# RENOVATE SUB (ACID) LAB MISSOURI GEOLOGICAL SURVEY (DNR) ROLLA, MO



OWNER: STATE OF MISSOURI

MICHAEL L. PARSON,

GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

PROJECT OFFICE OF ADMINISTRATION MANAGEMENT: DIVISION OF FACILITIES

MANAGEMENT,

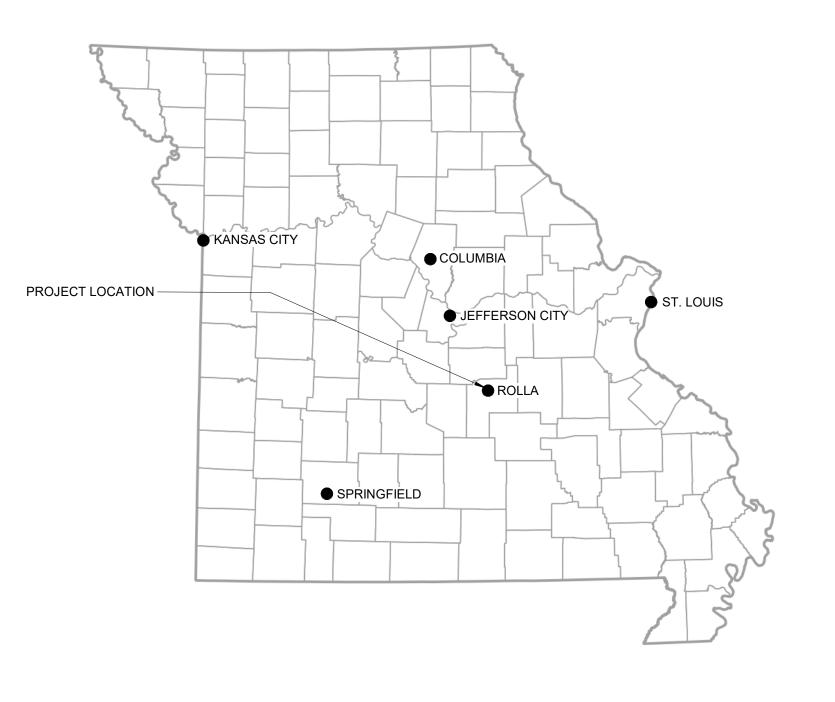
DESIGN AND CONSTRUCTION

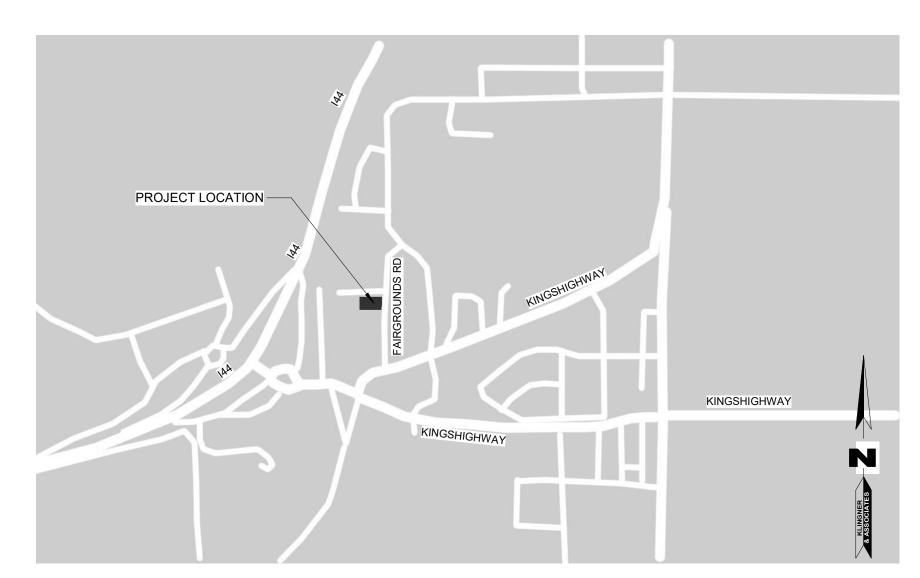
DESIGNER: KLINGNER & ASSOCIATES P.C.

PROJECT NUMBER: W2001-01

SITE NUMBER: 5001 - GEOLOGICAL SURVEY

ASSET NUMBER: 7815001009





#### PROJECT LOCATION MAP NTS

#### **GENERAL NOTES**

- 1. THE CONTRACTOR(S) SHALL FIELD VERIFY EXISTING DIMENSIONS AND CONDITIONS AND TELL THE ARCHITECT OF ANY DISCREPANCIES AND INTERFERENCES ENCOUNTERED PRIOR TO STARTING WORK AFFECTED THEREBY.
- 3. THE CONTRACTOR(S) SHALL BE RESPONSIBLE FOR OSHA COMPLIANCE AND JOB SITE SAFETY.
- CONTRACTOR(S) SHALL VERIFY LOCATIONS OF ALL UTILITIES (TELEPHONE, DATA, GAS, ELECTRIC, SANITARY AND STORM SEWERS, ETC.) AT THE SITE BEFORE STARTING EXCAVATION OR CONSTRUCTION. THESE ITEMS SHALL BE MARKED AND PROTECTED.
- KLINGNER PERFORMED AN ASBESTOS INSPECTION. THE REPORT IS INCLUED WITHIN THE PROJECT MANUAL. ASBESTOS CONTAINING MATERIAL IS NOTED ON THE DRAWINGS AND WILL BE THE CONTRACTORS RESPONSIBLITY TO BE PROPERLY ABATED.
- 6. CONTRACTOR(S) SHALL TAKE PRECAUTIONS NECESSARY TO PROTECT ADJACENT PROPERTY FROM DAMAGE RESULTING FROM CONSTRUCTION OPERATIONS.
- 7. WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION
- 8. ALL WORK SHALL COMPLY WITH APPLICABLE CODES.
- 9. LAB HOOD SYSTEM IS NOT DESIGNED FOR USE WITH PERCHLORIC OR HYDROFLUORIC ACID.

#### GENERAL DEMOLITION NOTES:

- 1. CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING CONSTRUCTION.
- 2. ALL MATERIALS THAT HAVE BEEN DEMOLISHED SHALL BE REMOVED AND DISPOSED OF PROPERLY. NO DEMOLISHED MATERIALS SHALL BE STOCKPILED ON SITE.
- 3. CONTRACTOR IS RESPONSIBLE FOR PROPER ABATEMENT OF ASBESTOUS CONTAINING MATERIALS.
- 4. THE CONTRACTOR SHALL MAKE A PERSONAL INSPECTION OF THE SITE AND INCLUDE ALL WORK REQUIRED BY THE DRAWINGS. NOTIFY THE ARCHITECT IN WRITING OF ANY INCONSISTENCIES IN THE DRAWINGS.
- 5. PROTECT OWNER'S PROPERTY AND PERSONS AT ALL TIMES. THIS INCLUDES ALL ITEMS AND SERVICES NECESSARY TO DEMOLISH OR DISMANTLE AND REMOVE ALL WALLS, EQUIPMENT, PIPING AND APPURTENANCES WHICH WILL INTERFERE WITH NEW CONSTRUCTION. ALL ITEMS TO BE REMOVED SHALL BE COORDINATED WITH NEW CONSTRUCTION.
- 6. ANY ITEMS NOT SHOWN TO BE DEMOLISHED THAT ARE DAMAGED DURING THE COURSE OF DEMOLITION OR CONSTRUCTION SHALL BE REPAIRED/REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S
- 7. COORDINATE ANY SYSTEMS SHUTDOWNS WHICH MAY BE REQUIRED WITH THE OWNER.
- 8. ANY ITEMS NOT TO BE RETAINED BY THE OWNER SHALL BE LEGALLY DISPOSED OF OFF SITE BY THE CONTRACTOR.
- 9. GENERAL CONTRACTOR SHALL PROVIDE & MAINTAIN DUST PROTECTION BETWEEN EXISTING OCCUPIED AREAS AND WORK AREAS.
- 10. EXISTING CONSTRUCTION SHALL BE PROTECTED.
- 11. AT REMOVED WALLS, PATCH AND REPAIR WALLS TO REMAIN WITH SIMILAR MATERIALS

