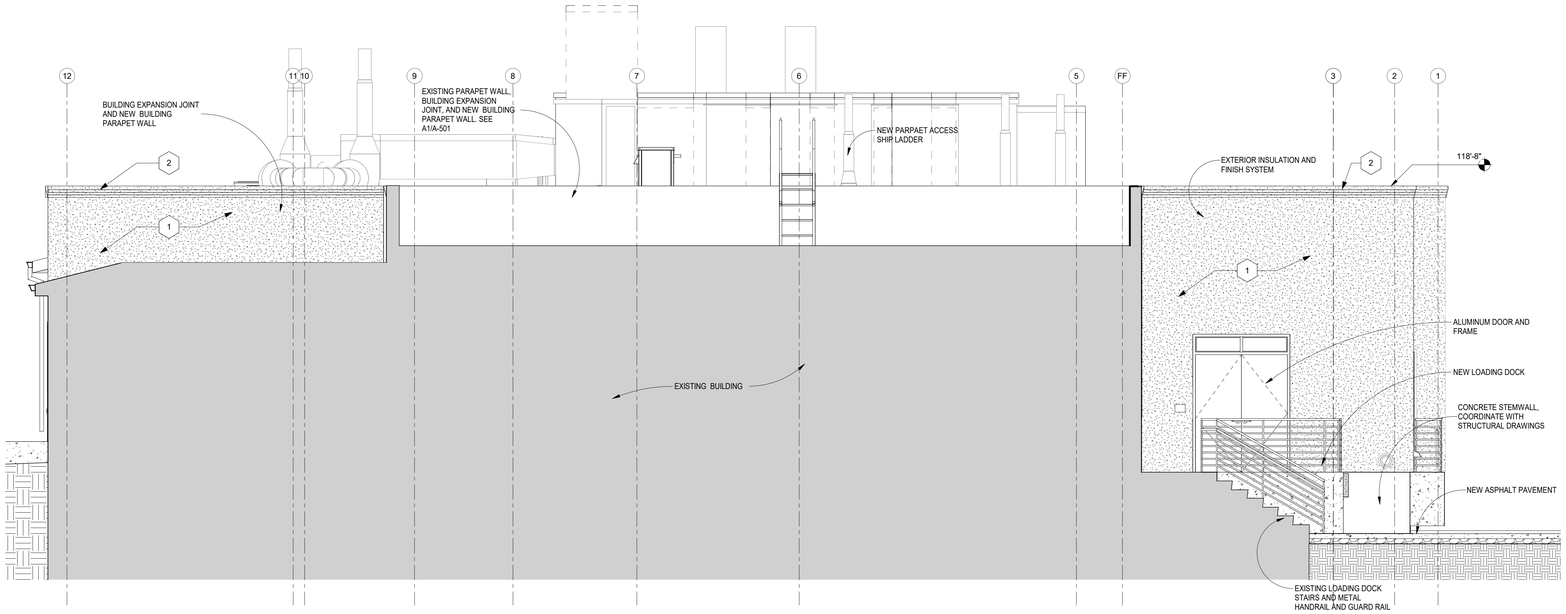
95% CONSTRUCTION DOCUMENTS
3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

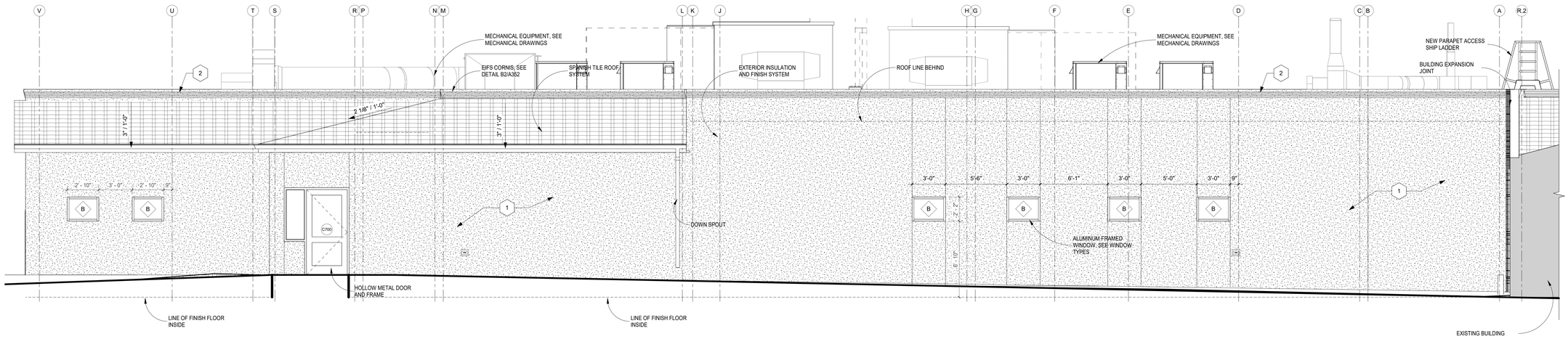
DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE
ROOF PLAN

A-104



C1 NORTH ELEVATION
1/4" = 1'-0"



A1 EAST ELEVATION
1/4" = 1'-0"

GENERAL NOTES

A. SEE A-601 FOR DOOR AND WINDOW SCHEDULES

KEYED NOTES

1 EIFS COLOR TO MATCH EXISTING.
2 EIFS CORNICE TO MATCH EXISTING COLOR AND PROFILE. SEE D4/A-504

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300
Albuquerque, NM 87110

PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE

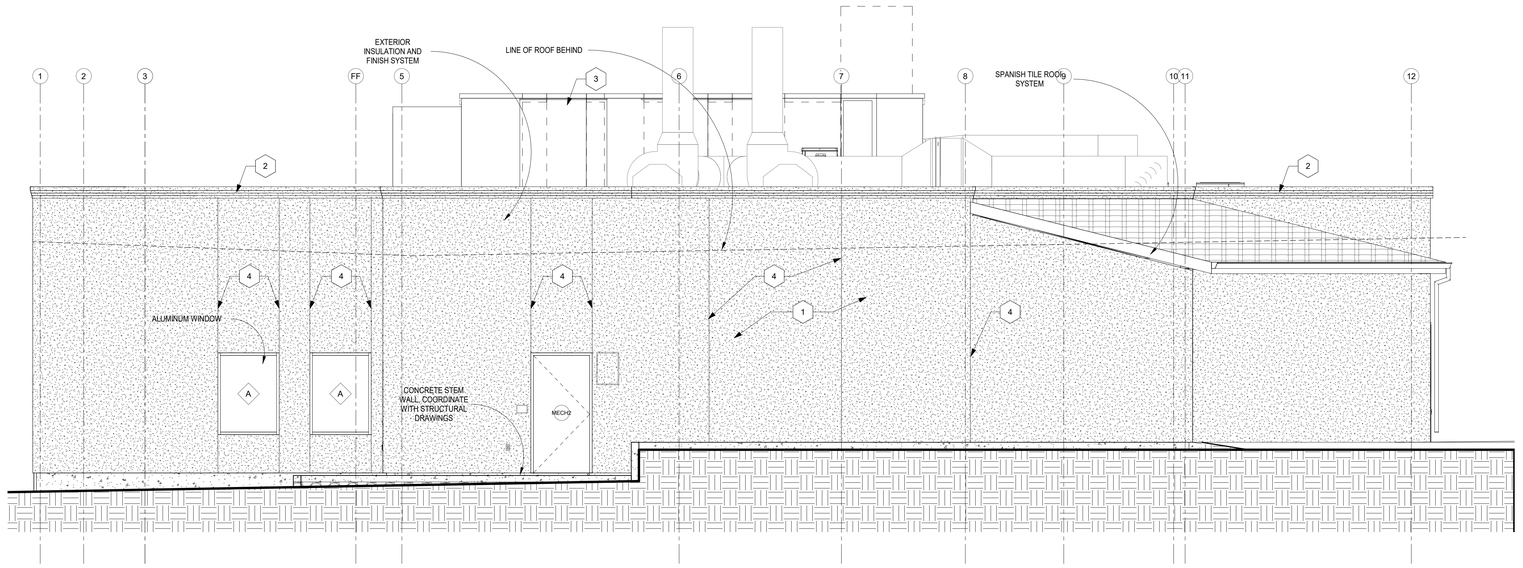
EXTERIOR ELEVATIONS

A-201

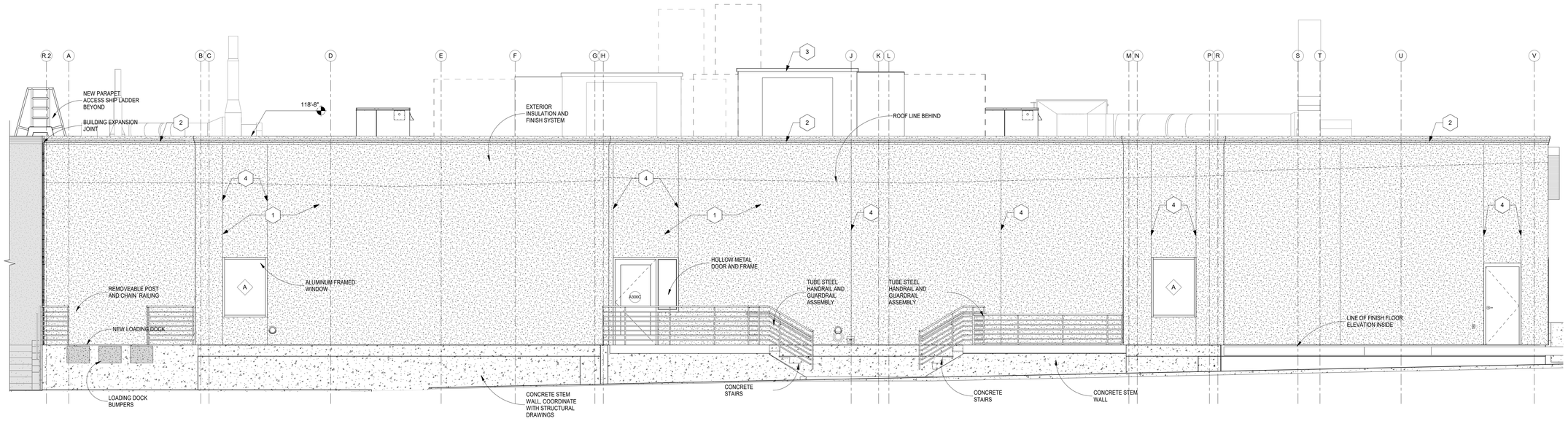
12/4/2023 12:10:16 PM

Biomedical Research Building Expansion

NMSU Agricultural Modernization: Biomedical Research Building Expansion



C1 EX_SOUTH ELEVATION
1/4" = 1'-0"



A1 WEST ELEVATION
1/4" = 1'-0"

GENERAL NOTES

A. SEE A-601 FOR DOOR AND WINDOW SCHEDULES

KEYED NOTES

1 EIFS COLOR TO MATCH EXISTING.
2 EIFS CORNICE TO MATCH EXISTING COLOR AND PROFILE. SEE D4/A-504
3 MECHANICAL EQUIPMENT. SEE MECHANICAL AND ELECTRICAL DRAWINGS.
4 EIFS CONTROL JOINTS.

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE

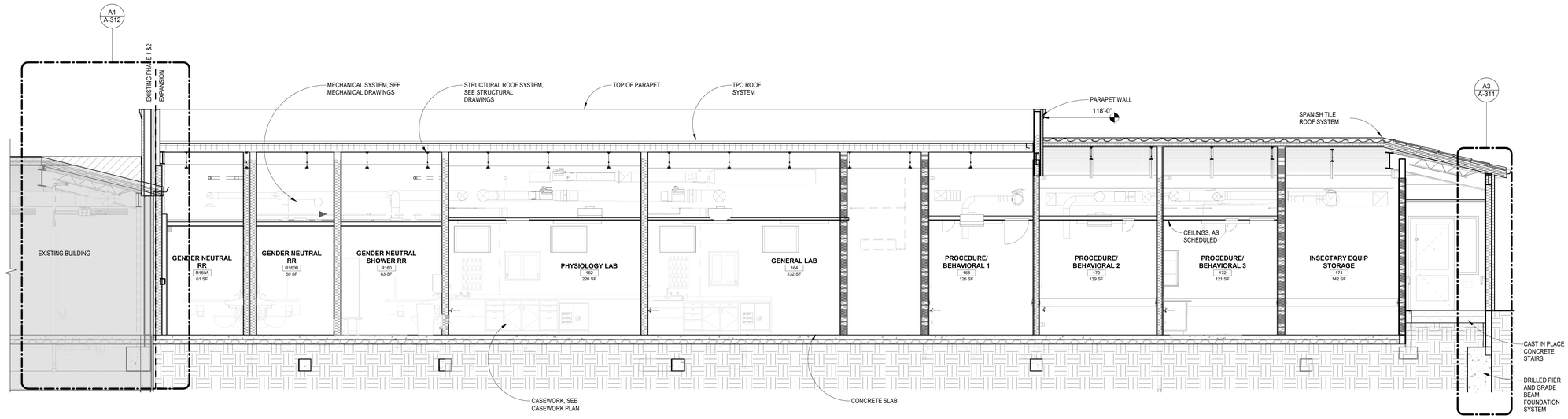
EXTERIOR ELEVATIONS

A-202

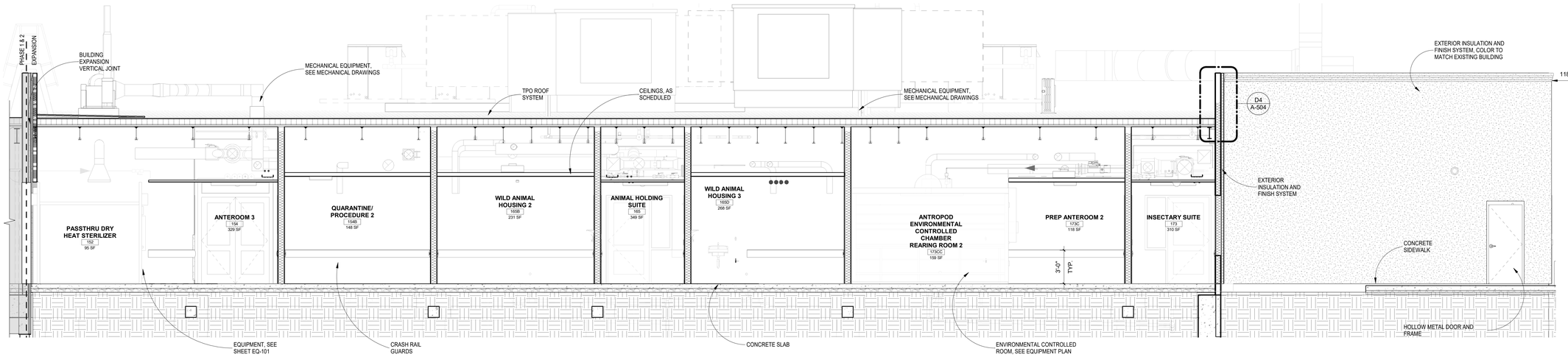
12/4/2023 12:10:21 PM

Biomedical Research Building Expansion

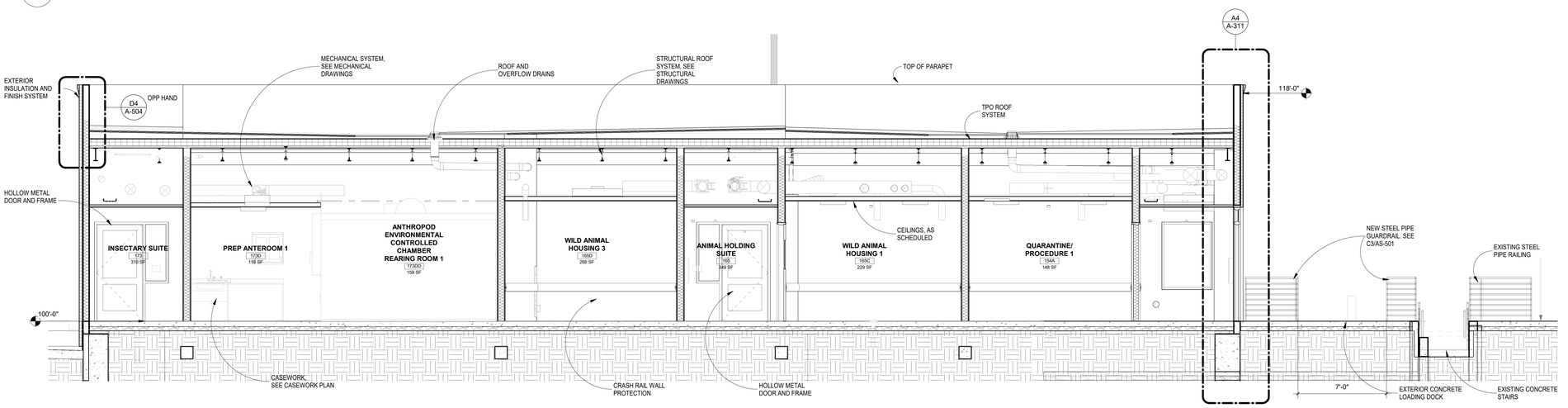
NMSU Agricultural Modernization: Biomedical Research Building Expansion



D1 BUILDING SECTION
1/4" = 1'-0"



B1 BUILDING SECTION
1/4" = 1'-0"



A1 BUILDING SECTION
1/4" = 1'-0"

12/4/2023 12:10:31 PM

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

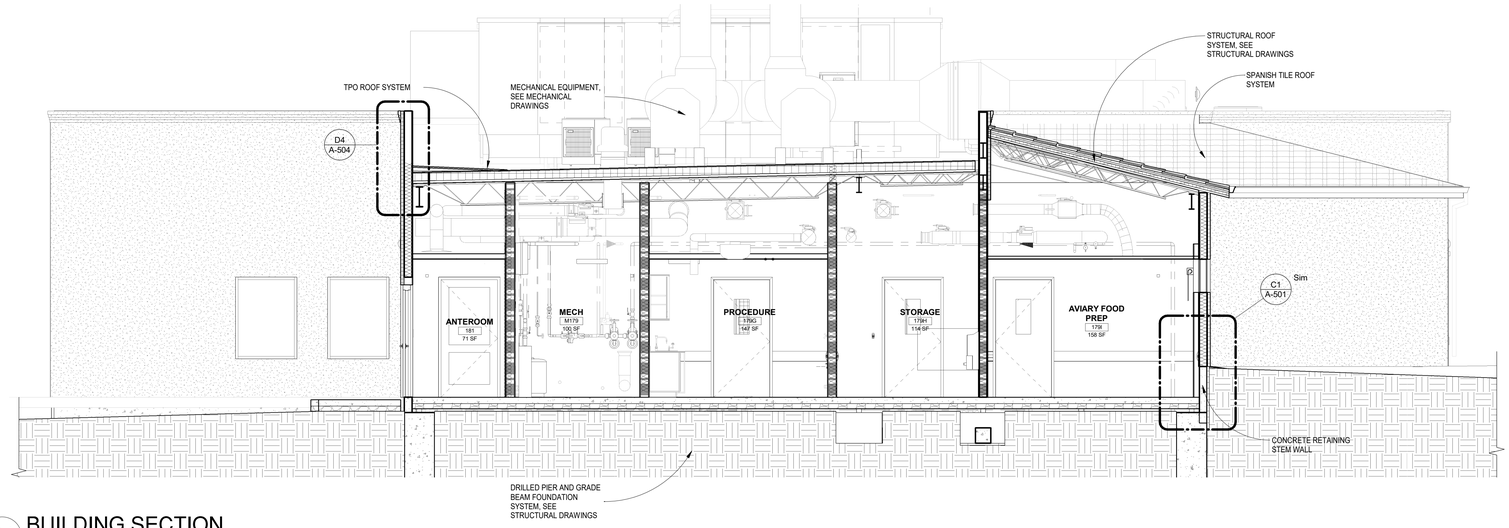
DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE

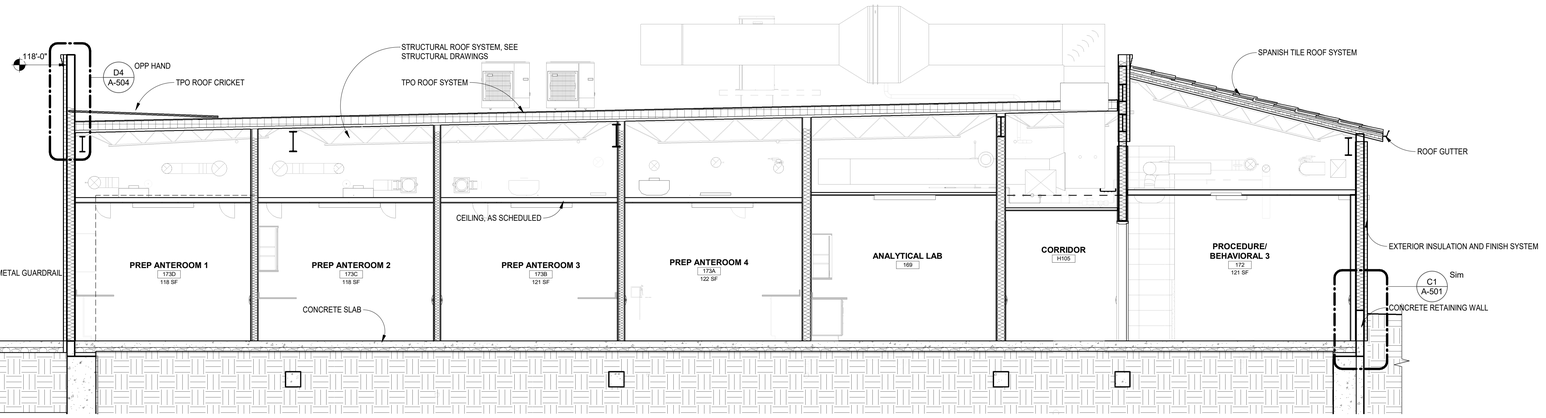
BUILDING SECTIONS

A-301

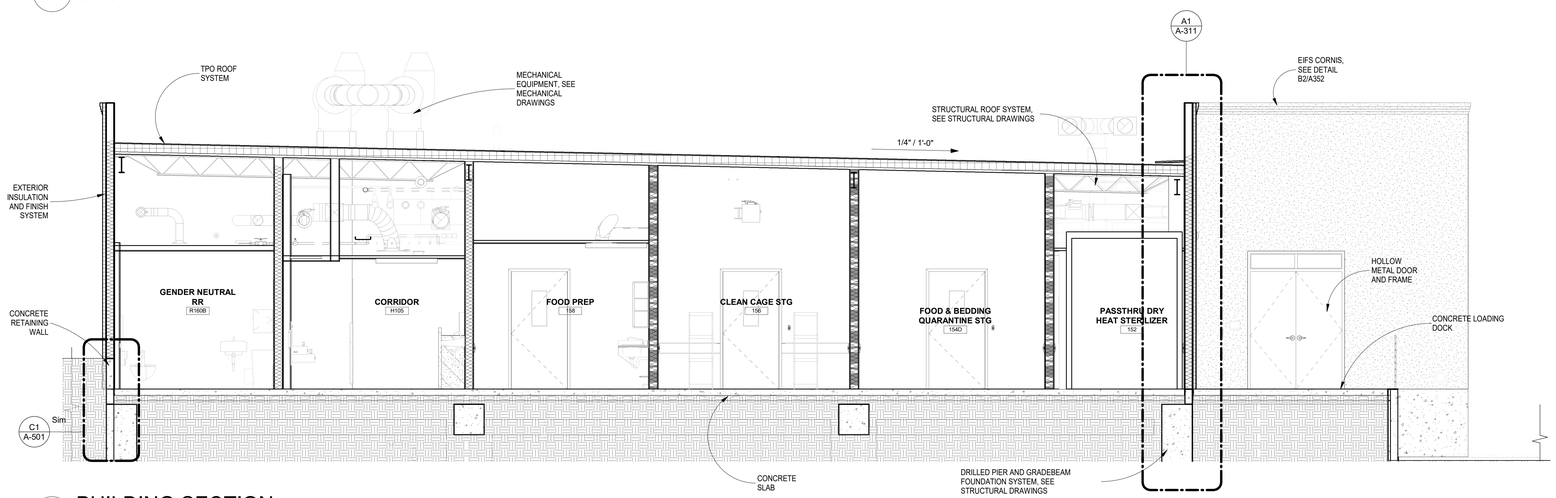
Biomedical Research Building Expansion



D1 BUILDING SECTION
1/4" = 1'-0"



B1 BUILDING SECTION
1/4" = 1'-0"



A1 BUILDING SECTION
1/4" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

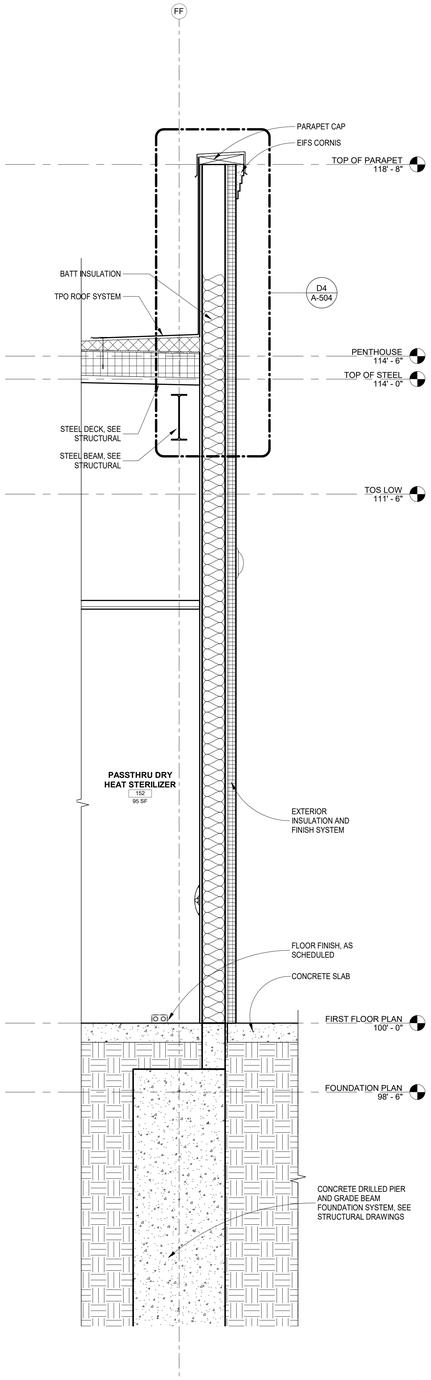
MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

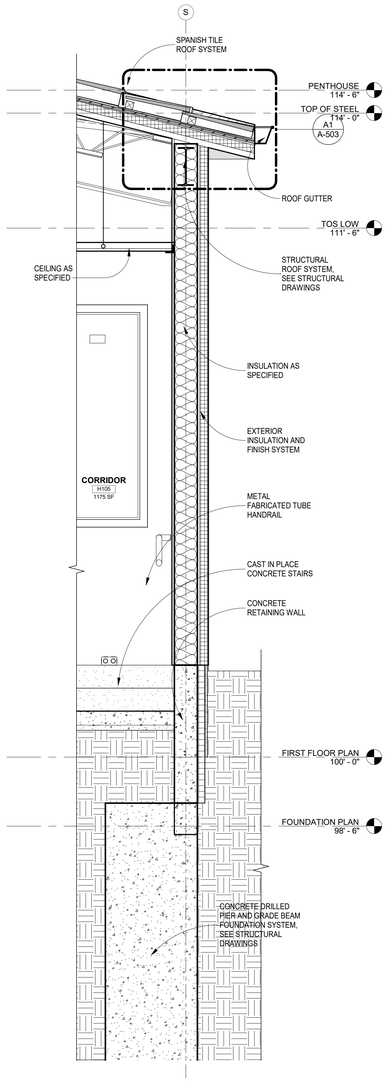
SHEET TITLE

BUILDING SECTIONS

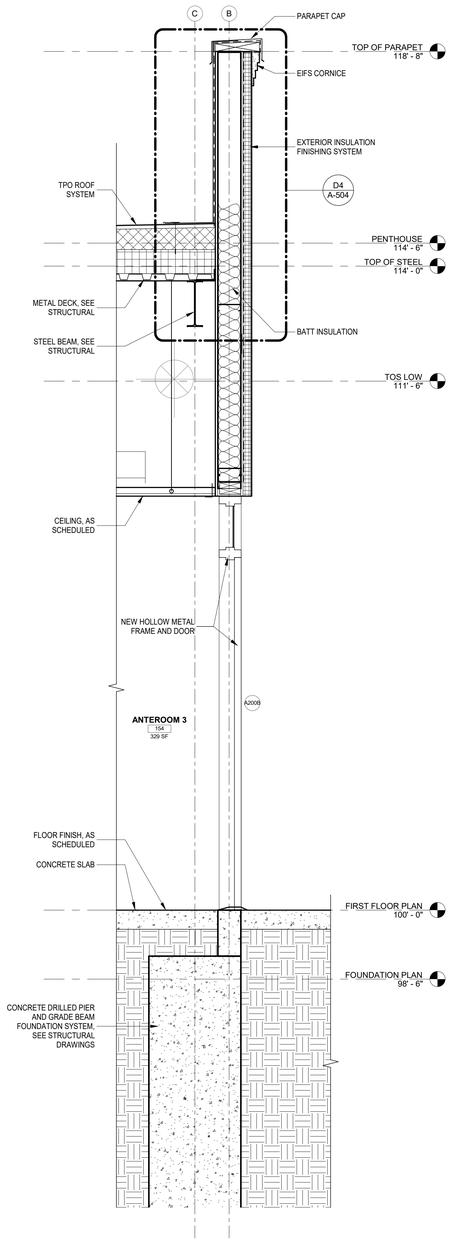
A-302



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



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



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

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

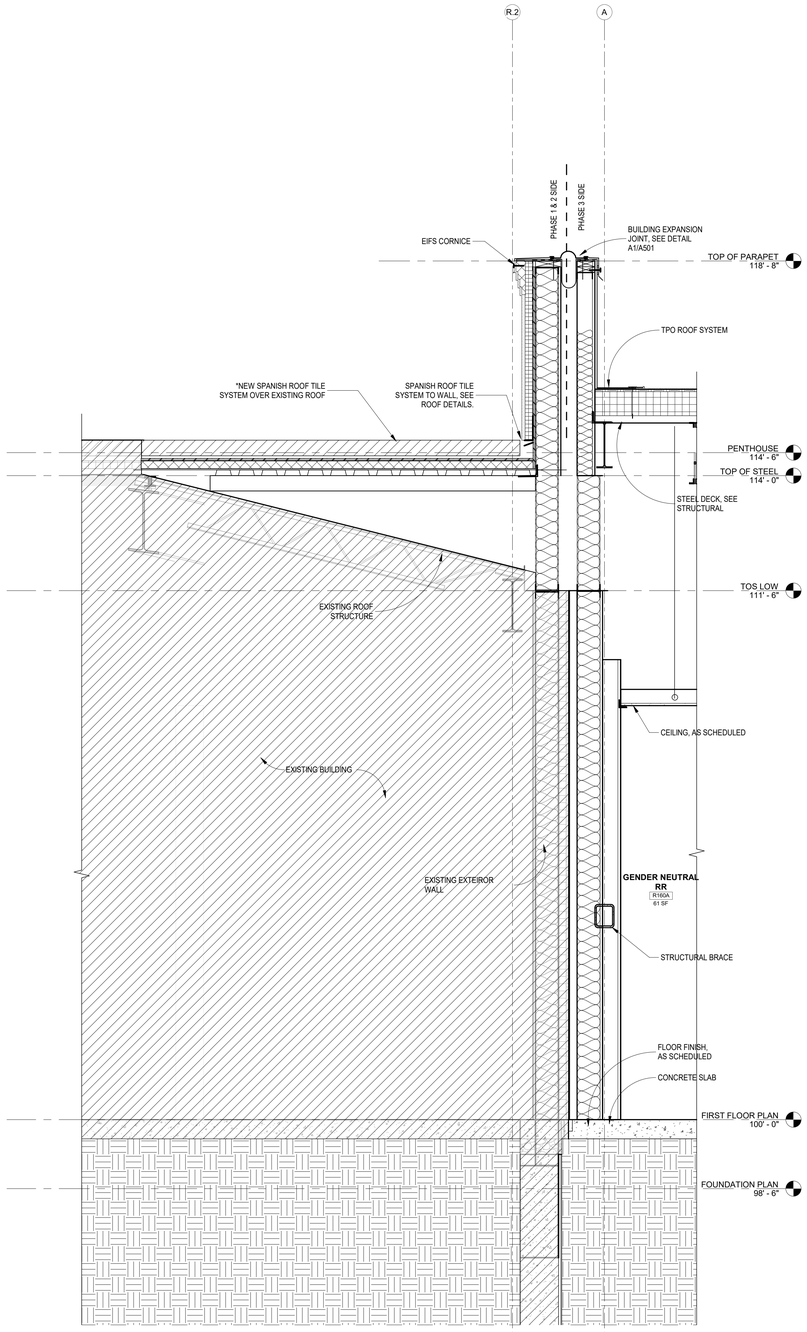
MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

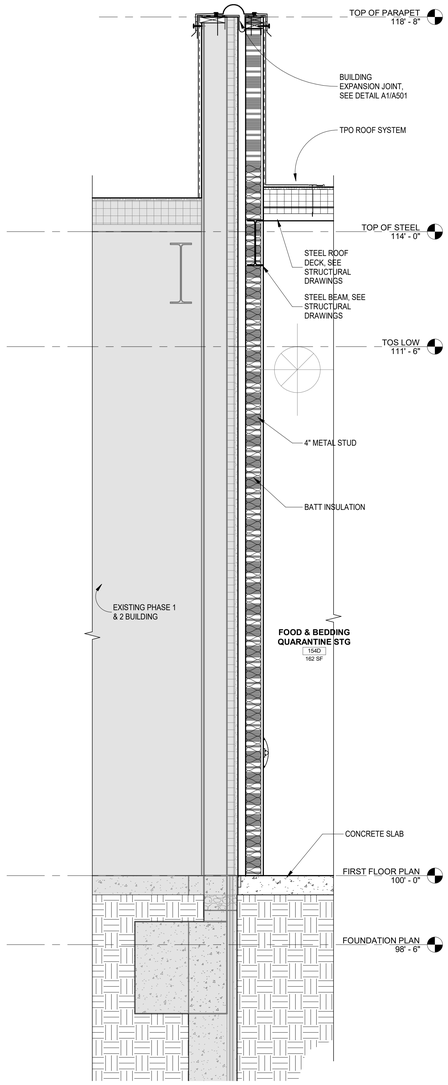
SHEET TITLE

WALL SECTIONS

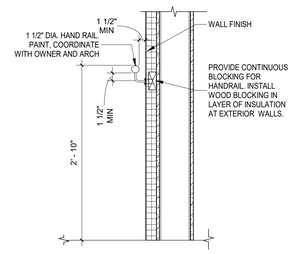
A-311



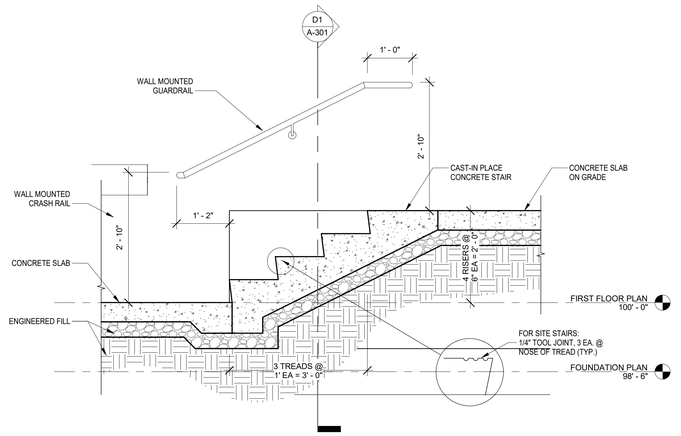
A1 WALL SECTION
3/4" = 1'-0"



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



C5 WALL MOUNTED HAND RAIL
1" = 1'-0"



A5 STAIR SECTION - TYPICAL
3/4" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

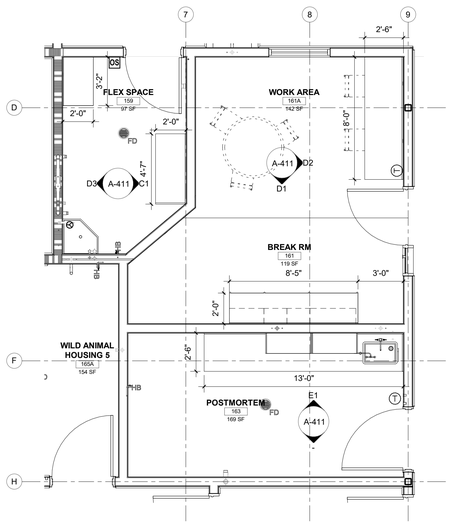
SHEET TITLE

WALL SECTIONS

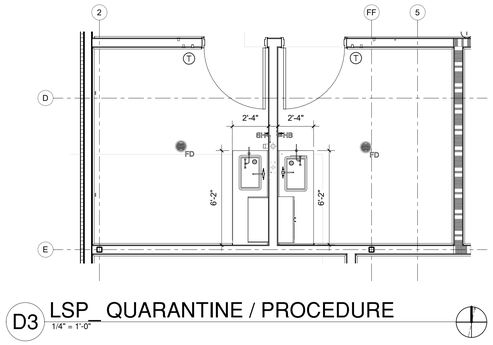
A-312

12/4/2023 12:10:45 PM

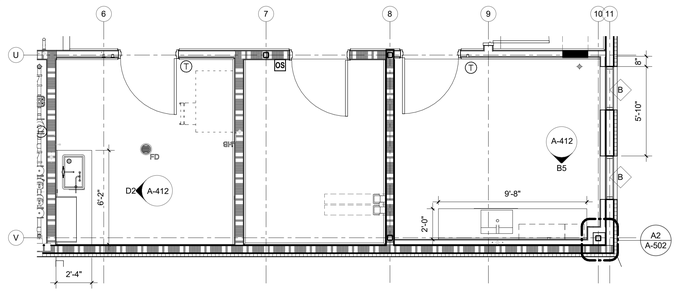
Biomedical Research Building Expansion



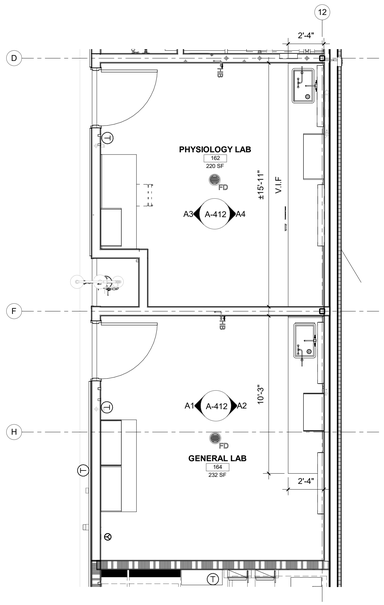
D1 ENLARGED PLAN- BREAK / WORK ROOMS
1/4" = 1'-0"



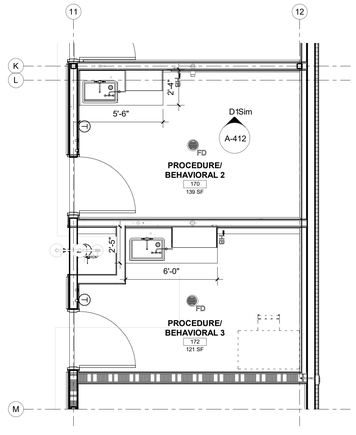
D3 LSP_ QUARANTINE / PROCEDURE
1/4" = 1'-0"



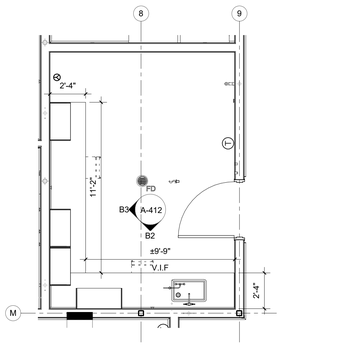
C1 LSP_ AVIARY FOOD PREP & PROCEDURE
1/4" = 1'-0"



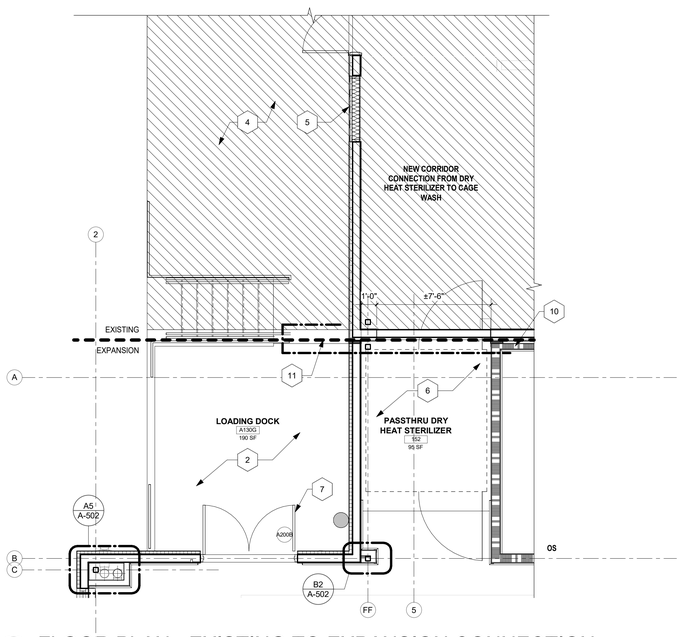
C3 LARGE SCALE PLAN - GENERAL & PHYSIOLOGY
1/4" = 1'-0"



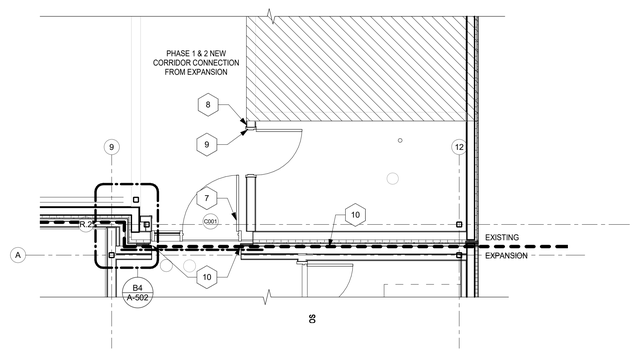
C4 LARGE SCALE PLAN - PROCEDURE / BEHAVIORAL
1/4" = 1'-0"



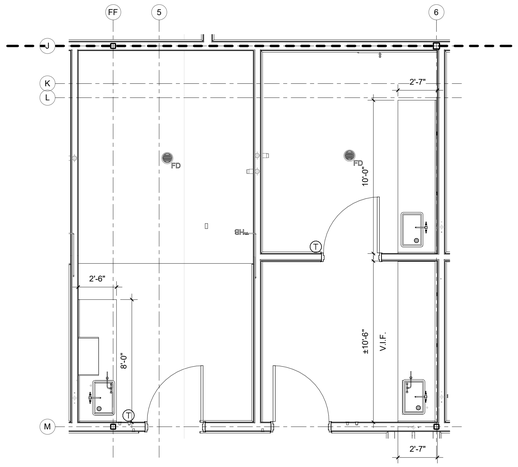
C5 LSP_ ANALYTICAL LAB
1/4" = 1'-0"



A1 FLOOR PLAN - EXISTING TO EXPANSION CONNECTION
1/4" = 1'-0"



A3 FLOOR PLAN - EXISTING TO EXPANSION CONNECTION
1/4" = 1'-0"



A5 LSP_ PREP ANTEROOM
1/4" = 1'-0"

GENERAL NOTES

A. CONTRACTOR SHALL PERFORM DAILY CLEANUP WHEN FINISH GRADE WORK IS BEING PERFORMED.

B. SEE ENLARGED PLANS FOR ROOM LAYOUTS, CASEWORK, ETC.

C. SEE ROOM MATERIALS LEGEND ON ID SHEETS FOR FLOOR/ BASE,WALL AND CEILING MATERIAL INFORMATION.

D. PROVIDE WOOD BLOCKING IN ALL WALLS FOR SUPPORT OF PARTITIONS, SIGNAGE, ACCESSORIES, AND OTHER WALL SUPPORTED ITEMS AS REQUIRED.

E. SEE ANSI GUIDELINES FOR INFORMATION REGARDING ACCESSIBILITY REQUIREMENTS.

F. PROVIDE SEALANT AT INTERSECTIONS OF ALL DISSIMILAR MATERIALS.

G. COORDINATE ALL PLUMBING FIXTURES WITH THE PLUMBING DRAWINGS. IN CASE OF ANY DISCREPANCY, NOTIFY ARCHITECT AND ENGINEER PRIOR TO ROUGH-IN OF INSTALLATION.

H. PROVIDE WATER RESISTANT GYPSUM BOARD AT ALL WET LOCATIONS.

I. FURNISH AND INSTALL 5/8" ABUSE RESISTANT GYP. BOARD TO 8'-0" AFF AT ALL CORRIDOR AND VESTIBULE WALL LOCATIONS.

J. SEE A-601 FOR DOOR AND WINDOW SCHEDULE AND A-602/603 FOR DOOR AND WINDOW FRAME ELEVATIONS.

K. SEE PARTITION TYPES A-501.

L. SEAL ALL EXISTING PENETRATIONS, HOLES OR OTHER UNUSED DAMAGED EXISTING INTERIOR OR EXTERIOR WALL ASSEMBLIES.

KEYED NOTES

2 NEW LOADING DOCK
4 EXISTING LOADING DOCK
5 INFILL OPENING TO MATCH EXISTING EXTERIOR AND INTERIOR ASSEMBLY.
6 COORDINATE FINAL FINISH DIMENSIONS WITH CFCI PASS THRU DRY HEAT STERILIZER AND PORTABLE CFCI CHLORINE DIOXIDE GAS UNIT.
7 NEW DOOR AND FRAME. SEE DOOR SCHEDULE.
8 NEW PARTITION, ALIGN WITH EXISTING. 12" ABOVE DECK
9 REINSTALL EXISTING JANITOR DOOR AND FRAME.
10 2" - 5" EXPANSION JOINT BETWEEN EXISTING BUILDING PARAPET AND NEW BUILDING PARAPET ALONG ENTIRE LENGTH OF SOUTH WALL. SEE EXPANSION DETAILS FOR ROOF EXPANSION JOINTS
11 DEMOLISH THIS PORTION OF METAL HAND RAIL AND GUARD RAIL. PATCH AND REPAIR CONCRETE AS REQUIRED TO PROVIDE FLUSH LEVEL SURFACE THAT MATCHES EXISTING LOADING DOCK SURFACE.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

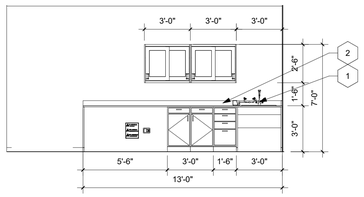
MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

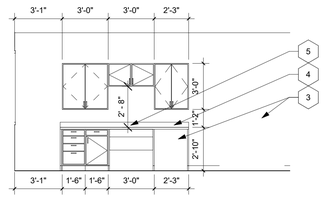
SHEET TITLE

ENLARGED PLANS

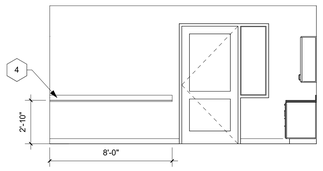
A-401



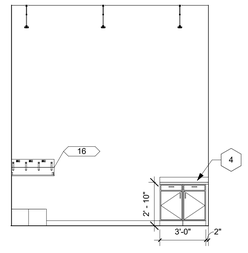
E1 POSTMORTEM B
1/4" = 1'-0"



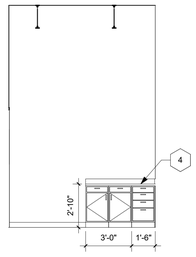
D1 WORK ROOM A
1/4" = 1'-0"
(PLASTIC LAMINATE CASEWORK BY ALTERNATE - THIS ROOM)



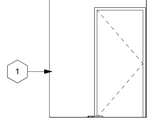
D2 WORK ROOM B
1/4" = 1'-0"
(PLASTIC LAMINATE CASEWORK BY ALTERNATE - THIS ROOM)



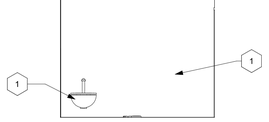
D3 FLEX ROOM
1/4" = 1'-0"
(PLASTIC LAMINATE CASEWORK BY ALTERNATE - THIS ROOM)



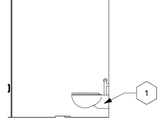
C1 FLEX ROOM
1/4" = 1'-0"
(PLASTIC LAMINATE CASEWORK BY ALTERNATE - THIS ROOM)



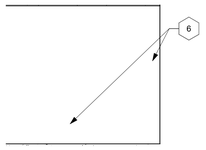
C2 GN RESTROOM
1/4" = 1'-0"



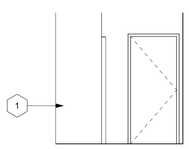
C3 GN RESTROOM
1/4" = 1'-0"



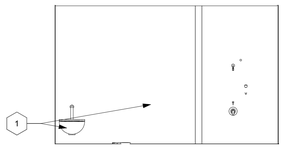
C4 GN RESTROOM
1/4" = 1'-0"



B1 SHOWER ROOM
1/4" = 1'-0"

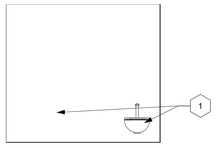


B2 SHOWER ROOM
1/4" = 1'-0"

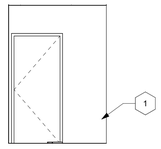


B3 SHOWER ROOM
1/4" = 1'-0"

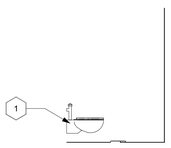
B4 SHOWER ROOM
1/4" = 1'-0"



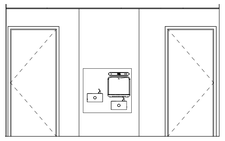
A1 GN RESTROOM
1/4" = 1'-0"



A2 GN RESTROOM
1/4" = 1'-0"



A3 GN RESTROOM
1/4" = 1'-0"



A4 DRINKING FOUNTAINS
1/4" = 1'-0"

GENERAL NOTES

A. ALL CASEWORK TO BE LABORATORY CASEWORK UNLESS NOTED OTHERWISE. REFER TO EQ-101 FOR EQUIPMENT LOCATION PLAN AND SCHEDULE.

B. REFER TO A-510 FOR PLASTIC LAMINATE CASEWORK DETAILS.

C. PROVIDE PAPER TOWEL AND SOAP DISPENSERS AT ALL SINKS. GC TO COORDINATE ROUGH-IN AND INSTALLATION WITH OWNER.

D. REFER TO A-601 FOR DOOR AND WINDOW SCHEDULE AND FRAME TYPES.

E. REFER TO ID-101 FOR WALL FINISH SCHEDULE.

KEYNOTES

1 PLUMBING FIXTURE. COORDINATE WITH PLUMBING DRAWINGS.
2 NEW LOADING DOCK
3 EQUIPMENT
4 SOLID SURFACE COUNTERTOP WITH INTEGRAL 4" BACKSPLASH
5 BASE BID WALL MOUNTED SINK. IN-COUNTER SINK PER ALT.
6 PREFABRICATED LOCKERS AND BENCH

TOILET ACCESSORY LEGEND

MARK	ACCESSORIES
1	24" X 36" MIRROR.
2	SOAP DISPENSER, MOUNT 5" ABOVE SINK. OWNER FURNISHED, CONTRACTOR INSTALLED. *
3	PAPER TOWEL DISPENSER. OWNER FURNISHED, CONTRACTOR INSTALLED.
4	ELECTRIC HAND DRYER. CONTRACTOR FURNISHED, CONTRACTOR INSTALLED.
5	WASTE RECEPTACLE CONTRACTOR FURNISHED, CONTRACTOR INSTALLED.
6	COAT HOOK. MOUNT 40" A.F.F.
7	18" VERTICAL GRAB BAR 1-1/2" DIA. (SEE ACCESSIBILITY GUIDELINES FOR MOUNTING HEIGHT).
8	36" GRAB BAR 1-1/2" DIA. (SEE ACCESSIBILITY GUIDELINES FOR MOUNTING HEIGHT).
9	42" GRAB BAR 1-1/2" DIA. (SEE ACCESSIBILITY GUIDELINES FOR MOUNTING HEIGHT).
10	TOILET PAPER DISPENSER. OWNER FURNISHED, CONTRACTOR INSTALLED.
11	SANITARY NAPKIN DISPOSAL. MOUNT 28" A.F.F.
12	FOLDING SHOWER SEAT. MOUNT TOP OF SEAT AT 17" A.F.F.
13	SHOWER CURTAIN ROD AND SHOWER CURTAIN.
14	14" ADA SHOWER GRAB BAR 1-1/2" DIA. (SEE ACCESSIBILITY GUIDELINES FOR MOUNTING HEIGHT).
15	30" ADA SHOWER GRAB BAR 1-1/2" DIA. (SEE ACCESSIBILITY GUIDELINES FOR MOUNTING HEIGHT).
16	MOP RACK. CONTRACTOR FURNISHED, CONTRACTOR INSTALLED.
17	TOILET SEAT COVER DISPENSER

* ALL SINKS TO HAVE PAPER TOWEL DISPENSERS AND SOAP DISPENSERS. CONTRACTOR TO COORDINATE ROUGH-IN AND PERFORM INSTALLATION.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

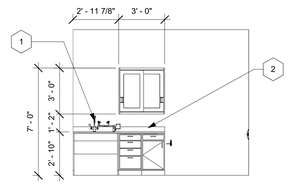
MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

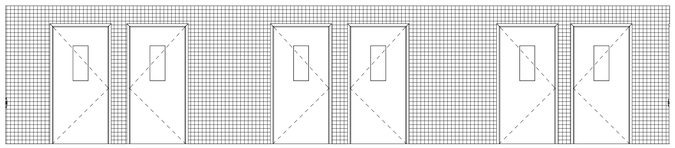
SHEET TITLE
INTERIOR ELEVATIONS

A-411

E1 EMERGENCY SHOWER
1/4" = 1'-0"

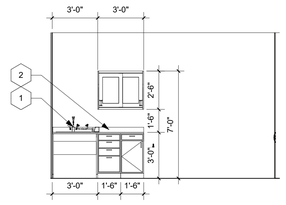


E2 PROCEDURE BEHAVIOR 2
1/4" = 1'-0"

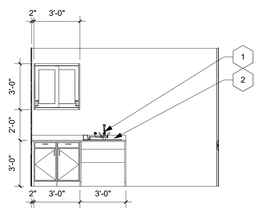


E3 AVIARY SUITE NORTH
1/4" = 1'-0"

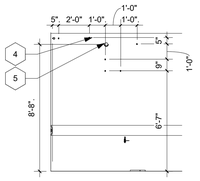
REFER TO D4/A-511 FOR AVIARY SCREEN DETAIL



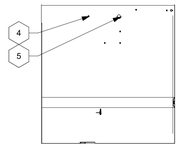
D1 PROCEDURE BEHAVIOR 1
1/4" = 1'-0"



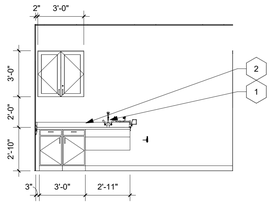
D2 AVIARY PROCEDURE
1/4" = 1'-0"



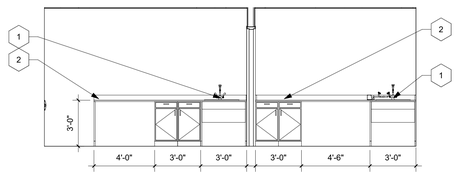
D3 BIRD ROOM
1/4" = 1'-0"



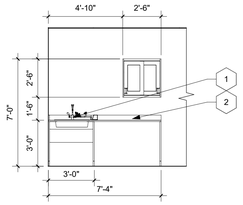
D4 BIRD ROOM
1/4" = 1'-0"



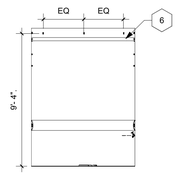
C1 QUARANTINE PROCEDURE 2
1/4" = 1'-0"



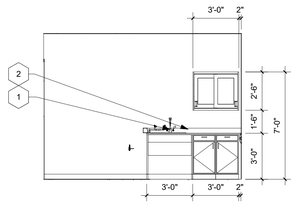
C2 PREP ANTEROOM 4
1/4" = 1'-0"



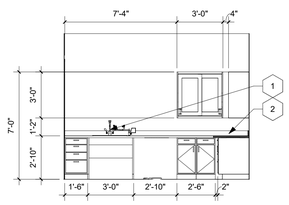
C3 PREP ANTEROOM 1
1/4" = 1'-0"



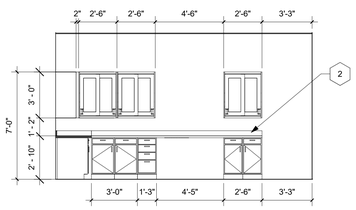
C4 BIRD ROOM
1/4" = 1'-0"



B1 QUARANTINE PROCEDURE 1
1/4" = 1'-0"

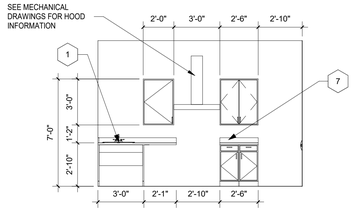


B2 ANALYTICAL LAB
1/4" = 1'-0"



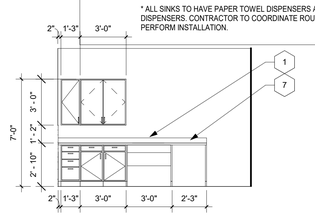
B3 ANALYTICAL LAB
1/4" = 1'-0"

SEE MECHANICAL DRAWINGS FOR HOOD INFORMATION



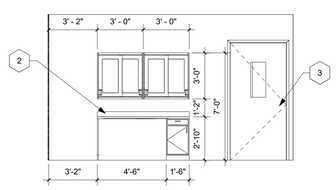
B4 FOOD PREP
1/4" = 1'-0"

(PLASTIC LAMINATE CASEWORK - THIS ROOM)

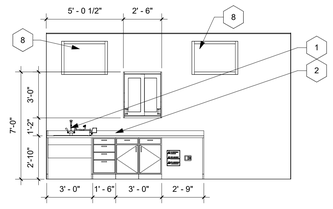


B5 AVIARY FOOD PREP
1/4" = 1'-0"

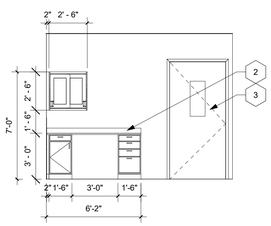
(PLASTIC LAMINATE CASEWORK - THIS ROOM)



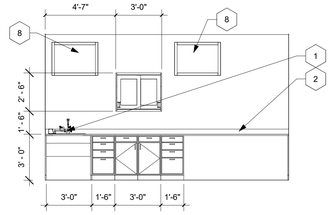
A1 GENERAL LAB
1/4" = 1'-0"



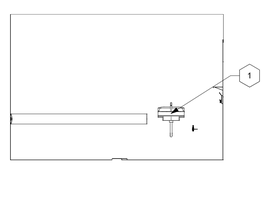
A2 GENERAL LAB
1/4" = 1'-0"



A3 PHYSIOLOGY LAB
1/4" = 1'-0"



A4 PHYSIOLOGY LAB
1/4" = 1'-0"



A5 TYPICAL WILD ANIMAL HOUSING
1/4" = 1'-0"

GENERAL NOTES

A. ALL CASEWORK TO BE LABORATORY CASEWORK UNLESS NOTED OTHERWISE. REFER TO EQ-101 FOR EQUIPMENT LOCATION PLAN AND SCHEDULE.

B. REFER TO A-510 FOR PLASTIC LAMINATE CASEWORK DETAILS.

C. PROVIDE PAPER TOWEL AND SOAP DISPENSERS AT ALL SINKS. GC TO COORDINATE ROUGH-IN AND INSTALLATION WITH OWNER.

D. REFER TO A-601 FOR DOOR AND WINDOW SCHEDULE AND FRAME TYPES.

E. REFER TO ID-101 FOR WALL FINISH SCHEDULE.

KEYNOTES

1 INTEGRAL EPOXY RESIN SINK FIXTURE. COORDINATE WITH PLUMBING DRAWINGS FOR HARDWARE.
2 EPOXY RESIN COUNTER WITH 4" INTEGRAL BACKSPLASH.
3 DOOR AS SCHEDULED.
4 1 1/5" DIA. STAINESS STEEL EYEBOLT, FOR USER CONNECTION OF HANGING ROPES AND ACCESSORIES FOR BIRD PERCH. LOCATE 6 THIS WALL, AND 6 ON OPPOSITE WALL IN SAME LOCATION ACROSS FROM EACHOTHER.
5 HEAVY DUTY WARDROBE HALF CIRCLE TUBE SUPPORT, FOR USER HANGING OF WOODEN DOWEL FOR BIRD PERCH. PLACE ONE ON OPPOSITE WALL IN SAME LOCATION.
6 1 1/5" DIA STAINESS STEEL EYEBOLT, FOR USER CONNECTION OF HANGING ROPES AND ACCESSORIES FOR BIRDS 3 ON THIS WALL
7 SOLID SURFACE COUNTERTOP.
8 WINDOW

TOILET ACCESSORY LEGEND

MARK	ACCESSORIES
1	24" X 36" MIRROR.
2	SOAP DISPENSER, MOUNT 5" ABOVE SINK. OWNER FURNISHED, CONTRACTOR INSTALLED. *
3	PAPER TOWEL DISPENSER. OWNER FURNISHED, CONTRACTOR INSTALLED.
4	ELECTRIC HAND DRYER. CONTRACTOR FURNISHED, CONTRACTOR INSTALLED.
5	WASTE RECEPTACLE CONTRACTOR FURNISHED, CONTRACTOR INSTALLED.
6	COAT HOOK. MOUNT 40" A.F.F.
7	18" VERTICAL GRAB BAR 1-1/2" DIA. (SEE ACCESSIBILITY GUIDELINES FOR MOUNTING HEIGHT).
8	36" GRAB BAR 1-1/2" DIA. (SEE ACCESSIBILITY GUIDELINES FOR MOUNTING HEIGHT).
9	42" GRAB BAR 1-1/2" DIA. (SEE ACCESSIBILITY GUIDELINES FOR MOUNTING HEIGHT).
10	TOILET PAPER DISPENSER. OWNER FURNISHED, CONTRACTOR INSTALLED.
11	SANITARY NAPKIN DISPOSAL. MOUNT 28" A.F.F.
12	FOLDING SHOWER SEAT. MOUNT TOP OF SEAT AT 17" A.F.F.
13	SHOWER CURTAIN ROD AND SHOWER CURTAIN.
14	14" ADA SHOWER GRAB BAR 1-1/2" DIA. (SEE ACCESSIBILITY GUIDELINES FOR MOUNTING HEIGHT).
15	30" ADA SHOWER GRAB BAR 1-1/2" DIA. (SEE ACCESSIBILITY GUIDELINES FOR MOUNTING HEIGHT).
16	MOP RACK. CONTRACTOR FURNISHED, CONTRACTOR INSTALLED.
17	TOILET SEAT COVER DISPENSER

* ALL SINKS TO HAVE PAPER TOWEL DISPENSERS AND SOAP DISPENSERS. CONTRACTOR TO COORDINATE ROUGH-IN AND PERFORM INSTALLATION.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

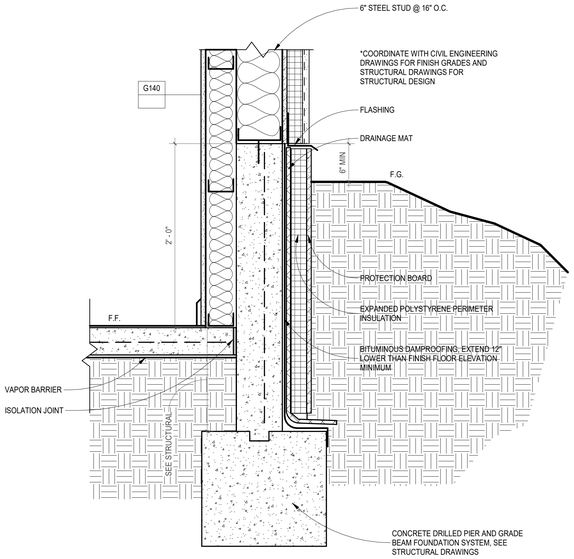
MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE

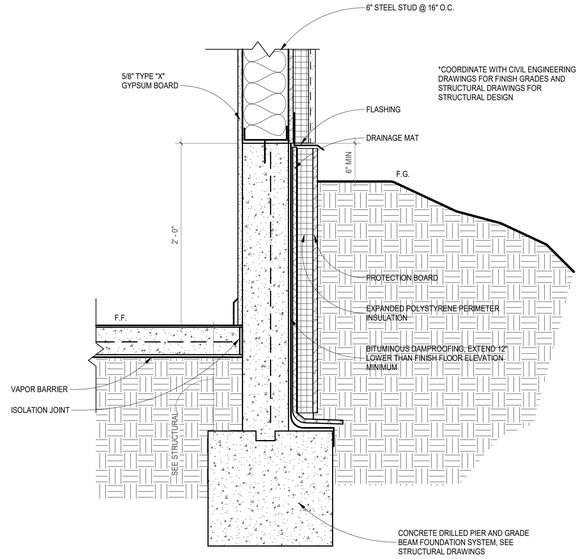
INTERIOR ELEVATIONS

A-412



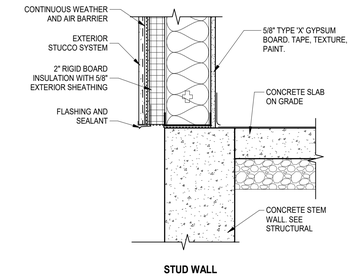
HIGH STEM WALL DETAIL
EXTERIOR INSULATION AND DRAIN

C1 1 1/2" = 1'-0"



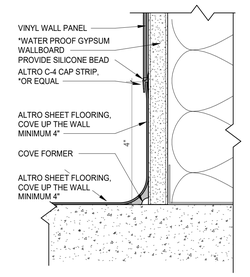
HIGH STEM WALL DETAIL
EXTERIOR INSULATION AND DRAIN

C3 1 1/2" = 1'-0"

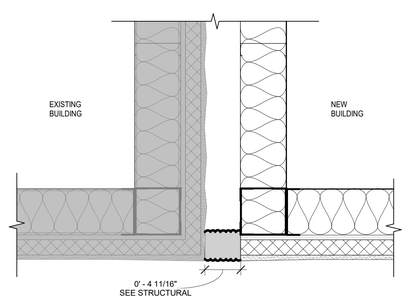


STUD WALL

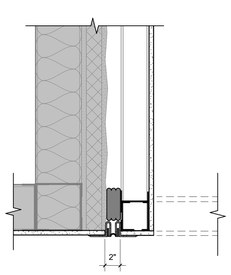
D5 TYPICAL STEM WALL DETAIL
1 1/2" = 1'-0"



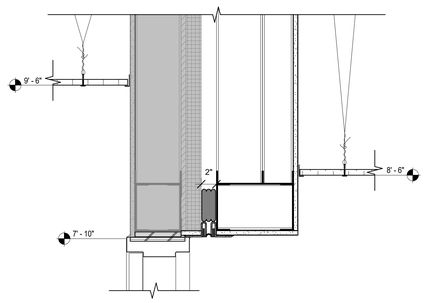
D6 TYPICAL COVE BASE DETAIL
6" = 1'-0"



PLAN VIEW- WALLS



SECTION VIEW- CEILING / WALL



SECTION VIEW- DOOR CEILING / WALL

VERTICAL WALL FOAM EXPANSION JOINT
SURFACE MOUNTED VERTICAL WALL EXPANSION JOINT FOR EXTERIOR APPLICATIONS, WATERTIGHT, WITH SILICONE COLOR COATING TO MATCH SURROUNDING EIFS, ALLOWS FOR 100% MOVEMENT, INSULATING, FOR USE IN EIFS, FOR SIZES 1/2" TO 10".

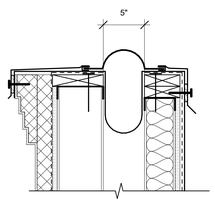
BASIS OF DESIGN: EMSEAL.COM, SEISMIC COLORSEAL

CEILING / WALL EXPANSION JOINT
SURFACE MOUNTED EXPANSION JOINT FOR CEILINGS AND WALLS, INTERIOR APPLICATION.

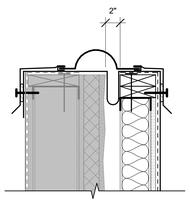
BASIS OF DESIGN: EMSEAL.COM, MIGUTEC FN 20/12 WITH QUIETJOUNT ACOUSTIC FILLER.

CEILING / WALL EXPANSION JOINT
SURFACE MOUNTED EXPANSION JOINT FOR CEILINGS AND WALLS, INTERIOR APPLICATION.

BASIS OF DESIGN: EMSEAL.COM, MIGUTEC FN 20/12 WITH QUIETJOUNT ACOUSTIC FILLER.



SECTION VIEW- PARAPET



SECTION VIEW- PARAPET

ROOF EXPANSION JOINT
ROOF EXPANSION JOINT FOR USE WITH TPO MEMBRANE ROOFING, DUAL-SEAL, DOUBLE FLANGED, FOR BUILDING EXPANSION JOINTS AT EXTERIOR ROOF APPLICATION, WATER TIGHT, ALLOWING FOR HIGH MOVEMENT, FOR SIZES 2-5 INCHES, WHITE COLOR.

BASIS OF DESIGN: ELEVATE UT-E-08

ROOF EXPANSION JOINT
ROOF EXPANSION JOINT FOR USE WITH TPO MEMBRANE ROOFING, DUAL-SEAL, DOUBLE FLANGED, FOR BUILDING EXPANSION JOINTS AT EXTERIOR ROOF APPLICATION, WATER TIGHT, ALLOWING FOR HIGH MOVEMENT, FOR SIZES 2-5 INCHES, WHITE COLOR.

BASIS OF DESIGN: ELEVATE UT-E-08

BUILDING EXPANSION JOINTS

A1 1 1/2" = 1'-0"

KEYED NOTES

2 ROOF ASSEMBLY. SEE ROOF PLAN.
7 EXTERIOR INSULATION AND FINISH SYSTEM, OVER STEEL STUD FRAMING.
8 LOUVER, SEE SPECIFICATIONS.
9 PARAPET WITH PRE-FINISHED COPING SYSTEM. SEE ROOF PLAN AND DETAILS.
10 STRUCTURE, PAINT P2 AT EXPOSED AREAS UNLESS OTHERWISE INDICATED. SEE STRUCTURAL DRAWINGS AND FINISH SCHEDULE.
13 GYPSUM BOARD WALL. TAPE, TEXTURE AND PAINT. SEE FINISH PLAN AND SCHEDULE.
14 MECHANICAL EQUIPMENT. SEE MECHANICAL ROOF PLAN.
15 CONCRETE SLAB OVER STRUCTURAL METAL DECK.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

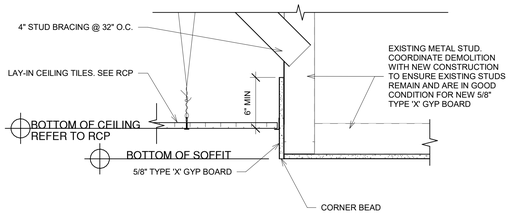
SHEET TITLE

DETAILS

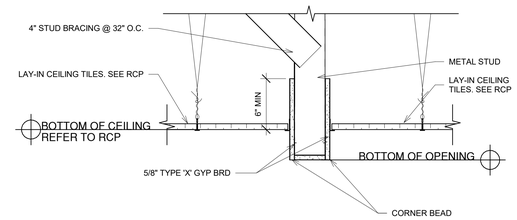
A-501

12/4/2023 12:11:05 PM

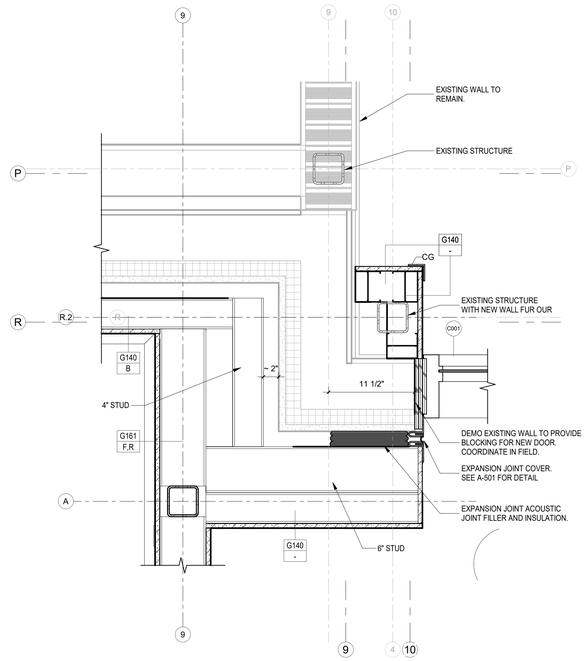
Biomedical Research Building Expansion



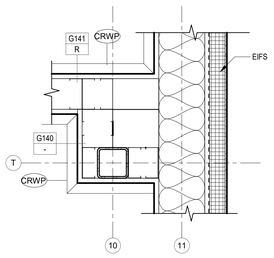
E1 TYPICAL CEILING DETAIL B
1 1/2" = 1'-0"



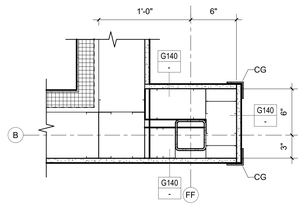
D1 TYPICAL CEILING DETAIL A
1 1/2" = 1'-0"



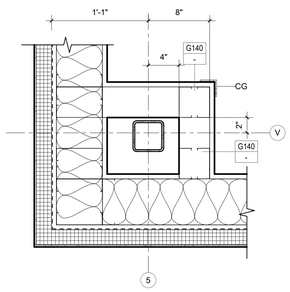
B4 FOOD PREP @ EXISTING
1 1/2" = 1'-0"



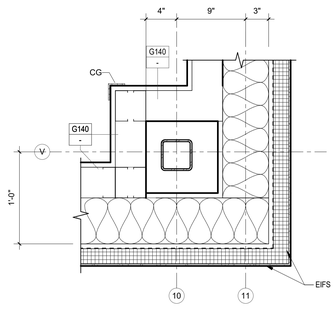
B1 ANTEROOM 177 FUR-OUT
1 1/2" = 1'-0"



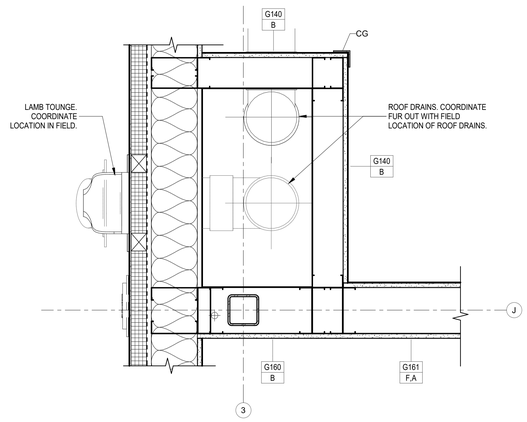
B2 ANTEROOM 3 FUR-OUT
1 1/2" = 1'-0"



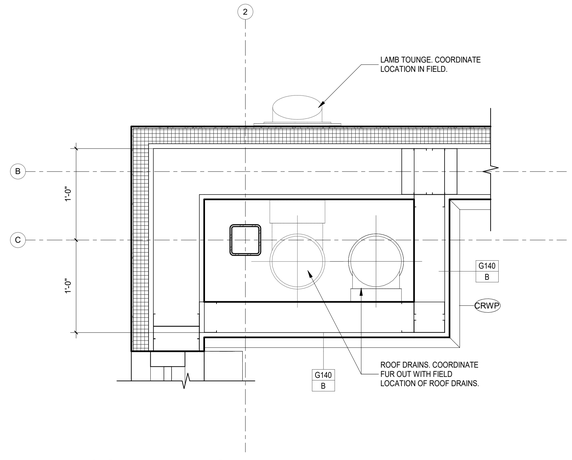
A1 ANTEROOM FUR-OUT
1 1/2" = 1'-0"



A2 AVIARY FOOD PREP FUR-OUT
1 1/2" = 1'-0"



A4 WILD ANIMAL HOUSING FUR-OUT
1 1/2" = 1'-0"



A5 FLOOR PLAN - Callout 1
1 1/2" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

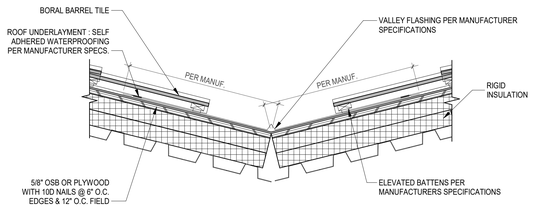
DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE
DETAILS

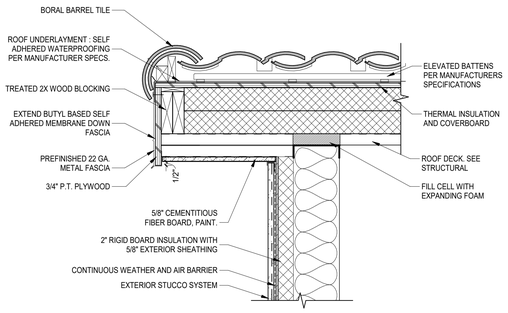
A-502

12/4/2023 12:11:08 PM

Biomedical Research Building Expansion



D1 TYPICAL ROOF VALLEY DETAIL
1 1/2" = 1'-0"



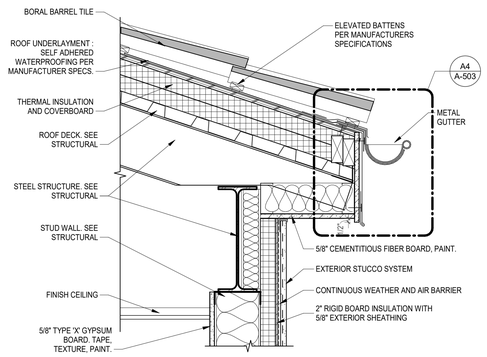
NOTE: ALL BLOCKING SHALL BE COVERED BY FASCIA OR FLASHING MATERIAL.