#### **ABBREVATIONS**

A/E ACP ADA AFF AHJ ALT ALUM ANOD APPROX ARCH	ARCHITECT/ENGINEER ACOUSTIC CEILING PANEL AMERICANS WITH DISABILITIES ACT ABOVE FINISHED FLOOR AUTHORITY HAVING JURISDICTION ALTERNATE ALUMINUM ANODIZED APPROXIMATE(LY) ARCHITECT/ARCHITECTURAL AVERAGE	MAX MDF MEP MFGR MIN MINS MIL MO	MAXIMUM MEDIUM DENSITY FIBERBOARD MECHANICAL ELECTRICAL PLUMBING MANUFACTURER MINIMUM MINUTES MILLIMETERS MASONRY OPENING  NOT IN CONTRACT
AVG BLDG BO BOD	BUILDING BOTTOM OF BASIS OF DESIGN	NOM NTS	NUMBER NOMINAL NOT TO SCALE ON CENTER
BOF BTW	BOTTOM OF FOOTING BETWEEN	OCC OFCI OH	OCCUPANCY OWNER FURNISHED CONTRACTOR INSTALLED OPPOSITE HAND
CL CL CJ CG	CORNER GUARD CONSTRUCTION JOINT/CONTROL JOINT CENTERLINE CEILING	OPNG OPP OVHD	OPENING OPPOSITE OVERHEAD
CLR CMU COL CONC	CLEAR CONCRETE MASONRY UNIT COLUMN(S) CONCRETE	PCC PLAM PLY PNT	PORTLAND CEMENT CONCRETE PLASTIC LAMINATE PLYWOOD PAINT
CONFIG CONST CONT CONTR	CONFIGURATION CONSTRUCTION CONTINUOUS CONTRACTOR	POLYISO PREF PREFAB PT	POLYISOCYANURATE PREFINISHED PREFABRICATED PRESSURE TREATED
COORD CORR CPT CT	COORDINATE CORRIDOR CARPET/CARPET TILE CERAMIC TILE	QTY RAD	QUANTITY
CTR DF	CENTER(S)  DRINKING FOUNTAIN	RCP RD REINF	REFLECTED CEILING PLAN ROOF DRAIN REINFORCE(D), REINFORCING
DIA DIM DR DRWR	DIAMETER DIMENSION DOOR DRAWER	REQ RES REV RM	REQUIRED RESILIENT WALL BASE REVISION(S), REVISE(D) ROOM
DS DTL DWG	DOWNSPOUT DETAIL DRAWING	RO RTU SAT	ROUGH OPENING ROOFTOP UNIT SUSPENDED ACOUSTICAL TILE
EA EJ EL EQ	EACH EXPANSION JOINT ELEVATION EQUAL	SCH SCWD SF SGL	SCHEDULE SOLID CORE WOOD DOOR SQUARE FEET SINGLE
ESA EST EXIST EXPAN	EXPOSED STRUCTURE ABOVE ESTIMATE(D) EXISTING EXPANSION	SHGC SHT SIM SEAL	SOLAR HEAT GAIN COEFFICIENT SHEET SIMILAR SEALER, SEALANT
EXT FBO FD	EXTERIOR  FURNISHED BY OWNER  FLOOR DRAIN	SPEC SS SSTL STD	SPECIFICATION(S) SOLID SURFACE STAINLESS STEEL STANDARD
FDC FDN FE FEC	FIRE DEPARTMENT CONNECTION FOUNDATION FIRE EXTINGUISHER FIRE EXTINGUISHER CABINET	STL STOR STRUCT	STEEL STORAGE STRUCTURE(AL)
FF FFE FIN FLR	FINISHED FLOOR FURNITURE FIXTURES & EQUIPMENT FINISHED FLOOR(ING)	T&G TBD TBR TERM	TONGUE & GROOVE TO BE DETERMINED TO BE REMOVED TERMINATION
FRP FTG GA	FIBERGLASS REINFORCED PLASTIC FOOTING GAUGE	TG THK THRU TIG	TEMPERED GLASS THICK THROUGH TEMPERED INSULATING GLASS
GALV GC GEN GWB	GALVANIZED GENERAL CONTRACTOR GENERAL GYPSUM WALL BOARD	TLT TO TPO TYP	TOILET ROOM TOP OF THERMOPLASTIC POLYOLEFIN TYPICAL
GYP HM	GYPSUM HOLLOW METAL	UNO	UNLESS NOTED OTHERWISE
HORIZ HR HVAC	HORIZONTAL HOUR HEATING VENTILATION & AIR CONDITIONING	VCT VERT VEST VIF	VINYL COMPOSITION TILE VERTICAL VESTIBULE VERIFY IN FIELD
IG INT	INSULATING GLAZING INTERIOR	WC WD	WATER CLOSET WOOD
JAN JNT JST LF	JANITOR JOINT JOIST LINEAR FEET	WG WRB WWF	WIRE GLASS WEATHER RESISTIVE BARRIER WELDED WIRE FABRIC

SHEET NUMBER	SHEET NAME
G001	TITLE SHEET
G002	INDEX SHEET
G003	TYPICAL MOUNTING HEIGHTS
G101	CODE PLAN AND REVIEW PLAN
AD101	DEMOLITION FLOOR PLAN
A100	RENOVATION FLOOR PLAN
A101	CEILING AND ROOF PLAN
A200	EXTERIOR ELEVATIONS
A300	BUILDING SECTIONS
A400	ENLARGED TOILET PLAN & ELEVATIONS
A700	FLOOR FINISH PLAN & SCHEDULES
A800	INTERIOR 3D VIEWS
S001	STRUCTURAL NOTES
S201	FRAMING PLAN
S501	STRUCTURAL DETAILS
MEP001	MEP SYMBOLS AND NOTES
MEP101	MEP DEMOLITION PLAN
P101	PLUMBING PLAN
P501	PLUMBING DETAILS
P601	PLUMBING SCHEDULES
M101	HVAC PLAN
M401	HVAC AIRFLOW SCHEMATIC - MAXIMUM
M402	HVAC AIRFLOW SCHEMATIC - MINIMUM
M501	MECHANICAL DETAILS
M601	MECHANICAL SCHEDULES
M701	HVAC CONTROLS SCHEMATICS
E100	ELECTRICAL SITE PLAN
E101	POWER PLAN
E102	LIGHTING PLAN
E601	SCHEDULES & ONE-LINE DIAGRAM

#### STATE OF MISSOURI MICHAEL L. PARSON, **GOVERNOR**



OFFICE OF ADMINISTRATION **DIVISION OF FACILITIES** MANAGEMENT, **DESIGN AND CONSTRUCTION** 

RENOVATE SUB (ACID) LAB

MISSOURI GEOLOGICAL SURVEY (DNR)

### 111 FAIRGROUNDS ROAD **ROLLA, MISSOURI 65401**

PROJECT # W2001-01 SITE# 5001 ASSET# 7815001009

**REVISION:** DATE: REVISION: DATE: **REVISION:** DATE:

ISSUE DATE: 07/27/2022

CAD DWG FILE: G002 DRAWING BY: JRT CHECKED BY: HMC DESIGNED BY: JRT

SHEET TITLE:

INDEX SHEET

SHEET NUMBER:





KLINGINER & A S S O G I A T E S, P. C.

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

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REVISION:
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DRAWING BY: JRT
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DESIGNED BY: JRT

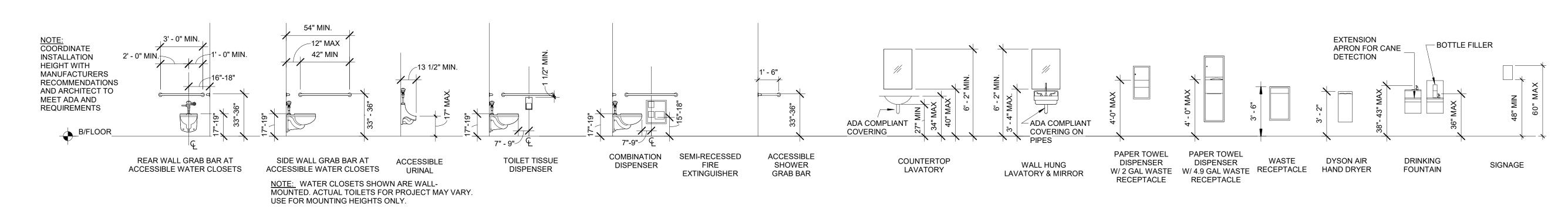
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TYPICAL MOUNTING HEIGHTS

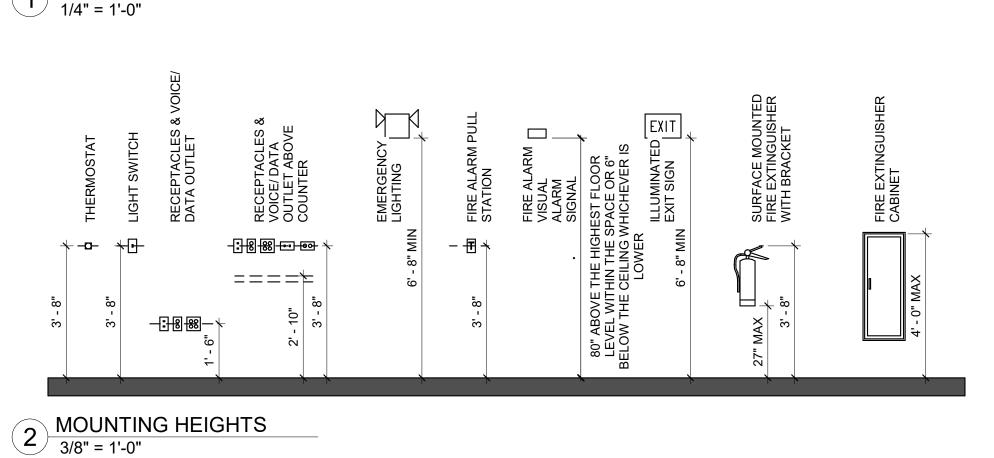
SHEET NUMBER:



3 OF 30 SHEETS 07/27/2022



# 1 ADA MOUNTING HEIGHTS 1/4" = 1'-0"



DIMENSION NOTES

1. WALL LOCATION DIMENSIONS ARE TO FACE OF GWB OR GRIDLINE, U.N.O.

2. FIELD MEASURE AND CONFIRM DIMENSIONS FOR OWNER PROVIDED EQUIPMENT AND FURNISHINGS.

3. MIN. 4" FINISHED FACE OF WALL TO EDGE OF DOOR FRAME, U.N.O.

4' - 6"

4' - 6"

3 MINIMUM DOOR CLEARANCE DIMENSIONS
1/4" = 1'-0"

ROOM#		OCCUPANCY	TABLE 10	04.1.2		# 05	
	ROOM NAME	CLASSIFICATION	FUNCTION OF SPACE	FLOOR AREA PER OCCUPANT	ROOM AREA	# OF OCCUPANTS	COMMENTS
101	ROCK CRUSHING	BUSINESS B	BUSINESS	100 SF	283 SF	2.8	
102	BALL MILL	BUSINESS B	BUSINESS	100 SF		0.5	
104	CONODONT LAB	BUSINESS B	BUSINESS	100 SF	152 SF	1.5	
105	CUTTINGS ROOM	BUSINESS B	BUSINESS	100 SF	451 SF	4.5	
106	TOILET	BUSINESS B	BUSINESS	100 SF	65 SF	0.7	
108	ACID LAB	BUSINESS B	BUSINESS	100 SF	284 SF	2.8	
BUSINESS	В				1285 SF	12.8	
103	INERT STORAGE	STORAGE - LOW HAZARD S-2	BUSINESS	300 SF	100 SF	0.3	
107	INERT STORAGE	STORAGE - LOW HAZARD S-2	BUSINESS	300 SF	185 SF	0.6	
109	ACID STORAGE	STORAGE - LOW HAZARD S-2	BUSINESS	300 SF	62 SF	0.2	
TORAGE	- LOW HAZARD S-2				347 SF	1.2	
MAIN LEVE	iL .				1632 SF	14.0	
GRAND TO	ΤΔΙ				1632 SF	14.0	

#### BUILDING CODE REVIEW INFORMATION

STATE OF MISSOURI JURISDICTION:

APPLICABLE CODES: 2018 INTERNATIONAL EXISTING BUILDING CODE 2018 INTERNATIONAL PLUMBING CODE 2018 INTERNATIONAL MECHANICAL CODE

**BUILDING INFORMATION - 2018 INTERNATIONAL EXISTING BUILDING CODE** 

CHAPTER 3 - PROVISIONS FOR ALL COMPLIANCE METHODS SECTION 305.4 CHANGE OF OCCUPANCY - OCCUPANCY HAS NOT CHANGED

ADA WITH 2010 ADDAG UPDATES

CHAPTER 5 - PRESCRIPTIVE COMPLIANCE METHOD

SECTION 503.1 ALTERATIONS - EXCEPT AS PROVIDED BY SECT. 302.4. AND 302.5, ALTERATIONS SHALL COMPLY W/ THE REQUIREMENTS OF THE I.B.C. -ALL ALTERATIONS WILL COMPLY W/ SECT'S. 302.4, 302.5 & THE 2018 I.B.C.

CHAPTER 6 - CLASSIFICATION OF WORK

SECTION 603 ALTERATION - LEVEL 2 - LEVEL 2 ALTERATIONS INCLUDE THE RECONFIG. OF SPACE, ADDITION OR ELIMIN. OF DOORS/ WINDOWS, RECONFIG. OF ANY SYSTEM, OR THE INSTALLATION OF ANY ADDITIONAL EQUIP. -AS ALL ALTERATIONS ARE CONTAINED IN A WORK AREA THAT OCCUPIES LESS THAN 50% OF BUILDING AREA, THIS PROJECT FALLS UNDER LEVEL 2

**ALTERATIONS** 

CHAPTER 8 - ALTERATIONS - LEVEL 2

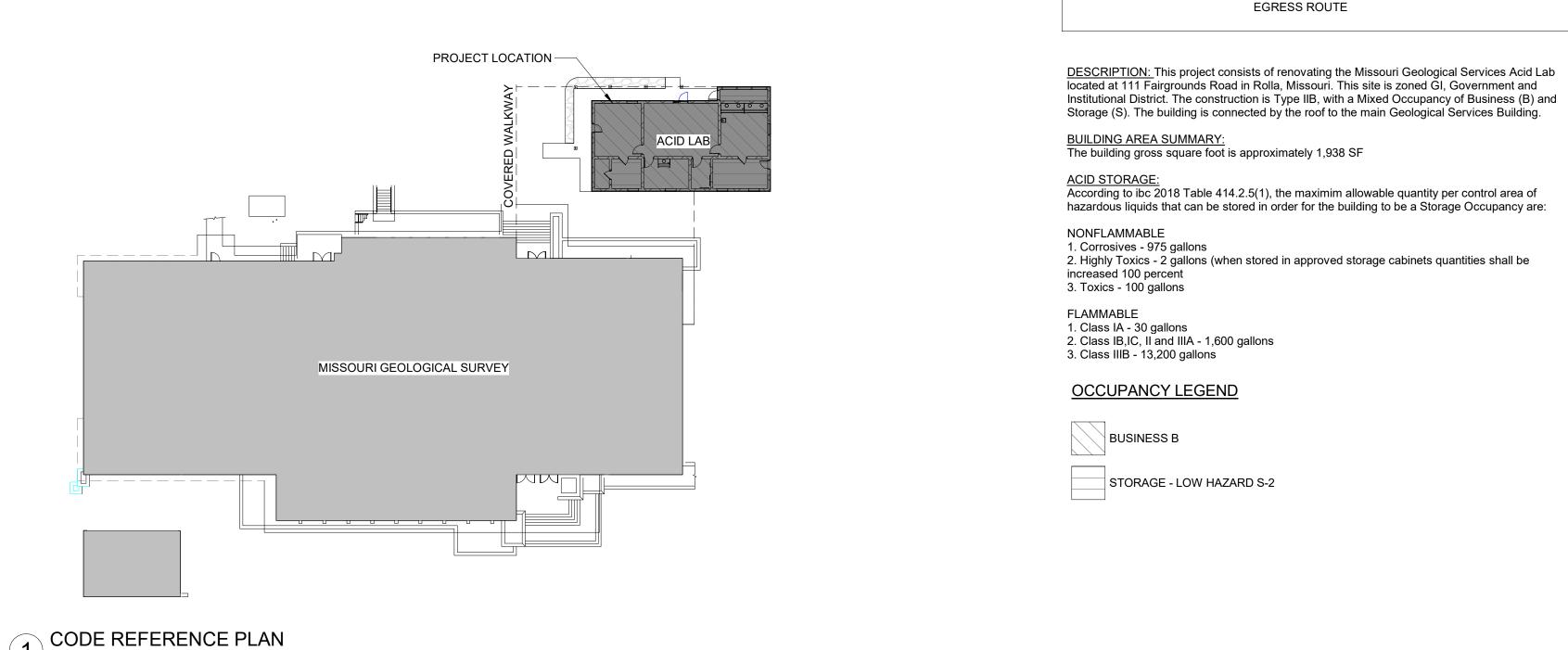
SECTION 805.4.1 TWO EGRESS DOORS REQUIRED WHEN OCCUPANT LOAD GREATER THAN 50 OR IN WHICH THE TRAVEL DISTANCE TO AN EXIT EXCEEDS 75 FEET

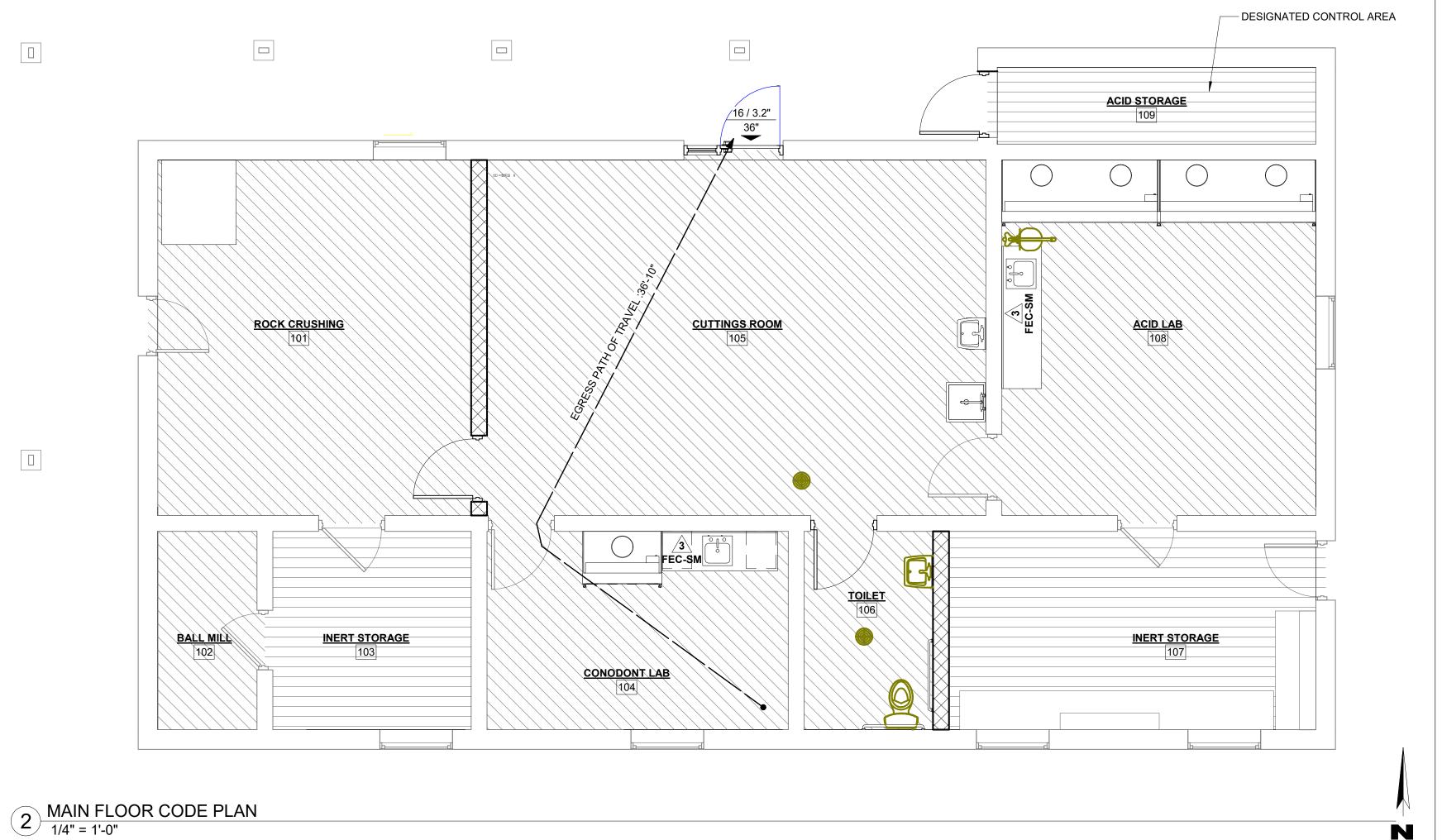
THREE EGRESS DOORS ARE PROVIDED.

SECTION 806.2 EXISTING STRUCTURAL ELEMENTS CARRYING GRAVITY LOADS - WHEN DEAD OR LIVE LOADS ARE INCREASED BY 5%, EXISTING STRUCTURAL ELEMENTS SHALL BE ALTERED AS REQUIRED TO CARRY ADDITIONAL LOAD IN ACCORDANCE WITH

> EXISTING JOISTS ARE BEING STRENGTHENED TO CARRY ADDITIONAL LOAD CREATED BY NEW RTU'S.

PLUMBING FIXTURES COUNT								
	WATER CLOSETS	LAVATORIES	DRINKING					
OCCUPANCY			FOUNTAINS	OTHER	COMMENTS			
Business (B)	1.0	1.0	0.0	1 service sink				
TOTAL	1.0	1.0	0.0	1 service sink				
Required Fixtures	1.0	1.0	0.0	1 service sink				
ixtures to be Provided	1.0	1.0	0.0	1 service sink				





STATE OF MISSOURI MICHAEL L. PARSON, **GOVERNOR** 

CODE PLAN SYMBOL LEGEND

0 / 0"

F.D.C.

\_\_\_\_\_

FIRE EXTINGUISHER TAG - SURFACE MOUNT

FIRE DEPARTMENT CONNECTION

**EXIT LOAD TAG** 

OCCUPANTS / WIDTH REQUIRED

WIDTH PROVIDED



OFFICE OF ADMINISTRATION **DIVISION OF FACILITIES** MANAGEMENT, **DESIGN AND CONSTRUCTION** 

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111 FAIRGROUNDS ROAD **ROLLA, MISSOURI 65401** 

7815001009

PROJECT # W2001-01 5001

ASSET#

**REVISION:** DATE: REVISION: DATE: REVISION: DATE:

ISSUE DATE: 07/27/2022 CAD DWG FILE: G101 DRAWING BY: JRT CHECKED BY: HMC DESIGNED BY: JRT

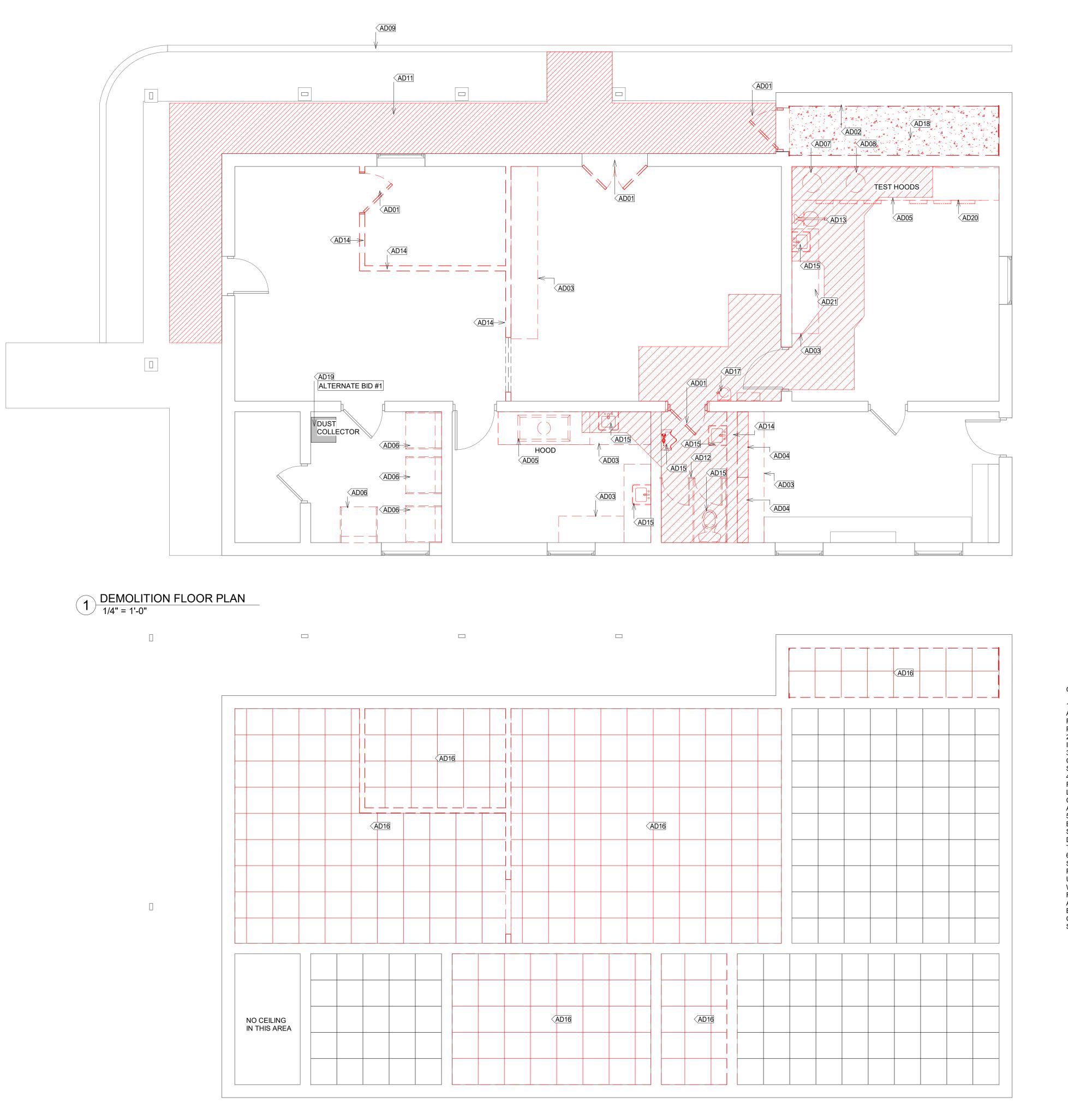
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**CODE PLAN AND REVIEW PLAN** 

SHEET NUMBER:

4 OF 30 SHEETS 07/27/2022

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



DEMOLITION LEGEND



CONCRETE FLOOR CUT OUT IN PREPARATION FOR NEW PLUMBING-SEE PLUMBING



DEMOLISH EXISTING SIDEWALK



GRIND 1/4" OF EXISTING CONCRETE FLOOR

NUMBER	DESCRIPTION
AD01	REMOVE EXISTING DOOR AND FRAME COMPLETELY. PREPARE OPENING FOR NEW DOOR AND FRAME AS NOTED ON RENVOATION PLAN.
AD02	REMOVE ALL EXISTING INTERIOR GYPSU BOARD, FURRING AND INSULATION IN ACID STORAGE ROOM.
AD03	REMOVE EXISTING BASE CABINETRY.
AD04	REMOVE EXISTING WALL STORAGE.
AD05	REMOVE EXISTING EXHAUST HOODS COMPLETELY INCLUDING SURROUND AN BASE CABINETRY.
AD06	REMOVE EXISTING DUST HOODS COMPLETELY.
AD07	ABANDONDED-IN-PLACE TANK WATER HEATER UNDER TEST HOODS TO BE DEMOLISHED.
AD08	EXISTING CATCH BASIN UNDER TEST HOODS TO BE DEMOLISHED.
AD09	CURB TO REMAIN
AD10	LANDSCAPE GRAVEL TO REMAIN
AD11	DEMOLISH EXISTING HATCHED SIDEWALI REPLACE WITH NEW SIDEWALK AT HIGHER ELEVATION TO PROVIDE ADA ACCESS AROUND BUILDING AND AT EACH DOOR.
AD12	REMOVE EXISTING TOILET PARTITIONS.
AD13	REMOVE EXISTING EYEWASH.
AD14	REMOVE EXISTING WALLS AND DOORS. DRYWALL JOINT COMPOUND IS ASBESTOS CONTAINING. DRYWALL JOINT COMPOUND AND ASSOCIATED DRYWALL

PROJECT MANUAL SECTION 028213) AD15 REMOVE EXISTING PLUMBING FIXTURES AD16 REMOVE CELING TILES AND CEILING AD17 REMOVE DRINKING FOUNTAIN AD18 GRIND 1/4" OF CONCRETE FLOOR.
REPLACE WITH BASIS OF DESIGN SIKA

SHALL BE REMOVED AS ASBESTOS CONTAINING BUILDING MATERIAL (SEE

TOP 122 PLUS. AD19 EXISTING DUST COLLECTOR TO BE REMOVED AD20 REMOVE EXISTING FUME HOOD. FUME HOOD INCLUDES ASBESTOS CONTAINING CEMENTITIOUS BOARD. ALL ASSOCIATED MATERIAL WITH FUME HOOD SHALL BE

ASSUMED TO BE ASBESTOS CONTAINING AND BE PROPERLY ABATED (SEE PROJECT MANUAL SECTION 028213) AD21 REMOVE EXISTING ASBESTOS CONTAINING COUNTERTOP AND SINK (SEE PROJECT MANUAL SECTION 028213)

## **GENERAL NOTES**

1. ALL ASBESTOS ABATEMENT SHALL BE CONDUCTED ACCORDING TO EPA NESHAP AND OSHA REGULATIONS WHERE APPLICABLE. ALSO SEE PROJECT MANUAL SECTION 028213. 2. ALL ASBESTOS ABATEMENT SHALL BE CONDUCTED

IN REGULATED AREAS. 3. THE NEGATIVE PRESSURE ENCLOSURE SHALL BE CONSTRUCTED ACCORDING TO OSHA REGULATIONS. SEE SPECIFICATIONS FOR FURTHER DETAILS. 4. PREVENT ACCESS BY THE PUBLIC TO ALL PATHS FOR ASBESTOS ABATEMENT WORKERS AND WASTE LOADOUT BY EITHER A HARD SECURITY BARRIER OR

CRITICAL BARRIERS AND LOCKED DOORS AS APPLICABLE. 5. DURING CONSTRUCTION OF SEPARATION BARRIERS AND CONTAINMENTS, THE CONTRACTOR SHALL EXERCISE DUE CAUTION TO PREVENT DISTURBANCE OF ACBM DURING THE PLACEMENT OF

THE BARRIERS. 6. DUE TO THE CONSTRUCTION DATE OF THE STRUCTURE (CONSTRUCTED PRIOR TO 1978), THE PAINT SHALL BE ASSUMED TO BE LEAD-BASED PAINT, UNLESS PROVEN OTHERWISE. IN TH COURSE OF WORK, CONTRACTOR SHALL MEET ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS ASSOCIATED WITH LEAD-BASED PAINT, INCLUDINIG, BUT NOT LIMITED TO 29 CFR 1926.62 (LEAD IN CONSTRUCTION INDUSTRY). SEE PROJECT MANUAL SECTION 022000 - EXISTING CONDITIONS.

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

STATE OF MISSOURI MICHAEL L. PARSON, **GOVERNOR** 



OFFICE OF ADMINISTRATION **DIVISION OF FACILITIES** MANAGEMENT, **DESIGN AND CONSTRUCTION** 

RENOVATE SUB (ACID) LAB

MISSOURI GEOLOGICAL SURVEY (DNR)

111 FAIRGROUNDS ROAD **ROLLA, MISSOURI 65401** 

PROJECT # W2001-01 5001 7815001009 ASSET#

**REVISION:** DATE: REVISION: DATE: REVISION: DATE:

ISSUE DATE: 07/27/2022 CAD DWG FILE: AD101 DRAWING BY: JRT CHECKED BY: HMC

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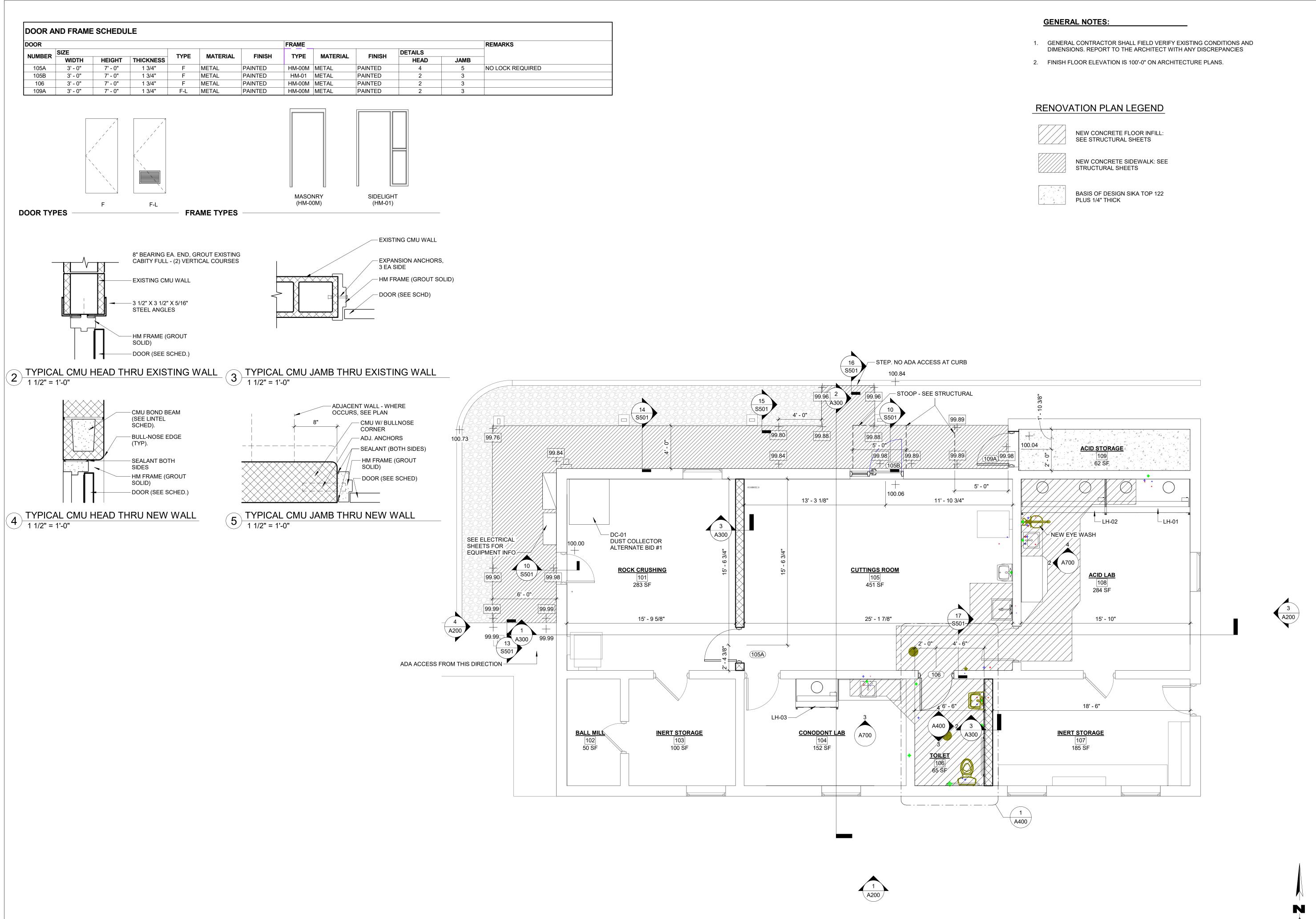
**DEMOLITION FLOOR PLAN** 