B1 TYPICAL RAKE DETAIL
1 1/2" = 1'-0"

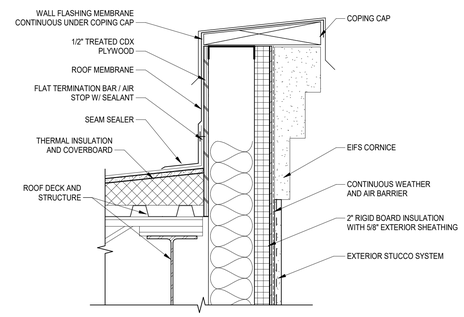
B2 TYPICAL TILE ROOF EDGE TO WALL
1 1/2" = 1'-0"

B4 TYPICAL ROOF TO WALL DETAIL
1 1/2" = 1'-0"

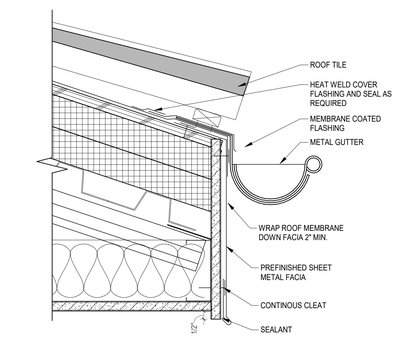
B5 TYPICAL ROOF RIDGE DETAIL
1 1/2" = 1'-0"



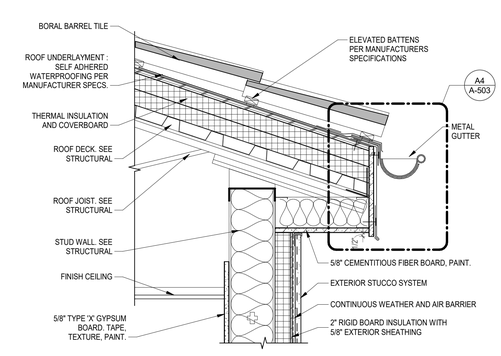
A1 TYPICAL EAVE DETAIL
1 1/2" = 1'-0"



A2 TYPICAL ROOF PARAPET DETAIL
1 1/2" = 1'-0"



A4 TYPICAL ROOF EDGE DETAIL
3" = 1'-0"



A5 TYPICAL ROOF EAVE DETAIL
1 1/2" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

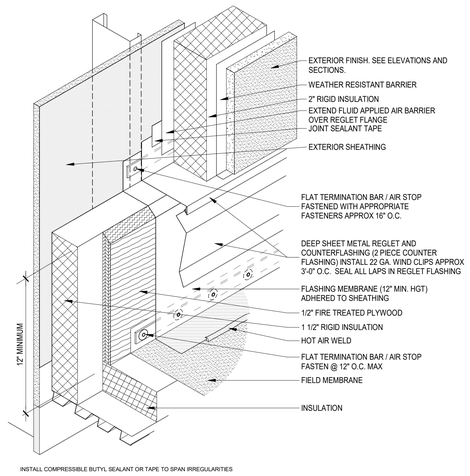
MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

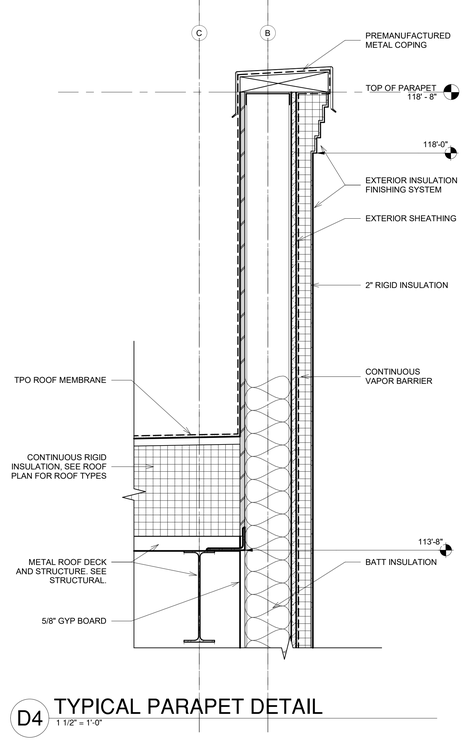
SHEET TITLE

DETAILS - ROOF

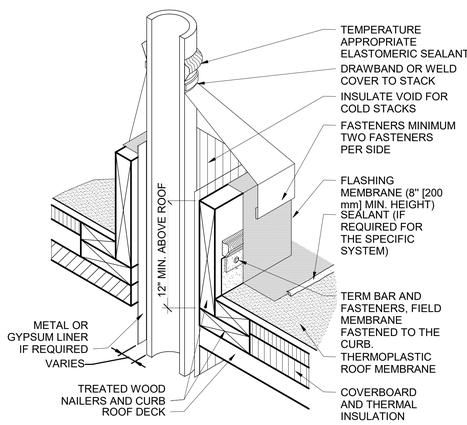
A-503



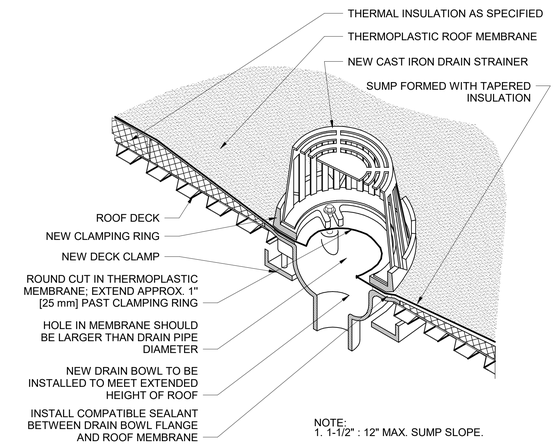
D1 TYPICAL WALL FLASHING AT TPO & STUCCO
3/4" = 1'-0"



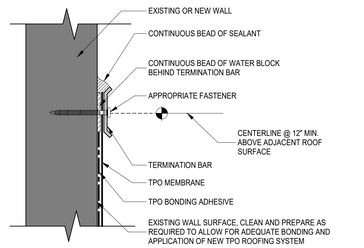
D4 TYPICAL PARAPET DETAIL
1 1/2" = 1'-0"



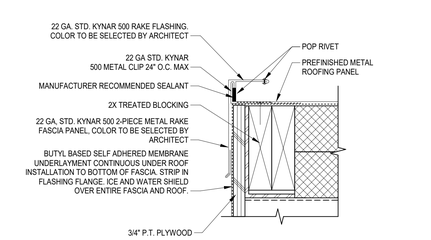
B1 TYPICAL HOT STACK VENT
1" = 1'-0"



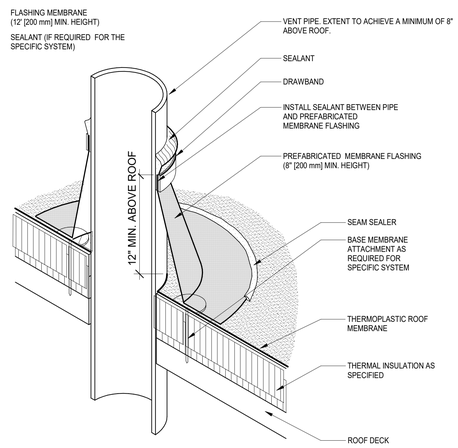
B3 TYPICAL ROOF DRAIN\
1" = 1'-0"



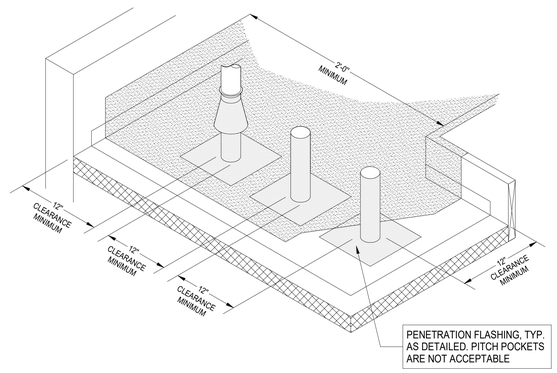
B4 TYPICAL TPO TERMINATION BAR
3" = 1'-0"



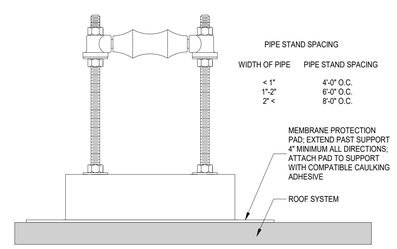
B6 TYPICAL RAKE DETAIL
3" = 1'-0"



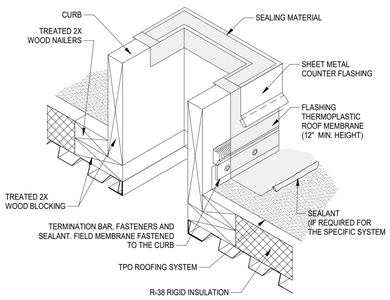
A1 TYPICAL ROOF VENT
1" = 1'-0"



A3 TYPICAL ROOF PENETRATION
1" = 1'-0"



A4 TYPICAL ROOF STAND
1" = 1'-0"



A6 TYPICAL EQUIPMENT CURB
1" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

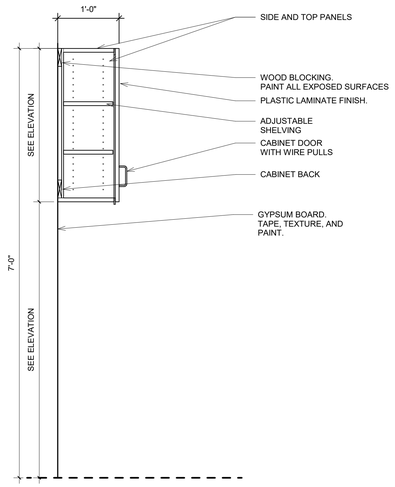
MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE

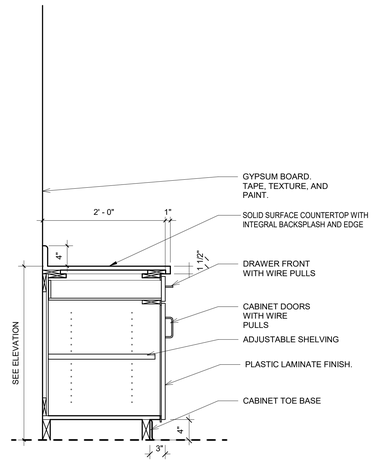
DETAILS - ROOF

A-504



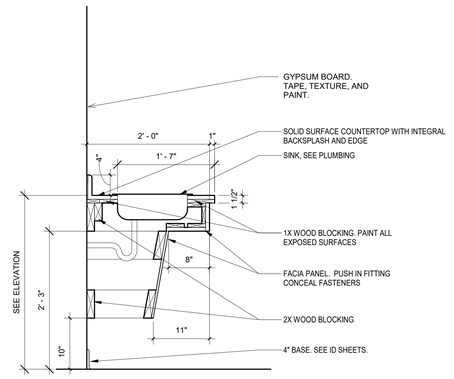
CASEWORK DETAIL-
BASE CABINET
UPPER CABINET

C3 1" = 1'-0"



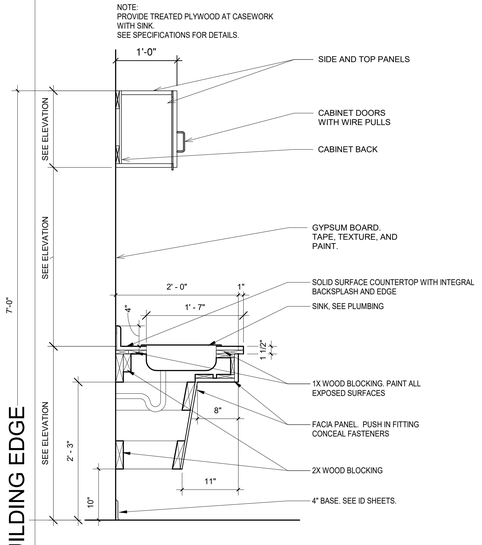
CASEWORK DETAIL-
BASE CABINET
UPPER CABINET

C4 1" = 1'-0"



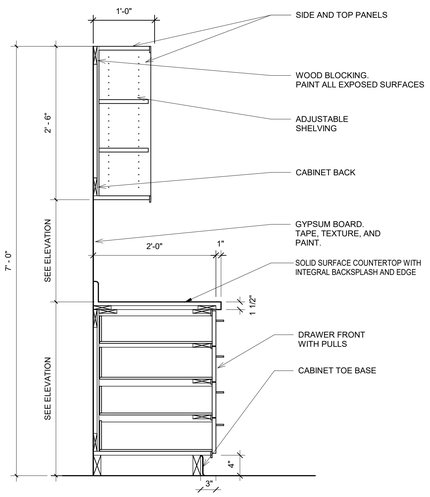
CW_Base Sink

C5 1" = 1'-0"



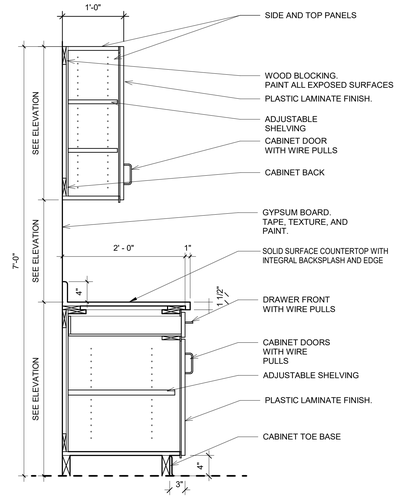
CW_Base Sink, upper Cab

A1 1" = 1'-0"



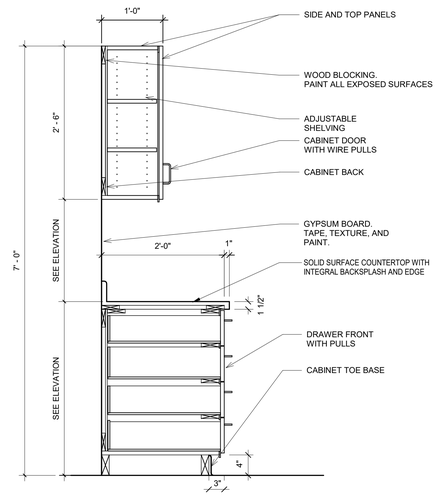
CASEWORK DETAIL
BASE 4-DRAWER CABINET
UPPER OPEN CABINET

A3 1" = 1'-0"



CASEWORK DETAIL-
BASE CABINET
UPPER CABINET

A4 1" = 1'-0"



CASEWORK DETAIL-
BASE 4-DRAWER CABINET
UPPER CABINET

A5 1" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300
Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

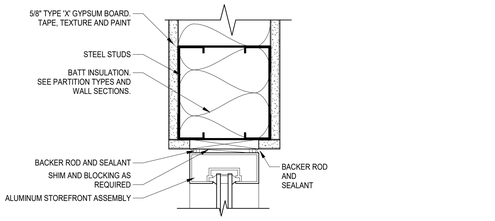
MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

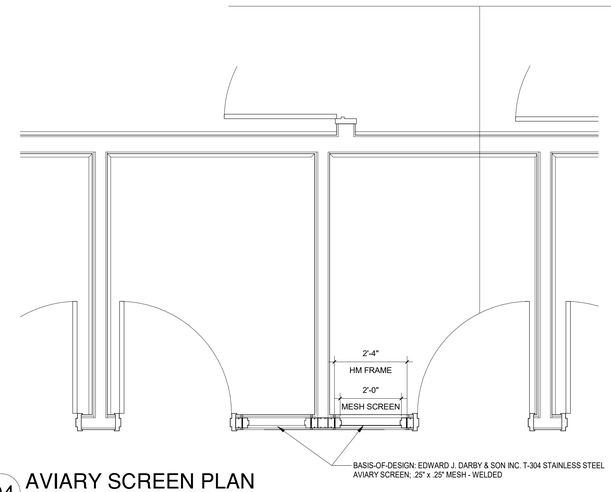
SHEET TITLE

CASEWORK DETAILS

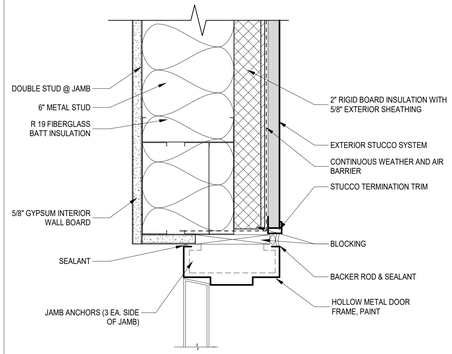
A-510

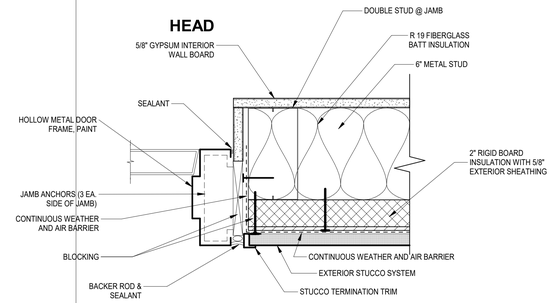


D3 DR_INTERIOR STOREFRONT
3" = 1'-0"

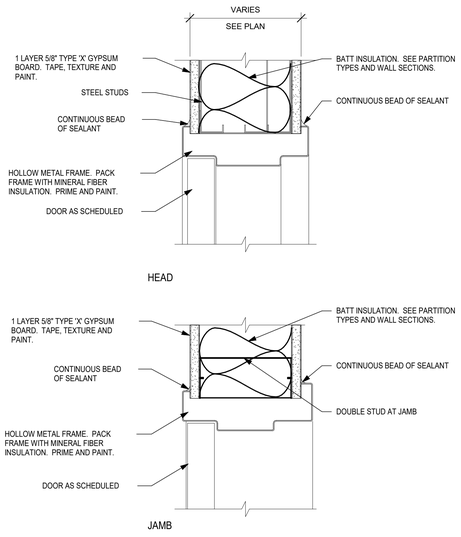


D4 AVIARY SCREEN PLAN
1/2" = 1'-0"

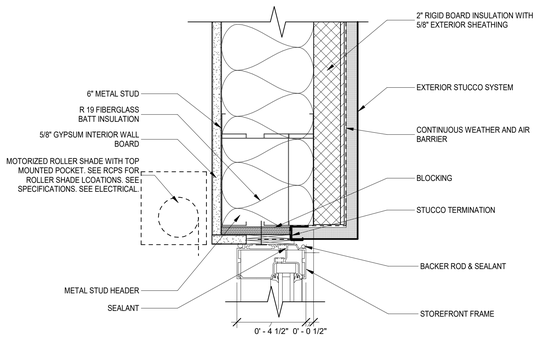


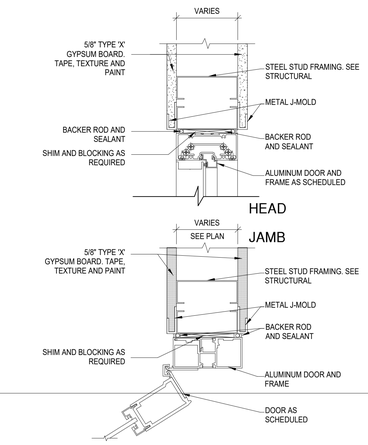


B1 DR_TYPICAL HOLLOW METAL FRAME - STUCCO
3" = 1'-0"

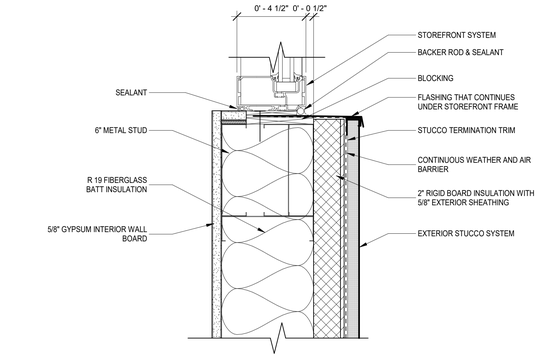


B3 DR_INTERIOR HOLLOW METAL DOOR
3" = 1'-0"

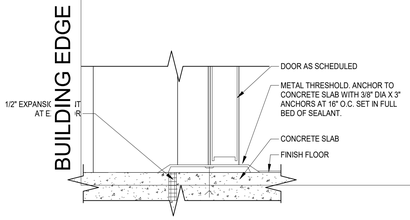




A3 DR_INTERIOR ALUMINUM STOREFRONT DOOR
3" = 1'-0"



A4 DR_STOREFRONT AT EIFS
3" = 1'-0"



A1 DR_DOOR THRESHOLD
3" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE

DOOR & STOREFRONT DETAILS

A-511

DOOR & FRAME SCHEDULE

DOOR NUMBER	SIZE WIDTH	SIZE HEIGHT	DOOR TYPE	FACING/ FINISH	FRAME TYPE	GLAZING	DETAIL REFERENCE HEAD	DETAIL REFERENCE JAMB	DETAIL REFERENCE SILL	REMARKS
200	3' - 8"	7' - 8"	FRP1	FRP	HM1	-	B3/A-511	B3/A-511	A1/A-511	-
201	3' - 8"	7' - 8"	HMA	HM	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	1 HOUR FIRE BARRIER
202	3' - 8"	7' - 8"	HMA	HM	HM1	-	B3/A-511	B3/A-511	A1/A-511	1 HOUR FIRE BARRIER
203	4' - 0"	7' - 8"	FRP2		HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
204	4' - 0"	7' - 8"	FRP2		HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
205	3' - 8"	7' - 8"	HMA	HM	HM1	-	B3/A-511	B3/A-511	A1/A-511	1 HOUR FIRE BARRIER
206	3' - 8"	7' - 8"	FRP1	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	-
207	3' - 8"	7' - 8"	HMB	HM	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	-
300	4' - 0"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	-
301	4' - 0"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
302	4' - 0"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
303	4' - 0"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
304	4' - 0"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
305	4' - 0"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
400	3' - 8"	7' - 8"	FRP1	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	-
401	3' - 8"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	-
402	3' - 8"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	-
403	3' - 8"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	-
404	3' - 8"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	-
405	3' - 8"	7' - 8"	FRP1	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	-
406	3' - 8"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	-
503	3' - 8"	7' - 8"	FRP1	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
504	3' - 8"	7' - 8"	FRP1	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
505	3' - 8"	7' - 8"	FRP1	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
505A	3' - 8"	7' - 8"	FRP1	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	-
506	3' - 8"	7' - 8"	FRP1	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
506A	3' - 8"	7' - 8"	FRP1	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	-
507	3' - 8"	7' - 8"	FRP1	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	1 HOUR FIRE BARRIER
605	3' - 8"	7' - 8"	FRP1	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	-
606	3' - 8"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
607	3' - 8"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
608	3' - 8"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
609	3' - 8"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
610	3' - 8"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
611	3' - 8"	7' - 8"	FRP2	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
612	3' - 8"	7' - 8"	FRP1	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	-
613	3' - 8"	7' - 8"	FRP1	FRP	HM1	TEMP	B3/A-511	B3/A-511	A1/A-511	1 HOUR FIRE BARRIER
A200A	6' - 0"	7' - 8"	HMC	HM	HM3	TEMP	B3/A-511	B3/A-511	A1/A-511	DOOR ACTUATOR
A200B	6' - 0"	7' - 8"	HMC	HM	HM3	1" INSUL	B1/A-511	B1/A-511	A1/A-511	CARD READER
A300A	3' - 8"	7' - 8"	HMB	HM	HM2	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER/ DOOR ACTUATOR
A300B	3' - 8"	7' - 8"	HMB	HM	HM2	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER/ DOOR ACTUATOR
A300C	3' - 8"	7' - 8"	HMB	HM	HM2	1" INSUL	B1/A-511	B1/A-511	A1/A-511	-
A501A	3' - 8"	7' - 8"	HMB	HM	HM2	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER/ DOOR ACTUATOR
A501B	3' - 8"	7' - 8"	HMB	HM	HM2	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER/ DOOR ACTUATOR
A502A	3' - 8"	7' - 8"	HMB	FRP	HM2	TEMP	B3/A-511	B3/A-511	A1/A-511	-
A502B	3' - 8"	7' - 8"	HMB	HM	HM1	-	B1/A-511	B1/A-511	A1/A-511	-
A601A	3' - 8"	7' - 8"	HMB	FRP	HM2	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER/ DOOR ACTUATOR
A601B	3' - 8"	7' - 8"	HMB	FRP	HM2	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER/ DOOR ACTUATOR
A602B	3' - 8"	7' - 8"	HMB	FRP	HM2	TEMP	B3/A-511	B3/A-511	A1/A-511	-
A602C	3' - 0"	7' - 0"	HMB	FRP	HM2	1" INSUL	B1/A-511	B1/A-511	A1/A-511	-
C001	3' - 8"	7' - 8"	HMB	FRP	HM2	TEMP	B3/A-511	B3/A-511	A1/A-511	CARD READER
C700	3' - 8"	7' - 8"	HMB	HM	HM2	1" INSUL	B1/A-511	B1/A-511	A1/A-511	CARD READER
ELEC2	3' - 8"	7' - 8"	HMA	HM	HM1	-	B3/A-511	B3/A-511	A1/A-511	1 HOUR FIRE BARRIER
EXISTING DOOR	3' - 0"	7' - 0"								
IT307	3' - 8"	7' - 8"	HMA	HM	HM1	-	B3/A-511	B3/A-511	A1/A-511	1 HOUR FIRE BARRIER
J306	3' - 8"	7' - 8"	HMA	HM	HM1	-				
MECH2	3' - 8"	7' - 8"	HMA	HM	HM1	-	B1/A-511	B1/A-511	A1/A-511	1 HOUR FIRE BARRIER
MRR	3' - 0"	7' - 0"	HMA		HM1	-	B3/A-511	B3/A-511	A1/A-511	
SRR	3' - 0"	7' - 0"	HMA		HM1	-	B3/A-511	B3/A-511	A1/A-511	
WRR	3' - 0"	7' - 0"	HMA		HM1	-	B3/A-511	B3/A-511	A1/A-511	

WINDOW SCHEDULE

MARK	COUNT	HEIGHT	LENGTH	HEIGHT A.F.F.	MATERIAL	DETAILS	COMMENTS
A	4	5' - 4"	4' - 0"	2' - 6"	ALUM	A4/A-511	WINDOW CURTAIN
B	4	2' - 2"	3' - 0"	6' - 10"	ALUM	A4/A-511	WINDOW CURTAIN
C	1	4' - 0"	4' - 0"	3' - 0"	ALUM	D3/A-511	WINDOW CURTAIN

Grand total: 9

GENERAL NOTES

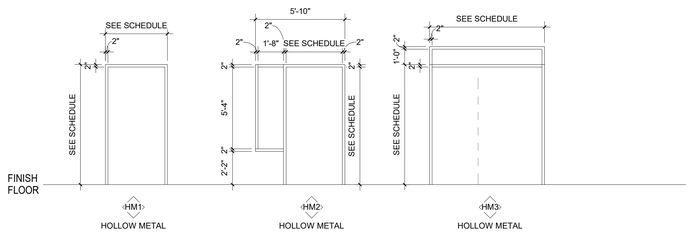
A. PACK ALL HOLLOW METAL DOOR FRAMES WITH MINERAL WOOL.
B. FINISH AND INSTALL PAINTABLE SEALANT AT INTERSECTION OF ALL DISSIMILAR MATERIALS.
C. PAINT ALL VISIBLE SURFACES OF HOLLOW METAL GLASS STOPS.
D. ALL FRAME DIMENSIONS AND PROFILES ARE TO BE FIELD VERIFIED BEFORE FABRICATION.
E. METAL INSERTS FOR GLASS SHALL BE 1-1/4" MAX. PAINT ALL VISIBLE SURFACES OF INSERTS.
F. PAINT ALL HOLLOW METAL DOORS AND FRAMES. COLOR TO BE SELECTED BY ARCHITECT.
G. LOCATE ROOM IDENTIFICATION SIGNS AT ALL DOORS AS INDICATED IN SIGNAGE SPECIFICATION SCHEDULE. SEE SPECIFICATIONS FOR SIZE AND TYPE OF SIGN. COORDINATE FINAL LOCATION OF ALL BUILDING SIGNS WITH OWNER AND ARCHITECT PRIOR TO INSTALLATION.
H. GLASS IN ALL EXTERIOR DOORS AND/OR DOOR FRAMES SHALL BE 1" INSULATED GLAZING.
I. SEE SPECIFICATIONS FOR HARDWARE SCHEDULE AND INFORMATION.

DOOR SCHEDULE NOTE LEGEND

HM/P - HOLLOW METAL/PAINT
ALUM - ALUMINUM SYSTEM FINISH TO BE SELECTED BY ARCHITECT
W/SV - WOOD SOLID CORE / STAIN & VARNISH
1" ISG - 1" INSULATED SAFETY GLASS
1/4" SG - 1/4" SAFETY GLASS
SS - STAINLESS STEEL
CR - ROUGH-IN FOR CARD READER. SEE ELECTRICAL

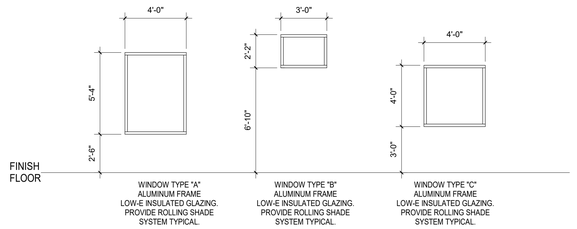
NOTE: REFER TO SHEET G-001 BUILDING CODE ANALYSIS FOR DOORS THAT OCCUR IN A FIRE RATED WALL AND REQUIRE FIRE RATING

Door Type Legend



NOTE: REFER TO SHEET G-001 BUILDING CODE ANALYSIS FOR DOORS THAT OCCUR IN A FIRE RATED WALL AND REQUIRE FIRE RATING

Frame Type Legend



Window Type Legend

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

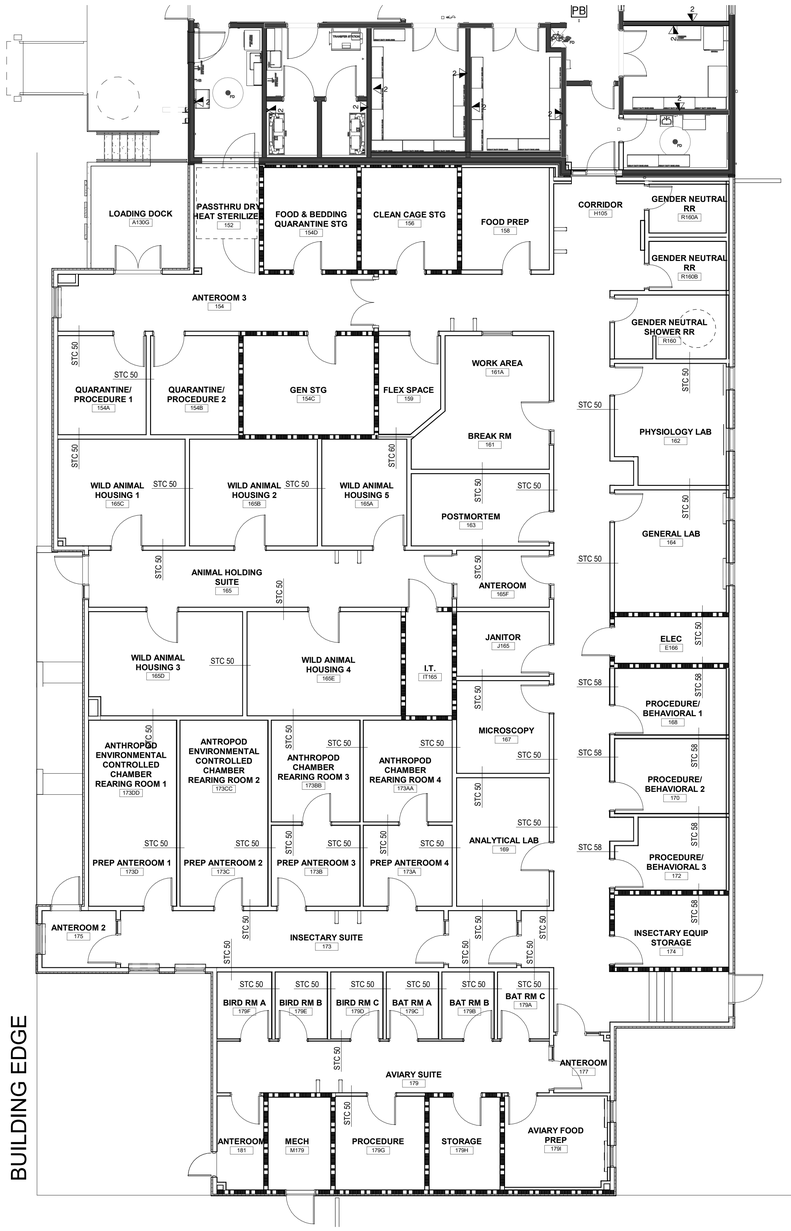
MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE

DOOR & WINDOW SCHEDULES, ELEVATIONS

A-601



A1 STC RATING PLAN
1/8" = 1'-0"

ACOUSTICAL PARTITION NOTES

A. BACK TO BACK OUTLETS IN STC RATED PARTITIONS WILL NOT BE ALLOWED.
B. FURNISH AND INSTALL ACOUSTIC SEALANT AT FLOOR TO PARTITION CONNECTIONS AT ALL STC RATED PARTITIONS.
C. FURNISH AND INSTALL ACOUSTIC SEALANT AT ALL PENETRATIONS FOR UTILITIES, HVAC, SPRINKLERS, CONDUITS, ETC. AS THEY PENETRATE STC RATED PARTITIONS. SUPPORT PENETRATIONS ON EACH SIDE OF PARTITION TO AVOID MECHANICAL CONTACT WITH STUDS OR GYPSUM BOARD.
D. SPACES BETWEEN ITEMS PENETRATING STC RATED PARTITIONS AND THE PARTITION ITSELF SHALL BE SEALED USING ACOUSTIC SEALANT AND BACKER MATERIAL (GLASS FIBER INSULATION OR ROCK WOOL).

GENERAL NOTES

A. FURNISH AND INSTALL SEALANT AT INTERSECTION OF ALL DISSIMILAR MATERIALS.
B. FURNISH AND INSTALL WOOD BLOCKING IN ALL WALLS FOR SUPPORT OF TOILET PARTITIONS, SIGNAGE, ACCESSORIES OR OTHER WALL SUPPORTED ITEMS AS REQUIRED.
C. FURNISH AND INSTALL WATER RESISTANT GYPSUM BOARD IN BREAK ROOM, RESTROOMS, CUSTODIAL ROOMS AND WET AREAS.
D. SEE FLOOR PLANS FOR EXTENT OF RATED ASSEMBLIES.
E. SEE BUILDING AND WALL SECTIONS FOR ADDITIONAL INFORMATION OF EXTERIOR WALLS. COORDINATE WITH STRUCTURAL.
F. AT ALL LOCATIONS OF EXPOSED CEILING STRUCTURE ALL STEEL STUD WALLS SHALL BE TAPED, TEXTURED AND PAINTED TO UNDERSIDE OF ROOF DECK. CONTROL PAINT AND TEXTURE OVERSPRAY AT THESE LOCATIONS, OVERSPRAY ON EXPOSED ROOF DECK WILL NOT BE ACCEPTED.
G. SEE STRUCTURAL DRAWINGS FOR LOCATIONS AND DETAILS OF LOAD BEARING STEEL STUDS.
H. PARTITION GAUGE SHALL COMPLY WITH DEFLECTION AND LOADING CRITERIA INDICATED IN THE SPECIFICATIONS.
I. FURNISH AND INSTALL WALL TILE ON 5/8" TYPE 'X' CEMENTITIOUS BACKER BOARD IN ALL RESTROOMS, AND AT ALL DRINKING FOUNTAINS.
J. SEE FLOOR PLANS AND ID SHEETS FOR INTERIOR FINISH INFORMATION.
K. FURNISH AND INSTALL SLIP TYPE HEAD JOINTS AT ALL STEEL STUD PARTITIONS THAT EXTEND TO DECK.
L. FURNISH AND INSTALL FIRE STOP TRACKS AT ALL FIRE RATED STEEL STUD PARTITIONS.
M. PARTITIONS THAT HAVE MULTIPLE LAYERS OF GYP BOARD SHALL BE CONTINUOUS ALONG WALL SURFACE. STAGGERED OR STEPPED WALL SURFACES WILL NOT BE ACCEPTED.

PARTITION TYPES KEY

Partition types are identified with the following system:
- Each partition has a Category, Configuration and possible Variation(s).
- The first letter indicates the Category the partition belongs to.
- The remaining indicates the Configuration.
- Variations to the partition are listed below.

Categories may be used in combination in some instances.

PARTITION CATEGORY
CONFIGURATION
G131
F1, S
VARIATION(s)

G131
F1, S

Example:
The symbol to the left would indicate that the partition is a Gypsum/Metal Stud partition system. It would be composed of 1 layer of 5/8" gypsum board on each side of a 3 5/8" metal stud. Its variations would indicate that the partition is to have a 1 Hour Fire Rating and it uses Sound Attenuation Blankets with studs at 24" on center and has the floor track set in a continuous bead of sealant.

CATEGORY		CONFIGURATION			
MATERIAL KEY	MATERIAL DESCRIPTION	LAYERS OF GB (CORR. SIDE)		MATERIAL WIDTH	LAYERS OF GB (INT. SIDE)
G	Gypsum Board and Metal Stud Partition Gypsum Board to be 5/8" Type "X" unless otherwise noted.	1	1	1 1/2" Metal Stud	0
			6	6" Metal Stud	1
			7	7/8" Hat Channel	
			2	2 1/2" Metal Stud	
			4	4" Metal Stud	
			5	(2) 4" Metal Stud w/ 1" air space between.	

VARIATIONS	
A	STC Rated Wall. See STC Plan A1/A-602 for layout.
C	Glass-Fiber Reinforced Cement Board - where exposed to moisture or ceramic tile.
F	FRP (Room side only.)
F1	1 Hour Fire Rated
IN	2" Polyiso Continuous Insulation
L	See Details for Top of Stud Height
P	Plumbing Chase Configuration
R	Abuse Resistant Gypsum Board (Hallway Side)
U	Partition to Extend to Underside of Ceiling
W	Fire treated plywood. See Electrical.

Additional Notes:
1. All GB in toilet rooms, janitor closets to be Water Resistant (W) except as noted.
2. All Fire Rated Partitions (F1, F2, F3) are to be constructed in accordance with appropriate UL Assembly.
3. All GB Partitions include Sound Attenuations Blanket and are to be sealed top and bottom.
4. All Partitions to be Braced. See Details & Specs
5. All Partitions extend to structure above unless otherwise noted.

PARTITION MARKINGS & IDENTIFICATION

2021 IBC

703.5 Marking and identification.

Fire walls, fire barriers, fire partitions , smoke barriers and smoke partitions or any other wall required to have protected openings or penetrations shall be effectively and permanently identified with signs or stenciling in the concealed space. Such identification shall:

1. Be located within 15 feet (4572 mm) of the end of each wall and at intervals not exceeding 30 feet (9144 mm) measured horizontally along the wall or partition.
2. Include lettering not less than 3 inches (76 mm) in height with a minimum 3/8-inch (9.5 mm) stroke in a contrasting color incorporating the suggested wording, "FIRE AND/OR SMOKE BARRIER— PROTECT ALL OPENINGS," or other wording.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

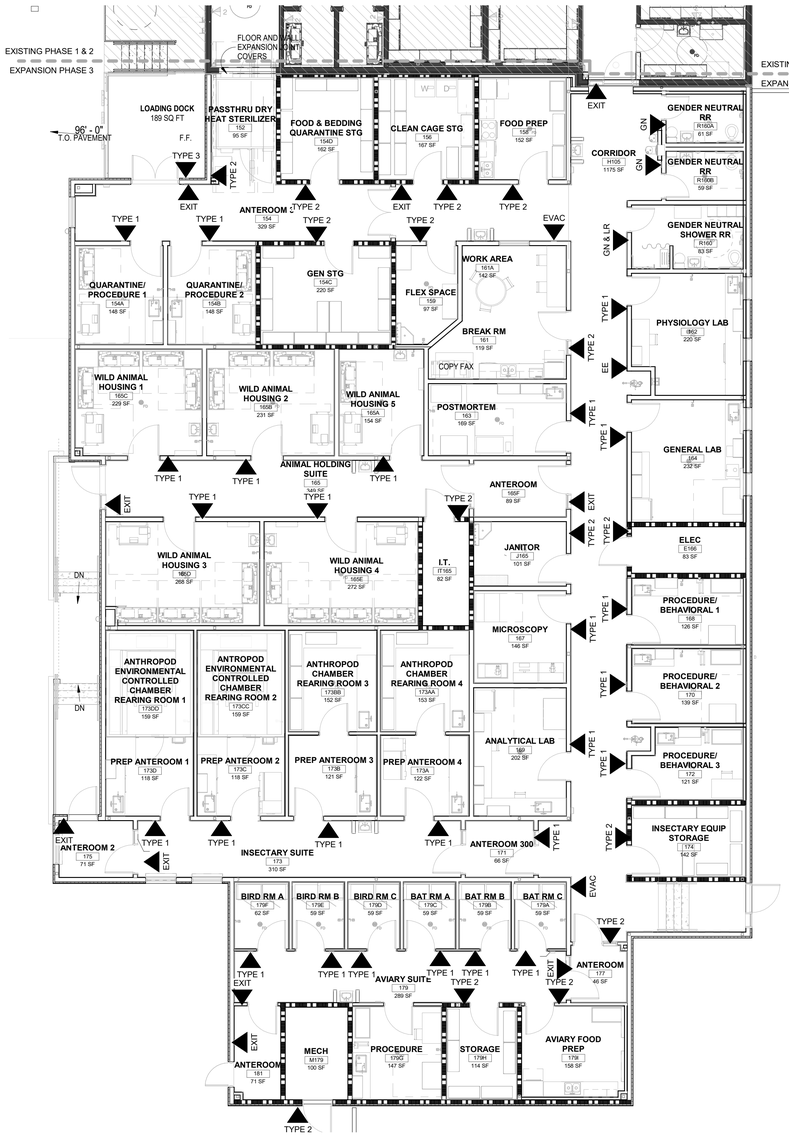
3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE
PARTITION SCHEDULE

A-621



A1 SIGNAGE PLAN
1/8" = 1'-0"

GENERAL NOTES

A. PROVIDE A TOTAL OF 1 EVACUATION SIGNS. GRAPHIC INFORMATION INSERT TO BE PROVIDED BY ARCHITECT.
B. ALL FINAL WORDING, IMAGES, AND PATTERNS TO BE DETERMINED BY OWNER AND ARCHITECT DURING SUBMITTAL PROCESS.

SIGNAGE LEGEND

COORDINATE WITH NMSU'S CAMPUS WAYFINDING AND SIGNAGE POLICY AND STANDARDS FOR SIGNAGE TYPES, DESIGN, FONTS, COLORS AND OTHER INFORMATION.

REFER TO SIGNAGE SPECIFICATION FOR SIGNAGE TO MEET NMSU STANDARD SIGNAGE.

*ALL SIGNAGE TO BE ADA TACTILE TEXT AND BRAILLE, UNO

TYPE 1	ST A6/00 ROOM SIGN WITH CHANGEABLE PAPER INSERT **PROVIDE HOOK ON SIGN TO HANG LAB CLIP-BOARDS AT ROOMS NOTED ON PLAN*
TYPE 2	ST A3/00 ROOM SIGN
TYPE 3	STX16/00 DELIVERY ENTRANCE ID
EXIT	ST A30/00 EXIT SIGN
EVAC	ST A10/00 EVACUATION PLAN NON-GLARE LENS *TO HOLD 8.5"X11" EVACUATION INSERT
W	ST A7/00 WOMEN RESTROOM
M	ST A8/00 MEN RESTROOM
GN	8"X8" GENDER NEUTRAL RESTROOM
LR	8"X6" LOCKER ROOM
EE	8"X8" EMERGENCY EYEWASH SHOWER STATION
FLAG	ST A24/00 RESTROOM FLAG SIGN
LEED	YOU ARE ENTERING A LEED BUILDING
TYPE 1	SIGNAGE TAG

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE

SIGNAGE PLAN

A-700

Biomedical Research Building Expansion

12/4/2023 12:11:29 PM

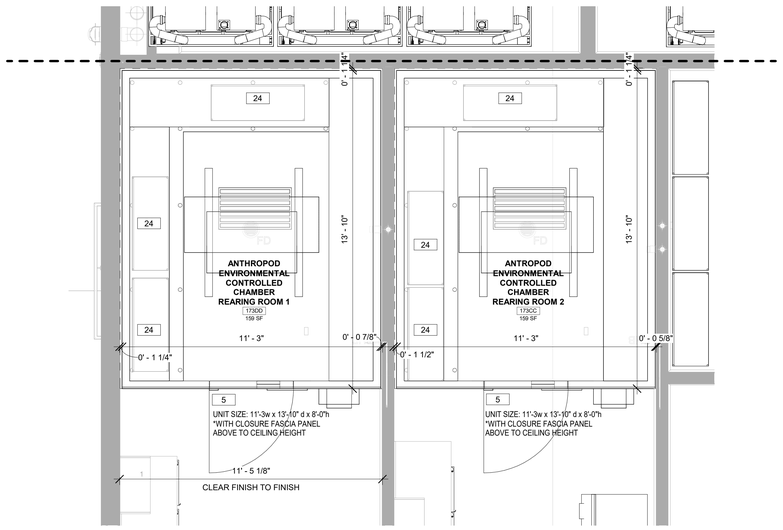
EQUIPMENT SCHEDULE

*THIS SCHEDULE COORDINATES WITH EQUIPMENT SPECIFICATIONS, SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION

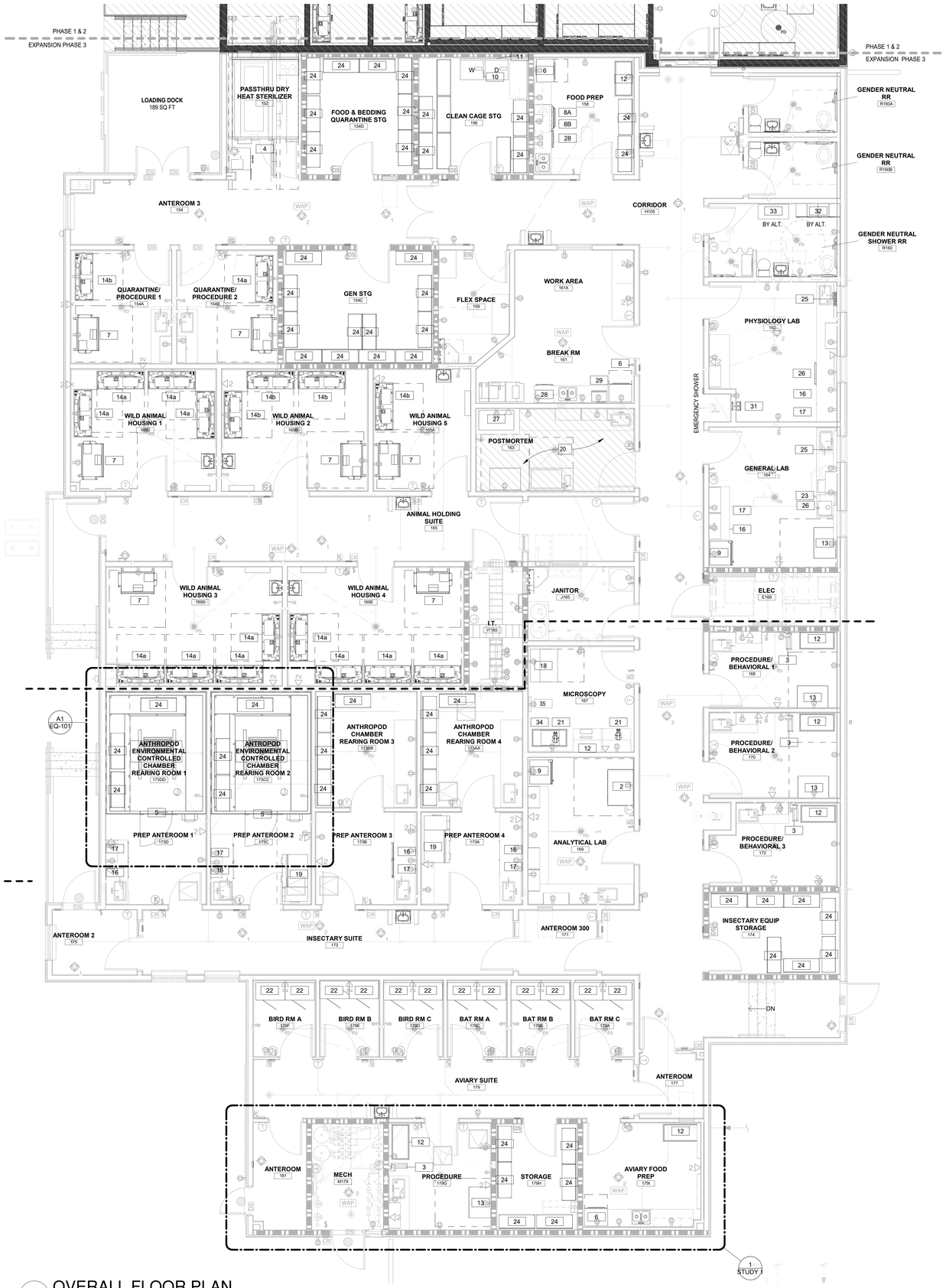
*COORDINATE WITH MECHANICAL, ELECTRICAL, PLUMBING AND STRUCTURAL DRAWINGS FOR UTILITY CONNECTIONS

*EQUIPMENT NOTED "MOBILE" TO BE PROVIDED BY OWNER.

TAG NO.	TYPE/ DESCRIPTION	FIXED/ MOBILE	PROVIDED BY/ INSTALLED BY	MANUFACTURER MODEL NO.	UTILITY REQUIREMENTS
1	NOT USED				
2	FUME HOOD	FIXED	CPCI	ISEC KEWAUNEE VENTURI FUME HOOD	ELECTRICAL, GAS, MECHANICAL
3	FUME EXTRACTION ARM	FIXED	CPCI	VAUGHN ALSIDENT WALL FUME ARM	ELECTRICAL, MECHANICAL
4	DRY HEAT STERILIZER	FIXED	CPCI	PCS MODEL VST40H175.OPTSS-SPL-G	ELECTRICAL, MECHANICAL, COMPRESSED AIR
5	ENVIRONMENTAL CHAMBER	FIXED	CPCI	CONVIRON C1214	ELECTRICAL, MECHANICAL, PLUMBING
6	FRIDGE/ FREEZER COMBO	MOBILE	OPOI	HISENSE 17.2 CU COUNTER DEPTH W/ DRAWER FREEZER	ELECTRICAL
7	ANIMAL TRANSFER STATION	MOBILE	OPCI	ALLENTOWN INC, PHANTOM 2	ELECTRICAL
8a	ELECTRIC RANGE W/ OVEN	MOBILE	OPCI	FRIGIDAIRE, FFES3026TS 30" SLIDE-IN ELECTRIC	ELECTRICAL
8b	ELECTRIC RANGE HOOD	FIXED	OPCI	TBD	ELECTRICAL
9	-80 LAB FREEZER	MOBILE	OPOI	THERMO FISHER TSX60086A ULTRA LOW FREEZER	ELECTRICAL
10	WASHER	MOBILE	OPCI	GE 5.3 CU FT. SMART FRONT LOAD STEAM WASHER	ELECTRICAL, PLUMBING
11	DRYER	MOBILE	OPCI	GE 7.8 CU FT SMART FRONT LOAD ELECTRIC DRYER	ELECTRICAL
12	STAINLESS STEEL WORKTABLE	MOBILE	OPOI	OMCAN GENERAL LAB PROCEDURE TABLE	NONE
13	BIOLOGICAL SAFETY CABINET, 4 FEET	MOBILE	OPCI	NUAIRE NU-540-400 4' OR EQUAL	ELECTRICAL
14a	IVC RACK	MOBILE	OPCI	ALLENTOWN INC, NEXGEN MOUSE 900, 45 RODENT CAPACITY	ELECTRICAL, MECHANICAL
14b	IVC RACK	MOBILE	OPCI	ALLENTOWN INC, NEXGEN RAT 900, 35 RODENT CAPACITY	ELECTRICAL, MECHANICAL
15	NOT USED				
16	-4 LAB FRIDGE, BELOW COUNTER	MOBILE	OPOI	THERMO SCIENTIFIC TSV05RPAA ADA LAB REFRIGERATOR, 5.5 CU	ELECTRICAL
17	-20 LAB FREEZER, BELOW COUNTER	MOBILE	OPOI	THERMO SCIENTIFIC 02LFEETSA, 1.8 CU FT, -12DC TO -20DC	ELECTRICAL
18	CRYOSTAT	MOBILE	OPOI	LEICA CM1950 CRYOSTAT	ELECTRICAL
19	GLOVE BOX	MOBILE	OPOI	LABCONCO	NONE
20	POSTMORTEM ROOM EQUIPMENT	*RE-LOCATED FROM PHASE 2		*SEE SHEET AD-101 DEMOLITION PLANS FOR ADDITIONAL INFORMATION WAITING ON NMSU TO PROVIDE	
21	MICROSCOPE(S)? (MICROSCOPY)	MOBILE	OPOI		
22	BIRD/ BAT CAGE	MOBILE	OPOI		
23	REVERSE OSMOSIS TABLE TOP UNIT	MOBILE	OPOI	MILI-Q EQ 7008/7016, 25L TANK	
24	HEAVY DUTY 4 POST STEEL SHELVING	MOBILE	OPOI	GLOBAL INDUSTRIES EXTRA HEAVY DUTY SHELVING, 1200 LB CAPACITY	
25	PEG BOARD	MOBILE	OPOI	RAPTOR SUPPLIES GRV2430 STAINLESS STEEL PEGBOARD	
26	FLAMMABLE STORAGE CABINET	MOBILE	OPOI	INTERSTATE PRODUCTS, FLAMMABLE SAFETY CABINET WITH 2 SHELVES	
27	CHEST FREEZER	MOBILE	OPOI	ULTRA LOW TEMP LAB CHEST FREEZER, LSR COLD STORAGE, 11 CU FT CAPACITY	
28	DISHWASHER	MOBILE	OPOI	GE, STAINLESS STEEL	
29	MICROWAVE	MOBILE	OPOI	WHIRLPOOL, STAINLESS STEEL, 1.6 CU FT CAPACITY	
30	CHLORINE DIOXIDE GAS UNIT, PORTABLE	MOBILE	CFCI	CLORDISYS- MINIDOX M UNIT, 30" W X 56"H X 29"D, 230LBS ELECTRICAL	
31	O2 CANISTER STORAGE	MOBILE	OPOI	OXYGEN CYLINDERS WITH WALL MOUNT DOUBLE BRACKET	
32	PHENOLIC LOCKERS (BY ALTERNATE)	MOBILE	OPOI	*ALSO SEE INTERIOR ELEVATIONS	
33	PHENOLIC LOCKER BENCH (BY ALTERNATE)	MOBILE	OPOI	*ALSO SEE INTERIOR ELEVATIONS	
34	ANTI VIBRATION TABLE	MOBILE	OPOI	ADAM EQUIPMENT, BALANCE ANTIVIBRATION TABLE, STAINLESS STEEL	
35	WALL MOUNTED DESK	FIXED	CPCI	* OMNIMED WALL DESK, MODEL 3 WBB1457734, ANODIZED ALUMINUM * BASIS - OF -DESIGN OR EQUAL / PROVIDE BACKING AS NEEDED	



A1 EQUIPMENT PLAN - ENVIRONMENTAL CHAMBER
3/8" = 1'-0"



A3 OVERALL FLOOR PLAN
3/16" = 1'-0"

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

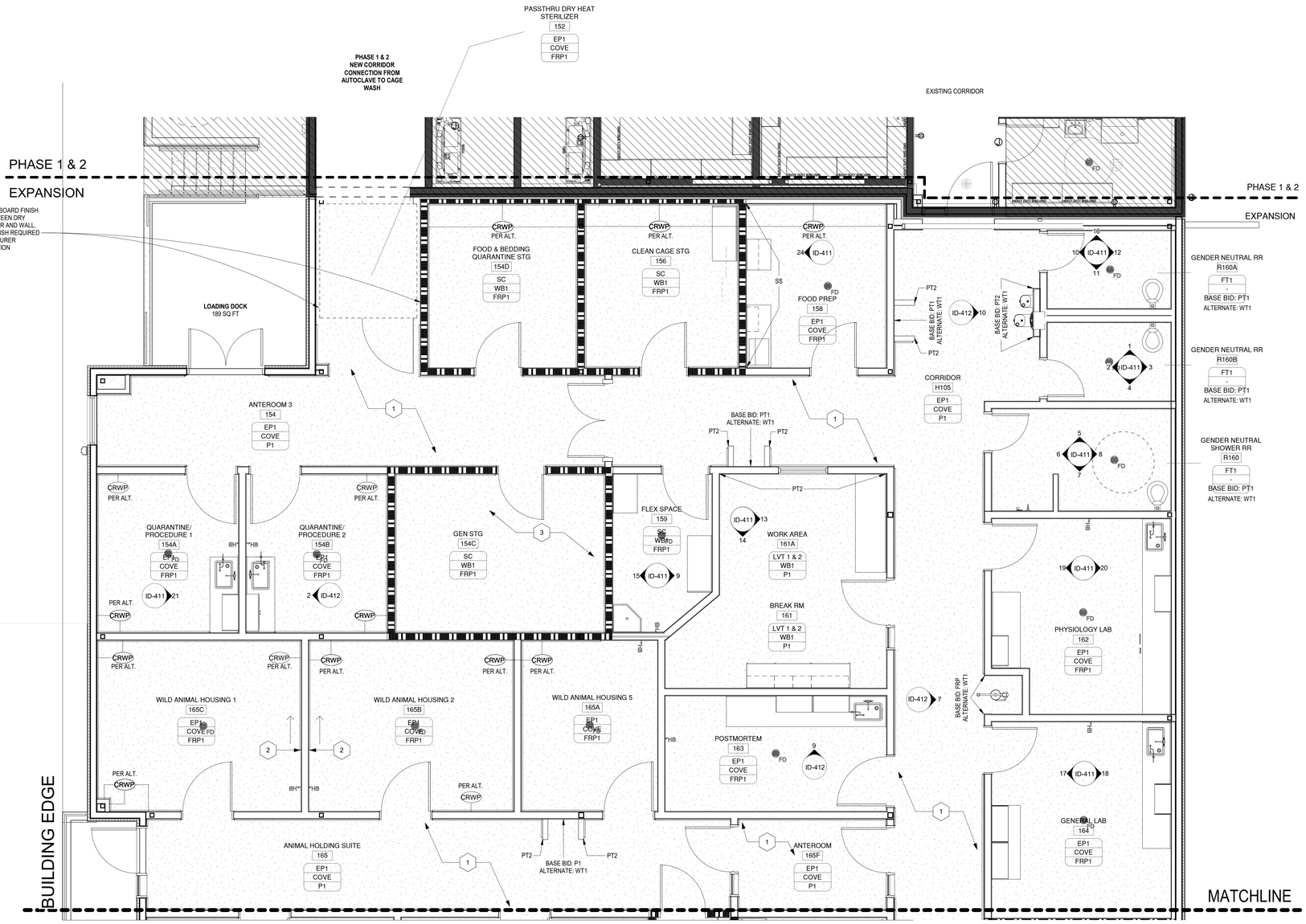
MARK	DATE	DESCRIPTION
1	12/12/12	THIS IS A TEST

DRAWN BY: JDM
CHECKED BY: SBJ

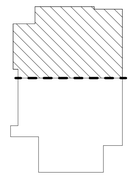
SHEET TITLE

EQUIPMENT PLAN

EQ-101



A1 FINISH PLAN
1/4" = 1'-0"



KEYPLAN

GENERAL NOTES

A. PAINT ALL EXPOSED MECHANICAL DUCTS, GRILLS AND DIFFUSERS PT2.
B. PAINT ALL SIDES OF SOFFITS - WRAP VERTICAL AND HORIZONTAL SURFACES WITH PT2 UNLESS OTHERWISE INDICATED.
C. PAINT ALL EXPOSED STEEL AND STRUCTURAL ELEMENTS PT2 UNLESS OTHERWISE INDICATED.
D. ACCENT COLORS NOTED ON FINISH PLAN.
E. HOLLOW METAL FRAMES TO BE PAINTED PT4 UNLESS OTHERWISE NOTED.
F. AT ALL WALLS INDICATED WITH – – – – – – PROVIDE VINYL WALL COVERING AND SPECIFIED SHEET FLOORING WITH INTEGRAL COVE BASE AND TRIM.

KEYED NOTES

1 CRASH RAIL ON ALL WALLS THIS ROOM.
2 END CRASH RAIL BEFORE PLUMBING FIXTURE PER ALTERNATE
3 CRASH RAIL ON ALL WALLS PER ALTERNATE THIS ROOM.

INTERIOR FINISH SCHEDULE

FLOOR:

WALK OFF CARPET TILE - 24" x 24"
CPT2 MFG: PATCRAFT COMMERCIAL
SERIES: WALK RIGHT IN II
COLOR: CHOCOLATE
*NOTE: QUARTER TURNED INSTALLATION

LUXURY VINYL TILE - 12"X24"
MFG: PATCRAFT
SERIES: SPLITWOOD
LVT1 COLOR: 00750 RUSTIC SILVER- V3
LVT2 COLOR: 00100 WASHED SILVER V3
*50/50 EQUAL MIXED COLOR PATTERN

PORCELAIN FLOOR TILE - 12"X24"
FT1 MFG: DALTILE
SERIES: INDUSTRIAL PARK
COLOR: NATURAL BEIGE
*NOTE: EPOXY GROUT: MFG: LATICRETE COLOR: 27 HEMP

SEALED CONCRETE
SC MFG: REFER TO PROJECT MANUAL

CERAMIC CARPET W/ INTEGRAL BASE - WINTEGRAL WALL BASS
EP1 MFG: DURAFLEX
SERIES: POLY-CRETE
COLOR: DARK GREY

ALUMINUM INSIDE WALL/FLOOR CORNER - COVE SHAPED PROFILE
WBC MFG: SCHLUTER SYSTEMS
SERIES: DILEX - AHKA
COLOR: ANODIZED ALUMINUM

RUBBER WALL BASE- 6" H
WB1 MFG: JOHNSONITE
SERIES: MILLWORK- REVEAL PROFIT
COLOR: #32 PEBBLE (WG)
*NOTE: INCLUDE SILICONE BEAD @ TOP OF BASE & FLOOR LEVEL

FLOOR TRANSITION STRIP
TS MFG: SCHLUTER SYSTEMS
SERIES: LVT TO EPOXY
LVT TO CONCRETE
CARPET TO CONCRETE
PORCELAIN TILE TO CONCRETE
LVT TO C
FINISH: BRUSHED ALUMINUM

WALL:

PORCELAIN WALL TILE- 12"X24"
WT1 MFG: DALTILE
SERIES: FABRIQUE
COLOR: P690 CREME LINEN UNPOLISHED
*NOTE: EPOXY GROUT: MFG- LATICRETE COLOR: 94 WALNUT

FIBERGLASS REINFORCED WALL PANEL (FRP) SIZE: 4' x 10'
FRP1 MFG: CRANE COMPOSITES
SERIES: SMOOTH FINISH W/ POLY SEAM SEALANT
COLOR: LIGHT GREY
*NOTE: PRICE TO INCLUDE PVC EDGE CAP, DIVISION BAR & INSIDE AND OUTSIDE CORNER, PER MANUFACTURERS SPECIFICATION

WALL PAINT
MFG: DUNN EDWARDS
LOCATION: WALL FIELD COLOR & CEILINGS
FINISH: EPOXY
PT1 COLOR: DE6212 CRISP MUSLIN
LOCATION: WALL ACCENT COLOR
FINISH: EPOXY
PT2 COLOR: DEC781 SYCAMORE STAND
LOCATION: OPEN TO STRUCTURE (PER ALTERNATE)
FINISH: EPOXY
PT3 COLOR: DE6370 CHARCOAL SMUDGE
LOCATION: HOLLOW METAL DOORS & FRAMES
FINISH: EPOXY
PT4 COLOR: DE6213 FINE GRAIN

CASEWORK:

PLASTIC LAMINATE
PL1 MFG: WILSONART
COLOR: PEWTER MESH 4878-38
LOCATION: ARCHITECTURAL CASEWORK

SOLID SURFACE COUNTERTOP
SS1 MFG:
COLOR: DELLA TERRA QUARTZ GRADE 1/ STANDARD, COLOR: CRISP STRIA
LOCATION: ARCHITECTURAL CASEWORK

PHENOLIC RESIN
PR MFG: BY LABORATORY CASEWORK
COLOR: WHITE
LOCATION: LABORATORY TYPE CASEWORK

WALL PROTECTION:

CORNER GUARD
CG MFG: PER SUBMITTED MANUFACTURER
COLOR: STAINLESS
LOCATION: DRINKING FOUNTAINS

CRASH RAIL
CRWP MFG: ACROVYN
MODEL: ECR-60A
FINISH: STAINLESS

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

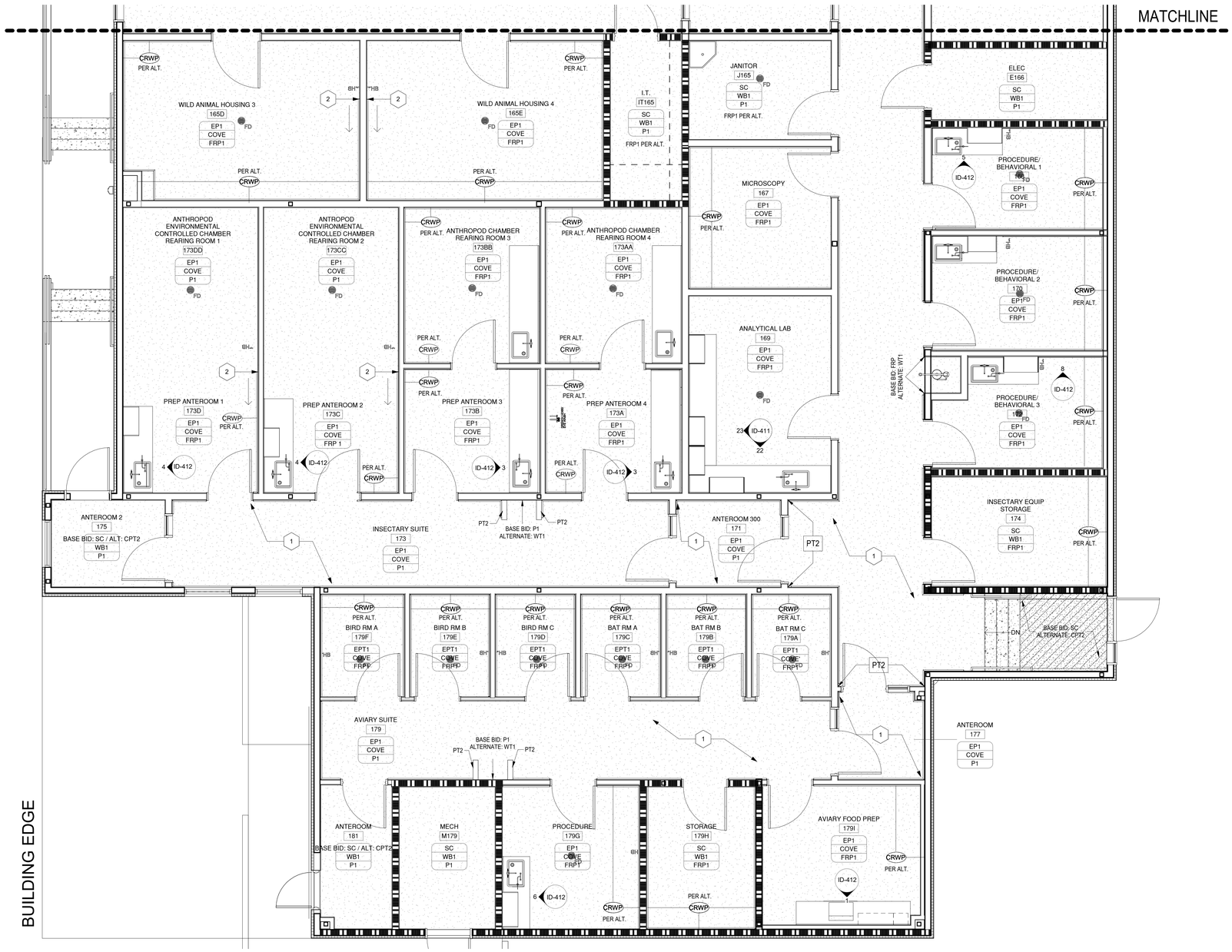
DRAWN BY: JDM
CHECKED BY: SBJ

SHEET TITLE
FLOOR FINISH PLAN A

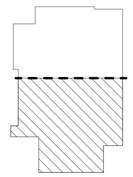
ID-101

12/4/2023 12:13:03 PM

Biomedical Research Building Expansion



1 FINISH PLAN
1/4" = 1'-0"



KEYPLAN

GENERAL NOTES

A. PAINT ALL EXPOSED MECHANICAL DUCTS, GRILLS AND DIFFUSERS PT2.
B. PAINT ALL SIDES OF SOFFITS - WRAP VERTICAL AND HORIZONTAL SURFACES WITH PT2 UNLESS OTHERWISE INDICATED.
C. PAINT ALL EXPOSED STEEL AND STRUCTURAL ELEMENTS PT2 UNLESS OTHERWISE INDICATED.
D. ACCENT COLORS NOTED ON FINISH PLAN.
E. HOLLOW METAL FRAMES TO BE PAINTED PT4 UNLESS OTHERWISE NOTED.
F. AT ALL WALLS INDICATED WITH – – – – – – PROVIDE VINYL WALL COVERING AND SPECIFIED SHEET FLOORING WITH INTEGRAL COVE BASE AND TRIM.

KEYED NOTES

1 CRASH RAIL ON ALL WALLS THIS ROOM.
2 END CRASH RAIL BEFORE PLUMBING FIXTURE PER ALTERNATE

INTERIOR FINISH SCHEDULE

FLOOR:

WALK OFF CARPET TILE - 24" x 24"
CPT2 MFG: PATCRAFT COMMERCIAL
SERIES: WALK RIGHT IN II
COLOR: CHOCOLATE
*NOTE: QUARTER TURNED INSTALLATION

LUXURY VINYL TILE - 12"X24"
MFG: PATCRAFT
SERIES: SPLITWOOD
LVT1 COLOR: 00750 RUSTIC SILVER- V3
LVT2 COLOR: 00100 WASHED SILVER V3
*50/50 EQUAL MIXED COLOR PATTERN

PORCELAIN FLOOR TILE - 12"X24"
FT1 MFG: DALTILE
SERIES: INDUSTRIAL PARK
COLOR: NATURAL BEIGE
*NOTE: EPOXY GROUT: MFG: LATICRETE COLOR: 27 HEMP

SEALED CONCRETE
SC MFG: REFER TO PROJECT MANUAL

CERAMIC CARPET W/ INTEGRAL BASE - W/INTEGRAL WALL BASS
EP1 MFG: DURAFLEX
SERIES: POLY-CRETE
COLOR: DARK GREY

ALUMINUM INSIDE WALL/FLOOR CORNER - COVE SHAPED PROFILE
WBC MFG: SCHLUTER SYSTEMS
SERIES: DILEX - AHKA
COLOR: ANODIZED ALUMINUM

RUBBER WALL BASE- 6" H
WB1 MFG: JOHNSONITE
SERIES: MILLWORK- REVEAL PROFIT
COLOR: #32 PEBBLE (WG)
*NOTE: INCLUDE SILICONE BEAD @ TOP OF BASE & FLOOR LEVEL

FLOOR TRANSITION STRIP
TS MFG: SCHLUTER SYSTEMS
SERIES: LVT TO EPOXY
LVT TO CONCRETE
CARPET TO CONCRETE
PORCELAIN TILE TO CONCRETE
LVT TO C
FINISH: BRUSHED ALUMINUM

WALL:

PORCELAIN WALL TILE- 12"X24"
WT1 MFG: DALTILE
SERIES: FABRIQUE
COLOR: P690 CREME LINEN UNPOLISHED
*NOTE: EPOXY GROUT: MFG- LATICRETE COLOR: 94 WALNUT

FIBERGLASS REINFORCED WALL PANEL (FRP) SIZE: 4' x 10'
FRP1 MFG: CRANE COMPOSITES
SERIES: SMOOTH FINISH W/ POLY SEAM SEALANT
COLOR: LIGHT GREY
*NOTE: PRICE TO INCLUDE PVC EDGE CAP, DIVISION BAR & INSIDE AND OUTSIDE CORNER, PER MANUFACTURERS SPECIFICATION

WALL PAINT
MFG: DUNN EDWARDS
LOCATION: WALL FIELD COLOR & CEILINGS
FINISH: EPOXY
PT1 COLOR: DE6212 CRISP MUSLIN
LOCATION: WALL ACCENT COLOR
FINISH: EPOXY
PT2 COLOR: DEC781 SYCAMORE STAND
LOCATION: OPEN TO STRUCTURE (PER ALTERNATE)
FINISH: EPOXY
PT3 COLOR: DE6370 CHARCOAL SMUDGE
LOCATION: HOLLOW METAL DOORS & FRAMES
FINISH: EPOXY
PT4 COLOR: DE6213 FINE GRAIN

CASEWORK:

PLASTIC LAMINATE
PL1 MFG: WILSONART
COLOR: PEWTER MESH 4878-38
LOCATION: ARCHITECTURAL CASEWORK

SOLID SURFACE COUNTERTOP
SS1 MFG:
COLOR: DELLA TERRA QUARTZ GRADE 1/ STANDARD, COLOR: CRISP STRIA
LOCATION: ARCHITECTURAL CASEWORK

PHENOLIC RESIN
PR MFG: BY LABORATORY CASEWORK
COLOR: WHITE
LOCATION: LABORATORY TYPE CASEWORK

WALL PROTECTION:

CORNER GUARD
CG MFG: PER SUBMITTED MANUFACTURER
COLOR: STAINLESS
LOCATION: DRINKING FOUNTAINS

CRASH RAIL
CRWP MFG: ACROVYN
MODEL: ECR-60A
FINISH: STAINLESS

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

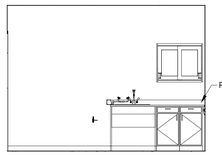
3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

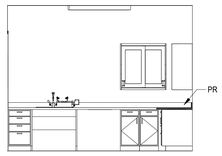
DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE
FINISH FLOOR PLAN B

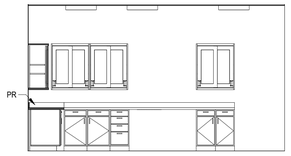
ID-102



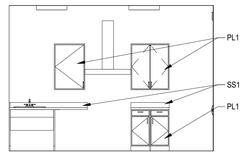
21 QUARANTINE PROCEDURE 1
1/4" = 1'-0"



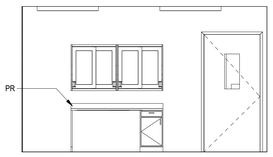
22 ANALYTICAL LAB
1/4" = 1'-0"



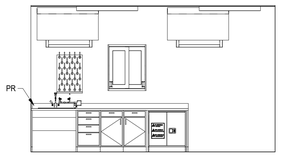
23 ANALYTICAL LAB
1/4" = 1'-0"



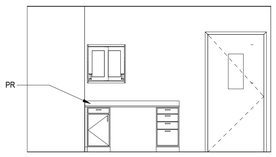
24 FOOD PREP
1/4" = 1'-0"



17 GENERAL LAB
1/4" = 1'-0"



18 GENERAL LAB
1/4" = 1'-0"

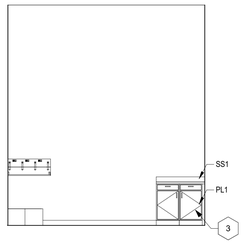


19 PHYSIOLOGY LAB
1/4" = 1'-0"

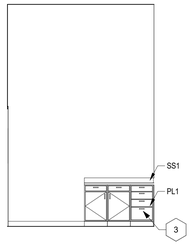
20 PHYSIOLOGY LAB
1/4" = 1'-0"

13 WORK ROOM B
1/4" = 1'-0"

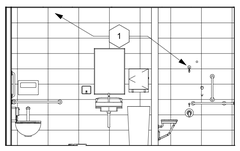
14 WORK ROOM A
1/4" = 1'-0"



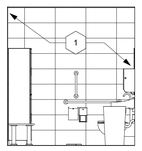
15 FLEX ROOM
1/4" = 1'-0"



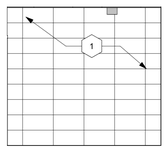
9 FLEX ROOM
1/4" = 1'-0"



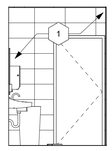
7 SHOWER ROOM B
1/4" = 1'-0"



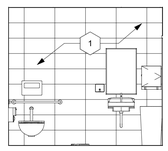
8 SHOWER ROOM A
1/4" = 1'-0"



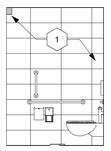
16 GN RESTROOM DD
1/4" = 1'-0"



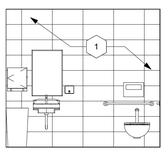
10 GN RESTROOM CC
1/4" = 1'-0"



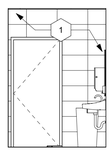
11 GN RESTROOM BB
1/4" = 1'-0"



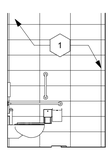
12 GN RESTROOM AA
1/4" = 1'-0"



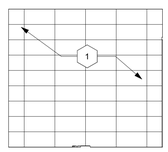
1 GN RESTROOM D
1/4" = 1'-0"



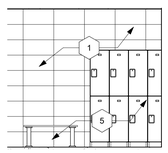
2 GN RESTROOM C
1/4" = 1'-0"



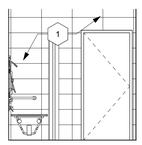
3 GN RESTROOM A
1/4" = 1'-0"



4 GN RESTROOM B
1/4" = 1'-0"



5 SHOWER ROOM D
1/4" = 1'-0"



6 SHOWER ROOM C
1/4" = 1'-0"

KEYNOTES

1 WT1 PER ALTERNATE. BASE BID PT1, EPOXY FINISH.
2 UPPER CASEWORK BY ALTERNATE. BASE BID NO CASEWORK.
3 LOWER CASEWORK AND COUTERTOP BY ALTERNATE. BASE BID NO CASEWORK.
4 COUTERTOP BY ALTERNATE. BASE BID NO CASEWORK.
5 BENCH AND LOCKERS BY ALTERNATE. BASE BID NO BENCH AND LOCKERS.

INTERIOR FINISH SCHEDULE

FLOOR:

WALK OFF CARPET TILE - 24" x 24"
CPT2 MFG: PATCRAFT COMMERCIAL
SERIES: WALK RIGHT IN II
COLOR: CHOCOLATE
*NOTE: QUARTER TURNED INSTALLATION

LUXURY VINYL TILE - 12"X24"
MFG: PATCRAFT
SERIES: SPLITWOOD
LVT1 COLOR: 00750 RUSTIC SILVER- V3
LVT2 COLOR: 00100 WASHED SILVER V3
*50/50 EQUAL MIXED COLOR PATTERN

PORCELAIN FLOOR TILE - 12"X24"
FT1 MFG: DALTILE
SERIES: INDUSTRIAL PARK
COLOR: NATURAL BEIGE
*NOTE: EPOXY GROUT: MFG: LATICRETE COLOR: 27 HEMP

SEALED CONCRETE
SC MFG: REFER TO PROJECT MANUAL

CERAMIC CARPET W/ INTEGRAL BASE - W/INTEGRAL WALL BASS
EP1 MFG: DURAFLEX
SERIES: POLY-CRETE
COLOR: DARK GREY

ALUMINUM INSIDE WALL/FLOOR CORNER - COVE SHAPED PROFILE
WBC MFG: SCHLUTER SYSTEMS
SERIES: DILEX - AHKA
COLOR: ANODIZED ALUMINUM

RUBBER WALL BASE- 6" H
WB1 MFG: JOHNSONITE
SERIES: MILLWORK- REVEAL PROFIT
COLOR: #32 PEBBLE (WG)
*NOTE: INCLUDE SILICONE BEAD @ TOP OF BASE & FLOOR LEVEL

FLOOR TRANSITION STRIP
TS MFG: SCHLUTER SYSTEMS
SERIES: LVT TO EPOXY
LVT TO CONCRETE
CARPET TO CONCRETE
PORCELAIN TILE TO CONCRETE
LVT TO C
FINISH: BRUSHED ALUMINUM

WALL:
PORCELAIN WALL TILE- 12"X24"
WT1 MFG: DALTILE
SERIES: FABRIQUE
COLOR: P690 CREME LINEN UNPOLISHED
*NOTE: EPOXY GROUT: MFG- LATICRETE COLOR: 94 WALNUT

FIBERGLASS REINFORCED WALL PANEL (FRP) SIZE: 4' x 10'
FRP1 MFG: CRANE COMPOSITES
SERIES: SMOOTH FINISH W/ POLY SEAM SEALANT
COLOR: LIGHT GREY
*NOTE: PRICE TO INCLUDE PVC EDGE CAP, DIVISION BAR & INSIDE AND OUTSIDE CORNER, PER MANUFACTURERS SPECIFICATION

WALL PAINT
MFG: DUNN EDWARDS
LOCATION: WALL FIELD COLOR & CEILINGS
FINISH: EPOXY
PT1 COLOR: DE6212 CRISP MUSLIN
LOCATION: WALL ACCENT COLOR
FINISH: EPOXY
PT2 COLOR: DEC781 SYCAMORE STAND
LOCATION: OPEN TO STRUCTURE (PER ALTERNATE)
FINISH: EPOXY
PT3 COLOR: DE6370 CHARCOAL SMUDGE
LOCATION: HOLLOW METAL DOORS & FRAMES
FINISH: EPOXY
PT4 COLOR: DE6213 FINE GRAIN

CASEWORK:
PLASTIC LAMINATE
PL1 MFG: WILSONART
COLOR: PEWTER MESH 4878-38
LOCATION: ARCHITECTURAL CASEWORK

SOLID SURFACE COUNTERTOP
SS1 MFG:
COLOR: DELLA TERRA QUARTZ GRADE 1/ STANDARD, COLOR: CRISP STRIA
LOCATION: ARCHITECTURAL CASEWORK

PHENOLIC RESIN
PR MFG: BY LABORATORY CASEWORK
COLOR: WHITE
LOCATION: LABORATORY TYPE CASEWORK

WALL PROTECTION:
CORNER GUARD
CG MFG: PER SUBMITTED MANUFACTURER
COLOR: STAINLESS
LOCATION: DRINKING FOUNTAINS

CRASH RAIL
CRWP MFG: ACROVYN
MODEL: ECR-60A
FINISH: STAINLESS

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

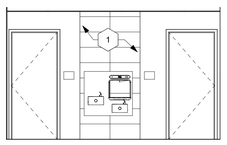
MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

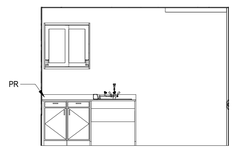
SHEET TITLE

FINISH ELEVATIONS

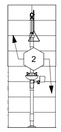
ID-411



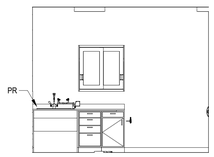
10 DRINKING FOUNTAINS
1/4" = 1'-0"



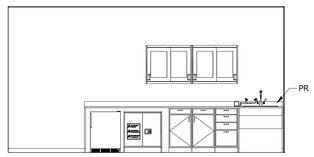
6 AVIARY PROCEDURE
1/4" = 1'-0"



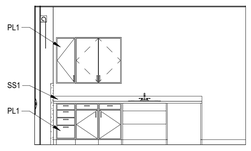
7 EMERGENCY SHOWER
1/4" = 1'-0"



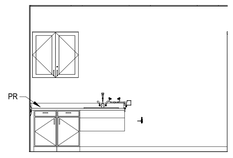
8 PROCEDURE BEHAVIOR 2
1/4" = 1'-0"



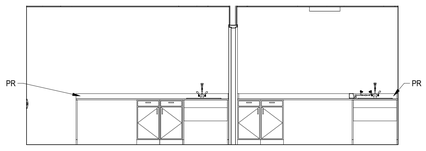
9 POSTMORTEM B
1/4" = 1'-0"



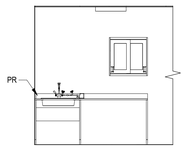
1 AVIARY FOOD PREP
1/4" = 1'-0"



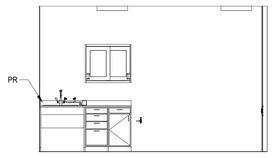
2 QUARANTINE PROCEDURE 2
1/4" = 1'-0"



3 PREP ANTEROOM 4
1/4" = 1'-0"



4 PREP ANTEROOM 1
1/4" = 1'-0"



5 PROCEDURE BEHAVIOR 1
1/4" = 1'-0"

KEYNOTES

1 WT1 PER ALTERNATE. BASE BID PT2, EPOXY FINISH.
2 WT1 PER ALTERNATE. BASE BID FRP1.

INTERIOR FINISH SCHEDULE

FLOOR:

WALK OFF CARPET TILE - 24" x 24"
CPT2 MFG: PATCRAFT COMMERCIAL
SERIES: WALK RIGHT IN II
COLOR: CHOCOLATE
*NOTE: QUARTER TURNED INSTALLATION

LUXURY VINYL TILE - 12"X24"
MFG: PATCRAFT
SERIES: SPLITWOOD
LVT1 COLOR: 00750 RUSTIC SILVER- V3
LVT2 COLOR: 00100 WASHED SILVER V3
*50/50 EQUAL MIXED COLOR PATTERN

PORCELAIN FLOOR TILE - 12"X24"
FT1 MFG: DALTILE
SERIES: INDUSTRIAL PARK
COLOR: NATURAL BEIGE
*NOTE: EPOXY GROUT: MFG: LATICRETE COLOR: 27 HEMP

SEALED CONCRETE
SC MFG: REFER TO PROJECT MANUAL

CERAMIC CARPET W/ INTEGRAL BASE - W/INTEGRAL WALL BASS
EP1 MFG: DURAFLEX
SERIES: POLY-CRETE
COLOR: DARK GREY

ALUMINUM INSIDE WALL/FLOOR CORNER - COVE SHAPED PROFILE
WBC MFG: SCHLUTER SYSTEMS
SERIES: DILEX - AHKA
COLOR: ANODIZED ALUMINUM

RUBBER WALL BASE- 6" H
WB1 MFG: JOHNSONITE
SERIES: MILLWORK- REVEAL PROFIT
COLOR: #32 PEBBLE (WG)
*NOTE: INCLUDE SILICONE BEAD @ TOP OF BASE & FLOOR LEVEL

FLOOR TRANSITION STRIP
TS MFG: SCHLUTER SYSTEMS
SERIES: LVT TO EPOXY
LVT TO CONCRETE
CARPET TO CONCRETE
PORCELAIN TILE TO CONCRETE
LVT TO C
FINISH: BRUSHED ALUMINUM

WALL:

PORCELAIN WALL TILE- 12"X24"
WT1 MFG: DALTILE
SERIES: FABRIQUE
COLOR: P690 CREME LINEN UNPOLISHED
*NOTE: EPOXY GROUT: MFG- LATICRETE COLOR: 94 WALNUT

FIBERGLASS REINFORCED WALL PANEL (FRP) SIZE: 4' x 10'
FRP1 MFG: CRANE COMPOSITES
SERIES: SMOOTH FINISH W/ POLY SEAM SEALANT
COLOR: LIGHT GREY
*NOTE: PRICE TO INCLUDE PVC EDGE CAP, DIVISION BAR & INSIDE AND OUTSIDE CORNER, PER MANUFACTURERS SPECIFICATION

WALL PAINT
MFG: DUNN EDWARDS
LOCATION: WALL FIELD COLOR & CEILINGS
FINISH: EPOXY
PT1 COLOR: DE6212 CRISP MUSLIN
LOCATION: WALL ACCENT COLOR
FINISH: EPOXY
PT2 COLOR: DEC781 SYCAMORE STAND
LOCATION: OPEN TO STRUCTURE (PER ALTERNATE)
FINISH: EPOXY
PT3 COLOR: DE6370 CHARCOAL SMUDGE
LOCATION: HOLLOW METAL DOORS & FRAMES
FINISH: EPOXY
PT4 COLOR: DE6213 FINE GRAIN

CASEWORK:

PLASTIC LAMINATE
PL1 MFG: WILSONART
COLOR: PEWTER MESH 4878-38
LOCATION: ARCHITECTURAL CASEWORK

SOLID SURFACE COUNTERTOP
SS1 MFG:
COLOR: DELLA TERRA QUARTZ GRADE 1/ STANDARD, COLOR: CRISP STRIA
LOCATION: ARCHITECTURAL CASEWORK

PHENOLIC RESIN
PR MFG: BY LABORATORY CASEWORK
COLOR: WHITE
LOCATION: LABORATORY TYPE CASEWORK

WALL PROTECTION:

CORNER GUARD
CG MFG: PER SUBMITTED MANUFACTURER
COLOR: STAINLESS
LOCATION: DRINKING FOUNTAINS

CRASH RAIL
CRWP MFG: ACROVYN
MODEL: ECR-60A
FINISH: STAINLESS

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

ACOUSTICAL
Wave Engineering
1100 Littleton Blvd #420
Littleton, CO 80120
Phone: 720.446.WAVE

LEED
Verdacity
6765 Guadalupe Trail NW
Los Ranchos, NM 87107
Phone: 505.242.2852

ARCHITECT

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
December 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

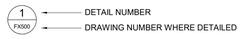
FINISH ELEVATIONS

ID-412

FIRE PROTECTION SYMBOL LEGEND

SECTION SYMBOL

DETAIL SYMBOL



SECTION, ELEVATION, AND DETAIL TITLES

SCHEMATIC SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
XX		KEYED NOTE
		POINT OF CONNECTION TO EXISTING
XXXXX		EXISTING PIPE TO BE REMOVED
		NEW PIPING
		EXISTING PIPING TO REMAIN
		NEW PIPE CONNECTION TO EXISTING PIPING
		DIRECTION OF FLOW
		DROP IN PIPE
		RISE IN PIPE
		TOP CONNECTION, 45° OR 90° BOTTOM CONNECTION, 45° OR 90°
		CAPPED OUTLET
		SIDE CONNECTION
		UNION
		FLANGED UNION
		ORIFICE UNION
		REDUCER OR INCREASER
		ECCENTRIC REDUCER
		PIPE GUIDE
		FLEXIBLE CONNECTION
		UNIVERSAL TEMPERATURE-PRESSURE FITTING (PETE'S PLUG)
		STRAINER WITH BLOWDOWN VALVE & HOSE BIBB
		PRESSURE GAUGE AND GAUGE COCK
		TEST PLUG (PRESS/TEMP)
		PENETRATION
	MAV	MANUAL AIR VENT (MAV)
A	AAV	AUTOMATIC AIR VENT (AAV)
	FS/FD/AD	FLOOR SINK , FLOOR DRAIN , AREA DRAIN
		SLOPE OF PIPE
	AG	AIR GAP FITTING
	(WH) (HB)	WALL HYDRANT, HOSE BIBB
	TP	TRAP PRIMER WITH ACCESS PANEL
		WATER MOTOR GONG
		ALARM BELL
		FIRE HOSE CABINET
		FIRE HOSE VALVE CABINET
		CLEAN AGENT FIRE SUPPRESSION
		DISCHARGE NOZZLE
		AUDIO/VISUAL ALARM
C.P.		CONTROL PANEL

PIPING SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
CA	CA	COMPRESSED AIR
FP	FP	FIRE PROTECTION; WET PIPE
DFP	DFP	FIRE PROTECTION; DRY PIPE
SP	SP	STANDPIPE; WET
DSP	DSP	STANDPIPE; DRY
DP	DP	DRY PIPE/PRE-ACTION FIRE PROTECTION

FIRE PROTECTION-INTERIOR

SYMBOL	DESCRIPTION
●	PENDENT STYLE HEAD/DRY TYPE AS NOTED
○	UPRIGHT STYLE HEAD/DRY TYPE AS NOTED
◁	SIDEWALL STYLE HEAD/DRY TYPE AS NOTED

NOTE: NOT ALL ABBREVIATIONS OR SYMBOLS APPLY TO THIS PROJECT

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ANT	ACID NEUTRALIZING TANK
BOP	BOTTOM OF PIPE
DN	DOWN
EL	ELEVATION
FFE	FINISHED FLOOR ELEVATION
FT	FEET
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HD	HEAD
HP	HORSEPOWER
IN	INCHES
INV	INVERT
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
No. #	NUMBER
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
OS&Y	OUTSIDE SCREW AND YOKE
PH	PHASE
PSIG	POUNDS PER SQUARE INCH GAUGE
SP	STATIC PRESSURE
TD	TRENCH DRAIN
TYP	TYPICAL
YB	YARD BOX
YH	YARD HYDRANT

VALVE SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
FP		ROOF MANIFOLD
FDC	FDC	FIRE DEPARTMENT INLET CONNECTION
FDC (E)	(E)FDC	EXISTING FIRE DEPARTMENT INLET CONNECTION
FP	FP	WET PIPE FIRE RISER
FP DFP	DFP	DRY PIPE FIRE RISER
FP DP		DELUGE/PREACTION FIRE RISER
FP D		INSPECTOR'S TEST CONNECTION (HORIZONTAL)
FP D		INSPECTOR'S TEST CONNECTION (VERTICAL)
		STANDPIPE VALVE
		FLOW CONTROL VALVE
		FLOW SWITCH
		GATE VALVE
		GLOBE VALVE
		OS&Y VALVE
		BUTTERFLY VALVE
OR OR		BALL VALVE
OR		CHECK VALVE
		WATER PRESSURE REDUCING VALVE
		AUTO BALL DRIP VALVE
		PRESSURE RELIEF VALVE
		TEMPERATURE AND PRESSURE RELIEF VALVE
		DRAIN VALVE
		VALVE IN VERTICAL
		FLOW SWITCH
		DIAPHRAGM (PROCESS SYSTEMS)
		REDUCED PRESSURE BACKFLOW PREVENTER (RPBP)
		ATMOSPHERIC VACUUM BREAKER
		PRESSURE STYLE VACUUM BREAKER

FIRE FLOW DATA

TEST DATE:	09/22/2022
TEST LOCATION:	HYDRANT #23
PEAK STATIC PRESSURE:	90 PSI
RESIDUAL PRESSURE:	85 PSI
FLOWING GPM:	1,000 GPM

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: DCR
CHECKED BY: NZ

SHEET TITLE

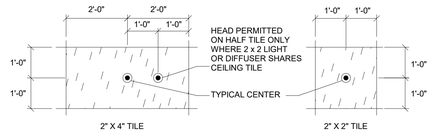
FIRE PROTECTION LEGEND

FX001

Bridgers & Paxton Project No: 8678 11/29/2023 4:04:21 PM D:\$DCR Revit local 20218678_NMSU Biomedical Research PH 3_MEP_DCRomero.rvt

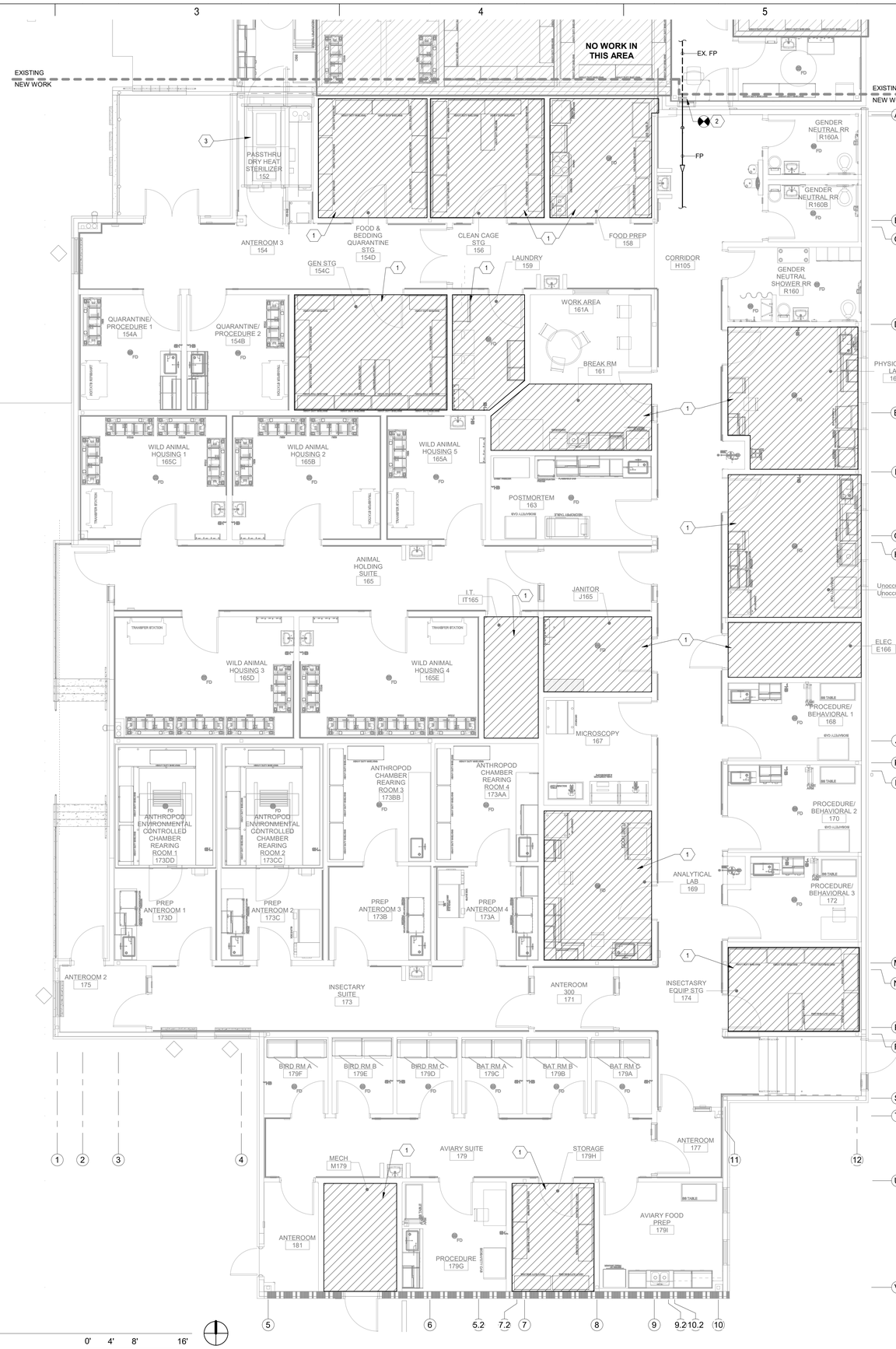
Biomedical Research Building Expansion

NOTE:
ON CEILING TILES THAT ARE LESS THAN FULL
HEAD SHALL BE CENTERED IN ALL DIRECTIONS



E1 FIRE SPRINKLER CEILING TILE DETAIL

SCALE: NOT TO SCALE



A1 FIRE PROTECTION FLOOR PLAN

3/16" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES

A. DESIGN AND INSTALL A COMPLETE AUTOMATIC WET PIPE SPRINKLER SYSTEM TO PROTECT EVERY ROOM IN THE ENTIRE BUILDING.
B. SEE FIRE SUPPRESSION SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING SUBMITTAL DRAWINGS, CALCULATIONS, ETC.
C. PROVIDE FLOW SWITCHES FOR ZONE MONITORING (ONE FOR EACH RISER) AND COORDINATE WITH WORK SHOWN ON ELECTRICAL DRAWINGS.
D. THIS SYSTEM SHALL BE INSTALLED PER IBC & NFPA. WATER SUPPLY SHALL BE TAKEN FROM THE SUPPLY FOR THE BUILDING SPRINKLERS CONNECTED DOWNSTREAM FROM THE FIRE DEPT. CONNECTION. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
E. FIRE SPRINKLER PROTECTION SYSTEM SHALL BE HYDRAULICALLY CALCULATED AND DESIGNED FOR EVERY ROOM AS REQUIRED BY LATEST APPLICABLE IBC AND NFPA.
F. ALL ROOMS SHALL BE PROTECTED WITH DESIGN DENSITY OF LIGHT HAZARD UNLESS NOTED OTHERWISE.
G. THE FOLLOWING ROOMS SHALL BE HYDRAULICALLY CALCULATED AND DESIGNED AROUND ORDINARY HAZARD GROUP ONE OCCUPANCYCLASSIFICATION AND AS REQUIRED BY LATEST APPLICABLE IBC AND NFPA; ELECTRICAL SPACES, JANITOR/HOUSEKEEPING SPACES, STORAGE AREAS, BREAKROOMS/KITCHENS, COPY AND MECHANICAL ROOMS, IT ROOMS.
H. ALL FIRE PROTECTION WET PIPING (FP) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING UNLESS NOTED OTHERWISE.
I. ALL FP DRAIN PIPING (D) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING UNLESS NOTED OTHERWISE.
J. ALL FIRE DEPARTMENT CONNECTION PIPING (FDC) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING UNLESS NOTED OTHERWISE.
K. WHERE CEILING CLOUDS ARE PRESENT, UPRIGHT FIRE SPRINKLER HEADS SHALL PROTECT THE CEILING PLENUM ABOVE THESE ELEMENTS AND PENDANT HEADS SHALL BE DESIGNED TO PROTECT THOSE AREAS OBSTRUCTED BY THE CLOUDS.
L. ADD SPRINKLER HEADS BELOW LARGE DUCTWORK WIDER THAN 48 INCHES.
M. INSTALL SPRINKLER HEADS IN CENTER OF CEILING TILES AS PER DETAIL E1/FX101.

KEYNOTES

1. DESIGN DENSITY - ORDINARY GROUP ONE.
2. CONNECT NEW FIRE PROTECTION TO EXISTING.
3. AREA ABOVE EQUIPMENT AND NEAR DOORS SHALL HAVE HIGH TEMPERATURE SPRINKLER HEADS. SEE SPEC. SECTION 21-1313.2.12.A.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: DCR
CHECKED BY: NZ

SHEET TITLE

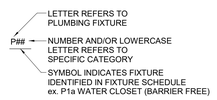
FIRE PROTECTION FLOOR PLAN

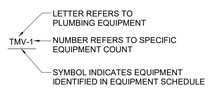
FX101

Bridgers & Paxton Project No: 8678 11/30/2023 10:37:25 AM D:\3DCR Revit local 20218678_NMSU Biomedical Research PH 3_MEP_DCRomero.rvt
Biomedical Research Building Expansion

PLUMBING SYMBOL LEGEND

PLUMBING FIXTURE & EQUIPMENT SYMBOL





P1	WATER CLOSETS
P2	URINALS
P3	LAVATORIES
P4	SINKS
P5	SERVICE SINKS
P6	WATER COOLERS/DRINKING FOUNTAINS
P7	SHOWERS/BATHTUBS
P8	WATER HAMMERS/SHOCK ABSORBERS
P9	HOSE BIBBS
P10	HYDRANTS
P11	SUPPLY BOXES
P12	WASHER BOXES
P13	EYEWASH/EYEWASH SHOWERS
P14	CLINIC SINKS
P15	TRAP PRIMER
FD1	FLOOR DRAINS
FS1	FLOOR SINKS
RD1	ROOF DRAINS
ORD1	OVERFLOW DRAINS
DSN1	DOWNSPOUT NOZZLES
AD1	AREA DRAINS
DD1	DECK DRAINS

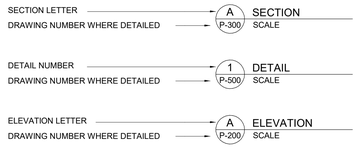
TMV-1	THERMOSTATIC MIXING VALVE
DWH-1	DOMESTIC WATER HEATER
EWH-1	ELECTRIC WATER HEATER
IWH-1	INSTANTANEOUS WATER HEATER
RCP-1	RECIRCULATION PUMP
EXP-1	EXPANSION TANK
RPZ-1	REDUCED PRESSURE ZONE BACKFLOW
BFP-1	DOUBLE CHECK BACKFLOW
GI-1	GREASE INTERCEPTOR
OI-1	OIL INTERCEPTOR
OS-1	OIL/SAND INTERCEPTOR
AN-1	ACID NEUTRALIZER
LI-1	LINT INTERCEPTOR
GM-1	GAS METER
REG-1	REGULATOR
PRV-1	PRESSURE REDUCING VALVE

NOTE: NOT ALL FIXTURE & EQUIPMENT SYMBOLS APPLY TO THIS PROJECT

SECTION SYMBOL

DETAIL SYMBOL

SECTION, ELEVATION, AND DETAIL TITLES



PIPING SYMBOLS

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

VALVE SYMBOLS

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

ABBREVIATIONS

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

NOTE: NOT ALL ABBREVIATIONS OR SYMBOLS APPLY TO THIS PROJECT

SCHEMATIC SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
XX		KEYED NOTE
		POINT OF CONNECTION TO EXISTING
XXXXX		EXISTING PIPE TO BE REMOVED
		NEW PIPING
		EXISTING PIPING TO REMAIN
		NEW PIPE CONNECTION TO EXISTING PIPING
		SLOPE OF PIPE
		DIRECTION OF FLOW
		DROP IN PIPE
		RISE IN PIPE
		TOP CONNECTION, 45° OR 90°
		BOTTOM CONNECTION, 45° OR 90°
		CAPPED OUTLET
		SIDE CONNECTION
		UNION
		FLANGED UNION
		ORIFICE UNION
		REDUCER OR INCREASER
		ECCENTRIC REDUCER
		PIPE GUIDE
		FLEXIBLE CONNECTION
		UNIVERSAL TEMPERATURE-PRESSURE FITTING (PETE'S PLUG)
		STRAINER WITH BLOWDOWN VALVE & HOSE BIBB
		THERMOMETER
		PRESSURE GAUGE AND GAUGE COCK
		AQUASTAT
OR		WATER HAMMER ARREST0R
		TEST PLUG (PRESS/TEMP)
		PENETRATION
	MAV	MANUAL AIR VENT (MAV)
A	AAV	AUTOMATIC AIR VENT (AAV)
	FS/FD/AD	FLOOR SINK , FLOOR DRAIN , AREA DRAIN
	FCO/COTG	FLOOR CLEANOUT/CLEANOUT TO GRADE
	DCOTG	TWO WAY OR DOUBLE CLEANOUT TO GRADE
	RD/OD/DD	ROOF DRAIN/OVERFLOW DRAIN/DECK DRAIN
	TP	TRAP PRIMER WITH ACCESS PANEL
	VTR	VENT THROUGH ROOF
	AG	AIR GAP FITTING
	(WH) (HB)	WALL HYDRANT, HOSE BIBB
	WCO	WALL CLEANOUT

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: DCR
CHECKED BY: NZ

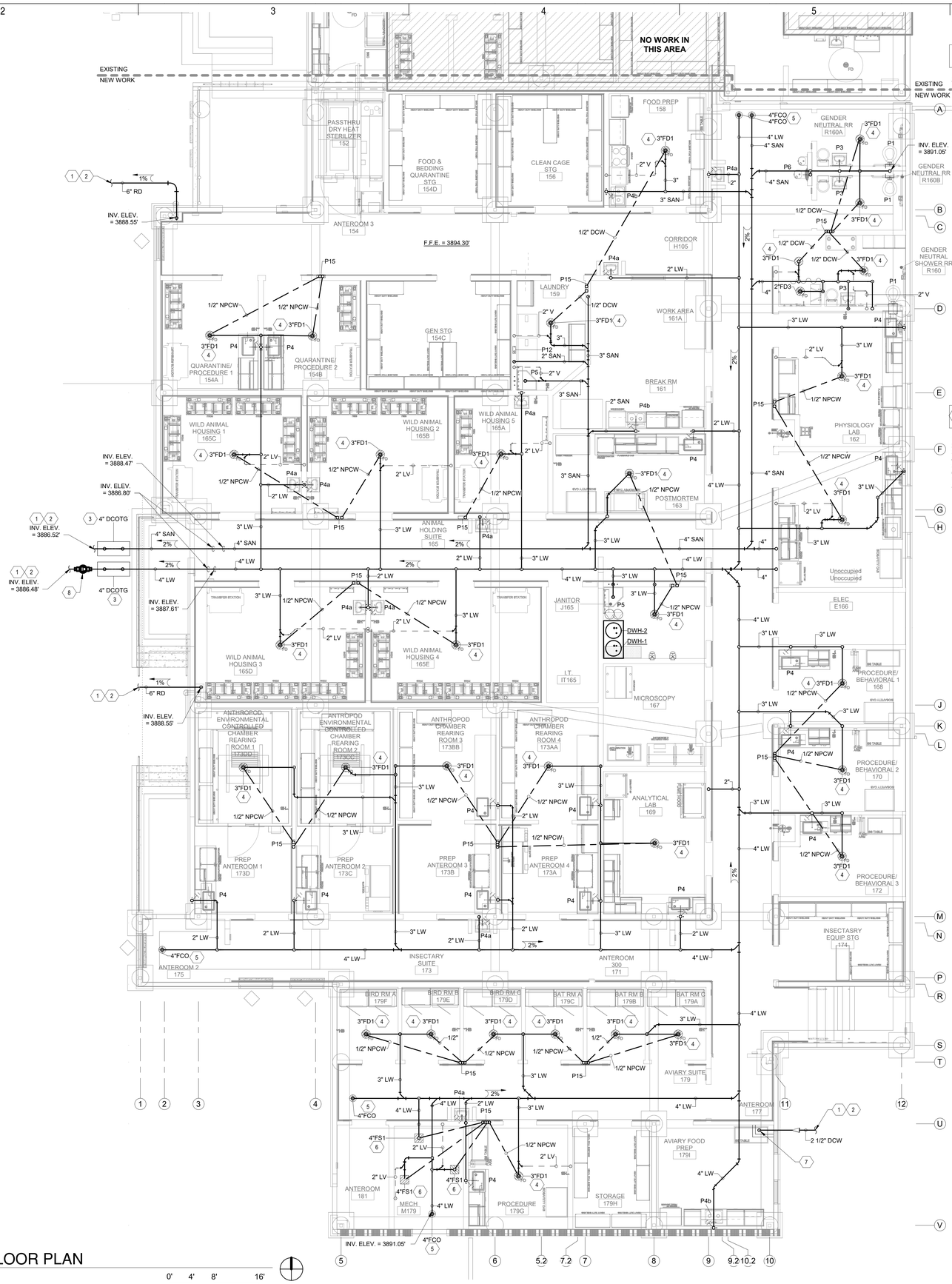
SHEET TITLE

PLUMBING LEGEND

P-001

Biomedical Research Building Expansion

Bridgers & Paxton Project No. 8678 11/30/2023 8:14:48 AM D:\$DCR Revit local 20218678_NMSU Biomedical Research PH 3_MEP_DCRomero.rvt



GENERAL NOTES

A. ALL SANITARY SEWER PIPING (SAN) SHALL BE INSTALLED BELOW FLOOR UNLESS NOTED OTHERWISE.
B. ALL LAB WASTE (LW) SHALL BE INSTALLED BELOW FLOOR UNLESS NOTED OTHERWISE.
C. ALL SANITARY VENT PIPING (V) SHALL BE INSTALLED BELOW FLOOR UNLESS NOTED OTHERWISE.
D. ALL ROOF DRAIN PIPING (RD) SHALL BE INSTALLED BELOW FLOOR UNLESS NOTED OTHERWISE.
E. ALL CW PIPING (CW) SHALL BE INSTALLED BELOW FLOOR UNLESS NOTED OTHERWISE.
F. ALL NPCW PIPING (NPCW) SHALL BE INSTALLED BELOW FLOOR UNLESS NOTED OTHERWISE.

KEYNOTES

1. ROUTE PIPING BELOW GRADE.
2. SEE CIVIL DRAWINGS FOR CONTINUATION.
3. INSTALL DOUBLE CLEANOUT TO GRADE IN ACCORDANCE WITH DETAIL D2/P-501.
4. INSTALL FLOOR DRAIN IN ACCORDANCE WITH DETAIL B1/P-501.
5. INSTALL FLOOR CLEANOUT IN ACCORDANCE WITH DETAIL D5/P-501.
6. INSTALL FLOOR SINK IN ACCORDANCE WITH DETAIL B2/P-501.
7. INSTALL WATER ENTRY THRU FOOTING IN ACCORDANCE WITH DETAIL D1/P-501.
8. INSTALL SAMPLING PORT BELOW GRADE. SCHEIR NO. SV10 WITH FIELD CUT EXTENSION RISER.

A1 PLUMBING UNDERFLOOR PLAN
3/16" = 1'-0"

0' 4' 8' 16'

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: DCR
CHECKED BY: NZ

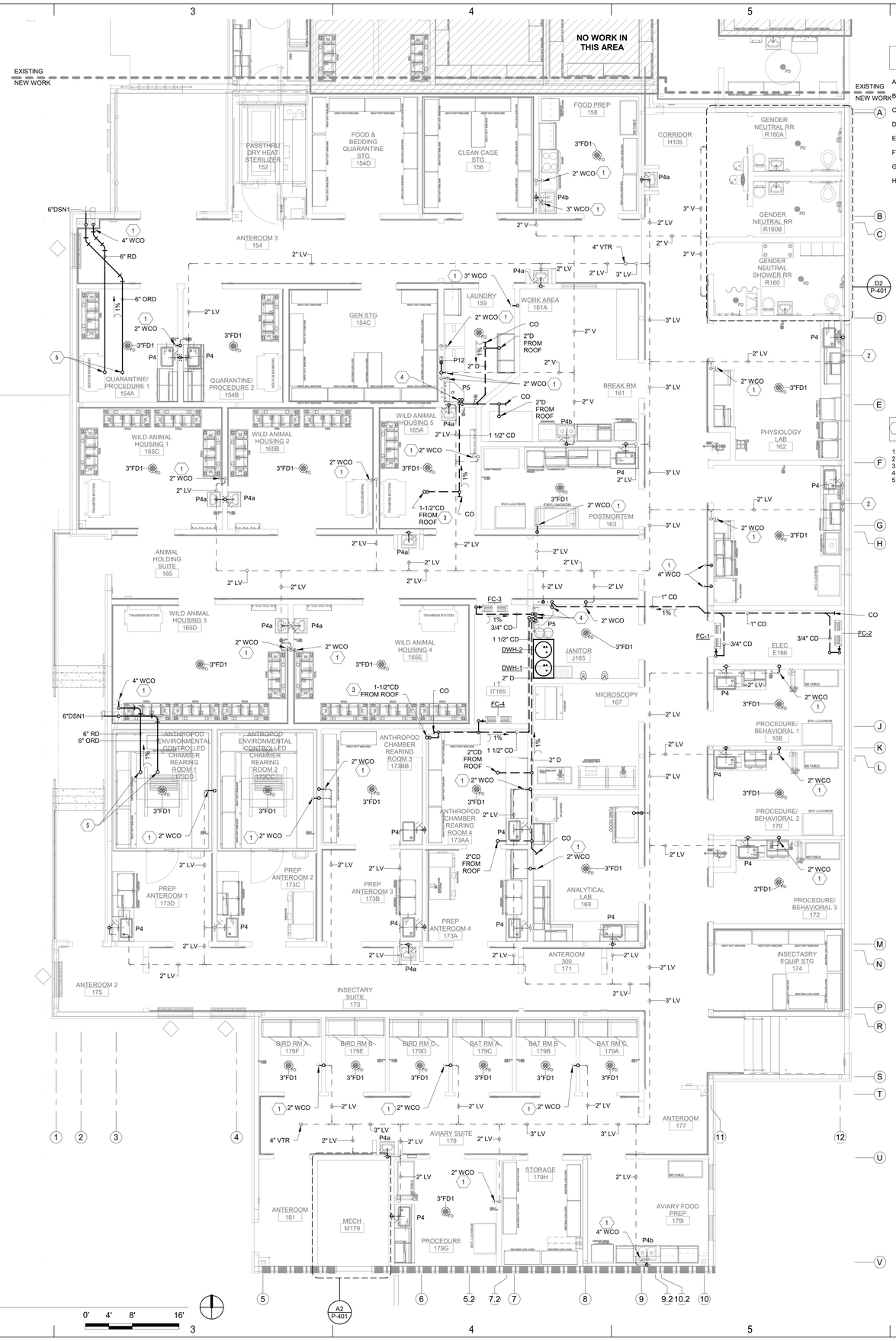
SHEET TITLE

PLUMBING UNDERFLOOR PLAN

PL100

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 10:54:48 AM D:\BDCR Revit local\ 20218678_NMSU Biomedical Research PH 3_MEP_DCRomero.rvt



A1 WASTE & VENT FLOOR PLAN
3/16" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES

A. ALL SANITARY SEWER PIPING (SAN) SHALL BE INSTALLED BELOW FLOOR UNLESS NOTED OTHERWISE.
B. ALL SANITARY VENT PIPING (V) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
C. ALL ROOF DRAIN PIPING (RD) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
D. ALL OVERFLOW ROOF DRAIN PIPING (ORD) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
E. ALL CONDENSATE DRAIN PIPING (CD) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
F. ALL DRAIN PIPING (D) SHALL BE INSTALLED ABOVE CEILING UNLESS NOTED OTHERWISE.
G. ALL VERTICAL SANITARY SEWER PIPING ABOVE FINISH FLOOR SHALL HAVE WALL CLEANOUT INSTALLED AS PER DETAIL D4/P-501.
H. REFER TO PLUMBING ROUGH-IN SCHEDULE ON SHEET P-702 FOR CONNECTION SIZES TO PLUMBING FIXTURES.

KEYNOTES

1. INSTALL WALL CLEANOUT IN ACCORDANCE WITH DETAIL D4/P-501.
2. ROUTE PIPING BELOW WINDOW.
3. INSTALL ROOF TOP UNIT DRAIN IN ACCORDANCE WITH DETAIL B5/P-501.
4. DISCHARGE CD INTO MOP SINK WITH AIR GAP OF 2X PIPE DIA. ABOVE SINK RIM.
5. SEE SHEET PL131 FOR CONNECTION TO ROOF DRAINS.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: DCR
CHECKED BY: NZ

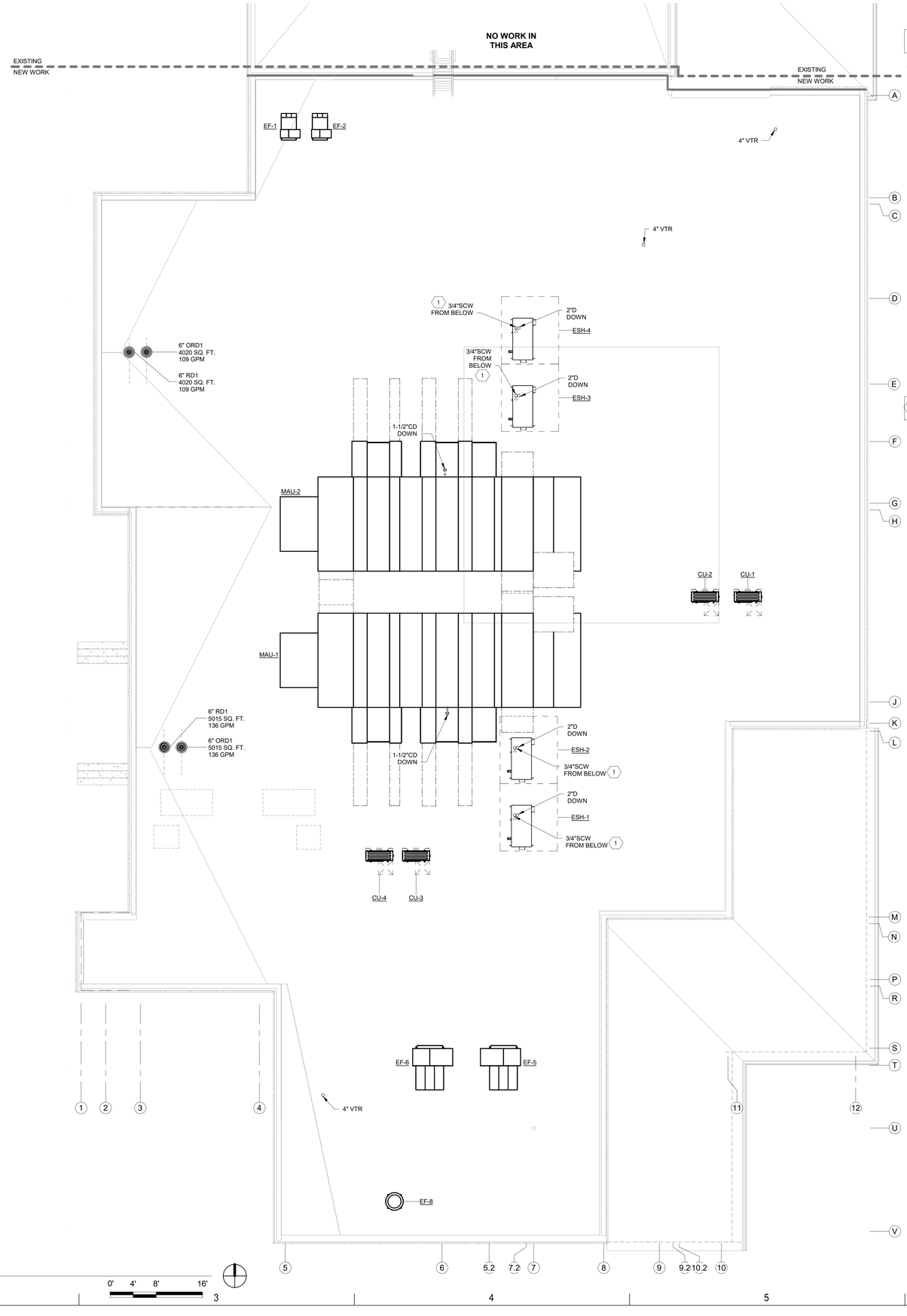
SHEET TITLE

WASTE & VENT FLOOR PLAN

PL101

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 10:38:19 AM D:\8DCR Revit local 20218678_NMSU Biomedical Research PH 3_MEP_DCRomero.rvt



GENERAL NOTES

A. SEE SHEET PL101 FOR ROOF DRAIN PIPING IN CEILING SPACE.
B. SEE MECHANICAL DRAWINGS FOR ROOF TOP EQUIPMENT.
C. REFER TO MANUFACTURERS RECOMMENDATIONS FOR DRAIN AND SUPPLY CONNECTIONS TO HUMIDIFIERS.

KEYNOTES

1. CONNECT SCW TO EQUIPMENT WITH SHUT-OFF VALVE AND UNION.

A1 PLUMBING ROOF PLAN
3/16" = 1'-0"

0' 4' 8' 16'

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

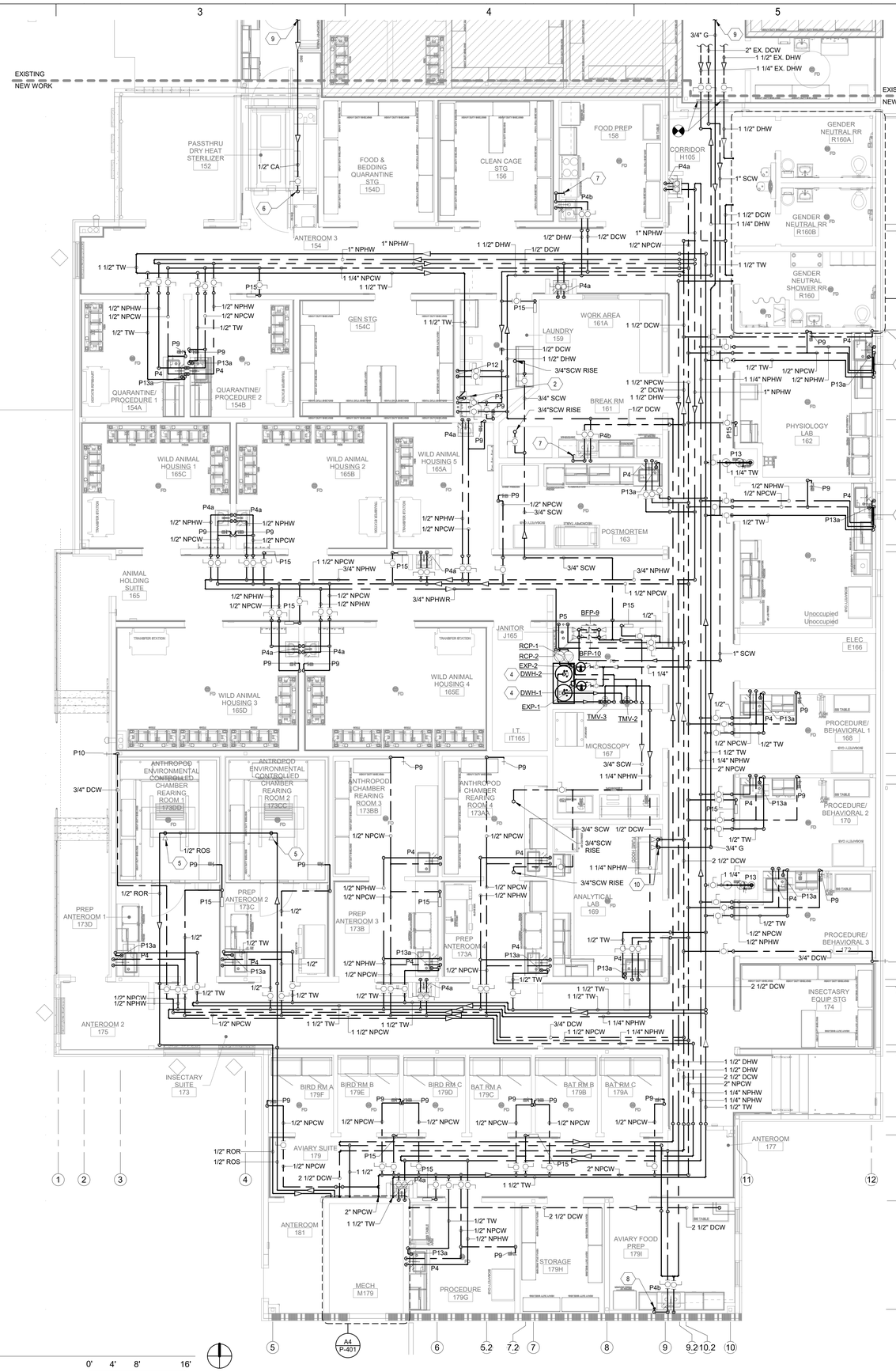
MARK	DATE	DESCRIPTION

DRAWN BY: DCR
CHECKED BY: NZ

SHEET TITLE
PLUMBING ROOF PLAN

PL131

Bridgers & Paxton Project No: 8678 11/30/2023 10:40:59 AM D:\$DCR Revit local 20218678_NMSU Biomedical Research PH 3_MEP_DCRomero.rvt
Biomedical Research Building Expansion



GENERAL NOTES

A. ALL DOMESTIC COLD WATER (DCW) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
B. ALL DOMESTIC HOT WATER (DHW) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
C. ALL DOMESTIC HOT WATER RETURN (DHWR) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
D. ALL NON-POTABLE COLD WATER (NPCW) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
E. ALL NON-POTABLE HOT WATER (NPHW) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
F. ALL NON-POTABLE HOT WATER RETURN (NPHWR) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
G. ALL TEMPERED WATER (TW) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
H. ALL RO SUPPLY WATER (ROS) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
I. ALL RO RETURN WATER (ROR) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
J. ALL SOFTEN COLD WATER (SCW) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
K. ALL WATER SUPPLY SHUT-OFF VALVES FOR EMERGENCY FIXTURES SHALL BE LOCKED OPEN OR HAVE HANDLE REMOVED AFTER OPENING.
L. REFER TO PLUMBING ROUGH-IN SCHEDULE ON SHEET P-702 FOR CONNECTION SIZES TO PLUMBING FIXTURES.
M. ALL NATURAL GAS PIPING (G) SHALL BE INSTALLED ABOVE CEILING OR HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.

KEYNOTES

1. ROUTE PIPING IN WALL BELOW WINDOW ON WARM SIDE OF INSULATION.
2. INSTALL SHUT-OFF VALVE FOR TEPID WATER LINE DRAIN. PROVIDE IDENTIFICATION SIGN THAT READS "OPERATION OF THIS FIXTURE SERVES TO PURGE EMERGENCY FIXTURES ON THIS FLOOR. NOTIFY PROJECT OFFICER OF THIS WARNING TAG IF MODIFYING THIS PIPING OR REMOVING THIS PLUMBING FIXTURE".
3. ROUTE 1/2" SCW TO HUMIDIFIER ON ROOF.
4. INSTALL NON-POTABLE WATER HEATER IN ACCORDANCE WITH DETAIL C4/P-502.
5. CONNECT 1/2" RO TO EQUIPMENT IN CEILING SPACE WITH SHUT-OFF VALVE AND UNION AS PER MANUFACTURERS RECOMMENDATIONS..
6. CONNECT 1/2" CA WITH PRESSURE REGULATOR TO DRY HEAT STERILIZER. SEE MANUFACTURERS INSTRUCTION MANUAL FOR MORE INFORMATION.
7. ROUTE 1/2" DCW TO UNDERCOUNTER DISHWASHER.
8. ROUTE AND CAP 1/2" DCW TO FUTURE UNDERCOUNTER DISHWASHER.
9. SEE SHEET PP102 FOR CONTINUATION.
10. CONNECT WATER AND GAS TO FUME HOOD WITH SHUT-OFF VALVES AS PER MANUFACTURERS RECOMMENDATIONS.

A1 PRESSURE PIPING FLOOR PLAN
3/16" = 1'-0"

0' 4' 8' 16'

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

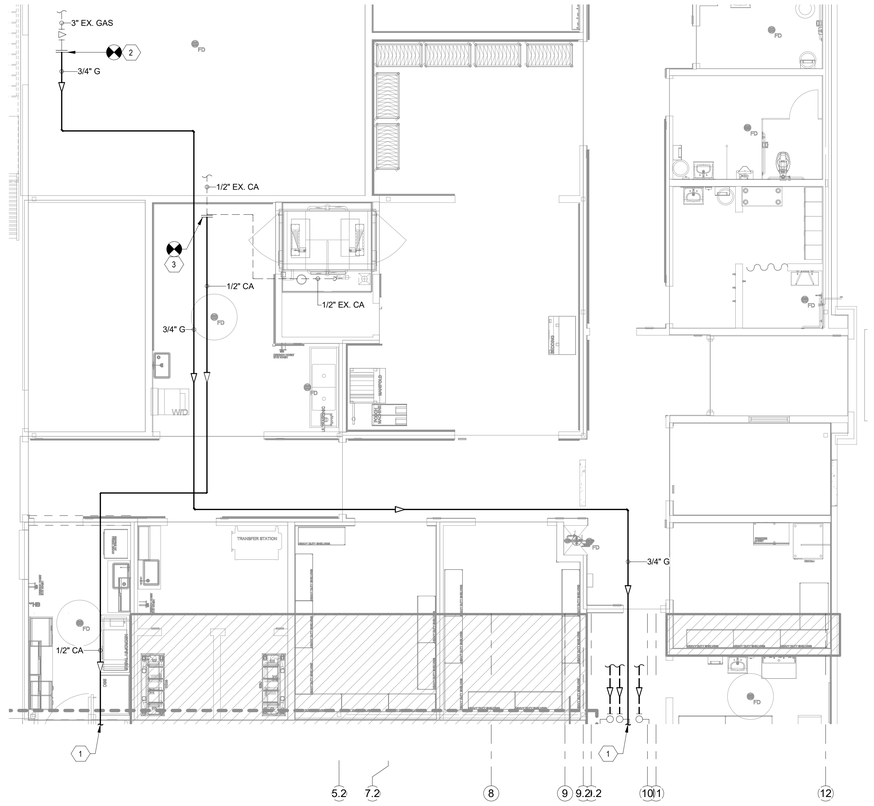
DRAWN BY: DCR
CHECKED BY: NZ

SHEET TITLE
PRESSURE PIPING FLOOR PLAN

PP101

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 10:39:20 AM D:\$DCR Revit local 20219878_NMSU Biomedical Research PH 3_MEP_DCRomero.rvt



C2 PRESSURE PIPING FLOOR PLAN - EX. PHASE 2 BUILDING

SCALE: 3/16" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES

A. ALL NATURAL GAS PIPING (G) SHALL BE INSTALLED ABOVE CEILING SPACE UNLESS NOTED OTHERWISE.
B. ALL COMPRESSED AIR (CA) SHALL BE INSTALLED ABOVE CEILING SPACE UNLESS NOTED OTHERWISE.

KEYNOTES

1. SEE SHEET PP101 FOR CONTINUATION.
2. CONNECT NEW GAS TO EXISTING.
3. CONNECT NEW CA TO EXISTING.

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: DCR
CHECKED BY: NZ

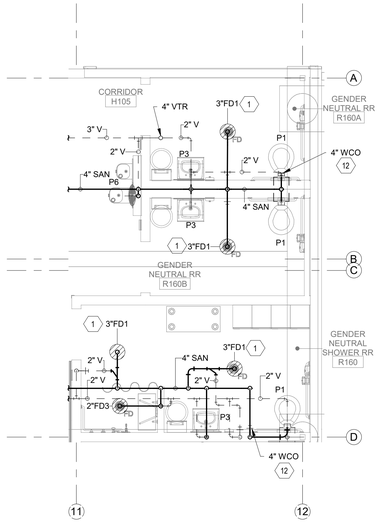
SHEET TITLE

PRESSURE PIPING FLOOR PLAN

PP102

Biomedical Research Building Expansion

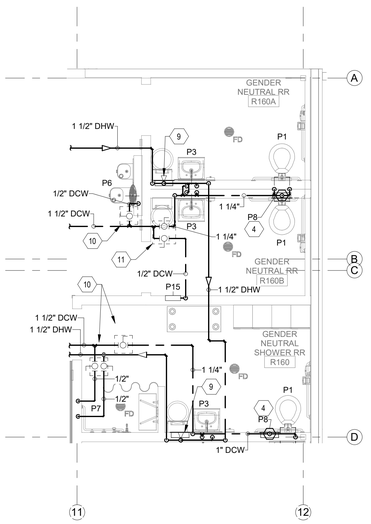
Bridgers & Paxton Project No: 8678 11/30/2023 10:40:12 AM D:\BDCR Revit local 20218678_NMSU Biomedical Research PH 3_MEP_DCRomero.rvt



D2 ENLARGED WASTE & VENT PLAN

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

0' 2' 4' 8'



D4 ENLARGED PRESSURE PIPING PLAN

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

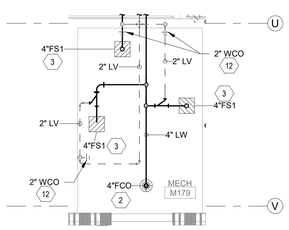
0' 2' 4' 8'

GENERAL NOTES

A. ALL SANITARY SEWER PIPING (SAN) SHALL BE INSTALLED BELOW FLOOR UNLESS NOTED OTHERWISE.
B. ALL SANITARY VENT PIPING (V) SHALL BE INSTALL HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
C. ALL DOMESTIC COLD WATER (DCW) SHALL BE INSTALLED HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
D. ALL DOMESTIC HOT WATER (DHW) SHALL BE INSTALLED HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
E. ALL DOMESTIC HOT WATER RETURN (DHWR) SHALL BE HIGH IN EXPOSED CEILING SPACE UNLESS NOTED OTHERWISE.
F. ALL VERTICAL SANITARY PIPING ABOVE GRADE SHALL HAVE WALL CLEANOUT INSTALLED AS PER DETAIL D4/P-501.

KEYNOTES

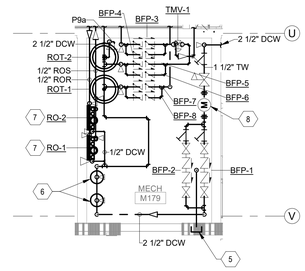
1. INSTALL FLOOR DRAIN IN ACCORDANCE WITH DETAIL B1/P-501.
2. INSTALL FLOOR CLEANOUT IN ACCORDANCE WITH DETAIL D5/P-501.
3. INSTALL FLOOR SINK IN ACCORDANCE WITH DETAIL B2/P-501.
4. INSTALL WATER HAMMER ARRESTOR IN ACCORDANCE WITH DETAIL B4/P-501.
5. INSTALL RPZ CATASTROPHIC DRAIN IN ACCORDANCE WITH DETAIL A2/P-501.
6. INSTALL WATER FILTRATION SYSTEM IN ACCORDANCE WITH DETAIL A5/P-501.
7. INSTALL RO SYSTEM IN ACCORDANCE WITH DETAIL A1/P-502.
8. INSTALL DOMESTIC WATER ENTRY ASSEMBLY IN ACCORDANCE WITH DETAIL A5/P-502.
9. INSTALL 1/2" BALL VALVE BEHIND 14"X14" ACCESS DOOR LOW ON WALL TO SUPPLY 1/2" DHW TO LAVATORY.
10. INSTALL 14"X14" ACCESS DOOR.
11. INSTALL 18"X18" ACCESS DOOR.
12. INSTALL WALL CLEANOUT IN ACCORDANCE WITH DETAIL D4/P-501.



A2 ENLARGED WASTE & VENT PLAN

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

0' 2' 4' 8'



A4 ENLARGED PRESSURE PIPING PLAN

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

0' 2' 4' 8'

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: DCR
CHECKED BY: NZ

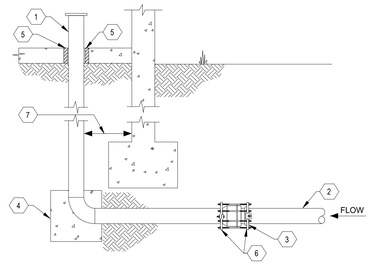
SHEET TITLE

ENLARGED PLUMBING PLANS

P-401

Biomedical Research Building Expansion

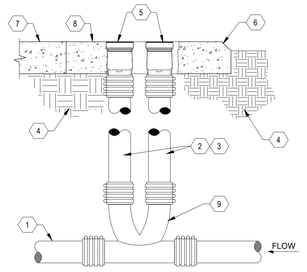
Bridgers & Paxton Project No: 8678 11/30/2023 10:45:24 AM D:\SDCR Revit local 2021\8678_NMSU Biomedical Research PH 3_MEP_DCRomero.rvt



1. AMES IN-BUILDING RISER. STAINLESS STEEL TYPE 304. SEE PLANS FOR SIZE AND SERVICE
2. DUCTILE IRON OR PVC WATER SERVICE.
3. MECHANICAL JOINT FROM SUPPLY PIPE TO STAINLESS STEEL, CONTINUE INTO BUILDING WITH STAINLESS STEEL
4. CONCRETE THRUST BLOCK SIZED IN ACCORDANCE WITH IBC IF REQUIRED BY AHJ
5. PIPE SLEEVE, SEE SPECIFICATIONS
6. MEGALUG PIPE RESTRAINT HARNESS
7. VERTICAL SECTION OF RISER LOCATED AS CLOSE AS POSSIBLE TO WALL

D1 WATER ENTRY BELOW FOOTING DETAIL

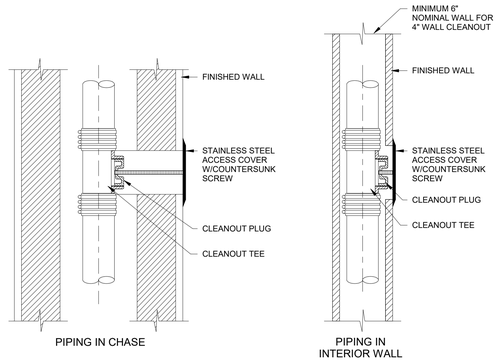
SCALE: NOT TO SCALE



1. SERVICE LINE, SEE SPECIFICATIONS FOR PIPE MATERIALS
2. SAME SIZE AS SERVICE LINE, THRU 4" PIPE, MAXIMUM 4"
3. SIZE REQUIRED CAST IRON SOIL PIPE RISER AND FITTINGS
4. COMPACTED EARTH, SEE SPECIFICATIONS
5. CLEANOUT WITH HEAVY DUTY SCORIATED SECURED TOP
6. 2" CHAMFER ON ALL COLLARS IN EARTH
7. FINISH HARDSCAPE. SEE SITE PLAN DRAWINGS FOR ELEVATIONS
8. 4"THICK CONCRETE PAD
9. TWO-WAY CLEANOUT FITTING

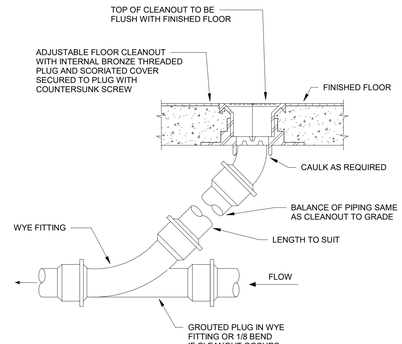
D2 DOUBLE CLEANOUT TO GRADE DETAIL

SCALE: NOT TO SCALE



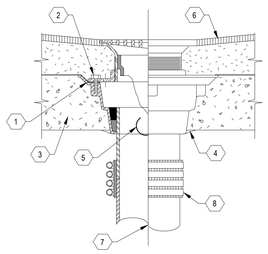
D4 WALL CLEANOUT DETAIL

SCALE: NOT TO SCALE



D5 FLOOR CLEANOUT

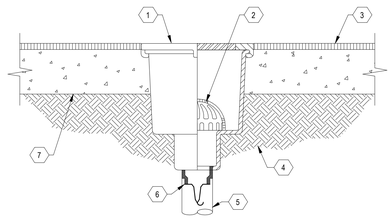
SCALE: NOT TO SCALE



1. FLOOR DRAIN WITH ADJUSTABLE STRAINER, DOUBLE DRAINAGE FLANGE AND WEEP HOLES. SEE FLOOR DRAIN SPECIFICATIONS
2. CLAMP TO 24"x24" 4# LEAD SHEET AND WATERPROOFING MEMBRANE (NOT REQUIRED FOR SINGLE POUR CONSTRUCTION)
3. CONCRETE FLOOR OF TWO POUR CONSTRUCTION
4. CAULK AS REQUIRED ON INSTALLATION ABOVE GRADE
5. TRAP GUARD WATER SAVING DEVICE SIZED PER DRAIN (IF SPECIFIED)
6. FINISHED FLOOR SLOPED IN ACCORDANCE WITH ARCH. DRAWINGS. COORDINATE WITH STRUCTURAL
7. SEE PLUMBING FLOOR PLANS FOR SIZING AND P-TRAP REQUIREMENTS
8. FOUR BAND HEAVY DUTY CLAMP, SEE SPECIFICATIONS

B1 FLOOR DRAIN DETAIL

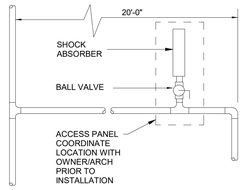
SCALE: NOT TO SCALE



1. FLOOR SINK GRATING, SEE FLOOR SINK SPECIFICATIONS
2. DOME STRAINER
3. FINISHED FLOOR
4. COMPACTED EARTH
5. SEE PLUMBING FLOOR PLANS FOR SIZING AND P-TRAP REQUIREMENTS
6. TRAP GUARD WATER SAVING DEVICE (SPECIFIED)
7. STRUCTURAL SLAB

B2 FLOOR SINK DETAIL

SCALE: NOT TO SCALE



NOTE:

FOR BRANCH LINES 20' OR LESS INSTALL SHOCK ABSORBERS BETWEEN LAST TWO FIXTURES.

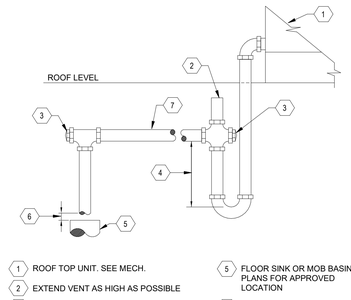
FOR BRANCH LINES OVER 20' PROVIDE TWO SHOCK ABSORBER UNITS. THE SECOND ONE PLACED AT THE MIDPOINT OF THE LINE.

SHOCK ABSORBER SCHEDULE						
* PDI CROSS REFERENCE	A	B	C	D	E	F
FIXTURE UNITS	1-11	12-32	33-60	61-113	114-154	155-330
PIPE SIZE	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"

* PDI - PLUMBING AND DRAINAGE INSTITUTE.

B4 SHOCK ABSORBER INSTALLATION

SCALE: NOT TO SCALE

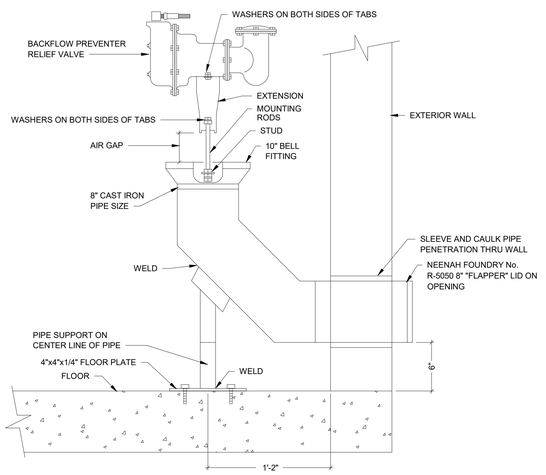


1. ROOF TOP UNIT. SEE MECH.
2. EXTEND VENT AS HIGH AS POSSIBLE
3. CLEANOUT PLUG
4. TRAP SEAL, DEPTH OF SEAL = STATIC PRESSURE (S.P.) DRAW THRU USE 1.5" + S.P. BLOW THRU USE 2" + S.P.
5. FLOOR SINK OR MOB BASIN SEE PLANS FOR APPROVED LOCATION
6. INDIRECT CONNECTION 2 x PIPE DIAMETER
7. SLOPE PIPE TOWARDS DRAIN MIN. 1/8" PER FOOT

DRAIN SIZING					
TONS	≤20	≤40	≤90	≤125	≤250
PIPE DIA.	3/4"	1"	1-1/4"	1-1/2"	2"

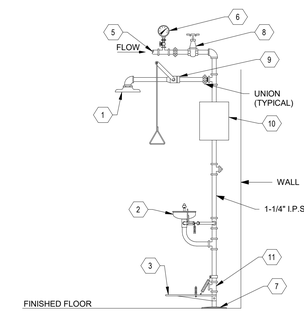
B5 ROOF TOP UNIT DRAIN DETAIL

SCALE: NOT TO SCALE



A2 RPZ CATASTROPHIC DRAIN DETAIL

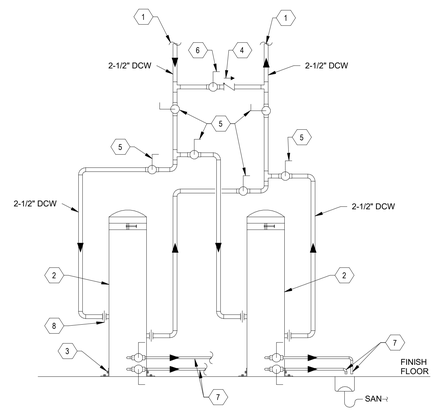
SCALE: NOT TO SCALE



1. SHOWERHEAD, DELUGE TYPE
2. FACE/EYEWASH
3. FOOT CONTROL (IF SPECIFIED)
4. NOT USED
5. 1-1/4" TEPID WATER
6. COLOR-COATED DIAL THERMOMETER (0 TO 140°F)
7. ANCHOR FLANGE BOLTED TO FLOOR
8. 1-1/4" SHUT-OFF (N.O.) VALVE (O.S.&Y OR VISIBLE RISING STEM WITH NAME TAG). VALVE SHALL BE ACCESSIBLE. REMOVE VALVE HANDLE AND RETURN TO OWNER
9. ACTUATING VALVE: STAY OPEN BALL VALVE FLOW RATE 18 TO 40 GPM, FLOW PRESSURE 20 TO 50 PSI
10. PROVIDE SIGNAGE PER ANSI Z358.1. REFER TO ARCHITECTURAL DRAWINGS FOR SIGNAGE AND LOCATION
11. 1-1/4" NPT WASTE FITTING ROTATED AWAY FROM WALL

A4 EMERGENCY SHOWER EYEWASH

SCALE: NOT TO SCALE



1. SEE SHEET PP101 FOR CONT'N
2. FILTER HOUSING
3. MOUNTING TABS (TYPICAL)
4. 2" BYPASS W/CHECK VALVE
5. NORMALLY OPEN VALVE
6. NORMALLY CLOSED VALVE
7. FULL SIZE DRAIN INTO FLOOR SINK WITH AIR GAP OF 2X ABOVE SINK RIM
8. UNION (TYPICAL)

A5 WATER FILTRATION DETAIL

SCALE: NOT TO SCALE

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

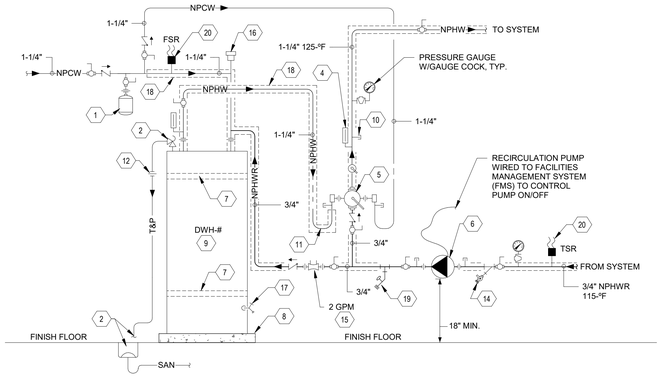
DRAWN BY: DCR
CHECKED BY: NZ

SHEET TITLE

PLUMBING DETAILS

P-501

Bridgers & Paxton Project No: 8678
11/30/2023 8:14:51 AM D:\BDCR Revit local 2021\8678_NMSU Biomedical Research PH 3_MEP_DCRomero.rvt
Biomedical Research Building Expansion



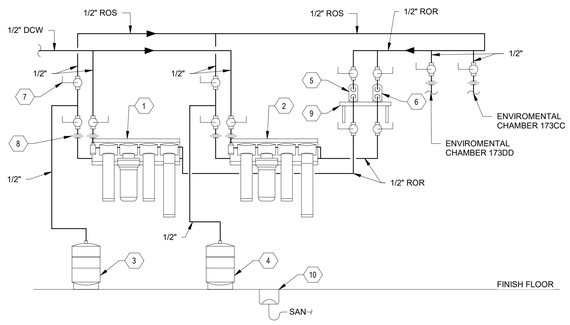
1. IN-LINE EXPANSION TANK, **EXP-#**
2. FULL SIZED T&P RELIEF VALVE. DISCHARGE TO FLOOR SINK WITH AIR GAP OF 2X PIPE DIA. ABOVE FLOOR SINK RIM
3. NOT USED
4. THERMOMETER (TYPICAL)
5. THERMOSTATIC MIXING VALVE, **TMV-#**
6. RECIRCULATION PUMP, **RCP-#**
7. SEISMIC STRAPPING PER UPC 508.2 OR **IPC 502.4 (IF REQUIRED).**
8. 4" MIN. HOUSEKEEPING PAD
9. WATER HEATER, SEE SPEC'S
10. PETE'S PLUGS (TYPICAL)
11. HEAT TRAP PER MFG. SPEC'S
12. UNION (TYPICAL)
13. NOT USED
14. WYE STRAINER WITH BLOWDOWN VALVE
15. CIRCUIT SETTER/BALANCING VALVE, SET TO GPM SHOWN
16. 3/4" VACUUM RELIEF VALVE
17. TANK DRAIN, PROVIDE WITH BALL VALVE AND 3/4" NPT OUTLET.
18. FIRST 8 FT OF PIPING INLET/OUTLET MUST BE INSULATED PER 2018 IECC (SEC. C404.3). INSULATE REST OF HOT WATER SYSTEM PER SPECIFICATIONS
19. PIPE MOUNT HOSE BIB
20. FLOW SENSOR (FSR) ON COLD WATER INLET, TEMPERATURE SENSOR (TSR) ON HOT WATER RETURN, WIRED TO FACILITY MANAGEMENT SYSTEM (FMS), PER 2018 IECC C404.6.1. COORDINATE WITH CONTROLS.

NOTE:
WATER HEATER SHALL BE OF THE DIRECT VENTING TYPE, COORDINATE WITH MECHANICAL

INSTALL THERMOSTATIC MIXING VALVE ASSEMBLY IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATION. PROVIDE PIPING SCHEMATIC WITH SUBMITTALS.

C4 NON-POTABLE WATER HEATER W/FMS DETAIL - 2018 IECC

SCALE: NOT TO SCALE

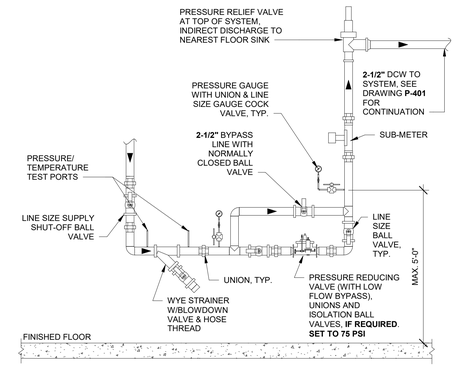


1. REVERSE OSMOSIS SYSTEM RO-1
2. REVERSE OSMOSIS SYSTEM RO-2
3. RO STORAGE TANK ROT-1
4. RO STORAGE TANK ROT-2
5. RO RECIRC. PUMP RO-RCP-1
6. RO RECIRC. PUMP RO-RCP-2
7. BALL VALVE (TYPICAL)
8. UNION (TYPICAL)
9. WALL MOUNTED SHELF
10. FLOOR SINK

NOTE:
INSTALL RO SYSTEM ASSEMBLY IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATION.

A1 RO SYSTEM DETAIL

SCALE: NOT TO SCALE



NOTE: BACKFLOW PREVENTER LOCATED ON SITE, COORDINATE WITH CIVIL DWGS.

A5 DOMESTIC WATER ENTRY ASSEMBLY DETAIL

SCALE: NOT TO SCALE

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: DCR
CHECKED BY: NZ

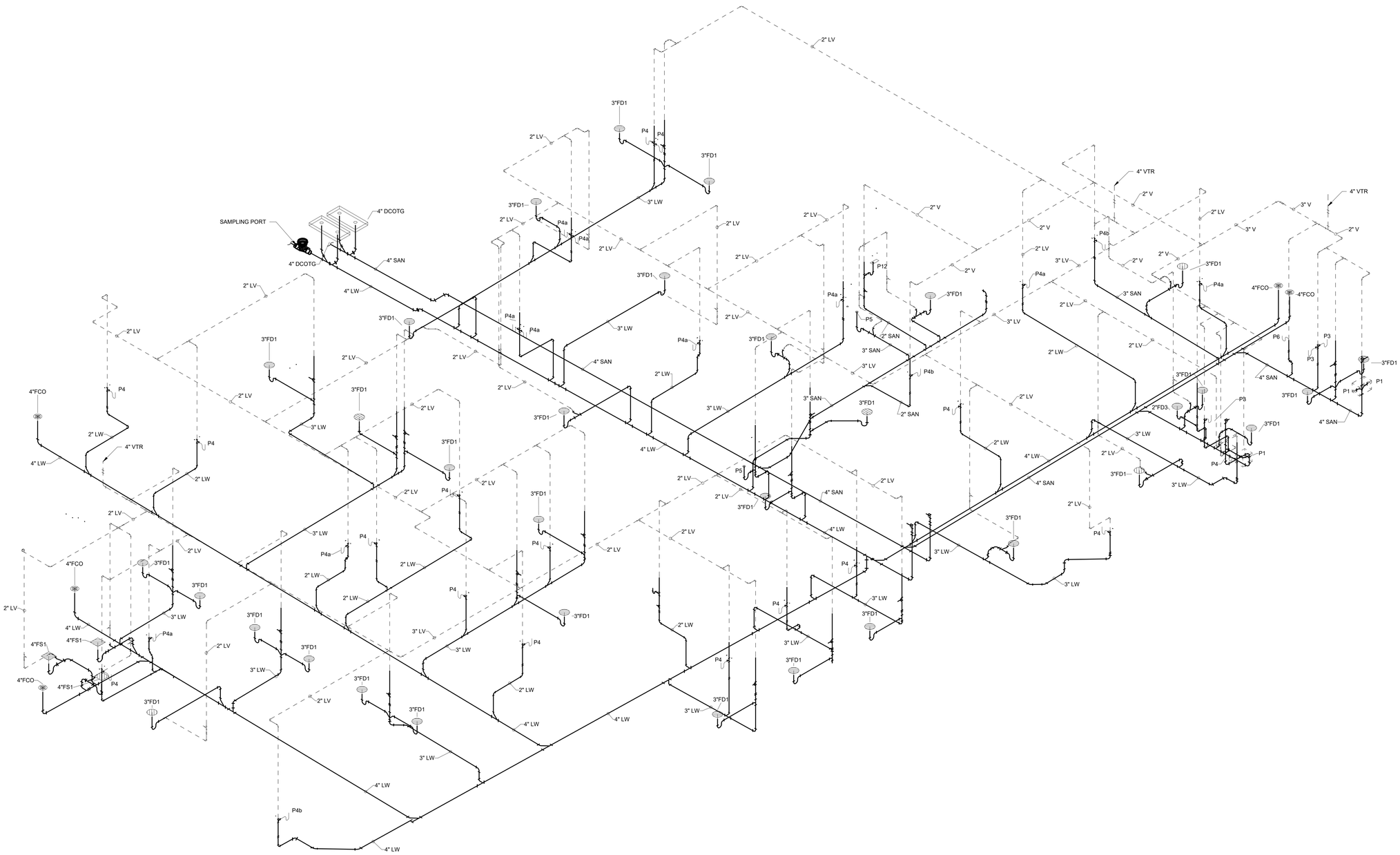
SHEET TITLE

PLUMBING DETAILS

P-502

Bridgers & Paxton Project No: 8678 11/30/2023 8:14:52 AM D:\SDCR Revit local 2021\8678_NMSU Biomedical Research PH 3_MEP_DCRomero.rvt

Biomedical Research Building Expansion



A1 WASTE AND VENT DIAGRAM

SCALE: NOT TO SCALE

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: DCR
CHECKED BY: NZ

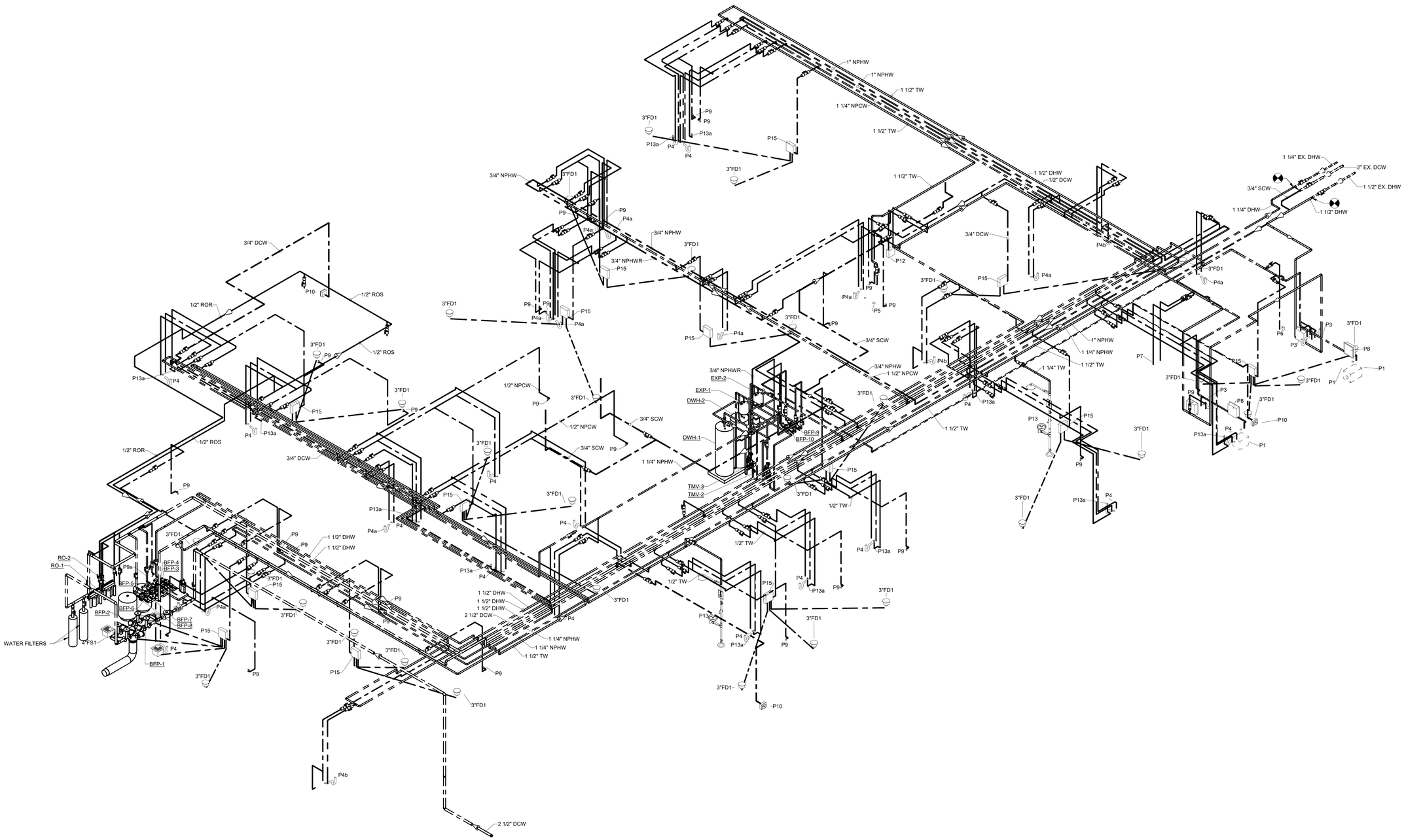
SHEET TITLE

PLUMBING DIAGRAMS

P-601

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 8:14:53 AM D:\$DCR Revit local 20218678_NMSU Biomedical Research PH 3_MEP_DCRomero.rvt



A1 PRESSURE PIPING DIAGRAM

SCALE: NOT TO SCALE

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: DCR
CHECKED BY: NZ

SHEET TITLE

PLUMBING DIAGRAMS

P-602

Bridgers & Paxton Project No: 8678
11/30/2023 10:47:03 AM D:\SDCR Revit local 20218678_NMSU Biomedical Research PH 3_MEP_DCRomero.rvt
Biomedical Research Building Expansion

PLUMBING FIXTURE SCHEDULE

REFER TO DIVISION 22 4000 FOR ADDITIONAL INFORMATION

	FIXTURE			TRIM/FAUCET			ELECTRICAL INFO				
SYMBOL*	TYPE	MANUFACTURER	MODEL	MANUFACTURER	MODEL	FLOW RATE	V	PH	HZ	A	REMARKS:
P1	WATER CLOSET (BARRIER FREE) - WALL MTD. - FLUSH VALVE ELEC/HARDWIRED	KOHLER	K-4325 "KINGSTON"	SLOAN	ROYAL 111 ESS-1.28 TMO	1.28 GPF	120	1	60	-	EXPOSED, CHROME PLATED, LOW FLOW, SENSOR OPERATED, HARDWIRED, TRUE MECHANICAL OVERRIDE. SEAT: HEAVY DUTY, OPEN FRONT LESS COVER, SOLID PLASTIC, WHITE, MFG: BEMIS NO. 1955STFR OR EQUAL. WATERSENSE CERTIFIED.
P3	LAVATORY (BARRIER FREE) - WALL MOUNT - ELEC/HARDWIRED	KOHLER	K-2007 "KINGSTON"	ZURN	Z-6920-XL-TMV-1-CWB-HW6-K	1.0 GPM	120	1	60	-	DECK MOUNT, SINGLE HOLE, SENSOR OPERATED, HARDWIRED, GOOSENECK, CHROME PLATED, LAMINAR FLOW, BELOW DECK THERMOSTATIC MIXING VALVE, P6000□HW6 POWER CONVERTER, WATERSENSE CERTIFIED.
P4	SINK - SINGLE COMP.	-	-	ZURN	Z-831B4-XL-ICT-18F	1.5 GPM	-	-	-	-	DECK MOUNT, 8" CENTERS, MANUAL, CHROME PLATED, 5-3/8" RIGID / SWING GOOSENECK SPOUT, LAMINAR FLOW, VANDAL-RESISTANT WRISTBLADE HANDLES, CERAMIC DISC CARTRIDGES, WATERSENSE CERTIFIED.
P4a	SINK - HAND	KOHLER	K-2005 "KINGSTON"	ZURN	Z-812A4-XL-18F	1.5 GPM	-	-	-	-	DECK MOUNT, 4" CENTERS, MANUAL, CHROME PLATED, 3-1/2" RIGID /SWING GOOSENECK SPOUT, LAMINAR FLOW, VANDAL-PROOF, VANDAL-RESISTANT WRISTBLADE HANDLES, CERAMIC DISC CARTRIDGES, WATERSENSE CERTIFIED.
P4b	SINK - DBL. COMP.	ELKAY	LRAD292260	ZURN	Z-831C4-XL-ICT-18F	1.5 GPM	-	-	-	-	DECK MOUNT, 8" CENTERS, MANUAL, CHROME PLATED, 8" RIGID / SWING GOOSENECK SPOUT, LAMINAR FLOW, VANDAL-PROOF, VANDAL-RESISTANT WRISTBLADE HANDLES, CERAMIC DISC CARTRIDGES, WATERSENSE CERTIFIED.
P5	SERVICE SINK	FIAT PRODUCTS	TSBC6010	CHICAGO FAUCETS	897-CCP	2.5 GPM	-	-	-	-	WALL MOUNTED SERVICE FAUCET 42" ABOVE FLOOR, CHROME PLATED WITH VACUUM BREAKER, INTEGRAL CHECK STOPS, ADJUSTABLE WALL BRACE, PAIL HOOK AND 3/4" HOSE THREAD ON SPOUT. PROVIDE: INTEGRAL STAINLESS STEEL STRAINER DRAIN, 3" CAST IRON P-TRAP, HOSE AND BRACKET, 30" LONG FLEXIBLE HEAVY DUTY 5/8" RUBBER HOSE, MFG: FIAT No. 832 AA. MOP BRACKET, 24" LONG x 3" WIDE, STAINLESS STEEL WITH THREE RUBBER GRIPS. MFG: FIAT No. 889 CC.
P6	ELECTRIC WATER COOLER W/BOTTLE FILLER (BARRIER FREE)	ELKAY	EZSTL8WSSK	-	-	8 GPH	120	1	60	6	BI-LEVEL, REFRIGERATED, WALL MOUNTED, STAINLESS STEEL, NON-FILTERED, SENSOR OPERATED BOTTLE FILLER, VANDAL RESISTANT, HEAVY-DUTY, ANTIMICROBIAL. GALVANIZED FRAME SHALL SUPPORT 14 GAUGE STAINLESS STEEL EXTERIOR PANELS. 8 GPH CAPACITY AT 90 DEGREE AMBIENT AND 50 DEGREE WATER OUTLET.
P7	SHOWER (BARRIER FREE)	BUILT-UP ENCLOSURE PER ARCHITECT'S SPECIFICATIONS, SHOWER TRIM AS SPECIFIED	-	SYMMONS	S-9603-PLR-VP-X	2.0 GPM	-	-	-	-	TEMPTROL PRESSURE-BALANCING MIXING VALVE WITH INTEGRAL VOLUME CONTROL AND ADJUSTABLE STOP SCREW TO LIMIT HANDLE TURN. WALL/ HAND SHOWER WITH FLEXIBLE 5' METAL HOSE. WALL CONNECTION AND FLANGE, 36" SLIDE BAR FOR HAND SHOWER MOUNTING, INTEGRAL SERVICE STOPS AND IN-LINE VACUUM BREAKER, VANDAL-RESISTANT ESCUTCHEON SCREWS, WATERSENSE CERTIFIED.
P8	WATER HAMMER ARRESTOR	PRECISION PLUMBING PRODUCTS	-	-	-	-	-	-	-	-	0 TO 200 PSIG MAX. OPERATING PRESSURE, 1-11 FIXTURE UNITS
P9	HOSE BIBB	WOODFORD	24-P-1/2-PC	-	-	-	-	-	-	-	POLISHED CHROME, VACUUM BREAKER, WITH WHEEL HANDLE, 1/2" INLET AND 3/4" GARDEN HOSE OUTLET
P10	WALL HYDRANT	WOODFORD	B65P	-	-	-	-	-	-	-	FREEZE-PROOF, INTEGRAL VACUUM BREAKER, WITH LOOSE-KEY, LOCKABLE DOOR, 3/4" INLET AND 3/4" GARDEN HOSE OUTLET, CHROME PLATED FINISH
P12	WASHER ROUGH-IN BOX	IPS WATER TITE	MBS1200HA	-	-	-	-	-	-	-	FIRE RATED MULTI-BOX, SINGLE WASHING MACHINE OUTLET BOX, QUARTER TURN VALVES, WATER HAMMER
P13	EMERGENCY EYEWASH/SHOWER	GUARDIAN	GBF1994	-	-	20 GPM	-	-	-	-	STAINLESS STEEL, BARRIER-FREE, PULL ROD, 10" DIA. SHOWERHEAD, 1" STAINLESS STEEL STAY-OPEN VALVE, FLIP TOP DUST COVERS, 11-1/2" DIA. STAINLESS STEEL WASH BOWL, ANSI-COMPLIANT IDENTIFICATION SIGN.
P13a	EMERGENCY EYEWASH DECK MOUNT	GUARDIAN	G1849LH-L	-	-	13 GPM	-	-	-	-	DECK MOUNTED, BARRIER FREE, CHROME-PLATED BRASS, SWING DOWN HEAD ASSEMBLY, INTEGRAL STRAINER, DUST COVERS, UNIT SHALL INCLUDE ANSI COMPLIANT SIGN.
P15	TRAP PRIMER ELEC	PRECISION PLUMBING PRODUCTS	MPB-500-115V	-	-	-	120	1	60	-	DISTRIBUTION UNIT FOR 1-4 OUTLETS, FACTORY PRESET TIMER DISCHARGES WATER TO TRAP EVERY 24 HOURS

FLOOR/ROOF DRAIN SCHEDULE

REFER TO DIVISION 22 4000 FOR ADDITIONAL INFORMATION

SYMBOL*	MANUFACTURER	MODEL	VENT	REMARKS:
DSN1	JAY R. SMITH	1771		WALL MOUNT, CAST BRONZE AND FLANGE, MACHINED NOZZLE, NICKEL BRONZE, SET SCREW. SIZE AS INDICATED ON PLANS.
3"FD1	ZURN	Z415-BZ1-NH-ZB-VP-1/2"-VP-Z1000	2"	ROUND TOP, 6" POLISHED BRONZE STRAINER, FLOOR AND SHOWER DRAIN, DURA-COATED CAST IRON BODY WITH BOTTOM OUTLET, COMBINATION INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH SEEPAGE SLOTS AND TOP ASSEMBLY. CONCRETE SHIELD, 1" POST POUR VERTICAL ADJUSTMENT, PRE-PACKAGED SHIMS FOR TILT CORRECTION AND INTEGRATED, SELF-CONTAINED "TYPE B" POLISHED BRONZE LIGHT DUTY, HEEL PROOF STRAINER WITH ROUGH-IN COVER FOR PROTECTION DURING CONCRETE POUR, VANDAL PROOF SECURED TOP, DEEP SEAL P-TRAP,STRAINER OPEN AREA: 9 SQUARE INCHES SERVICE: RESTROOMS, LOCKERS, SHOWERS, ETC. SIZE AS INDICATED ON DRAWINGS.
2"FD3	JAY. R. SMITH	2015	2"	SHOWER DRAIN, ROUND TOP, 5" DIAMETER, DUCO CAST IRON BODY WITH FLASHING COLLAR AND ADJUSTABLE STRAINER HEAD, VANDAL-PROOF. DIAMETER OF OUTLET AS SHOWN ON DRAWINGS. PROVIDE TRAP GUARD, SURE SEAL OR EQUAL. SIZE AND TYPE TO FIT DRAIN.
4"FS1	ZURN	Z-1901-NH-3-32-P	2"	DEEP CAST IRON BODY WITH WHITE ACID RESISTING ENAMEL BODY INTERIOR, SQUARE, SLOTTED 3/4 LOOSE SET GRATE , ALUMINUM ANTI-SPASH DOME STRAINER, ANCHOR FLANGE WITH SEEPAGE HOLES AND CLAMP COLLAR, (DEEP SEAL P-TRAP MFG: ZURN Z1000). DIAMETER OF OUTLET AS SHOWN ON DRAWINGS. TRAP PRIMER CONNECTION. SIZE AND TYPE TO FIT DRAIN.
RD1	ZURN	Z100-NH-C-DE-R-VP	-	15" DIAMETER ROOF DRAIN, DURA-COATED CAST IRON BODY WITH COMBINATION MEMBRANE FLASHING/GRAVEL GUARD AND LOW SILHOUETTE CAST IRON DOME, UNDER DECK CLAMP, DECK EXTENSION, ROOF SUMP RECEIVER, VANDAL PROOF SECURED TOP. NO-HUB OUTLETS, SIZE AS INDICATED ON PLANS
ORD1	ZURN	Z100-NH-C-DE-R-VP-W2	-	SAME AS PRIMARY ROOF DRAIN EXCEPT FOR OVERFLOW. INTERNAL WATER DAM. NO-HUB OUTLETS, SIZE AS INDICATED ON PLANS

PLUMBING ROUGH-IN SCHEDULE

REFER TO DIVISION 22 4000 FOR ADDITIONAL INFORMATION

		ROUGH-IN SIZE					
SYMBOL*	FIXTURE	CW	HW	WASTE	*VENT*	*TRAP*	REMARKS:
P1	WATER CLOSET (BARRIER FREE) - WALL MTD. - FLUSH VALVE ELEC/HARDWIRED	1"	-	4"	2"	INTEGRAL	ELONGATED BOWL, VITREOUS CHINA, 1-1/2" TOP SPUD. CARRIER: ZURN, WADE, JOSAM OR SMITH MTD HEIGHT: SEE ARCHITECTURAL DRAWINGS
P3	LAVATORY (BARRIER FREE) - WALL MOUNT - ELEC/HARDWIRED	1/2"	1/2"	2"	1-1/2"	1-1/4" X 1-1/2"	SINGLE HOLE, WHITE VITREOUS CHINA, 21-1/4" X 18-1/8", 4" CENTERS. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT. SUPPLIES: 1/2" WHEEL HANDLE ANGLE STOPS WITH 3/8" O.D. FLEXIBLE RISERS, CHROME PLATED FINISH. TRAP: 1-1/4" IN X 1-1/2" OUT, 17 GA, CHROME PLATED, ADJUSTABLE, CLEANOUT PLUG, SEMICAST P-TRAP. MFG: MCGUIRE NO. 8902. DRAIN: GRID STRAINER. CARRIER: ZURN, WADE, JOSAM or SMITH NOTE: INSULATE SUPPLY AND WASTE PIPING PER SPECIFICATIONS.
P4	SINK - SINGLE COMP.	1/2"	1/2"	2"	1-1/2"	1-1/2" X 1-1/2"	INTEGRAL TO COUNTERTOP, SEE ARCHITECTURAL DRAWINGS AND SPEC'S. SUPPLIES: 1/2" WHEEL HANDLE ANGLE STOPS WITH 3/8" O.D. FLEXIBLE RISERS, CHROME PLATED FINISH. TRAP: 1-1/2" IN X 1-1/2" OUT, 17 GA, CHROME PLATED, ADJUSTABLE, CLEANOUT PLUG, SEMICAST P-TRAP. MFG: MCGUIRE NO. 8902. DRAIN: BASKET STRAINER ELKAY NO. LK35. NOTE: INSULATE SUPPLY AND WASTE PIPING PER SPECIFICATIONS.
P4a	SINK - HAND	1/2"	1/2"	2"	1-1/2"	1-1/4" X 1-1/2"	THREE HOLE, WHITE VITREOUS CHINA, 21-1/4" X 18-1/8", 4" CENTERS. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT. SUPPLIES: 1/2" WHEEL HANDLE ANGLE STOPS WITH 3/8" O.D. FLEXIBLE RISERS, CHROME PLATED FINISH. TRAP: 1-1/4" IN X 1-1/2" OUT, 17 GA, CHROME PLATED, ADJUSTABLE, CLEANOUT PLUG, SEMICAST P-TRAP. MFG: MCGUIRE NO. 8902. DRAIN: GRID STRAINER. CARRIER: ZURN, WADE, JOSAM or SMITH NOTE: INSULATE SUPPLY AND WASTE PIPING PER SPECIFICATIONS.
P4b	SINK - DBL. COMP.	1/2"	1/2"	2"	1-1/2"	1-1/2" X 1-1/2"	DOUBLE COMPARTMENT, 29" X 22" X 6" DEEP OVERALL DIMENSIONS, 8" CENTERS, 18 GA. TYPE 304 STAINLESS STEEL, BOTTOM PADS, REAR CENTER DRAIN. SUPPLIES: 1/2" WHEEL HANDLE ANGLE STOPS WITH 3/8" O.D. FLEXIBLE RISERS, CHROME PLATED FINISH. TRAP: 1-1/2" IN X 1-1/2" OUT, 17 GA, CHROME PLATED, ADJUSTABLE, CLEANOUT PLUG, SEMICAST P-TRAP. MFG: MCGUIRE NO. 8902. DRAIN: BASKET STRAINER ELKAY NO. LK35 WITH TAILPIECE FOR DISHWASHER DRAIN AND AIR GAP. NOTE: INSULATE SUPPLY AND WASTE PIPING PER SPECIFICATIONS.
P5	SERVICE SINK	1/2"	1/2"	3"	2"	3"	FLOOR MOUNTED, TERRAZZO, 24"x24"x12" DEEP, 3" DRAIN. PROVIDE: 3" CAST IRON P-TRAP.
P6	ELECTRIC WATER COOLER W/BOTTLE FILLER (BARRIER FREE)	1/2"	-	2"	1-1/2"	1-1/4" X 1-1/2"	NOTE: PROVIDE WITH 3 WIRE GROUNDING TYPE CORD AND PLUG, UL LISTED AND WALL CARRIER
P7	SHOWER (BARRIER FREE)	1/2"	1/2"	2"	2"	2"	PAN LINER SHALL BE FURNISHED BY PLUMBING CONTRACTOR. 2" SHOWER DRAIN (SEE DRAIN SCHEDULE), 2" CAST IRON P-TRAP. PROVIDE ADDITIONAL DRAINS IF REQUIRED OUTSIDE OF SHOWER COMPARTMENT, COORDINATE WITH THRESHOLD AND FLOOR SLAB SLOPE. BACK TO BACK VALVE INSTALLATION REQUIRES 0'-6-3/4" MIN. WALL CAVITY.
P8	WATER HAMMER ARRESTOR	1/2"	-	-	-	-	IN-LINE, PISTON TYPE. TYPE "L" COPPER BARREL WITH CAP ATTACHED WITH 95-5 SOLDER, LOW LEAD BRASS, EPDM "O" RINGS
P9	HOSE BIBB	1/2"	-	-	-	-	3/4" OUTLET, 1/2" INLET.
P10	WALL HYDRANT	3/4"	-	-	-	-	FREEZE-PROOF, VERIFY WALL THICKNESS BEFORE ORDERING.
P12	WASHER ROUGH-IN BOX	1/2"	1/2"	2"	2"	2"	KNOCK OUTS, RAISED GRIP GUARDS, 4-1/2" X 5-1/4" WITH FACE UNIVERSAL FACEPLATE, 2" DRAIN PIPE CONNECTION.
P13	EMERGENCY EYEWASH/SHOWER	-	-	FD	-	-	ROTATE DRAIN TOWARDS FLOOR DRAIN. 1-1/4" TEPID WATER.
P13a	EMERGENCY EYEWASH DECK MOUNT	-	-	-	-	-	UNIT SHALL BE FULLY FACTORY ASSEMBLED AND HYDROSTATICALLY TESTED TO MEET OR EXCEED ANSI Z358.1 – 2014. 1/2" TEPID WATER.
P15	TRAP PRIMER ELEC	1/2"	-	-	-	-	1/2" NPT MALE INLET, 1/2" NPT FEMALE OUTLET, ACCESS DOOR 12" X 12" X 4" OVERALL DIMENSIONS.

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: DCR
CHECKED BY: NZ

SHEET TITLE

PLUMBING SPECIFICATIONS

P-701

Bridgers & Paxton Project No: 8678 11/30/2023 8:14:58 AM D:\DCR Revit local 2021\8678_NMSU Biomedical Research PH 3_MEP_DCRomero.rvt

Biomedical Research Building Expansion

ELECTRIC WATER HEATER SCHEDULE

NOTE:ALL WATER HEATERS SHALL COMPLY FULLY WITH THE 2018 IECC TABLE C404.2, MINIMUM PERFORMANCE OF WATER-HEATING EQUIPMENT

SYMBOL	MANUFACTURER	MODEL NO.	LOCATION	SERVICE	TYPE	SET POINT (DEGREES)	EFFICIENCY	STORAGE VOLUME (GAL.)	OPERATION WEIGHT	ELECTRICAL						HOT WATER RECOVERY		REMARKS:
										V	PH	HZ	NUMBER OF ELEMENTS	WATTS	FLA	RATE (GPH)	Δ T °F	
DWH-1	A.O. SMITH	DSE-50A	JANITOR J165	NON-POTABLE HOT WATER	ELECTRIC TANK TYPE	145 F	100 %	50	707 LBS.	480	3	60	2	18,000	43.3	164	90	INSTALL ON 4" MIN. HOUSEKEEPING PAD, FULL SIZE T&P RELIEF VALVE TO NEAREST FLOOR OR MOP SINK, GLASSLINED TANK, ASME TANK CONSTRUCTION.
DWH-2	A.O. SMITH	DSE-50A	JANITOR J165	NON-POTABLE HOT WATER	ELECTRIC TANK TYPE	145 F	100 %	50	707 LBS.	480	3	60	2	18,000	43.3	164	90	INSTALL ON 4" MIN. HOUSEKEEPING PAD, FULL SIZE T&P RELIEF VALVE TO NEAREST FLOOR OR MOP SINK, GLASSLINED TANK, ASME TANK CONSTRUCTION.

PLUMBING PUMP SCHEDULE

SYMBOL	MANUFACTURER	MODEL NO.	LOCATION	SERVICE	TYPE	CAPACITY		PUMP (RPM)	MOTOR (HP)	ELECTRICAL				REMARKS:
						GPM	TOTAL FT. HD.			V	PH	HZ	AMPS	
RCP-1	BELL & GOSSETT	ECOCIRC+ 20-18	JANITOR J165	NON-POTABLE HOT WATER	INLINE RECIRC.	2	13	VARIABLE	1/12	115	1	60	.06-1.02	STAINLESS STEEL BODY, FLANGED CONNECTION, ADJUSTABLE SPEED, LED INDICATORS, NUMERIC DISPLAY. FOR NON-POTABLE WATER.
RCP-2	BELL & GOSSETT	ECOCIRC+ 20-18	JANITOR J165	NON-POTABLE HOT WATER	INLINE RECIRC.	2	13	VARIABLE	1/12	115	1	60	.06-1.02	STAINLESS STEEL BODY, FLANGED CONNECTION, ADJUSTABLE SPEED, LED INDICATORS, NUMERIC DISPLAY. FOR NON-POTABLE WATER.

THERMOSTATIC MIXING VALVE SCHEDULE

SYMBOL	MANUFACTURER	MODEL NO.	LOCATION	SERVICE	OUTLET TEMPERATURE	INLET PIPE SIZE	OUTLET PIPE SIZE	RETURN PIPE SIZE	SYSTEM FLOW & PRESSURE DROP	REMARKS:
TMV-1	LEONARD	EXL-800-LF-IT	MECH. M179	TEPID WATER	60-65 F (PER NIH)	1"	1-1/4"	NA	21 GPM @ 5 PSI	WALL MOUNT, ROUGH BRASS FINISH, INLET THERMOMETERS, INTEGRAL CHECK STOPS, INTERNAL COLD BYPASS, DIAL THERMOMETER, ASSE 1071, ANSI Z358.1 COMPLIANT.
TMV-2	LEONARD	NV-150-LF-IF-RTS	JANITOR J165	NON-POTABLE HOT WATER RETURN	125 F	1-1/4"	1-1/2"	3/4"	50 GPM @ 5PSI	DIGITAL MIXING VALVE, LEAD FREE, MOUNTED ON WALL, ROUGH BRASS, INTEGRAL CHECK STOPS, INLET THERMOMETER, ASSE 1017, UL LISTED 120V PLUG IN POWER SUPPLY WITH 6' CORD, USER ADJUSTABLE SETTINGS AT THE CONTROLLER OR REMOTELY THROUGH A BUILDING AUTOMATION SYSTEM/ BUILDING MANAGEMENT SYSTEM, INLET FITTINGS AND SENSORS WITH RETURN TEMPERATURE SENSOR. POWER: 120V/1/PH/60HZ
TMV-3	LEONARD	NV-150-LF-IF-RTS	JANITOR J165	NON-POTABLE HOT WATER RETURN	125 F	1-1/4"	1-1/2"	3/4"	50 GPM @ 5PSI	DIGITAL MIXING VALVE, LEAD FREE, MOUNTED ON WALL, ROUGH BRASS, INTEGRAL CHECK STOPS, INLET THERMOMETER, ASSE 1017, UL LISTED 120V PLUG IN POWER SUPPLY WITH 6' CORD, USER ADJUSTABLE SETTINGS AT THE CONTROLLER OR REMOTELY THROUGH A BUILDING AUTOMATION SYSTEM/ BUILDING MANAGEMENT SYSTEM, INLET FITTINGS AND SENSORS WITH RETURN TEMPERATURE SENSOR. POWER: 120V/1/PH/60HZ

EXPANSION TANK SCHEDULE

SYMBOL	MANUFACTURER	MODEL NO.	SERVICE	DESIGN DEG °F	TANK VOLUME (GAL.)	TANK ACCEPTANCE (GAL.)	PSIG	WEIGHT (LBS.)	REMARKS:
EXP-1	AMTROL	ST-5C-DD	NON-POTABLE HOT WATER	125 F	2	0.45	55	10	INLINE, ASME.
EXP-2	AMTROL	ST-5C-DD	NON-POTABLE HOT WATER	125 F	2	0.45	55	10	INLINE, ASME.

PLUMBING BACKFLOW SCHEDULE

SYMBOL	MANUFACTURER	MODEL	LOCATION	SERVICE	TYPE	PIPE SIZE (IN)	FLOW (GPM)	PSI LOSS	REMARKS:
BFP-1	ZURN	375	MECH. 179	DOMESTIC	HORIZONTAL - IN-LINE	2 1/2"	210	14	LEAD FREE, REDUCED PRESSURE ZONE ASSEMBLIES, NON-RISING STEM, FLANGE CONNECTIONS, ASSE 1013.
BFP-2	ZURN	375	MECH. 179	DOMESTIC	HORIZONTAL - IN-LINE	2 1/2"	210	14	LEAD FREE, REDUCED PRESSURE ZONE ASSEMBLIES, NON-RISING STEM, FLANGE CONNECTIONS, ASSE 1013.
BFP-3	FEBCO	LF825Y-AGD	MECH. 179	TEPID WATER HOT	HORIZONTAL - IN-LINE	1 1/2"	50	10	LEAD FREE, REDUCED PRESSURE ZONE ASSEMBLIES, AIR GAP DRAIN TO NEAREST FLOOR SINK, ASSE 1013.
BFP-4	FEBCO	LF825Y-AGD	MECH. 179	TEPID WATER HOT	HORIZONTAL - IN-LINE	1 1/2"	50	10	LEAD FREE, REDUCED PRESSURE ZONE ASSEMBLIES, AIR GAP DRAIN TO NEAREST FLOOR SINK, ASSE 1013.
BFP-5	FEBCO	LF825Y-AGD	MECH. 179	TEPID WATER COLD	HORIZONTAL - IN-LINE	1 1/2"	50	10	LEAD FREE, REDUCED PRESSURE ZONE ASSEMBLIES, AIR GAP DRAIN TO NEAREST FLOOR SINK, ASSE 1013.
BFP-6	FEBCO	LF825Y-AGD	MECH. 179	TEPID WATER COLD	HORIZONTAL - IN-LINE	1 1/2"	50	10	LEAD FREE, REDUCED PRESSURE ZONE ASSEMBLIES, AIR GAP DRAIN TO NEAREST FLOOR SINK, ASSE 1013.
BFP-7	FEBCO	LF825Y-AGD	MECH. 179	NON-POTABLE COLD WATER	HORIZONTAL - IN-LINE	1 1/2"	50	10	LEAD FREE, REDUCED PRESSURE ZONE ASSEMBLIES, AIR GAP DRAIN TO NEAREST FLOOR SINK, ASSE 1013.
BFP-8	FEBCO	LF825Y-AGD	MECH. 179	NON-POTABLE COLD WATER	HORIZONTAL - IN-LINE	1 1/2"	50	10	LEAD FREE, REDUCED PRESSURE ZONE ASSEMBLIES, AIR GAP DRAIN TO NEAREST FLOOR SINK, ASSE 1013.
BFP-9	FEBCO	LF825Y-AGD	JANITOR J165	SCW- STEAM HUMIDIFIER SUPPLY	HORIZONTAL - IN-LINE	1"	20	12	LEAD FREE, REDUCED PRESSURE ZONE ASSEMBLIES, AIR GAP DRAIN TO NEAREST MOP SINK, ASSE 1013.
BFP-10	FEBCO	LF825Y-AGD	JANITOR J165	SCW- STEAM HUMIDIFIER SUPPLY	HORIZONTAL - IN-LINE	1"	20	12	LEAD FREE, REDUCED PRESSURE ZONE ASSEMBLIES, AIR GAP DRAIN TO NEAREST MOP SINK, ASSE 1013.

EQUIPMENT ROUGH-IN SCHEDULE

SYMBOL	DESCRIPTION	ROUGH-IN SIZE			VENT	TRAP	REMARKS
		CW	HW	WASTE			
2	FUME HOOD	1/2"	1/2"	2"	2"	1-1/2"	-
4	DRY HEAT STERILIZER	-	-	-	-	-	COMP. AIR, 1/4", 2-5 CFM, 60-120 PSI
5	ENVIRONMENTAL CHAMBER	-	-	-	-	-	RO WATER, TYPE IV, 3 GALLONS PER HOUR
6	FRIDGE/ FREEZER COMBO	-	-	-	-	-	NO ICE MAKER
7	ANIMAL TRANSFER STATION	-	-	-	-	-	1" NPT, HOSE BARB FITTING W/ BALL VALVE
10	WASHER	1/2"	1/2"	2	2"	2"	WASHER BOX

REVERSE OSMOSIS WATER EQUIPMENT SCHEDULE

SYMBOL	ITEM	MANUFACTURER	MODEL NO.	NORMAL FLOW	MAX. FLOW	ELECTRICAL	MOTOR HP	REMARKS
RO-1	REVERSE OSMOSIS UNIT	CULLIIGAN	LCRO-200AC	-	-	-	-	WALL MOUNT, 200 GPD, AUTOMATIC SHUT-OFF VALVE, 5 MICRON SEDIMENT PRE-FILTER CARTRIDGE, 10" GAC FILTER, SECONDARY GAC FILTER, PRE-ASSEMBLED. OVERALL DIMENSIONS: 18.4"W X 8.1"D X 17.9"H.
RO-2	REVERSE OSMOSIS UNIT	CULLIIGAN	LCRO-200AC	-	-	-	-	WALL MOUNT, 200 GPD, AUTOMATIC SHUT-OFF VALVE, 5 MICRON SEDIMENT PRE-FILTER CARTRIDGE, 10" GAC FILTER, SECONDARY GAC FILTER, PRE-ASSEMBLED. OVERALL DIMENSIONS: 18.4"W X 8.1"D X 17.9"H.
ROT-1	REVERSE OSMOSIS STORAGE TANK	AMTROL	RO-34	-	-	-	-	FREESTANDING, 34 GALLONS, STEEL, 86 LBS, 1-1/4" NPT CONNECTION, 15 PSI PRECHARGE, OVERALL DIMENSIONS: 22" DIA. X 30" HIGH
ROT-2	REVERSE OSMOSIS STORAGE TANK	AMTROL	RO-34	-	-	-	-	FREESTANDING, 34 GALLONS, STEEL, 86 LBS, 1-1/4" NPT CONNECTION, 15 PSI PRECHARGE, OVERALL DIMENSIONS: 22" DIA. X 30" HIGH
RO-RCP-1	RO RECIRCULATION PUMP	GRUNDFOS	SCALA2 3-45A	2 GPM	13.2 GPM	115V/1PH/60Hz	0.603	INTEGRATED, SELF-PRIMING, COMPACT, TYPE B PLUG, OVERALL DIMENSIONS: 15.9"L X 7.6"W X 11.9"H.
RO-RCP-2	RO RECIRCULATION PUMP	GRUNDFOS	SCALA2 3-45A	2 GPM	13.2 GPM	115V/1PH/60Hz	0.603	INTEGRATED, SELF-PRIMING, COMPACT, TYPE B PLUG, OVERALL DIMENSIONS: 15.9"L X 7.6"W X 11.9"H.