SHEET NUMBER:



5 OF 30 SHEETS 07/27/2022

2 DEMOLITION REFLECTED CEILING PLAN
1/4" = 1'-0"





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MISSOURI GEOLOGICAL SURVEY (DNR)

111 FAIRGROUNDS ROAD **ROLLA, MISSOURI 65401** 

PROJECT # W2001-01 5001 7815001009 ASSET#

**REVISION:** DATE: **REVISION:** DATE: **REVISION:** DATE: ISSUE DATE: 07/27/2022

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SHEET TITLE:

RENOVATION **FLOOR PLAN** 

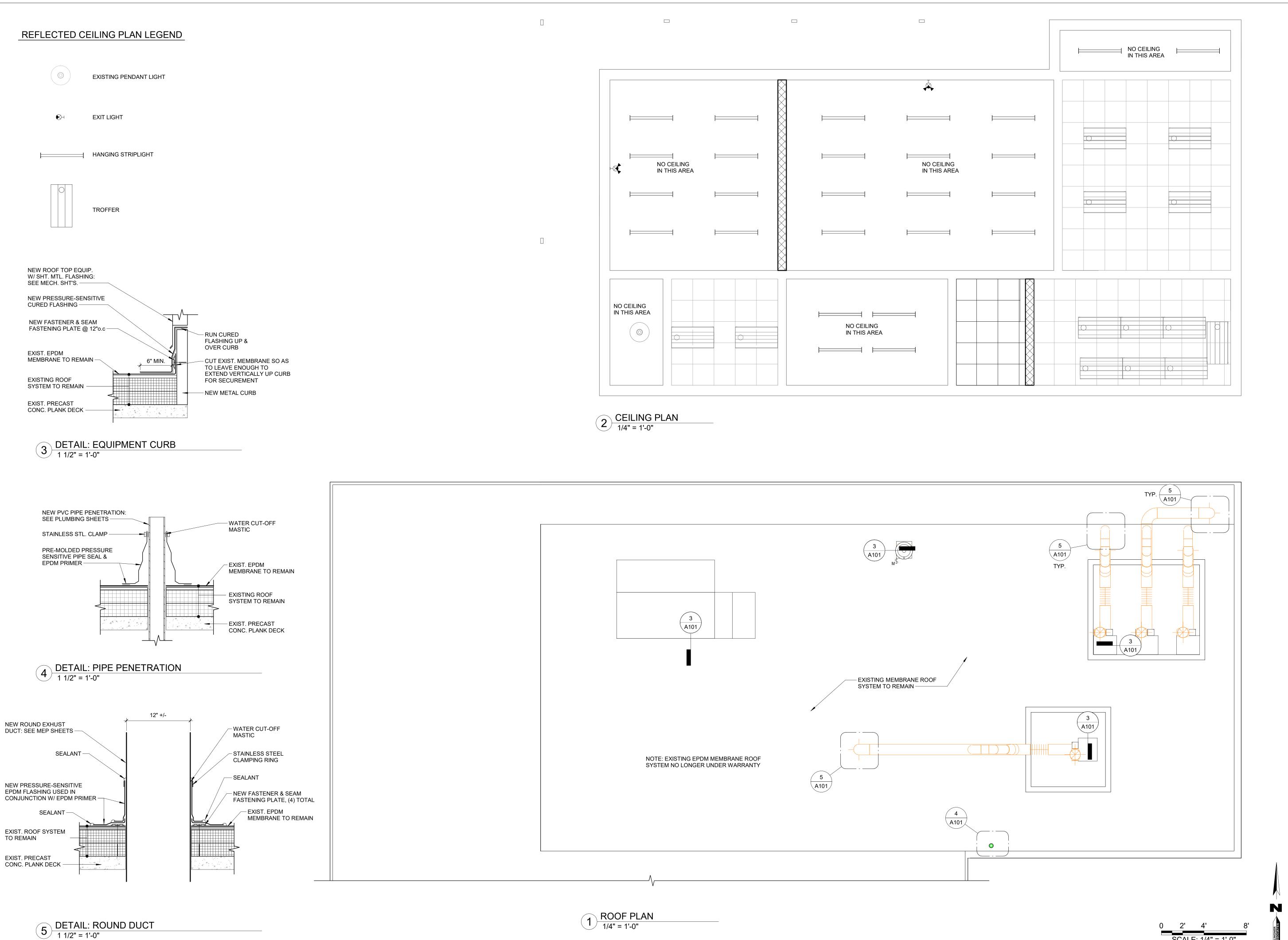
SHEET NUMBER:

07/27/2022

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

6 OF 30 SHEETS

1 RENOVATION PLAN
1/4" = 1'-0"





Engineer

OFFICE OF ADMINISTRATION **DIVISION OF FACILITIES** MANAGEMENT, **DESIGN AND CONSTRUCTION** 

RENOVATE SUB (ACID) LAB

MISSOURI GEOLOGICAL SURVEY (DNR)

111 FAIRGROUNDS ROAD **ROLLA, MISSOURI 65401** 

PROJECT # W2001-01 5001 7815001009

ASSET#

**REVISION:** DATE: **REVISION:** DATE REVISION:

DATE: ISSUE DATE: 07/27/2022

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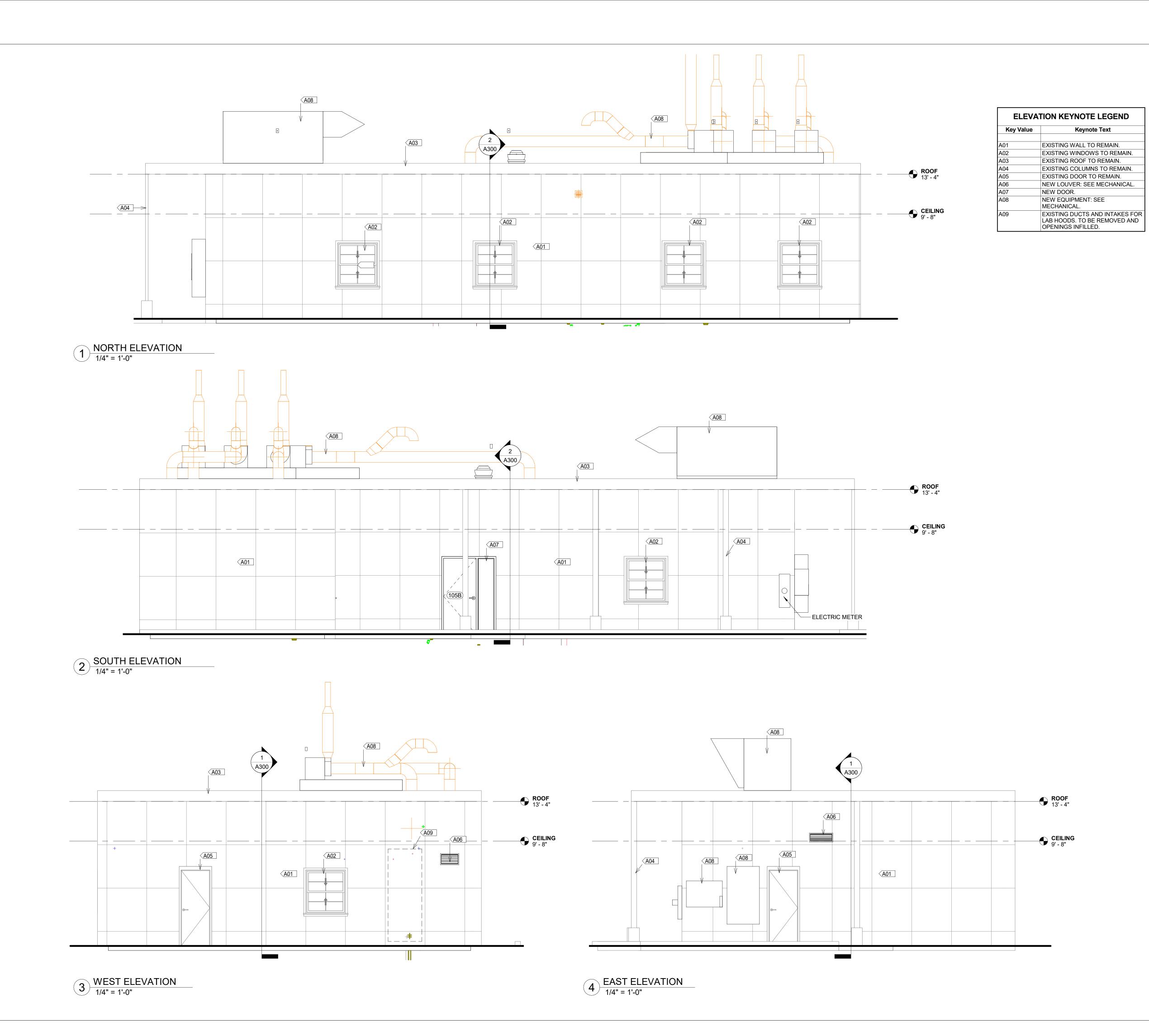
SHEET TITLE:

**CEILING AND ROOF PLAN** 

SHEET NUMBER:

07/27/2022







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OFFICE OF ADMINISTRATION

RENOVATE SUB (ACID) LAB

**DIVISION OF FACILITIES** 

**DESIGN AND CONSTRUCTION** 

MANAGEMENT,

MISSOURI GEOLOGICAL SURVEY (DNR)

#### 111 FAIRGROUNDS ROAD ROLLA, MISSOURI 65401

PROJECT # W2001-01 SITE # 5001 ASSET # 7815001009

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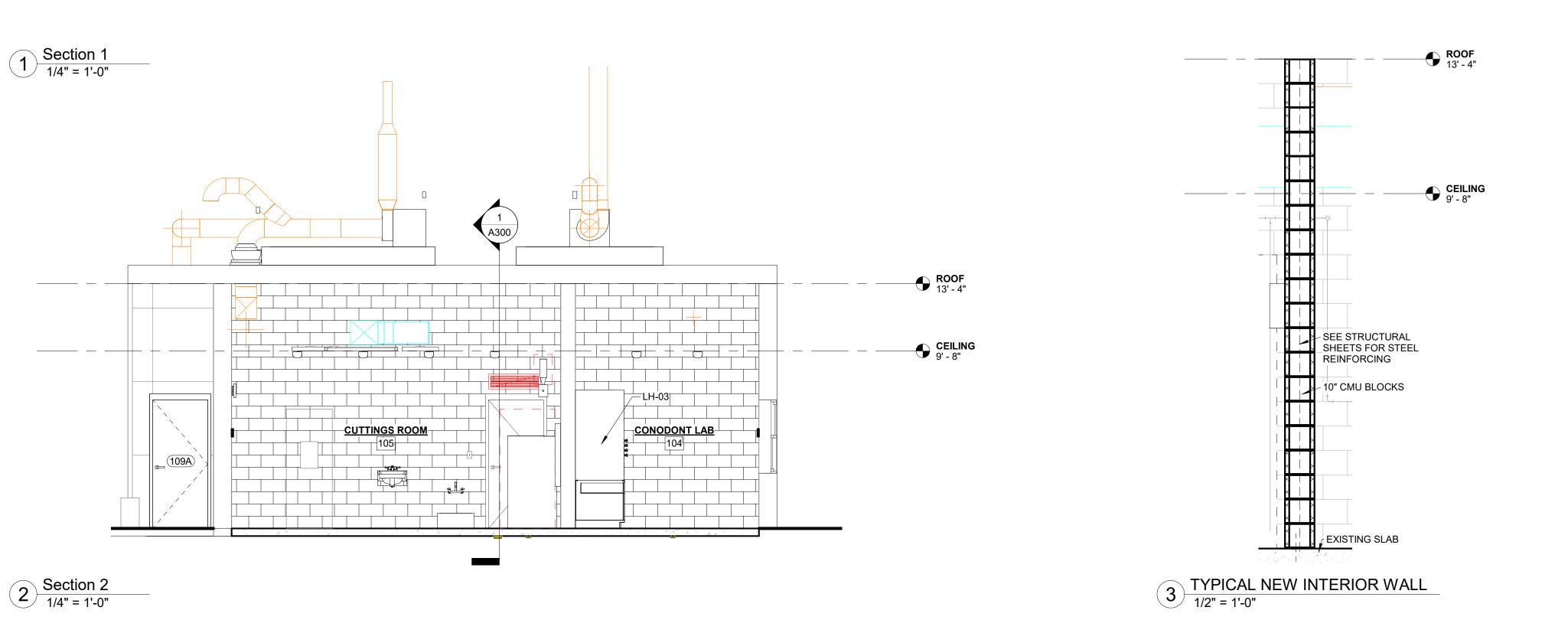
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# EXTERIOR ELEVATIONS

SHEET NUMBER:

**A20** 





Veyors

Galesburg, IL

& A & O U U I A I Ingineers • Architect Solumbia, Missouri

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

RENOVATE SUB (ACID) LAB

MISSOURI GEOLOGICAL SURVEY (DNR)

#### 111 FAIRGROUNDS ROAD ROLLA, MISSOURI 65401

PROJECT # W2001-01 SITE # 5001 ASSET # 7815001009

REVISION:
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DATE:
ISSUE DATE: 07/27/2022

CAD DWG FILE: A300
DRAWING BY: JRT
CHECKED BY: HMC
DESIGNED BY: JRT

SHEET TITLE:

BUILDING SECTIONS

SHEET NUMBER:

A300



OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, **DESIGN AND CONSTRUCTION** 

RENOVATE SUB (ACID) LAB

MISSOURI GEOLOGICAL SURVEY (DNR)

## 111 FAIRGROUNDS ROAD **ROLLA, MISSOURI 65401**

PROJECT # W2001-01 5001 ASSET # 7815001009

REVISION:\_ DATE:\_ REVISION:\_ DATE: REVISION: DATE:

ISSUE DATE: 07/27/2022 CAD DWG FILE: A400 DRAWING BY: JRT CHECKED BY: HMC DESIGNED BY: JRT

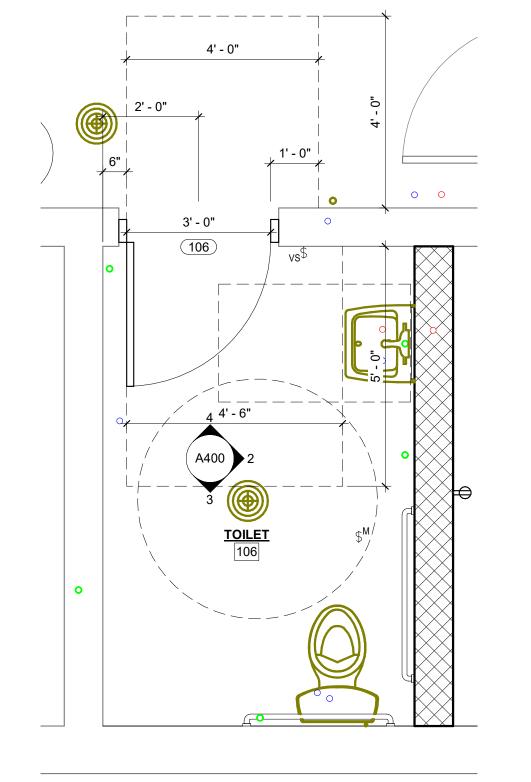
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**ENLARGED** TOILET PLAN & **ELEVATIONS** 

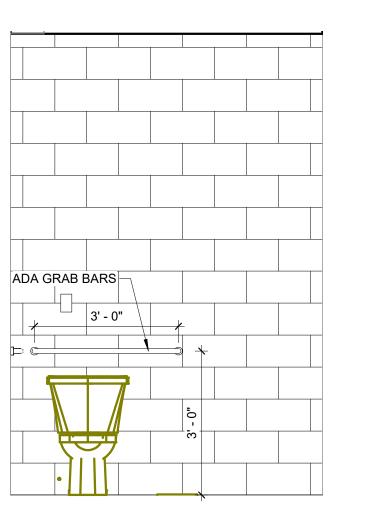
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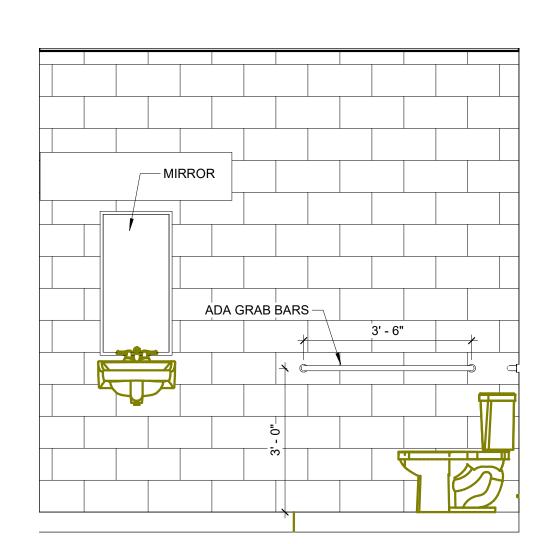
10 OF 30 SHEETS 07/27/2022



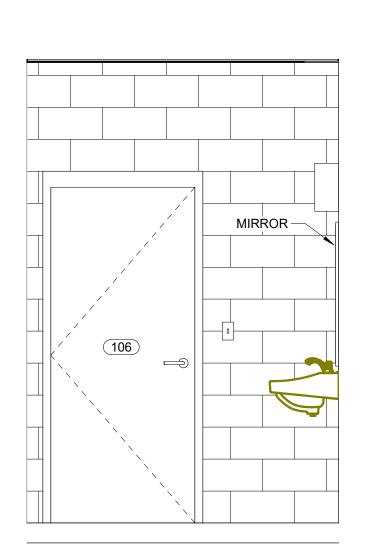
1 ENLARGED TOILET ROOM 106 1/2" = 1'-0"