ALL SELECTIONS ARE BASED ON 3,900 FT. ABOVE SEA LEVEL.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: DCR
CHECKED BY: NZ

SHEET TITLE

PLUMBING SCHEDULES

P-702

Bridgers & Paxton Project No: 8678 11/30/2023 8:15:01 AM D:\BDCR Revit local\ 20218678_NMSU Biomedical Research PH 3_MEP_DCRomero.rvt

Biomedical Research Building Expansion

MECHANICAL SYMBOL LEGEND

ABBREVIATIONS

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

DUCTWORK SYMBOLS

- FLEXIBLE DUCT
- ACOUSTICAL DUCT LINING
- MANUAL BALANCING DAMPER (HD)
- FIRE DAMPER (FRD)
- SMOKE DAMPER (SMD)
- COMBINATION FIRE/SMOKE DAMPER (FSD)
- 1 HR. FIRE BARRIER
- 2HR. FIRE BARRIER
- SMOKE BARRIER
- 2HR. SMOKE BARRIER

(1 HR. FIRE BARRIER, 2HR. FIRE BARRIER, SMOKE BARRIER, 2HR. SMOKE BARRIER: VERIFY WITH ARCHITECTURAL DRAWINGS)

- CONNECT NEW DUCT TO EXISTING DUCT
- EXISTING DUCT TO BE REMOVED
- FLEXIBLE CONNECTION
- RISE IN DUCT
- VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EXCEPT TRANSFER AIR SOUND ELBOW)
- SHORT RADIUS ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EXCEPT TRANSFER AIR SOUND ELBOW)
- STANDARD LONG RADIUS ELBOW
- SUPPLY DUCT
- RETURN DUCT
- EXHAUST DUCT
- STAMPED FACE CEILING DIFFUSERS
- CEILING SUPPLY AIR DIFFUSERS
- PERFORATED FACE CEILING DIFFUSERS
- CEILING EXHAUST REGISTER
- CEILING RETURN AIR REGISTER OR GRILLE
- SIDEWALL EXHAUST OR RETURN AIR GRILLE OR REGISTER
- SIDEWALL SUPPLY REGISTER
- DUCT TRANSITION
- DUCT TRANSITION FROM RECTANGULAR TO ROUND
- 24"x12" — 24x12 — INDICATES A 24"x12" RECTANGULAR DUCT (WIDTH x DEPTH)
- 12"Ø — 12"Ø — INDICATES A 12" ROUND DUCT
- 24"/12" — 24x12Ø — INDICATES A 24"x12" FLAT OVAL DUCT (WIDTH x DEPTH)
- DUCT MOUNTED SMOKE DETECTOR
- DUCT MOUNTED STATIC PRESSURE PROBE
- ACCESS DOOR
- (T) ROOM THERMOSTAT/TEMP. TRANSMITTER LOCATION ONLY SEE CONTROL DRAWINGS FOR TYPE
- (H) ROOM HUMIDISTAT/HUMIDITY TRANSMITTER LOCATION ONLY SEE CONTROL DRAWINGS FOR TYPE
- (CO2) ROOM CARBON DIOXIDE TRANSMITTER LOCATION ONLY SEE CONTROL DRAWINGS FOR TYPE

VALVE SYMBOLS

- GATE VALVE
- GLOBE VALVE
- CHECK VALVE
- PLUG VALVE
- PRESSURE REDUCING VALVE
- 3-WAY MODULATING CONTROL VALVE
- 2-WAY CONTROL VALVE
- SAFETY VALVE OR PRESSURE RELIEF VALVE
- SOLENOID VALVE
- 3/4" BALL VALVE WITH ADAPTER TO 3/4" HOSE THREAD
- DIAPHRAGM VALVE
- BUTTERFLY VALVE
- BALL VALVE
- VALVE IN RISE
- WATER FLOW MEASURING DEVICE
- CIRCUIT SETTER

FITTING SYMBOLS

- ELBOW - DOWN
- ELBOW - UP
- PIPE RISE-DROP
- ELBOW - DROP TO TEE
- TEE - DROP FROM TEE
- END CAP
- FLEX CONNECTION
- PIPE REDUCER - CONCENTRIC
- PIPE REDUCER - ECCENTRIC
- PIPE STRAINER
- UNION - SCREWED
- AIR VENT - AUTOMATIC
- AIR VENT - MANUAL
- GAUGE - DIFFERENTIAL
- GAUGE - PRESSURE
- GAUGE - PRESSURE WITH COCK
- GAUGE - TEMPERATURE
- PIPE ANCHOR
- PIPE EXPANSION JOINT
- PIPE GUIDE
- SENSOR - FLOW
- SWITCH - FLOW
- SWITCH HUMIDITY
- SWITCH - PRESSURE
- SWITCH - TEMPERATURE
- TEMPERATURE - PRESSURE TEST FITTING
- THERMOMETER
- THERMOMETER WELL
- BASKET STRAINER
- STEAM TRAP INVERTED BUCKET
- METER - TOTALIZING BTU
- METER - TOTALIZING FLOW

PIPING SYMBOLS

MECHANICAL PIPING

HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN
D	DRAIN
CD	CONDENSATE DRAIN
V	VENT
MU	MAKE-UP WATER
RS	REFRIGERATION SUCTION
RL	REFRIGERATION LIQUID
R	REFRIGERATION
HPS	STEAM - HIGH PRESSURE SUPPLY
HPR	STEAM - HIGH PRESSURE RETURN
MPS	STEAM - MEDIUM PRESSURE SUPPLY
HPR	STEAM - MEDIUM PRESSURE RETURN
LPS	STEAM - LOW PRESSURE SUPPLY
LPR	STEAM - LOW PRESSURE RETURN
CND	CONDENSER WATER
PC	PUMPED CONDENSATE
DOWN	DIRECTION PITCH
	DIRECTION OF FLOW
	EXISTING
	DEMO

NOTE: NOT ALL ABBREVIATIONS OR SYMBOLS APPLY TO THIS PROJECT

SECTION SYMBOL

SECTION LOCATION — A1
DRAWING NUMBER WHERE DETAILED — M301

DETAIL SYMBOL

DETAIL LOCATION — X#/X###
DRAWING NUMBER WHERE DETAILED

SECTION AND DETAIL TITLES

SECTION LETTER LOCATION — A1 SECTION / SCALE

DETAIL NUMBER LOCATION — A1 DETAIL / SCALE

EQUIPMENT SYMBOLS

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

##x## — SIDEWALL GRILLE DIMENSION WHERE SHOWN ON PLANS

XX-# — SYMBOL INDICATES GRILLE OR DIFFUSER IDENTIFIED IN EQUIPMENT SCHEDULE

— CFM

GENERAL NOTES

A. ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN FURRED CHASES OR SUSPENDED CEILINGS, UNLESS OTHERWISE NOTED.

B. PROVIDE ACCESS PANELS OR DOORS IN INACCESSIBLE CEILINGS AND/OR CHASES FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, COILS, FANS, CONTROLS, ETC. THEY SHALL BE FURNISHED UNDER DIVISION 23 AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATION. ACCESS DOOR RATING SHALL MATCH CLASSIFICATION OF WALL AND CEILING FIRE RATING.

C. WATER PIPE CONNECTIONS TO WATER COILS SHALL BE MADE SO THERE WILL BE COUNTER FLOW BETWEEN WATER AND AIR.

D. COORDINATE THE LOCATION OF ALL DIFFUSERS, GRILLES, REGISTERS, ACCESS DOORS, ETC., WITH THE ARCHITECTURAL REFLECTED CEILING PLAN(S).

E. ALL ROUND RUNOUTS AND DROPS TO DIFFUSERS SHALL BE THE SAME NOMINAL SIZE AS THE SCHEDULED DIFFUSER NECK SIZE.

F. THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN.

G. PROVIDE 1/2" MANUAL AIR VENTS AT ALL HIGH POINTS OF CLOSED SYSTEM PIPING AND 1/2" MANUAL DRAIN VALVES WITH HOSE CONNECTION AT LOW POINTS AS REQUIRED TO PROVIDE COMPLETE SYSTEM DRAINAGE. WHERE DRAIN VALVES OCCUR ABOVE CEILING AREAS AND IN AREAS OUTSIDE MECHANICAL RANGE PROVIDE HOSE CONNECTION ON VALVE.

H. PROVIDE TURNING VANES IN ALL SQUARE ELBOWS, EXCEPT TRANSFER AIR SOUND ELBOWS.

I. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL FIRE RATED AND/OR SMOKE RATED WALLS AND ASSEMBLIES. PROVIDE APPROVED FIRE DAMPERS IN ALL REQUIRED PENETRATIONS FOR DUCTWORK, GRILLES, REGISTERS AND DIFFUSERS. ALL PIPE AND DUCTWORK PENETRATIONS OF FIRE, SMOKE AND FULL HEIGHT WALLS SHALL BE CAULKED AIRTIGHT TO THE ADJACENT STRUCTURE BY MEANS OF U.L. APPROVED FIRE PROOF CAULKING MATERIAL.

J. CONTRACTOR SHALL COORDINATE ALL DUCTWORK, PIPING, PLUMBING AND FIRE PROTECTION PIPING WITH STRUCTURAL AND ELECTRICAL SYSTEMS AND SHALL PROVIDE NECESSARY OFFSETS TO AVOID CONFLICTS AND TO MAINTAIN EQUIPMENT ACCESS AND SERVICEABILITY.

K. CONTRACTOR SHALL FURNISH ALL NECESSARY STRUCTURES, INSERTS, SLEEVES, AND HANGING DEVICES FOR INSTALLATION OF MECHANICAL AND PLUMBING EQUIPMENT, DUCTWORK AND PIPING, ETC. CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR AND ALL BUILDING TRADES TO AVOID CONFLICTS AND TO MAINTAIN EQUIPMENT ACCESS AND SERVICEABILITY.

L. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY MISCELLANEOUS ANGLES, CHANNELS, UNISTRUT, ETC., AS MAY BE REQUIRED TO ADEQUATELY SUPPORT THE MECHANICAL PIPING, DUCTWORK, AND EQUIPMENT IN A MANNER APPROVED BY THE ARCHITECT, WHICH WILL NOT OVERLOAD THE BUILDING STRUCTURAL SYSTEM.

M. CONTRACTOR SHALL PROVIDE RETURN AIR OR TRANSFER AIR OPENINGS IN FULL HEIGHT WALLS SIZED AT 350 FPM (UNLESS OTHERWISE SPECIFICALLY SHOWN ON THE DRAWINGS) TO CREATE AND/OR MAINTAIN A RETURN AIR PATH AS REQUIRED. FIRE DAMPERS AND/OR SMOKE DAMPERS SHALL BE PROVIDED IN SUCH OPENINGS WHERE REQUIRED BY NOTE "J".

N. SEAL ALL TRANSVERSE JOINTS, LONGITUDINAL SEAMS, DUCT WALL PENETRATIONS AND FITTING CONNECTIONS ON ALL DUCT SYSTEMS.

O. MECHANICAL ITEMS SUCH AS ROOF DRAINS, FLOOR DRAINS, PLUMBING FIXTURES, ETC. SHOWN ON THE ARCHITECTURAL DRAWINGS BUT NOT SHOWN ON THE MECHANICAL DRAWINGS SHALL BE INCLUDED IN THE PROJECT. THESE ITEMS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR INCLUSION IN ADDENDUM.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: NZ
CHECKED BY: IM

SHEET TITLE

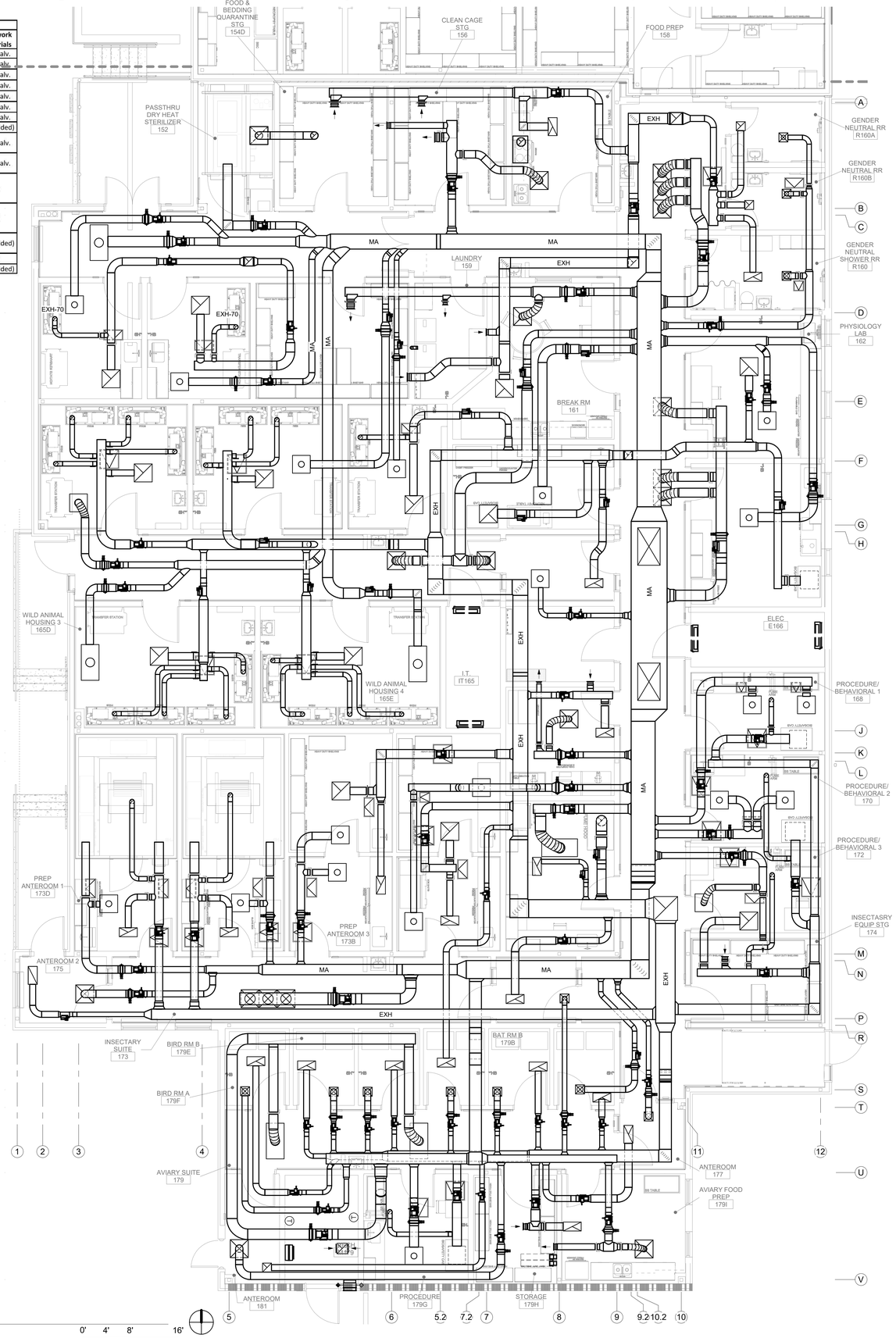
MECHANICAL LEGEND

M-001

Bridgers & Paxton Project No: 8678 11/30/2023 1:10:46 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_navd2003ah.rvt
Biomedical Research Building Expansion

Minimum Duct Construction Standards		
Application	**SMACNA Pressure Class Pa(in w.g.)**	**Ductwork Materials**
All ductwork, unless noted otherwise	500 (2)	G90 galv.
Outdoor air intake, relief return, and general exhaust air plenums[b,c,d]	500 (2)	G90 galv.
Low-pressure supply air and return air ductwork, constant volume[c,d]	500 (2)	G90 galv.
Low-pressure supply air ductwork downstream of air terminal units[tu,c,d]	500 (2)	G90 galv.
Low-pressure return air ductwork upstream of air terminal units[tu,c,d]	500 (2)	G90 galv.
Low-pressure general exhaust air ductwork[c,d]	500 (2)	G90 galv.
Low-pressure west exhaust air ductwork	500 (2)	G90 galv.
Low-pressure hazardous exhaust air ductwork upstream air terminal units[e,f]	500 (2)	SS (welded)
Medium-pressure supply air ductwork upstream of air terminal units, VAV, or CV air terminal units[e,g]	1,000 (4)	G90 galv.
Medium-pressure general exhaust air ductwork downstream of air terminal units, VAV, or CV air terminal units[g]	1,000 (4)	G90 galv.
Medium-pressure hazardous exhaust air ductwork downstream of air terminal units, VAV or CV, duct operating pressure up to 750 Pa (3 in. w.g.)[e,g,f]	1,000 (4)	SS
High-pressure hazardous exhaust air ductwork downstream of air terminal units, VAV or CV air terminal units, duct operating pressure above 750 Pa (3 in. w.g.) to 1,250 Pa (5 in. w.g.) operating pressures[e,h,f]	Class I/industrial 1,500 (6)	SS
Hazardous exhaust air, positive pressure segment up to 1,250 Pa (5 in. w.g.) operating pressure[e,f]	Class I/industrial 1,500 (6)	SS (welded)
Special hazard exhaust air ductwork[e,i]	1,000 (4)	SS
Kitchen Hood Exhaust	1,000 (4)	SS (welded)

Acceptable Maximum Air velocities in the Design and Sizing of HVAC Components	
Element/System	**Maximum Face Velocity m/s (fpm)**
Ductwork	
Up to 500 Pa (2 in. w.g.) pressure class in mechanical shafts	7.6 (1,500)
Ductwork above occupied areas	6.1 (1,200)
Air outlet devices	3.8 (750)
750 Pa (3 in. w.g.) to 1,000 Pa (4 in. w.g.) pressure class in mechanical shafts	12.7 (2,500)
Ductwork above occupied areas	10.2 (2,000)
Outdoor/relief air	7.6 (1,500)
Animal research facility exhaust ductwork	7.6 (1,500)
Coils	
Cooling/dehumidifying coils ≤ 2,000 cfm	2.3 (450)
Cooling/dehumidifying coils > 2,000 cfm	2.1-2.5 (420-500)
Heating coils--hot water	2.5-3.8 (500-750)
Filters	
Panel type--low efficiency	4.0 (800)
Pleated panel type--low to medium efficiency	2.5 (500)
Bag-type, rigid box type--medium to high efficiency	2.5 (500)
HEPA in duct, air handler	1.3 (250)
HEPA terminal	0.5 (100)
Louvers[a]	
Intake	2.5 (500)
Exhaust	3.8 (750)



A1 HVAC FLOOR PLAN
3/16" = 1'-0"
0' 4' 8' 16'

GENERAL NOTES

A. COORDINATE EQUIPMENT INSTALLATION WITH STRUCTURAL PLANS, ARCHITECTURAL PLANS AND ELECTRICAL PLANS. GIVE SPECIAL ATTENTION TO STRUCTURAL BEAM ELEVATIONS, CEILING HEIGHTS, CABLE TRAYS, AND ROOF DRAIN LEADERS. SUBMIT 3D COORDINATION DRAWINGS FOR REVIEW PER SPECIFICATIONS 23 0500.

B. SEE SPECIFICATION 230700 FOR INSULATION INFORMATION.

C. REFER TO SHEETS M-701 AND M-702 FOR MECHANICAL EQUIPMENT SCHEDULES. ALL BRANCH DUCTWORK TO SUPPLY DIFFUSERS SHALL BE SIZED TO MATCH NECK SIZE OF DIFFUSER AS INDICATED ON "GRILLE AND DIFFUSER" SCHEDULE ON SHEET M-702.

D. ALL BRANCH DUCTWORK TO SUPPLY DIFFUSERS AND EXHAUST GRILLES NOT FURNISHED WITH OPPOSED BLADE DAMPERS SHALL INCLUDE BALANCING DAMPER WITH LOCKING QUADRANT.

E. COORDINATE ALL DUCT AND PIPE ROUTING AND INSTALLATION WITH STRUCTURAL PLANS AND ARCHITECTURAL FLOOR PLANS.

F. THERMOSTATS SHALL BE MOUNTED AT 48" A.F.F. ALL THERMOSTATS IN STUDENT AREAS SHALL BE FURNISHED AND INSTALLED WITH METAL LOCKING COVERS.

G. ALL EXPOSED DUCTWORK AND GRILLES SHALL BE CLEANED, DEGREASED AND PREPPED FOR PAINTING. DUCTWORK SHALL BE PAINTED PER ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.

H. 24"X24" CEILING ACCESS DOORS SHALL BE PROVIDED AT ALL BALANCING DAMPERS, FIRE DAMPERS AND DUCT MOUNTED SMOKE DETECTOR LOCATIONS ABOVE HARD CEILINGS.

I. SEE SHEETS M-501 TO M-503 FOR MECHANICAL DETAILS.

J. DUCT LINING IS NOT PERMITTED FOR USE IN AIR HANDLING EQUIPMENT AND DUCT SYSTEMS.

K. FLEXIBLE DUCT RUNS SHALL BE LIMITED TO 6 FEET. FLEXIBLE DUCTS SHALL BE FACTORY INSULATED AND COMPLY WITH THE LATEST NFPA 90A-B. FLEXIBLE DUCT CONNECTIONS SHALL BE MADE USING STAINLESS STEEL DRAW BANDS. FLEXIBLE DUCTS SHALL NOT BE USED IN EXHAUST, RETURN OR OTHER NEGATIVE PRESSURE DUCT SYSTEM DUE TO RISK OF COLLAPSE OR EXCESS OF AIRFLOW.

L. ALL DUCTWORK PENETRATING ROOM WALLS AND ALL DIFFUSER, REGISTER, GRILLE PENETRATING HARD CEILINGS SHALL BE SEALED PER NIH REQUIREMENTS (APPENDIX L).

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

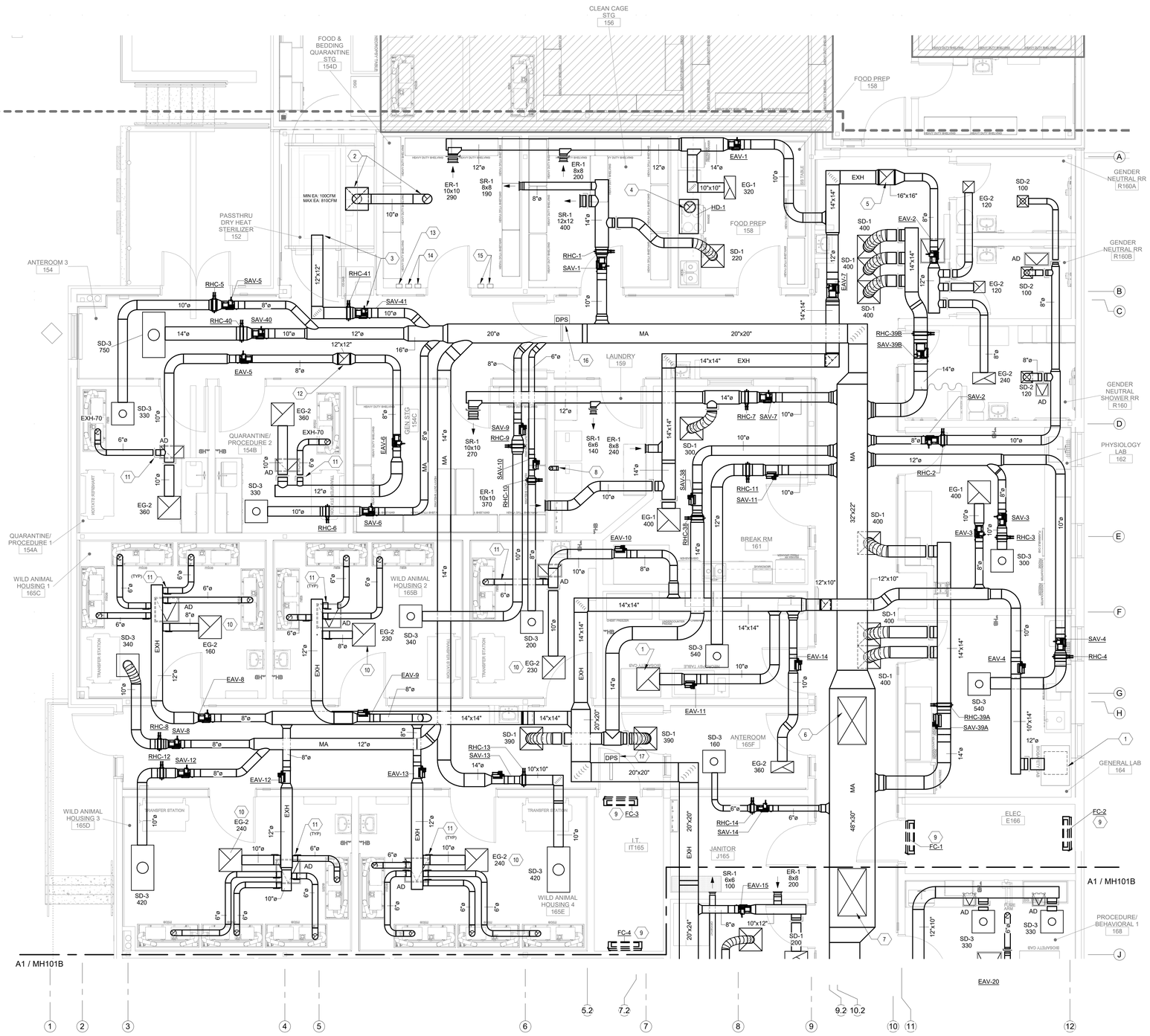
DRAWN BY: NZ
CHECKED BY: IM

SHEET TITLE
HVAC OVERALL FLOOR PLAN

MH101

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 1:11:17 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_navid2023zh.rvt



A1 HVAC FLOOR PLAN

1/4" = 1'-0"

0' 2' 4' 8'

GENERAL NOTES

A. COORDINATE EQUIPMENT INSTALLATION WITH STRUCTURAL PLANS, ARCHITECTURAL PLANS AND ELECTRICAL PLANS. GIVE SPECIAL ATTENTION TO STRUCTURAL BEAM ELEVATIONS, CEILING HEIGHTS, CABLE TRAYS, AND ROOF DRAIN LEADERS. SUBMIT 3D COORDINATION DRAWINGS FOR REVIEW PER SPECIFICATIONS 23 0500.

B. SEE SPECIFICATION 230700 FOR INSULATION INFORMATION.

C. REFER TO SHEETS M-701 AND M-702 FOR MECHANICAL EQUIPMENT SCHEDULES. ALL BRANCH DUCTWORK TO SUPPLY DIFFUSERS SHALL BE SIZED TO MATCH NECK SIZE OF DIFFUSER AS INDICATED ON "GRILLE AND DIFFUSER" SCHEDULE ON SHEET M-702.

D. ALL BRANCH DUCTWORK TO SUPPLY DIFFUSERS AND EXHAUST GRILLES NOT FURNISHED WITH OPPOSED BLADE DAMPERS SHALL INCLUDE BALANCING DAMPER WITH LOCKING QUADRANT.

E. COORDINATE ALL DUCT AND PIPE ROUTING AND INSTALLATION WITH STRUCTURAL PLANS AND ARCHITECTURAL FLOOR PLANS.

F. THERMOSTATS SHALL BE MOUNTED AT 48" A.F.F. ALL THERMOSTATS IN STUDENT AREAS SHALL BE FURNISHED AND INSTALLED WITH METAL LOCKING COVERS.

G. ALL EXPOSED DUCTWORK AND GRILLES SHALL BE CLEANED, DEGREASED AND PREPPED FOR PAINTING. DUCTWORK SHALL BE PAINTED PER ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.

H. 24"X24" CEILING ACCESS DOORS SHALL BE PROVIDED AT ALL BALANCING DAMPERS, FIRE DAMPERS AND DUCT MOUNTED SMOKE DETECTOR LOCATIONS ABOVE HARD CEILINGS.

I. SEE SHEETS M-501 TO M-503 FOR MECHANICAL DETAILS.

J. DUCT LINING IS NOT PERMITTED FOR USE IN AIR HANDLING EQUIPMENT AND DUCT SYSTEMS.

K. FLEXIBLE DUCT RUNS SHALL BE LIMITED TO 6 FEET. FLEXIBLE DUCTS SHALL BE FACTORY INSULATED AND COMPLY WITH THE LATEST NFPA 90A-B. FLEXIBLE DUCT CONNECTIONS SHALL BE MADE USING STAINLESS STEEL DRAW BANDS. FLEXIBLE DUCTS SHALL NOT BE USED IN EXHAUST, RETURN OR OTHER NEGATIVE PRESSURE DUCT SYSTEM DUE TO RISK OF COLLAPSE OR EXCESS OF AIRFLOW.

L. ALL DUCTWORK PENETRATING ROOM WALLS AND ALL DIFFUSER, REGISTER, GRILLE PENETRATING HARD CEILINGS SHALL BE SEALED PER NIH REQUIREMENTS (APPENDIX L).

KEYNOTES

1. PROVIDE FIXED FLOW CANOPY (NU-907) ABOVE BSC. DO NOT CONNECT EXHAUST DUCT DIRECTLY TO THE HOOD. BSC SHALL BE FURNISHED WITH HEPA FILTER.
2. 10" DIA. DUCT WITH THIMBLE CONNECTION UP TO EF-7 ON THE ROOF. PROVIDE INDIRECT CONNECTION. PROVIDE STAINLESS STEEL MATERIAL FOR DUCT AND ALL ACCESSORIES.
3. PROVIDE 12"X12" MAKE UP AIR DUCT ABOVE DRY HEAT MACHINE. SUPPLY AIR VALVE SHALL BE INTERLOCKED WITH EF-7 DURING CYCLING.
4. ROUTE 12" EXHAUST DUCT FROM HOOD UP TO THE ROOF. INSTALL PER MANUFACTURES INSTRUCTIONS.
5. 16"X16" EXHAUST AIR DUCT UP TO UTILITY SET EXHAUST FANS (EF-3 & 4) ON THE ROOF.
6. 50"X30" SUPPLY AIR DUCT UP TO MAU-2 ON THE ROOF.
7. 50"X30" SUPPLY AIR DUCT UP TO MAU-1 ON THE ROOF.
8. USE 4" RIGID METAL OR UL-LISTED DRYER TRANSITION DUCT TO CONNECT THE DRYER TO THE EXHAUST. PROVIDE DRYER VENT SIZED PER MANUFACTURER'S RECOMMENDATION. EXTEND AND OFFSET AS NECESSARY. EXTEND VENT UP THRU ROOF AND TERMINATE WITH GOOSENECK. PROVIDE DUCT THRU ROOF CURB. GOOSENECK DISCHARGE SHALL BE APPROX. 24" ABOVE FINISHED ROOF. DRYER VENT DUCTWORK MUST NOT HAVE ANY SCREWS OR OTHER FASTENERS PROJECTING INSIDE THE DUCTWORK. INSTALL PER CODE. COORDINATE EXACT MOUNTING HEIGHT REQUIRED WITH DRYER VENT OUTLET.
9. PROVIDE A/C UNIT WITH WALL MOUNTED T-STAT. INSTALL UNIT LEVEL ON WALL ABOVE DOOR FOR PROPER CONDENSATE DRAINAGE. DRAIN SIZED PER MANUFACTURER'S INSTRUCTIONS. COORDINATE CONDENSATE DRAIN WITH PLUMBING CONTRACTOR. PROVIDE LIQUID AND VAPOR PIPING. SIZE PIPING, TRAP AND SLOPE REFRIGERANT LINES PER MANUFACTURER'S INSTRUCTIONS. CONTRACTOR TO COORDINATE SHORTEST CONCEALED ROUTING TO ASSOCIATED REMOTE CONDENSING UNIT. PROVIDE ALL VALVES AND ACCESSORIES FOR A COMPLETE AND OPERATIONAL SYSTEM. REFER TO DETAILS AND EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
10. EXHAUST GRILLE IN HOLDING SPACES SHALL BE FURNISHED WITH MERV-8 FILTER (TYP).
11. PROVIDE STAINLESS STEEL THIMBLE CONNECTION WITH FLEX DUCT FOR EACH IVC RACK AND SET BALANCING DAMPER TO 70 CFM (TYP).
12. 12"X12" EXHAUST AIR DUCT UP TO UTILITY SET EXHAUST FANS (EF-1 & 2) ON THE ROOF.
13. PROVIDE HOA CONTROLLER FOR EF-7 AT THIS LOCATION.
14. PROVIDE HOA CONTROLLER FOR EF-1,2 AT THIS LOCATION.
15. PROVIDE HOA CONTROLLER FOR EF-3,4 AT THIS LOCATION.
16. INSTALL STATIC PRESSURE SENSOR FOR MAU-1,2 SUPPLY FAN CONTROL IN DUCT AT APPROXIMATE LOCATION SHOWN.
17. INSTALL STATIC PRESSURE SENSOR FOR EF-5,6 EXHAUST FAN CONTROL IN DUCT AT APPROXIMATE LOCATION SHOWN.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

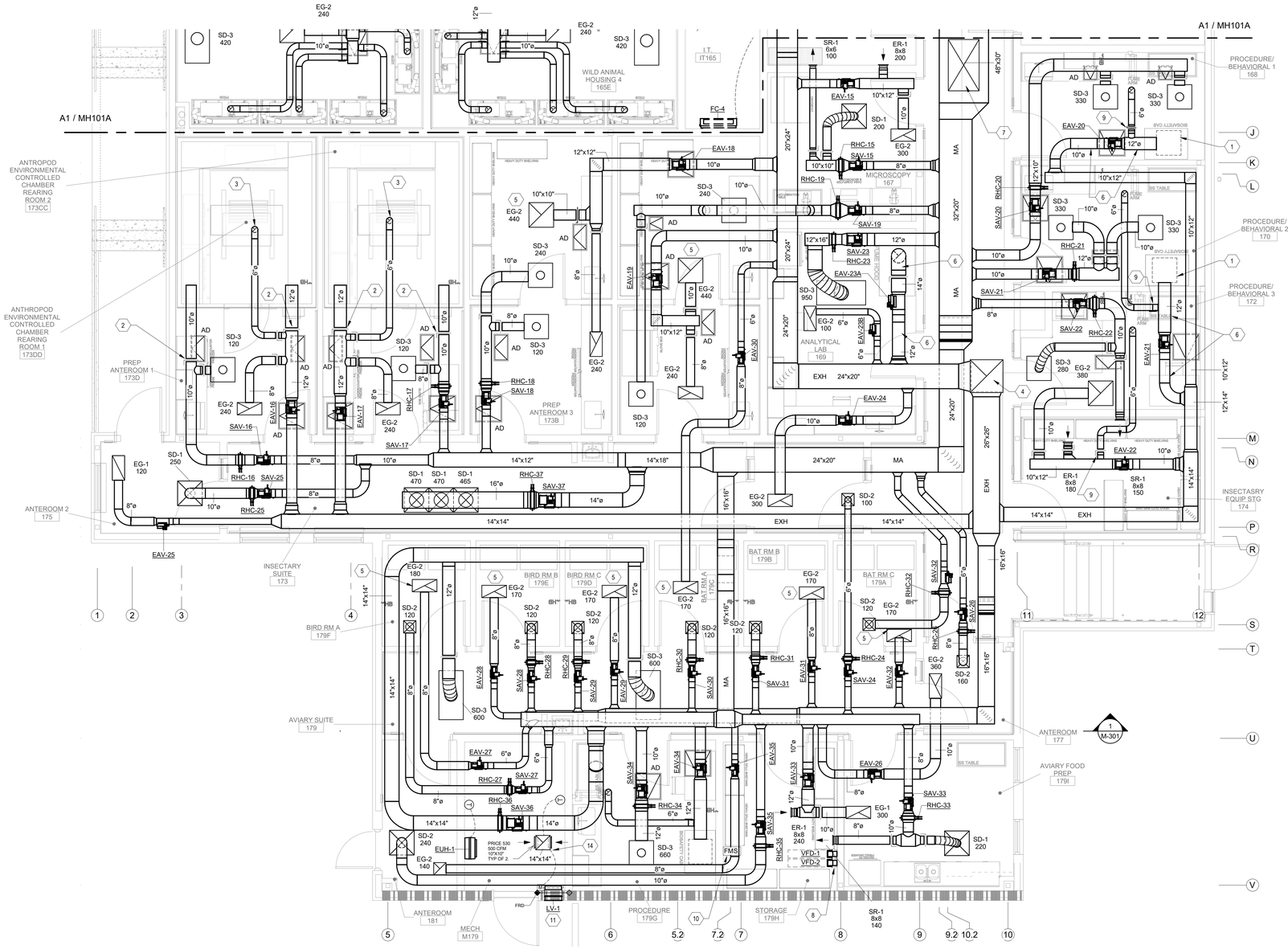
DRAWN BY: NZ
CHECKED BY: IM

SHEET TITLE

HVAC FLOOR PLAN - AREA A

MH101A

Bridgers & Paxton Project No: 8678
11/30/2023 3:18:16 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_pavid2003zb.rvt
Biomedical Research Building Expansion



A1 HVAC FLOOR PLAN
1/4" = 1'-0"

0' 2' 4' 8'

GENERAL NOTES

A. COORDINATE EQUIPMENT INSTALLATION WITH STRUCTURAL PLANS, ARCHITECTURAL PLANS AND ELECTRICAL PLANS. GIVE SPECIAL ATTENTION TO STRUCTURAL BEAM ELEVATIONS, CEILING HEIGHTS, CABLE TRAYS, AND ROOF DRAIN LEADERS. SUBMIT 3D COORDINATION DRAWINGS FOR REVIEW PER SPECIFICATIONS 23 0500.

B. SEE SPECIFICATION 230700 FOR INSULATION INFORMATION.

C. REFER TO SHEETS M-701 AND M-702 FOR MECHANICAL EQUIPMENT SCHEDULES. ALL BRANCH DUCTWORK TO SUPPLY DIFFUSERS SHALL BE SIZED TO MATCH NECK SIZE OF DIFFUSER AS INDICATED ON "GRILLE AND DIFFUSER" SCHEDULE ON SHEET M-702.

D. ALL BRANCH DUCTWORK TO SUPPLY DIFFUSERS AND EXHAUST GRILLES NOT FURNISHED WITH OPPOSED BLADE DAMPERS SHALL INCLUDE BALANCING DAMPER WITH LOCKING QUADRANT.

E. COORDINATE ALL DUCT AND PIPE ROUTING AND INSTALLATION WITH STRUCTURAL PLANS AND ARCHITECTURAL FLOOR PLANS.

F. THERMOSTATS SHALL BE MOUNTED AT 48" A.F.F. ALL THERMOSTATS IN STUDENT AREAS SHALL BE FURNISHED AND INSTALLED WITH METAL LOCKING COVERS.

G. ALL EXPOSED DUCTWORK AND GRILLES SHALL BE CLEANED, DEGREASED AND PREPPED FOR PAINTING. DUCTWORK SHALL BE PAINTED PER ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.

H. 24"X24" CEILING ACCESS DOORS SHALL BE PROVIDED AT ALL BALANCING DAMPERS, FIRE DAMPERS AND DUCT MOUNTED SMOKE DETECTOR LOCATIONS ABOVE HARD CEILINGS.

I. SEE SHEETS M-501 TO M-503 FOR MECHANICAL DETAILS.

J. DUCT LINING IS NOT PERMITTED FOR USE IN AIR HANDLING EQUIPMENT AND DUCT SYSTEMS.

K. FLEXIBLE DUCT RUNS SHALL BE LIMITED TO 6 FEET. FLEXIBLE DUCTS SHALL BE FACTORY INSULATED AND COMPLY WITH THE LATEST NFPA 90A-B. FLEXIBLE DUCT CONNECTIONS SHALL BE MADE USING STAINLESS STEEL DRAW BANDS. FLEXIBLE DUCTS SHALL NOT BE USED IN EXHAUST, RETURN OR OTHER NEGATIVE PRESSURE DUCT SYSTEM DUE TO RISK OF COLLAPSE OR EXCESS OF AIRFLOW.

L. ALL DUCTWORK PENETRATING ROOM WALLS AND ALL DIFFUSER, REGISTER, GRILLE PENETRATING HARD CEILINGS SHALL BE SEALED PER NIH REQUIREMENTS (APPENDIX L).

KEYNOTES

1. PROVIDE FIXED FLOW CANOPY (NU-907) ABOVE BSC. DO NOT CONNECT EXHAUST DUCT DIRECTLY TO THE HOOD. BSC SHALL BE FURNISHED WITH HEPA FILTER.
2. SET BALANCING DAMPER TO 250 CFM FOR SA AND 350 FOR EXH. DUCTWORK WILL BE EXPOSED ABOVE THE CHAMBER. SUPPLY AND EXHAUST AIR WILL BE PROVIDED DUE TO CHAMBER HEAT REJECTION.
3. 6" DIA. EXHAUST DUCT DOWN TO CHAMBER WITH DIRECT CONNECTION. SET BALANCING DAMPER TO 100 CFM.
4. 32"X32" EXHAUST AIR DUCT UP TO UTILITY SET EXHAUST FANS (EF-5 & 6) ON THE ROOF.
5. EXHAUST GRILLE IN HOLDING SPACES SHALL BE FURNISHED WITH MERV-8 FILTER (TYP).
6. FUME HOOD EXHAUST DUCTWORK AN EXHAUST VALVE SHALL BE CONSTRUCTED OF CORROSION-RESISTANT MATERIAL SUCH AS 316L WELDED STAINLESS STEEL OR BE COATED WITH A PROTECTIVE CORROSION-RESISTANT PRODUCT SUCH AS EPOXY PHENOLIC.
7. 50"X30" SUPPLY AIR DUCT UP TO MAU-1 ON THE ROOF.
8. INSTALL VFDS FOR EF-5 & 6 AT THIS LOCATION.
9. SET SNORKEL BALANCING DAMPER TO 100 CFM.
10. FMS (DDC CONTROLS) CONDUIT TO ENTER STORAGE ROOM THROUGH WALL AT THIS APPROXIMATE LOCATION.
11. 16"X24" LOUVER WITH 120V MOTORIZED DAMPER. INTERLOCK DAMPER WITH EXHAUST FAN, EF-8. LOUVER 6 FEET FROM FINISHED FLOOR.
12. 14"X14" EXHAUST DUCT UP TO EF-8 ON THE ROOF.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: NZ
CHECKED BY: IM

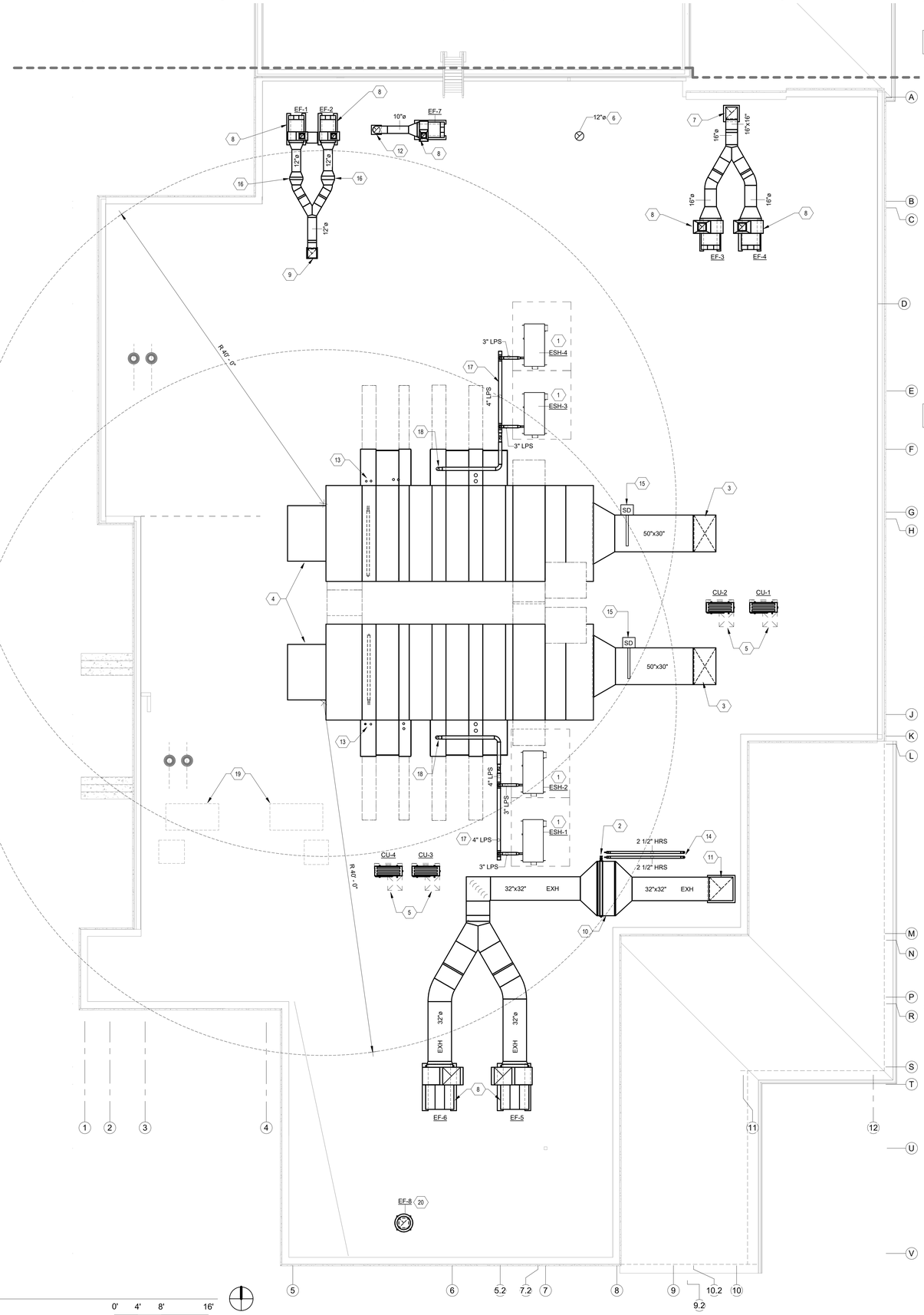
SHEET TITLE

HVAC FLOOR PLAN - AREA B

MH101B

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 3:29:11 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_navis\2003dh.rvt



GENERAL NOTES

A. COORDINATE ALL DUCT AND PIPE ROUTING AND INSTALLATION WITH STRUCTURAL PLANS AND ARCHITECTURAL FLOOR PLANS.

B. SEE SHEETS M-501 TO M-504 FOR MECHANICAL DETAILS.

C. ALL LOW VOLTAGE WIRING (LESS THAN 50 VOLTS) SHALL BE PROVIDED DIV. 23. ALL WIRING (GREATER THAN 50 VOLTS) SHALL BE PROVIDED BY DIV. 26 OR OTHER WHERE NOTED.

D. MAINTAIN MINIMUM 10 FT CLEARANCE BETWEEN PLUMBING VENTS, EXHAUST FANS AND OUTSIDE AIR INTAKES.

E. COORDINATE INSTALLATION OF HVAC EQUIPMENT WITH ELECTRICAL AND PLUMBING DISCIPLINES.

F. MECH EQUIPMENT SHALL BE LABELED WITH 2" HIGH STENCIL LETTERS IN BLACK PAINT AND SHALL INCLUDE UNIT NUMBER AND AREA SERVED.

KEYNOTES

1. OUTDOOR ELEC STEAM HUMIDIFIER SHALL BE INSTALLED WITH HEATED OUTDOOR ENCLOSURE TO ENSURE COMPLETE SAFETY AND OPERATION IN COLD OR HOT WEATHER INSTALL ON 16" ROOF CURB. THE OUTDOOR ENCLOSURE SHALL BE FURNISHED WITH HEATING AND VENTING SYSTEMS THAT ENSURE HUMIDIFIER OPERATION IN TEMPERATURES FROM -40°F TO 120°F. INSTALL UNIT ON 14" ROOF CURB. SEE MECH SCHEDULE AND DETAIL XX FOR ADDITIONAL INFO.
2. HEAT RECOVERY COIL LOCATED IN LAB EXHAUST AIR STREAM. SEE SHEET M-701 FOR ADDITIONAL INFO.
3. ROUTE 50"X30" SA DUCT DOWN TO FIRST FLOOR CEILING.
4. INSTALL OUTDOOR VAV MAKE UP AIR UNIT WITH 18" ROOF CURB ON 6" CONCRETE PAD. ENSURE CURB AND UNIT IS INSTALLED LEVEL FOR PROPER CONDENSATE DRAINAGE FROM UNIT. PROVIDE FLEXIBLE CONNECTORS ON THE SUPPLY DUCT CONNECTION AND TRANSITION TO DUCT SIZES SHOWN ON PLANS. COORDINATE WITH STRUCTURE. PROVIDE METAL JACKETING FOR THE PIPING IN THE MAU CURB. OUTDOOR UNIT SHALL BE OF DOUBLE-WALL CONSTRUCTION WITH A MINIMUM OF R-19 INSULATION.
5. INSTALL AND ANCHOR CONDENSING UNIT ON TWO ROOF SKIDS WITH RAILS INSIDE ROOF CURB. PIPING ABOVE ROOF SHALL BE INDIVIDUALLY INSULATED WITH FIBERGLASS WRAP, TAPED AT 1FT INTERVALS AND ALUMINUM JACKETED. AT LOCATIONS WITH MULTIPLE CONDENSING UNITS, THE CONTRACTOR SHALL ORIENT THE FAN INLET AND DISCHARGE OF EACH UNIT SO THE HOT DISCHARGE AIR FROM ONE UNIT DOES NOT ENTER THE INLET OF ANOTHER UNIT.
6. 12" DIA. EXHAUST DUCT FROM KITCHEN HOOD IN THE FIRST FLOOR. INSTALL PER MANUFACTURES INSTRUCTIONS. FLASH AND COUNTER FLASH ROOF PER ARCH SPECS.
7. ROUTE 16"X16 EXHAUST DUCT FROM NON-LAB SPACES IN LEVEL BELOW. PROVIDE 14" TALL ROOF CURB.
8. PROVIDE TWO ROOF SKID SUPPORTS FOR THE UTILITY EXHAUST FAN. SEE DETAIL B2/M-502. SUPPORT DISCHARGE STACK WITH 4 GUY WIRE ANCHORED TO ROOF WITH 1" DIA PIPE ANCHORS. EXHAUST DISCHARGE SHALL BE AT LEAST 10 FEET FROM ROOF SURFACE WITH MIN 3,000 FPM VELOCITY.
9. ROUTE 12"X12" EXHAUST DUCT FROM QUARANTINE ROOMS. PROVIDE 14" TALL ROOF CURB.
10. PROVIDE FILTER RACK WITH MERV-8 FILTER. SIZE TO MATCH 450-500 FPM VELOCITY. PROVIDE CASKETED SEALED ACCESS DOORS AT BOTH SIDES OF THE FILTER RACK.
11. ROUTE 32X32 EXHAUST DUCT FROM LAB SPACES IN LEVEL BELOW. PROVIDE 14" TALL ROOF CURB.
12. ROUTE 10". DIA EXHAUST DUCT FROM DRY HEAT OVEN. PROVIDE 14" TALL ROOF CURB.
13. ROUTE 2" SUPPLY & RETURN HEAT RECOVERY PIPING UP FROM FIRST FLOOR CEILING. PROVIDE MANUAL VENT AT THE COIL.
14. ROUTE 2" SUPPLY & RETURN HEAT RECOVERY PIPING FROM LAB EXHAUST COIL DOWN TO FIRST FLOOR CEILING. PROVIDE MANUAL VENT AT THE COIL.
15. INSTALL SMOKE DETECTOR AND SAMPLING TUBES FURNISHED BY DIVISION 28 IN DUCTWORK. POWER AND WIRING BY DIVISION 26 AND DIVISION 28.
16. PROVIDE FILTER RACK WITH HEPA FILTER. SIZE TO MATCH 450-500 FPM VELOCITY. PROVIDE CASKETED SEALED ACCESS DOORS AT BOTH SIDES OF THE FILTER RACK.
17. ROUTE 4" STAINLESS STEEL LOW PRESSURE STEAM PIPE WITH INSULATION AND ALUMINUM JACKET ON THE ROOF. PROVIDE SUPPORT ON THE ROOF.
18. ROUTE 4" STAINLESS STEEL PIPE DOWN TO HUMIDIFIER HEADER.
19. REMOTE OUTDOOR AIR COOLED CONDENSING UNIT (OACU) BY OTHERS. THIS COMPONENT WILL NEED TO BE PLACED ON THE OUTSIDE OF THE BUILDING AS NEAR AS POSSIBLE TO THE CHAMBER LOCATION. A CLEAN MOUNTING PAD ON THE ORDER OF 6' X 4' MUST BE PROVIDED AND SHOULD BE ABLE TO ACCOMMODATE APPROXIMATELY 700 POUNDS. PENETRATIONS FOR PASS THROUGH OF REFRIGERATION PIPING AND CONTROL WIRING NEED TO BE CONSIDERED, AND ROOF PENETRATIONS MADE TO ACCOMMODATE THIS INFRASTRUCTURE.
20. INSTALL ROOF MOUNTED EXHAUST FAN ON 16" TALL ROOF CURB. PROVIDE BACKDRAFT DAMPER TRAY AND DAMPER INSIDE ROOF CURB. INSTALL EXHAUST FAN LEVEL. PROVIDE DUCT TRANSITION FROM OPENING TO DUCT SIZE SHOWN ON PLAN. TRANSITION DUCT IN CURB AND EXTEND DUCT DOWN THRU ROOF. COORDINATE WITH STRUCTURE. REFER TO DETAILS AND EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.

A1 MECHANICAL ROOF PLAN
3/16" = 1'-0"

0' 4' 8' 16'

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

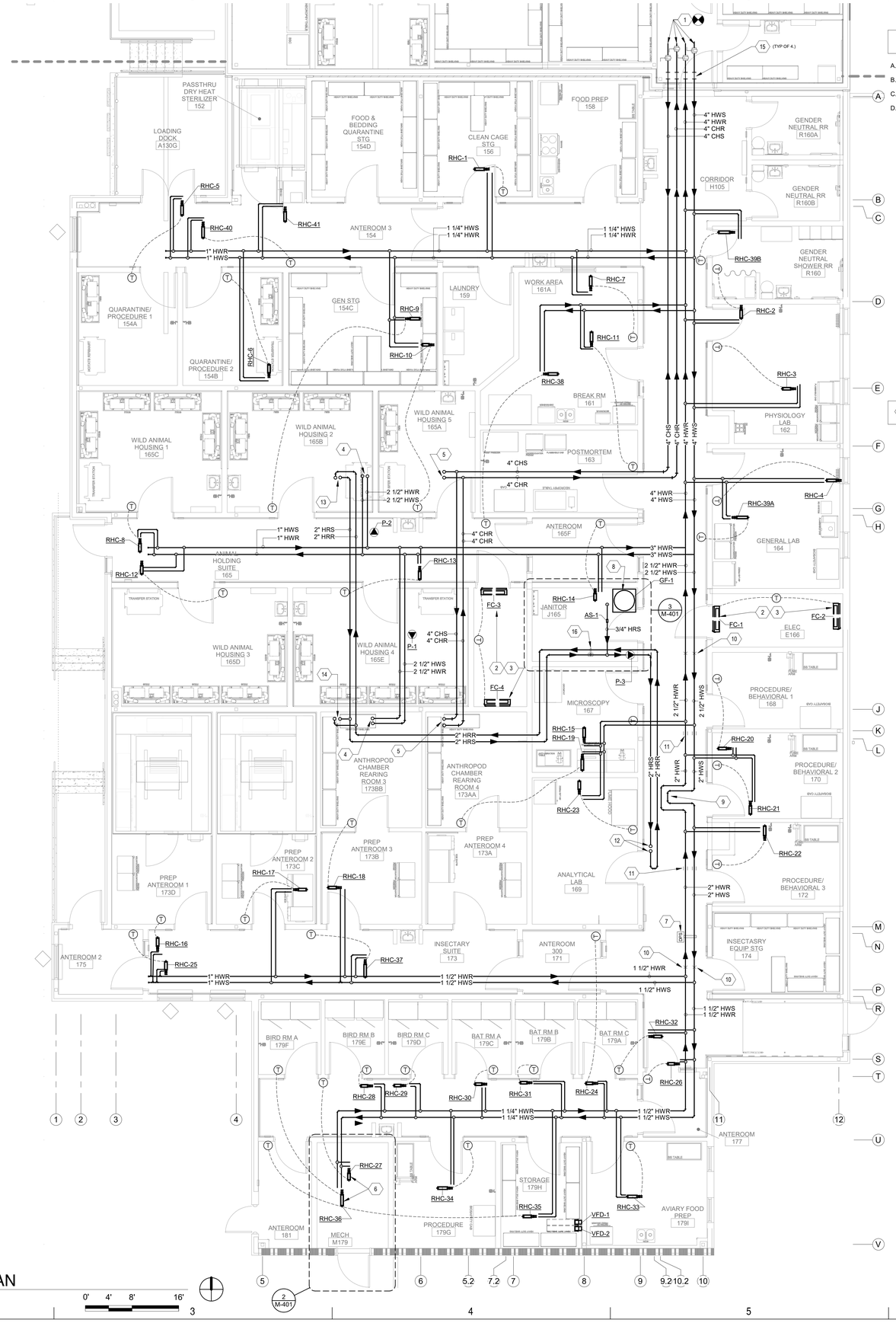
DRAWN BY: NZ
CHECKED BY: IM

SHEET TITLE
MECHANICAL ROOF PLAN

MH131

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 1:11:32 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_navis2003dh.rvt



A1 MECHANICAL PIPING FLOOR PLAN
3/16" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES

A. PROVIDE MANUAL AIR VENTS AT ALL HIGH POINTS IN HOT WATER SYSTEM.

B. PROVIDE DRAINS AT ALL LOW POINTS IN HOT WATER SYSTEM.

C. SEE PLUMBING SHEETS FOR CONDENSATE DRAIN PIPING.

D. PROVIDE 2-WAY CONTROL VALVE FOR HOT WATER REHEAT COIL AT SUPPLY AIR VALVES UNLESS OTHERWISE NOTED. SEE SHEET M-702 FOR ADDITIONAL INFO.

KEYNOTES

1. EXTEND NEW 4" HWR, 4" HWS, 4" CHWS & 4" CHWR PIPING FROM EXISTING AT THIS LOCATION IN PH-2 BUILDING.
2. ROUTE REFRIGERANT SUCTION AND LIQUID LINES FROM FAN COIL UNIT UP TO CONDENSING UNIT ON THE ROOF. REFER TO SPLIT SYSTEM SCHEDULE ON SHEET M-701 FOR REFRIGERANT PIPE SIZES. REFER TO PLUMBING SHEETS FOR CONDENSATE DRAIN PIPING.
3. INDOOR FAN COIL UNIT FURNISHED WITH CONDENSATE PUMP. REFER TO PLUMBING SHEETS FOR ROUTING OF CONDENSATE PIPING.
4. ROUTE 3" HWS & 3" HWR PIPING TO MAU HOT WATER COIL ON THE ROOF. FURNISH COIL WITH 3-WAY CONTROL VALVE.
5. ROUTE 4" CHWS & 4" CHWR PIPING TO MAU CHILLED WATER COIL ON THE ROOF. FURNISH COIL WITH 3-WAY CONTROL VALVE.
6. PROVIDE 3-WAY CONTROL VALVE FOR HOT WATER REHEAT COIL. SEE TERMINAL EQUIPMENT SCHEDULE ON SHEET M-702.
7. DIFFERENTIAL PRESSURE SENSOR FOR HOT WATER PUMPS. PUMP SPEED AND HOT WATER SYSTEM FLOW RATE SHALL BE CONTROLLED BASED ON SENSED DIFFERENTIAL PRESSURE AT THIS LOCATION.
8. ROUTE 3/4" MAKE UP FROM GLYCOL FEEDER. SEE SHEET M-601 FOR SCHEMATIC DESIGN. PROVIDE 4" CONCRETE PAD FOR GLYCOL FEEDER TANK.
9. PROVIDE (1 FT X 2 FT MIN DIMENSIONS) U-BEND FOR THERMAL EXPANSION IN 2" HWS/R PIPING AT THIS LOCATION.
10. ANCHOR HWS/R PIPING AT THIS LOCATION.
11. PROVIDE ROLLER GUIDES AT EACH SIDE OF U-BEND. SPACE ROLLER GUIDE MIN 6 T FROM EACH SIDE OF U-BEND.
12. ROUTE 2" HEAT RECOVERY SUPPLY & RETURN PIPING UP TO ROOF. SEE SHEET MH131 FOR CONTINUATION.
13. ROUTE 2" HEAT RECOVERY SUPPLY & RETURN PIPING UP MAU-2 ON THE ROOF. SEE SHEET MH131 FOR CONTINUATION.
14. ROUTE 2" HEAT RECOVERY SUPPLY & RETURN PIPING UP MAU-1 ON THE ROOF. SEE SHEET MH131 FOR CONTINUATION.
15. PROVIDE EXPANSION JOINT ON ALL PIPES PENETRATING THE WALL BETWEEN EXISTING BUILDING AND NEW ADDITION.
16. INSTALL 3-WAY TEMPERATURE CONTROL VALVE (TCV) AT APPROXIMATE LOCATION SHOWN.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

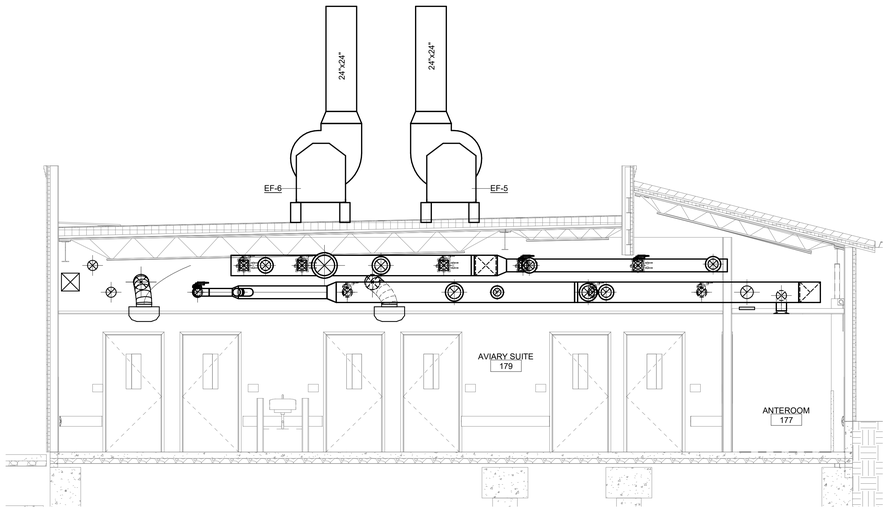
DRAWN BY: NZ
CHECKED BY: IM

SHEET TITLE
MECHANICAL PIPING FLOOR PLAN

MP101

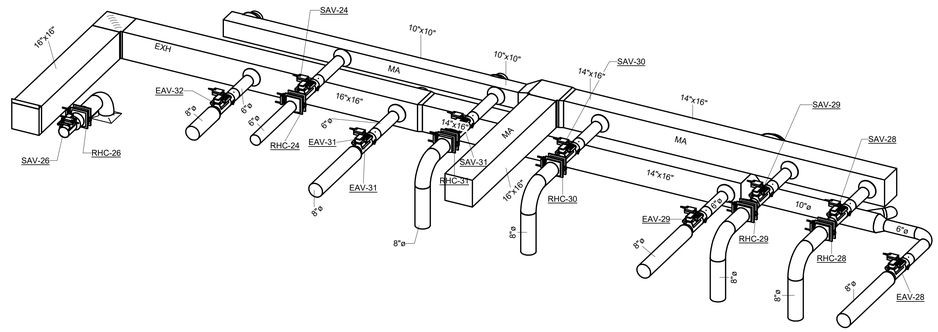
Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 3:44:12 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_navid2003zh.rvt



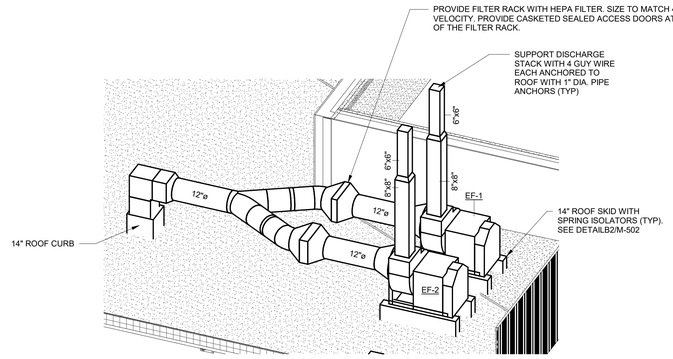
1 AVIARY SUITE SEC #001

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



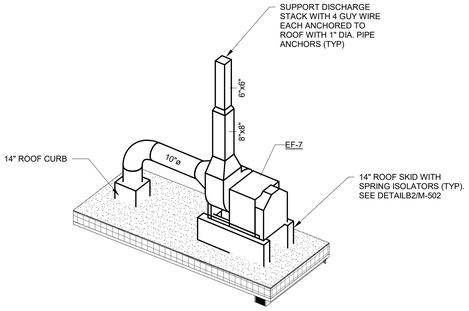
2 AVIARY SUITE MECH 3D PLAN

SCALE: NOT TO SCALE



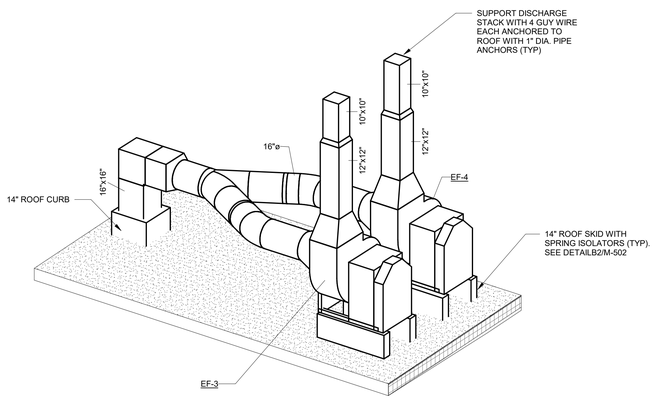
3 EF-1,2_ 3D MECH ROOF PLAN

SCALE: NOT TO SCALE



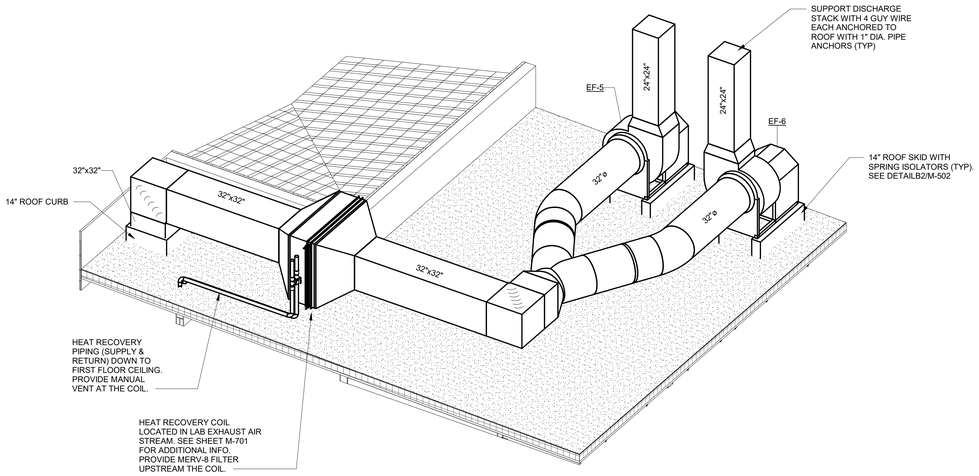
4 EF-7_ 3D MECH ROOF PLAN

SCALE: NOT TO SCALE



5 EF-3,4_ 3D MECH ROOF PLAN

SCALE: NOT TO SCALE



6 EF-5,6_ 3D MECH ROOF PLAN

SCALE: NOT TO SCALE

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: NZ
CHECKED BY: IM

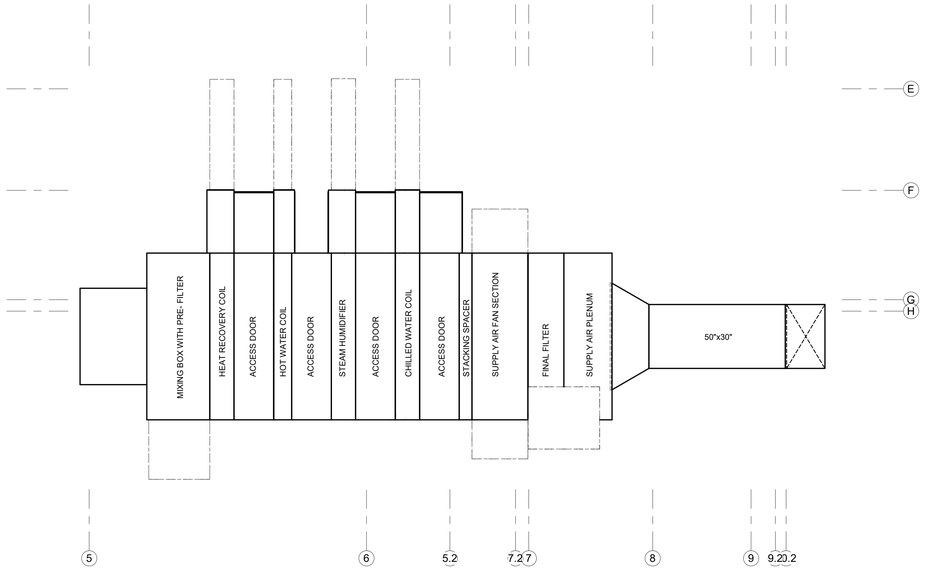
SHEET TITLE

MECHANICAL SECTIONS

M-301

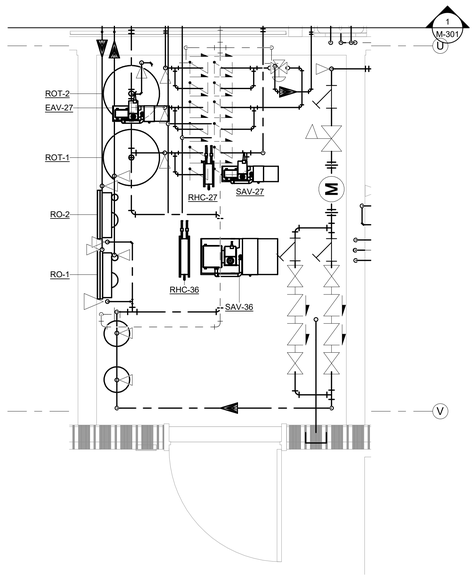
Bridgers & Paxton Project No: 8678 11/30/2023 1:10:49 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_navid2003ah.rvt

Biomedical Research Building Expansion



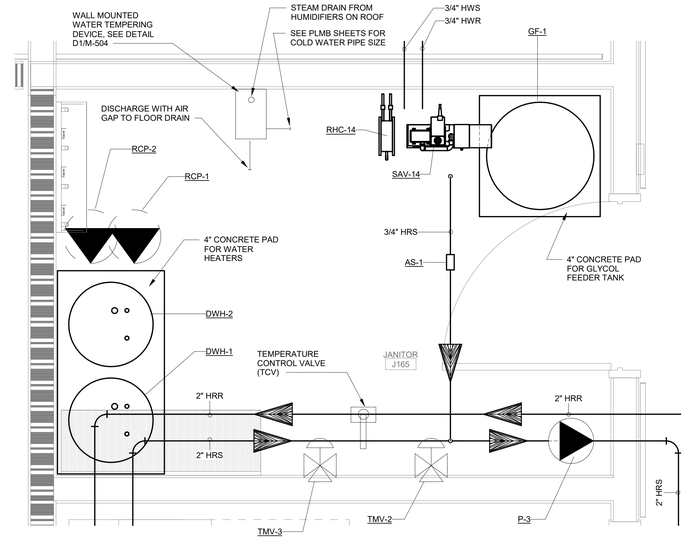
1 MAKE UP AIR UNIT SECTIONS

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



2 MECH ROOM ENLARGED PLAN

SCALE: 1/2" = 1'-0"



3 JAN-J165 ROOM ENLARGED PLAN

SCALE: 3/4" = 1'-0"

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: NZ
CHECKED BY: IM

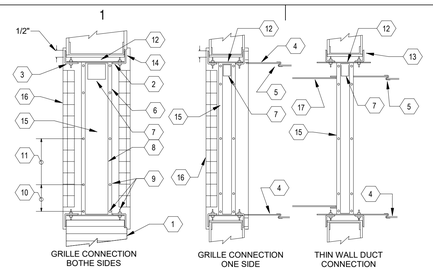
SHEET TITLE

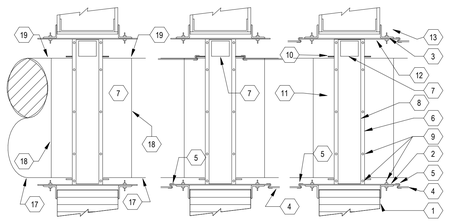
ENLARGED MECHANICAL PLANS

M-401

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 1:10:50 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_nanvl2003zh.rvt



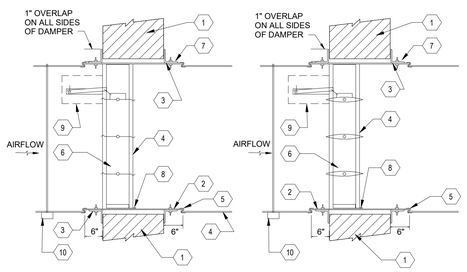


KEYNOTES

1. WALL (OR FLOOR)
2. SLEEVE - SEE INSTALLATION NOTES THIS SHEET
3. MOUNTING ANGLES CONTINUOUS AROUND SLEEVE WITH WELDED JOINTS
4. SQUARE OR RECTANGULAR DUCT
5. BREAKAWAY DUCT CONNECTION
6. FIRE DAMPER FRAME
7. FIRE DAMPER CURTAIN TYPE SQUARE OF RECTANGULAR
8. CURTAIN TRACT
9. BOLT, SCREW, RIVET, OR TACK WELDED CONNECTION
10. CORNER SPACING PER MANUFACTURE'S INSTALLATION INSTRUCTION
11. INTERMEDIATE SPACING PER MANUFACTURE'S INSTALLATION INSTRUCTION
12. 1/8" PER LINEAR FOOT BOTH DIMENSIONS, AND 1/4" MINIMUM
13. 1" MINIMUM OVERLAP OF STRUCTURAL OPENING
14. ALTERNATE MOUNTING ANGLE METHOD AS REQUIRED BY GRILLE
15. MAXIMUM WIDTH 1-7/8" RUSKIN MODEL IBDT OR APPROVED EQUAL
16. GRILLE OR REGISTER WITH A MIN. 1/2" OVERLAP. GRILLE OR REGISTER SHALL BE STEEL MINIMUM 26 GAGE FRAME THICKNESS AND SHALL NOT BE ATTACHED DIRECTLY TO WALL
17. ROUND OR OVAL DUCT
18. ROUND OR OVAL DUCT COLLAR FURNISHED WITH RECTANGULAR DAMPER ASSEMBLY
19. ROUND OR OVAL DUCT BREAKAWAY CONNECTION WITH EITHER DRAWBAND OR SHEET METAL SCREWS IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.

C1 FIRE DAMPER DETAIL - CURTAIN TYPE

SCALE = NONE



KEYNOTES

1. WALL OR FLOOR
2. SLEEVE - SEE INSTALLATION NOTES, THIS SHEET
3. MOUNTING ANGLES CONTINUOUS AROUND SLEEVE WITH MINIMUM 1" OVERLAP
4. SQUARE OR RECTANGULAR DAMPER FRAME FOR ROUND OR OVAL DUCTS, PROVIDE DUCT TRANSITION
5. BREAKAWAY DUCT CONNECTION - SEE INSTALLATION NOTES
6. FIRE DAMPER FUSIBLE LINK (NOT REQUIRED FOR COMBINATION FIRE/SMOKE DAMPERS OR SMOKE DAMPERS)
7. 1/4" MINIMUM EXPANSION CLEARANCE - SEE INSTALLATION NOTES
8. NEGATIVE SPRING (NOT REQUIRED FOR COMBINATION FIRE/SMOKE DAMOER OR SMOKE DAMPERS)
9. APPROVED SEALING MATERIAL IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS
10. U.L. APPROVED DAMPER ACTUATOR ASSEMBLY WITH MOUNTING BRACKET, ELECTRIC FUSE LINK, AND OPERATING JACK SHAFT LINKAGE. DAMPER ACTUATOR SHALL BE MOUNTED ON DUCT OUTSIDE AIR STREAM\

* FUSIBLE ROD IS NOT REQUIRED FOR SMOKE DAMPER APPLICATION

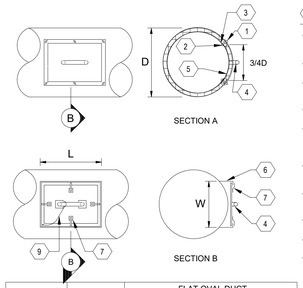
A1 FIRE DAMPER, SMOKE DAMPER, AND COMBINATION FIRE SMOKE DAMPER DETAILS

SCALE = NONE

1. OPENINGS IN FLOOR OR WALLS SHALL BE LARGER THAN THE DAMPER BY 1/8" FOR EACH LINEAR FOOT IN HEIGHT AND WIDTH OF THE DAMPER TO ALLOW FOR THERMAL EXPANSION, BUT THE OPENING SHALL NOT BE LESS THAN REQUIRED TO MAINTAIN A MINIMUM OF 1/4" CLEARANCE BETWEEN THE SLEEVE AND WALL ON ALL SIDES. IN INSTALLATIONS WHERE THE OPENING BETWEEN THE WALL AND SLEEVE REQUIRES FILLER MATERIAL (SEE NFPA 90A) THE FILLER MATERIAL SHALL BE OF FLEXIBLE CONSISTENCY TO ALLOW FOR EXPANSION OF THE FIRE DAMPER-ASSEMBLY.
2. THE FOLDED BLADE ASSEMBLY SHALL ALWAYS BE POSITIONED AT THE TOP WHEN THE DAMPER IS PLACED IN A WALL OPENING.
3. THE DAMPER SHALL BE POSITIONED IN THE OPENING SO THE HORIZONTAL CLEARANCE ALLOWED FOR EXPANSION IS EQUALLY DIVIDED AT BOTH SIDES OF THE DAMPER.
4. THE DAMPER SHALL BE POSITIONED IN THE OPENING SO THAT NO PART OVERLAPS THE PLANE FORMED BY EITHER SIDE OF THE WALL OF THE FIRE RATED FLOOR ASSEMBLY.
5. THE DUCT SHALL NOT BE CONTINUOUS THROUGH THE WALL OPENING, BUT SHALL BE CONNECTED TO THE DAMPER (OR SLEEVE DEPENDING UPON THE STYLE OF DAMPER) ON EITHER SIDE OF THE WALL.
6. APPROVED RECTANGULAR DUCT BREAKAWAY CONNECTIONS ARE: PLAIN 'S' SLIP; HEMMED 'S' SLIP; DOUBLE 'S' SLIP; INSIDE SLIP JOINT; STANDING 'S'; STANDING 'S' ANGLE OR BAR REINFORCED; STANDING 'S' ALTERNATE; AND DRIVE SLIP JOINT. FLANGED CONNECTION SYSTEMS MANUFACTURED BY DUCTMATE, NEXUS, WARD TDC(LOCK FORMER) AND TDF (ENGLE) MAY BE USED FOR BREAKAWAY CONNECTIONS WHERE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. APPROVED ROUND AND FLAT OVAL BREAKAWAY CONNECTIONS SHALL BE EITHER 4" WIDE DRAW BAND OR #10 SHEET METAL SCREWS, SPACED EQUALLY AROUND THE CIRCUMFERENCE OF THE DUCT IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. DO NOT BOLT, SCREW, RIVET, TACK WELD, ETC., DUCT CONNECTIONS TO THE DUCT-SLEEVE. SEAL DUCT CONNECTIONS WITH HARDCAST INC.
7. DAMPER FRAME MAY BE OF DESIGN AND LENGTH AS TO FUNCTION AS THE SLEEVE IF SO TESTED AND LABELED BY UL. OTHERWISE, THE SLEEVE SHALL BE CONTINUOUS THROUGH THE WALL WITH ALL WELDED SEAMS AND SHALL EXTEND A MINIMUM DISTANCE BEYOND THE PLANES FORMED BY BOTH WALLS OR FLOOR ASSEMBLY. EQUAL TO THE WIDTH OF THE RETAINING ANGLES, BUT SHALL NOT BE GREATER THAN WALL WIDTH PLUS MOUNTING ANGLE DIMENSIONS PLUS 8".
8. THE SLEEVE GAUGE SHALL BE EQUAL TO OR HEAVIER THAN THE GAUGE OF THE DUCT AS DEFINED BY THE APPROPRIATE SMACNA DUCT CONSTRUCTION STANDARD, BUT THE SLEEVE SHALL BE NOT LESS THAN REQUIRED TO PROVIDE INSTALLATION EQUIVALENT TO THE DAMPER MANUFACTURER'S UL TEST AND INSTALLATION INSTRUCTIONS.
9. THE FIRE DAMPER SHALL BE BOLTED, SCREWED, RIVETED, OR TACK WELDED TO THE SLEEVE AND THE SPACING SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.
10. THE SLEEVE-FIRE DAMPER ASSEMBLY SHALL BE THEN HELD IN PLACE IN THE WALL (OR FLOOR BY MOUNTING ANGLES, (MINIMUM OF 1-1/2" X 16 GAUGE, BUT NOT LESS THAN REQUIRED SLEEVE GAUGE AND MANUFACTURER'S INSTALLATION INSTRUCTIONS) ON BOTH SIDES OF WALL OR FLOOR ASSEMBLY. THESE MOUNTING ANGLES SHALL BE WELDED TO THE SLEEVE AT A SPACING IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. MOUNTING ANGLES SHALL OVERLAP THE WALL A MINIMUM OF ONE (1) INCH ON ALL SIDES AND SHALL NOT BE ATTACHED TO THE WALL.
11. WHEN MULTIPLE SECTIONS OF STEEL DAMPERS ARE JOINTED, THE CONNECTIONS SHALL BE ON BOTH SIDES OF DAMPER CURTAIN, AT A MAXIMUM DISTANCE OF 2" FROM ANY OF THE FOUR CORNERS AND A MAXIMUM SPACING OF 12" O.C. WITH A MINIMUM OF TWO CONNECTIONS IN EACH SIDE, TOP AND BOTTOM.
12. PROVIDE DUCT ACCESS DOORS AT ALL FIRE DAMPER LOCATIONS OF SUFFICIENT SIZE TO ALLOW EASY INSPECTION AND RESETTING OF DAMPER LINKAGES. PROVIDE CEILING ACCESS DOORS IN ALL GYP BOARD, PLASTER, OR CONCEALED SPLINE CEILINGS TO SERVICE ALL REQUIRED DUCT ACCESS DOORS. PROVIDE ACCESS DOORS IN ALL WALLS OR FLOORS THAT BLOCK ACCESS TO DUCT DOOR PROVIDING ACCESS TO THE FIRE DAMPER. DUCT ACCESS FOR SMALL FIRE DAMPERS 8" SQUARE DIAMETER AND LESS, MAY BE PROVIDED BY MEANS OF REMOVABLE FLEXIBLE DUCT SUBJECT TO THE APPROVAL OF THE BUILDING CODE AUTHORITY HAVING JURISDICTION.
13. ALL FIRE DAMPERS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND IN ACCORDANCE WITH THE FOLLOWING: UL STANDARD 555 FIRE DAMPERS; UL STANDARD 555S SMOKE DAMPERS AND LABELED AS UL LEAKAGE CLASS 1; NFPA STANDARD 90A AND 90B; CURRENT ADOPTED INTERNATIONAL BUILDING CODE AND THE CURRENT ADOPTED INTERNATIONAL MECHANICAL.
14. COMBINATION FIRE AND SMOKE DAMPERS SHALL BE MULTIBLADE TYPE DAMPER CERTIFIED AND LABELED IN ACCORDANCE WITH UL 555 CLASSIFICATION AND UL 555S CLASSIFICATION AS LEAKAGE CLASS 1S. DAMPER ASSEMBLY INSTALLATION SHALL BE PROVIDED IN ACCORDANCE WITH MANUFACTURER'S APPROVED INSTALLATION INSTRUCTIONS. DAMPERS SHALL BE FURNISHED BY THE MANUFACTURER WITH UL APPROVED DAMPER ACTUATOR AND FUSE LINK IN ACCORDANCE WITH SPECIFICATION SECTION 15800.

C2 FIRE DAMPER INSTALLATION NOTES

SCALE = NONE



W X L	ROUND DUCT DIAMETER	FLAT OVAL DUCT: MAJOR AXIS WHEN MOUNTED ON MAJOR AXIS	FLAT OVAL DUCT: MINOR AXIS WHEN MOUNTED ON MAJOR AXIS
8" X 12"	8" - 12"	8" - 16"	8" - 11"
12" X 12"	13" X 18"	17" - 24"	12" - 13"
14" X 20"	19" +	25" +	14" +

ROUND OR FLAT OVAL DUCT, 8" +

DUCT DIMENSION ON WHICH ACCESS DOOR IS PLACED	OUTSIDE FRAME W X L
6" - 8"	5" X 12"
9" - 12"	8" X 8"
13" - 15"	12" X 12"
16" - 33"	14" X 14"
34" - 66"	(2) 14" X 14"
67" +	(3) 14" X 14"

RECTANGULAR DUCTS

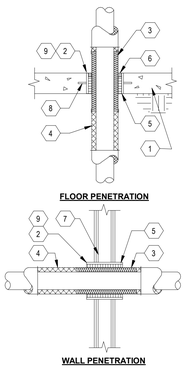
NOTE:
DUCT ACCESS DOORS SHALL BE PROVIDED AT EACH FIRE DAMPER, SMOKE DAMPER, DUCT MOUNTED EQUIPMENT, AND AS REQUIRED FOR DUCT CLEANING AND INSPECTION

KEYNOTES

1. BOLT AND WING NUT AT MAX. 3" O.C.
2. TACK WELD BOLT TO DUCT
3. PROVIDE GASKET BETWEEN DUCT AND ACCESS DOOR
4. HANDLE
5. INSULATE COVER AS REQUIRED BY DUCT INSULATION SPEC.
6. MIN. 20 GA FRAME WELDED TO DUCT
7. PRESSURE SENSITIVE LATCH FOR VACUUM RELEASE
8. RETAINER CHAIN
9. MIN. 22 GA GALV. STEEL FRAME
10. FRAME SECURED TO DUCT WITH 5/8" NOTCHED KNOCK-OVER EDGES ON ALL SIDES
11. CONTINUOUS HINGE
12. CAM LATCH
13. MIN. 22 GA DOOR

A2 DUCT ACCESS DOOR DETAIL

SCALE = NONE

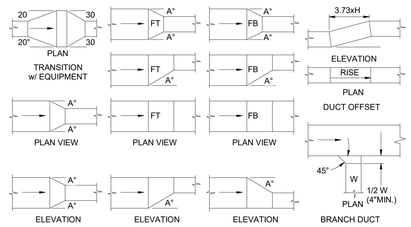


KEYNOTES

1. FLOOR STRUCTURE, SEE ARCH. DRAWINGS FOR RATING
2. PIPE SLEEVES, SEE SPECIFICATIONS. PROVIDE WATERSTOP FOR BELOW GRADE PENETRATIONS
3. ROCKWOOL OR APPROVED FIRE SAVING PIPE INSULATION THRU PENETRATION, MIN. 6" BOTH SIDES OF WALL OR FLOOR (FOR INSULATED PIPING ONLY)
4. PIPE INSULATION (WHERE REQUIRED)
5. U.L. LISTED SILICONE FOAM OR OTHER FIRE SAFE MATERIAL BETWEEN PIPE AND PIPE SLEEVES OR PIPE SLEEVE AND ROCKWOOL INSULATION FOR INSULATED PIPING
6. IF SILICONE FOAM IS NOT USED AS FIRE SAFING MATERIAL, SEAL WATER-PROOF WITH SILICONE SEALANT
7. PARTITION OR WALL, SEE ARCH. DWGS FOR RATING
8. ANCHOR ONE PIPE DIAMETER LONG 90° APART
9. PIPE SLEEVES NOT REQUIRED IN GYP-BOARD WALLS

D4 PIPE PENETRATION THRU FIRE RATED BARRIER

SCALE = NONE

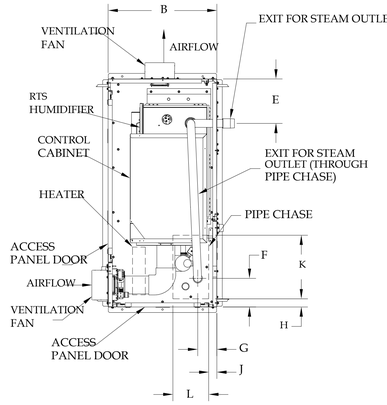


NOTES
- ANGLE A=30 MAXIMUM WHEN AIR FLOWS IN DIRECTION OF ARROWS. (SUPPLY AIR)
- ANGLE A=15 WHEN AIR FLOWS IN OPPOSITE DIRECTION OF ARROWS (R.A. OR EXHAUST)

C4 LOW PRESSURE DUCT FITTING DETAIL

SCALE = NONE

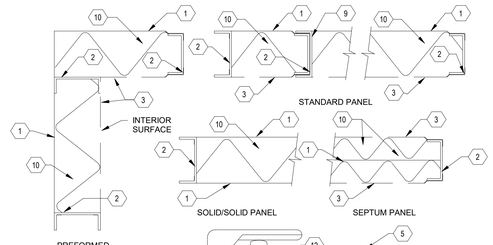
OUTDOOR ENCLOSURE DIMENSIONS



OUTDOOR ENCLOSURE DIMENSIONS		INCHES	MM
A	OVERALL LENGTH	62.8	1595
B	OVERALL WIDTH	32.8	833
C	OVERALL HEIGHT	62.0	1575
D	STEAM OUTLET (EXTERNAL)	55.0	1397
E		11.1	282
F	STEAM OUTLET (INTERNAL)	8.6	218
G		6.2	157
H	PIPE CHASE POSITION	4.4	112
J		4.4	112
K	PIPE CHASE DIMENSIONS	14.0	356
L		7.0	178

A4 OUTDOOR ENCLOSURE DIMENSIONS

SCALE: NOT TO SCALE



KEYNOTES

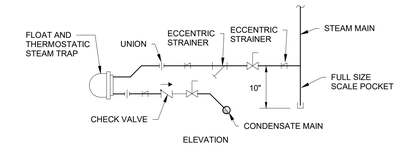
1. 18 GAUGE GALVANIZED SHEET METAL (MIN. GA.)
2. 16 GAUGE GALVANIZED SHEET METAL REINFORCING (MIN. GA.)
3. 22 GAUGE GALVANIZED PERFORATED SHEET METAL (MIN. GA.)
4. 16 GAUGE ALL WELDED FRAME (MIN. GA.)
5. 20 GAUGE GALVANIZED OFFSET HINGE.
6. CHANNEL ANCHORED SECURELY TO FINISH FLOOR.
7. GASKET MATERIAL FOR TIGHT SEAL, PER MFR. RECOMMENDATIONS.
8. FINISH FLOOR.
9. SEALING BEAD AT ALL LAP JOINTS FOR AIR TIGHT SEAL, (TYP.).
10. INSULATED PANELS, THICKNESS AS NOTED ON DRAWINGS.
11. GASKET, CONTINUOUS AROUND DOOR PERIMETER.
12. 20 GAUGE GALVANIZED SHEET METAL (MIN. GA.).

GENERAL NOTES:

- SEPTUM PANELS SHALL BE INSTALLED AT INTERIOR PARTITIONS, AROUND COILS, AIR WASHERS, FILTERS, FAN DISCHARGE (INTERIOR) PLENUM PARTY WALLS.
- PIPING AND DUCT PENETRATIONS THRU WALLS AND CEILINGS OF PLENUM SHALL BE SEALED AIRTIGHT. FOLLOW MFR'S RECOMMENDATIONS.
- PANELS SHALL BE MFR'D BY SEMCO OR EQUIVALENT, UNITS HAVING CERTIFIED TEST DATA ON SOUND & THERMAL TRANSMISSION.
- ALL ACCESS DOORS SHALL BE 24" x 60" MIN. SIZE, UNLESS OTHERWISE NOTED

C5 DOUBLE WALL PLENUM DETAIL

SCALE = NONE

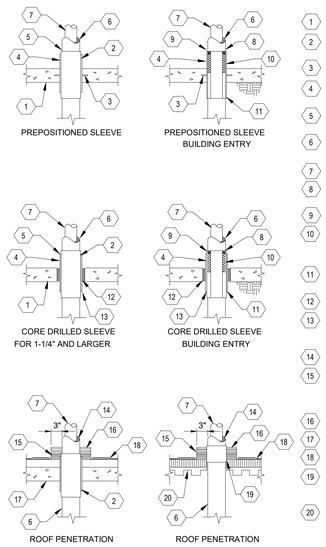


NOTE:

GAGE VALVE AND STRAINER ON LINE ENTERING TRAP ARE NOT REQUIRED ON EQUIPMENT WITH GATE VALVE AND STRAINER AT CONTROL VALVE

B5 END OF MAIN DRIP TRAP DETAIL

SCALE = NONE



1. CONCRETE STRUCTURE
2. PIPE SLEEVE SIZED FOR PIPE WITH INSULATION
3. WATERSTOP
4. EXTEND SLEEVE 4" ABOVE FINISHED FLOOR LEVEL
5. MINIMUM 18" LONG ALUMINUM INSULATION JACKET
6. INSULATION - SEE SPECS FOR THICKNESS
7. PIPE
8. SEAL WITH WATERPROOF CAULKING
9. MINIMUM 3/4" POURED LEAD
10. THIAKOL PLASTIC CEMENT (FOR TEMPERATURES OVER 200°F USE ASBESTOS ROPE)
11. PIPE SLEEVE (I.D. MIN. 1" LARGER THAN O.D. OF PIPE)
12. WATERPROOF GROUT
13. CORE DRILL MIN. 1" LARGER HOLE THAN O.D. OF PIPE SLEEVE (12" MAXIMUM CORE DRILL SIZE)
14. EXTERIOR INSULATION JACKET
15. PITCH PAN, 18 GA. GALV. SHEET METAL BY MECHANICAL CONTRACTOR, SUPPLIED TO ROOFING CONTRACTOR
16. FILL WITH PLASTIC FLASHING
17. CONCRET ROOF DECK
18. ROOFING
19. CAULK WITH FIBEROUS MATERIAL BEFORE ADDING PLASTIC FLASHING
20. STEEL DECK WITH INSULATION

A5 PIPE PENETRATION DETAIL

SCALE = NONE

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: NZ
CHECKED BY: IM

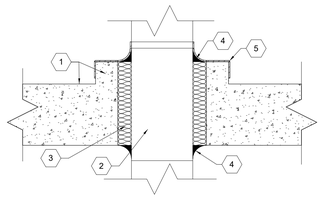
SHEET TITLE

MECHANICAL DETAILS

M-501

Bridgers & Paxton Project No: 8678 11/30/2023 1:10:52 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_navd2003zh.rvt

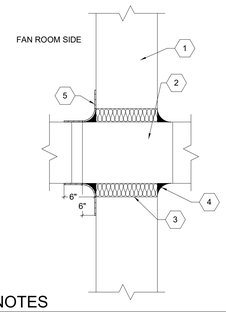
Biomedical Research Building Expansion



KEYNOTES

1. CONCRETE PENTHOUSE FLOOR AND 4" CONCRETE CURB AROUND DUCT PENETRATION.
2. DUCT - POSITIONED SUCH THAT THERE IS NO PHYSICAL CONTACT BETWEEN THE DUCT AND THE FLOOR. ENSURE GAP OF 1/2" TO 5/8" ON ALL SIDES.
3. FIBERGLASS OR MINERAL WOOL TYPE INSULATION.
4. NON-HARDENING RESILIENT CAULK - CONTINUOUS.
5. MASS LOADED VINYL SIMILAR TO KINETICS KNM 100RB WITH A SURFACE DENSITY OF NO LESS THAN 1.0 LB/SQ-FT. ADHERE TO THE DUCT AND ADJACENT CONCRETE WITH AN ADHESIVE RECOMMENDED BY THE VINYL MANUFACTURER.

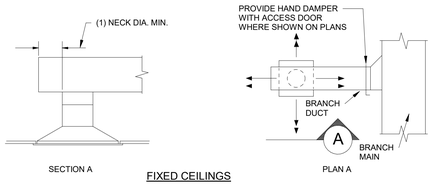
D1 PENTHOUSE FLOOR DUCT PENETRATION DETAIL
SCALE = NONE



KEYNOTES

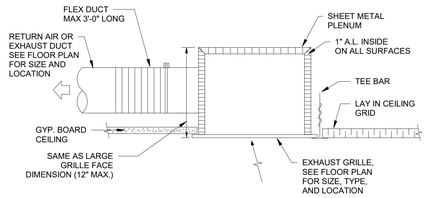
1. FAN ROOM WALL - REFER TO ARCHITECTURAL DRAWINGS FOR CONSTRUCTION TYPE.
2. DUCT POSITIONED SUCH THAT THERE IS NO PHYSICAL CONTACT BETWEEN THE DUCT AND THE WALL. ENSURE A GAP OF " TO " OU ALL SIDES. 1/2 5/8
3. FIBERGLASS OR MINERAL WOOL TYPE INSULATION.
4. NON-HARDENING RESILIENT CAULK - CONTINUOUS.
5. MASS LOADED VINYL, SIMILAR TO KINETICS KNM 100RB WITH A SURFACE DENSITY OF NO LESS THAN 1.0 LB/SQ-FT. ADHERE TO THE DUCT AND ADJACENT WALL WITH AN ADHESIVE RECOMMENDED BY THE VINYL MANUFACTURER.

C1 FAN ROOM WALL PENETRATION DETAIL
SCALE = NONE

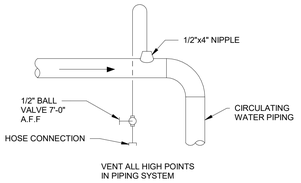


NOTE:
PROVIDE BALANCING DAMPER IN SUPPLY AND EXHAUST DUCTS REGARDLESS WHETHER SHOWN ON DRAWINGS

A1 DIFFUSER AND REGISTER CONNECTION DETAIL
SCALE = NONE

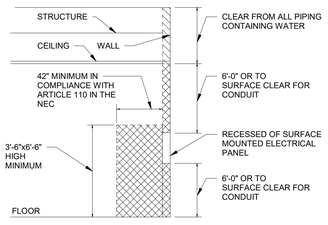


E2 RETURN AIR AND EXHAUST REGISTER DETAIL
SCALE = NONE

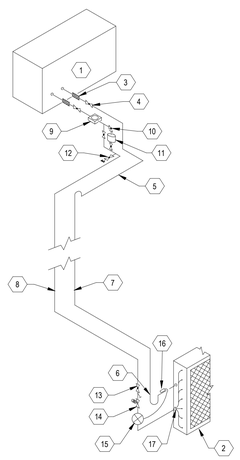


D3 MANUAL AIR VENT DETAIL
SCALE = NONE

B2 UTILITY VENT SET DETAIL
SCALE = NONE



A3 CLEARANCE REQUIREMENTS AT ELECTRICAL PANELS
SCALE = NONE



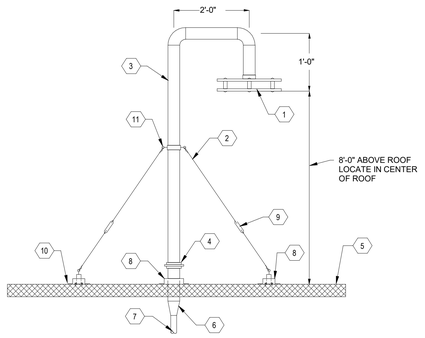
1. ROOF MOUNTED CONDENSING UNIT
2. DIRECT EXPANSION (DX) COIL
3. FLEXIBLE CONNECTION
4. GLOBE VALVE
5. SWING JOINT
6. TRAP, 6" MIN. 12" MAX.
7. INSULATED SUCTION LINE, SEE FLOOR PLAN FOR SIZE
8. INSULATED LIQUID LINE, SEE FLOOR PLAN FOR SIZE
9. SIGHT GLASS
10. ANGLE VALVE
11. FILTER
12. LIQUID CHARGING VALVE
13. STRAINER
14. SOLENOID VALVE TO BE LOCATED AS CLOSE TO EXPANSION VALVE AS POSSIBLE
15. EXPANSION VALVE
16. REMOTE BULB
17. DISTRIBUTION NOZZLE

D4 DX COIL PIPING SCHEMATIC
SCALE = NONE

SECTION A

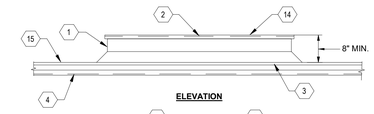
1. ROUND SUPPLY DUCT. SIZE PER PLAN.
2. PRICE MODEL SDS LINEAR SUPPLY DIFFUSER WITH FRAME TYPE 16 FOR MOUNTING DIRECTLY TO SPIRAL DUCT. MOUNT 45 DEGREES FROM CENTER, ANGLED DOWN. DIFFUSER SHALL BE BRUSHED METAL FINISH.
3. LOAD-RATED FASTENERS
4. THREADED ROD HANGER

C4 EXPOSED DUCT SUPPORT WITH LINEAR DIFFUSERS
SCALE = NONE



1. STATIC OUTSIDE AIR PROBE AIR MONTIR S.O.A.P.-1 OR EQUIVALENT
2. GUIDE WIRES (MIN 4)
3. 2" PIPE
4. UNION FOR S.O.A.P. STATION REMOVAL
5. BUILT-UP ROOF
6. 2-1/2"x1/2" REDUCER
7. 1/2" PIPE CONNECTED TO THE BUILDING STATIC PRESSURE REFERENCE PORTS. SEE CONTROLS.
8. SEE ARCH. DRAWINGS FOR PIPE PENETRATION DETAILS
9. TURN BUCKLES (TYPICAL)
10. 1" STEEL PIPE WELDED TO PLATE, BOLTED TO ROOF DECK
11. EYELET (TYPICAL)

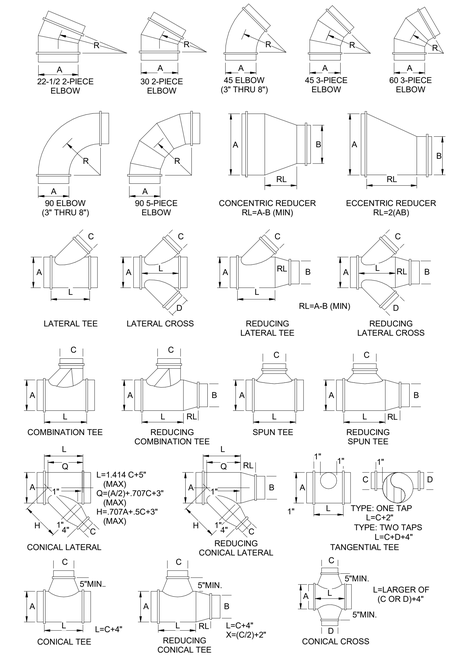
A4 S.O.A.P. DETAIL
SCALE = NONE



KEYNOTES

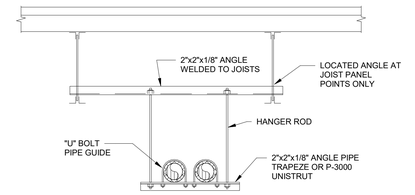
1. LOCATE SKIDS FOR SECURE EQUIPMENT SUPPORT
2. SKID SHALL SPAN TWO BEAMS MINIMUM
3. INSTALL SKIDS PERPENDICULAR TO ROOF BEAMS
4. ROOF, SEE ARCHITECTURAL DRAWINGS
5. 8"x8" TREATED REDWOOD SKID
6. FASTENERS AT 8" O.C.
7. BASE FLASHING
8. 20 GAUGE GALVANIZED SHEET METAL CAP
9. COUNTERFLASHING WITH FASTENERS 24" O.C.
10. FIBER CANT STRIP. SET IN BITUMEN
11. ROOF INSULATION. SEE ARCHITECTURAL DRAWINGS
12. MOP SKID IN PLACE WITH HOT ASPHALT TAR OR AS DIRECTED BY ARCHITECT
13. BLOCKING. ANCHOR SECURELY TO ROOF DECK. SAME THICKNESS AS ROOF INSULATION.
14. SET SKIDS TO BE LEVEL WHEN INSTALLED ON SLOPING ROOF

D5 ROOF SKID DETAIL
SCALE = NONE



NOTE: SEE SPECIFICATIONS FOR DUCT MATERIALS AND CONSTRUCTION

B5 MEDIUM VELOCITY AND ROUND DUCT FITTINGS
SCALE = NONE



NOTES:

1. 5 PROVIDE SHEET METAL SLEEVE AROUND PIPE INSULATION AT ALL PIPE HANGERS. SEE SPECS. FOR INSULATION
2. "U" BOLTS SHALL BE USED AS GUIDES ONLY, NOT ANCHORS.
3. "U" BOLTS SHALL BE ON EVERY THIRD TRAPEZE (MIN.)
4. DO NOT TIGHTEN "U" BOLTS ON PIPING OR INSULATION, LEAVE LOOSE AS PIPE GUIDE.

A5 PIPE HANGER DETAIL
SCALE = NONE

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

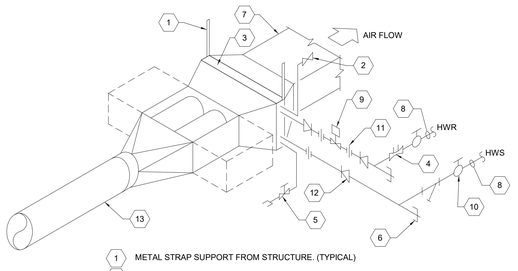
MARK	DATE	DESCRIPTION

DRAWN BY: NZ
CHECKED BY: IM

SHEET TITLE
MECHANICAL DETAILS

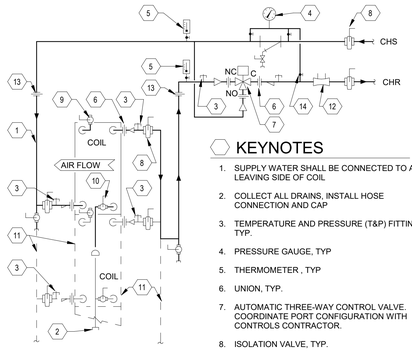
M-502

Bridgers & Paxton Project No: 8678
11/30/2023 1:10:54 PM
D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_savi2020zb.rvt
Biomedical Research Building Expansion



1. METAL STRAP SUPPORT FROM STRUCTURE. (TYPICAL)
2. MANUAL AIR VENT ON COIL OR HWR PIPING.
3. HOT WATER COIL
4. FLOW CONTROL VALVE, SEE SPECIFICATIONS.
5. DRAIN
6. TEMPERATURE-PRESSURE FITTING (TYP.)
7. LOW VELOCITY DUCTWORK TO DISTRIBUTION.
8. REFER TO PLANS FOR PIPE SIZES.
9. 2-WAY CONTROL VALVE, NORMALLY CLOSED. FAIL TO COOL.
10. BALL VALVE (TYP)
11. UNION (TYP)
12. REDUCER (TYP)
13. HIGH VELOCITY RIGID SUPPLY DUCT, 3 FT. MINIMUM STRAIGHT RUN PRIOR TO TERMINAL UNIT CONNECTION. SEE SCHEDULE FOR VALVE AND DUCT SIZE.

D1 LABORATORY CONTROL AIR VALVE WITH REHEAT PIPING DETAIL (2-WAY)
SCALE = NONE



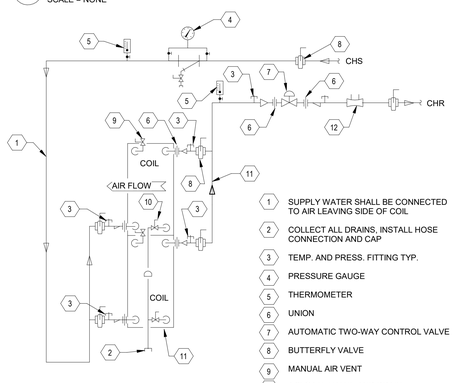
KEYNOTES

1. SUPPLY WATER SHALL BE CONNECTED TO AIR LEAVING SIDE OF COIL
2. COLLECT ALL DRAINS, INSTALL HOSE CONNECTION AND CAP
3. TEMPERATURE AND PRESSURE (T&P) FITTING, TYP.
4. PRESSURE GAUGE, TYP
5. THERMOMETER , TYP
6. UNION, TYP.
7. AUTOMATIC THREE-WAY CONTROL VALVE. COORDINATE PORT CONFIGURATION WITH CONTROLS CONTRACTOR.
8. ISOLATION VALVE, TYP.
9. MANUAL AIR VENT
10. 1/2" SHUT-OFF VALVE AND DRAIN
11. DASHED PIPING AND COILS INDICATE TYPICAL IPING REQUIREMENTS FOR MULTIPLE COILS
12. AUTOMATIC FLOW LIMITING VALVE. SEE SPECIFICATIONS.
13. UNION OR FLANGE. INSTALL SO AS TO ALLOW REMOVAL OF COIL WITHOUT MAJOR REMOVAL OF PIPING.
14. GAUGE COCK, TYP.

NOTE:

- PROVIDE MANUAL AIR VENTS AT ALL HIGH POINTS IN SYSTEM. SEE MANUAL AIR VENT DETAIL
- SEE PLANS AND/OR PIPING SCHEMATIC FOR PIPE SIZES.
- T&P FITTINGS INSTALLED IN PIPING 2" AND SMALLER SHALL BE INSTALLED IN ELBOW OR IN THE BRANCH SIDE OF A 2" TEE.
- DRAIN VALVE AT ALL LOW POINTS OF PIPING. SEE DRAIN VALVE DETAIL

B1 CHILLED WATER COIL PIPING SCHEMATIC (3-WAY)
SCALE = NONE



1. SUPPLY WATER SHALL BE CONNECTED TO AIR LEAVING SIDE OF COIL
2. COLLECT ALL DRAINS, INSTALL HOSE CONNECTION AND CAP
3. TEMP. AND PRESS. FITTING TYP.
4. PRESSURE GAUGE
5. THERMOMETER
6. UNION
7. AUTOMATIC TWO-WAY CONTROL VALVE
8. BUTTERFLY VALVE
9. MANUAL AIR VENT
10. 1/2" GATE VALVE AND DRAIN
11. TYPICAL PIPING REQUIREMENTS FOR MULTIPLE COILS
12. FLOW BALANCING VALVE, SEE SPECIFICATIONS

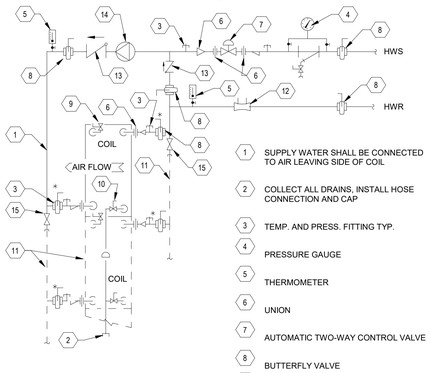
GENERAL NOTES

1 PROVIDE MANUAL AIR VENTS AT ALL HIGH POINTS IN SYSTEM.

2 SEE PLANS AND/OR PIPING SCHEMATIC FOR PIPE SIZES.

3 TEMP./PRESS. FITTINGS INSTALLED IN PIPING 2" AND SMALLER SHALL BE INSTALLED IN ELBOW OR IN THE BRANCH SIDE OF A 2" TEE.

A1 CHILLED WATER COIL PIPING SCHEMATIC (2-WAY)
SCALE = NONE



1. SUPPLY WATER SHALL BE CONNECTED TO AIR LEAVING SIDE OF COIL
2. COLLECT ALL DRAINS, INSTALL HOSE CONNECTION AND CAP
3. TEMP. AND PRESS. FITTING TYP.
4. PRESSURE GAUGE
5. THERMOMETER
6. UNION
7. AUTOMATIC TWO-WAY CONTROL VALVE
8. BUTTERFLY VALVE
9. MANUAL AIR VENT
10. 1/2" GATE VALVE AND DRAIN
11. DASHED PIPING AND COILS INDICATE TYPICAL PIPING REQUIREMENTS FOR MULTIPLE COILS
12. FLOW CONTROL VALVE, SEE SPECIFICATIONS
13. CHECK VALVE
14. IN-LINE PUMP, SEE DETAIL
15. DRAIN VALVE IN BOTTOM OF PIPE DROP. SEE DRAIN VALVE DETAIL

GENERAL NOTES

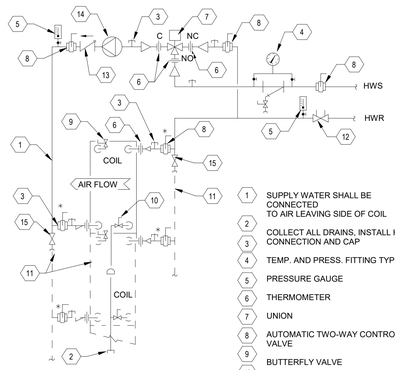
1 PROVIDE MANUAL AIR VENTS AT ALL HIGH POINTS IN SYSTEM.

2 SEE PLANS AND/OR PIPING SCHEMATIC FOR PIPE SIZES.

3 TEMP./PRESS. FITTINGS INSTALLED IN PIPING 2" AND SMALLER SHALL BE INSTALLED IN ELBOW OR IN THE BRANCH SIDE OF A 2" TEE.

* THIS VALVE NOT REQUIRED FOR COILS HAVING SINGLE SUPPLY & RETURN CONNECTIONS

D2 HOT WATER COIL PIPING SCHEMATIC (2-WAY)
SCALE = NONE



1. SUPPLY WATER SHALL BE CONNECTED TO AIR LEAVING SIDE OF COIL
2. COLLECT ALL DRAINS, INSTALL HOSE CONNECTION AND CAP
3. TEMP. AND PRESS. FITTING TYP.
4. PRESSURE GAUGE
5. THERMOMETER
6. UNION
7. AUTOMATIC TWO-WAY CONTROL VALVE
8. BUTTERFLY VALVE
9. MANUAL AIR VENT
10. 1/2" GATE VALVE AND DRAIN
11. DASHED PIPING AND COILS INDICATE TYPICAL PIPING REQUIREMENTS FOR MULTIPLE COILS
12. FLOW CONTROL VALVE, SEE SPECIFICATIONS SECT. 15080
13. CHECK VALVE
14. IN-LINE PUMP, SEE DETAIL
15. DRAIN VALVE IN BOTTOM OF PIPE DROP. SEE DRAIN VALVE DETAIL

GENERAL NOTES

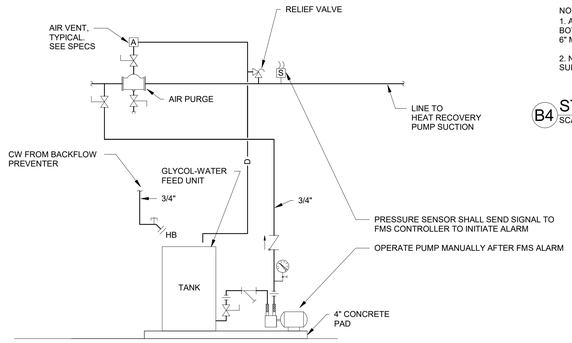
1 PROVIDE MANUAL AIR VENTS AT ALL HIGH POINTS IN SYSTEM.

2 SEE PLANS AND/OR PIPING SCHEMATIC FOR PIPE SIZES.

3 TEMP./PRESS. FITTINGS INSTALLED IN PIPING 2" AND SMALLER SHALL BE INSTALLED IN ELBOW OR IN THE BRANCH SIDE OF A 2" TEE.

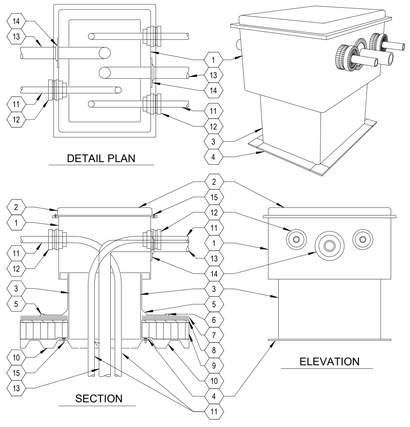
* THIS VALVE NOT REQUIRED FOR COILS HAVING SINGLE SUPPLY & RETURN CONNECTIONS

B2 HOT WATER COIL PIPING SCHEMATIC (3-WAY)
SCALE = NONE



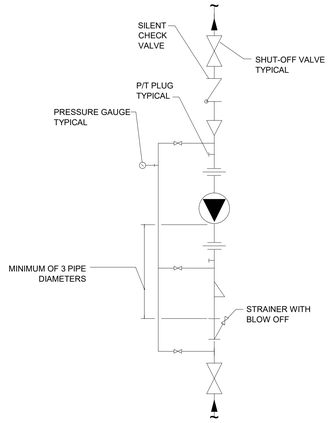
NOTE:
SET REGULATING VALVE TO MAINTAIN MAKE-UP PRESSURE 15 PSIG ABOVE HIGHEST SYSTEM PRV SETTING.

A3 AIR CONTROL AND MAKE-UP FOR GLYCOL SYSTEM
SCALE = NONE

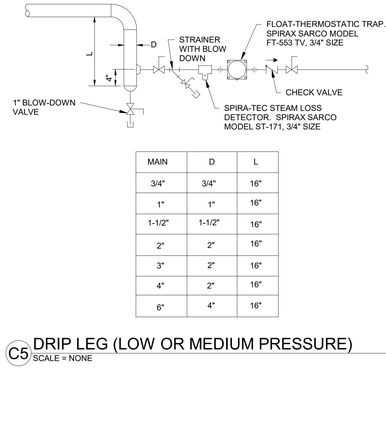


1. VAULT , SEE PLAN FOR MODEL NUMBER
2. MATCHING PREFAB ALUMINUM CAP
3. MATCHING ALUMINUM CURB 14" HIGH MIN. TO COMPLY WITH WIND RATING, CURB MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.
4. ALUM FLANGE, FASTEN TO ROOF DECK
5. SBS FLASHING MEMBRANE
6. CONTINUOUS CAULK WITH RUBBERIZED ASPHALT SEALANT
7. ROOFING SYSTEM
8. RECOVERY BOARD
9. RIGID INSULATION
10. METAL ROOF DECK
11. CONDUIT, PIPE, REFRIGERANT LINE, ETC. SIZES FROM 0.25" THRU 1.90" O.D.
12. EXIT SEAL FOR SIZES FROM 0.25" THRU 1.90" O.D.
13. CONDUIT, PIPE, REFRIGERANT LINE, ETC. SIZES FROM 1.90" THRU 15" O.D.
14. EXIT SEAL FOR SIZES FROM 1.90" THRU 15" O.D.
15. VANDAL RESISTANT STAINLESS SCREWS
16. FASTEN CURB FLANGE TO ROOF DECK

D4 ROOF PENETRATION HOUSING
SCALE = NONE

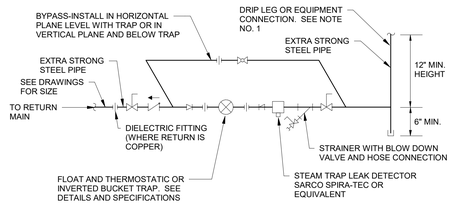


C4 IN-LINE PUMP DETAIL
SCALE = NONE



MAIN	D	L
3/4"	3/4"	16"
1"	1"	16"
1-1/2"	1-1/2"	16"
2"	2"	16"
3"	2"	16"
4"	2"	16"
6"	4"	16"

C5 DRIP LEG (LOW OR MEDIUM PRESSURE)
SCALE = NONE



NOTES:
1. ALL DRIP POINTS ON STEAM SHALL BE PROVIDED WITH A 12" MINIMUM HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN OR EQUIVALENT CONNECTION TO TRAP INLET. DRIP LEG SHALL HAVE 6" MINIMUM LENGTH SCALE POCKET BELOW TRAP INLET.

2. NO BYPASS IS REQUIRED ON THE TRAP SET PROVIDED FOR THE DRIPPING OF LOW PRESSURE SUPPLY MAINS (15 PSIG OR LESS).

B4 STEAM TRAP DETAIL
SCALE = NONE

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: NZ
CHECKED BY: IM

SHEET TITLE

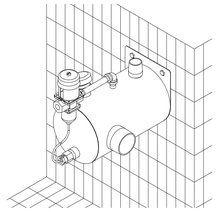
MECHANICAL DETAILS

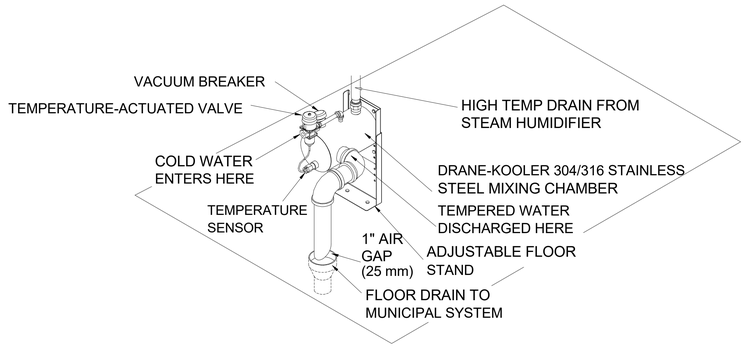
M-503

Biomedical Research Building Expansion

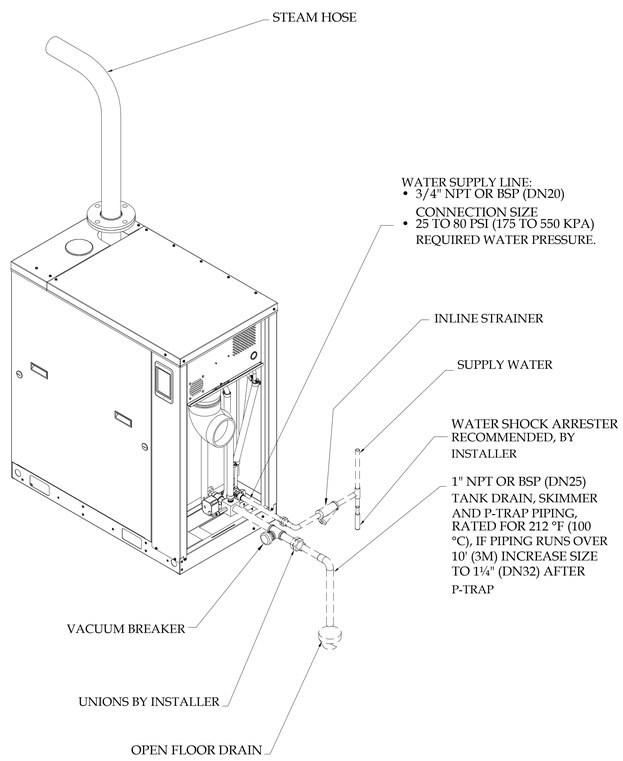
Bridgers & Paxton Project No: 8678 11/30/2023 1:10:55 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_nav\d2003zh.rvt

STANDARD WALL MOUNT





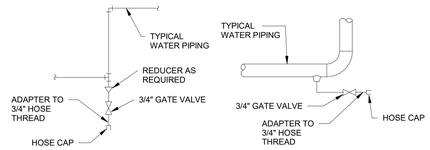
D1 WALL MOUNTED WATER TEMPERING DEVICE
SCALE: NOT TO SCALE



NOTES:

- LOCATE AIR GAP ONLY IN SPACES WITH ADEQUATE TEMPERATURE AND AIR MOVEMENT TO ABSORB FLASH STEAM; OTHERWISE, CONDENSATION MAY FORM ON NEARBY SURFACES. REFER TO GOVERNING CODES FOR DRAIN PIPE SIZE AND MAXIMUM DISCHARGE WATER TEMPERATURE.
- OFFSET HUMIDIFIER FROM SPILL FUNNEL OR FLOOR DRAIN TO PREVENT FLASH STEAM FROM RISING INTO THE CABINET.
- DASHED LINES INDICATE PROVIDED BY INSTALLER.
- THE WATER SUPPLY INLET IS MORE THAN 1" (25 MM) ABOVE THE OVERFLOW PORT, ELIMINATING THE POSSIBILITY OF BACKFLOW OR SIPHONING FROM THE TANK. NO ADDITIONAL BACKFLOW PREVENTION IS REQUIRED; HOWEVER, GOVERNING CODES PREVAIL.
- INSTALL A UNION IN THE WATER SUPPLY AND DRAIN LINES AS SHOWN TO ALLOW TANK REMOVAL.

A1 STEAM HUMIDIFIER DRAIN DETAIL
SCALE: NOT TO SCALE



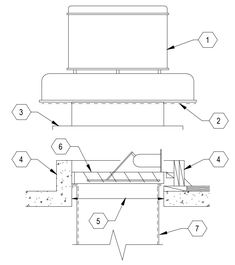
ELEVATION THREADED PIPE

ELEVATION WELDED PIPE

NOTES:

1. DRAIN ALL LOW POINTS OF PIPING
2. DRAIN ALL SCALE POCKETS AS SHOWN ON PLANS AND/OR PIPING DIAGRAMS

E3 DRAIN VALVE DETAIL
SCALE = NONE



KEYNOTES

1. POWER ROOF EXHAUSTER
2. BIRDSCREEN
3. INTEGRAL CURB CAP SECURE AND CAULK TO CURB
4. FACTORY CURB SECURELY ANCHORED TO ROOF OR AS SHOWN ON ARCHITECTURAL DRAWINGS. FLASH AND COUNTERFLASH
5. ROOF OPENING - MIN. 1" LARGER THAN DUCT SIZE AS SHOWN ON PLANS
6. MOTORIZED DAMPER
7. ACOUSTICALLY LINED DUCT UNLESS EXHAUSTING MOIST AIR

D3 POWER ROOF EXHAUSTER DETAIL
SCALE = NONE

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: NZ
CHECKED BY: IM

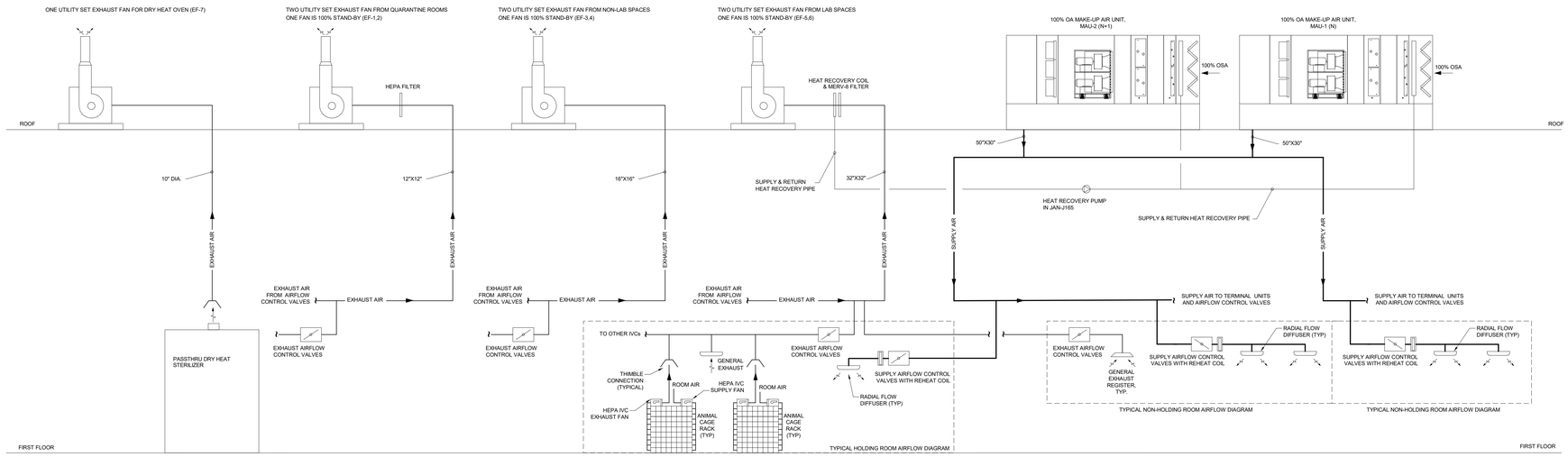
SHEET TITLE

MECHANICAL DETAILS

M-504

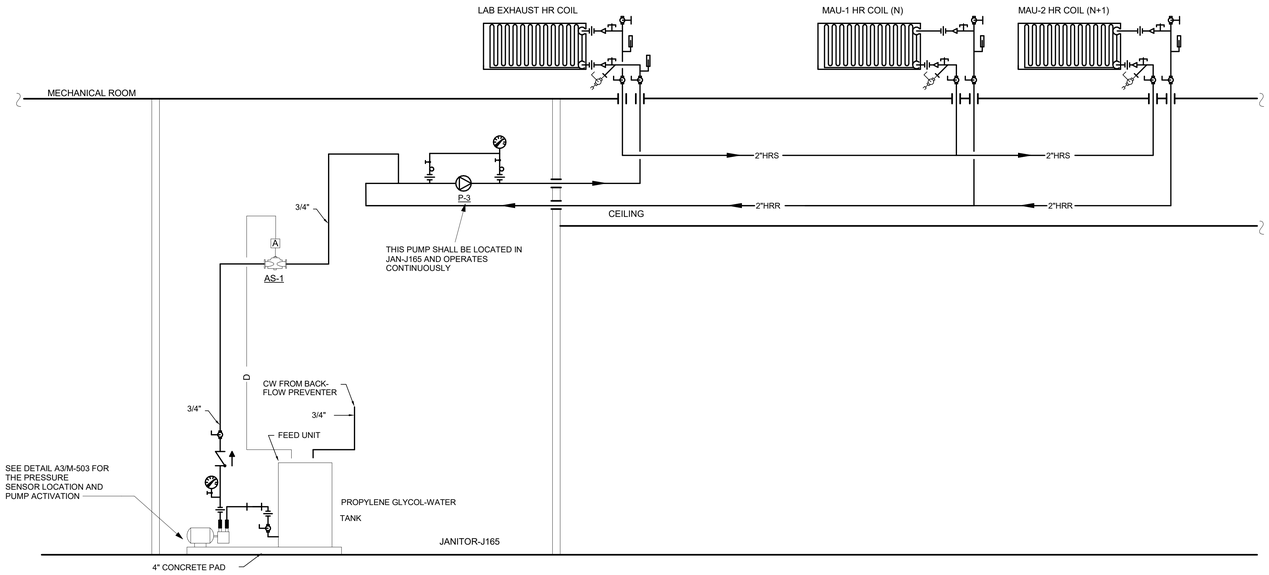
Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 1:10:56 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_nanvd2003dh.rvt



1 SUPPLY & EXHAUST AIR FLOW DIAGRAM

SCALE: NOT TO SCALE



2 GLYCOL FEEDER AND HEAT RECOVERY DIAGRAM

SCALE: NOT TO SCALE

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: NZ
CHECKED BY: IM

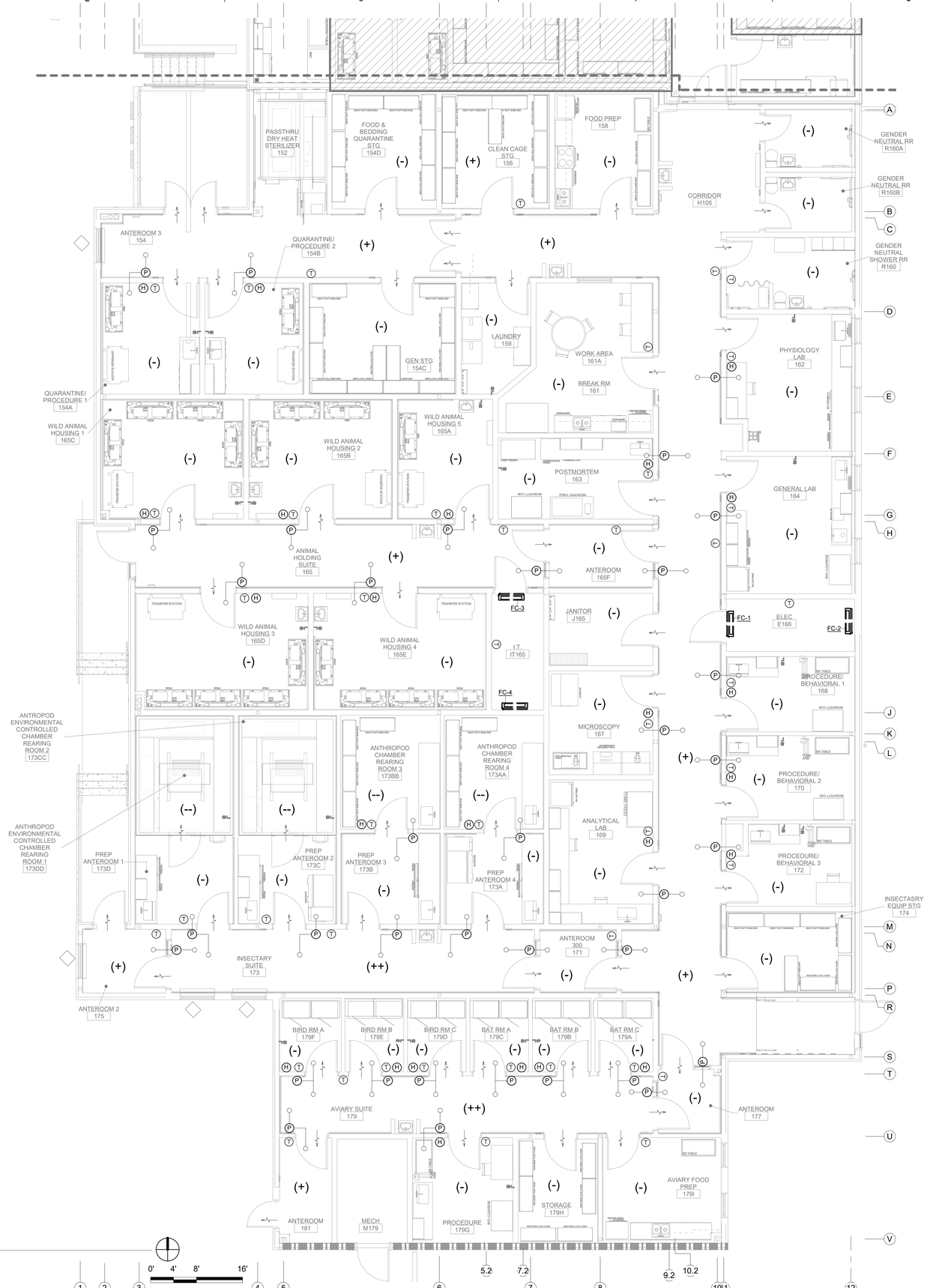
SHEET TITLE

MECHANICAL DIAGRAM

M-601

Bridgers & Paxton Project No: 8678 11/30/2023 3:40:08 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_navid2003ch.rvt

Biomedical Research Building Expansion



1 HVAC FLOOR PLAN
3/16" = 1'-0"

0' 4' 8' 16'

Indoor Design Conditions

Area	Minimum Design ACH per NIH Req'mnts	20% Increase in ACH Per NIH Req'mnts	100% Outside air	Temp Range	RH %	Noise Criteria
Wild Animal Housing	10	12	Yes	70 - 76	35-70	NC-40
Arthropod Rearing Room	15	18	Yes	70 - 76	35-70	NC-40
Anteroom	6	7.2	Yes	70 - 76	35-70	NC-40
Procedure Behavioral	6	7.2	Yes	70 - 76	35-70	NC-40
General Lab	6	7.2	Yes	70 - 76	35-70	NC-35
Physiology Lab	6	7.2	Yes	70 - 76	35-70	NC-40
Clean Cage Storage	6	7.2	Yes	70 - 76	35-70	NC-45
Quarantine Room	15	18	Yes	70 - 76	35-70	NC-45
Microscopy Lab	6	7.2	Yes	70 - 76	35-70	NC-45
Analytical Lab	6	7.2	Yes	70 - 76	35-70	NC-45
Aviary Holding	15	18	Yes	N/A	45-70	NC-40
Aviary Procedure	15	18	Yes	70 - 76	45-70	NC-40
Aviary Food Preparation	6	7.2	Yes	70 - 76	45-70	NC-40
Aviary Equipment Storage	6	7.2	Yes	70 - 76	45-70	NC-40

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: NZ
CHECKED BY: IM

SHEET TITLE

MECHANICAL PRESSURE DIAGRAM

M-602

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 1:11:01 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_navid2003ath.rvt

OUTDOOR VAV MAKE-UP AIR UNIT

SYMBOL	DAIKIN MODEL NO.	TYPE	LOCATION	STATUS	DESIGN CAPACITY FOR FUTURE GROWTH (CFM)	T&B CAPACITY AT PRESENT (CFM)	SUPPLY FAN SECTION						HEAT RECOVERY COIL	CHILLED WATER COOLING COIL									
							FAN TYPE / SIZE	ECM FAN QTY.	EACH ECM FAN					FLUID	MAX. FACE VEL. (FPM)	AIRFLOW (CFM)	TC / SC (MBH)	EAT (°F)	LAT (°F)	AIR MAX. PD (IN. WC)	EWT / LWT (F)	WATER PD (FT)	GPM	ROWS / FPF	FLUID VEL (FPS)
									AIRFLOW (CFM)	EXT. SP. (IN. WC)	RPM	HP	V/PH/HZ					DB/WB	DB/WB						
MAU-1	TRANE PSCA-ECMRt-54	VAV - 100%OSA	ROOF	100% RUNNING	20,000	16,000	15.7 IMPELLER FAN REDU WIDTH	6	3,333	2.60	3357	8.050	460/3/60	REFER TO HEAT RECOVERY SCHEDULE	100% WATER	378	20,000	1270 / 474	75 / 71.2	50 / 50	0.526	42 / 60	10.5	140	8 / 116	2.32
MAU-2	TRANE PSCA-ECMRt-54	VAV - 100%OSA	ROOF	100% STAND-BY	20,000	16,000	15.7 IMPELLER FAN REDU WIDTH	6	3,333	2.60	3357	8.050	460/3/60	REFER TO HEAT RECOVERY SCHEDULE	100% WATER	378	20,000	1270 / 474	75 / 71.2	50 / 50	0.526	42 / 60	10.5	140	8 / 116	2.32

OUTDOOR VAV MAKE-UP AIR UNIT (CONTINUED)

SYMBOL	HOT WATER HEATING COIL										STEAM HUMIDIFIER		STEAM HUMIDIFIER		FILTER		OUTSIDE AIR (CFM)	CIRCUIT #1 (460/3/60)		CIRCUIT #2 (115/1/60)		CIRCUIT #3 (115/1/60)		TOTAL OPERATING WEIGHT (LBS.)	OVERALL UNIT DIMENSIONS (L X H X W) (INCHES)	SOUND POWER BY OCTAVE BAND							
	TOTAL CAPACITY (MBH)	AIR FLOW (CFM)	MAX. FACE VELOCITY (FPM)	EAT / LAT (°F)	ROWS / FPF	GPM	WATER TEMP (°F)		MAX PRESSURE LOSS		HUMIDIFICATION LOAD (LBS/HR)	ENTERING AIR RH (%)	LEAVING AIR RH (%)	EAT / LAT (F)	PRE	FINAL		MCA1	MOP1	MCA2	MOP2	MCA3	MOP3			63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ
							ENT.	LVG.	AIR (IN. WC)	WATER (FT)																						
MAU-1	822.82	20,000	386	18 / 63	1/ 80	55	180.00	150.00	0.035	2.65	520	7	61	55 / 57	MERV 8 & MERV 13	MERV 14	20,000	51.91	60.00	3.26	15	10	15	18,000	370.0 X 91.3 X 127.5	86	83	93	88	96	67	68	66
MAU-2	822.82	20,000	386	18 / 63	1/ 80	55	180.00	150.00	0.035	2.65	520	7	61	55 / 57	MERV 8 & MERV 13	MERV 14	20,000	51.91	60.00	3.26	15	10	15	18,000	370.0 X 91.3 X 127.5	86	83	93	88	96	67	68	66

- FURNISH WITH ELEC DISCONNECT, ECM FANS, 18" ROOF CURB, SPRING ISOLATION IN FAN SECTION, INSULATED PIPE CABINET, WATERPROOF MARINE LIGHTS

HEAT RECOVERY LOOP - SUPPLY SIDE

SYMBOL	TYPE	MANUFACTURER & MODEL NO.	COIL CONSTRUCTION											SUMMER SUPPLY									WINTER SUPPLY									
			FIN HEIGHT (IN)	FIN LENGTH (IN)	ROWS/ FPI	FACE AREA (SF) / VELOCITY (FPM)	SUPPLY CONNECTION (IN)	RETURN CONNECTION (IN)	TUBE DETAIL			FIN DETAIL			SUPPLY CFM	CAPACITY (MBH)	EAT (DB/WB)	LAT (DB/WB)	APD (IN.W.G)	FLUID TYPE %	GPM	EFT (DEG F)	LFT (DEG F)	FLUID VEL. (FPS)	FPD (FT)	SUPPLY CFM	CAPACITY (MBH)	EAT (DB)	LAT (DB)	APD (IN.W.G)	FLUID TYPE %	GPM	EFT (DEG F)	LFT (DEG F)	FLUID VEL. (FPS)	FPD (FT)
									MATERIAL	OD	WALL THICKNESS (IN)	MATERIAL	THICKNESS (IN)	CASING																				
HR COIL-01	SUPPLY	GREENHECK 58S04S12-87x74	87	74	4 / 12	44.7 / 447	2"	2"	COPPER	5/8"	0.02"	COPPER	0.006"	16 GA	20,000	147	98 / 67	89.6 / 64.6	0.37	PROP 30%	40.0	84.9	92.9	2.3	9.5	20,000	337	15	31.5	0.4	PROP 30%	40.0	52.0	33.4	3.12	16.7

- SA COILS TO BE LOCATED INSIDE MAU-1 & 2 OUTSIDE AIR INTAKE SECTION

HEAT RECOVERY LOOP- EXHAUST SIDE

SYMBOL	TYPE	MANUFACTURER & MODEL NO.	COIL CONSTRUCTION											SUMMER EXHASUT									WINTER EXHAUST									
			FIN HEIGHT (IN)	FIN LENGTH (IN)	ROWS/ FPI	FACE AREA (SF) / VELOCITY (FPM)	SUPPLY CONNECTION (IN)	RETURN CONNECTION (IN)	TUBE DETAIL			FIN DETAIL			SUPPLY CFM	CAPACITY (MBH)	EAT (DB)	LAT (DB)	APD (IN.W.G)	FLUID TYPE %	GPM	EFT (DEG F)	LFT (DEG F)	FLUID VEL. (FPS)	FPD (FT)	EXHAUST CFM	CAPACITY (MBH)	EAT (DB)	LAT (DB)	APD (IN.W.G)	FLUID TYPE %	GPM	EFT (DEG F)	LFT (DEG F)	FLUID VEL. (FPS)	FPD (FT)
									MATERIAL	OD	WALL THICKNESS (IN)	MATERIAL	THICKNESS (IN)	CASING																				
HR COIL-02	EXHAUST	GREENHECK 58SO6S12-60-74	60	74	6 / 12	30.8 / 454	2.0	2.0	COPPER	5/8"	0.02	COPPER	0.006	16 GA	14,000	147	78	89.6	0.58	PROP 30%	40	92.9	84.8	2.57	9.1	14,000	337	75	48.3	0.56	PROP 30%	40	33.4	52.1	2.91	17.1

- EXH. COIL TO BE LOCATED UPSTREAM THE LAB EXHAUST FANS (EF-5 & 6)

EXHAUST FANS

SYMBOL	GREENHECK MODEL NO.	AREA SERVED	TYPE	DESIGN CAPACITY FOR FUTURE GROWTH (CFM)	T&B CAPACITY AT PRESENT (CFM)	S.P. (IN. WC)	FAN RPM	BHP	MOTOR DATA						SOUND POWER BY OCTAVE BAND								OPERATING WEIGHT (LBS.)	DAMPERS	NOTES
									HP	VOLT	PH	HZ	MCA / MOP	FLA	63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ			
EF-1	COOK - 120 CPV (VF2)	QUARANTINE/PROCEDURE 154 A,B	UTILITY SET FAN - ECM MOTOR	860	720	1.7	2003	0.4	0.5	460	3	60	-	1.1	93	91	83	77	72	69	65	58	170	MOTORIZED	FURNISH WITH ECM PANEL WITH HOA, ROOF SKID SUPPORTS, VIBRATION ISOLATORS, ELEC DISCOUNT, INSTALL PER DETAIL B2/M-502
EF-2	COOK - 120 CPV (VF2)	QUARANTINE/PROCEDURE 154 A,B	UTILITY SET FAN - ECM MOTOR	860	720	1.7	2003	0.4	0.5	460	3	60	-	1.1	93	91	83	77	72	69	65	58	170	MOTORIZED	FURNISH WITH ECM PANEL WITH HOA, ROOF SKID SUPPORTS, VIBRATION ISOLATORS, ELEC DISCOUNT, INSTALL PER DETAIL B2/M-502, 100% STANDBY
EF-3	GREENHECK USF-16	NON-LAB SPACES	UTILITY SET FAN - ECM MOTOR	2,300	1,820	1.0	1273	0.57	1.0	208	3	60	6.2 / 10	-	90	82	81	71	71	68	62	62	270	MOTORIZED	FURNISH WITH ECM PANEL WITH HOA, ROOF SKID SUPPORTS, VIBRATION ISOLATORS, ELEC DISCOUNT, INSTALL PER DETAIL B2/M-502
EF-4	GREENHECK USF-16	NON-LAB SPACES	UTILITY SET FAN - ECM MOTOR	2,300	1,820	1.0	1273	0.57	1.0	208	3	60	6.2 / 10	-	90	82	81	71	71	68	62	62	270	MOTORIZED	FURNISH WITH ECM PANEL WITH HOA, ROOF SKID SUPPORTS, VIBRATION ISOLATORS, ELEC DISCOUNT, INSTALL PER DETAIL B2/M-502, 100% STANDBY
EF-5	GREENHECK USF-36	LAB SPACES	BELT DRIVE UTILITY SET FAN	14,000	11,450	3.0	849	8.9	10	460	3	60	-	14	96	96	86	85	83	79	74	68	1500	MOTORIZED	FURNISH WITH VFD, ROOF SKID SUPPORTS, VIBRATION ISOLATORS, ELEC DISCOUNT, INSTALL PER DETAIL B2/M-502
EF-6	GREENHECK USF-36	LAB SPACES	BELT DRIVE UTILITY SET FAN	14,000	11,450	3.0	849	8.9	10	460	3	60	-	14	96	96	86	85	83	79	74	68	1500	MOTORIZED	FURNISH WITH VFD, ROOF SKID SUPPORTS, VIBRATION ISOLATORS, ELEC DISCOUNT, INSTALL PER DETAIL B2/M-502, 100% STANDBY
EF-7	GREENHECK USF-13	DRY HEAT AUTOCLAVE	UTILITY SET FAN - ECM MOTOR	810	810	0.55	1073	0.11	1/4	208	1	60	4 / 15	-	80	74	67	62	58	54	49	47	110	MOTORIZED	FURNISH WITH ECM PANEL WITH HOA, ROOF SKID SUPPORTS, VIBRATION ISOLATORS, ELEC DISCOUNT, INSTALL PER DETAIL B2/M-502, INTERLOCKED WITH SAV-41
EF-8	GREENHECK GB-130-4	MECH ROOM	BELT DRIVE CENTRIFUGAL ROOF EXHAUST FAN	1,000	1,000	0.5	1103	0.16	1/4	208	1	60	-	3.2	72	71	71	65	61	59	52	45	60	BACKDRAFT	PROVIDE 115V MOTORIZED DAMPER, ELEC DISCONNECT, 16" ROOF CURB

- ALL EXHAUST FANS SHALL OPERATE 24 HOURS PER DAY, 7 DAYS PER A WEEK.
- ALL EXHAUST FANS SHALL BE CONNECTED TO EMERGENCY ELEC POWER SYSTEM .
- ALL FLEX CONNECTIONS AT THE INLET TO THE FAN SHALL BE FIRE-RATED NEOPRENE-COATED GLASS FIBER.
- FUME HOOD EXHAUST DUCTWORK & EXHAUST FANS SHALL BE CONSTRUCTED OF CORROSION-RESISTANT MATERIAL SUCH AS 316L WELDED STAINLESS STEEL OR BE COATED WITH A PROTECTIVE CORROSION-RESISTANT PRODUCT SUCH AS EPOXY PHENOLIC.

GAS FIRED STEAM HUMIDIFIER

SYMBOL	MANUFACTURER & MODEL NO.	LOCATION	SERVING	STEAM CAPACITY (LB/HR)	TYPE	DRAIN	STEAM CONDENSATE	WATER SUPPLY				STEAM OUTLET TYPE & DIA. (IN)	ELEC					WITH ELEC HEATED ENCLOSURE		NOTE
								MIN PR. (PSIG)	MAX PR. (PSIG)	FILL RATE (GPM)	WATER CONNECTION (IN)		VOLT	PHASE	HZ	KW	CURRENT DRAW (AMP)	OPERATING WEIGHT (LBS)	DIMENSION H X L X W (IN)	
ESH-1	DRISTEEM RX-264-4	ROOF	MAU-1	264	ELEC	1"	3/4"	25	80	6	3/4"	3" WELDED FLANGE	460	3	60	88	130	1,000	62 X 32.8 X 62.8	FURNISH WITH ELEC HEATED ENCLOSURE, 14" CURB, STAINLESS STEEL PIPING, ELEC DISCONNECT, BACNET, WALL MOUNTED WATER TEMPERING DEVICE, SEE DETAIL A1 & D1/M-504
ESH-2	DRISTEEM RX-264-4	ROOF	MAU-1	264	ELEC	1"	3/4"	25	80	6	3/4"	3" WELDED FLANGE	460	3	60	88	130	1,000	62 X 32.8 X 62.8	FURNISH WITH ELEC HEATED ENCLOSURE, 14" CURB, STAINLESS STEEL PIPING, ELEC DISCONNECT, BACNET, WALL MOUNTED WATER TEMPERING DEVICE, SEE DETAIL A1 & D1/M-504
ESH-3	DRISTEEM RX-264-4	ROOF	MAU-2	264	ELEC	1"	3/4"	25	80	6	3/4"	3" WELDED FLANGE	460	3	60	88	130	1,000	62 X 32.8 X 62.8	FURNISH WITH ELEC HEATED ENCLOSURE, 14" CURB, STAINLESS STEEL PIPING, ELEC DISCONNECT, BACNET, WALL MOUNTED WATER TEMPERING DEVICE, SEE DETAIL A1 & D1/M-504, 100% STAND-BY
ESH-4	DRISTEEM RX-264-4	ROOF	MAU-2	264	ELEC	1"	3/4"	25	80	6	3/4"	3" WELDED FLANGE	460	3	60	88	130	1,000	62 X 32.8 X 62.8	FURNISH WITH ELEC HEATED ENCLOSURE, 14" CURB, STAINLESS STEEL PIPING, ELEC DISCONNECT, BACNET, WALL MOUNTED WATER TEMPERING DEVICE, SEE DETAIL A1 & D1/M-504, 100% STAND-BY

INDOOR SPLIT SYSTEM SCHEDULE

SYMBOL	MANUFACTURER	CAPACITY (TON)	AREA SERVED	TYPE	AIRFLOW (CFM)	COOLING CAPACITY (BTUH)	HEATING CAPACITY (BTUH)	EAT DB (F)	EAT WB (F)	PIPING			MOTOR DATA			WEIGHT (LBS)	HEIGHT / WIDTH / DEPTH (IN)	NOTE
										RS DIA.	RL DIA.	DRAIN	VOLT	PH	HZ			
FC-1	MITSUBISHI, PKA-A36KA4	3.0	ELEC E166	WALL MOUNTED	1160	36,000	24,000	80	67	5/8"	3/8"	1-1/4"	208	1	60	55	33 X 12 X 15	FURNISH W/ WIRED 7-DAY PROG T'STAT,CONDENSATE PUMP - SAUERMANN MODEL SI3100, CONNECT TO CU-1, R-410A REFRIGERANT, ELEC DISCONNECT BY DIV 26
FC-2	MITSUBISHI, PKA-A36KA4	3.0	ELEC E166	WALL MOUNTED	1160	36,000	24,000	80	67	5/8"	3/8"	1-1/4"	208	1	60	55	33 X 12 X 15	FURNISH W/ WIRED 7-DAY PROG T'STAT,CONDENSATE PUMP - SAUERMANN MODEL SI3100, CONNECT TO CU-2, R-410A REFRIGERANT, ELEC DISCONNECT BY DIV 26, 100% STAND-BY
FC-3	MITSUBISHI, PKA-A36KA4	3.0	IT 165	WALL MOUNTED	1160	36,000	24,000	80	67	5/8"	3/8"	1-1/4"	208	1	60	55	33 X 12 X 15	FURNISH W/ WIRED 7-DAY PROG T'STAT,CONDENSATE PUMP - SAUERMANN MODEL SI3100, CONNECT TO CU-3, R-410A REFRIGERANT, ELEC DISCONNECT BY DIV 26
FC-4	MITSUBISHI, PKA-A36KA4	3.0	IT 165	WALL MOUNTED	1160	36,000	24,000	80	67	5/8"	3/8"	1-1/4"	208	1	60	55	33 X 12 X 15	FURNISH W/ WIRED 7-DAY PROG T'STAT,CONDENSATE PUMP - SAUERMANN MODEL SI3100, CONNECT TO CU-4, R-410A REFRIGERANT, ELEC DISCONNECT BY DIV 26, 100% STAND-BY

OUTDOOR SPLIT SYSTEM SCHEDULE

SYMBOL	MANUFACTURER, MODEL NO.	LOCATION	INDOOR UNIT SERVED	COOLING		HEATING		LIQUID SIZE	SUCTION SIZE	ELECTRICAL DATA					WEIGHT (LBS)	HEIGHT/ WIDTH/ DEPTH (IN)	NOTE
				CAPACITY (BTUH)	AMBIENT DB (F)	CAPACITY (BTUH)	AMBIENT DB (F)			VOLTS	PH	HZ	MCA	MOP			
CU-1	MITSUBISHI PUZ-HA36NHA4	ROOF	FC-1	36,000	95	27,000	15	3/8"	5/8"	208	1	60	28	30	265	23 X 12 X 24	FURNISH W/ LO AMBIENT KIT (HEATING TO 5°F AMBIENT) AND WIND BAFFLE, INTERLOCK W/ FC-1
CU-2	MITSUBISHI PUZ-HA36NHA4	ROOF	FC-2	36,000	95	27,000	15	3/8"	5/8"	208	1	60	28	30	265	23 X 12 X 24	FURNISH W/ LO AMBIENT KIT (HEATING TO 5°F AMBIENT) AND WIND BAFFLE, INTERLOCK W/ FC-2, 100% STAND-BY
CU-3	MITSUBISHI PUZ-HA36NHA4	ROOF	FC-3	36,000	95	27,000	15	3/8"	5/8"	208	1	60	28	30	265	23 X 12 X 24	FURNISH W/ LO AMBIENT KIT (HEATING TO 5°F AMBIENT) AND WIND BAFFLE, INTERLOCK W/ FC-3
CU-4	MITSUBISHI PUZ-HA36NHA4	ROOF	FC-4	36,000	95	27,000	15	3/8"	5/8"	208	1	60	28	30	265	23 X 12 X 24	FURNISH W/ LO AMBIENT KIT (HEATING TO 5°F AMBIENT) AND WIND BAFFLE, INTERLOCK W/ FC-4, 100% STAND-BY

GLYCOL FEEDER

SYMBOL	WESSELS MODEL NO.	TANK VOL. (GAL)	LOCATION	SERVICE	TANK DIAMETER (IN)	HEIGHT (IN)	PRESSURE RANGE (PSI)	HP	V/PH/HZ	MAKE-UP CAPACITY		WEIGHT (LBS)	NOTE
										GPM	PSI		
GF-1	GMP-13050	50	JANITOR J165	HEAT RECOVERY LOOP	28"	42"	10-70	1/3	115/1/60	1.8	70	90	4" CONCRETE PAD, SEE DETAIL A3/M-503 FOR PRESSURE SENSOR AND PUMP ACTIVATION

AIR SEPARATOR

SYMBOL	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	GPM	WATER TEMP. (DEG F)	MAX. VELOCITY (FPS)	MAX WORKING PRESSURE (PSIG)	PIPE CONNECTION (IN)
AS-1	TACO 49-075	JANITOR J165	HEAT RECOVERY FILL	1.8	100	5.0	150	3/4"

ALL SELECTIONS ARE BASED ON 4,500 FT. ABOVE SEA LEVEL.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: NZ
CHECKED BY: IM

SHEET TITLE
MECHANICAL SCHEDULES-1

M-701

Bridgers & Paxton Project No: 8678
11/30/2023 1:11:05 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_navis2003zb.rvt
Biomedical Research Building Expansion

SUPPLY AIRFLOW CONTROL VALVES (SEE SPECIFICATION SECTION 230900)

SYMBOL	ACCUTROL MODEL NO.	ROOM SERVED	T&B CAPACITY AT PRESENT (CFM)	DESIGN CAPACITY FOR FUTURE GROWTH (CFM)		SERVICE	PRESSURE DROP (IN. WC)	VALVE SIZE (IN.)
				OCCUPIED CFM	UNOCCUPIED CFM			
SAV-1	ACV6000	FOOD-158, STG-156, BEDDING QUARANTINE-154D	540	810	810	SUPPLY	0.2	10
SAV-2	ACV6000	GENDER NEUTRAL RR-160A/B, SHOWER RR-R160	260	320	320	SUPPLY	0.2	8
SAV-3	ACV6000	PHYSIOLOGY LAB-162	220	300	300	SUPPLY	0.2	8
SAV-4	ACV6000	GENERAL LAB-164	430	540	540	SUPPLY	0.2	10
SAV-5	ACV6000	QUARANTINE/PROCEDURE 1-154A	260	330	330	SUPPLY	0.2	8
SAV-6	ACV6000	QUARANTINE/PROCEDURE 2-154B	260	330	330	SUPPLY	0.2	8
SAV-7	ACV6000	WORK AREA-161A, LAUNDRY-159, GEN STG-154C	480	710	710	SUPPLY	0.2	10
SAV-8	ACV6000	WILD ANIMAL HOUSING 1-165C	260	340	340	SUPPLY	0.2	8
SAV-9	ACV6000	WILD ANIMAL HOUSING 2-165B	260	340	340	SUPPLY	0.2	8
SAV-10	ACV6000	WILD ANIMAL HOUSING 5-165A	140	200	200	SUPPLY	0.2	6
SAV-11	ACV6000	POSTMORTEM-163	430	540	540	SUPPLY	0.2	10
SAV-12	ACV6000	WILD ANIMAL HOUSING 3-165D	330	420	420	SUPPLY	0.2	8
SAV-13	ACV6000	WILD ANIMAL HOUSING 4-165E	330	420	420	SUPPLY	0.2	8
SAV-14	ACV6000	ANTEROOM-165F	100	160	160	SUPPLY	0.2	6
SAV-15	ACV6000	MICROSCOPY-167, JANITOR-J165	160	300	300	SUPPLY	0.2	8
SAV-16	ACV6000	PREP ANTEROOM 1-173D, CHAMBER-173DD	280	370	370	SUPPLY	0.2	8
SAV-17	ACV6000	PREP ANTEROOM 2-173C, CHAMBER-173CC	280	370	370	SUPPLY	0.2	8
SAV-18	ACV6000	PREP ANTEROOM 3-173B, CHAMBER-173BB	260	360	360	SUPPLY	0.2	8
SAV-19	ACV6000	PREP ANTEROOM 4-173A, CHAMBER-173AA	260	360	360	SUPPLY	0.2	8
SAV-20	ACV6000	PROCEDURE/BEHAVIORAL 1-168	530	660	660	SUPPLY	0.2	10
SAV-21	ACV6000	PROCEDURE/BEHAVIORAL 2-170	530	660	660	SUPPLY	0.2	10
SAV-22	ACV6000	PROCEDURE 3-172, INSECTARY-174	320	430	430	SUPPLY	0.2	8
SAV-23	ACV6000	ANALYTICAL LAB-169	790	950	950	SUPPLY	0.2	12
SAV-24	ACV6000	ANTEROOM 300-171	60	100	100	SUPPLY	0.2	6
SAV-25	ACV6000	ANTEROOM 2-175	250	300	300	SUPPLY	0.2	8
SAV-26	ACV6000	ANTEROOM-177	100	160	160	SUPPLY	0.2	6
SAV-27	ACV6000	BIRD ROOM A-179F	100	120	120	SUPPLY	0.2	6
SAV-28	ACV6000	BIRD ROOM B-179E	100	120	120	SUPPLY	0.2	6
SAV-29	ACV6000	BIRD ROOM C-179D	100	120	120	SUPPLY	0.2	6
SAV-30	ACV6000	BAT ROOM A-179C	100	120	120	SUPPLY	0.2	6
SAV-31	ACV6000	BAT ROOM B-179B	100	120	120	SUPPLY	0.2	6
SAV-32	ACV6000	BAT ROOM C-179A	100	120	120	SUPPLY	0.2	6
SAV-33	ACV6000	AVIARY FOOD PREP-179I, STORAGE-179H	280	360	360	SUPPLY	0.2	8
SAV-34	ACV6000	PROCEDURE-179G	530	660	660	SUPPLY	0.2	10
SAV-35	ACV6000	ANTEROOM-181	200	240	240	SUPPLY	0.2	8
SAV-36	ACV6000	AVIARY SUITE-179	1200	1200	1200	SUPPLY	0.2	14
SAV-37	ACV6000	INSECTARY SUITE-173	1100	1400	1400	SUPPLY	0.2	14
SAV-38	ACV6000	ANIMAL HOLDING SUITE-165	660	780	780	SUPPLY	0.2	10
SAV-39A	ACV6000	CORRIDOR-H105	1000	1200	1200	SUPPLY	0.2	14
SAV-39B	ACV6000	CORRIDOR-H105	1000	1200	1200	SUPPLY	0.2	14
SAV-40	ACV6000	ANTEROOM 3-154	600	750	750	SUPPLY	0.2	10
SAV-41	ACV6000	PASSTHRU DRY HEAT STERILIZER-152	710	710	710	SUPPLY	0.2	10

- FURNISH W/ 277/24VAC (100 VA) TRANSFORMER

EXHAUST AIRFLOW CONTROL VALVES (SEE SPECIFICATION SECTION 230900)

SYMBOL	ACCUTROL MODEL NO.	ROOM SERVED	SERVICE	T&B CAPACITY AT PRESENT (CFM)	DESIGN CAPACITY FOR FUTURE GROWTH (CFM)		PRESSURE DROP (IN. WC)	VALVE SIZE (IN.)
					OCCUPIED CFM	UNOCCUPIED CFM		
EAV-1	ACV6000	FOOD-158, STG-156, BEDDING QUARANTINE-154D	EXHAUST	640	810	810	0.2	10
EAV-2	ACV6000	GENDER NEUTRAL RR-160A/B, SHOWER RR-R160	EXHAUST	400	480	480	0.2	8
EAV-3	ACV6000	PHYSIOLOGY LAB-162	EXHAUST	320	400	400	0.2	8
EAV-4	ACV6000	GENERAL LAB-164	EXHAUST	530	640	640	0.2	10
EAV-5	ACV6000	QUARANTINE/PROCEDURE 1-154A	EXHAUST	360	430	430	0.2	8
EAV-6	ACV6000	QUARANTINE/PROCEDURE 2-154B	EXHAUST	360	430	430	0.2	8
EAV-7	ACV6000	BREAK ROOM-161, LAUNDRY-159, GEN STG-154C	EXHAUST	780	1010	1010	0.2	12
EAV-8	ACV6000	WILD ANIMAL HOUSING 1-165C	EXHAUST	360	440	440	0.2	8
EAV-9	ACV6000	WILD ANIMAL HOUSING 2-165B	EXHAUST	360	440	440	0.2	8
EAV-10	ACV6000	WILD ANIMAL HOUSING 5-165A	EXHAUST	240	300	300	0.2	8
EAV-11	ACV6000	POSTMORTEM-163	EXHAUST	530	640	640	0.2	10
EAV-12	ACV6000	WILD ANIMAL HOUSING 3-165D	EXHAUST	430	520	520	0.2	8
EAV-13	ACV6000	WILD ANIMAL HOUSING 4-165E	EXHAUST	430	520	520	0.2	8
EAV-14	ACV6000	ANTEROOM-165F	EXHAUST	300	360	360	0.2	8
EAV-15	ACV6000	MICROSCOPY-167, JANITOR-J165	EXHAUST	310	500	500	0.2	8
EAV-16	ACV6000	PREP ANTEROOM 1-173D, CHAMBER-173DD	EXHAUST	580	690	690	0.2	10
EAV-17	ACV6000	PREP ANTEROOM 2-173C, CHAMBER-173CC	EXHAUST	580	690	690	0.2	10
EAV-18	ACV6000	PREP ANTEROOM 3-173B, CHAMBER-173BB	EXHAUST	560	680	680	0.2	10
EAV-19	ACV6000	PREP ANTEROOM 4-173A, CHAMBER-173AA	EXHAUST	560	680	680	0.2	10
EAV-20	ACV6000	PROCEDURE/BEHAVIORAL 1-168	EXHAUST	630	760	760	0.2	10
EAV-21	ACV6000	PROCEDURE/BEHAVIORAL 2-170	EXHAUST	630	760	760	0.2	10
EAV-22	ACV6000	PROCEDURE 3-172, INSECTARY STG-174	EXHAUST	520	630	630	0.2	10
EAV-23A	ACV6000	ANALYTICAL LAB-169	EXHAUST	445	950	950	0.2	12
EAV-23B	ACV6000	ANALYTICAL LAB-169	EXHAUST	445	100	100	0.2	6
EAV-24	ACV6000	ANTEROOM 300-171	EXHAUST	260	300	300	0.2	8
EAV-25	ACV6000	ANTEROOM 2-175	EXHAUST	100	120	360	0.2	6
EAV-26	ACV6000	ANTEROOM-177	EXHAUST	300	360	180	0.2	8
EAV-27	ACV6000	BIRD ROOM A-179F	EXHAUST	150	180	170	0.2	6
EAV-28	ACV6000	BIRD ROOM B-179E	EXHAUST	140	170	170	0.2	6
EAV-29	ACV6000	BIRD ROOM C-179D	EXHAUST	140	170	170	0.2	6
EAV-30	ACV6000	BAT ROOM A-179C	EXHAUST	140	170	170	0.2	6
EAV-31	ACV6000	BAT ROOM B-179B	EXHAUST	140	170	170	0.2	6
EAV-32	ACV6000	BAT ROOM C-179A	EXHAUST	140	170	170	0.2	6
EAV-33	ACV6000	AVIARY FOOD PREP-179I, STORAGE-179H	EXHAUST	450	540	540	0.2	10
EAV-34	ACV6000	PROCEDURE-179G	EXHAUST	630	760	760	0.2	10
EAV-35	ACV6000	ANTEROOM-181	EXHAUST	100	140	140	0.2	6

- FURNISH W/ 277/24VAC (100 VA) TRANSFORMER

ALL SELECTIONS ARE BASED ON 4,500 FT. ABOVE SEA LEVEL.

DUCT MOUNTED REHEAT COILS

SYMBOL	TRANE MODEL NO.	VALVE SERVED	T&B CAPACITY AT PRESENT (CFM)	DESIGN CAPACITY FOR FUTURE GROWTH (CFM)	AIR DATA			HEATING CAPACITY (MBH)	FLUID DATA				COIL ROWS	PIPE SIZE (IN)	FINS PER FOOT	CONTROL VALVE	COIL DIMENSIONS (IN.)		WEIGHT (LBS.)	FACE VELOCITY (FPM)
					EAT DB (°F)	LAT DB (°F)	AIR PRESSURE LOSS (IN. WC)		EWT (°F)	LWT (°F)	GPM	FLUID P.D. (FT. HD)					FINNED LENGTH	HEIGHT		
RHC-1	DSTB15016	SAV-1	540	810	55	90	0.085	37.1	180	160	3.8	5.81	2	1"	80	2 WAY	16"	15"	20.9	486
RHC-2	DSTB09011	SAV-2	260	320	55	90	0.098	14.7	180	160	1.5	0.75	2	3/4"	110	2 WAY	11"	9"	11.8	465
RHC-3	DSTB09010	SAV-3	220	300	55	90	0.104	13.6	180	160	1.4	0.62	2	3/4"	110	2 WAY	10"	9"	11.2	480
RHC-4	DSTB15011	SAV-4	430	540	55	90	0.100	24.9	180	160	2.5	3.32	2	3/4"	110	2 WAY	11"	15"	17.4	471
RHC-5	DSTB09011	SAV-5	260	330	55	90	0.104	15.0	180	160	1.5	0.77	2	3/4"	110	2 WAY	11"	9"	11.8	480
RHC-6	DSTB09011	SAV-6	260	330	55	90	0.104	15.0	180	160	1.5	0.77	2	3/4"	110	2 WAY	11"	9"	11.8	480
RHC-7	DSTB15014	SAV-7	480	710	55	90	0.085	32.3	180	160	3.3	4.23	2	3/4"	80	2 WAY	14"	15"	19.1	487
RHC-8	DSTB09011	SAV-8	260	340	55	90	0.109	15.7	180	160	1.6	0.80	2	3/4"	110	2 WAY	11"	9"	11.8	495
RHC-9	DSTB09011	SAV-9	260	340	55	90	0.109	15.7	180	160	1.6	0.80	2	3/4"	110	2 WAY	11"	9"	11.8	495
RHC-10	DSTB09008	SAV-10	140	200	55	90	0.076	9.3	180	160	0.9	0.29	2	3/4"	110	2 WAY	8"	9"	9.8	400
RHC-11	DSTB15011	SAV-11	430	540	55	90	0.100	24.9	180	160	2.5	3.32	2	3/4"	110	2 WAY	11"	15"	17.4	471
RHC-12	DSTB12011	SAV-12	330	420	55	90	0.077	19.3	180	160	2.0	1.17	2	3/4"	80	2 WAY	11"	12"	13.9	458
RHC-13	DSTB12011	SAV-13	330	420	55	90	0.077	19.3	180	160	2.0	1.17	2	3/4"	80	2 WAY	11"	12"	13.9	458
RHC-14	DSTB06008	SAV-14	100	160	55	90	0.104	7.3	180	160	0.7	0.11	2	3/4"	110	2 WAY	8"	6"	7.5	480
RHC-15	DSTB09010	SAV-15	160	300	55	90	0.104	13.6	180	160	1.4	0.62	2	3/4"	110	2 WAY	10"	9"	11.2	480
RHC-16	DSTB09012	SAV-16	280	370	55	90	0.109	17.1	180	160	1.7	1.00	2	3/4"	110	2 WAY	12"	9"	12.5	493
RHC-17	DWLB09012	SAV-17	280	370	55	90	0.109	17.1	180	160	1.7	1.00	2	3/4"	110	2 WAY	12"	9"	12.5	493
RHC-18	DSTB09012	SAV-18	260	360	55	90	0.104	16.5	180	160	1.7	0.96	2	3/4"	110	2 WAY	12"	9"	12.5	480
RHC-19	DSTB09012	SAV-19	260	360	55	90	0.104	16.5	180	160	1.7	0.96	2	3/4"	110	2 WAY	12"	9"	12.5	480
RHC-20	DSTB15014	SAV-20	530	660	55	90	0.075	30.1	180	160	3.1	3.89	2	3/4"	80	2 WAY	14"	15"	19.1	453
RHC-21	DSTB15014	SAV-21	530	660	55	90	0.075	30.1	180	160	3.1	3.89	2	3/4"	80	2 WAY	14"	15"	19.1	453
RHC-22	DSTB12012	SAV-22	320	430	55	90	0.068	19.7	180	160	2.0	1.32	2	3/4"	80	2 WAY	12"	12"	14.6	430
RHC-23	DSTB18017	SAV-23	790	950	55	90	0.101	43.3	180	160	4.4	0.02	2	1"	122	2 WAY	17"	18"	48.1	475
RHC-24	DSTB06006	SAV-24	60	100	55	90	0.088	4.6	180	160	0.5	0.04	2	3/4"	110	2 WAY	6"	6"	6.5	400
RHC-25	DSTB09010	SAV-25	250	300	55	90	0.104	13.9	180	160	1.4	0.62	2	3/4"	110	2 WAY	10"	9"	11.2	480
RHC-26	DSTB06008	SAV-26	100	160	55	90	0.104	7.3	180	160	0.7	0.11	2	3/4"	110	2 WAY	8"	6"	7.5	480
RHC-27	DSTB06007	SAV-27	100	120	55	90	0.092	5.6	180	160	0.6	0.07	2	3/4"	110	2 WAY	7"	6"	7.0	411
RHC-28	DSTB06007	SAV-28	100	120	55	90	0.092	5.6	180	160	0.6	0.07	2	3/4"	110	2 WAY	7"	6"	7.0	411
RHC-29	DSTB06007	SAV-29	100	120	55	90	0.092	5.6	180	160	0.6	0.07	2	3/4"	110	2 WAY	7"	6"	7.0	411
RHC-30	DSTB06007	SAV-30	100	120	55	90	0.092	5.6	180	160	0.6	0.07	2	3/4"	110	2 WAY	7"	6"	7.0	411
RHC-31	DSTB06007	SAV-31	100	120	55	90	0.092	5.6	180	160	0.6	0.07	2	3/4"	110	2 WAY	7"	6"	7.0	411
RHC-32	DSTB06007	SAV-32	100	120	55	90	0.092	5.6	180	160	0.6	0.07	2	3/4"	110	2 WAY	7"	6"	7.0	411
RHC-33	DSTB09012	SAV-33	280	360	55	90	0.104	16.5	180	160	1.7	0.96	2	3/4"	110	2 WAY	12"	9"	12.5	480
RHC-34	DSTB15014	SAV-34	530	660	55	90	0.075	30.1	180	160	3.1	3.89	2	3/4"	80	2 WAY	14"	15"	19.1	453
RHC-35	DSTB09009	SAV-35	200	240	55	90	0.085	11.1	180	160	1.1	0.42	2	3/4"	110	2 WAY	9"	9"	10.5	427
RHC-36	D5WB21019	SAV-36	1200	1200	55	90	0.089	54.5	180	160	5.5	0.03	2	1"	113	2 WAY	19"	21"	55.8	433
RHC-37	D5WB21021	SAV-37	1100	1400	55	90	0.094	64.2	180	160	6.5	0.04	2	1-1/4"	109	2 WAY	21"	21"	58.3	457
RHC-38	DSTB15015	SAV-38	660	780	55	90	0.089	35.7	180	160	3.6	5.10	2	1"	80	2 WAY	15"	15"	20.0	499
RHC-39A	D5WB21018	SAV-39A	1000	1200	55	90	0.108	55.5	180	160	5.7	0.03	2	1"	125	2 WAY	18"	21"	55.2	457
RHC-39B	D5WB21018	SAV-39B	1000	1200	55	90	0.108	55.5	180	160	5.7	0.03	2	1"	125	2 WAY	18"	21"	55.2	457
RHC-40	DSTB15015	SAV-40	600	750	55	90	0.083	34.3	180	160	3.5	4.88	2	3/4"	80	2 WAY	15"	15"	20.0	480
RHC-41	DWLB18013	SAV-41	710	710	55	75	0.083	22.8	180	160	2.3	0.04	2	3/4"	84	2 WAY	13"	18"	28.4	419

GRILLES AND DIFFUSERS

SYMBOL	MANUFACTURER & MODEL NO.	TYPE	FRAME STYLE	FACE DIMENSIONS (INCH)	NECK DIMENSIONS (INCH)	CFM RANGE	T.P. (IN. W.G.)	MAX NC
SD-1	PRICE SCDA, TYPE 3	SUPPLY DIFFUSER	LAY-IN CEILING	12x12, 24x24	6	91-130	0.02-0.06	24
	PRICE SCDA, TYPE 3	SUPPLY DIFFUSER	LAY-IN CEILING	12x12, 24x24	8	131-210	0.02-0.06	28
	PRICE SCDA, TYPE 3	SUPPLY DIFFUSER	LAY-IN CEILING	24x24	10	211-330	0.03-0.06	30
	PRICE SCDA, TYPE 3	SUPPLY DIFFUSER	LAY-IN CEILING	24x24	12	331-430	0.03-0.06	30
	PRICE SCDA, TYPE 3	SUPPLY DIFFUSER	LAY-IN CEILING	24x24	14	431-530	0.04-0.06	30
	PRICE SCDA, TYPE 3	SUPPLY DIFFUSER	LAY-IN CEILING	24x24	15	531-630	0.03-0.06	30
SD-2	PRICE SCDA, TYPE 1	SUPPLY DIFFUSER	FIXED CEILING	12x12, 24x24	6	91-130	0.02-0.09	30
	PRICE SCDA, TYPE 1	SUPPLY DIFFUSER	FIXED CEILING	12x12, 24x24	8	131-210	0.02-0.09	30
	PRICE SCDA, TYPE 1	SUPPLY DIFFUSER	FIXED CEILING	24x24	10	211-330	0.02-0.08	30
	PRICE SCDA, TYPE 1	SUPPLY DIFFUSER	FIXED CEILING	24x24	12	331-430	0.02-0.08	30
	PRICE SCDA, TYPE 1	SUPPLY DIFFUSER	FIXED CEILING	24x24	14	431-530	0.03-0.08	30
SD-3	PRICE RFD	RADIAL FLOW DIFFUSER	FIXED CEILING	24x24	8	200-500	0.04-0.26	35
	PRICE RFD	RADIAL FLOW DIFFUSER	FIXED CEILING	24x48	12	501-1000	0.03-0.19	35
SR-1	PRICE 520	SIDEWALL SUPPLY	FLAT MARGIN	SEE PLAN	SEE PLANS	SEE PLANS	0.03-0.06	26
RG-1	PRICE 80	RETURN GRILLE	LAY-IN CEILING	24x24, 24x12, 12x12	SEE PLANS	-	N/A	N/A
RG-2	PRICE 80	RETURN GRILLE	FIXED CEILING	24x24, 24x12, 12x12	SEE PLANS	-	N/A	N/A
RG-3	PRICE 530	RETURN GRILLE	SIDEWALL	SEE PLAN	SEE PLANS	-	N/A	N/A
EG-1	PRICE 80	EXHAUST GRILLE	LAY-IN CEILING	24x24, 24x12, 12x12	SEE PLANS	SEE PLANS	0.01-0.08	25
EG-2	PRICE 80	EXHAUST GRILLE	FIXED CEILING	24x24, 24x12, 12x12	SEE PLANS	SEE PLANS	0.01-0.08	25
EG-3	PRICE 530	EXHAUST GRILLE	SIDEWALL	SEE PLAN	SEE PLANS	-	N/A	N/A

KITCHEN HOOD WITH FIRE SUPPRESSION CABINET

SYMBOL	MANUFACTURER	MODEL NO.	LOCATION	EXHAUST AIR FLOW (CFM)	FAN TYPE	VENTIING	HOOD WIDTH (IN)	HOOD LENGTH (IN)	MOTOR SIZE (HP)	ELEC (V-PH-HZ)
HD-1	DENLAR	D1036-I-DF (NFPA 101)	DIET KITCHEN 130	510	INLINE DUCT FAN	VERTICAL DUCT	19.3	36	1/4	115-1-60

- TESTED TO UL300A STANDARD, NFPA101 COMPLIANCE, LIGHTING WITH 60 WATT SHATTER PROOF BULB, STAINLESS STEEL CONSTRUCTION, BRUSHED FINISH, WALL MOUNTED WITH BRACKETS, MECHANICAL FIRE SUPPRESSION-FACTORY INSTALLED

VARIABLE FREQUENCY DRIVES

SYMBOL	ABB MODEL NO.	LOCATION	SERVICE	ELECTRICAL				
				VOLT	PHASE	HZ	MOTOR HP	MAX AMP
VFD-1	ACH580-VXR-014A-4	STR 179H	LAB EXHAUST FAN (EF-5)	460	3	60	10	14
VFD-2	ACH580-VXR-014A-4	STR 179H	LAB EXHAUST FAN (EF-6)	460	3	60	10	14

PUMPS

SYMBOL	BELL & GOSSETT MODEL NO.	LOCATION	SERVICE	TYPE	CAPACITY (GPM)	TOTAL HEAD (FT. WG)	PUMP RPM	MOTOR HP	ELECTRICAL DATA				NPSHr	OPERATING WEIGHT (LBS.)	NOTES
									VOLT	PHASE	HZ	BHP			
P-1	e-60_1.5x1.5x5.25	WILD ANIMAL HOUSING 4-165E	MAU-1 HW COIL RECIRCULATION	INLINE	55	20	1612	3/4	115	1	60	0.45	9.0	65	ELEC DISCONNECT
P-2	e-60_1.5x1.5x5.25	ANIMAL HOLDING SUITE-165	MAU-2 HW COIL RECIRCULATION	INLINE	55	20	1612	3/4	115	1	60	0.54	9.0	65	ELEC DISCONNECT
P-3	e-60_1.25x1.25x5.25	JANITOR J165	HEAT RECOVERY COIL	INLINE	40	25	1731	3/4	115	1	60	0.42	6.6	60	ELEC DISCONNECT

LOUVERS

SYMBOL	MANUFACTURER & MODEL NO.	LOCATION	APPLICATION	AIRFLOW (CFM)	LOUVER DIMENSIONS (INCH)		PRE DROP (IN)	FREE AREA VELOCITY (FPM)	FREE AREA (%)
					WIDTH	HEIGHT			
LV-1	RUSKIN - ELF6375DX	MECH ROOM	INTAKE	1,000	16"	24"	0.11	833	45

ELECTRIC UNIT HEATER

SYMBOL	MANUFACTURER & MODEL NO.	LOCATION	HEATING (KW)	AIR FLOW (CFM)	ELEC							WEIGHT (LBS.)	NOTES
					VOLT	PHASE	HZ	MOTOR HP	FUSE SIZE	MAX AMP	MOTOR RPM		
EUH-1	TRANE UHE07	MECH ROOM	7.5	700	208	1	60	1/50	50	36.1	1550	120	PROVIDE WALL MOUNTED T-STAT

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: NZ
CHECKED BY: IM

SHEET TITLE
MECHANICAL SCHEDULES-2

M-702

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 1:11:08 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_nav420093zh.rvt

INSTRUMENTATION SOCIETY OF AMERICA TABLE

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURING OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER FLAME		USER CHOICE	USER CHOICE	USER CHOICE
C	CONDUCTIVITY			CONTROL (13)	
D	DENSITY	DIFFERENTIAL			
E	VOLTAGE		SENSOR PRIMARY ELEMENT		
F	FLOW RATE	RATIO FRACTION			
G	GAUGE		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOTION	MOMENTARY			MIDDLE INTERMEDIATE
N	HUMIDITY		USER DEFINED	USER DEFINED	USER DEFINED
O	USER CHOICE		ORIFICE RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTI-VARIABLE		MULTI-FUNCTION	MULTI-FUNCTION	MULTI-FUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X-AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y-AXIS		RELAY, COMPUTE CONVERT	
Z	POSITION DIMENSION	Z-AXIS		DRIVER, ACTUATOR UNCLASSIFIED FINAL CONTROL ELEMENT	

INSTRUMENTATION TYPE ABBREVIATION LIST

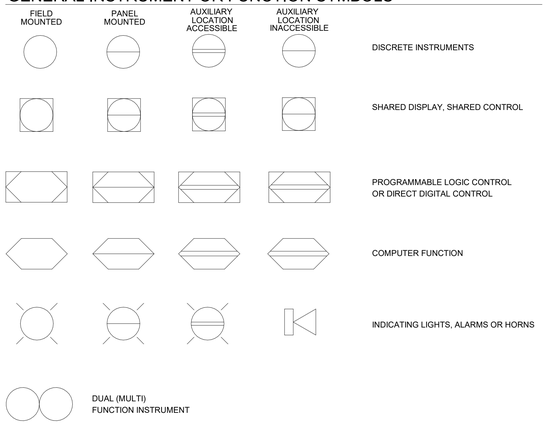
CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
AA	ANALYTICAL ALARM	LA	LEVEL ALARM	VA	VIBRATION ALARM
AE	ANALYTICAL ELEMENT	LC	LEVEL CONTROLLER (STAND ALONE)	VS	VIBRATION SWITCH
AET	ANALYTICAL ELEMENT TRANSMITTER	LCV	LEVEL CONTROL VALVE		
AI	ANALYTICAL INDICATOR	LE	LEVEL ELEMENT	XV	SOLENOID VALVE
AC	ANALYTICAL CONTROLLER	LIC	LEVEL INDICATING CONTROLLER		
AIC	ANALYTICAL INDICATING CONTROLLER	LIT	LEVEL INDICATING TRANSMITTER	YA	EQUIPMENT ALARM
AT	ANALYTICAL TRANSMITTER	LS	LEVEL SWITCH	YI	EQUIPMENT STATUS
AIT	ANALYTICAL INDICATING CONTROLLER	LT	LEVEL TRANSMITTER	YCD	SMOKE DAMPER
ACV	ANALYTICAL CONTROL VALVE	LY	LEVEL SIGNAL CONVERTER	YS	SMOKE DETECTOR
AY	ANALYTICAL SIGNAL CONVERTER				
		MV	MANUAL HAND VALVE	ZC	POSITION CONTROL
EI	VOLTAGE INDICATOR			ZI	POSITION INDICATOR
EA	VOLTAGE ALARM	NT	HUMIDITY TRANSMITTER	ZS	POSITION SWITCH
ES	VOLTAGE SWITCH (CONTROL RELAY)				
ESL	VOLTAGE SWITCH LOW (24 VAC OR LESS)	PA	PRESSURE ALARM		
E	VOLTAGE TRANSMITTER	PCV	PRESSURE CONTROL VALVE	VA	VIBRATION ALARM
EY	VOLTAGE SIGNAL CONVERTER	PDI	PRESSURE DIFFERENTIAL INDICATOR	VS	VIBRATION SWITCH
		PDS	PRESSURE DIFFERENTIAL SWITCH		
FA	FLOW ALARM	PDT	PRESSURE DIFFERENTIAL TRANSMITTER		
FCV	FLOW CONTROL VALVE	PI	PRESSURE INDICATOR		
FE	FLOW ELEMENT	PIS	PRESSURE INDICATING SWITCH		
FET	FLOW ELEMENT/TRANSMITTER	PIT	PRESSURE INDICATING TRANSMITTER		
FI	FLOW INDICATOR	PS	PRESSURE SWITCH		
FIT	FLOW INDICATING TRANSMITTER	PT	PRESSURE TRANSMITTER		
FS	FLOW SWITCH	PY	PRESSURE SIGNAL CONVERTER		
FT	FLOW TRANSMITTER				
FY	FLOW SIGNAL CONVERTER	SC	SPEED CONTROL		
		SCM	SPEED CONTROL MANUAL		
HK	MANUAL VARIABLE CONTROL				
HS	HAND SWITCH	TA	TEMPERATURE ALARM		
HSI	HAND SWITCH INDICATOR	TC	TEMPERATURE CONTROLLER		
		TCV	TEMPERATURE CONTROL VALVE		
II	CURRENT INDICATOR	TE	TEMPERATURE ELEMENT		
IA	CURRENT ALARM	TET	TEMPERATURE ELEMENT TRANSMITTER		
IS	CURRENT SWITCH	TI	TEMPERATURE INDICATOR		
IT	CURRENT TRANSMITTER	TIT	TEMPERATURE INDICATING TRANSMITTER		
IY	CURRENT SIGNAL CONVERTER	TIC	TEMPERATURE INDICATING CONTROLLER		
		TS	TEMPERATURE SWITCH		
JIT	POWER INDICATING TRANSMITTER	TSL	FREEZE STAT		
JY	POWER SIGNAL CONVERTER	TT	TEMPERATURE TRANSMITTER		
KC	TIME CLOCK				

FMS SYSTEM OPERATING CONSTRAINTS

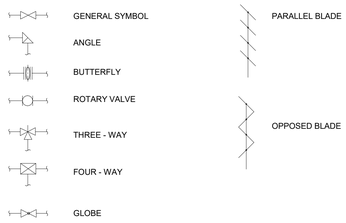
THE FMS CONTROL SYSTEM SHALL OPERATE WITHIN THE FOLLOWING SYSTEM CONSTRAINTS FOR CONTROL:

SUPPLY AIR DRYBULB TEMPERATURE	+/- 0.5°F OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
MIXED AIR DRYBULB TEMPERATURE	+/- 0.5°F OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
WATER TEMPERATURE	+/- 0.5°F OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
DUCT STATIC PRESSURE	+/- 0.1" W.C. OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
SUPPLY/ RETURN AIR VOLUME	+/- 2.5% OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
OUTSIDE AIR/ RELIEF AIR VOLUME	+/- 2.5% OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
BUILDING PRESSURE	+/- 0.01" W.C. OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
ROOM TEMPERATURE	+/- 1.0°F OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
ROOM AIR VOLUME	+/- 2.5% OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
HUMIDITY LEVEL	+/- 2.5% R.H. OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
WATER TEMPERATURE	+/- 1.0°F OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
WATER DIFFERENTIAL PRESSURE	+/- 1.0 PSI OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL

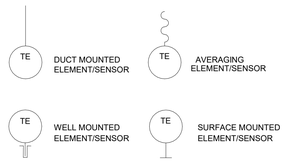
GENERAL INSTRUMENT OR FUNCTION SYMBOLS



CONTROL VALVE BODY/ DAMPER SYMBOLS

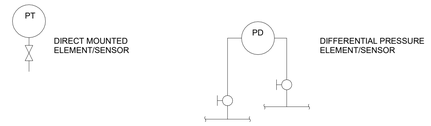


TEMPERATURE

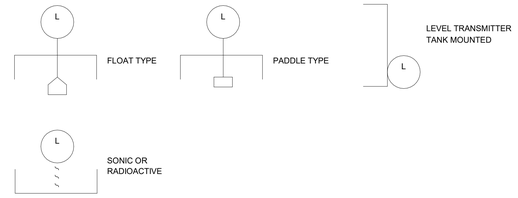


CURRENT

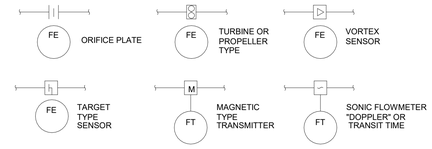
PRESSURE



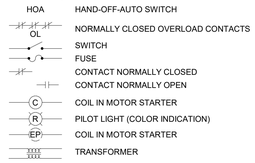
LEVEL



FLOW



LADDER DIAGRAM SYMBOLS



ABBREVIATIONS

IA	INSTRUMENTATION AIR
DDC	DIRECT DIGITAL CONTROL
C	COMMON VALVE PORT
F.O	FAIL OPEN
F.C	FAIL CLOSED
SR	SPRING RANGE
TR	THROTTLING RANGE
PH	PREHEAT
HR	HEAT RECOVERY
CPA	CONTROL POINT ADJUSTMENT
SPDT	SINGLE POLE DOUBLE THROW
DPDT	DOUBLE THROW DOUBLE POLE
DA	DIRECT ACTING
RA	REVERSE ACTING

PROCESS CODES

TW	COOLING TOWER OR CONDENSER WATER
CHW	CHILLED WATER
SCHW	SECONDARY CHILLED WATER
HW	HOT WATER
SHW	SECONDARY HOT WATER
STM	STEAM

LINE LEGEND

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NMSU STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: SDB
CHECKED BY: IM

SHEET TITLE

MECHANICAL CONTROLS LEGEND

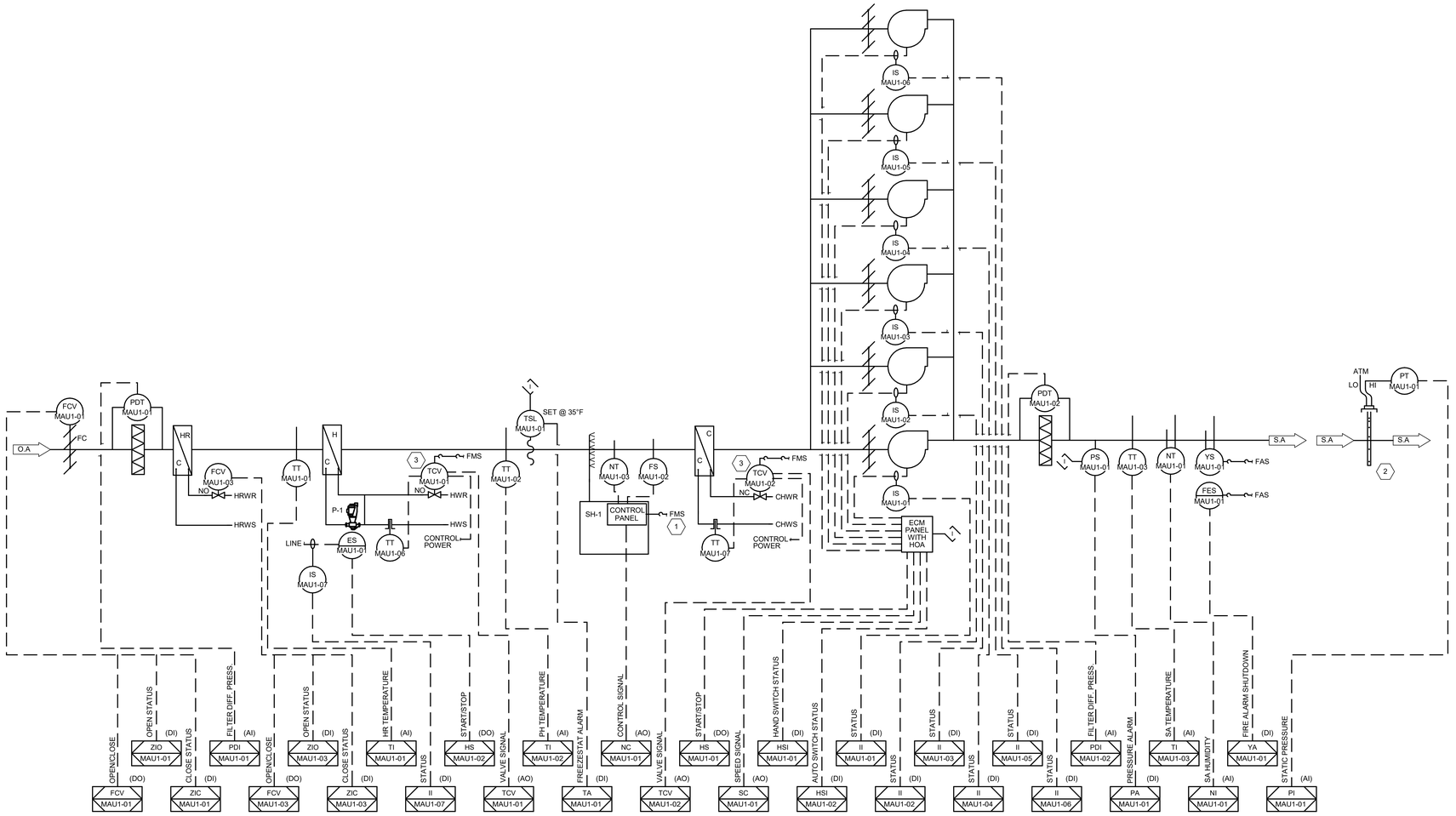
MI001

Biomedical Research Building Expansion

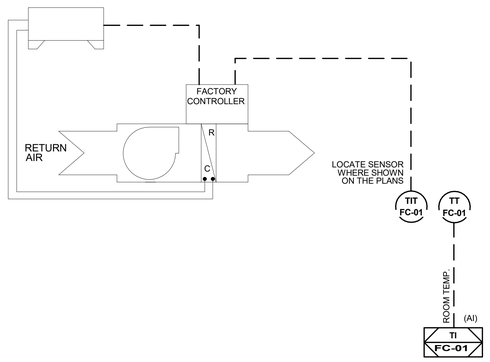
Bridgers & Paxton Project No: 8678 11/30/2023 1:11:33 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_nav\420003zh.rvt

KEYED NOTES

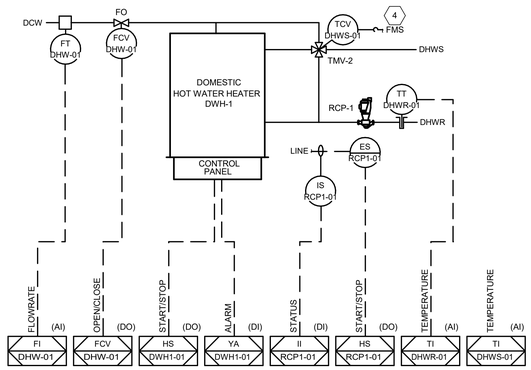
1. HUMIDIFIERS SHALL BE CONNECTED TO THE FMS NETWORK THROUGH A BACNET NETWORK CONNECTION. THE FOLLOWING POINTS SHALL BE INTEGRATED INTO THE FMS:
   - A. DUCT RELATIVE HUMIDITY
   - B. HUMIDITY DEMAND - LBS/HR
   - C. HUMIDITY DEMAND - PERCENT
   - D. HUMIDITY OUTPUT - LBS/HR
   - E. HUMIDITY OUTPUT - PERCENT
   - F. RUN MODE
   - G. DUCT HIGH LIMIT SETPOINT
   - H. PERCENT DEMAND
   - I. AIRFLOW PROVING SWITCH STATUS
   - J. DUCT HIGH LIMIT STATUS
   - K. SAFETY INTERLOCK STATUS
   - L. LOW WATER SENSOR STATUS
   - M. SYSTEM ENABLE/DISABLE
   - N. SYSTEM ALARMS
   - O. SYSTEM MESSAGES
2. LOCATE THE STATIC PRESSURE PROBE ⅔ THE LENGTH OF THE MAIN DUCT RUN.
3. ENERGY VALVES SHALL BE TO THE FMS NETWORK THROUGH A DIRECT NETWORK CONNECTION AS WELL AS THROUGH THE HARDWIRED POINT INDICATED. ALL VALID BACNET POINTS SHALL BE INTEGRATED INTO THE FMS.
4. THERMOSTATIC MIXING VALVE SHALL BE TO THE FMS NETWORK THROUGH A DIRECT NETWORK CONNECTION. ALL VALID BACENT POINTS SHALL BE INTEGRATED INTO THE FMS.



MAKE-UP AIR HANDLING UNIT MAU-1 CONTROL DIAGRAM
(TYPICAL FOR MAU-2)



TYPICAL SPLIT SYSTEM CONTROL DIAGRAM



DOMESTIC HW HEATER DWH-1 CONTROL DIAGRAM
(TYPICAL FOR DWH-2)

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

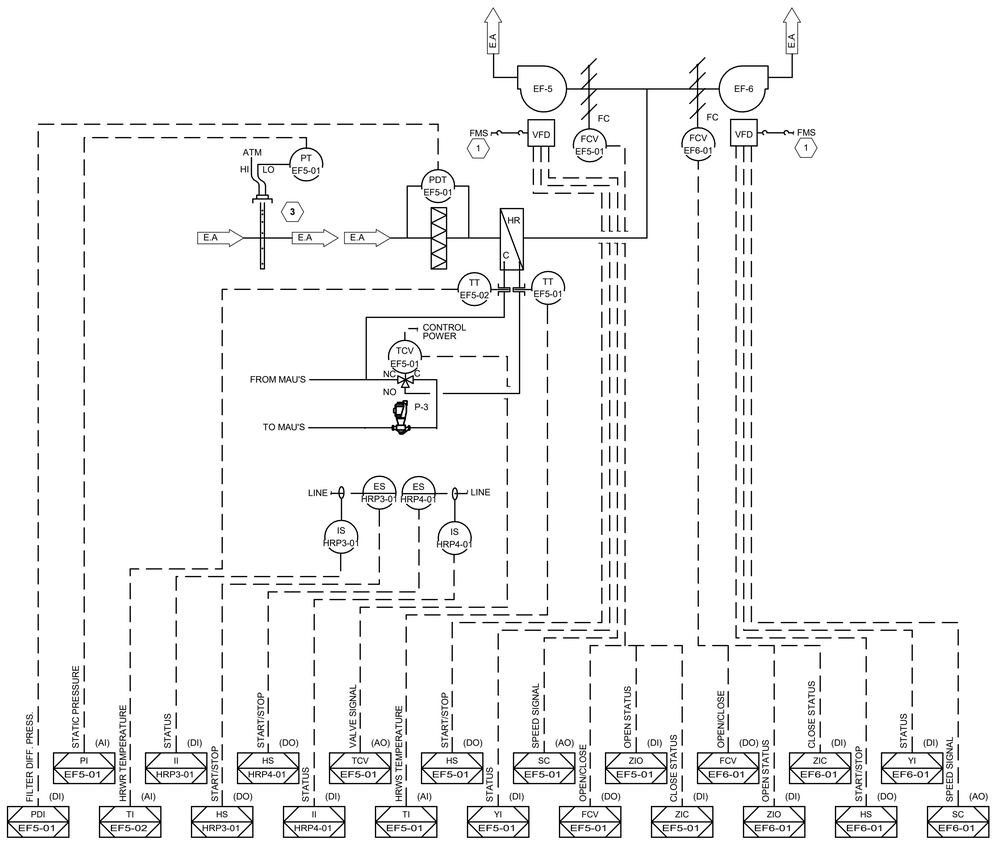
DRAWN BY: SDB
CHECKED BY: IM

SHEET TITLE

MECHANICAL CONTROLS DIAGRAMS

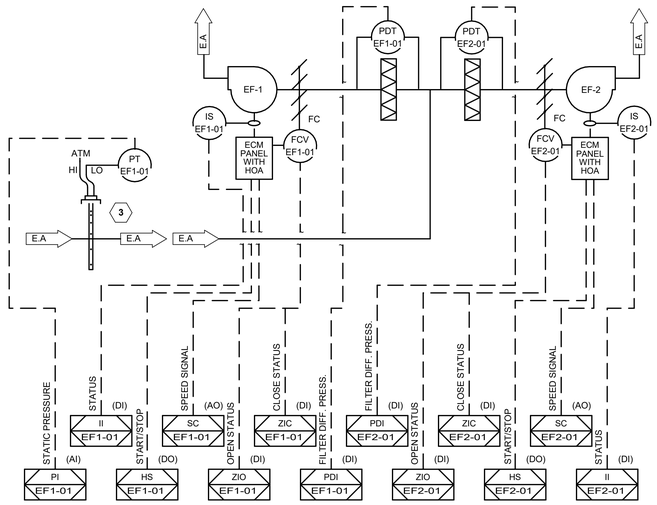
MI601

Bridgers & Paxton Project No: 8678
11/30/2023 1:11:34 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_pavid2003zb.rvt
Biomedical Research Building Expansion

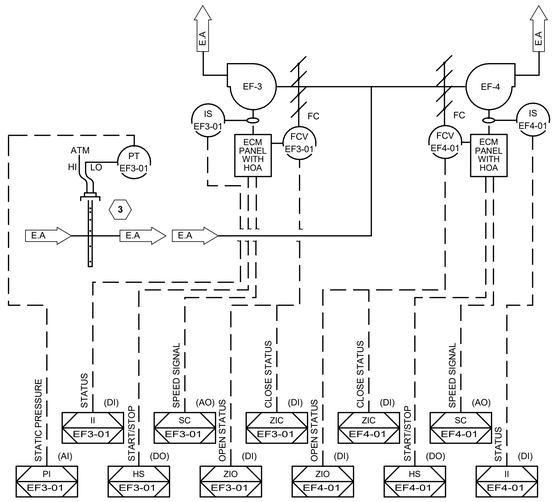


EXHAUST FAN SYSTEM EF-5/EF-6 CONTROL DIAGRAM

EXHAUST FAN EF-7 CONTROL DIAGRAM



EXHAUST FAN SYSTEM EF-1/EF-2 CONTROL DIAGRAM



EXHAUST FAN SYSTEM EF-3/EF-4 CONTROL DIAGRAM

KEYED NOTES

1. VFD'S SHALL BE CONNECTED TO THE FMS NETWORK THROUGH A DIRECT NETWORK CONNECTION AS WELL AS THROUGH THE HARDWIRED POINTS INDICATED. IT IS THE RESPONSIBILITY OF THE FMS CONTRACTOR TO COORDINATE AND ADAPT THE FMS NETWORK TO THE COMMUNICATIONS PROTOCOLS AVAILABLE FROM THE VFD MANUFACTURER. THE FOLLOWING POINTS SHALL BE INTEGRATED INTO THE FMS:

   A. SPEED FEEDBACK
   B. FREQUENCY OUTPUT
   C. CURRENT
   D. TORQUE
   E. POWER
   F. DC BUS VOLTAGE
   G. OUTPUT VOLTAGE
   H. KWH COUNTER
   I. DRIVE TEMPERATURE
   J. ALARMS
   K. STATUSES
   L. HOA SWITCH STATUSES

2. LOCATE THE STATIC PRESSURE PROBE ⅔ THE LENGTH OF THE MAIN DUCT RUN.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: SDB
CHECKED BY: IM

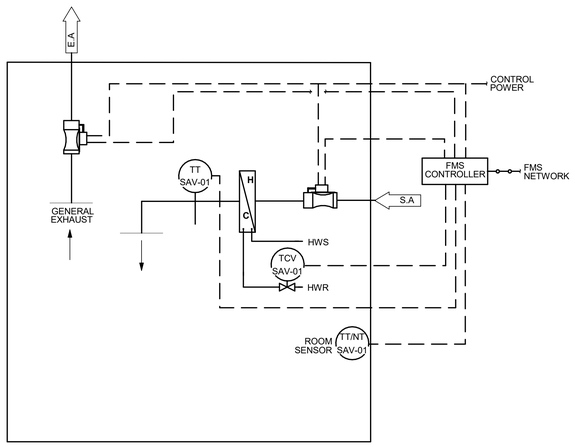
SHEET TITLE

MECHANICAL CONTROLS DIAGRAMS

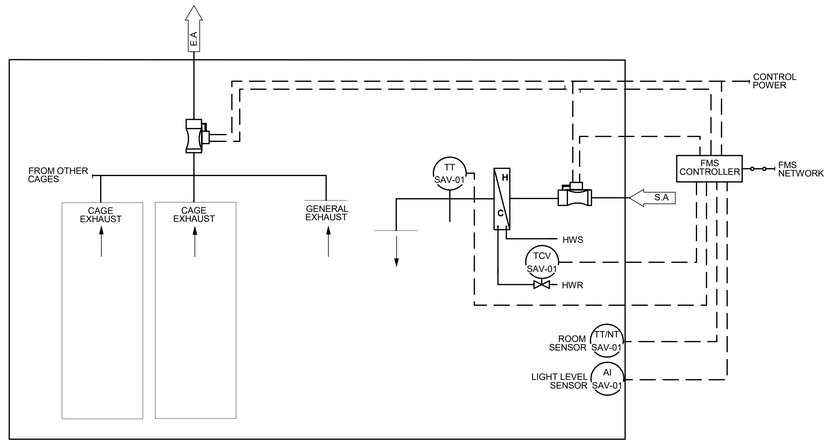
MI602

Bridgers & Paxton Project No: 8678 11/30/2023 1:11:34 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_navid2003ah.rvt

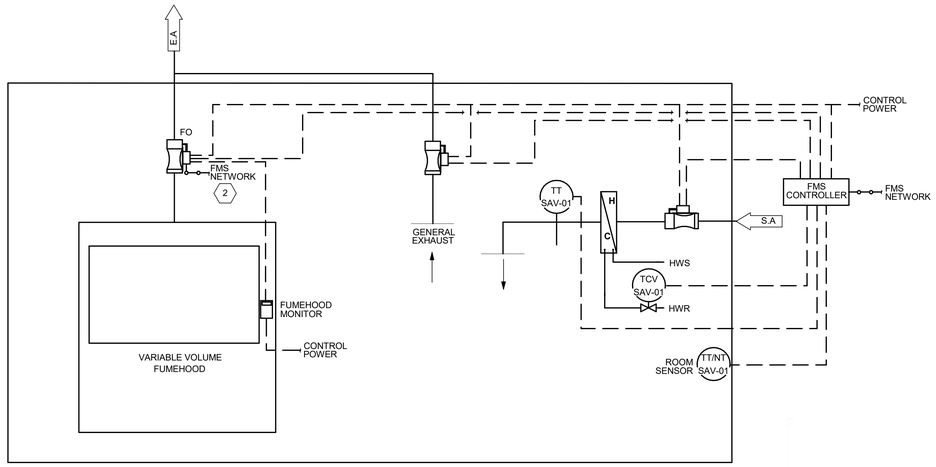
Biomedical Research Building Expansion



TYPICAL SPACE HVAC SYSTEM CONTROL DIAGRAM

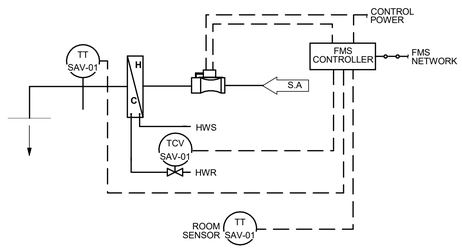


TYPICAL ANIMAL HOUSING AREA CONTROL DIAGRAM



TYPICAL FUMEHOOD LABORATORY CONTROL DIAGRAM

TYPICAL ROOM PRESSURE MONITOR CONTROL DIAGRAM



TYPICAL SUPPLY AIR TERMINAL UNIT CONTROL DIAGRAM

GENERAL NOTES

A. ALL AIR VALVES SHALL BE FURNISHED WITH MODULATING ACTUATORS WHICH FAIL IN LAST POSITION.

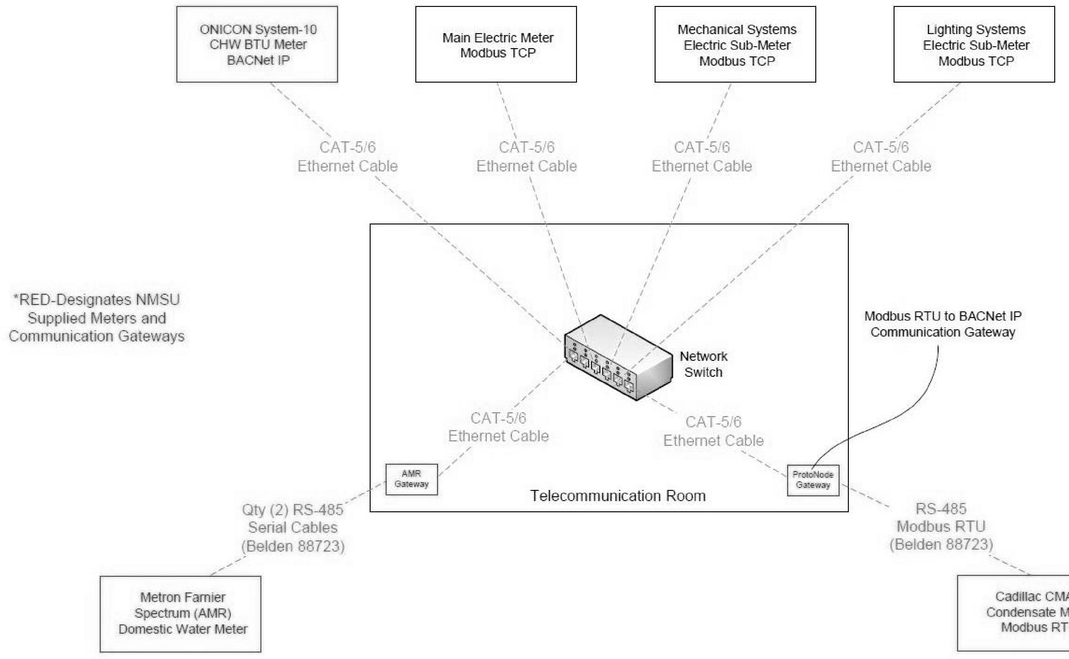
B. ALL HOT WATER VALVES SERVING THE HOT WATER COILS FOR SUPPLY AIR VALVES SHALL HAVE EITHER FAIL IN LAST POSITION OR FAIL CLOSED ACTUATORS. REFER TO MECHANICAL FLOOR PLANS FOR 2-WAY AND 3-WAY VALVE REQUIREMENTS.

C. IF THE AIR VALVES FURNISHED ON THE PROJECT REQUIRE A DIFFERENTIAL PRESSURE FLOW TRANSMITTER, THEN THE CONTROLS SHALL BE PROVIDED WITH THE CAPABILITY OF RE-ZEROING THE PRESSURE TRANSDUCER TO MAINTAIN THE FLOW MEASUREMENT ACCURACY WITHOUT STROKING THE DAMPER.

KEYED NOTES ⬡

1. ROOM PRESSURE MONITORS SHALL BE FULLY INTEGRATED INTO THE FMS. ALL POINTS AVAILABLE FROM THE MONITOR SHALL BE MONITORED BY THE FMS.

2. FUMEHOOD CONTROLLERS SHALL BE FULLY INTEGRATED INTO THE FMS. ALL POINTS AVAILABLE FROM THE CONTROLLER SHALL BE MONITORED BY THE FMS.



fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: SDB
CHECKED BY: IM

SHEET TITLE

MECHANICAL CONTROLS DIAGRAMS

MI603

Bridgers & Paxton Project No: 8678 11/30/2023 1:11:34 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_navid2003ah.rvt

Biomedical Research Building Expansion

SEQUNCE OF OPERATION

GENERAL

PROGRAMMING
THE FMS SHALL BE PROGRAMMED ACCORDING TO THE FOLLOWING SEQUENCE OF OPERATIONS INCLUDING ALL ENERGY REDUCTION OPERATIONS DESCRIBED IN THIS SEQUENCE AND IN THE PROJECT SPECIFICATIONS.

SYSTEM STATUS DISPLAY
THE FMS SHALL PROVIDE OPERATING STATUS FOR ALL SYSTEMS CONTROLLED BY THE FMS. THE DISPLAYS SHALL INCLUDE ALL POINTS INDICATED ON THE DRAWINGS AND ANY OTHERS REQUIRED TO ACHIEVE THE SEQUENCE OF OPERATIONS. THE FMS SHALL BE ABLE TO INTEGRATE SYSTEM DIAGNOSTICS INTO CONTROL ACTION DECISIONS. THIS SHALL ALSO INCLUDE THE ABILITY TO DESIGNATE INDIVIDUAL UNITS AS BEING IN MAINTENANCE MODE TO AVOID GENERATING ALARMS. ALL SYSTEM CONTROL AND STATUS EVENTS SHALL BE RECORDED, AT THE OPERATOR'S SELECTION, IN THE FMS EVENT LOG TO FACILITATE TROUBLESHOOTING. ALL DETECTED ALARMS OR FAILURES SHALL INITIATE AN ALARM WITHIN THE FMS.

POWER FAILURE RECOVERY
THE FMS SHALL CONTAIN A POWER FAILURE RECOVERY MODE (OPERATOR ADJUSTABLE). THE POWER FAILURE RECOVERY CAPABILITY SHALL RETURN THE SYSTEM TO ITS LAST STATE (BEFORE THE BUILDING LOST POWER).

OCCUPANCY CONTROL
THE FMS SHALL BE SETUP WITH AN OCCUPANCY SCHEDULE FOR DIFFERENT AREAS OF THE BUILDING. THE OWNER SHALL BE INTERVIEWED BY THE CONTRACTOR AT START-UP TO ESTABLISH THESE SCHEDULES. SOME AREAS OF THE BUILDING SHALL BE SETUP TO BE CONTINUOUSLY OCCUPIED.

MAKE-UP AIR HANDLING UNITS MAU-1 & MAU-2

GENERAL
THE FMS SHALL OPERATE THE UNITS IN A LEAD/STANDBY CONFIGURATION. THE LEAD UNIT SHALL OPERATE CONTINUOUSLY. THE LEAD/STANDBY CONFIGURATION OF THE UNITS SHALL BE ROTATED MONTHLY.

OUTSIDE AIR DAMPER
THE DAMPER SHALL BE OPEN ANYTIME THE AIR HANDLING UNIT IS OPERATING. THE FMS SHALL MONITOR THE OPEN AND CLOSED STATUSES OF THE DAMPER THROUGH DAMPER ACTUATOR END SWITCHES. IF A DAMPER FAILURE IS DETECTED, THE FMS SHALL INITIATE AN ALARM. IF A DAMPER FAILS IN THE CLOSED POSITION THE FMS SHALL SHUTDOWN THE AIR HANDLING UNIT AND AUTOMATICALLY START THE STANDBY AIR HANDLING UNIT.

SUPPLY AIR TEMPERATURE SETPOINT CONTROL
THE FMS SHALL CONTROL THE AIR HANDLING UNIT TO MAINTAIN AN ADJUSTABLE SUPPLY AIR TEMPERATURE SETPOINT. THE TEMPERATURE SETPOINT SHALL BE RESET FROM 55°F (ADJUSTABLE) TO 75°F (ADJUSTABLE) BASED ON THE DEMAND OF THE SUPPLY AIR VALVES SERVED BY IT SO THAT AT LEAST ONE UNIT IS IN FULL COOLING (NO REHEAT) AND STILL MAINTAINING THE ROOM TEMPERATURE SETPOINT.

SUPPLY AIR STATIC SETPOINT CONTROL
THE FMS SHALL RESET THE STATIC PRESSURE SETPOINT USING A TRIM AND RESPOND LOGIC WITHIN THE RANGE OF 0.5" W.G. TO 1.5" W.G. WHEN THE FAN IS OFF, THE SETPOINT SHALL BE 1.0" W.G. ONCE THE FAN IS STARTED, THE SETPOINT SHALL BE TRIMMED BY 0.04" W.G. EVERY TWO MINUTES IF THERE ARE TWO OR FEWER ZONE PRESSURE REQUESTS. IF THERE ARE MORE THAN TWO ZONE PRESSURE REQUESTS, RESPOND BY INCREASING THE SETPOINT BY 0.06" W.G. A ZONE PRESSURE REQUEST IS GENERATED WHEN AN AIR VALVE IS GREATER THAN 95% OPEN UNTIL IT DROPS TO 80% OPEN OR BASED ON PRESSURE REQUEST SIGNAL FROM THE AIR VALVE. ALL SETPOINTS SHALL BE ADJUSTABLE THROUGH THE OPERATOR WORKSTATION.

HEAT RECOVERY COIL PUMP CONTROL
THE FMS SHALL OPERATE THE HEAT RECOVERY PUMPS IN A LEAD/STANDBY CONFIGURATION. THE LEAD PUMP SHALL OPERATE ANYTIME THE OUTSIDE AIR TEMPERATURE IS 10°F (ADJUSTABLE) BELOW THE SUPPLY AIR TEMPERATURE SETPOINT FOR THE AIR HANDLING UNIT OR IS ABOVE 76°F (ADJUSTABLE) WHEN THE AIR HANDLING UNIT IS OPERATING. THE FMS SHALL OPEN THE HEAT RECOVERY COIL ISOLATION VALVE AND MODULATE THE HEAT RECOVERY SYSTEM VALVE TO MAINTAIN THE SUPPLY AIR TEMPERATURE AT SETPOINT.

HEAT RECOVERY COIL PUMP MONITORING
THE FMS SHALL MONITOR THE STATUS OF EACH PUMP THROUGH A CURRENT SWITCH INSTALLED ON THE MOTOR. IF A FAILURE OCCURS, THE FMS SHALL STOP THE PUMP AND INITIATE AN ALARM. THE STANDBY PUMP SHALL AUTOMATICALLY START AND OPERATE AS THE LEAD PUMP.

SUPPLY AIR TEMPERATURE CONTROL
THE FMS SHALL MODULATE THE CHILLED WATER AND HOT WATER COIL VALVES TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT. THE FMS SHALL PREVENT SIMULTANEOUS HEATING AND COOLING.

HUMIDIFICATION SETPOINT CONTROL
THE FMS SHALL CALCULATE THE SUPPLY AIR DEWPOINT TEMPERATURE USING THE SUPPLY AIR HUMIDITY SENSOR AND TEMPERATURE SENSOR. THE SUPPLY AIR DEWPOINT SETPOINT SHALL BE RESET BETWEEN 40°F AND 44°F BASED ON THE HUMIDITY LEVELS IN THE SPACE TO MAINTAIN THE AVERAGE RELATIVE HUMIDITY LEVELS AT A SETPOINT OF 35% +/-5% R.H (ADJUSTABLE).

HUMIDIFIER CONTROL
THE FMS SHALL START THE HUMIDIFIER AND MODULATE IT TO MAINTAIN THE SUPPLY AIR DEWPOINT TEMPERATURE AT SETPOINT. THE FMS SHALL STOP THE HUMIDIFIER IF THERE IS NOT A REQUIREMENT FOR HUMIDITY FOR MORE THAN 30 MINUTES. THE LEAD/LAG CONFIGURATION OF THE HUMIDIFIERS SHALL BE ROTATED WEEKLY.

HUMIDIFIER MONITORING
THE FMS SHALL MONITOR THE ALARM CONDITION OF EACH HUMIDIFIER. IF AN ALARM CONDITION IS DETECTED IN AN OPERATING SYSTEM, THE FMS SHALL INITIATE AN ALARM AND STOP THE AIR HANDLING UNIT. THE FMS SHALL AUTOMATICALLY START THE STANDBY AIR HANDLING UNIT AND OPERATE IT IN PLACE OF THE FAILED UNIT.

DEHUMIDIFICATION CONTROL
IF THE AVERAGE SPACE HUMIDITY LEVEL RISES ABOVE 50% R.H., THE FMS SWITCH CONTROL THE AIR HANDLING UNIT TO A DEHUMIDIFICATION MODE. WHEN OPERATING IN A DEHUMIDIFICATION MODE, THE FMS SHALL RESET SUPPLY AIR DRYBULB TEMPERATURE SETPOINT TO 50°F (ADJUSTABLE) AND MODULATE THE CHILLED WATER COIL VALVE TO MAINTAIN THE SUPPLY AIR TEMPERATURE AT SETPOINT. THE FMS SHALL CONTINUE TO OPERATE THE UNIT IN A DEHUMIDIFICATION MODE UNTIL THE AVERAGE HUMIDITY LEVEL FALLS BELOW 45% R.H. (ADJUSTABLE). WHEN OPERATING IN A DEHUMIDIFICATION MODE THE HUMIDIFIER SHALL BE DISABLED.

SUPPLY FAN CONTROL
THE SUPPLY FANS SHALL BE STARTED AND STOPPED BY THE FMS SYSTEM. THE FANS SHALL OPERATE ANYTIME THE AIR HANDLING UNIT IS ENABLED.

SUPPLY FAN CONTROL
THE FMS SHALL MODULATE THE FANS TO MAINTAIN THE SUPPLY DUCT STATIC PRESSURE AT SETPOINT FOR THE DUCT STATIC PRESSURE SENSOR WHICH IS FARTHEST BELOW SETPOINT. THE RAMP OF THE SPEED SHALL BE ADJUSTED TO RESTRICT THE RATE OF CHANGE OF THE SPEED OUTPUT TO SIXTY SECONDS FOR A ZERO TO ONE HUNDRED PERCENT CONTROL SIGNAL CHANGE.

SUPPLY FAN MONITORING
EACH FAN OPERATION SHALL BE INDICATED TO THE FMS THROUGH A CURRENT SWITCH INSTALLED ON EACH PUMP. IF A FAN FAILURE IS DETECTED, THE FMS SHALL INITIATE AN ALARM, STOP THE AIR HANDLING UNIT, AND AUTOMATICALLY START THE STANDBY UNIT. THE FMS SHALL MONITOR THE AUTO AND HAND POSITION OF THE ECM CONTROL PANEL. IF THE FANS ARE NOT IN AUTO OR ARE PLACED IN HAND, THE FMS SHALL INITIATE AN ALARM.

FILTER MONITORING
THE DIFFERENTIAL PRESSURE ACROSS THE FILTERS SHALL BE MONITORED BY THE FMS THROUGH A DIFFERENTIAL PRESSURE TRANSMITTER. IF THE DIFFERENTIAL PRESSURE EXCEEDS SET POINT, THE FMS SHALL INITIATE AN ALARM.

FREEZESTAT
A FREEZESTAT SET AT 35°F LOCATED DOWNSTREAM OF THE HOT WATER COIL SHALL INITIATE AN ALARM AT THE FMS AND STOP THE SUPPLY FAN IF AN ALARM CONDITION IS DETECTED. THE STANDBY AIR HANDLING UNIT SHALL AUTOMATICALLY START AND OPERATE IN PLACE OF THE FAILED UNIT.

SMOKE DETECTOR
A SMOKE DETECTOR LOCATED IN THE SUPPLY AIR STREAM, SHALL STOP THE FANS THROUGH THE FIRE ALARM SYSTEM IF AN ALARM CONDITION IS DETECTED. WHEN THE FANS ARE STOPPED, THE FMS SHALL POSITION THE DAMPERS TO THEIR NORMAL STATE.

DUCT PRESSURE SAFETY SWITCHES
A SAFETY SWITCH INSTALLED IN THE SUPPLY AIR DUCT FOR THE UNIT SHALL ALARM THE FMS IF THE DUCT PRESSURE IS ABOVE THE HIGH ALARM SETPOINT. THE HIGH ALARM SETPOINT SHALL BE 150% OF THE NORMAL OPERATING STATIC OF THE SYSTEM. IF THE FMS SENSES AN ALARM CONDITION, THE FMS SHALL STOP THE UNIT. THE STANDBY AIR HANDLING UNIT SHALL AUTOMATICALLY START AND OPERATE IN PLACE OF THE FAILED UNIT.

HOT WATER COIL PUMP
THE FMS SHALL OPERATE THE PUMP ANYTIME THE OUTSIDE AIR IS BELOW 35°F (ADJUSTABLE) WHEN THE AIR HANDLING UNIT IS OPERATING. THE FMS SHALL MONITOR THE STATUS OF THE PUMP THROUGH A CURRENT SWITCH INSTALLED ON THE MOTOR. IF A PUMP FAILURE IS DETECTED, THE FMS SHALL INITIATE AN ALARM.

EXHAUST FANS EF-1 THRU EF-4

EXHAUST FAN CONTROL
EACH SET OF FANS SHALL OPERATE IN A LEAD/STANDBY CONFIGURATION WITH THE LEAD FAN OPERATING CONTINUOUSLY. THE LEAD/STANDBY CONFIGURATION OF THE FANS SHALL BE ROTATED MONTHLY.

EXHAUST FAN SPEED CONTROL
THE FAN SHALL BE MODULATED TO MAINTAIN THE EXHAUST DUCT STATIC PRESSURE AT A SET POINT OF -1.0" W.G. (ADJUSTABLE) ANY TIME THE EXHAUST FAN IS OPERATING. THE RAMP OF THE SPEED ADJUSTMENT SHALL BE ADJUSTED TO RESTRICT THE RATE OF CHANGE OF THE VFD OUTPUT TO SIXTY SECONDS FOR A ZERO TO ONE HUNDRED PERCENT CONTROL SIGNAL CHANGE.

EXHAUST FAN MONITORING
THE FAN OPERATION SHALL BE INDICATED TO THE FMS THROUGH A CURRENT SWITCH INSTALLED ON THE MOTOR. IF A FAN FAILURE IS DETECTED, THE FMS SHALL INITIATE AN ALARM, STOP THE EXHAUST FAN, AND AUTOMATICALLY START THE STANDBY FAN. IF CURRENT IS DETECTED WHEN THE FMS HAS THE FAN OFF, THEN AN OVERRIDE ALARM SIGNAL SHALL INITIATE BY THE FMS.

EXHAUST FAN ISOLATION DAMPER CONTROL
EACH EXHAUST FAN DAMPER SHALL BE CONTROLLED THROUGH THE ECM CONTROLLER TO OPEN ANYTIME THE FAN IS OPERATING. IF THE FAN IS STOPPED, THE DAMPER SHALL CLOSE. THE FMS SHALL MONITOR THE OPEN AND CLOSED STATUS OF THE DAMPER THROUGH DAMPER ACTUATOR END SWITCHES. IF A DAMPER FAILURE IS DETECTED, THE FMS SHALL INITIATE AN ALARM. IF THE DAMPER FAILS IN THE CLOSED POSITION THE FMS SHALL STOP THE EXHAUST FAN AND MARK IT AS FAILED. THE STANDBY EXHAUST FAN SHALL AUTOMATICALLY START AND OPERATE IN PLACE OF THE LEAD FAN.

FILTER MONITORING (EF-1/EF-2 ONLY)
THE DIFFERENTIAL PRESSURE ACROSS THE FILTERS SHALL BE MONITORED BY THE FMS THROUGH A DIFFERENTIAL PRESSURE TRANSMITTER. IF THE DIFFERENTIAL PRESSURE EXCEEDS SET POINT, THE FMS SHALL INITIATE AN ALARM.

EXHAUST FANS EF-5 & EF-6

EXHAUST FAN CONTROL
EACH SET OF FANS SHALL OPERATE IN A LEAD/STANDBY CONFIGURATION WITH THE LEAD FAN OPERATING CONTINUOUSLY. THE LEAD/STANDBY CONFIGURATION OF THE FANS SHALL BE ROTATED MONTHLY.

EXHAUST FAN VFD CONTROL
THE VFD SHALL BE MODULATED TO MAINTAIN THE EXHAUST DUCT STATIC PRESSURE AT A SET POINT OF -1.0" W.G. (ADJUSTABLE) ANY TIME THE EXHAUST FAN IS OPERATING. THE RAMP OF THE VFD'S SHALL BE ADJUSTED TO RESTRICT THE RATE OF CHANGE OF THE VFD OUTPUT TO SIXTY SECONDS FOR A ZERO TO ONE HUNDRED PERCENT CONTROL SIGNAL CHANGE.

EXHAUST FAN VFD MONITORING
THE VFD OPERATION SHALL BE INDICATED TO THE FMS THROUGH SETS OF CONTACTS IN THE VFD. IF AN ALARM CONDITION IS DETECTED, THE FMS SHALL INITIATE AN ALARM, STOP THE EXHAUST FAN, AND AUTOMATICALLY START THE STANDBY FAN. THE FMS SHALL MONITOR THE AUTO AND HAND POSITION OF THE VFD. IF THE VFD IS NOT IN AUTO OR IS PLACED IN HAND, THE FMS SHALL INITIATE AN ALARM. THE FMS SHALL MONITOR THE SPEED FEEDBACK OF THE VFD. IF THE SPEED FEEDBACK VARIES FROM THE COMMANDED SPEED POSITION BY MORE THAN 10% (ADJUSTABLE) FOR A PERIOD OF 1 MINUTE (ADJUSTABLE) THEN A SPEED OVERRIDE SIGNAL SHALL INITIATE BY THE FMS.

EXHAUST FAN ISOLATION DAMPER CONTROL
EACH EXHAUST FAN DAMPER SHALL BE OPENNED BY THE FMS ANYTIME THE FAN IS OPERATING. IF THE FAN IS STOPPED, THE DAMPER SHALL CLOSE. THE FMS SHALL MONITOR THE OPEN AND CLOSED STATUS OF THE DAMPER THROUGH DAMPER ACTUATOR END SWITCHES. IF A DAMPER FAILURE IS DETECTED, THE FMS SHALL INITIATE AN ALARM. IF THE DAMPER FAILS IN THE CLOSED POSITION THE FMS SHALL STOP THE EXHAUST FAN AND MARK IT AS FAILED. THE STANDBY EXHAUST FAN SHALL AUTOMATICALLY START AND OPERATE IN PLACE OF THE LEAD FAN.

FILTER MONITORING
THE DIFFERENTIAL PRESSURE ACROSS THE FILTERS SHALL BE MONITORED BY THE FMS THROUGH A DIFFERENTIAL PRESSURE TRANSMITTER. IF THE DIFFERENTIAL PRESSURE EXCEEDS SET POINT, THE FMS SHALL INITIATE AN ALARM.

STERILIZER ROOM EXHAUST FAN EF-7 & SUPPLY SAV-41

EXHAUST FAN CONTROL
THE FMS SHALL MONITOR THE LOW SPEED AND HIGH SPEED CONTACTS LOCATED IN THE STERILIZER CONTROL PANEL. WHEN THE LOW SPEED CONTACTS ARE ACTIVATED, THE FMS SHALL START THE EXHAUST FAN AND OPERATE IT AT THE LOW SPEED AIRFLOW SETPOINT. WHEN THE HIGH SPEED CONTACTS ARE ACTIVATED, THE FMS SHALL CONTROL THE FAN AT THE HIGH SPEED AIRFLOW SETPOINT. THE FAN SHALL BE OFF WHEN NEITHER SET OF CONTACTS ARE ENERGIZED.

EXHAUST FAN MONITORING
THE FAN OPERATION SHALL BE INDICATED TO THE FMS THROUGH A CURRENT SWITCH INSTALLED ON THE MOTOR. IF A FAN FAILURE IS DETECTED, THE FMS SHALL INITIATE AN ALARM AND STOP THE EXHAUST FAN. IF CURRENT IS DETECTED WHEN THE FMS HAS THE FAN OFF, THEN AN OVERRIDE ALARM SIGNAL SHALL INITIATE BY THE FMS.

EXHAUST FAN ISOLATION DAMPER CONTROL
THE EXHAUST FAN DAMPER SHALL BE CONTROLLED THROUGH THE ECM CONTROLLER TO OPEN ANYTIME THE FAN IS OPERATING. IF THE FAN IS STOPPED, THE DAMPER SHALL CLOSE. THE FMS SHALL MONITOR THE OPEN AND CLOSED STATUS OF THE DAMPER THROUGH DAMPER ACTUATOR END SWITCHES. IF A DAMPER FAILURE IS DETECTED, THE FMS SHALL INITIATE AN ALARM. IF THE DAMPER FAILS IN THE CLOSED POSITION THE FMS SHALL STOP THE EXHAUST FAN AND MARK IT AS FAILED.

SUPPLY AIR VALVE CONTROL
THE FMS SHALL MODULATE THE SUPPLY AIR VALVE TO TRACK THE EXHAUST AIRFLOW. WHEN THE EXHAUST FAN IS OFF, THE AIR VALVE SHALL BE CLOSED.

TEMPERATURE CONTROL
THE FMS SHALL MODULATE THE HOT WATER VALVE TO MAINTAIN THE SUPPLY AIR TEMPERATURE AT A SETPOINT OF 70°F (ADJUSTABLE) WHEN THE SUPPLY AIR VALVE IS OPEN.

TYPICAL SPACE PRESSURE AND TEMPERATURE CONTROLS

GENERAL
EACH SPACE SHALL BE INSTALLED WITH A FMS CONSTANT AIR VOLUME CONTROL SYSTEM WHICH SHALL CONTROL THE MOTORIZED SUPPLY AIR VALVE, REHEAT COIL, AND GENERAL EXHAUST AIR VALVE. THE CONTROL SYSTEM SHALL INCLUDE ALL REQUIRED EXHAUST AIR VALVES, SUPPLY AIR VALVES, CONTROLLERS, COIL VALVE, AND SENSORS FOR A COMPLETE AND OPERATIONAL SYSTEM. REFER TO MECHANICAL FLOOR PLANS FOR EXACT REQUIREMENTS IN EACH SPACE.

ROOM PRESSURE CONTROL
THE FMS SHALL CONTROL SUPPLY AND AUXILIARY EXHAUST AIRFLOW DEVICES IN ORDER TO MAINTAIN A VOLUMETRIC OFFSET AS SPECIFIED ON THE MECHANICAL DRAWINGS. OFFSET SHALL BE MAINTAINED REGARDLESS OF ANY CHANGE IN FLOW OR STATIC PRESSURE. THIS OFFSET SHALL BE FIELD ADJUSTABLE AND REPRESENTS THE VOLUME OF AIR, WHICH WILL ENTER (OR EXIT) THE ROOM FROM THE CORRIDOR OR ADJACENT SPACES. THE PRESSURIZATION CONTROL ALGORITHM SHALL SUM THE FLOW VALUES OF ALL SUPPLY AND EXHAUST AIRFLOW DEVICES AND COMMAND APPROPRIATE CONTROLLED DEVICES TO NEW SET POINTS TO MAINTAIN THE DESIRED OFFSET. THE OFFSET SHALL BE ADJUSTABLE. THE PRESSURIZATION CONTROL ALGORITHM SHALL CONSIDER BOTH NETWORKED DEVICES, AS WELL AS NON-NETWORKED DEVICES PROVIDING A LINEAR ANALOG FLOW SIGNAL AND ANY NUMBER OF CONSTANT VOLUME DEVICES WHERE THE TOTAL OF SUPPLY DEVICES AND THE TOTAL OF EXHAUST DEVICES MAY BE FACTORED INTO THE PRESSURIZATION CONTROL ALGORITHM. VOLUMETRIC OFFSET SHALL BE THE ONLY ACCEPTABLE MEANS OF CONTROLLING ROOM PRESSURIZATION. THE PRESSURIZATION CONTROL ALGORITHM SHALL SUPPORT THE ABILITY TO REGULATE THE DISTRIBUTION OF TOTAL SUPPLY FLOW ACROSS MULTIPLE SUPPLY AIRFLOW CONTROL DEVICES IN ORDER TO OPTIMIZE AIR DISTRIBUTION IN THE SPACE. FOR NEGATIVE PRESSURE SPACES, THE EXHAUST AIRFLOW SHALL BE FIXED AND THE SUPPLY AIR VOLUME SHALL BE ADJUSTED TO MAINTAIN THE REQUIRED OFFSET FOR PRESSURIZATION. FOR POSITIVE PRESSURE SPACES, THE SUPPLY AIR VOLUME SHALL BE FIXED AND THE GENERAL EXHAUST AIRFLOW SHALL BE ADJUSTED TO MAINTAIN THE REQUIRED OFFSET FOR PRESSURIZATION.

TEMPERATURE CONTROL
THE TEMPERATURE OF THE SPACE SHALL BE CONTINUOUSLY MEASURED. IF THE SPACE REQUIRES HEATING, THE REHEAT COIL VALVE SHALL BE MODULATED TO MAINTAIN THE SPACE TEMPERATURE AT THE OCCUPIED HEATING SETPOINT OF 72°F (ADJUSTABLE). THE SPACE TEMPERATURE SETPOINT SHALL BE ADJUSTABLE THROUGH THE FMS. THE CONTROLLER SHALL LIMIT THE HEATING CONTROL VALVE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT OR BELOW 90°F (ADJUSTABLE). A COOLING SETPOINT OF 74°F (ADJUSTABLE) SHALL BE USED BY THE FMS FOR AIR HANDLING UNIT SUPPLY AIR TEMPERATURE RESET CONTROL.

TYPICAL ANIMAL HOLDING AREAS CONTROLS

GENERAL
EACH SPACE SHALL BE INSTALLED WITH A FMS CONSTANT AIR VOLUME CONTROL SYSTEM WHICH SHALL CONTROL THE MOTORIZED SUPPLY AIR VALVE, REHEAT COIL, AND GENERAL EXHAUST AIR VALVE. THE CONTROL SYSTEM SHALL INCLUDE ALL REQUIRED EXHAUST AIR VALVES, SUPPLY AIR VALVES, CONTROLLERS, COIL VALVE, AND SENSORS FOR A COMPLETE AND OPERATIONAL SYSTEM. REFER TO MECHANICAL FLOOR PLANS FOR EXACT REQUIREMENTS IN EACH SPACE.

ROOM PRESSURE CONTROL
THE FMS SHALL CONTROL SUPPLY AND AUXILIARY EXHAUST AIRFLOW DEVICES IN ORDER TO MAINTAIN A VOLUMETRIC OFFSET AS SPECIFIED ON THE MECHANICAL DRAWINGS. OFFSET SHALL BE MAINTAINED REGARDLESS OF ANY CHANGE IN FLOW OR STATIC PRESSURE. THIS OFFSET SHALL BE FIELD ADJUSTABLE AND REPRESENTS THE VOLUME OF AIR, WHICH WILL ENTER (OR EXIT) THE ROOM FROM THE CORRIDOR OR ADJACENT SPACES. THE PRESSURIZATION CONTROL ALGORITHM SHALL SUM THE FLOW VALUES OF ALL SUPPLY AND EXHAUST AIRFLOW DEVICES AND COMMAND APPROPRIATE CONTROLLED DEVICES TO NEW SET POINTS TO MAINTAIN THE DESIRED OFFSET. THE OFFSET SHALL BE ADJUSTABLE. THE PRESSURIZATION CONTROL ALGORITHM SHALL CONSIDER BOTH NETWORKED DEVICES, AS WELL AS NON-NETWORKED DEVICES PROVIDING A LINEAR ANALOG FLOW SIGNAL AND ANY NUMBER OF CONSTANT VOLUME DEVICES WHERE THE TOTAL OF SUPPLY DEVICES AND THE TOTAL OF EXHAUST DEVICES MAY BE FACTORED INTO THE PRESSURIZATION CONTROL ALGORITHM. VOLUMETRIC OFFSET SHALL BE THE ONLY ACCEPTABLE MEANS OF CONTROLLING ROOM PRESSURIZATION. THE PRESSURIZATION CONTROL ALGORITHM SHALL SUPPORT THE ABILITY TO REGULATE THE DISTRIBUTION OF TOTAL SUPPLY FLOW ACROSS MULTIPLE SUPPLY AIRFLOW CONTROL DEVICES IN ORDER TO OPTIMIZE AIR DISTRIBUTION IN THE SPACE. FOR NEGATIVE PRESSURE SPACES, THE EXHAUST AIRFLOW SHALL BE FIXED AND THE SUPPLY AIR VOLUME SHALL BE ADJUSTED TO MAINTAIN THE REQUIRED OFFSET FOR PRESSURIZATION.

TEMPERATURE CONTROL
THE TEMPERATURE OF THE SPACE SHALL BE CONTINUOUSLY MEASURED. IF THE SPACE REQUIRES HEATING, THE REHEAT COIL VALVE SHALL BE MODULATED TO MAINTAIN THE SPACE TEMPERATURE AT THE OCCUPIED HEATING SETPOINT OF 70°F (ADJUSTABLE) +/-2°F. THE SPACE TEMPERATURE SETPOINT SHALL BE ADJUSTABLE THROUGH THE FMS.

ENVIRONMENTAL TRENDING
THE FOLLOWING POINTS SHALL BE CONTINUOUSLY TRENDED IN ACCORDANCE WITH AAALAC ACCREDITATION REQUIREMENTS.

1. SPACE TEMPERATURE
2. SPACE HUMIDITY LEVEL
3. SPACE DIFFERENTIAL PRESSURE
4. CALCULATED AIR CHANGE RATE
5. LIGHT LEVEL
6. SUPPLY AND EXHAUST AIRFLOW RATES

TYPICAL FUMEHOOD LABORATORY CONTROLS

GENERAL
EACH LABORATORY SHALL BE INSTALLED WITH A DEDICATED VARIABLE AIR VOLUME FMS CONTROL SYSTEM WHICH SHALL CONTROL THE VARIABLE VOLUME FUME HOOD, SUPPLY AIR VALVE, REHEAT COIL, AND GENERAL EXHAUST AIR VALVE. THE CONTROL SYSTEM SHALL INCLUDE ALL REQUIRED EXHAUST AIR VALVES, SUPPLY AIR VALVES, CONTROLLERS, AND SENSORS FOR A COMPLETE AND OPERATIONAL SYSTEM. REFER TO MECHANICAL FLOOR PLANS FOR EXACT REQUIREMENTS IN EACH LAB.

VAV FUME HOOD CONTROL
EACH FUME HOOD FACE VELOCITY AND EXHAUST VOLUME SHALL BE CONTINUOUSLY MEASURED. THE FACE VELOCITY FUME HOOD CONTROLLER SHALL MODULATE THE FUME HOOD AIR VALVE TO MAINTAIN THE FACE VELOCITY SETPOINT AND MINIMUM EXHAUST VOLUME SET POINT AT ALL TIMES. IF A FAILURE IS DETECTED IN THE FUME HOOD SYSTEM, THE LOCAL FUME HOOD INDICATOR SHALL ALARM AS WELL AS AN ALARM SHALL BE INITIATED BY THE FMS. THE AIRFLOW VALUE THROUGH THE FUMEHOOD SHALL BE CONTINUOUSLY MONITORED BY THE FMS CONTROLLER.

VARIABLE VOLUME ROOM PRESSURE CONTROL
THE FMS SHALL CONTROL SUPPLY AND AUXILIARY EXHAUST AIRFLOW DEVICE IN ORDER TO MAINTAIN A VOLUMETRIC OFFSET (NEGATIVE). OFFSET SHALL BE MAINTAINED REGARDLESS OF ANY CHANGE IN FLOW OR STATIC PRESSURE. THIS OFFSET SHALL BE FIELD ADJUSTABLE AND REPRESENTS THE VOLUME OF AIR, WHICH WILL ENTER (OR EXIT) THE ROOM FROM THE CORRIDOR OR ADJACENT SPACES. THE PRESSURIZATION CONTROL ALGORITHM SHALL SUM THE FLOW VALUES OF ALL SUPPLY AND EXHAUST AIRFLOW DEVICES AND COMMAND APPROPRIATE CONTROLLED DEVICES TO NEW SET POINTS TO MAINTAIN THE DESIRED OFFSET. THE OFFSET SHALL MAINTAIN THE LABORATORY AT A NEGATIVE PRESSURE TO THE CORRIDOR AT A SETPOINT BETWEEN -0.03" W.C AND -0.05" W.C. VOLUMETRIC OFFSET SHALL BE THE ONLY ACCEPTABLE MEANS OF CONTROLLING ROOM PRESSURIZATION. THE PRESSURIZATION CONTROL ALGORITHM SHALL SUPPORT THE ABILITY TO REGULATE THE DISTRIBUTION OF TOTAL SUPPLY FLOW ACROSS MULTIPLE SUPPLY AIRFLOW CONTROL DEVICES IN ORDER TO OPTIMIZE AIR DISTRIBUTION IN THE SPACE. THE ROOM PRESSURE CONTROLLER SHALL MODULATE THE SUPPLY AND GENERAL EXHAUST DAMPERS TO MAINTAIN AN OFFSET BETWEEN THE TOTAL SUPPLY AND TOTAL EXHAUST FLOW VOLUMES. A ROOM PRESSURE MONITOR LOCATED NEXT TO THE DOOR TO EACH LAB SHALL ALARM IF THE ROOM PRESSURE IS OUTSIDE OF THE NORMAL OPERATING RANGE.

VARIABLE VOLUME TEMPERATURE CONTROL
THE TEMPERATURE OF THE LAB SHALL BE CONTINUOUSLY MEASURED. IF THE LAB REQUIRES COOLING, THE SUPPLY AIR VALVE AND GENERAL EXHAUST AIR VALVE SHALL BE MODULATED TOGETHER BETWEEN THE MINIMUM AND MAXIMUM COOLING AIR FLOWS TO MAINTAIN THE SPACE TEMPERATURE AT THE OCCUPIED COOLING SETPOINT OF 74°F (ADJUSTABLE). IF THE LAB REQUIRES HEATING, THE REHEAT COIL VALVE SHALL BE MODULATED TO MAINTAIN THE SPACE TEMPERATURE AT THE OCCUPIED HEATING SETPOINT OF 72°F (ADJUSTABLE). THE LAB TEMPERATURE SETPOINT SHALL BE ADJUSTABLE THROUGH THE FMS. DURING UNOCCUPIED PERIODS, THE SPACE TEMPERATURE SETPOINT SHALL BE RESET TO 55°F FOR HEATING AND 90°F FOR COOLING. IF DURING AN UNOCCUPIED PERIOD THE SPACE OCCUPANCY SWITCH IS ACTIVATED, THE SPACE SHALL RETURN TO THE OCCUPIED SETPOINTS FOR A PERIOD OF TWO HOURS BEFORE SWITCH BACK TO THE UNOCCUPIED STATE.

TYPICAL SPLIT SYSTEM

EACH UNIT SHALL BE PROVIDED WITH A FACTORY PACKAGED CONTROL SYSTEM WHICH SHALL CONTROL THE UNIT TO MAINTAIN THE SPACE TEMPERATURE AT SETPOINT. THE FMS SHALL MONITOR THE SPACE TEMPERATURE THROUGH A SEPARATE SPACE TEMPERATURE SENSOR AND SHALL INITIATE AN ALARM IF THE SPACE TEMPERATURE RISES ABOVE THE SPACE HIGH TEMPERATURE ALARM SETPOINT.

DOMESTIC HOT WATER SYSTEM

GENERAL
THE TWO DOMESTIC HOT WATER SYSTEMS SHALL BE OPERATED IN A LEAD/STANDBY CONFIGURATION. THE LEAD SYSTEM SHALL OPERATE CONTINOUSLY. WHEN THE SYSTEM IS ENABLED AS THE LEAD SYSTEM, THE FMS SHALL OPEN THE ASSOCIATED DOMESTIC COLD WATER MAKE-UP VALVE AND ENABLE THE ASSOCIATED DOMESTIC HOT WATER HEATER. WHEN THE SYSTEM IS DISABLED, THE FMS SHALL DISABLE THE ASSOCIATED DOMESTIC HOT WATER HEATER AND CLOSE THE ASSOCIATED DOMESTIC COLD WATER MAKE-UP VALVE. THE LEAD/STANDBY CONFIGURATION OF THE SYSTEMS SHALL BE ROTATED MONTHLY.

DOMESTIC HOT WATER HEATER MONITORING
THE FMS SHALL MONITOR THE ALARM CONTACTS IN EACH HEATER. IF AN ALARM CONDITION IS DETECTED, THE INITIATE AN ALARM AND DISABLE THE SYSTEM. THE STANDBY SYSTEM SHALL AUTOMATICALLY START AND OPERATE IN PLACE OF THE LEAD SYSTEM. THE FMS SHALL MONITOR AND TREND THE HOT WATER SUPPLY TEMPERATURES FOR EACH SYSTEM.

DOMESTIC HOT WATER RECIRCULATION PUMP
THE FMS SHALL OPERATE THE ASSOCIATED PUMP ANYTIME HOT WATER FLOW IS SENSED IN THE HOT WATER MAKE-UP LINE AND THE HOT WATER RETURN TEMPERATURE IS BELOW SETPOINT. IF FLOW IS NO LONGER SENSED AND THE RETURN TEMPERATURE REACHES SETPOINT, THE PUMP SHALL STOP. THE FMS SHALL MONITOR THE STATUS OF THE PUMP THROUGH A CURRENT SWITCH INSTALLED ON THE MOTOR. IF A PUMP FAILURE IS DETECTED, THE FMS SHALL INITIATE AN ALARM AND DISABLE THE SYSTEM. THE STANDBY SYSTEM SHALL AUTOMATICALLY START AND OPERATE IN PLACE OF THE LEAD SYSTEM.

THERMOSTATIC MIXING VALVE
THE FMS SHALL MONITOR THE OPERATING CONDITIONS, TEMPERATURES, POSITIONS, STATUSES, AND ALARMS IN THE VALVE. IF AN ALARM CONDITION IS DETECTED, THE FMS SHALL INITIATE AN ALARM.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300
Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: SDB
CHECKED BY: IM

SHEET TITLE

SEQUNCE OF OPERATION

MI604

Biomedical Research Building Expansion

ELECTRICAL SYMBOL LEGEND (NOT ALL SYMBOLS APPLY TO THIS PROJECT)

UPDATED: 09/07/2016

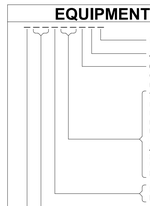
ABBREVIATIONS

ABBREV.	DEFINITION
A	AMPS, AMPERE, AMPERAGE
AC	ABOVE COUNTER
A/C	ALTERNATING CURRENT
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AVAILABLE INTERRUPTING CURRENT
AL	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ATSC	AUTOMATIC TRANSFER SWITCH CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
A/V	AUDIO/VISUAL
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CL	CLOCK
CLF	CURRENT LIMITING FUSE
CO	CONDUIT ONLY
CU	COPPER
D	DIMMING
DC	DIRECT CURRENT
DL	DAY-LIGHTING
DIA	DIAMETER
E	EMERGENCY
EC	EMERGENCY, CRITICAL
EG	ENGINE GENERATOR
EL	EMERGENCY, LIFE SAFETY
EQ	EMERGENCY, EQUIPMENT
EX	EXISTING
FUT	FUTURE
FA	FIRE ALARM
FAA	FIRE ALARM ANNUNCIATOR
FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINAL CABINET
FDR	FEEDER
FMS	FACILITY MANAGEMENT SYSTEM
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
G OR GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFEP	GROUND FAULT EQUIPMENT PROTECTION
GFP	GROUND FAULT PROTECTION
GND	GROUND.
HOA	HAND-OFF-AUTOMATIC.
HP	HORSEPOWER
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IG	ISOLATED GROUND
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT AMPS
KVAR	KILOVOLT AMPS REACTIVE
KW	KILOWATT
KWH	KILOWATT HOUR.
LSIG	LONG TIME, SHORT TIME, INSTANTANEOUS, AND GROUND FAULT PROTECTION
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MH	MANHOLE
MIN	MINIMUM
MM	MIXED MEDIA
MTS	MANUAL TRANSFER SWITCH
MVA	MEGAVOLT AMPS
N	NEW
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT	NEUTRAL
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NORMAL
NM	NEW MEXICO
NO	NORMALLY OPEN
O/H	OVERHEAD
P	POLE
PA	PUBLIC ADDRESS
PC	PHOTOCELL
PH	PHASE
PMCS	POWER MONITORING AND CONTROL SYSTEM
R	REMOVED/REMOVAL
RC	ROOM CONTROLLER
RSC	RIGID STEEL CONDUIT
SEC	SECURITY
SPD	SURGE PROTECTIVE DEVICE
SW	SWITCH
TEMP	TEMPORARY
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
TYP.	TYPICAL
UC	UNDER COUNTER
U/G	UNDERGROUND
UGE	UNDERGROUND ELECTRIC
UL	UNDERWRITERS' LABORATORIES
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTABLE POWER SUPPLY
V	VOLTS, VOLTAGE
VFD	VARIABLE FREQUENCY DRIVE
W	WALL MOUNTED
WG	WEATHERPROOF AND GFCI
WP	WEATHERPROOF
XFER	TRANSFER
XFMR (TRANSF)	TRANSFORMER

REFERENCE TAGS

SYMBOL	DEFINITION
⬡	KEYED NOTE REFERENCE
VAV-9	MECHANICAL EQUIPMENT REFERENCE
+44"	DENOTES MOUNTING HEIGHT AFF
▭	KITCHEN EQUIPMENT REFERENCE
⬭	MEDICAL EQUIPMENT REFERENCE

EQUIPMENT NAMING CONVENTION



EXAMPLES:
A. SES1 (SERVICE ENTRANCE SECTION #1)
B. 1H1A (SERVED FROM SES#1, 480/277 NORMAL, LEVEL 1, FIRST BOARD)
C. 1EQH1A (SERVED FROM MAIN EMER SWBD #1, 480/277 EQUIP POWER, LEVEL 1, FIRST BOARD)

RACEWAY & CONDUCTORS

BRANCH CIRCUIT GENERAL INFORMATION:

BRANCH CIRCUITS FROM OVERCURRENT PROTECTION (20A) TO FURTHEST DEVICE SHALL NOT EXCEED 75 FEET FOR #12AWG COPPER AND 150 FEET FOR #10AWG COPPER; MEASURED ALONG CONDUCTORS ROUTING PATH. BRANCH CIRCUITS EXCEEDING 150 FEET WILL BE SIZED SO THAT VOLTAGE DROP DOES NOT EXCEED 3%.

SYMBOL	DESCRIPTION
= GROUND = HOT/PHASE = NEUTRAL = SWITCH LEG	CONDUCTOR IDENTIFICATION SYMBOLS. REFER TO PLANS FOR COMBINATION USE. CONDUCTOR IDENTIFICATION MOSTLY USED IN HOMERUN LOCATION, BUT CAN ALSO BE USED IN BRANCH CIRCUITING WHERE APPLIED. GROUND CONDUCTORS WILL BE INSTALLED IN ALL RACEWAYS WHETHER SHOWN OR NOT.
LA-1	HOMERUN FROM EQUIPMENT LOCATION. THE CIRCUIT NUMBER ADJACENT TO HOMERUN INDICATES PANEL SOURCE AND INDIVIDUAL SINGLE POLE CIRCUIT BREAKER(S). CONDUCTOR IDENTIFICATION SYMBOL INDICATES NUMBER OF CONDUCTORS IN HOMERUN. MINIMUM #12 CONDUCTORS AND 3/4" RACEWAY PATH WILL BE PROVIDED IN HOMERUN UON. ALL HOMERUNS WILL INCLUDE GROUND CONDUCTOR.
LA-1,3 LA-5,7,9	HOMERUN FROM EQUIPMENT LOCATION. THE CIRCUIT NUMBER ADJACENT TO HOMERUN INDICATES PANEL SOURCE AND INDIVIDUAL SINGLE POLE CIRCUIT BREAKER(S). SYMBOL REPRESENTS A MULTI-BRANCH CIRCUIT. NUMBER OF CONDUCTORS IN HOMERUN WILL INCLUDE A SEPARATE NEUTRAL FOR EACH CIRCUIT PHASE CONDUCTOR. MINIMUM #12 CONDUCTORS AND 3/4" RACEWAY PATH WILL BE PROVIDED IN HOMERUN UON. ALL HOMERUNS WILL INCLUDE GROUND CONDUCTOR.
LA-1,3 LA-5,7,9	HOMERUN FROM EQUIPMENT LOCATION. THE CIRCUIT NUMBER ADJACENT TO HOMERUN INDICATES PANEL SOURCE AND INDIVIDUAL SINGLE POLE CIRCUIT BREAKERS. CONDUCTOR IDENTIFICATION SYMBOL INDICATES NUMBER OF CONDUCTORS IN HOMERUN. MINIMUM #12 CONDUCTORS AND 3/4" RACEWAY PATH WILL BE PROVIDED IN HOMERUN UON. NEUTRAL MAY BE USED WHERE INDICATED ON PLAN. ALL HOMERUNS WILL INCLUDE GROUND CONDUCTOR.
	CONCEALED RACEWAY BETWEEN DEVICES AND OR EQUIPMENT IN WALLS OR IN CEILING SPACE
	UNDERGROUND RACEWAY BETWEEN DEVICES AND OR EQUIPMENT
	EXPOSED RACEWAY BETWEEN DEVICES AND OR EQUIPMENT ON WALLS OR CEILINGS
DOWN UP	CONDUIT TURNS
	CONDUIT STUBBED AND CAPPED
B	BUSWAY
G	GROUNDING CONDUCTOR
	CABLE TRAY - POWER AND TELECOMMUNICATIONS
T	TELECOMMUNICATIONS RACEWAY
D	DATA RACEWAY
V/D	VOICE/DATA COMBINATION RACEWAY
FA	FIRE ALARM RACEWAY

GENERAL DRAWING SYMBOLS

A / E4	SECTION/ELEVATION LETTER OR DETAIL NUMBER
6 / E4	DRAWING NUMBER WHERE DETAILED
6 / E3 E4	SECTION/ELEVATION LETTER OR DETAIL NUMBER
A / E3 E4	DRAWING NUMBER WHERE DETAILED
	DRAWING NUMBER WHERE TAKEN
NORTH	NORTH ARROW OR MATCH ARCHITECT'S
0 10' 20' 40' 80' 1" = 40'-0"	SCALE BAR OR MATCH ARCHITECT'S

DEMOLITION

SYMBOL	DESCRIPTION	NOTES
	DASHED SYMBOL INDICATES EXISTING DEVICE OR EQUIPMENT TO BE REMOVED	REFER TO DEMOLITION PLANS FOR ADDITIONAL INFORMATION
R	REMOVE EXISTING RACEWAY IN ALL ACCESSIBLE AREAS. CAPPED AND ABANDONED IF IN UNACCESSIBLE AREA	
	SOLID SYMBOL, LIGHTER IN COLOR INDICATES EXISTING DEVICE OR EQUIPMENT TO REMAIN	
EX	EXISTING CONDUIT TO BE REUSED	

DEVICES

DEVICE INDICATOR LETTER. "X" EQUALS DESIGNATION BELOW (TYPICAL FOR MOST RECEPTACLE TYPES):
- BLANK FOR NORMAL POWER
- G = GFCI RATED
- IG = ISOLATED GROUND
- T = TAMPERPROOF
- WG = WEATHERPROOF AND GFCI
- WP = WEATHERPROOF (IN-USE COVER)
- CL = CLOCK
- TV = TELEVISION

SYMBOL	DESCRIPTION	MOUNTING LOC.	MOUNTING HT.
X	IN FLOOR DUPLEX RECEPTACLE. CONFIGURATION AS INDICATED ON PLANS	FLOOR	VARIES
X	IN FLOOR DOUBLE DUPLEX (QUADPLEX) RECEPTACLE. CONFIGURATION AS INDICATED ON PLANS		
X	IN FLOOR EMERGENCY DUPLEX RECEPTACLE. CONFIGURATION AS INDICATED ON PLANS		
X	IN FLOOR EMERGENCY DOUBLE DUPLEX (QUADPLEX) RECEPTACLE. CONFIGURATION AS INDICATED ON PLANS		
X	COMBINATION DUPLEX RECEPTACLE AND COMMUNICATIONS FLOORBOX. DEVICE CONFIGURATION AS INDICATED ON PLANS.		
X	CEILING MOUNTED DUPLEX RECEPTACLE	CEILING	FLUSH
X	CEILING MOUNTED DOUBLE DUPLEX (QUADPLEX) RECEPTACLE		
X	CEILING MOUNTED EMERGENCY DUPLEX RECEPTACLE		
X	CEILING MOUNTED EMERGENCY DOUBLE DUPLEX (QUADPLEX) RECEPTACLE		
X	COMBINATION POWER/COMMUNICATION IN CEILING OUTLET. CONFIGURATION AS INDICATED ON PLANS		
X	SIMPLEX RECEPTACLE	WALL, UON	+18", UON
X	DUPLEX RECEPTACLE		
X	DOUBLE DUPLEX (QUADPLEX) RECEPTACLE		
X	EMERGENCY DUPLEX RECEPTACLE		
X	EMERGENCY DOUBLE DUPLEX (QUADPLEX) RECEPTACLE		
X	SPECIAL PURPOSE RECEPTACLE. NEMA CONFIGURATION AND AMPERAGE AS NOTED ON PLANS		
	MULTI-OUTLET ASSEMBLY (SURFACE MOUNTED RACEWAY)	VARIES SEE PLANS	VARIES SEE PLANS
	COMBINATION POWER/COMMUNICATION POLE. CONFIGURATION AS NOTED ON PLANS		
J	WALL MOUNTED CODE SIZE J-BOX	VARIES SEE PLANS	VARIES SEE PLANS
J	CODE SIZE JUNCTION BOX		
P	CODE SIZE PULLBOX (OR AS SIZED ON PLAN)		
•	PUSHBUTTON (EMERGENCY POWER OFF - EPO)		
PC	PHOTOCELL		
•	LIGHTNING PROTECTION AIR TERMINAL	ROOF	VARIES
T	THERMOSTAT	WALL	+44" UON
CB 30/3R	ENCLOSED CIRCUIT BREAKER. AMPERAGE/NEMA ENCLOSURE RATING, 3 POLE UON	VARIES	VARIES
30/1	NON-FUSED DISCONNECT SWITCH. AMPERAGE/NEMA ENCLOSURE RATING, 3 POLE UON		
30/3R	FUSED DISCONNECT SWITCH. AMPERAGE/NEMA ENCLOSURE RATING, 3 POLE UON		
0/1	MOTOR STARTER. STARTER SIZE INDICATED BY NUMBER/NEMA ENCLOSURE RATING, SINGLE SPEED UON		
1/30/3R	COMBINATION FUSIBLE DISCONNECT SWITCH AND MOTOR STARTER. NEMA STARTER SIZE/AMPERAGE/NEMA ENCLOSURE RATING, 3 POLE UON		
5	MOTOR. NUMBER INDICATES HORSEPOWER RATING FOR 1HP AND LARGER	N/A	N/A
F	MOTOR. "F" INDICATES FRACTIONAL HORSEPOWER		

EQUIPMENT

SYMBOL	DESCRIPTION
MSB	MAIN SWITCHBOARD. DASHED LINES INDICATE CLEARANCES.
DB	DISTRIBUTION BOARD OR PANEL. DASHED LINES INDICATE CLEARANCES.
H1A	FLUSH MOUNTED PANELBOARD. DASHED LINES INDICATE CLEARANCES.
L1A	SURFACE MOUNTED PANELBOARD. DASHED LINES INDICATE CLEARANCES.
MCC	MOTOR CONTROL CENTER. DASHED LINES INDICATE CLEARANCES.
T1A	DRY TYPE TRANSFORMER (15kVA OR ABOVE), WITH EQUIPMENT TAG (TAG INSIDE OR OUTSIDE, DEPENDING ON SIZE). IN MOST CASES, ACTUAL SIZE SHOWN ON PLANS (ELECTRICAL ROOMS).
T	DRY TYPE TRANSFORMER (LESS THAN 15kVA), WITH NO EQUIPMENT TAG. SIZE, TYPE AND LOCATION NOTED ON PLANS.
VFD	VARIABLE FREQUENCY DRIVE
UPS-A	UNINTERRUPTABLE POWER SUPPLY. DASHED LINES INDICATE CLEARANCES.
ATS-1	AUTOMATIC TRANSFER SWITCH. DASHED LINES INDICATE CLEARANCES.
G	GROUND BAR

LIGHTING

REFER TO LUMINAIRE SCHEDULE FOR ALL LUMINAIRE TYPES WHETHER WALL MOUNTED OR CEILING MOUNTED.

SYMBOL	DESCRIPTION	MOUNTING LOC.	MOUNTING HT.
	HATCHING INDICATES EMERGENCY LIGHTING. HATCH WILL BE MODIFIED FOR EACH LUMINAIRE TYPE. EMERGENCY LUMINAIRE DESIGNATED WITH "E" IN TYPE DESIGNATION.	VARIES	REFER TO LIGHTING SCHEDULE
3 A a	RECESSED MOUNTED LUMINAIRE. SMALL CASE "a" DENOTES SWITCHING, NUMBER "3" DENOTES BRANCH CIRCUITING. SYMBOL "A" DENOTES LUMINAIRE TYPE	CEILING	
	SURFACE MOUNTED LUMINAIRE. LUMINAIRE TYPE AS INDICATED ON PLANS		
	LINEAR DIRECT/INDIRECT LUMINAIRE. CABLE OR STEM MOUNTED		
	DOWN LIGHT LUMINAIRE; CEILING MOUNTED		
	WALL MOUNTED LUMINAIRES	WALL	
	TRACK MOUNTED LUMINAIRES	SURFACE	
	STRIP LUMINAIRE		
WALL / CEILING	EXIT LUMINAIRE. SHADED SIDE INDICATES FACE SIDE. PROVIDE DIRECTIONAL ARROW(S) AS INDICATED ON PLANS	VARIES	
WALL / CEILING	DOUBLE FACE EXIT LUMINAIRE. SHADED SIDE INDICATES FACE SIDE. PROVIDE DIRECTIONAL ARROW(S) AS INDICATED ON PLANS		
	EMERGENCY BATTERY PACK LUMINAIRE (BUG-EYE/FROG-EYE)		
	SINGLE HEAD, POLE MOUNTED LUMINAIRE	EXTERIOR	AS DETAILED
	DOUBLE HEAD, POLE MOUNTED LUMINAIRE		
$ X	DEVICE INDICATOR LETTER. "X" EQUALS DESIGNATION BELOW (TYPICAL FOR MOST SWITCH TYPES): a = SMALL CASE LETTER DENOTES SWITCHING CONTROL; 2 = DOUBLE POLE TOGGLE SWITCH; 3 = THREE-WAY TOGGLE SWITCH; 4 = FOUR-WAY TOGGLE SWITCH; P = PILOT LIGHT TOGGLE SWITCH; M = MOMENTARY CONTACT SWITCH; K = KEY OPERATED SWITCH; WP = WEATHERPROOF TOGGLE SWITCH; T = MANUAL MOTOR STARTER SWITCH WITH THERMAL OVERLOAD PROTECTION; D = DIMMER SWITCH; TW= TWIST TIMER SWITCH	WALL	+44" UON
OS	WALL MOUNTED OCCUPANCY SENSOR; TYPE AS INDICATED ON PLANS		
OS	CEILING MOUNTED OCCUPANCY SENSOR; TYPE AS INDICATED ON PLANS	CEILING	SURFACE
DL	DAY-LIGHTING SENSOR; TYPE AS INDICATED ON PLANS		
RC	ROOM CONTROLLER; TYPE AS INDICATED ON PLANS		

UTILITIES

SYMBOL	DESCRIPTION
•	DISTRIBUTION POLE FOR OVERHEAD ELECTRICAL OR COMMUNICATIONS AS INDICATED ON PLAN.
X X X	OVERHEAD UTILITY AND OR SYSTEM DISTRIBUTION. 3PH = THREE PHASE; 1PH = SINGLE PHASE; P = ELECTRICAL PRIMARY; S = ELECTRICAL SECONDARY; T = TELECOMMUNICATION; TV = TELEVISION; E = EMERGENCY POWER; ATSC = AUTOMATIC TRANSFER SWITCH CONTROL; N = NEW; EX = EXISTING
X X X	UNDERGROUND UTILITY AND OR SYSTEM DISTRIBUTION.
UT	UTILITY OR FACILITY TRANSFORMER
S	PAD MOUNTED SWITCH
CC	CONNECTION CABINET (UTILITY METER MOUNT)
PM	PRIMARY SITE METER ENCLOSURE
ME	METER ENCLOSURE. EITHER ON BUILDING OR ON UTILITY EQUIPMENT
CT	CT ENCLOSURE. EITHER ON BUILDING OR ON UTILITY EQUIPMENT
MH	MANHOLE - POWER OR COMMUNICATION AS INDICATED ON PLANS
HH	HAND HOLE - POWER OR COMMUNICATION AS INDICATED ON PLANS
EG	ENGINE GENERATOR
TP	TELECOMMUNICATION PEDESTAL
TVP	TELEVISION PEDESTAL

FIRE ALARM

SYMBOL	DESCRIPTION	MOUNTING LOC.	MOUNTING HT.
FACP	FIRE ALARM CONTROL PANEL	WALL	-
FATC	FIRE ALARM TERMINAL CABINET (EQUIPMENT NAMING CONVENTION PER PLANS)		
FAA	FIRE ALARM ANNUNCIATOR PANEL	WALL	+44"
F	PULL STATION		
F	FIREMAN'S TELEPHONE OUTLET		
F	HORN NOTIFICATION	WALL	+80" UON
S	SPEAKER NOTIFICATION		
C	CHIME NOTIFICATION		
	COMBINATION SPEAKER AND CHIME NOTIFICATION		
	SPEAKER/HORN WITH STROBE LIGHT		
	STROBE LIGHT ONLY		
B	BELL (GONG)		
P	PHOTOELECTRIC SMOKE DETECTOR	CEILING	SURFACE
I	IONIZATION SMOKE DETECTOR		
R/F	COMBINATION RATE OF RISE / FIXED TEMPERATURE		
F	FIXED TEMPERATURE; TEMPERATURE AS NOTED ON PLANS OR SPECIFICATIONS		
R	RATE OF RISE ONLY		
BT	BEAM TRANSMITTER	CEILING OR WALL	VARIES
BR	BEAM RECEIVER		
U	UNDER FLOOR SMOKE DETECTOR	UNDER FLOOR	SEE PLANS
	DUCT DETECTOR	AT DUCT	SEE PLANS
	FIRE/SMOKE DAMPER		
PS	PRESSURE SWITCH	PIPE	VARIES
TS	TAMPER SWITCH		
FS	FLOW SWITCH		
PIV	POST INDICATOR VALVE		
M	MAGNETIC DOOR HOLDER	VARIES	SEE PLANS
R	CONTROL RELAY		
MM	MONITOR MODULE		
	REMOTE ALARM INDICATING LIGHT		
R	ADDRESSABLE/SUPERVISED RELAY		

ONE-LINE DIAGRAM

SYMBOL	DESCRIPTION
300 / 400	CIRCUIT BREAKER; TRIP SETTING/FRAME SIZE OR NO. OF POLES. SETTINGS AND PROTECTION AS NOTED ON PLANS
300 / 400	DRAWOUT CIRCUIT BREAKER (TRIP SETTING / FRAME SIZE)
300 / 400	MEDIUM VOLTAGE DRAWOUT CIRCUIT BREAKER (TRIP SETTING / FRAME SIZE)
T1A 75KVA K-4 208Y/120V Δ 480V	TRANSFORMER. TRANSFORMER NAME, TRANSFORMER kVA RATING, PRIMARY VOLTAGE AND WIRING CONFIGURATION, SECONDARY VOLTAGE, K RATING (IF APPLICABLE)
3000/5	CURRENT TRANSFORMER, NUMBER "3000/5" DENOTES RATIO.
	POTENTIAL TRANSFORMER.
300A	DISCONNECT SWITCH. "300A" DENOTES AMPERAGE RATING
300A	FUSE. "300A" DENOTES AMPERAGE RATING
G	GROUND FAULT PROTECTION
ST	SHUNT TRIP OPERATOR
	GROUND CONNECTION
	TRANSFER SWITCH. SEE PLANS FOR TYPE OF SWITCH
	SURGE ARRESTOR
SPD	SURGE PROTECTIVE DEVICE
KW	KILOWATT METER
M	ELECTRONIC METER
K1	KIRK KEY INTERLOCK No.1
R1	RELAY No.1
AS	AMMETER SWITCH
A	AMMETER
VS	VOLTMETER SWITCH
V	VOLTMETER
	DELTA CONNECTED
	WYE CONNECTED
	GENERATOR
VFD	VFD CONNECTION
5	MOTOR CONNECTION
UPS	UPS

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

ELECTRICAL LEGEND

E-001

A1 ELECTRICAL SITE PLAN
3/32" = 1'-0"

0' 5' 10' 20'

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

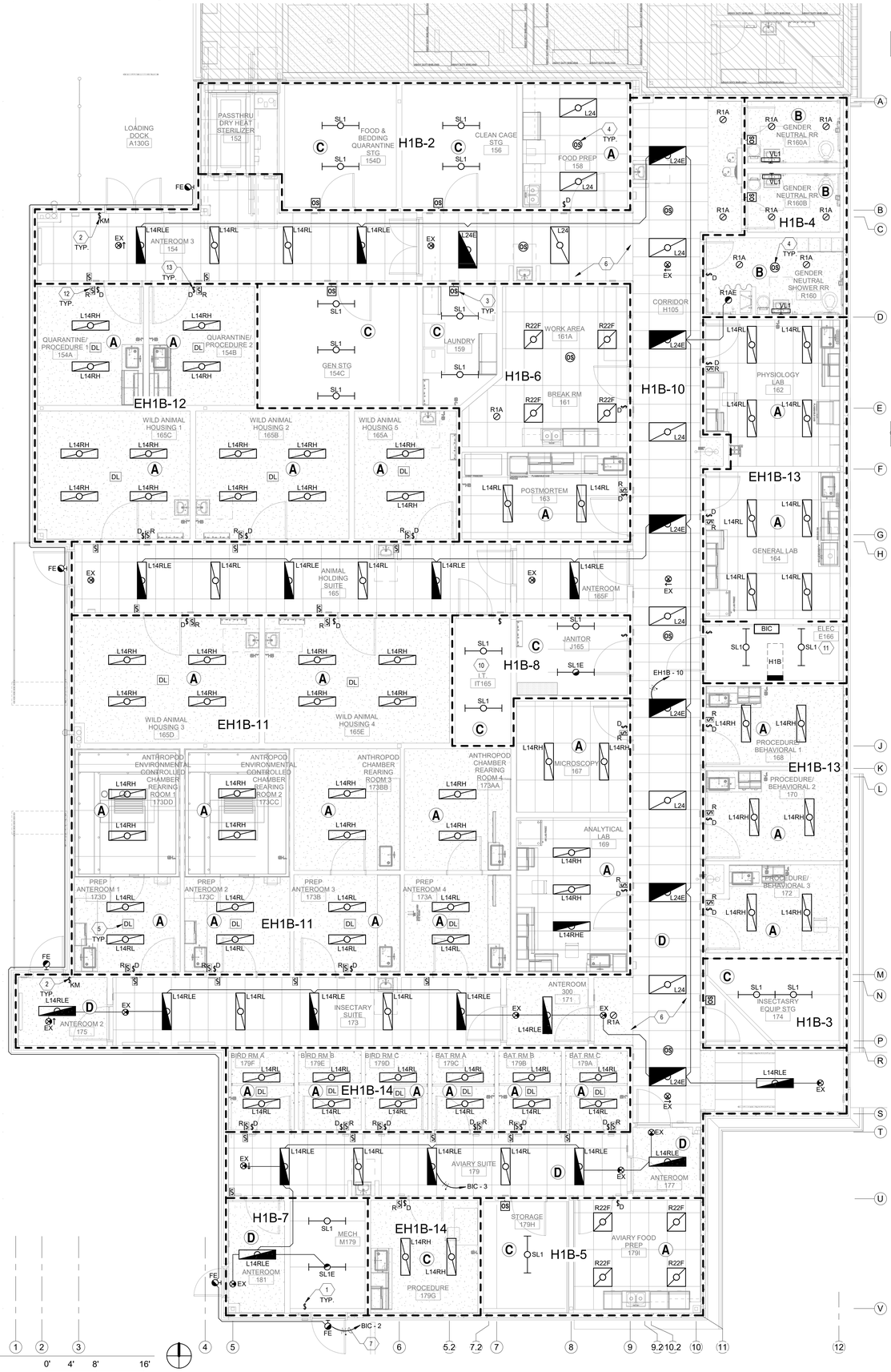
SHEET TITLE

ELECTRICAL SITE PLAN

ES101

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 3:56:51 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_LMMoreno-Chavez.rvt



A1 LIGHTING FLOOR PLAN
3/16" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES

A. ALL EXIT SIGNS WILL BE CONNECTED TO CIRCUIT SERVING THE ROOM THEY ARE LOCATED IN AND FROM NO OTHER CIRCUIT.
B. FOR ELECTRICAL LUMINAIRE SCHEDULE, SEE SHEET E-701.
C. REFER TO SHEET EP101 FOR ELECTRICAL EQUIPMENT LAYOUT.
D. ALL EXTERIOR BUILDING MOUNTED LUMINAIRES AND POLE MOUNTED SITE LUMINAIRES WILL BE ROUTED THROUGH A RELAY PANEL LOCATED IN THE ELECTRICAL SPACE WHERE THE PANEL FEEDING THOSE LUMINAIRES IS LOCATED.
E. ALL LUMINAIRES IN DASHED AREA WILL BE CONNECTED TO CIRCUIT INDICATED UNLESS OTHERWISE NOTED. CONTROL IS INDICATED OR NOTED.
F. COVER PLATES OF ALL DEVICES WILL BE LABELED WITH CIRCUIT IT IS CONNECTED TO. SUCH DEVICES ARE, BUT NOT LIMITED TO, SWITCHES AND RECEPTACLES. REFER TO SPECIFICATION SECTION 260553 FOR ADDITIONAL INFORMATION. ALL COVER PLATES SHALL BE STAINLESS STEEL.
G. ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE SEALED WITH FIRE STOPPING, IE. 3M BRAND CALK, PUTTY, STRIP AND SHEET FORMS, DOW CORNERING 3-6548 SILICONE RTV FOAM.
H. INSTALL CONDUITS IN OPEN CEILING AREAS AS CLOSE TO STRUCTURE AS POSSIBLE. PAINT TO MATCH STRUCTURE/CEILING.
I. ALL LUMINAIRE TYPES ENDING WITH AN "E" DESIGNATION, WILL BE CONNECTED TO BATTERY INVERTER OR LOCAL MICRO BATTERY INVERTER FOR LIFE SAFETY (EMERGENCY) ILLUMINATION.

REFER TO SHEET E-603 FOR LIGHTING SEQUENCE OF OPERATION.
(A) INDICATES SEQUENCE IN EACH ROOM.

KEYNOTES

1. ONE SWITCH; SWITCH TYPE AS INDICATED. WILL CONTROL THE LUMINAIRES IN SPACE.
2. ONE SWITCH; A KEYED MOMENTARY OVERRIDE SWITCH. THIS SWITCH WILL CONTROL CORRIDOR AND ANTEROOM LIGHTING. IT WILL ALSO PROVIDE OVERRIDE OF LIGHTING BETWEEN 11 PM AND 5 AM. IF LIGHTING IS TURNED ON DURING THE NIGHT, THE LIGHTING WILL AUTOMATICALLY TURN OFF AFTER 30 MINUTES. LIGHTING WILL SIGNAL WITH A BLINK OF THE LIGHTS (5) FIVE MINUTES BEFORE SHUT DOWN. SWITCH TYPE TO BE ECHOFLEX #EPSKS OR APPROVED EQUAL.
3. WALL-MOUNTED, DUAL TECHNOLOGY, LINE VOLTAGE OCCUPANCY SENSOR/SWITCH. LOCATE PER MANUFACTURER'S RECOMMENDATIONS. SHOWN HERE FOR BID PURPOSES. REFER TO LIGHTING SEQUENCE OF OPERATION FOR ADDITIONAL INFORMATION.
4. CEILING-MOUNTED, DUAL TECHNOLOGY, LINE VOLTAGE OCCUPANCY SENSOR. LOCATE PER MANUFACTURER'S RECOMMENDATIONS. SHOWN HERE FOR BID PURPOSES. REFER TO LIGHTING SEQUENCE OF OPERATION ON THIS SHEET.
5. PROVIDE DAY LIGHT SENSOR ON CEILING. PROGRAM DIMMING DELAY TO GRADUALLY REDUCE OR INCREASE LIGHTING LEVELS OVER A PERIOD OF TIME SO THAT DIMMING IS NOT NOTICEABLE. COORDINATE WITH CONTROLS MANUFACTURER FOR RECOMMENDATIONS.
6. ALL CORRIDOR AND LOBBY LUMINAIRES WILL BE ROUTED THROUGH A RELAY PANEL LOCATED IN ELECTRICAL ROOM.
7. ALL EXTERIOR LUMINAIRES ON THIS CIRCUIT WILL BE ROUTED THROUGH A RELAY PANEL LOCATED IN ELECTRICAL ROOM.
8. ONE PROGRAMMABLE RELAY PANEL WITH ROOF MOUNTED PHOTO CELL FOR CORRIDOR, LOBBY, AND EXTERIOR BUILDING MOUNTED LIGHTING LUMINAIRES. EACH CIRCUIT TO BE CONTROLLED SEPARATELY.
9. BATTERY INVERTER. REFER TO BATTERY INVERTER SCHEDULE ON SHEET E-701 FOR APPROVED MANUFACTURERS AND SIZE.
10. FOR LUMINAIRE LOCATIONS, COORDINATE WITH TELECOMMUNICATIONS RACK PLACEMENT. CONTRACTOR TO STEM MOUNT LIGHTING AND UTILIZE UNISTRUT SO THAT LOCATION IS AWAY FROM OBSTRUCTION AND BOTTOM OF LUMINAIRE IS FLUSH WITH BOTTOM OF CABLE TRAY.
11. REFER TO SHEET SERIES "*EP*" FOR ELECTRICAL EQUIPMENT LAYOUT IN THIS ROOM. CONTRACTOR TO STEM MOUNT LIGHTING AND UTILIZE UNISTRUT SO THAT LOCATION IS CENTERED AND AWAY FROM OBSTRUCTION.
12. COLOR CHANGING CONTROLLER FOR RED TUNING. COMPATIBLE WITH THE ASSOCIATED LIGHTING FIXTURE.
13. SINGLE PADDLE, SINGLE OUTLET, DIMMER SWITCH. REFER TO LIGHTING SEQUENCE OF OPERATION ON THIS SHEET FOR ADDITIONAL INFORMATION.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

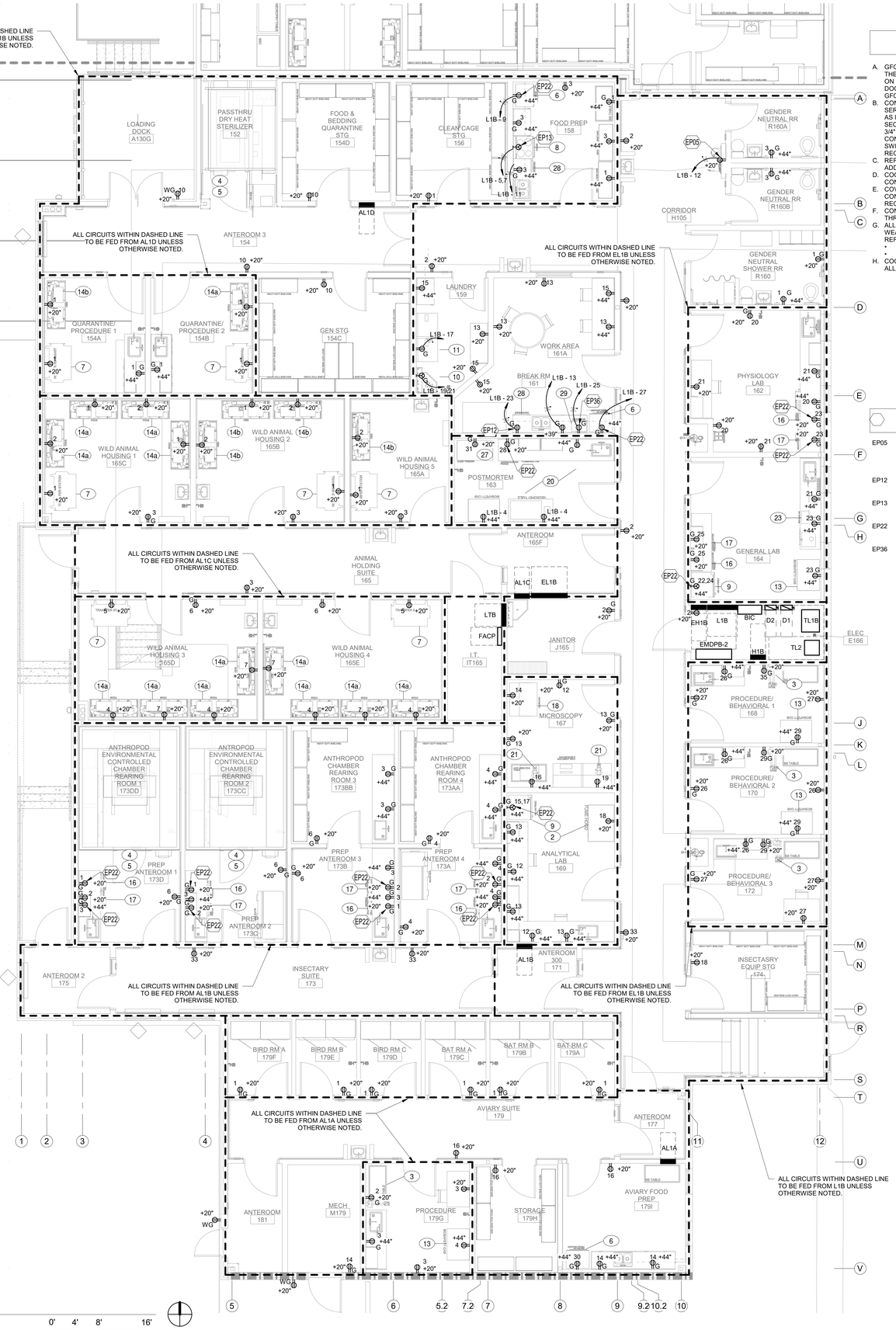
LIGHTING FLOOR PLAN

EL101

Bridgers & Paxton Project No: 8678
11/30/2023 3:56:28 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_LMMoreno-Chavez.rvt
Biomedical Research Building Expansion

ELECTRICAL EQUIPMENT SCHEDULE

ID #	EQUIPMENT DESCRIPTION	VOLTAGE	PHASE	BRANCH CIRCUIT CONDUCTOR	CONDUIT SIZE	EQUIPMENT TERMINATION	FLA	WATTS	OTHER
2	FUME HOOD	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE		445	
3	FUME EXTRACTION ARM	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE		445	
4	DRY HEAT STERILIZER	208	3	2#12 & 1#12 GND	3/4"	RECEPTACLE	95	34200	
5	ENVIRONMENTAL CHAMBER	208	3	2#12 & 1#12 GND	3/4"	RECEPTACLE	30	10800	
6	FRIDGE/ FREEZER COMBO	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE		600	
7	ANIMAL TRANSFER STATION	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE		273	
8	ELECTRIC RANGE W/ OVEN	208	1	2#12 & 1#12 GND	3/4"	RECEPTACLE	40	8320	
9	-80 LAB FREEZER	208	1	2#12 & 1#12 GND	3/4"	RECEPTACLE	8.5	1020	
10	WASHER	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE	11	1320	
11	DRYER	208	1	2#12 & 1#12 GND	3/4"	RECEPTACLE	23	4300	
13	BIOLOGICAL SAFETY CABINET, 4 FEET	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE		445	
14a	IVC RACK	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE		9.5	
14b	IVC RACK	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE		13.8	
16	-4 LAB FRIDGE, BELOW COUNTER	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE	.8	96	
17	-20 LAB FREEZER, BELOW COUNTER	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE	1.2	144	
18	MICROSCOPE(S) (MICROSCOPY)	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE	15	1800	
20	POSTMORTEM ROOM EQUIPMENT	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE	16	1920	
21	MICROSCOPE(S) (MICROSCOPY)	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE	16	1920	
23	REVERSE OSMOSIS TABLE TOP UNIT	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE		200	
27	CHEST FREEZER	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE	5.2	600	
28	DISHWASHER	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE	8.9	1068	
29	MICROWAVE	120	1	2#12 & 1#12 GND	3/4"	RECEPTACLE		1200	



A1 RECEPTACLE FLOOR PLAN
3/16" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES

A. GFCI RECEPTACLES WILL BE INSTALLED AT ALL LOCATIONS AS REQUIRED BY THE LATEST VERSION OF NEC, STATE AND LOCAL CODES WHETHER INDICATED ON PLANS OR NOT. SOME LOCATIONS WILL BE WITHIN 6'-0" OF SINKS, EXTERIOR DOORS AND WET LOCATIONS. ALL EXTERIOR RECEPTACLE LOCATIONS WILL BE GFCI RATED AND WEATHERPROOF.
B. CONTROLS FOR ALL MECHANICAL EQUIPMENT WILL BE AS INDICATED ON SHEET SERIES "MI". RACEWAY PATHS FOR CONTROLS AND WIRING WILL BE INSTALLED AS INDICATED ON CONTROL DIAGRAMS. ALSO REFER TO SPECIFICATION SECTION 230549 FOR ADDITIONAL INFORMATION. CONTRACTOR WILL PROVIDE A 3/4" CONDUIT FOR CONTROL WIRING AS REQUIRED BY SHEET SERIES "MI". CONTROL WILL EITHER BE BY FACILITY MANAGEMENT SYSTEM (FMS) OR LOCAL SWITCHES. PROVIDE PILOT LIGHT SWITCHES WHERE LOCAL SWITCHES ARE REQUIRED PER CONTROL DIAGRAMS.
C. REFER TO MECHANICAL EQUIPMENT SCHEDULES ON SHEET SERIES "M-700" FOR ADDITIONAL INFORMATION ON EQUIPMENT.
D. COORDINATE ALL 120 VOLT POWER REQUIREMENTS AND LOCATIONS WITH THE CONTROLS / ACCESS / SECURITY CONTRACTORS IN THE FIELD.
E. COVER PLATES OF ALL DEVICES WILL BE LABELED WITH CIRCUIT IT IS CONNECTED TO, SUCH DEVICES ARE, BUT NOT LIMITED TO, SWITCHES AND RECEPTACLES. ALL COVER PLATES SHALL BE STAINLESS-STEEL.
F. CONTRACTOR TO PROVIDE EMT WITH WATERTIGHT, COMPRESSION FITTINGS THROUGHOUT NEW WORK.
G. ALL OUTLETS IN THE FOLLOWING ROOMS SHALL BE GFCI AND INCLUDE A WEATHERPROOF LOCKING COVER WHETER INDICATED ON PLANS OR NOT. REFER TO DETAIL 3 ON SHEET E-501 FOR WEATHERPROOF LOCKING DETAIL:
   - BEHAVIORAL SPACE
   - HOLDING SPACE
H. COORDINATE ALL DEVICE MOUNTING HEIGHTS IN ANIMAL HOLDING SPACES AND ALL VIVARIUM SPACES LOCATION WITH EQUIPMENT PRIOR TO ROUGH-IN.

KEYNOTES

EP05 PROVIDE DEVICE FOR ELECTRIC WATER COOLER/BOTTLE FILLER. PROVIDE GFCI CIRCUIT BREAKER IN PANEL, NOT AT RECEPTACLE. MOUNT DEVICE SO IT IS CONCEALED BEHIND UNIT ALONG WITH CORD. COORDINATE WITH MANUFACTURER'S FOR ALL REQUIREMENTS PRIOR TO COMMENCEMENT OF ANY WORK.

EP12 DEVICE IS FOR DISHWASHER. MOUNT BEHIND UNIT. CONTRACTOR TO COORDINATE INSTALLATION HEIGHT WITH ARCHITECTURAL ELEVATIONS.

EP13 ELECTRIC RANGE/STOVE. MOUNT DEVICE BEHIND UNIT. CONTRACTOR WILL MATCH NEMA CONFIGURATION OF RECEPTACLE WITH UNIT PLUG. COORDINATE PRIOR TO ORDERING RECEPTACLE DEVICE.

EP22 DEVICE IS FOR REFRIGERATOR/FREEZER. CONTRACTOR WILL MATCH NEMA CONFIGURATION OF RECEPTACLE WITH UNIT PLUG. COORDINATE PRIOR TO ORDERING RECEPTACLE DEVICE.

EP36 MOUNT GFCI RATED DEVICE FOR MICROWAVE. COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN. PROVIDE DEDICATED CIRCUIT. LABEL COVER PLATE "MICROWAVE".

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

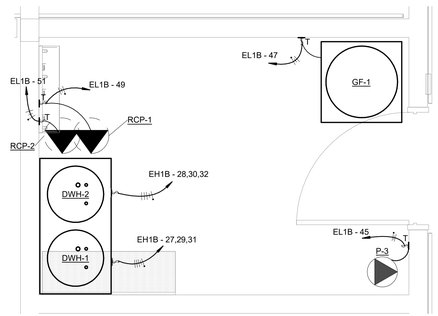
DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE
RECEPTACLE FLOOR PLAN

EJ101

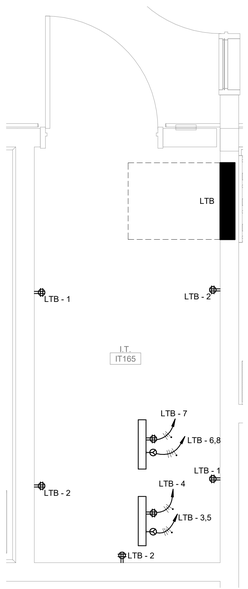
Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 3:56:16 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_LMMoreno-Chavez.rvt



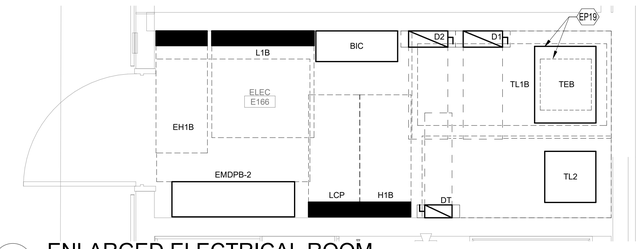
A4 ENLARGED JANITOR ROOM

SCALE: 1/2" = 1'-0"



A3 ENLARGED I.T. ROOM

SCALE: 1/2" = 1'-0"



A2 ENLARGED ELECTRICAL ROOM

SCALE: 1/2" = 1'-0"

ALL CIRCUITS WITHIN DASHED LINE TO BE FED FROM EH1B UNLESS OTHERWISE NOTED.

TO ELEC. RM E129

(2) 4" AND (2) 2"CONDUITS

(2) 4" CONDUITS

INTERCEPT EXISTING CONDUITS AND EXTEND FEEDERS TO NEW PANELS. REFER TO SHEET E-601 FOR ADDITIONAL INFORMATION.

A1 POWER FLOOR PLAN

3/16" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES

A. GFCI RECEPTACLES WILL BE INSTALLED AT ALL LOCATIONS AS REQUIRED BY THE LATEST VERSION OF NEC, STATE AND LOCAL CODES WHETHER INDICATED ON PLANS OR NOT. SOME LOCATIONS WILL BE WITHIN 6'-0" OF SINKS, EXTERIOR DOORS AND WET LOCATIONS. ALL EXTERIOR RECEPTACLE LOCATIONS WILL BE GFCI RATED AND WEATHERPROOF.

B. CONTROLS FOR ALL MECHANICAL EQUIPMENT WILL BE AS INDICATED ON SHEET SERIES "MI". RACEWAY PATHS FOR CONTROLS AND WIRING WILL BE INSTALLED AS INDICATED ON CONTROL DIAGRAMS. ALSO REFER TO SPECIFICATION SECTION 230549 FOR ADDITIONAL INFORMATION. CONTRACTOR WILL PROVIDE A 3/4" CONDUIT FOR CONTROL WIRING AS REQUIRED BY SHEET SERIES "MI". CONTROL WILL EITHER BE BY FACILITY MANAGEMENT SYSTEM (FMS) OR LOCAL SWITCHES. PROVIDE PILOT LIGHT SWITCHES WHERE LOCAL SWITCHES ARE REQUIRED PER CONTROL DIAGRAMS.

C. REFER TO MECHANICAL EQUIPMENT SCHEDULES ON SHEET SERIES "M-700" FOR ADDITIONAL INFORMATION ON EQUIPMENT.

D. COORDINATE ALL 120 VOLT POWER REQUIREMENTS AND LOCATIONS WITH THE CONTROLS / ACCESS / SECURITY CONTRACTORS IN THE FIELD.

E. COVER PLATES OF ALL DEVICES WILL BE LABELED WITH CIRCUIT IT IS CONNECTED TO, SUCH DEVICES ARE, BUT NOT LIMITED TO, SWITCHES AND RECEPTACLES. ALL COVER PLATES SHALL BE STAINLESS-STEEL.

F. CONTRACTOR TO PROVIDE EMT WITH WATERTIGHT, COMPRESSION FITTINGS THROUGHOUT NEW WORK.

G. ALL OUTLETS IN THE FOLLOWING ROOMS SHALL BE GFCI AND INCLUDE A WEATHERPROOF LOCKING COVER WHETER INDICATED ON PLANS OR NOT. REFER TO DETAIL 3 ON SHEET E-501 FOR WEATHERPROOF LOCKING DETAIL:
- BEHAVIORAL SPACE
- HOLDING SPACE

H. COORDINATE ALL DEVICE MOUNTING HEIGHTS IN ANIMAL HOLDING SPACES AND ALL VIVARIUM SPACES LOCATION WITH EQUIPMENT PRIOR TO ROUGH-IN.

KEYNOTES

EP06 JUNCTION BOXES FOR PUSH BUTTONS FOR ADA SYSTEM AND FOR CONNECTON TO DOOR HARDWARE. 3/4" CONDUIT BETWEEN EACH JUNCTION BOX AND PERMANENT CONDUCTORS PER DOOR HARDWARE INSTALLER'S INSTRUCTIONS. SEE DETAIL C5 ON SHEET E-501. COORDINATE MOUNTING AND LOCATION WITH ARCHITECT.

EP19 TRANSFORMER TO BE STACKED, TEB 112.5KVA TO BE ON STOP OF TL1B 112.5KVA. INSTALLER TO PROVIDE ADEQUATE SUPPORT FOR TRANSFORMER.

ALL CIRCUITS WITHIN DASHED LINE TO BE FED FROM EH1B UNLESS OTHERWISE NOTED.

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

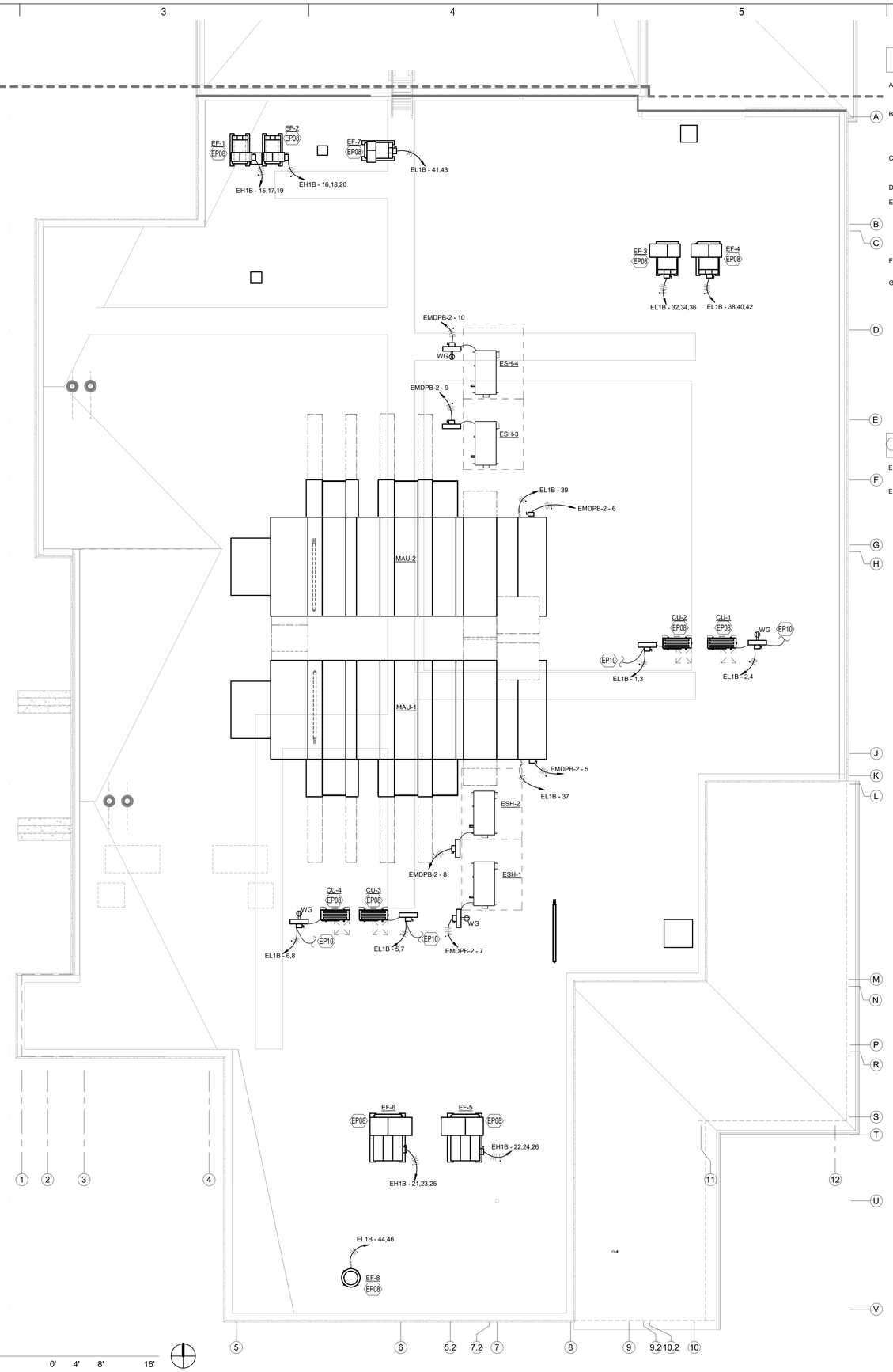
POWER FLOOR PLAN

EP101

Bridges & Paxton Project No: 8678 11/30/2023 3:56:42 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_LMMoreno-Chavez.rvt
Biomedical Research Building Expansion

ELECTRICAL CONNECTIONS FOR MECHANICAL EQUIPMENT SCHEDULE1

EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	VOLTAGE	PHASE	BRANCH CIRCUIT CONDUCTOR DESCRIPTION	CONDUIT SIZE
CU-1	CONDENSING UNIT	208 V	1	3#10 & 1# 10 GND.	3/4"
CU-2	CONDENSING UNIT (STAND BY)	208 V	1	3#10 & 1# 10 GND.	3/4"
CU-3	CONDENSING UNIT	208 V	1	3#10 & 1# 10 GND.	3/4"
CU-4 STAND BY	CONDENSING UNIT (STAND BY)	208 V	1	3#10 & 1# 10 GND.	3/4"
EF-1	EXHAUST FAN	480 V	3	4#12 & 1# 12 GND.	3/4"
EF-2	EXHAUST FAN (STAND BY)	480 V	3	4#12 & 1# 12 GND.	3/4"
EF-3	EXHAUST FAN	208 V	3	4#12 & 1# 12 GND.	3/4"
EF-4	EXHAUST FAN (STAND BY)	208 V	3	4#12 & 1# 12 GND.	3/4"
EF-5	EXHAUST FAN	480 V	3	4#12 & 1# 12 GND.	3/4"
EF-6	EXHAUST FAN (STAND BY)	480 V	3	4#12 & 1# 12 GND.	3/4"
EF-7	EXHAUST FAN	208 V	1	3#12 & 1# 12 GND.	3/4"
EF-8	EXHAUST FAN	208 V	1	3#12 & 1# 12 GND.	3/4"
EF-8	EXHAUST FAN	208 V	1	3#12 & 1# 12 GND.	3/4"
EF-8	EXHAUST FAN	208 V	1	3#12 & 1# 12 GND.	3/4"
MAU-1	MAKE-UP AIR UNIT	480 V	3	4#6 & 1# 10 GND.	1"
MAU-2 STAND BY	MAKE-UP AIR UNIT (STAND BY)	480 V	3	4#6 & 1# 10 GND.	1"
SH-1	STEAM HUMIDIFIER	480 V	3	4#1/0 & 1# 6 GND.	2"
SH-2	STEAM HUMIDIFIER	480 V	3	4#1/0 & 1# 6 GND.	2"
SH-3	STEAM HUMIDIFIER (STAND BY)	480 V	3	4#1/0 & 1# 6 GND.	2"
SH-4	STEAM HUMIDIFIER (STAND BY)	480 V	3	4#1/0 & 1# 6 GND.	2"



GENERAL NOTES

A. GFCI RECEPTACLES WILL BE INSTALLED AT ALL LOCATIONS AS REQUIRED BY THE LATEST VERSION OF NEC, STATE AND LOCAL CODES. SOME LOCATIONS WILL BE WITHIN 6'-0" OF SINKS, EXTERIOR DOORS AND WET LOCATIONS. ALL EXTERIOR RECEPTACLE LOCATIONS WILL BE GFCI RATED AND WEATHERPROOF.
B. LOCATION OF EQUIPMENT AND OTHER DEVICES SHOWN ON PLANS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED.
SHOULD CONTRACTOR AT ANY TIME NOTICE THAT THE ACTUAL FIELD CONDITIONS DO NOT CORRESPOND TO THE INFORMATION GIVEN ON THE DRAWINGS, THEN IT WILL BE THEIR RESPONSIBILITY TO NOTIFY THE ENGINEER FOR CLARIFICATION, PRIOR TO COMMENCEMENT OF ANY WORK.
C. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH ALL TRADES FOR THE EXACT LOCATION OF EQUIPMENT AND APPURTENANCES THAT REQUIRE ELECTRICAL CONNECTIONS AND PROVIDE ALIGNMENT OF DEVICES.
D. REFER TO SHEET E-701 FOR ELECTRICAL / MECHANICAL CONNECTION SCHEDULE.
E. CONTROLS FOR ALL MECHANICAL EQUIPMENT WILL BE AS INDICATED ON SHEET SERIES "MI". RACEWAY PATHS FOR CONTROLS AND WIRING WILL BE INSTALLED AS INDICATED ON CONTROL DIAGRAMS. ALSO REFER TO SPECIFICATION SECTION 230549 FOR ADDITIONAL INFORMATION. CONTRACTOR WILL PROVIDE A 3/4" CONDUIT FOR CONTROL WIRING AS REQUIRED BY SHEET SERIES "MI". CONTROL WILL EITHER BE BY FACILITY MANAGEMENT SYSTEM (FMS) OR LOCAL SWITCHES. PROVIDE PILOT LIGHT SWITCHES WHERE LOCAL SWITCHES ARE REQUIRED PER CONTROL DIAGRAMS.
F. COORDINATE ALL 120 VOLT POWER REQUIREMENTS AND LOCATIONS WITH THE CONTROLS / ACCESS / SECURITY CONTRACTORS IN THE FIELD. REFER TO SPECIFICATION 230549 FOR ADDITIONAL INFORMATION.
G. COVER PLATES OF ALL DEVICES WILL BE LABELED WITH CIRCUIT IT IS CONNECTED TO. SUCH DEVICES ARE, BUT NOT LIMITED TO, SWITCHES AND RECEPTACLES. REFER TO SPECIFICATION SECTION 260553 FOR ADDITIONAL INFORMATION.

KEYNOTES

EP08	FOR EACH UNIT, REFER TO SHEET SERIES "M-700" FOR MECHANICAL EQUIPMENT CHARACTERISTICS. REFER TO SHEET E-701 FOR ELECTRICAL CONNECTION AND OTHER INFORMATION.
EP10	EXTEND RACEWAY AND CONDUCTORS TO INDOOR UNIT THAT IS ASSOCIATED WITH THIS UNIT.

A1 ELECTRICAL ROOF PLAN
3/16" = 1'-0"

0' 4' 8' 16'

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

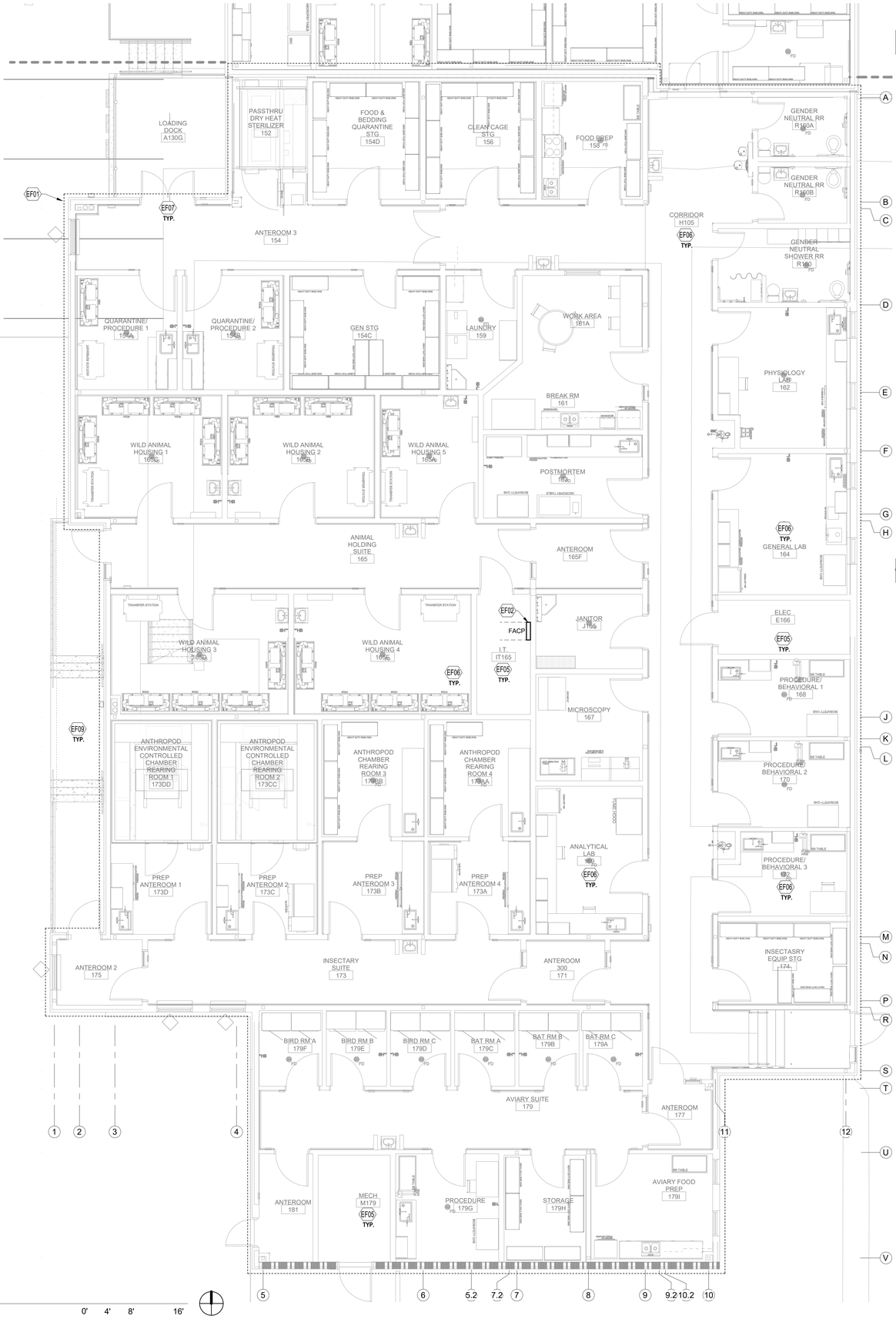
DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE
ELECTRICAL ROOF PLAN

EP131

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 3:56:46 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_LMMoreno-Chavez.rvt



A1 FIRE ALARM FLOOR PLAN
3/16" = 1'-0"
0' 4' 8' 16'

GENERAL NOTES

RESPONSIBILITIES OF FIRE ALARM CONTRACTOR
THE INTENT OF THESE DRAWINGS IS TO OUTLINE THE COMPONENTS OF A LEGALLY REQUIRED FIRE ALARM SYSTEM AND TO INDICATE REQUIREMENTS ABOVE AND BEYOND THOSE REQUIRED BY CODE. THESE DOCUMENTS ARE IN NO WAY IMPLIED TO BE COMPREHENSIVE OF A COMPLETED FINAL DESIGN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A FINAL DESIGN AND BUILD THE SYSTEM IN COMPLIANCE WITH THESE PLANS, THE PROJECT SPECIFICATIONS, APPLICABLE CODES, AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION (AHJ). ADDITIONALLY THE CONTRACTOR IS REQUIRED TO COORDINATE WITH OTHER BUILDING TRADES TO PROVIDE NECESSARY PARTS, LABOR, AND INTERCONNECTION WITH THE OTHER SYSTEMS AFFECTING THE FIRE ALARM SYSTEM. FIRE ALARM DESIGNS ARE TO BE CREATED BY A NICET LEVEL 3 CERTIFIED DESIGNER AND CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER ACCEPTABLE TO THE AHJ.

CONTRACTOR IS TO REVIEW OTHER TRADES DRAWINGS TO PREVENT CONFLICTS BETWEEN FIRE ALARM DEVICES AND ARCHITECTURAL FEATURES SUCH AS CABINETRY, MECHANICAL OR ELECTRICAL DEVICES.

PROJECT BASIS OF DESIGN

SYSTEM TOPOGRAPHY
MAIN FIRE ALARM CABINET IS EXISTING: FIRE-LITE ALARMS BY HONEYWELL. RELOCATE FACP AS SHOWN IN PLANS. PROVIDE ALL NECESSARY EQUIPMENT FOR A VOICE EVACUATION SYSTEM. COORDINATE CONDUIT REQUIREMENTS WITH NICET LEVEL 3 DESIGNER AND NMSU ITC DEPARTMENT.

SYSTEM INITIATION
ENTIRE AREA OF SCOPE TO HAVE A MANUAL FIRE ALARM SYSTEM. MANUAL SYSTEM TO BE DESIGNED AS REQUIRED BY NFPA 72, THE NATIONAL FIRE ALARM AND SIGNALING CODE.

AUTOMATIC SMOKE DETECTION IS TO BE DESIGNED PER PROJECT SPECIFICATIONS AND AS PRESCRIBED IN NFPA 72.

AUTOMATIC SMOKE DETECTION IS TO BE INSTALLED IN ALL ELECTRICAL AND IT SPACES, CUSTODIAL STORAGE, OR SIMILAR TYPE ROOMS. AREAS SUBJECT TO DUST OR VAPORS ARE TO HAVE HEAT DETECTION IN LIEU OF SMOKE DETECTION.

PROVIDE SMOKE DETECTION FOR MECHANICAL UNITS AS REQUIRED BY THE IMC SECTION 606, NFPA 90A, AND NFPA 101 AND AS REQUIRED IN NFPA 72 AND THE PROJECT SPECIFICATIONS. MECHANICAL/DUCT DETECTION AND MONITORING DEVICES TO BE POWERED AND MONITORED BY FIRE ALARM SYSTEM.

INTEGRATION WITH OTHER SYSTEMS
PROVIDE MAGNETIC DOOR HOLDERS PER PROJECT SPECIFICATIONS AND AS REQUIRED BY NFPA 72. PROVIDE SMOKE DETECTION ON BOTH SIDES OF DOOR. DOOR HOLDERS TO BE POWERED LOCALLY AND CONTROLLED BY FIRE ALARM SYSTEM. DOOR HOLDER LOCATIONS ARE INDICATED BY KEYED NOTE ON FA-SERIES DRAWINGS. KNOWN DOOR HOLDER LOCATIONS ARE INDICATED ON PLANS HOWEVER CONTRACTOR IS TO ADD DEVICES AS REQUIRED BY THE AHJ.
PROVIDE CONTROL MODULES FOR DEACTIVATION OF HIGH VOLUME, LOW SPEED FANS.

OCCUPANT NOTIFICATION

PROVIDE AUDIO/VISUAL NOTIFICATION IN DESIGNATED AREAS OF THE BUILDING IN ACCORDANCE WITH REQUIREMENTS OF IBC/IFC SECTION 907, NFPA 101, NEW MEXICO ADMINISTRATIVE CODE (TO INCLUDE ADA REQUIREMENTS), AND THE REQUIREMENTS OF NFPA 72.

FOR THIS BUILDING A VOICE EVACUATION SYSTEM WILL BE REQUIRED. AUDIBLE NOTIFICATION DEVICES TO BE SPEAKER OR SPEAKER/STROBE TYPE. SPEAKER STROBE SPACING TO BE IN ACCORDANCE WITH INTELLIGIBILITY STANDARDS IN NFPA 72.

KEYNOTES

EF01 SEE GENERAL NOTES FOR FIRE ALARM REQUIRMENTS.
EF02 FIRE ALARM CONTROL PANEL (FACP). REFER TO FIRE ALARM RISER DIAGRAM ON SHEET E-602 FOR ADDITIONAL INFORMATION. FIRE ALARM SYSTEM SHALL BE COMPATIBLE WITH EXISTING FIRE ALARM.
EF05 PROVIDE DETECTION DEVICES IN ALL UN-OCCUPIED SPACES INCLUDING ELECTRICAL ROOMS, MECHANICAL ROOMS, STORAGE ROOMS, JANITOR CLOSETS, CORRIDORS, ETC...
EF06 PROVIDE SPEAKERS/STROBE DEVICES IN ALL OCCUPIED AREAS PER THE REQUIREMENTS OF NFPA, AND LOCAL CODES.
EF07 PROVIDE PULL STATIONS AT ALL EXIT DOORS.
EF09 PROVIDE ONE EXTERIOR MOUNT WEATHERPROOF SPEAKER/STROBE ON EACH FACE OF THE BUILDING THAT FACES AN ACCESS AREA.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

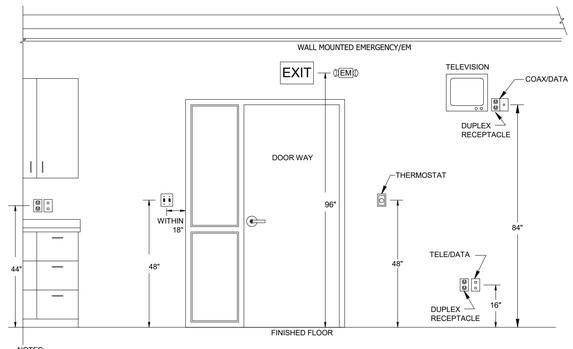
DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE
FIRE ALARM FLOOR PLAN

FA101

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 3:57:00 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_LMMoreno-Chavez.rvt

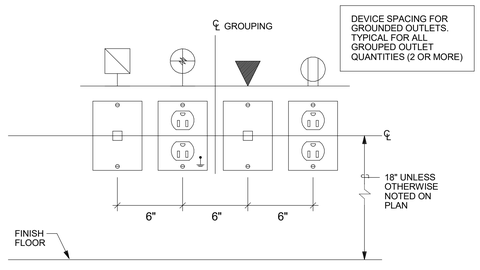


NOTES:
1. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL TELEVISION OUTLETS WITH THE ARCHITECT PRIOR TO INSTALLATION.
2. ALL DEVICES SHOWN ON THIS DETAIL ARE FOR REFERENCES OF MOUNTING HEIGHTS ONLY. THE ELECTRICAL CONTRACTOR SHALL FIELD ADJUST THE HEIGHTS OF THE DEVICES AS REQUIRED FOR PROPER MOUNTING OF THE DEVICES.
3. ALL DEVICES REQUIRED FOR THIS PROJECT MAY NOT APPEAR ON THIS DETAIL. ALL ITEMS SHOWN ON THIS DETAIL MAY NOT BE REQUIRED FOR THIS PROJECT.

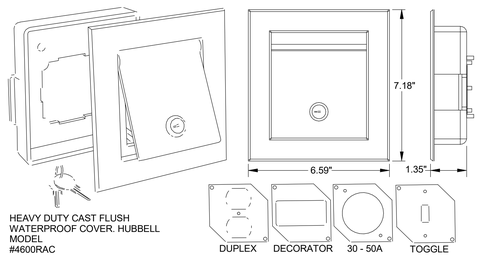
DEVICE MOUNTING HEIGHT DETAIL

SCALE: NONE

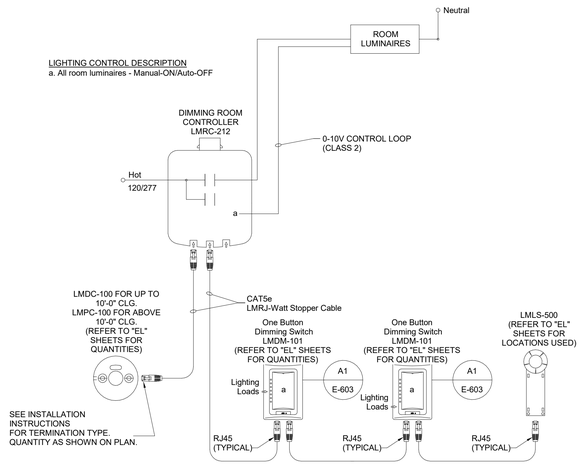
1 DEVICE MOUNTING HEIGHT
12" = 1'-0"



2 GROUPED WALL OUTLETS
12" = 1'-0"



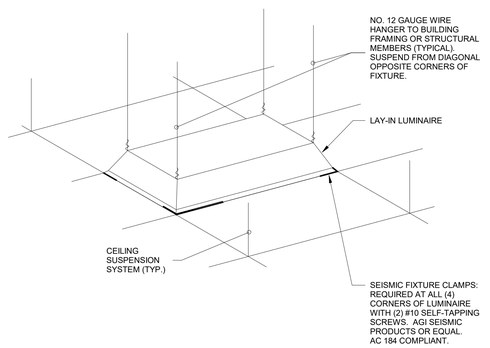
3 WEATHERPROOF LOCKING DETIAL
12" = 1'-0"



REFER TO SHEET SERIES "EL" FOR ADDITIONAL INFORMATION

5 WATT STOPPER "DLM" WIRING DIAGRAM
NO SCALE

BELOW CLAMPS REQUIRED IN SEISMIC CAT 'C' OR HIGHER OR IMPORTANCE FACTOR OF 1.5.



4 LAY-IN LUMINAIRE SUPPORT DETAIL
N.T.S.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

ELECTRICAL DETAIL SHEET

E-501

Bridgers & Paxton Project No: 8678
11/30/2023 3:55:56 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_LMMoreno-Chavez.rvt

Biomedical Research Building Expansion

Switchboard: EMDPB-2

Location: ELEC E166
Supply From:
Mounting:
Enclosure:

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 65000
Mains Type: MCB
Mains Rating: 600 A
MCB Rating: 600 A

Notes:
EMERGENCY DISTRIBUTION BOARD.

CKT	Circuit Description	# of Poles	Trip Rating	Load	Remarks
1	EH1B	3	100 A	74446 VA	
2	EL1B VIA TEB	3	200 A	51339 VA	
3	LTB VIA TB	3	100 A	6800 VA	
4	SPD	1	60 A	0 VA	
5	MTR EQP MAU-1	3	65 A	34525 VA	
6	MTR EQP MAU-2 (STAND BY)	3	65 A	0 VA	
7	MTR EQP ESH-1	3	150 A	108080 VA	
8	MTR EQP ESH-2 (STANDBY)	3	150 A	0 VA	
9	MTR EQP ESH-3	3	150 A	108080 VA	
10	MTR EQP ESH-4 (STANDBY)	3	150 A	0 VA	
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
				383270 VA	
				461 A	

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	10 VA	100.00%	10 VA		
LTG	5645 VA	125.00%	7056 VA	**Total Conn. Load:**	383270 VA
REC	21240 VA	73.54%	15620 VA	**Total Est. Demand:**	379061 VA
NC	18508 VA	100.00%	18508 VA	**Total Conn.:**	461 A
MTR	337867 VA	100.00%	337867 VA	**Total Est. Demand:**	456 A

Notes:

NMSU Ag - Biomedical Building Phase 3 Preliminary Electrical Load Calculations	SF or Qty	VA/SF	kVA	Demand Factor	Demand Load (kVA)	GEN-SET EM kVA	GEN-SET STEP
Emergency Lighting			2.15	1.00	2.15	2.15	1
Misc. Mech. TU / VAVs	--	--	7.60	1.00	7.60	7.60	1
FMS Controls	--	--	1.50	1.00	1.50	1.50	1
Fire Alarm Loads	--	--	4.00	1.00	4.00	4.00	1
Back-up Power Laboratory Equipment			70.00	1.00	70.00	70.00	1
Mechanical							
MAU-1	--	--	41.40	1.00	41.40	41.40	3
EF-1			0.91	1.00	0.91	0.91	3
EF-3			4.12	1.00	4.12	4.12	3
EF-5 - VFD 1			11.63	1.00	11.63	11.63	2
ESH-1 (LM)			108.03	1.00	108.03	108.03	4
EF-8			0.67	1.00	0.67	0.67	3
EF-7			0.67	1.00	0.67	0.67	3
CU-1			4.66	1.00	4.66	4.66	3
CU-3			4.66	1.00	4.66	4.66	3
P-1			1.66	1.00	1.66	1.66	2
P-3			1.66	1.00	1.66	1.66	2
HD-1			0.70	1.00	0.70	0.70	2
ESH-3			108.03	1.00	108.03	108.03	5
Plumbing							
RCP-1			0.60	1.00	0.60	0.60	1
DHW-1			18.00	1.00	18.00	18.00	1
Total kVA			**392.63**		**392.63**	**392.63**	

GENERATOR PHASE 3 LOAD CALCULATION

Phase 2 KVA	208.45
Phase 3 KVA	392.63
Total kVA	601.08

GENERATOR LOAD CALCULATION

GENERAL NOTES

A. AIC RATINGS FOR PANELBOARDS ARE INDICATED ON THE PANEL SCHEDULES.
B. INFORMATION SHOWN IS DIAGRAMMATIC AND IS NOT INTENDED TO REPRESENT PHYSICAL ARRANGEMENTS, LOCATIONS, ROUTING OR CONNECTIONS. PHYSICAL LAYOUTS ARE TO BE PER FIELD CONDITIONS AND AS INDICATED ELSEWHERE IN THE ELECTRICAL PLANS.
C. REFERENCE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING EQUIPMENT AND INSTALLATION.
D. CONTRACTOR WILL MEASURE AND TORQUE ALL PANEL FEEDERS, MEASURE RESISTANCE TO GROUND AT SERVICE GROUND AND PROVIDE WRITTEN DOCUMENTATION OF TEST RESULTS.
E. CONTRACTOR WILL LABEL ALL DISTRIBUTION EQUIPMENT PRIOR TO FINAL OBSERVATION WALKTHROUGH.
F. PROVIDE COMPRESSION TYPE FITTINGS. SET-SCREW FITTING ARE NOT ALLOWED.
G. ALL PANELBOARDS AND OVERCURRENT PROTECTIOND EVICES SHALL BE FULLY RATED (NO SERIES RATED ALLOWED).

COPPER FEEDER SCHEDULE

NOTE: ALL CONDUCTORS ARE COPPER, TYPE THWN/THHN UNLESS OTHERWISE NOTED.

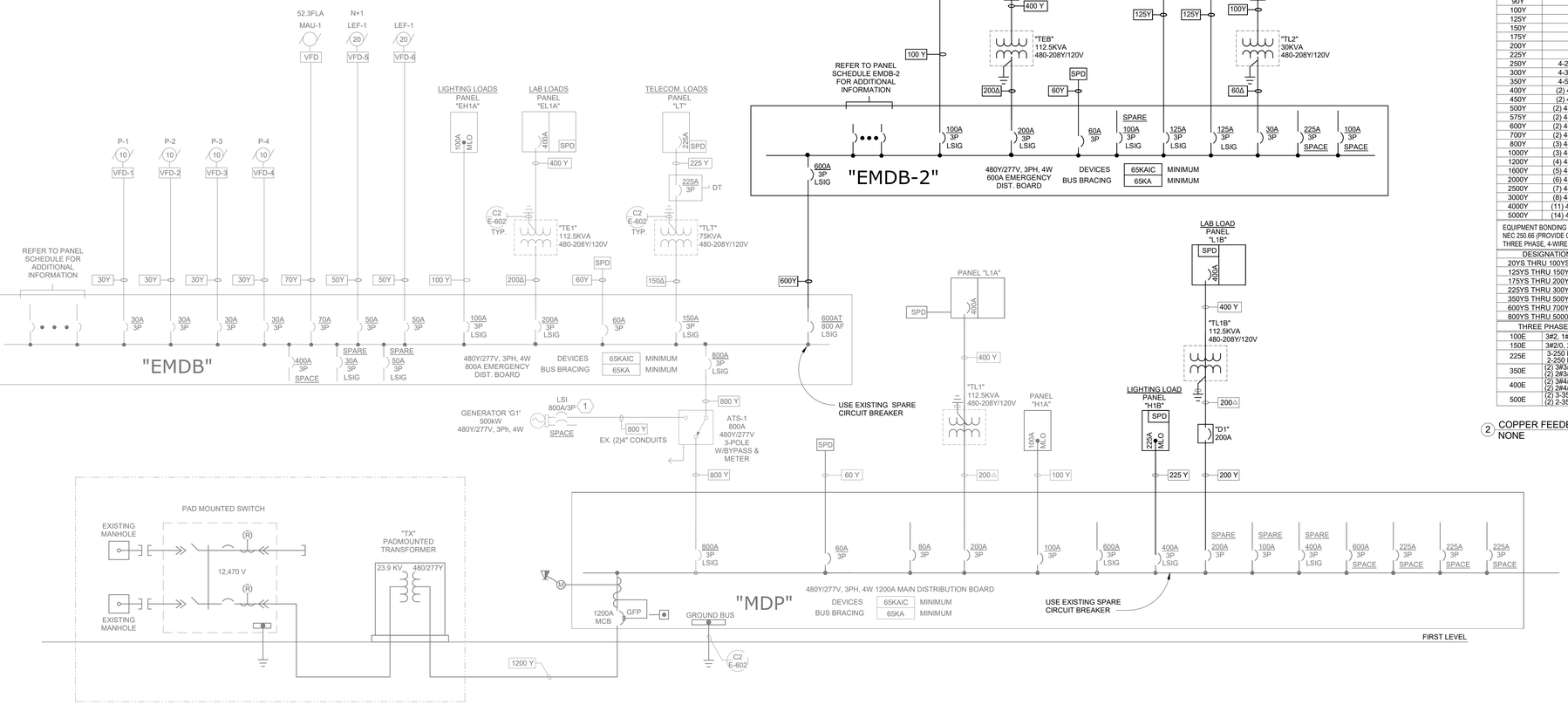
DESIGNATION	CONDUCTORS	GROUND	CONDUIT	NOTES
THREE PHASE THREE WIRE & GROUND FEEDER				
20Δ	3#12	12	3/4"	
25Δ	3#10	10	3/4"	
30Δ	3#10	10	3/4"	
35Δ	3#8	10	3/4"	
40Δ	3#8	10	3/4"	
45Δ	3#8	10	3/4"	
50Δ	3#8	10	3/4"	
60Δ	3#6	10	1"	
70Δ	3#4	8	1 1/4"	
80Δ	3#4	8	1 1/4"	
90Δ	3#2	8	1 1/4"	
100Δ	3#2	8	1 1/4"	
125Δ	3#1/0	6	1 1/2"	
150Δ	3#1/0	6	1 1/2"	
175Δ	3#2/0	6	2"	
200Δ	3#3/0	6	2"	
225Δ	3#4/0	4	2 1/2"	
250Δ	3-250 KCMIL	4	3"	
300Δ	3-350 KCMIL	4	3"	
350Δ	3-500 KCMIL	2	4"	
400Δ	(2) 3#3/0	(2) 2	(2) 2"	
450Δ	(2) 3#4/0	(2) 2	(2) 2 1/2"	
500Δ	(2) 3-250 KCMIL	(2) 2	(2) 3"	
575Δ	(2) 3-300 KCMIL	(2) 1	(2) 3"	
600Δ	(2) 3-350 KCMIL	(2) 1	(2) 3"	
700Δ	(2) 3-500 KCMIL	(2) 1/0	(2) 4"	
800Δ	(3) 3-300 KCMIL	(3) 1/0	(3) 3"	
1000Δ	(3) 3-400 KCMIL	(3) 2/0	(3) 3"	
1200Δ	(4) 3-350 KCMIL	(4) 3/0	(4) 3"	
1600Δ	(5) 3-400 KCMIL	(5) 4/0	(5) 4"	
2000Δ	(6) 3-500 KCMIL	(6) 250 KCMIL	(6) 4"	
2500Δ	(7) 3-500 KCMIL	(7) 350 KCMIL	(7) 4"	
3000Δ	(8) 3-500 KCMIL	(8) 400 KCMIL	(8) 4"	
4000Δ	(11) 3-500 KCMIL	(11) 500 KCMIL	(11) 4"	
THREE PHASE FOUR WIRE & GROUND FEEDER				
20Y	4#12	12	3/4"	
25Y	4#10	10	3/4"	
30Y	4#10	10	3/4"	
35Y	4#8	10	3/4"	
40Y	4#8	10	3/4"	
45Y	4#8	10	3/4"	
50Y	4#8	10	3/4"	
60Y	4#6	10	1"	
70Y	4#4	8	1 1/4"	
80Y	4#4	8	1 1/4"	
90Y	4#2	8	1 1/4"	
100Y	4#2	8	1 1/4"	
125Y	4#1/0	6	1 1/2"	
150Y	4#1/0	6	2"	
175Y	4#2/0	6	2"	
200Y	4#3/0	6	2"	
225Y	4#4/0	4	2 1/2"	
250Y	4-250 KCMIL	4	3"	
300Y	4-350 KCMIL	4	3"	
350Y	4-500 KCMIL	2	4"	
400Y	(2) 4#3/0	(2) 2	(2) 2"	
450Y	(2) 4#4/0	(2) 2	(2) 2 1/2"	
500Y	(2) 4-250 KCMIL	(2) 2	(2) 3"	
575Y	(2) 4-300 KCMIL	(2) 1	(2) 3"	
600Y	(2) 4-350 KCMIL	(2) 1	(2) 3"	
700Y	(2) 4-500 KCMIL	(2) 1/0	(2) 4"	
800Y	(3) 4-300 KCMIL	(3) 1/0	(3) 3"	
1000Y	(3) 4-400 KCMIL	(3) 2/0	(3) 3"	
1200Y	(4) 4-350 KCMIL	(4) 3/0	(4) 4"	
1600Y	(5) 4-400 KCMIL	(5) 4/0	(5) 4"	
2000Y	(6) 4-400 KCMIL	(6) 250 KCMIL	(6) 4"	
2500Y	(7) 4-500 KCMIL	(7) 350 KCMIL	(7) 4"	
3000Y	(8) 4-500 KCMIL	(8) 400 KCMIL	(8) 4"	
4000Y	(11) 4-500 KCMIL	(11) 500 KCMIL	(11) 4"	
5000Y	(14) 4-500 KCMIL	(14) 500 KCMIL	(14) 4"	

EQUIPMENT BONDING JUMPER FOR SEPARATELY DERIVED SYSTEMS PER NEC 250.66 (PROVIDE CONDUCTOR GROUND BELOW INSTEAD OF FEEDER GROUND FOR THREE PHASE, 4-WIRE SYSTEMS INDICATED ABOVE)

DESIGNATION	GROUND
20YS THRU 100YS	8
125YS THRU 150YS	6
175YS THRU 200YS	4
225YS THRU 300YS	2
350YS THRU 500YS	1/0
600YS THRU 700YS	2/0
800YS THRU 5000YS	3/0

THREE PHASE FOUR WIRE 200% NEUTRAL & GROUND FEEDER			
100E	3#2, 1#4/0 NEUTRAL	8	2"
150E	3#2/0, 2#2/0 NEUT.	6	2"
225E	3-250 KCMIL 2-250 KCMIL NEUT.	4	2 1/2"
350E	(2) 3#3/0, (2) 2#3/0 NEUT.	(2) 2	(2) 2 1/2"
400E	(2) 3#4/0, (2) 2#4/0 NEUT.	(2) 2	(2) 2 1/2"
500E	(2) 3-350 KCMIL (2) 2-350 KCMIL NEUT.	(2) 2	(2) 3"

2 COPPER FEEDER SCHEDULE - 500 kCMIL
NONE



1 ELECTRICAL ONE-LINE DIAGRAM
NO SCALE

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

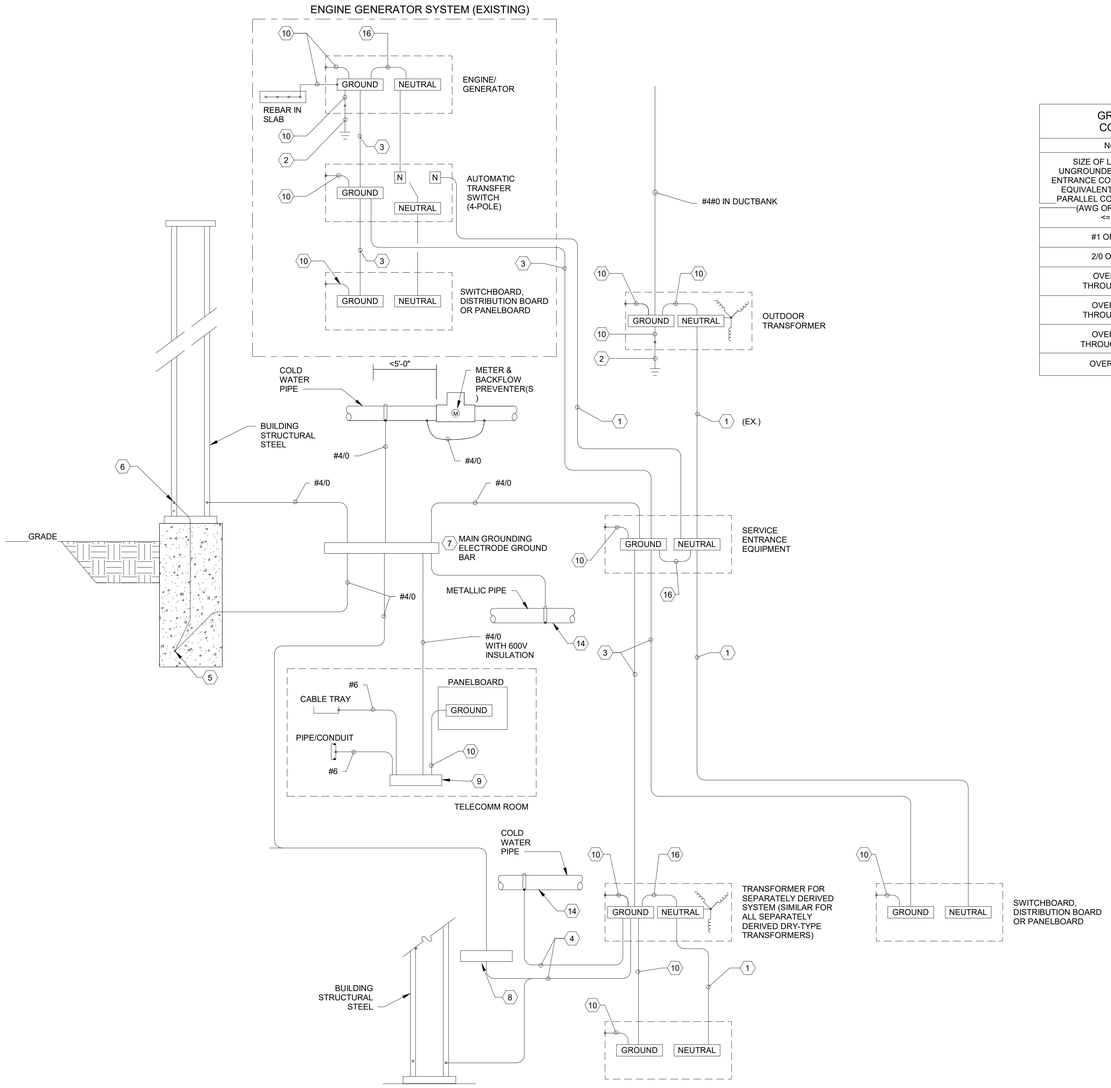
SHEET TITLE

ELECTRICAL DIAGRAMS

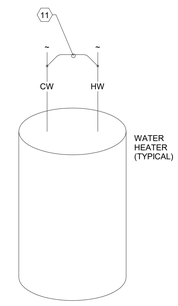
E-601

Biomedical Research Building Expansion

Bridgers & Paxton Project No. 8678
11/30/2023 3:55:58 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP _LMMoreno-Chavez.rvt



GROUNDING ELECTRODE CONDUCTOR SCHEDULE	
NOTE: ALL CONDUCTORS ARE COPPER.	
SIZE OF LARGEST UNGROUNDED SERVICE-ENTRANCE CONDUCTOR OR EQUIVALENT AREA FOR PARALLEL CONDUCTORS. (AWG OR KCMIL)	SIZE OF GROUNDING ELECTRODE CONDUCTOR (AWG)
<= #2	8
#1 OR 1/0	6
2/0 OR 3/0	4
OVER 3/0 THROUGH 350	2
OVER 350 THROUGH 600	1/0
OVER 600 THROUGH 1100	2/0
OVER 1100	SEE KEYED NOTE 16

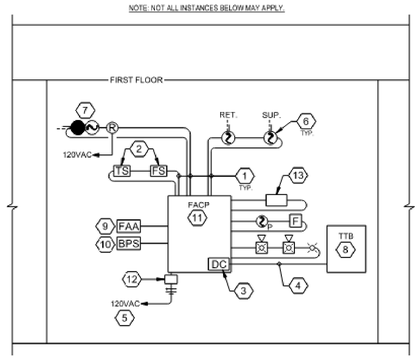


GENERAL NOTES

A. INSTALL GROUNDING CONNECTIONS TO BUILDING STRUCTURE AND WATER PIPES AT LOCATIONS THAT ARE VISIBLE AND ACCESSIBLE FOR INSPECTION, MAINTENANCE, AND TESTING.
B. INSTALL AN INSULATED THROAT GROUNDING BUSHING ON EACH METALLIC SERVICE ENTRANCE CONDUIT. BOND TO SERVICE ENTRANCE EQUIPMENT GROUND BUS USING NEC TABLE 250.102 (C)(1).
C. INSTALL AN INSULATED THROAT GROUNDING BUSHING ON EACH METALLIC FEEDER CONDUIT. BOND TO GROUND BUS USING CONDUCTOR THAT IS SIZED EQUAL TO EQUIPMENT GROUNDING CONDUCTOR.
D. BOND ELECTRICAL EQUIPMENT ENCLOSURES TO GROUND BAR USING SAME SIZE CONDUCTOR AS FEEDER EQUIPMENT GROUND CONDUCTOR OR FACTORY PROVIDED GREEN SCREW.
E. CLEAN COATED RE-BAR PRIOR TO PERFORMING ELECTRICAL CONNECTIONS.

KEYNOTES

1. REFER TO ONE-LINE DIAGRAM AND FEEDER SCHEDULE FOR GROUNDED CONDUCTOR SIZE.
2. CONNECT GROUNDING ELECTRODE CONDUCTOR TO GROUND ROD.
3. FOR EQUIPMENT GROUNDING CONDUCTOR SIZE REFER TO ONE-LINE DIAGRAM AND FEEDER SCHEDULE.
4. PROVIDE GROUNDING ELECTRODE CONDUCTOR SIZE BASED ON THE CONDUCTOR SIZE OF THE SECONDARY OF THE TRANSFORMER. SIZE PER NEC 250.66 AND PER SCHEDULE ON THIS SHEET.
5. PROVIDE A CONCRETE-ENCASED MAIN GROUNDING ELECTRODE IN THE BUILDING FOUNDATION AROUND THE ENTIRE PERIMETER OF THE BUILDING. LOCATE ELECTRODE IN THE BOTTOM ONE-THIRD OF THE FOUNDATION WITH AT LEAST 3 INCHES OF CONCRETE COVER. USE EITHER #4/0 BARE COPPER CABLE OR #6 OR LARGER STEEL REINFORCING BARS MADE ELECTRICALLY CONTINUOUS USING EXOTHERMICALLY WELDED #4/0 JUMPERS.
6. BOND EACH PERIMETER STRUCTURAL STEEL COLUMN TO THE CONCRETE-ENCASED MAIN GROUNDING ELECTRODE. USE EXOTHERMIC WELDS.
7. PROVIDE A 1/4" X 4" X 12" "MAIN GROUNDING ELECTRODE GROUND BAR" FOR SINGLE POINT GROUNDING. LOCATE AT AN ACCESSIBLE POINT NEAR THE SERVICE ENTRANCE EQUIPMENT. MAKE OTHER CONNECTIONS TO THE GROUND BAR USING TWO-HOLE COMPRESSION SPADE LUGS THAT MEET IEEE 837 REQUIREMENTS. LABEL EACH CONNECTION.
8. USE THE "MAIN GROUNDING ELECTRODE GROUND BAR" INSTEAD OF BUILDING STRUCTURAL STEEL IF THE FIRST OVER CURRENT DEVICE FOR THE SEPARATELY DERIVED SYSTEM IS WITHIN SAME ROOM OF THE "MAIN GROUNDING ELECTRODE GROUND BAR".
9. INSTALL A 1/4" X 4" COPPER "TELECOMMUNICATIONS GROUNDING BUSBAR" IN EACH TELECOMMUNICATIONS ROOM. CONNECT CABLES TO THE "TELECOMMUNICATIONS GROUNDING BUSBAR" USING COMPRESSION SPADE LUGS. LABEL CONDUCTORS PER ANSI-J-STD-607-A. LABEL EACH CONNECTION. SEE PLAN FOR BAR LENGTH AND LOCATIONS.
10. BONDING JUMPER SIZED PER GROUNDING ELECTRODE CONDUCTOR SCHEDULE THIS SHEET.
11. BOND HOT WATER PIPE TO COLD WATER PIPE AT EACH WATER HEATER WITH A #6 BARE COPPER CONDUCTOR.
12. NOT USED
13. NOT USED
14. BOND ALL METALLIC PIPING SYTEMS WITHIN STRUCTURE.
15. NOT USED
16. MAIN BONDING JUMPER AND/OR SYSTEM BONDING JUMPER SIZE BASED ON UNGROUNDED CONDUCTOR SIZE AND GROUNDING ELECTRODE CONDUCTOR SCHEDULE ON THIS SHEET UNLESS UNGROUNDED CONDUCTOR SIZE OR EQUIVALENT IS GREATER THAN 1100 KCMIL. IF GREATER THAN 1100 KCMIL (OR 1750 KCMIL FOR ALUMINUM) SIZE JUMPER PER NEC TABLE 250.102 (C)(1)
17. LIGHTNING PROTECTION COUNTERPOISE - #4/0 BARE COPPER.
18. BOND EACH CORNER STRUCTURAL STEEL AND PERIMETER STRUCTURAL STEEL AT NO MORE THAN 50 FOOT SPACING TO THE LIGHTNING PROTECTION COUNTERPOISE.
19. COVER THE EXTERIOR LIGHTNING PROTECTION DOWN CONDUCTOR WITH NON-CONDUCTIVE MATERIAL FROM THE FINAL GRADE TO 8' ABOVE FINISHED FLOOR.



A4 FIRE ALARM RISER DIAGRAM
NO SCALE

FIRE ALARM RISER DIAGRAM GENERAL NOTES

A. FIRE ALARM DIAGRAM INDICATES GENERAL DIAGRAMMATIC CONNECTIONS ONLY. ALL CONNECTIONS AND INSTALLATION WILL BE PER FIRE ALARM SYSTEM MANUFACTURER'S SHOP DRAWINGS.
B. DEVICE QUANTITIES ARE NOT INDICATED ON THIS DRAWING. REFER TO FLOOR PLANS FOR QUANTITIES AND LOCATIONS.
C. REFER TO SPECIFICATION SECTION 283111 FOR FIRE ALARM SYSTEM REQUIREMENTS.
D. FIRE ALARM WIRING AND CABLING SHALL BE IN CONFORMANCE WITH NEC AND TYPE SHALL BE AS RECOMMENDED BY FIRE ALARM SYSTEM MANUFACTURER.
E. SEAL ALL PENETRATIONS THROUGH WALLS, FLOOR, CEILINGS AND ROOF PER ARCHITECTURAL SPECIFIED REQUIREMENTS. SEAL WILL MATCH THE FIRE RATING OF EACH PENETRATION LOCATION.

IT IS THE INTENT OF THESE DOCUMENTS TO SHOW A BASIC REPRESENTATION OF THE FIRE ALARM SYSTEM. DEVICES INDICATED ON THESE DOCUMENTS ARE IN NO WAY IMPLIED TO BE COMPREHENSIVE OF THE FINAL DESIGN. IT IS THE RESPONSIBILITY OF THE FIRE ALARM CONTRACTOR TO PROVIDE A DESIGN/BUILD FIRE ALARM SYSTEM BASED UPON A THOROUGH REVIEW OF ALL CONTRACT DOCUMENTS. IT IS THE RESPONSIBILITY OF THE FIRE ALARM CONTRACTOR TO ENSURE THAT THE FIRE ALARM SYSTEM IS CODE COMPLIANT, MEETS THE REQUIREMENTS OF THE AHJ AND COMPREHENSIVELY COVERS AND INCLUDES ALL NECESSARY PARTS AND LABOR ASSOCIATED WITH OTHER TRADES AND SYSTEMS IMPACTING THE FIRE ALARM SYSTEM. NO CHANGE ORDERS SHALL BE APPROVED FOR THE BASE SCOPE OF WORK.

ENTIRE FIRE ALARM SYSTEM WILL BE IN RACEWAYS, NO EXCEPTIONS!

CONTRACTOR IS RESPONSIBLE FOR PROVIDING A "TURN-KEY" FIRE ALARM SYSTEM.

FIRE ALARM RISER DIAGRAM KEYNOTES

1. MINIMUM 3/4" CONDUIT AND FIRE ALARM CABLING AS REQUIRED BY THE FIRE ALARM MANUFACTURER.
2. INDEPENDENTLY SUPERVISE EACH FLOW AND TAMPER SWITCH WITH AN ADDRESSABLE MODULE. REFER TO FIRE PROTECTION/ PLUMBING PLANS FOR EACH LOCATION.
3. DIGITAL COMMUNICATOR FOR CENTRAL STATION MONITORING.
4. CONDUIT AND COMMUNICATIONS CABLING FOR CENTRAL STATION REPORTING.
5. REFER TO SHEET EP101 FOR CIRCUITS SERVING THIS SYSTEM.
6. DUCT SMOKE DETECTOR, FURNISHED BY DIVISION 28, INSTALLED IN DUCT BY DIVISION 23, CONNECTED, WIRED AND TESTED BY DIVISION 28. REFERENCE MECHANICAL CONTROL DIAGRAMS FOR MECHANICAL INTERCONNECTIONS. PROVIDE DUCT DETECTORS IN NEW AND EXISTING UNITS WHERE 2000CFM AND ABOVE EXIST. INSTALL PER CODE.
7. FIRE SMOKE DAMPER. ROUTE 120VAC VIA FIRE ALARM ADDRESSABLE RELAY.
8. TELEPHONE TERMINAL BOARD.
9. PROVIDE NEW ANNUNCIATOR PANEL IN MAIN ENTRANCE OR AS DIRECTED BY FIRE MARSHALL. FIELD COORDINATE EXACT LOCATION.
10. WHERE POWER SUPPLIES ARE INSTALLED OUTSIDE OF FACP/FATC, CONTRACTOR WILL PROVIDE 120V/20A STAND-BY POWER CIRCUIT TO UNITS FROM NEAREST PANEL. CONTRACTOR TO COORDINATE THIS REQUIREMENT WITH FIRE ALARM INSTALLER AT TIME OF SUBMITTALS TO VERIFY NEED.
11. FIRE ALARM SYSTEM F.A.C.P.
12. PROVIDE SURGE PROTECTION FOR CIRCUIT TO FIRE ALARM PANEL.
13. REFER TO ES101 FOR HOT BOX LOCATIONS.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE
GROUNDING DIAGRAM

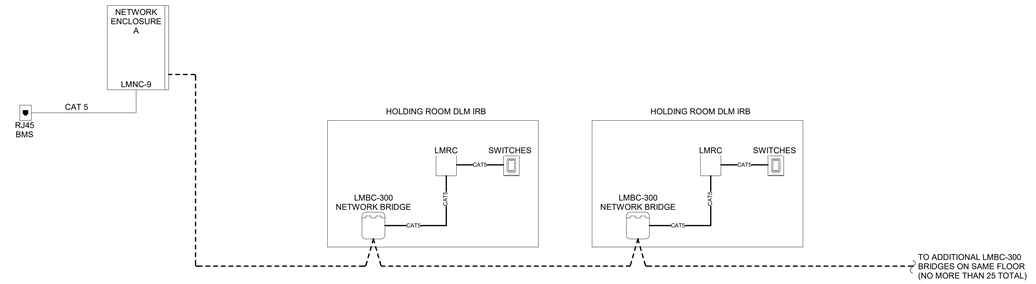
E-602

Bridgers & Paxton Project No: 8678 11/30/2023 3:55:59 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_LMMoreno-Chavez.rvt
Biomedical Research Building Expansion

ELECTRICAL LUMINAIRE SCHEDULE

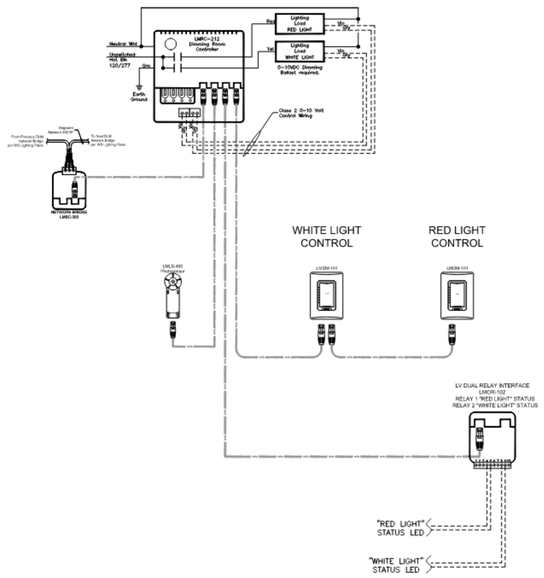
TYPE	DESCRIPTION	VOLTS	MOUNTING	LUMEN OUTPUT	COLOR TEMP	APPARENT LOAD	MANUFACTURER / MODEL
EX	UNIVERSAL MOUNTED LED EXIT FIXTURE	277 OR 120 MULTI-TAP (UNV.)	UNIVERSAL	0	0	2 VA	DUAL LITE #EVEURWEI
FE				1234	1234	38 VA	
L14RH	RED & WHITE LED	277 OR 120	RECESSED	8011	4000	75 VA	CSEDI 14-23R/67L-40K8-DIM01-DV-2F-4H-SYM-AMF
L14RHE	RED & WHITE LED	277 OR 120	RECESSED	8011	4000	75 VA	CSEDI 14-23R/67L-40K8-DIM01-DV-2F-4H-SYM-AMF
L14RL	RED & WHITE LED	277 OR 120	RECESSED	5230	4000	50 VA	CSEDI 14-23R/45L-40K8-DIM01-DV-2F-4H-SYM-AMF
L14RLE	RED & WHITE LED	277 OR 120	RECESSED	5230	4000	50 VA	CSEDI 14-23R/45L-40K8-DIM01-DV-2F-4H-SYM-AMF
L24	2X4 LED LAY IN FIXTURE	277 OR 120 MULTI-TAP (UNV.)	RECESSED/ LAY-IN	4500	3500	43 VA	COLUMBIA #LCAT24-35LWG-EDU
L24E	2X4 LED LAY IN FIXTURE	277 OR 120 MULTI-TAP (UNV.)	RECESSED/ LAY-IN	4500	3500	43 VA	COLUMBIA #LCAT24-35LWG-EDU
R1A	RECESSED LED DOWN LIGHT	277 OR 120 MULTI-TAP (UNV.)	RECESSED	1500	3500	19 VA	PRECOLITE #LTR-4RD-H-SL15L-DM1/LTR-4RD-T-SL35K8WDSSWT
R1AE	RECESSED LED DOWN LIGHT	277 OR 120 MULTI-TAP (UNV.)	RECESSED	1500	3500	19 VA	PRECOLITE #LTR-4RD-H-SL15L-DM1/LTR-4RD-T-SL35K8WDSSWT
R22F	2X2 LED CLEAN ROOM FIXTURE	277 OR 120 MULTI-TAP (UNV.)	RECESSED/ GYP.	4300	3500	39 VA	KENNAL #CSEDO-22-45LD-35K8-DIM1-DV-5F-4H-SYM-FN
SL1	4' LINEAR STRIP LIGHT	277 OR 120 MULTI-TAP (UNV.)	SURFACE/HUNG	4000	3500	44 VA	COLUMBIA #MPS4-35HL-CN-EDU
SL1E	4' LINEAR STRIP LIGHT	277 OR 120 MULTI-TAP (UNV.)	SURFACE/HUNG	4000	3500	44 VA	COLUMBIA #MPS4-35HL-CN-EDU
VL1	LINEAR LED VANITY FIXTURE	277 OR 120 MULTI-TAP (UNV.)	WALL MOUNTED	1300	3500	23 VA	ELITE #2-OEC-LED-2000L-DIM10-MVOLT-35K-85

BATTERY INVERTER CALCULATION	
ACTUAL WATTAGE	1160.0 W
TOTAL VA	1288.9 VA
25% SPARE	1611.1 VA
INVERTER SIZE	2100.0 VA



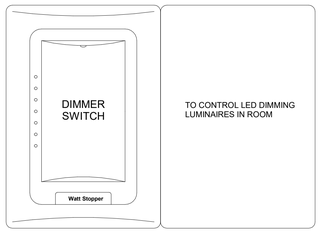
4 ELECTRICAL TYPICAL HOLDING ROOM NETWORK DIAGRAM

SCALE: NOT TO SCALE



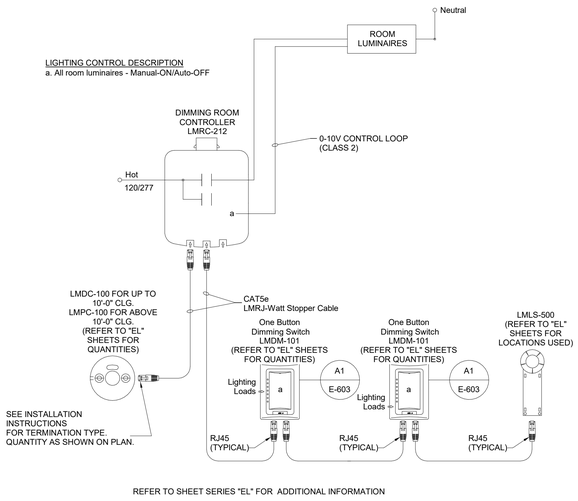
3 TYPICAL HOLDING ROOM

NO SCALE



2 ENGRAVED SWITCH & PLACARD DETAIL

SCALE: NO SCALE



1 WATT STOPPER "DLM" WIRING DIAGRAM

SCALE: NO SCALE

GENERAL NOTES

A. DIAGRAMS ARE SHOWN FOR BIDDING PURPOSES. CONTRACTOR WILL PROVIDE ACCURATE AND COORDINATED DIAGRAMS FOR SHOP DRAWING SUBMITTALS.

LIGHTING SEQUENCE OF OPERATIONS

A. ANIMAL RESEARCH SPACES (INCLUDES ALL HOLDING ROOMS, BEHAVIOR ROOMS AND BEHAVIORAL ROOMS)
- THE 24 REVERSE CYCLE (DIURNAL CYCLE) WILL NEED TO BE FULLY ADJUSTABLE AND PROGRAMMABLE THROUGH THE COMPUTER APP BY USERS ONLY. BACNET CONNECTION IS ALSO REQUIRE AS "READ-ONLY". A SEPARATE MICRO-PROCESSOR WILL BE PROVIDED FOR EACH ROOM.
- EACH ANIMAL HOLDING ROOM WILL BE PROVIDED WITH (2) INDEPENDENTLY CONTROLLED LIGHTING ZONES, ONE FOR RED LAMP AND ONE FOR WHITE LAMP
- WHITE: PROGRAMMABLE AUTOMATIC DAY/NIGHT CYCLE ON AN ADJUSTABLE TIME AND DURATION SCHEDULE. PHOTOCELL CONFIRMATION OF CYCLE CONTROL AND MONITORED BY FRONT END SYSTEM.
- HUMAN WHITE OVERRIDE SWITCH: MANUALLY CONTROLLED BY LIGHT SWITCH MOUNTED INSIDE THE HOLDING ROOM. SWITCH SHALL BE DISABLED DURING "NIGHT" SCHEDULE.
- HUMAN RED OVERRIDE: MANUALLY CONTROLLED BY LIGHT SWITCH MOUNTED INSIDE THE HOLDING ROOM. RED LUMINAIRES WILL ONLY BE AVAILABLE / ENABLED DURING THE DARK CYCLE ONLY. NO TIMER WILL BE PROVIDED FOR RED LUMINARES (MANUAL ON / MANUAL OFF). FINAL COORDINATION WITH ANIMAL RESEARCH PROGRAM WILL BE NEEDED.
- STATUS LIGHTS OUTSIDE THE DOOR SHALL PROVIDE INDICATION OF STATE OF WHITE LIGHT AND RED LIGHT INSIDE THE HOLDING ROOM.
  1. RED LIGHT ON/OFF STATUS.
  2. WHITE LIGHT ON/OFF STATUS
  3. NO LIGHTS (DARK)
- 1 HOUR STEP FADE RATE REQUIRED FOR MORNING AND NIGHT SETTINGS ON THE 24 HOUR REVERSE CYCLE.
- A PROGRAMMABLE SETTING WILL PROVIDE PREPROGRAMMED CONTROLS AS FOLLOWS:
  1. 24 HOUR REVERSE CYCLE. 12 HOUR DAY CYCLE AND 12 HOUR DARK CYCLE CONTROLLED VIA INTERNAL SYSTEM TIMER. RESEARCH PROGRAM MANAGEMENT WILL HAVE ACCESS TO ENABLE SCENARIO VIA THE APP / COMPUTER.
  2. WHEN DAY-CYCLE IS ON,
     A. RED LIGHT SWITCH IS DISABLED.
  3. WHEN DARK-CYCLE IS ON,
     A. RED LIGHT SWITCH IS ENABLED
- LIGHTING SYSTEM MONITORING, REPORTING AND ALARMING
  1. REPORT SHALL INCLUDE ALARMS OR WARNINGS IN CASE LIGHTING LEVELS DROP BELOW A USER DEFINED SETTING OR IF THE LIGHTS TURN ON OR OFF AT UNDESIRABLE TIMES. AN E-MAIL WILL BE SENT TO THE USERS IN CASE OF ALARM.
  2. ALARM INITIATION:
     - IN THE FORM OF EMAIL TO THE USERS AND IN THE REPORT.
     - ALARM / WARNING WILL BE PROVIDED WHEN SYSTEM PROGRAMMING GETS OVERRIDE. IF THERE IS AN ERROR, OR IF SYSTEM LIGHTS TURN ON/OFF AT UNDESIRABLE TIMES.

B. RESTROOMS, LARGE AND SMALL:
- LARGE: DUAL TECHNOLOGY (ULTRASONIC/INFRARED) SWITCHES TO CONTROL ENTIRE ROOM.

C. UTILITY ROOMS (STORAGE, JANITORS AND THE LIKE): WALL-MOUNTED OCCUPANCY SENSOR WILL CONTROL THE LUMINAIRE(S) IN THE ROOM.

D. CORRIDORS:
- OVERALL CONTROL WILL BE PROGRAMMED ON AT 5 AM AND OFF AT 11 PM.
- OVERRIDE OCCUPANY/VACANCY SENSORS TO OPERATE PROGRAMMED CONTROL BETWEEN 11 PM AND 5 AM.

E. EXTERIOR BUILDING LIGHTING:
- ALL EXTERIOR BUILDING LIGHTING WILL BE PROGRAMMED TO COME ON AT 1/2 HOUR BEFORE DUSK AND OFF A 1/2 HOUR AFTER DAWN.
- ALL WALKWAY LIGHTING, EXCEPT THOSE NOTED, WILL COME ON 1/2 HOUR BEFORE DUSK AND OFF AT 11 PM

F. DAYLIGHT SENSORS:
- DAYLIGHT SENSORS (REFER TO "EL" SHEETS FOR LOCATION USED) WILL CONTROL LUMINAIRES WITHIN 15 FT OF ANY VERTICAL FENESTRATION AND WINDOW WIDTH PLUS 2 FT ON EACH SIDE.
- LUMINAIRE SWITCH WILL OVERRIDE ANY LIGHT LEVEL SET BY THE DAYLIGHT SENSOR.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

LIGHTING DIAGRAM

E-603

Bridgers & Paxton Project No: 8678 11/30/2023 3:56:01 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_LMMoreno-Chavez.rvt
Biomedical Research Building Expansion

Switchboard: EMDPB-2

Location: ELEC E166
Supply From:
Mounting:
Enclosure:

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 65000
Mains Type: MCB
Mains Rating: 600 A
MCB Rating: 600 A

Notes:
EMERGENCY DISTRIBUTION BOARD.

CKT	Circuit Description	# of Poles	Trip Rating	Load	Remarks
1	EH1B	3	100 A	74446 VA	
2	EL1B VIA TEB	3	200 A	51339 VA	
3	LTB VIA TB	3	100 A	6800 VA	
4	SPD	1	60 A	0 VA	
5	MTR EQP MAU-1	3	65 A	34525 VA	
6	MTR EQP MAU-2 (STAND BY)	3	65 A	0 VA	
7	MTR EQP ESH-1	3	150 A	108080 VA	
8	MTR EQP ESH-2 (STANDBY)	3	150 A	0 VA	
9	MTR EQP ESH-3	3	150 A	108080 VA	
10	MTR EQP ESH-4 (STANDBY)	3	150 A	0 VA	
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
				383270 VA	
				461 A	

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	10 VA	100.00%	10 VA		
LTG	5645 VA	125.00%	7056 VA	**Total Conn. Load:**	383270 VA
REC	21240 VA	73.54%	15620 VA	**Total Est. Demand:**	379061 VA
NC	18508 VA	100.00%	18508 VA	**Total Conn.:**	461 A
MTR	337867 VA	100.00%	337867 VA	**Total Est. Demand:**	456 A

Notes:

Branch Panel: EH1B

Location: ELEC E166
Supply From: EMDPB-2
Mounting: Recessed
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Spaces: 42

A.I.C. Rating: 42000
Mains Type: MLO
Mains Rating: 150 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	MTR EQP EAV AND SAV	20 A	1	700 VA	800 VA					1	20 A	MTR EQP EAV AND SAV	2
3	MTR GEN STG 154C	20 A	1			1300...	696 VA			1	20 A	MTR EQP HD-1	4
5	MTR EQP EAV AND SAV	20 A	1					1100...	1000...	1	20 A	MTR EQP EAV AND SAV	6
7	MTR EQP EAV AND SAV	20 A	1	900 VA	900 VA					1	20 A	MTR EQP EAV AND SAV	8
9	MTR EAP EAV AND SAVE	20 A	1			1200...	930 VA			1	20 A	LTG ROOM H105, 154, 173, 179, 165F, 165, 181,...	10
11	LTG ROOM 173D, 173C, 173B, 173A, 165E, 165D	20 A	1					1975...	1150...	1	20 A	LTG WILD ANIMAL HOUSING 1 165C	12
13	LTG PROCEDURE/ BEHAVIORAL 1 168	20 A	1	850 VA	750 VA					1	20 A	LTG BIRD RM A 179F	14
15	MTR EQP EF-1	15 A	3			306 VA	0 VA			3	15 A	MTR EQP EF-2 (STAND BY)	16
17	--	--	--					306 VA	0 VA	--	--	--	18
19	--	--	--	306 VA	0 VA					--	--	--	20
21	MTR EQP EF-6	30 A	3			3880...	3880...			3	30 A	MTR EQP EF-5	22
23	--	--	--					3880...	3880...	--	--	--	24
25	--	--	--	3880...	3880...					--	--	--	26
27	MTR EQP DWH-1 (STANDBY)	20 A	3			1200...	0 VA			3	20 A	MTR EQP DWH-2 (STANDBY)	28
29	--	--	--					1200...	0 VA	--	--	--	30
31	--	--	--	1200...	0 VA					--	--	--	32
33	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	34
35	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	36
37	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	38
39	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	40
41	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	42
		Total Load:		24965 VA		24191 VA		25290 VA					
		Total Amps:		91 A		87 A		92 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	10 VA	100.00%	10 VA		
MTR	68791 VA	100.00%	68791 VA	**Total Conn. Load:**	74446 VA
LTG	5645 VA	125.00%	7056 VA	**Total Est. Demand:**	75857 VA
				Total Conn. Current:	90 A
				Total Est. Demand Current:	91 A

Notes:

Branch Panel: EL1B

Location: ANTEROOM 165F
Supply From: TEB
Mounting: Recessed
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Spaces: 84

A.I.C. Rating: 14000
Mains Type: MCB
Mains Rating: 400 A
MCB Rating: 400 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	MTR EQP CU-2 (STANDBY)	30 A	2	0 VA	2330...					2	30 A	MTR EQP CU-1	2
3	--	--	--			0 VA	2330...			--	--	--	4
5	MTR EQP CU-3	30 A	2					2330...	0 VA	2	30 A	MTR EQP CU-4 (STAND BY)	6
7	--	--	--	2330...	0 VA					--	--	--	8
9													10
11									540 VA	1	20 A	REC ROOM 169, 167	12
13	REC ROOM 169, 167	20 A	1	900 VA	1800...					1	20 A	NC MICROSCOPY 167	14
15	NC ANALYTICAL LAB 169	20 A	2			510 VA	1920...			1	20 A	REC MICROSCOPY 167	16
17	--	--	--					510 VA	1920...	1	20 A	REC ANALYTICAL LAB 169	18
19	REC MICROSCOPY 167	20 A	1	1920...	540 VA					1	20 A	REC PHYSIOLOGY LAB 162	20
21	REC ROOM 162, 164	20 A	1			720 VA	510 VA			2	20 A	NC GENERAL LAB 164	22
23	NC ROOM 162, 164	20 A	1					536 VA	510 VA	--	--	--	24
25	NC GENERAL LAB 164	20 A	1	240 VA	900 VA					1	20 A	REC ROOM 168, 170, 172	26
27	REC ROOM 168, 172	20 A	1			900 VA	500 VA			1	20 A	NC EQP REFRIGERATOR POSTMORTEM 163	28
29	NC ROOM 168, 170, 172	20 A	1					1082...	600 VA	1	20 A	NC AVIARY FOOD PREP 179I	30
31	NC EQP CHEST FREEZER POSTMORTEM 163	20 A	1	600 VA	596 VA					3	15 A	MTR EQP EF-3	32
33	REC ROOM 173, H105	20 A	1			540 VA	596 VA			--	--	--	34
35	NC PROCEDURE/ BEHAVIORAL 1 168	20 A	1					445 VA	596 VA	--	--	--	36
37	NC EQP MAU-1 CONTROLS	20 A	1	1800...	0 VA					3	15 A	MTR EQP EF-4	38
39	NC EQP MAU-2 CONTROLS	20 A	1			0 VA	0 VA			--	--	--	40
41	MTR EQP EF-7	15 A	2					333 VA	0 VA	--	--	--	42
43	--	--	--	333 VA	333 VA					2	20 A	MTR EQP EF-8	44
45	MTR EQP P-3	20 A	1			1656...	333 VA			--	--	--	46
47	MTR EQP GF-1	20 A	1					864 VA	1656...	1	20 A	MTR EQP P-3	48
49	MTR EQP RCP-1	15 A	1	122 VA	0 VA					1	20 A	SPARE	50
51	MTR EQP RCP-2 (STANDBY)	15 A	1			0 VA	0 VA			1	20 A	SPARE	52
53	MTR EQP P-2	20 A	1					1656...	0 VA	1	20 A	SPARE	54
55	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	56
57	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	58
59	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	60
61	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	62
63	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	64
65	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	66
67	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	68
69	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	70
71	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	72
73	AL1A	100 A	3	1525...	2700...					3	100 A	AL1C	74
75	--	--	--			720 VA	1440...			--	--	--	76
77	--	--	--					0 VA	1440...	--	--	--	78
79	AL1B	100 A	3	1440...	1080...					3	100 A	AL1D	80
81	--	--	--			2160...	0 VA			--	--	--	82
83	--	--	--					0 VA	0 VA	--	--	--	84
		Total Load:		21488 VA		14834 VA		15017 VA					
		Total Amps:		179 A		124 A		125 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
NC	11708 VA	100.00%	11708 VA		
MTR	18391 VA	100.00%	18391 VA	**Total Conn. Load:**	51339 VA
REC	21240 VA	73.54%	15620 VA	**Total Est. Demand:**	45719 VA
				Total Conn. Current:	143 A
				Total Est. Demand Current:	127 A

Notes:

EMDPB-2 | EH1B | EL1B

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

ELECTRICAL SCHEDULES

E-701

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 3:56:02 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_LMMoreno-Chavez.rvt

Branch Panel: H1B

Location: ELEC E166
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Spaces: 42

A.I.C. Rating: 14000
Mains Type: MLO
Mains Rating: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	LTG ELEC E166	20 A	1	88 VA	262 VA					1	20 A	LTG ROOM 158, 154D, 156	2
3	LTG INSECTASRY EQUIP STG 174	20 A	1			88 VA	183 VA			1	20 A	LTG ROOM R160, R160B, R160A	4
5	LTG ROOM 179H, 179I	20 A	1					200 VA	395 VA	1	20 A	LTG ROOM 161A, 161, 154C, 159	6
7	LTG MECH M179	20 A	1	44 VA	176 VA					1	20 A	LTG ROOM J165, IT165	8
9	SPARE	20 A	1			0 VA	715 VA			1	20 A	LTG ROOM H105, 154, 173, 165	10
11	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	12
13	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	14
15	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	16
17	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	18
19	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	20
21	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	22
23	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	24
25	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	26
27	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	28
29	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	30
31	SPACE ONLY	--	1	--	--					1	--	SPACE ONLY	32
33	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	34
35	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	36
37	SPACE ONLY	--	1	--	--					1	--	SPACE ONLY	38
39	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	40
41	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	42
		Total Load:		570 VA		986 VA		595 VA					
		Total Amps:		2 A		4 A		2 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
LTG	2151 VA	125.00%	2689 VA		
				Total Conn. Load:	2151 VA
				Total Est. Demand:	2689 VA
				Total Conn. Current:	3 A
				Total Est. Demand Current:	3 A

Notes:

Branch Panel: L1B

Location: ELEC E166
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Spaces: 84

A.I.C. Rating: 14000
Mains Type: MCB
Mains Rating: 400 A
MCB Rating: 400 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	REC STG 156, FOOD 158, LAUNDRY 159, 161A	20 A	1	900 VA	1080...					1	20 A	REC ROOM E166, J165, H105	2
3	REC FOOD 158, RR R160A, RR R160B	20 A	1			1080...	1178...			1	20 A	NC POSTMORTEM ROOM EQUIPMENT	4
5	NC FOOD PREP 158 RANGE	40 A	2					4160...	864 VA	1	20 A	NC PUSH BUTTONS	6
7	--	--	--	4160...	684 VA					1	20 A	NC PUSH BUTTONS	8
9	NC FOOD PREP 158 REFRIGERATOR	20 A	1			600 VA	720 VA			1	20 A	REC LOADING DOCK A130G	10
11	NC FOOD PREP 158 DISHWASHER	20 A	1					1068...	600 VA	1	20 A	NC CORRIDOR H105 EWC	12
13	REC LAUNDRY 159	20 A	1	900 VA	900 VA					1	20 A	REC ROOM 179I, M179	14
15	REC LAUNDRY 159	20 A	1			720 VA	540 VA			1	20 A	REC ROOM 179I, 179H	16
17	NC LAUNDRY 159 WASHER	20 A	1					1320...	180 VA	1	20 A	REC INSECTASRY EQUIP STG 174	18
19	NC LAUNDRY 159 DRYER	20 A	2	2150...	0 VA					1	20 A	SPARE	20
21	--	--	--			2150...	0 VA			1	20 A	SPARE	22
23	NC BREAK RM 161 DISHWASHER	20 A	1					1068...	0 VA	1	20 A	SPARE	24
25	NC BREAK RM 161 MICROWAVE	20 A	1	1200...	0 VA					1	20 A	SPARE	26
27	NC BREAK RM 161 REFRIGERATOR	20 A	1			600 VA	0 VA			1	20 A	SPARE	28
29	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	30
31	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	32
33	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	34
35	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	36
37	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	38
39	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	40
41	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	42
43	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	44
45	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	46
47	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	48
49	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	50
51	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	52
53	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	54
55	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	56
57	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	58
59	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	60
61	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	62
63	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	64
65	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	66
67	SPACE ONLY	--	1	--	--					1	--	SPACE ONLY	68
69	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	70
71	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	72
73	SPACE ONLY	--	1	--	--					1	--	SPACE ONLY	74
75	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	76
77	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	78
79	SPACE ONLY	--	1	--	--					1	--	SPACE ONLY	80
81	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	82
83	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	84
		Total Load:		11974 VA		7588 VA		9260 VA					
		Total Amps:		102 A		63 A		79 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
NC	21802 VA	100.00%	21802 VA		
REC	7020 VA	100.00%	7020 VA	**Total Conn. Load:**	28822 VA
				Total Est. Demand:	28822 VA
				Total Conn. Current:	80 A
				Total Est. Demand Current:	80 A

Notes:

H1B

L1B

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

ELECTRICAL SCHEDULES

E-702

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 3:56:03 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_LMMoreno-Chavez.rvt

Branch Panel: AL1C

Location: ANTEROOM 165F
Supply From: EL1B
Mounting: Recessed
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Spaces: 42

A.I.C. Rating: 14000
Mains Type: MCB
Mains Rating: 100 A
MCB Rating: 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	REC ROOM 165C, 165B, 165A	20 A	1	1080...	900 VA					1	20 A	REC ROOM 165C, 165B, 165A	2
3	REC ROOM 165B, 165C, 165A	20 A	1			720 VA	720 VA			1	20 A	REC ROOM 165D, 165E	4
5	REC ROOM 165D, 165E	20 A	1					360 VA	1080...	1	20 A	REC ROOM 165D, 165E, 173D, 173C, 173B, 173BB	6
7	REC ROOM 165D, 165E	20 A	1	720 VA	0 VA					1	20 A	SPARE	8
9	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	10
11	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	12
13	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	14
15	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	16
17	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	18
19	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	20
21	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	22
23	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	24
25	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	26
27	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	28
29	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	30
31	SPACE ONLY	--	1	--	--					1	--	SPACE ONLY	32
33	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	34
35	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	36
37	SPACE ONLY	--	1	--	--					1	--	SPACE ONLY	38
39	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	40
41	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	42
		Total Load:		2700 VA		1440 VA		1440 VA					
		Total Amps:		23 A		12 A		12 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
REC	5580 VA	100.00%	5580 VA		
				Total Conn. Load:	5580 VA
				Total Est. Demand:	5580 VA
				Total Conn. Current:	15 A
				Total Est. Demand Current:	15 A

Notes:

Branch Panel: AL1A

Location: ANTEROOM 177
Supply From: EL1B
Mounting: Recessed
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Spaces: 42

A.I.C. Rating: 14000
Mains Type: MCB
Mains Rating: 100 A
MCB Rating: 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	REC ROOM 179F, 179E, 179D, 179C, 179B, 179A	20 A	1	1080...	445 VA					1	20 A	NC PROCEDURE 179G	2
3	REC PROCEDURE 179G	20 A	1			540 VA	180 VA			1	20 A	NC PROCEDURE 179G	4
5	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	6
7	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	8
9	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	10
11	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	12
13	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	14
15	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	16
17	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	18
19	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	20
21	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	22
23	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	24
25	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	26
27	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	28
29	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	30
31	SPACE ONLY	--	1	--	--					1	--	SPACE ONLY	32
33	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	34
35	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	36
37	SPACE ONLY	--	1	--	--					1	--	SPACE ONLY	38
39	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	40
41	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	42
		Total Load:		1525 VA		720 VA		0 VA					
		Total Amps:		14 A		7 A		0 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
NC	625 VA	100.00%	625 VA		
REC	1620 VA	100.00%	1620 VA		
				Total Conn. Load:	2245 VA
				Total Est. Demand:	2245 VA
				Total Conn. Current:	6 A
				Total Est. Demand Current:	6 A

Notes:

Branch Panel: AL1D

Location: ANTEROOM 3 154
Supply From: EL1B
Mounting: Recessed
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Spaces: 42

A.I.C. Rating: 1400
Mains Type: MCB
Mains Rating: 100 A
MCB Rating: 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	REC QUARANTINE 1 154A, QUARANTINE 2 154B	20 A	1	1080...	0 VA					1	20 A	SPARE	2
3	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	4
5	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	6
7	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	8
9	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	10
11	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	12
13	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	14
15	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	16
17	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	18
19	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	20
21	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	22
23	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	24
25	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	26
27	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	28
29	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	30
31	SPACE ONLY	--	1	--	--					1	--	SPACE ONLY	32
33	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	34
35	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	36
37	SPACE ONLY	--	1	--	--					1	--	SPACE ONLY	38
39	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	40
41	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	42
		Total Load:		1080 VA		0 VA		0 VA					
		Total Amps:		9 A		0 A		0 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
REC	1080 VA	100.00%	1080 VA		
				Total Conn. Load:	1080 VA
				Total Est. Demand:	1080 VA
				Total Conn. Current:	3 A
				Total Est. Demand Current:	3 A

Notes:

Branch Panel: AL1B

Location: ANTEROOM 300 171
Supply From: EL1B
Mounting: Recessed
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Spaces: 42

A.I.C. Rating: 14000
Mains Type: MCB
Mains Rating: 100 A
MCB Rating: 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	NC ROOM 173A, 173B, 173C, 173D	20 A	1	720 VA	720 VA					1	20 A	NC ROOM 173A, 173B, 173C, 173D	2
3	REC ROOM 173B, 173C, 173D, 173BB	20 A	1			1080...	1080...			1	20 A	REC ROOM 173A, 173AA	4
5	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	6
7	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	8
9	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	10
11	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	12
13	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	14
15	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	16
17	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	18
19	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	20
21	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	22
23	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	24
25	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	26
27	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	28
29	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	30
31	SPACE ONLY	--	1	--	--					1	--	SPACE ONLY	32
33	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	34
35	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	36
37	SPACE ONLY	--	1	--	--					1	--	SPACE ONLY	38
39	SPACE ONLY	--	1			--	--			1	--	SPACE ONLY	40
41	SPACE ONLY	--	1					--	--	1	--	SPACE ONLY	42
		Total Load:		1440 VA		2160 VA		0 VA					
		Total Amps:		14 A		20 A		0 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
NC	1440 VA	100.00%	1440 VA		
REC	2160 VA	100.00%	2160 VA		
				Total Conn. Load:	3600 VA
				Total Est. Demand:	3600 VA
				Total Conn. Current:	10 A
				Total Est. Demand Current:	10 A

Notes:

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

ELECTRICAL SCHEDULES

AL1C	AL1A
AL1D	AL1B

E-703

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 3:56:05 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_LMMoreno-Chavez.rvt

TECHNOLOGY SYMBOL LEGEND

(NOT ALL SYMBOLS APPLY TO THIS PROJECT)

ABBREVIATIONS

ABBREV.	DEFINITION
A	AMPS, AMPERE, AMPERAGE
AC	ABOVE COUNTER
A/C	ALTERNATING CURRENT
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AVAILABLE INTERRUPTING CURRENT
AL	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ATSC	AUTOMATIC TRANSFER SWITCH CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
A/V	AUDIO/VISUAL
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CL	CLOCK
CLF	CURRENT LIMITING FUSE
CO	CONDUIT ONLY
CU	COPPER
D	DIMMING
DC	DIRECT CURRENT
DL	DAY-LIGHTING
DIA	DIAMETER
E	EMERGENCY
EC	EMERGENCY, CRITICAL
EG	ENGINE GENERATOR
EL	EMERGENCY, LIFE SAFETY
EQ	EMERGENCY, EQUIPMENT
EX	EXISTING
FUT	FUTURE
FA	FIRE ALARM
FAA	FIRE ALARM ANNUNCIATOR
FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINAL CABINET
FDR	FEEDER
FMS	FACILITY MANAGEMENT SYSTEM
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
G OR GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFEP	GROUND FAULT EQUIPMENT PROTECTION
GFP	GROUND FAULT PROTECTION
GND	GROUND.
HOA	HAND-OFF-AUTOMATIC.
HP	HORSEPOWER
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IG	ISOLATED GROUND
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT AMPS
KVAR	KILOVOLT AMPS REACTIVE
KW	KILOWATT
KWH	KILOWATT HOUR.
LSIG	LONG TIME, SHORT TIME, INSTANTANEOUS, AND GROUND FAULT PROTECTION
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MIN	MINIMUM
MH	MANHOLE
MM	MIXED MEDIA
MTS	MANUAL TRANSFER SWITCH
MVA	MEGAVOLT AMPS
N	NEW
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT	NEUTRAL
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NORMAL
NM	NEW MEXICO
NO	NORMALLY OPEN
O/H	OVERHEAD
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
P	POLE
PA	PUBLIC ADDRESS
PC	PHOTOCELL
PH	PHASE
PMCS	POWER MONITORING AND CONTROL SYSTEM
R	REMOVED/REMOVAL
RC	ROOM CONTROLLER
RSC	RIGID STEEL CONDUIT
SEC	SECURITY
SPD	SURGE PROTECTIVE DEVICE
SW	SWITCH
TEMP	TEMPORARY
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
TYP.	TYPICAL
UC	UNDER COUNTER
U/G	UNDERGROUND
UGE	UNDERGROUND ELECTRIC
UL	UNDERWRITERS' LABORATORIES
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTABLE POWER SUPPLY
V	VOLTS, VOLTAGE
VFD	VARIABLE FREQUENCY DRIVE
VR	VANDAL RESISTANT
W	WALL MOUNTED
WG	WEATHERPROOF AND GFCI
WP	WEATHERPROOF
XFER	TRANSFER
XFMR (TRANSF)	TRANSFORMER

RACEWAY & CONDUCTORS

BRANCH CIRCUIT GENERAL INFORMATION:

BRANCH CIRCUITS FROM OVERCURRENT PROTECTION (20A) TO FURTHEST DEVICE SHALL NOT EXCEED 75 FEET FOR #12AWG COPPER AND 150 FEET FOR #10AWG COPPER; MEASURED ALONG CONDUCTORS ROUTING PATH. BRANCH CIRCUITS EXCEEDING 150 FEET WILL BE SIZED SO THAT VOLTAGE DROP DOES NOT EXCEED 5%.

SYMBOL	DESCRIPTION
= GROUND = HOT/PHASE = NEUTRAL = SWITCH LEG	CONDUCTOR IDENTIFICATION SYMBOLS. REFER TO PLANS FOR COMBINATION USE. CONDUCTOR IDENTIFICATION MOSTLY USED IN HOMERUN LOCATION, BUT CAN ALSO BE USED IN BRANCH CIRCUITING WHERE APPLIED. GROUND CONDUCTORS WILL BE INSTALLED IN ALL RACEWAYS WHETHER SHOWN OR NOT.
LA-1	HOMERUN FROM EQUIPMENT LOCATION. THE CIRCUIT NUMBER ADJACENT TO HOMERUN INDICATES PANEL SOURCE AND INDIVIDUAL SINGLE POLE CIRCUIT BREAKER(S). CONDUCTOR IDENTIFICATION SYMBOL INDICATES NUMBER OF CONDUCTORS IN HOMERUN. MINIMUM #12 CONDUCTORS AND 3/4" RACEWAY PATH WILL BE PROVIDED IN HOMERUN UON. ALL HOMERUNS WILL INCLUDE GROUND CONDUCTOR.
LA-1,3 LA-5,7,9	HOMERUN FROM EQUIPMENT LOCATION. THE CIRCUIT NUMBER ADJACENT TO HOMERUN INDICATES PANEL SOURCE AND INDIVIDUAL SINGLE POLE CIRCUIT BREAKER(S). SYMBOL REPRESENTS A MULTI-BRANCH CIRCUIT. NUMBER OF CONDUCTORS IN HOMERUN WILL INCLUDE A SEPARATE NEUTRAL FOR EACH CIRCUIT PHASE CONDUCTOR. MINIMUM #12 CONDUCTORS AND 3/4" RACEWAY PATH WILL BE PROVIDED IN HOMERUN UON. ALL HOMERUNS WILL INCLUDE GROUND CONDUCTOR.
LA-7 LA-13	HOMERUN FROM EQUIPMENT LOCATION. THE CIRCUIT NUMBER ADJACENT TO HOMERUN INDICATES PANEL SOURCE AND INDIVIDUAL TWO OR THREE POLE CIRCUIT BREAKERS. CONDUCTOR IDENTIFICATION SYMBOL INDICATES NUMBER OF CONDUCTORS IN HOMERUN. MINIMUM #12 CONDUCTORS AND 3/4" RACEWAY PATH WILL BE PROVIDED IN HOMERUN UON. NEUTRAL MAY BE USED WHERE INDICATED ON PLAN. ALL HOMERUNS WILL INCLUDE GROUND CONDUCTOR.
	CONCEALED RACEWAY BETWEEN DEVICES AND OR EQUIPMENT IN WALLS OR IN CEILING SPACE
	UNDERGROUND RACEWAY BETWEEN DEVICES AND OR EQUIPMENT
	EXPOSED RACEWAY BETWEEN DEVICES AND OR EQUIPMENT ON WALLS OR CEILINGS
DOWN UP	CONDUIT TURNS
	CONDUIT STUBBED AND CAPPED
B	BUSWAY
G	GROUNDING CONDUCTOR
	CABLE TRAY - POWER AND TELECOMMUNICATIONS
T	TELECOMMUNICATIONS RACEWAY
D	DATA RACEWAY
V/D	VOICE/DATA COMBINATION RACEWAY
FA	FIRE ALARM RACEWAY

EQUIPMENT

SYMBOL	DESCRIPTION
MSB	MAIN SWITCHBOARD. DASHED LINES INDICATE CLEARANCES.
DB	DISTRIBUTION BOARD. DASHED LINES INDICATE CLEARANCES.
H1A	FLUSH MOUNTED PANELBOARD. DASHED LINES INDICATE CLEARANCES.
L1A	SURFACE MOUNTED PANELBOARD. DASHED LINES INDICATE CLEARANCES.
MCC	MOTOR CONTROL CENTER. DASHED LINES INDICATE CLEARANCES.
T1A	DRY TYPE TRANSFORMER (15kVA OR ABOVE), WITH EQUIPMENT TAG (TAG INSIDE OR OUTSIDE, DEPENDING ON SIZE). IN MOST CASES, ACTUAL SIZE SHOWN ON PLANS (ELECTRICAL ROOMS).
T	DRY TYPE TRANSFORMER (LESS THAN 15kVA), WITH NO EQUIPMENT TAG. SIZE, TYPE AND LOCATION NOTED ON PLANS.
VF	VARIABLE FREQUENCY DRIVE
D UPS-A	UNINTERRUPTABLE POWER SUPPLY. DASHED LINES INDICATE CLEARANCES.
ATS-1	AUTOMATIC TRANSFER SWITCH. DASHED LINES INDICATE CLEARANCES.
G	GROUND BAR

REFERENCE TAGS

SYMBOL	DEFINITION
	KEYED NOTE REFERENCE
VAV-9	MECHANICAL EQUIPMENT REFERENCE
+44"	DENOTES MOUNTING HEIGHT AFF
	KITCHEN EQUIPMENT REFERENCE
	MEDICAL EQUIPMENT REFERENCE

SPECIAL SYSTEMS

SYMBOL	DESCRIPTION	MOUNTING LOC.	MOUNTING HT.
	FLOOR BOX WITH DATA	FLOOR	VARIES SEE PLANS
	FLOOR BOX WITH POWER AND DATA		
Jxx	FLOOR BOX WITH A/V. REFER TO J-BOX SCHEDULE ON 600 SERIES SHEETS.		
	DATA OUTLET	WALL	+18" UON
	VOICE\DATA OUTLET	WALL	+18" UON
AC	VOICE\DATA OUTLET ABOVE COUNTER TOP	WALL	+44" UON
W	TELEPHONE OUTLET WALL MOUNTED	WALL	+44" UON
IC	INTERCOM CALL SWITCH		
ICM	INTERCOM MASTER STATION		
VR	POLYCARBONITE VANDAL RESISTANT COVER		
S	COMMUNICATION HORN	WALL	+84" UON
B	COMMUNICATION BELL		
S	WALL SPEAKER	WALL	+108 UON
DA	DURESS ALARM PUSHBUTTON	WALL	SEE PLANS
LD	LOCK DOWN PUSHBUTTON		
Jx	A/V JUNCTION BOX. REFER TO J-BOX SCHEDULE ON 600 SERIES SHEETS.	WALL	SEE PLANS
Jx Jx Jx	A/V J- BOXES STACKED VERTICALLY. REFER TO J-BOX SCHEDULE ON 600 SERIES SHEETS.		
CS	COMBINATION CLOCK/SPEAKER. MOUNTED ABOVE AND CENTER TO WRITING/TACK BOARD	WALL	SEE PLANS
DSVD	DIGITAL SIGNAGE VIDEO DISPLAY	WALL	SEE PLANS
VP	VIDEO PROJECTOR	REFER TO PLANS	
S 2	CEILING SPEAKER: LOCAL SOUND SYSTEM	CEILING	FLUSH
S IC	CEILING SPEAKER: INTERCOM SYSTEM		
	CABLE TRAY FOR COMMUNICATIONS	ABOVE CEILING	SEE PLANS
J	J-HOOK ROUTING PATH		
	CEILING MOUNTED DATA OUTLET		
	CEILING MOUNTED VOICE/DATA OUTLET		
WAP	WIRELESS ACCESS POINT		
Jx J	CEILING MOUNTED A/V JUNCTION BOX. REFER TO J-BOX SCHEDULE ON 600 SERIES SHEETS.		

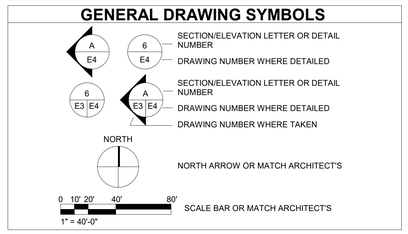
SECURITY

SYMBOL	DESCRIPTION	MOUNTING LOC.	MOUNTING HT.
CR KP	CARD READER. KEY PAD	WALL, UON	+44" UON
	BOX SECURITY CAMERA	VARIES	SEE PLANS
	DOME SECURITY CAMERA SECURITY CAMERA 180° SECURITY CAMERA 360°	VARIES	SEE PLANS
G	GLASS BREAK DETECTOR	WINDOW	SEE PLANS
M	MOTION DETECTOR	CEILING	SEE PLANS
DS	DOOR SWITCH	DOOR	SEE PLANS

DEMOLITION

SYMBOL	DESCRIPTION	NOTES
	DASHED SYMBOL INDICATES EXISTING DEVICE OR EQUIPMENT TO BE REMOVED	REFER TO DEMOLITION PLANS FOR ADDITIONAL INFORMATION
R	REMOVE EXISTING RACEWAY IN ALL ACCESSIBLE AREAS. CAPPED AND ABANDONED IF IN UNACCESSIBLE AREA	
S	SOLID SYMBOL, LIGHTER IN COLOR INDICATES EXISTING DEVICE OR EQUIPMENT TO REMAIN	
EX	EXISTING CONDUIT TO BE REUSED	

GENERAL DRAWING SYMBOLS



TELECOM, ACCESS CONTROL, AND SECURITY SYSTEMS DIVISION OF RESPONSIBILITY

GROUP	ITEM OR TASK	FURNISH	INSTALL
GENERAL (TELECOM, ACCESS CONTROL, & SECURITY) - ALL SPACES: UNLESS OTHERWISE NOTED ON DRAWINGS			
	JUNCTION / PULL BOXES AND CONDUITS FOR LOW VOLTAGE CABLING PURPOSES	CONTRACTOR	CONTRACTOR
	BLANK COVERS FOR LOW VOLTAGE JUNCTION / PULL BOXES	CONTRACTOR	CONTRACTOR
	STRUCTURAL SUPPORT FOR DEVICES/EQUIPMENT	CONTRACTOR	CONTRACTOR
	SEALING / FIRESTOPPING OF WALL / FLOOR PENETRATIONS FOR PATHWAYS AND CABLES	CONTRACTOR	CONTRACTOR
	GROUNDING AND BONDING FOR LOW VOLTAGE PATHWAYS AND EQUIPMENT	CONTRACTOR	CONTRACTOR
	AREA OF REFUGE (WHERE APPLICABLE)	CONTRACTOR	CONTRACTOR
TELECOM - ALL SPACES: UNLESS OTHERWISE NOTED ON DRAWINGS			
	DATA CABLING	CONTRACTOR	CONTRACTOR
	DATA CABLE TERMINATIONS, DEVICE PLATES, AND TESTING	CONTRACTOR	CONTRACTOR
	WIRE-BASKET CABLE TRAY	CONTRACTOR	CONTRACTOR
	LADDER-STYLE CABLE TRAY (DATA ROOMS)	CONTRACTOR	CONTRACTOR
	DATA RACKS AND CABINETS	CONTRACTOR	CONTRACTOR
	WIRELESS ACCESS POINTS AND MOUNTING HARDWARE	OWNER	OWNER
ACCESS CONTROL - ALL SPACES: UNLESS OTHERWISE NOTED ON DRAWINGS			
	ACCESS CONTROL CABLING	CONTRACTOR	CONTRACTOR
	ACCESS CONTROL CABLE TERMINATIONS AND TESTING	CONTRACTOR	CONTRACTOR
	J-HOOKS FOR ACCESS CONTROL CABLING ATTACHED TO CABLE TRAY SUPPORTS	CONTRACTOR	CONTRACTOR
	ACCESS CONTROL DEVICES AND MOUNTING HARDWARE	CONTRACTOR	CONTRACTOR
SECURITY - ALL SPACES: UNLESS OTHERWISE NOTED ON DRAWINGS			
	VIDEO SURVEILLANCE CAMERA SYSTEM CABLING	CONTRACTOR	CONTRACTOR
	CAMERA CABLE TERMINATIONS AND TESTING	CONTRACTOR	CONTRACTOR
	ALL PATHWAYS FOR ALL SYSTEMS	CONTRACTOR	CONTRACTOR
	CAMERAS, SOFTWARE, STORAGE	OWNER	OWNER
	MOTION DETECTORS AND ALARM KEYPADS WITH MOUNTING HARDWARE	OWNER	OWNER
	SECURITY HEAD-END DEVICES AND MOUNTING HARDWARE	OWNER	OWNER

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

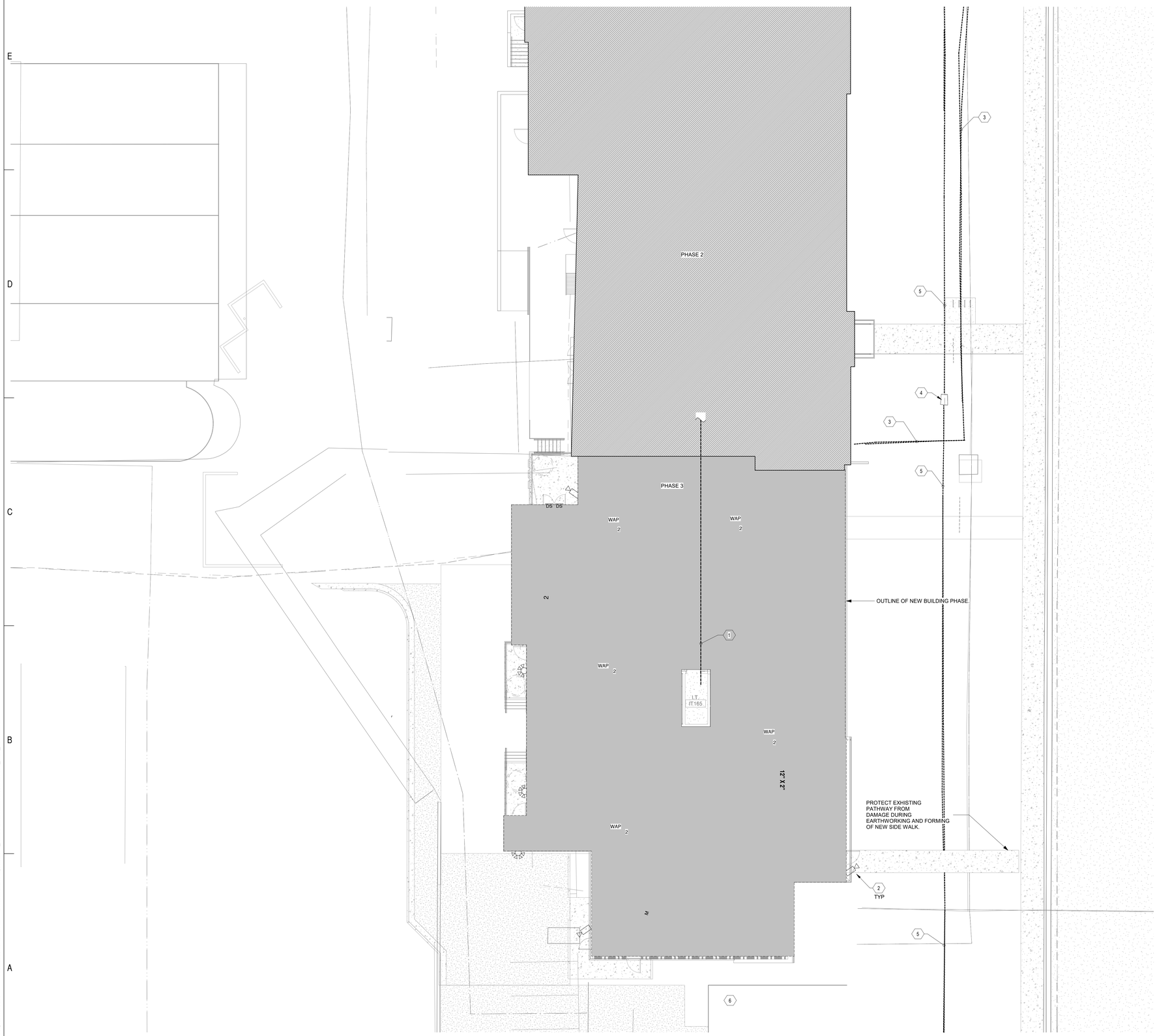
SHEET TITLE

TECHNOLOGY LEGEND

T-001

Bridgers & Paxton Project No: 8678 11/30/2023 12:45:13 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_SDRush.rvt

Biomedical Research Building Expansion



A1 TECHNOLOGY SITE PLAN
3/32" = 1'-0"

0' 5' 10' 20'

GENERAL NOTES

A. THE CONDUIT RUNS, AS SHOWN ON PLANS, INDICATE APPROXIMATE ROUTING. EXACT LOCATION OF CONDUIT RUNS SHALL BE AS FIELD CONDITIONS DICTATE. COORDINATE IN FIELD WITH EXISTING CONDITIONS. COORDINATE WITH EXISTING UNDERGROUND CONDUITS.
B. ALL LOW VOLTAGE CONDUCTORS SHALL BE RUN IN SEPARATE RACEWAYS FROM POWER CONDUCTORS (120VAC OR HIGHER PHASE TO NEUTRAL). NO EXCEPTIONS.
C. ALL UNDERGROUND CONDUITS LOCATED UNDER ROADWAYS AND PARKING LOTS SHALL BE CONCRETE ENCASED PATHWAYS TRAFFIC RATED TIER 22.
D. ALL HANDHOLES AND MANHOLES LOCATED IN ROADWAYS AND PARKING LOTS SHALL BE TRAFFIC RATED H20.
E. ALL UNDERGROUND CABLING TO BE OSP RATED.
F. ALL CONDUIT TURNS SHALL BE "SWEEP" TYPE, NO BEND FITTINGS ARE PERMITTED.

KEYNOTES

1. ABOVE CEILING PATHWAY EXTENDING INTRABUILDING BACKBONE FROM EXISTING PHASE TELECOM ROOM TO NEW PHASE TELECOM ROOM.
2. EXTERIOR BUILDING MOUNTED CAMERA LOCATION. REFER TO TECHNOLOGY FLOOR PLANS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
3. EXISTING UNDERGROUND COMMUNICATIONS LINES. COORDINATE WITH NMSU IT DEPT TO COORDINATE REMOVAL OF OF ANY PATHWAYS AND CABLING.
4. EXISTING IN-GROUND HAND HOLE FOR COMMUNICATIONS. PATHWAY IS CURRENTLY IN USE. PROTECT THROUGHOUT CONSTRUCTION. FOR ANY RELOCATION, COORDINATE WITH NMSU IT PRIOR TO COMMENCING WORK.
5. EXISTING COMMUNICATIONS PATHWAY. PATHWAY CURRENTLY SERVES OTHER BUILDINGS. PROTECT THROUGHOUT CONSTRUCTION. IF ANY RELOCATION OR MODIFICATIONS ARE REQUIRED, COORDINATE WITH NMSU IT PRIOR TO COMMENCING WORK.
6. EXISTING NEALE HALL AREA. INCOMING SERVICE TO NEALE HALL OCCURS IN PORTION TO BE DEMOLISHED. COORDINATE WITH NMSU IT PRIOR TO ANY DEMO TO HAVE SERVICE RELOCATED OR REMOVED.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

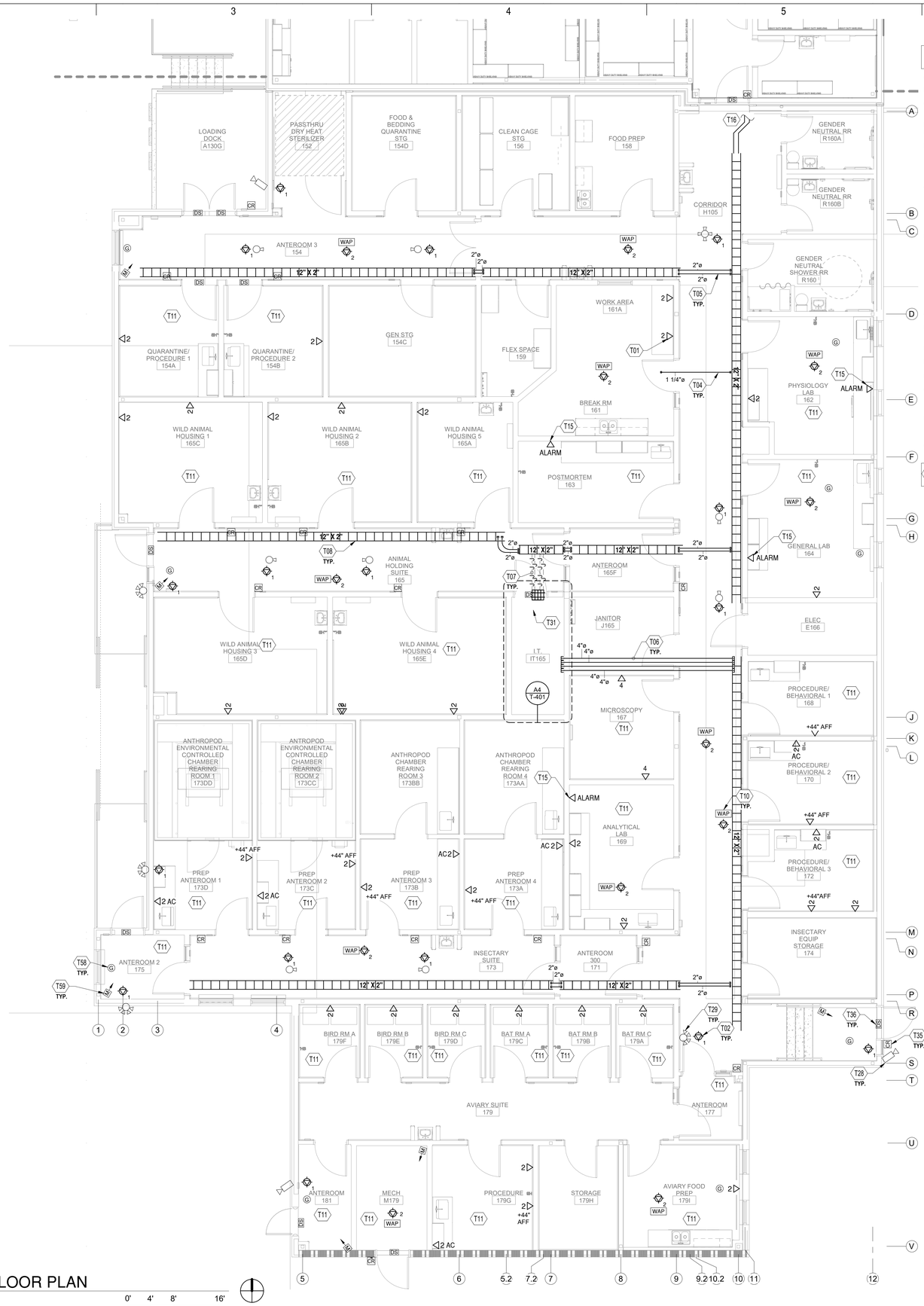
DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

TECHNOLOGY SITE PLAN

TS101

Bridgers & Paxton Project No: 8678 11/30/2023 12:46:37 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_SDRush.rvt
Biomedical Research Building Expansion



A1 TECHNOLOGY SYSTEMS FLOOR PLAN
3/16" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES

A. PROPERLY FIRE STOP AND SEAL ALL PENETRATIONS THROUGH WALLS, FLOORS, CEILINGS, AND ROOF AS PER OWNER, CODE, AND AHJ.
B. PRIOR TO INSTALLATION OF CABLE TRAY COORDINATE LOCATIONS WITH ALL OTHER TRADES.
C. NOT ALL PARTS AND PIECES ARE SHOWN FOR A COMPLETE SYSTEM. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE END-TO-END WARRANTED SOLUTION FOR THE HORIZONTAL CABLING.
D. ALL CABLING TO BE PLENUM RATED THROUGHOUT THE BUILDING.
E. ALL COMMUNICATIONS CABLING TO MEET OR EXCEED CATEGORY 6 STANDARDS. CATEGORY 6A FOR WIRELESS ACCESS POINTS.
F. TELECOMMUNICATIONS OUTLETS TO BE MOUNTED AT +18" A.F.F. (BOTTOM OF BOX) UNLESS OTHERWISE NOTED. FOR EXAMPLE, DEVICES SPECIFIED AT +18" A.F.F. SHALL MATCH THE STANDARD MOUNTING HEIGHT FOR POWER RECEPTACLES AND TELECOMMUNICATIONS OUTLETS. DEVICES SPECIFIED AT + 48" A.F.F. SHALL MATCH THE STANDARD MOUNTING HEIGHT FOR LIGHT SWITCHES ETC.
G. ALL CONDUITS FOR TELECOMMUNICATIONS OUTLETS SHALL BE STEEL, THINWALL ELECTRICAL METALLIC TUBING (TYPE EMT) UNLESS OTHERWISE NOTED. UNDER NO CIRCUMSTANCES SHALL FLEXIBLE CONDUIT BE USED FOR PATHWAYS INDICATED ON THIS SHEET. ALL CONDUITS ARE TO BE, AT A MINIMUM, 1" TRADE SIZE, UNLESS OTHERWISE NOTED. ALL CONDUITS FOR TELECOMMUNICATIONS OUTLETS ARE TO BE STUBBED TO NEAREST CABLE TRAY. CONTRACTOR IS TO ENSURE THAT NO CONDUIT EXCEEDS 40% FILL.
H. CABLE TRAY SYSTEMS SHOWN ON THIS SHEET SHALL BE USED FOR VOICE AND DATA CABLING ONLY. ALL OTHER SYSTEMS INCLUDING, BUT NOT LIMITED TO, FIRE ALARM, SECURITY, HVAC CONTROL, ETC. SHALL BE SUPPORTED BY OTHER MEANS. J-HOOKS ATTACHED TO THE CABLE TRAY SUPPORTS WILL BE PERMITTED. LIKEWISE, ANY CONDUITS PROVIDED FOR VOICE AND DATA CABLING IS NOT TO BE USED BY ANY OTHER SYSTEM, HENCE, SEPARATE CONDUITS MAY NEED TO BE PROVIDED FOR THE SUPPORT OF THESE SYSTEMS.
I. NUMBER ADJACENT TO TELECOMMUNICATIONS OUTLET SYMBOL REPRESENTS NUMBER OF CATEGORY 6 CABLES TO BE INSTALLED AND TERMINATED AT THAT LOCATION. A "B" ADJACENT TO AN OUTLET LOCATION REPRESENTS A ROUGH-IN ONLY LOCATION, PROVIDE BOX, CONDUIT, AND BLANK FACEPLATE.
J. ALL CONDUIT TURNS FOR A/V AND IT CONDUITS SHALL BE "SWEEP" TYPE, NO BEND FITTINGS ARE PERMITTED.
K. ALL CONDUIT PATHWAYS SHALL BE PROVIDED WITH NYLON BUSHINGS TO PROTECT CABLES, REGARDLESS OF WHETHER THEY TERMINATE IN A DEVICE OR JUNCTION BOX.
L. CONTRACTOR TO VERIFY ALL CABLE COUNTS AND NUMBER OF PATCH PANELS REQUIRED.
M. GROUP DATA OUTLETS TOGETHER WITH POWER OUTLETS (WHERE APPLICABLE). REFER TO "EP" SERIES SHEETS FOR POWER OUTLET LOCATIONS.
N. COORDINATE WITH FLOOR AND FURNITURE CONTRACTORS FOR PATHWAYS FOR VOICE/DATA OUTLETS FOR MODULAR FURNITURE SYSTEMS.
O. DURING VOICE/DATA CABLE INSTALLATION, PROPER COORDINATION AND CARE SHALL BE TAKEN TO ENSURE CABLING DOES NOT GET PAINTED, TEXTURED OR OTHERWISE CONTAMINATED. PER MANUFACTURERS INSTALLATION GUIDELINES.
P. ANY ON-GRADE FLOOR BOX APPLICATIONS, CONTRACTOR SHALL INSTALL "WET-RATED"CABLE, AS PER NEC 2014 ARTICLE 100. CONTRACTOR TO TRANSITION FROM "WET-RATED" CABLE TO "PLENUM" RATED CABLE AS PER BICSI AND TIA GUIDELINES AND INDUSTRY BEST PRACTICES.
Q. IN AREAS OF ANIMAL HOLDING/HOUSING ALL DEVICE RECEPTACLES TO BE MOUNTED +48" AFF AND PROVIDE IN-USE COVERS.

KEYNOTES

T01 STANDARD TELECOMMUNICATIONS OUTLET. PROVIDE STANDARD 4-11/16" SQ BOX AND MUD RING WITH 1" EMT TO ACCESSIBLE CEILING SPACE OR CABLE TRAY. PROVIDE CATEGORY 6 CABLES. TERMINATED ON FACEPLATE. QUANTITY AS SHOWN. REFER TO TECHNOLOGY DETAILS ON T500 SERIES OF SHEETS FOR MORE INFORMATION.

T02 TELECOMMUNICATIONS BISCUIT STYLE OUTLET LOCATED ABOVE ACCESSIBLE CEILING. PROVIDE CATEGORY 6A FOR WIRELESS ACCESS POINTS AND CATEGORY 6 FOR ALL OTHER DEVICES UNLESS NOTED OTHERWISE. QUANTITY OF CABLING AS NOTED ON PLANS.

T04 1-1/4" EMT CONDUIT SLEEVE THROUGH WALL ABOVE CEILING GRID FOR HORIZONTAL VOICE/DATA CABLING, QUANTITY AS SHOWN. PROVIDE PLASTIC BUSHINGS ON BOTH ENDS TO PROTECT CABLES.

T05 2" EMT CONDUIT THROUGH WALL ABOVE CEILING GRID FOR HORIZONTAL VOICE/DATA CABLING, QUANTITY AS SHOWN. PROVIDE PLASTIC BUSHINGS ON BOTH ENDS TO PROTECT CABLES.

T06 4" EMT CONDUIT ABOVE CEILING FOR HORIZONTAL VOICE/DATA CABLING, QUANTITY AS SHOWN. PROVIDE PLASTIC BUSHINGS ON BOTH ENDS TO PROTECT CABLES.

T07 J-HOOK PATH. PROVIDE PROPERLY SIZED AND QUANTITY TO SPAN NO MORE THAN 5FT. REFER TO SPECIFICATIONS SECTION 27 0528 FOR ADDITIONAL REQUIREMENTS. J-HOOKS SHALL BE ATTACHED TO STRUCTURE. PROVIDE AS NEEDED

T08 12" X 2" WIRE BASKET STYLE CABLE TRAY FOR HORIZONTAL TELECOMMUNICATIONS CABLING. MOUNT CABLE TRAY 6" ABOVE LAY-IN CEILING, 12" ABOVE CABLE TRAY AND 6" ON AT LEAST ONE SIDE OF TRAY (ACCESSIBLE SIDE). COORDINATE WITH ALL OTHER TRADES PRIOR TO COMMENCEMENT OF WORK. REFER TO DETAILS ON T-501 AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

T10 WIRELESS ACCESS POINT LOCATION. PROVIDE A CLEAR LABEL FOR LOCATION OF WIRELESS ACCESS POINT ON ACCESSIBLE CEILING TILE OR WALL NEAR ACCESSIBLE CEILING TILE. WIRELESS ACCESS POINT HARDWARE PROVIDED AND INSTALLED BY OWNER.

T11 HARD-LID CEILING AND/OR NON-ACCESSIBLE CEILING LOCATION. EXTEND CONDUITS FROM DEVICE BACK BOXES DIRECTLY TO ACCESSIBLE CEILING OR CABLE TRAY.

T15 ROUGH-IN FOR FUTURE SYSTEM CABLING. PROVIDE STANDARD 4-11/16" SQ BOX AND 1- GANG MUD RING WITH 1" EMT TO ACCESSIBLE CEILING SPACE OR CABLE TRAY. PROVIDE A BLANK FACEPLATE WITH LABEL INDICATING RESERVED FOR FUTURE ALARM CABLING.

T16 COORDINATE FINAL CONFIGURATION OF WALL PENETRATION OF CONDUIT SLEEVES TO PH. 2 COMMUNICATIONS CABLING FOR BACKBONE CABLING. EXTEND CONDUIT SLEEVES AS NEEDED TO CABLE TRAY, IF TRAY CANNOT MEET UP FLUSH TO WALL.

T28 ROUGH-IN FOR EXTERIOR SURVEILLANCE CAMERA. PROVIDE (1) CATEGORY 6 CABLE FROM ADJACENT TELECOM OUTLET, TERMINATED WITH MALE RJ-45 MODULAR CONNECTORS, WITH MINIMUM 10' SLACK LOCATED ABOVE CEILING. REFER TO DETAILS ON SHEET T-503 FOR ROUGH-IN REQUIREMENTS. CAMERA AND MOUNT BY OWNER. REFER TO DIVISION 28 SPECIFICATION FOR ADDITIONAL ROUGH-IN REQUIREMENTS. HEIGHT AS INDICATED ON SHEET.

T29 ROUGH-IN FOR INTERIOR SECURITY CAMERA. PROVIDE (1) CATEGORY 6 CABLE FROM ADJACENT TELECOM OUTLET, TERMINATED WITH MALE RJ-45 MODULAR CONNECTORS, WITH MINIMUM 10' SLACK. REFER TO DETAILS ON SHEET T-503 FOR ROUGH-IN REQUIREMENTS. CAMERA AND MOUNT BY OWNER. REFER TO DIVISION 28 SPECIFICATION FOR ADDITIONAL ROUGH-IN REQUIREMENTS. HEIGHT AS INDICATED ON SHEET WHERE APPLICABLE. COORDINATE FINAL LOCATION WITH ELECTRICAL FOR LIGHTING INTERFERENCE. REFER TO DIVISION 28 SPECIFICATIONS FOR ADDITIONAL ROUGH-IN REQUIREMENTS.

T31 PROVIDE EZ PATH SERIES 44+ AS MFG BY STI. PROVIDE AS NOTED ON PLANS AND ENLARGED PLANS. INSTALL PER MANUFACTURER INSTRUCTIONS FOR MULTI-GANG WALL INSTALLATIONS.

T35 ACCESS CONTROL DEVICE. NEW LOCATION AS PART OF PHASE 3 WORK. REFER TO DETAILS ON SHEET T-503 FOR ROUGH-IN AND CABLING REQUIREMENTS AS WELL AS SECTION 28 1300. COORDINATE WITH ARCHITECTURAL DOOR SCHEDULE AND DOOR HARDWARE SPECIFICATION. REFER TO GENERAL NOTE "N" FOR ADDITIONAL INFORMATION. IF TAGGED WITH "R/I" LOCATION WILL BE ROUGH-IN ONLY.

T36 DOOR STATUS SENSOR. REFER TO DOOR HARDWARE DETAILS ON SHEET T-503, DIVISION 28, AND ARCHITECTURAL DOOR HARDWARE SCHEDULE FOR ADDITIONAL REQUIREMENTS. REFER TO GENERAL NOTE "N" FOR ADDITIONAL INFORMATION. IF TAGGED WITH "R/I" LOCATION WILL BE ROUGH-IN ONLY.

T58 GLASS BREAK SENSOR LOCATION. REFER TO SPECIFICATION SECTION 281600 FOR REQUIREMENTS.

T59 MOTION DETECTOR LOCATION. REFER TO SPECIFICATION SECTION 281600 FOR REQUIREMENTS.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

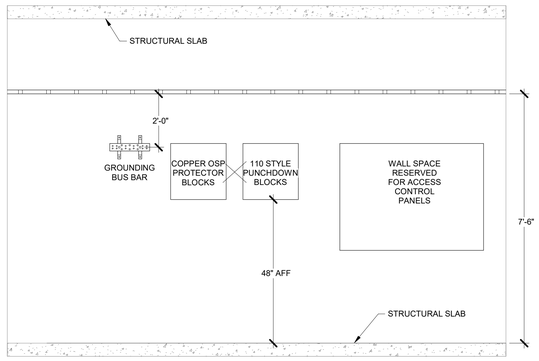
SHEET TITLE

TECHNOLOGY SYSTEMS FLOOR PLAN

T-101

Bridgers & Paxton Project No: 8678 11/30/2023 12:54:29 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_SDRush.rvt

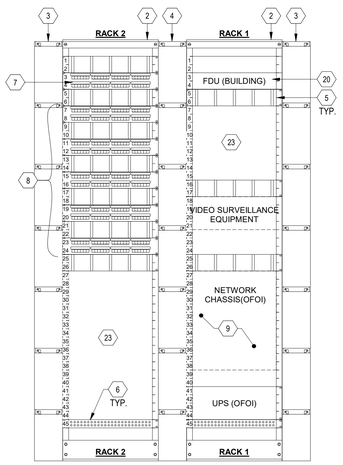
Biomedical Research Building Expansion



C2 TELE ELEV - ER/TR WALL ELEVATION

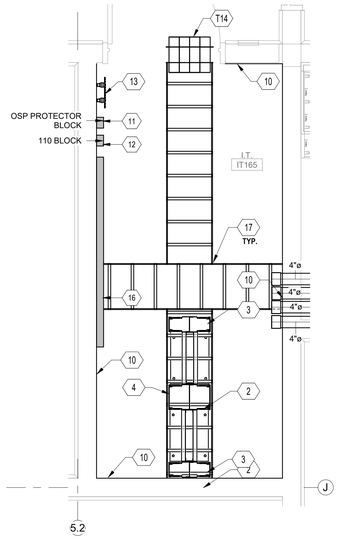
SCALE: NO SCALE

NOTE:
PRIOR TO COMMENCING WORK, COORDINATE WITH NMSU IT DEPT AND NMSU DIV. 27 STANDARDS FOR SPECIFIC RACK CONFIGURATION AND PLACEMENT OF OFOI EQUIPMENT.



A2 TELE ELEV - ER/TR RACK ELEVATION

SCALE: NO SCALE



A4 ENLARGED TECHNOLOGY FLOOR PLAN - IT #165

SCALE: 1/2" = 1'-0"

GENERAL NOTES

A. PROPERLY FIRE STOP AND SEAL ALL PENETRATIONS THROUGH WALLS, FLOORS, CEILINGS, AND ROOF AS PER OWNER, CODE, AND AHJ.
B. PRIOR TO INSTALLATION OF CABLE TRAY COORDINATE LOCATIONS WITH ALL OTHER TRADES.
C. NOT ALL PARTS AND PIECES ARE SHOWN FOR A COMPLETE SYSTEM. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE END-TO-END WARRANTED SOLUTION FOR THE HORIZONTAL CABLING.
D. ALL CABLING TO BE PLENUM RATED THROUGHOUT THE BUILDING.
E. ALL COMMUNICATIONS CABLING TO MEET OR EXCEED CATEGORY 6 STANDARDS.
F. TELECOMMUNICATIONS OUTLETS TO BE MOUNTED AT +18" A.F.F. (BOTTOM OF BOX) UNLESS OTHERWISE NOTED. FOR EXAMPLE, DEVICES SPECIFIED AT +18" A.F.F. SHALL MATCH THE STANDARD MOUNTING HEIGHT FOR POWER RECEPTACLES AND TELECOMMUNICATIONS OUTLETS. DEVICES SPECIFIED AT + 48" A.F.F. SHALL MATCH THE STANDARD MOUNTING HEIGHT FOR LIGHT SWITCHES ETC.
G. ALL CONDUITS FOR TELECOMMUNICATIONS OUTLETS SHALL BE STEEL, THINWALL ELECTRICAL METALLIC TUBING (TYPE EMT) UNLESS OTHERWISE NOTED. UNDER NO CIRCUMSTANCES SHALL FLEXIBLE CONDUIT BE USED FOR PATHWAYS INDICATED ON THIS SHEET. ALL CONDUITS ARE TO BE, AT A MINIMUM, 1" TRADE SIZE, UNLESS OTHERWISE NOTED. ALL CONDUITS FOR TELECOMMUNICATIONS OUTLETS ARE TO BE STUBBED TO NEAREST CABLE TRAY. CONTRACTOR IS TO ENSURE THAT NO CONDUIT EXCEEDS 40% FILL.
H. CABLE TRAY SYSTEMS SHOWN ON THIS SHEET SHALL BE USED FOR VOICE AND DATA CABLING ONLY. ALL OTHER SYSTEMS INCLUDING, BUT NOT LIMITED TO, FIRE ALARM, SECURITY, HVAC CONTROL, ETC. SHALL BE SUPPORTED BY OTHER MEANS. J-HOOKS ATTACHED TO THE CABLE TRAY SUPPORTS WILL BE PERMITTED. LIKEWISE, ANY CONDUITS PROVIDED FOR VOICE AND DATA CABLING IS NOT TO BE USED BY ANY OTHER SYSTEM, HENCE, SEPARATE CONDUITS MAY NEED TO BE PROVIDED FOR THE SUPPORT OF THESE SYSTEMS.
I. NUMBER ADJACENT TO TELECOMMUNICAITONS OUTLET SYMBOL REPRESENTS NUMBER OF CATEGORY 6 CABLES TO BE INSTALLED AND TERMINATED AT THAT LOCATION. A "P" ADJACENT TO AN OUTLET LOCATION REPRESENTS A ROUGH-IN ONLY LOCATION, PROVIDE BOX, CONDUIT, AND BLANK FACEPLATE.
J. ALL CONDUIT TURNS FOR A/V AND IT CONDUITS SHALL BE "SWEEP" TYPE, NO BEND FITTINGS ARE PERMITTED.
K. ALL CONDUIT PATHWAYS SHALL BE PROVIDED WITH NYLON BUSHINGS TO PROTECT CABLES, REGARDLESS OF WHETHER THEY TERMINATE IN A DEVICE OR JUNCTION BOX.
L. CONTRACTOR TO VERIFY ALL CABLE COUNTS AND NUMBER OF PATCH PANELS REQUIRED.
M. GROUP DATA OUTLETS TOGETHER WITH POWER OUTLETS (WHERE APPLICABLE). REFER TO "EP" SERIES SHEETS FOR POWER OUTLET LOCATIONS.
N. COORDINATE WITH FLOOR AND FURNITURE CONTRACTORS FOR PATHWAYS FOR VOICE/DATA OUTLETS FOR MODULAR FURNITURE SYSTEMS.
O. DURING VOICE/DATA CABLE INSTALLATION, PROPER COORDINATION AND CARE SHALL BE TAKEN TO ENSURE CABLING DOES NOT GET PAINTED, TEXTURED OR OTHERWISE CONTAMINATED. PER MANUFACTURERS INSTALLATION GUIDELINES.
P. ANY ON-GRADE FLOOR BOX APPLICATIONS, CONTRACTOR SHALL INSTALL "WET-RATED"CABLE, AS PER NEC 2014 ARTICLE 100. CONTRACTOR TO TRANSITION FROM "WET-RATED" CABLE TO "PLENUM" RATED CABLE AS PER BICSI AND TIA GUIDELINES AND INDUSTRY BEST PRACTICES..

KEYNOTES

1. 4 POST 84" TALL QUADRARACK TELECOMMUNICATIONS EQUIPMENT RACK. CPI# 50120-703.
2. 2 POST 84" TALL UNIVERSAL TELECOMMUNICATIONS EQUIPMENT RACK. CPI# 46353-703.
3. 6" WIDE VERTICAL WIRE MANAGERS. CPI #35523-703.
4. 10" WIDE VERTICAL WIRE MANAGERS. CPI #35573-703.
5. HORIZONTAL WIRE MANAGEMENT
6. GROUND BUS BAR MOUNTED TO RACK.
7. 48 PORT VOICE GRADE PATCH PANEL WITH 50 PAIR COPPER TO 110 BLOCK ON WALL.
8. 48 PORT CATEGORY 6 DATA PATCH PANEL.
9. OWNER FURNISHED, OWNER INSTALLED ACTIVE NETWORK EQUIPMENT.
10. 3/4" AC GRADE FIRE RESISTANT PLYWOOD WITH 2 COATS OF FIRE RESISTANT PAINT ON ALL WALLS. LEAVE WINDOW WITH GRADE STAMP UNPAINTED.
11. COPPER OSP PROTECTOR BLOCK ON WALL.
12. 25 PAIR 110 STYLE PUNCHDOWN BLOCK ON WALL.
13. TELECOMMUNICATIONS GROUND BUS BAR MOUNTED 24" BELOW CABLE TRAY.
14. 4" FIRE-RATED CONDUIT PATHWAY. PROVIDE QUANTITY OF TWO (2), STACKED ON WALL. BASIS OF DESIGN EZ PATH 44+ 4 CELL AS MFG BY STI.
15. (3) 4" UNDERGROUND CONDUIT PATHWAY. REFER TO SITE PLAN TS101 FOR ADDITIONAL INFORMATION.
16. WALL SPACE RESERVED FOR WALL MOUNTED ACCESS CONTROL PANELS.
17. 18" LADDER STYLE CABLE TRAY MOUNTED 6" ABOVE TELECOM RACKS
18. 18" LADDER STYLE CABLE TRAY, MOUNTED VERTICALLY ON WALL.
19. RACK MOUNTED FIBER DISTRIBUTION UNIT FROM CAMPUS BACKBONE FIBER
20. RACK MOUNTED FIBER DISTRIBUTION UNIT FOR BUILDING CONNECTIVITY.
21. SPACE RESERVED FOR INTRUSION PANEL.
22. WALL MOUNT HVAC UNIT. REFER TO MECHANICAL SHEETS FOR INFORMATION.
23. RESERVED FOR FUTURE USE.

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

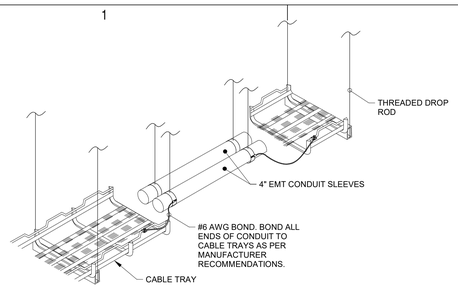
DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

ENLARGED TECHNOLOGY PLANS

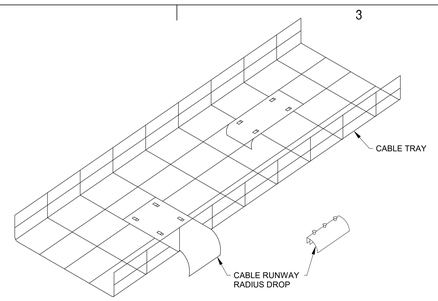
T-401

Bridgers & Paxton Project No: 8678 11/30/2023 12:45:24 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_SDR.sch.rvt
Biomedical Research Building Expansion



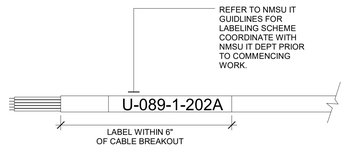
E1 CABLE TRAY / CONDUIT SLEEVE BONDING AND GROUNDING

SCALE: NOT TO SCALE



E2 TELECOMMUNICATIONS CABLE TRAY RUNWAY RADIUS DROP

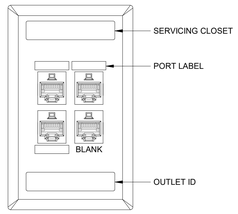
SCALE: NOT TO SCALE



E5 TYPICAL CABLE IDENTIFICATION SCHEME

SCALE: NOT TO SCALE

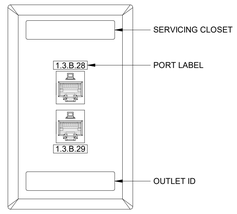
NOTE:
REFER TO NMSU DIVISION 27 STANDARDS FOR LABELING SCHEMATICS. COORDIANTE DIRECTLY WITH NMSU IT DEPT PRIOR TO COMMENCING WORK.



D1 STANDARD TELECOM OUTLET IDENTIFICATION SCHEME (TYPICAL)

SCALE: NOT TO SCALE

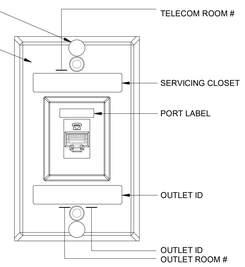
NOTE:
REFER TO NMSU DIVISION 27 STANDARDS FOR LABELING SCHEMATICS. COORDIANTE DIRECTLY WITH NMSU IT DEPT PRIOR TO COMMENCING WORK.



D2 CEILING TELECOM OUTLET IDENTIFICATION SCHEME (TYPICAL)

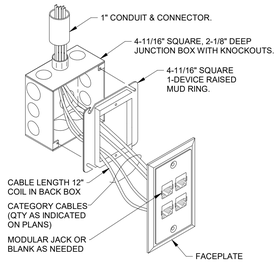
SCALE: NOT TO SCALE

NOTE:
REFER TO NMSU DIVISION 27 STANDARDS FOR LABELING SCHEMATICS. COORDIANTE DIRECTLY WITH NMSU IT DEPT PRIOR TO COMMENCING WORK.



D3 STANDARD WALL PHONE OUTLET IDENTIFICATION SCHEME (TYPICAL)

SCALE: NOT TO SCALE



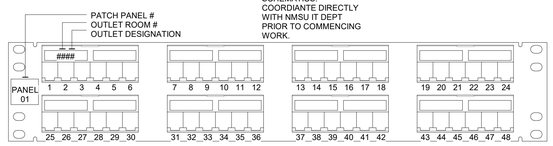
D4 TELECOMMUNICATIONS OUTLET BOX DETAILS (TYPICAL)

SCALE: NOT TO SCALE

D5 TELECOMMUNICATIONS CONDUIT IDENTIFICATION SCHEME

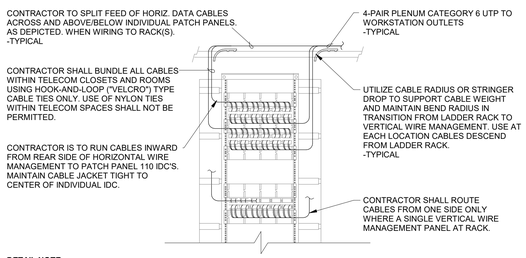
SCALE: NOT TO SCALE

NOTE:
REFER TO NMSU DIVISION 27 STANDARDS FOR LABELING SCHEMATICS. COORDIANTE DIRECTLY WITH NMSU IT DEPT PRIOR TO COMMENCING WORK.



C1 PATCH PANEL LABELING (TYPICAL)

SCALE: NOT TO SCALE

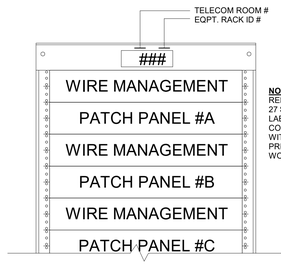


DETAIL NOTE:

A CONTRACTOR REQUEST TO VARY FROM METHODOLOGIES ILLUSTRATED ABOVE MUST BE SUBMITTED IN WRITING FOR TELECOMMUNICATIONS ENGINEER'S APPROVAL. REQUEST MUST BE ACCOMPANIED BY LEGIBLE, DETAILED ILLUSTRATION AND PHOTO(S) OF PAST PROJECTS DEPICTING METHODOLOGY REQUESTED. NO DEVIATIONS ACCEPTED WITHOUT ENGINEER'S WRITTEN APPROVAL.

B2 TYPICAL TELECOMMUNICATION RACK WIRING METHODOLOGY REAR ELEV.

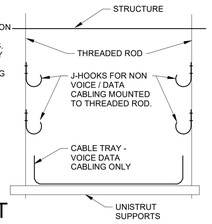
SCALE: NOT TO SCALE



B3 TELECOMMUNICATIONS EQUIPMENT RACK IDENTIFICATION SCHEME

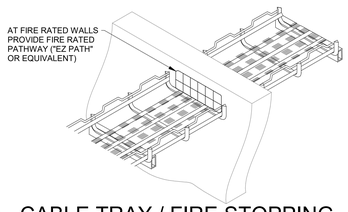
SCALE: NOT TO SCALE

NOTE:
REFER TO NMSU DIVISION 27 STANDARDS FOR LABELING SCHEMATICS. COORDIANTE DIRECTLY WITH NMSU IT DEPT PRIOR TO COMMENCING WORK.



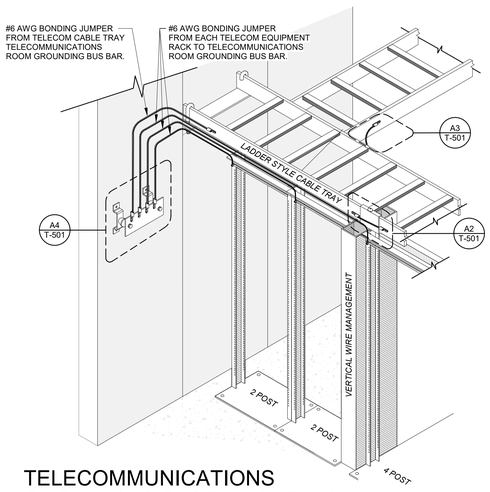
B4 CABLE TRAY DETAIL

SCALE: NOT TO SCALE



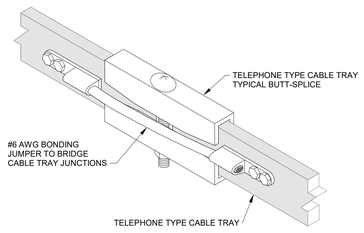
B6 CABLE TRAY / FIRE STOPPING

SCALE: NOT TO SCALE



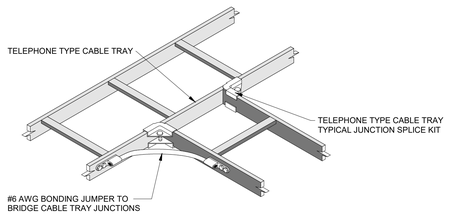
A1 TELECOMMUNICATIONS GROUNDING SYSTEM OVERVIEW

SCALE: NOT TO SCALE



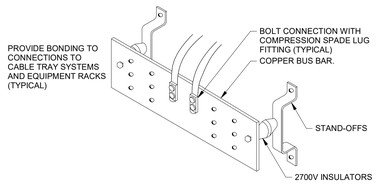
A2 TYPICAL CABLE TRAY GROUNDING DETAILS

SCALE: NOT TO SCALE



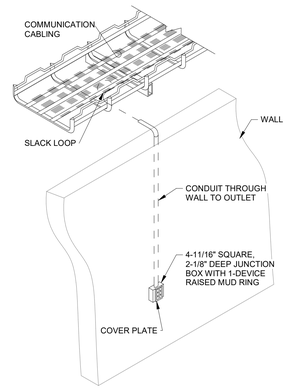
A3 TYPICAL CABLE TRAY JUNCTION GROUNDING DETAILS

SCALE: NOT TO SCALE



A4 TELECOMMUNICATIONS GROUNDING BUS BAR (TYPICAL)

SCALE: NOT TO SCALE



A6 TELECOMMUNICATIONS OUTLET CONDUIT ROUTING

SCALE: NOT TO SCALE

fbt | architects

MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NMSU STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

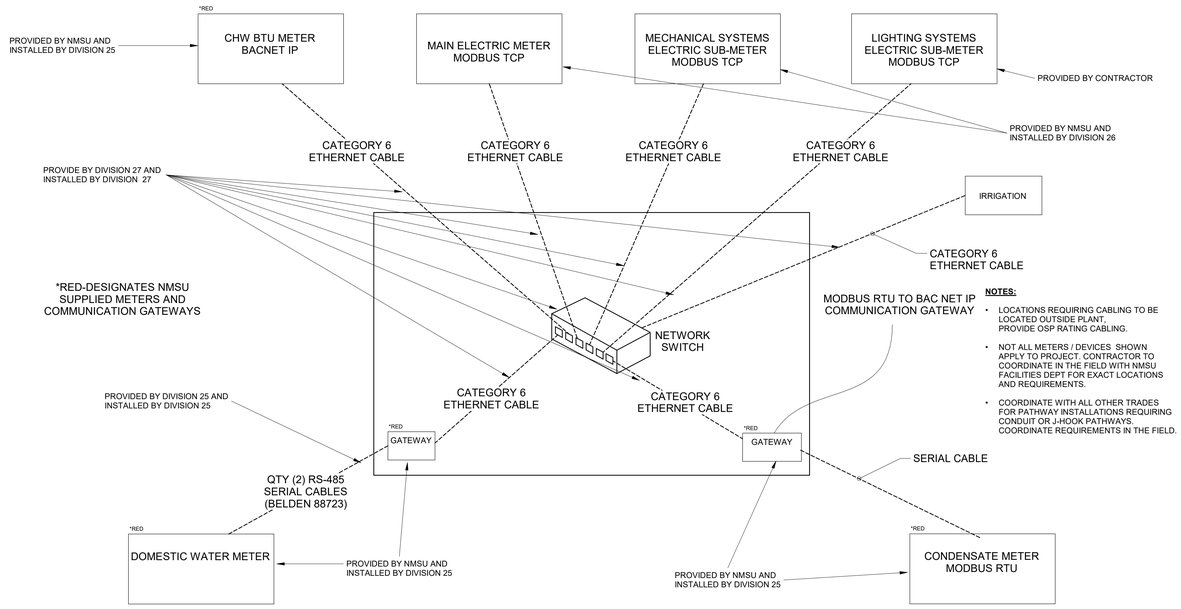
DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

TECHNOLOGY DETAILS

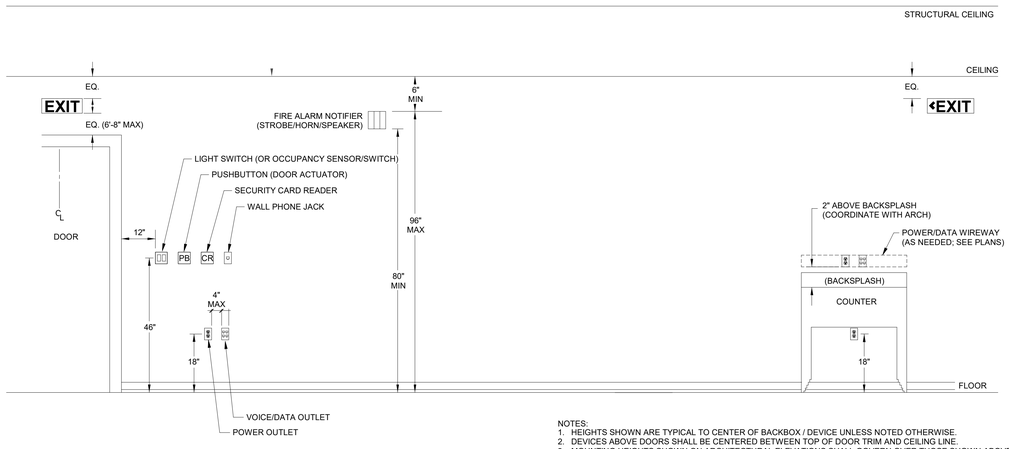
T-501

Bridgers & Paxton Project No: 8678
11/30/2023 12:45:27 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_SDRush.rvt
Biomedical Research Building Expansion



B3 DATA METERING DETAIL

SCALE: NOT TO SCALE



NOTES:
1. HEIGHTS SHOWN ARE TYPICAL TO CENTER OF BACKBOX / DEVICE UNLESS NOTED OTHERWISE.
2. DEVICES ABOVE DOORS SHALL BE CENTERED BETWEEN TOP OF DOOR TRIM AND CEILING LINE.
3. MOUNTING HEIGHTS SHOWN ON ARCHITECTURAL ELEVATIONS SHALL GOVERN OVER THOSE SHOWN ABOVE.
4. NOT ALL ITEMS SHOWN APPLY TO PROJECT.

A4 ELECTRICAL COMPONENT MOUNTING HEIGHTS

SCALE: NOT TO SCALE

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

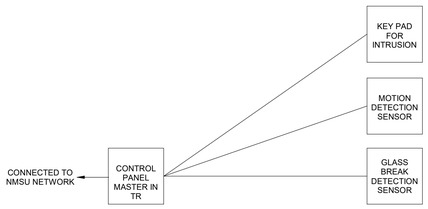
SHEET TITLE

TECHNOLOGY DETAILS

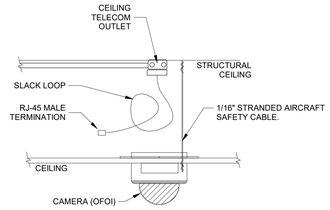
T-502

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678
11/30/2023 12:45:28 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_SDRuth.rvt

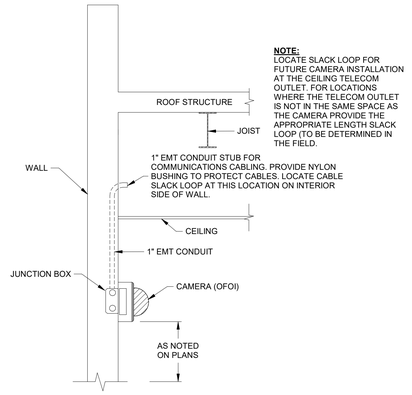


D1 TYPICAL INTRUSION DIAGRAM
SCALE: NOT TO SCALE

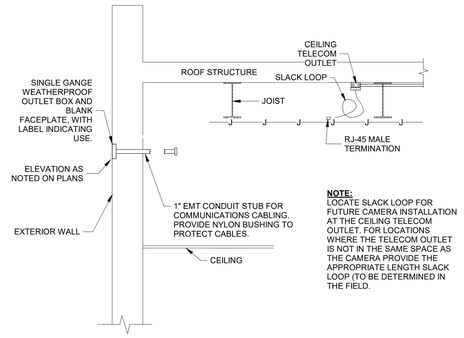


NOTE: 1. AVOID OBSTACLES SUCH AS MECHANICAL DUCTWORK, PIPING, CABLE TRAYS ETC. COORDINATE WITH OTHER TRADES

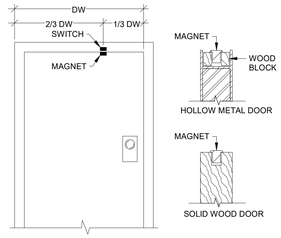
D3 CAMERA INTERIOR LAY-IN CEILING MOUNTING DETAIL
SCALE: NOT TO SCALE



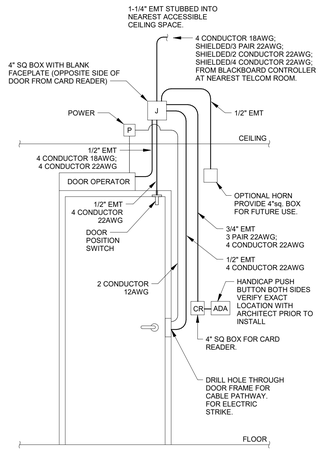
D4 CAMERA INTERIOR WALL MOUNTING DETAIL
SCALE: NOT TO SCALE



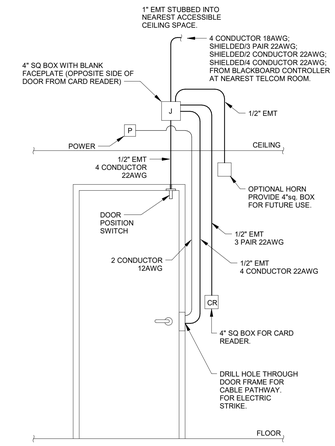
D5 CAMERA EXTERIOR WALL MOUNTING DETAIL
SCALE: NOT TO SCALE



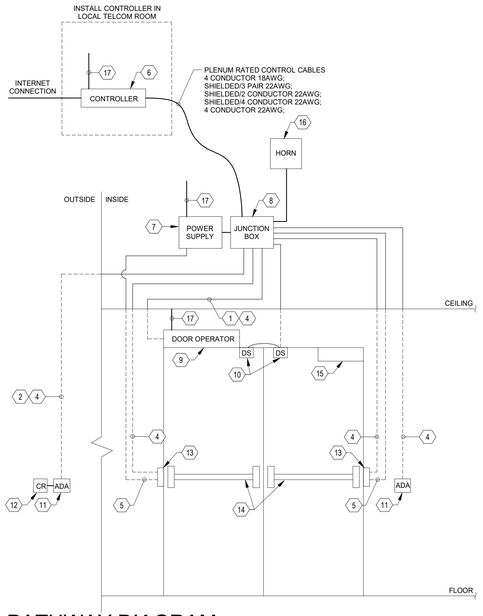
C3 SECURITY ALARM SYSTEM: DOOR SWITCHES
SCALE: NOT TO SCALE



C5 DOOR ROUGH-IN: ADA CONTROLLED ACCESS ENTRY - DETAIL A
SCALE: NOT TO SCALE

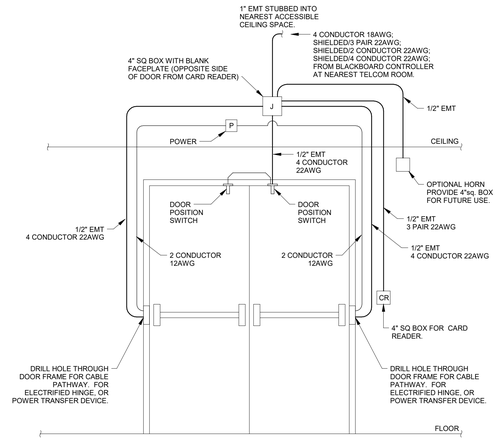


C6 DOOR ROUGH-IN: CONTROLLED ACCESS ENTRY - DETAIL C
SCALE: NOT TO SCALE

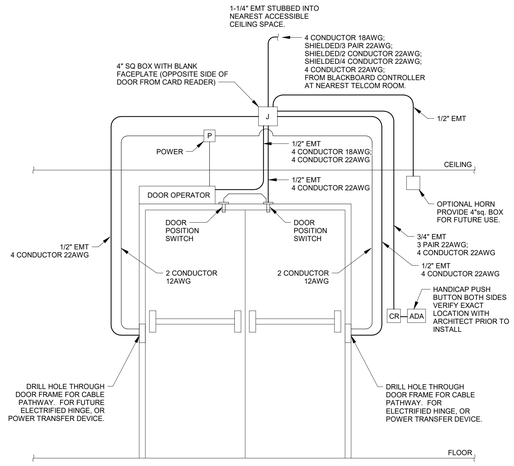


KEYED NOTES
1. 4 CONDUCTOR 18AWG
2. 3 PAIR 22AWG
3. 2 CONDUCTOR 22AWG
4. 4 CONDUCTOR 22AWG
5. 2 CONDUCTOR 12AWG
6. BLACKBOARD DOOR CONTROLLER WITH ENCLOSURE
7. APPROVED POWER SUPPLY
8. APPROVED JUNCTION BOX
9. APPROVED ADA COMPLIANT SWING OPERATOR
10. APPROVED DOOR POSITION SWITCH
11. APPROVED HC OPERATOR BUTTON
12. BLACKBOARD CARD READER
13. APPROVED POWER TRANSFER
14. APPROVED EXIT DEVICE WITH REQUIRED TRIM
15. APPROVED DOOR CLOSER
16. OPTIONAL HORN. PROVIDE 4"sq. BOX FOR FUTURE USE.
17. 1, 120 VAC, CONNECT TO EMERGENCY POWERED CIRCUIT WHERE AVAILABLE.

A1 DOOR ROUGH-IN: WIRE PATHWAY DIAGRAM
SCALE: NOT TO SCALE



A3 DOOR ROUGH-IN: CONTROLLED ACCESS ENTRY PAIRED DOORS - DETAIL D
SCALE: NOT TO SCALE



A5 DOOR ROUGH-IN: ADA CONTROLLED ACCESS ENTRY PAIRED DOORS - DETAIL B
SCALE: NOT TO SCALE

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

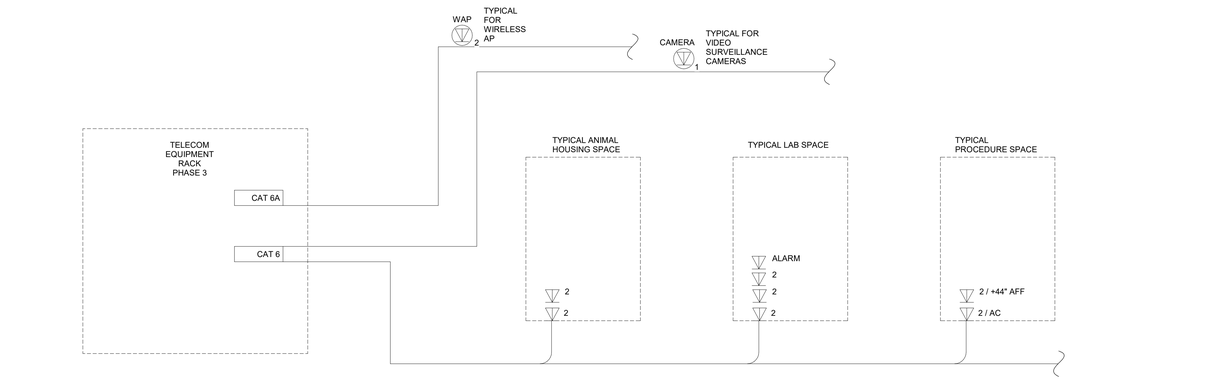
DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE
SECURITY DETAILS

T-503

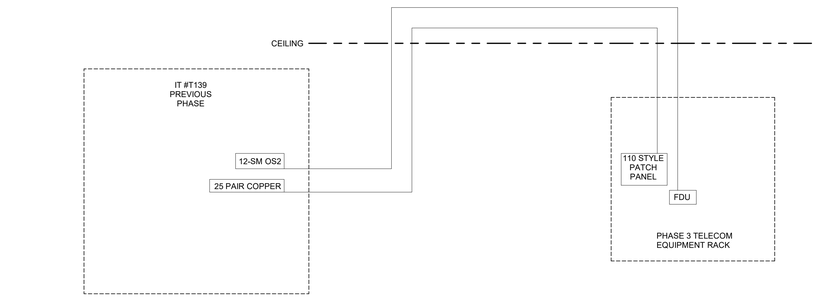
Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 12:45:29 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_SDRush.rvt



B3 PHASE 3 COMMUNICATION - HORIZONTAL CABLING INFRASTRUCTURE RISER

SCALE: NOT TO SCALE



A4 PHASE 3 COMMUNICATION INTRA BUILDING BACKBONE RISER DIAGRAM

SCALE: NOT TO SCALE

fbt | architects
MAIL: 6501 Americas Pkwy NE., Ste. 300, Albuquerque, NM 87110
PHO: 505.883.5200
FAX: 505.884.5390
WEB: www.fbtarch.com

CONSULTANTS

CIVIL
Bohannan Huston
7500 Jefferson St NE
Albuquerque, NM 87109
Phone: 505.823.1000

LANDSCAPE
Groundwork Studio
6501 Americas Pkwy #350
Albuquerque, NM 87110
Phone: 505.212.9126

STRUCTURAL
Walla Engineering
6501 Americas Pkwy #301
Albuquerque, NM 87110
Phone: 505.881.3008

INTERIORS
Studio M
6501 Americas Pkwy #302
Albuquerque, NM 87110
Phone: 505.243.9287

M/E/P/T
Bridgers & Paxton
4600-C, Montgomery Blvd NE
Albuquerque, NM 87110
Phone: 505.883.4111

BRIDGERS & PAXTON
4600 C Montgomery Blvd. NE
Albuquerque, NM 87109 | 505.883.4111 | www.bpce.com

ENGINEER

NM STATE

NMSU Agricultural Modernization: Biomedical Research Building Expansion

95% CONSTRUCTION DOCUMENTS

3020 SOUTH ESPINA STREET
LAS CRUCES, NEW MEXICO 88003
DECEMBER 4, 2023

MARK	DATE	DESCRIPTION

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

TECHNOLOGY DIAGRAMS

T-601

Biomedical Research Building Expansion

Bridgers & Paxton Project No: 8678 11/30/2023 12:45:30 PM D:\Revit 2021\Projects\8678_NMSU Biomedical Research PH 3_MEP_SDRush.rvt