3 SOUTH INTERIOR ELEVATION - TOILET 106
1/2" = 1'-0"



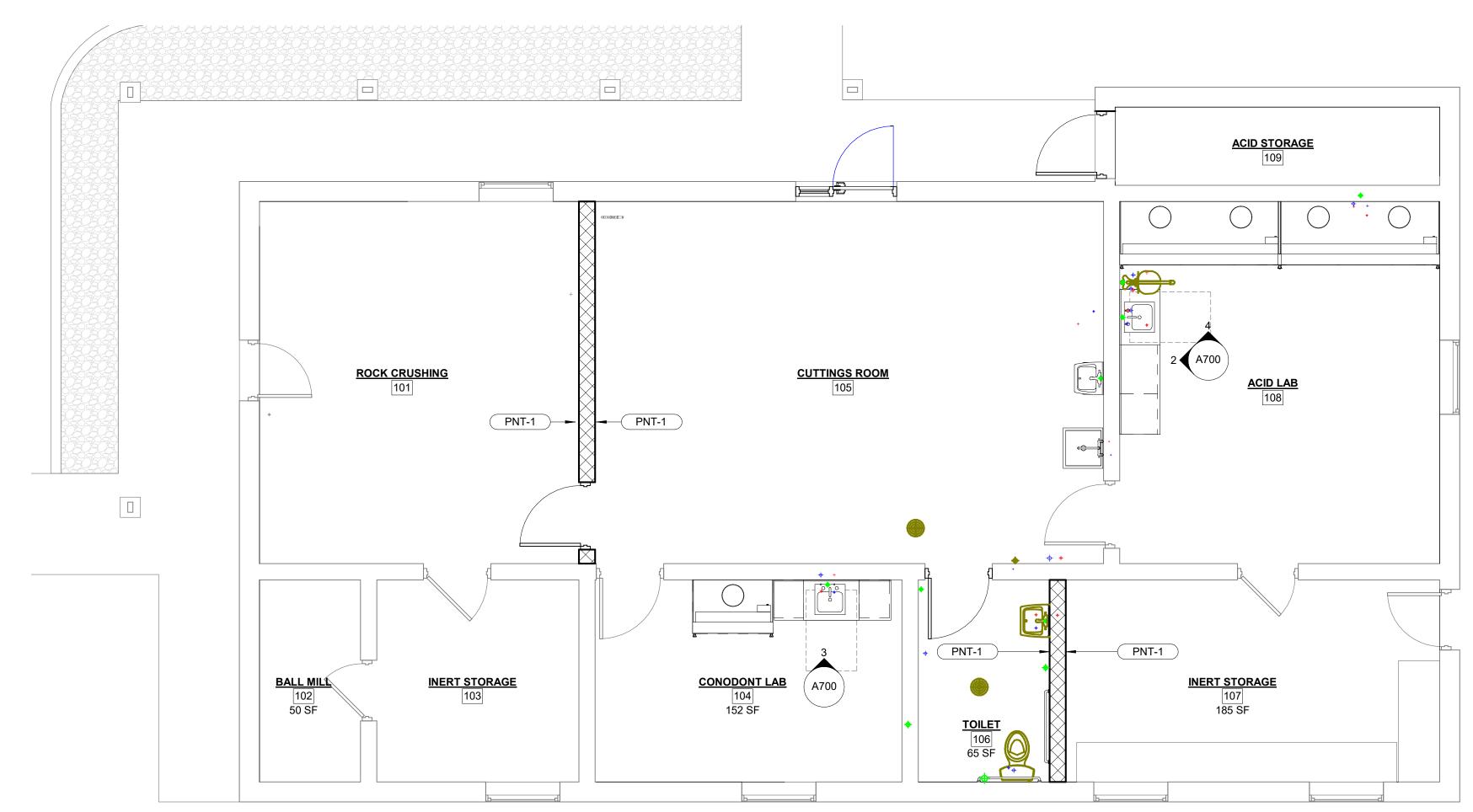
2 EAST INTERIOR ELEVATION - TOILET 106
1/2" = 1'-0"



4 NORTH INTERIOR ELEVATION - TOILET 106
1/2" = 1'-0"

		WALLS	
TAG	BASIS OF DESIGN MANUFACTURER	PRODUCT DESCRIPTION	REMARKS
PNT-0	SHERWIN WILLIAMS	BASIS OF DESIGN COLOR: SW 7002 DOWNY	METAL DOORS & FRAMES
PNT-1	SHERWIN WILLIAMS	BASIS OF DESIGN COLOR: SW 7016 MINDFUL GRAY	FIELD PAINT

NOTE:
ALL EXISTING WALLS ARE NOT PAINTED NEW PAINT COLOR TO MATCH EXISTING PAINT COLOR



# INTERIOR FINISH ABBREVATIONS

ALUMINUM WALL BASE ACOUSTIC CEILING PANEL AMERICANS WITH DISABILITIES ACT ARCHITECT / ENGINEER ABOVE FINISHED FLOOR

AFF ALUM ALUMINUM ACOUSTICAL WALL PANEL

ACP

ADA

LIN

WINDOW ROLLER BLIND CORNER GUARD CJ CLR CMU CONSTRUCTION JOINT/CONTROL JOINT CONCRETE MASONRY UNIT

CERAMIC TILE END WALL PROTECTOR **EXIST EXISTING** 

FIBER REINFORCED PLASTIC (PANEL)

OWNER FURNISHED, CONTRACTOR INSTALLED

GLS GLT GWB GLASS TILE GYPSUM WALL BOARD GYP GYPSUM

LINOLEUM

PLASTIC LAMINATE PNT RESILIENT WALL BASE

RPS RESIN PANEL SYSTEM RIGID SHEET

SUSPENDED ACOUSTICAL TILE SEALED CONCRETE SOLID SURFACE SSTL STC SV STAINLESS STEEL STAINED CONCRETE SHEET VINYL

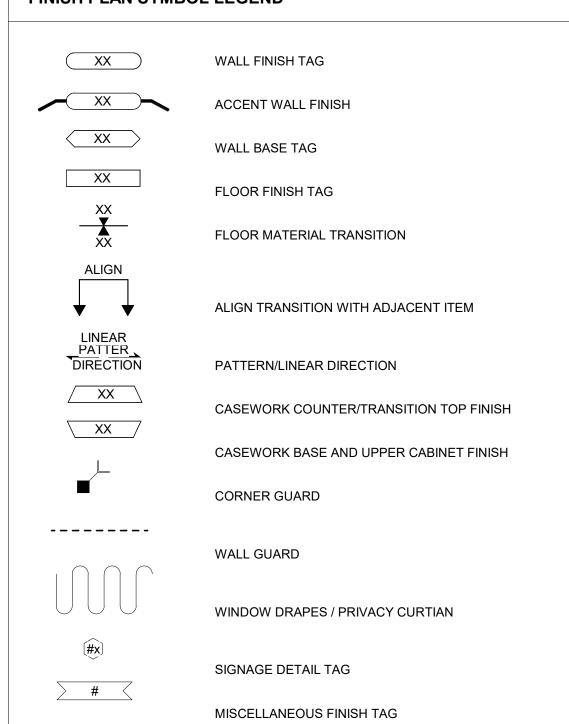
SOLID VINYL TILE

TRANSITION STRIP

### FINISH PLAN GENERAL NOTES

- ALL CONTRACTORS TO FIELD VERIFY ALL CONDITIONS AND DIMENSIONS.
- ALL FLOOR TRANSITIONS THAT CHANGE MATERIALS TO RECEIVE TRANSITION STRIP.
- ALL FLOOR FINISHES TO EXTEND BENEATH CASEWORK.
- DISSIMILAR FLOOR MATERIALS SHALL MEET UNDER CENTER OF DOOR LEAF WHEN IN CLOSED POSITION, UNLESS OTHERWISE NOTED OR SHOWN.
- REMARKS COLUMN ON ROOM AND PRODUCT FINISH SCHEDULE INDICATES GENERAL COMMENTS ONLY. SEE INTERIOR FINISH PLANS AND SPECIFICATIONS FOR LOCATIONS AND DETAILS.
- ALL WALLS SHALL BE PNT-1, UNLESS OTHERWISE NOTED OR SHOWN.
- ALL METAL DOORS, DOOR FRAMES, AND WINDOW FRAMES SHALL BE PNT-0, UNLESS OTHERWISE NOTED OR SHOWN.

#### FINISH PLAN SYMBOL LEGEND



STATE OF MISSOURI MICHAEL L. PARSON, **GOVERNOR** 



OFFICE OF ADMINISTRATION **DIVISION OF FACILITIES** MANAGEMENT, **DESIGN AND CONSTRUCTION** 

RENOVATE SUB (ACID) LAB

MISSOURI GEOLOGICAL SURVEY (DNR)

111 FAIRGROUNDS ROAD **ROLLA, MISSOURI 65401** 

PROJECT # W2001-01 5001 ASSET # 7815001009

**REVISION:** DATE: REVISION: DATE: **REVISION:** DATE: ISSUE DATE: 07/27/2022

CAD DWG FILE: A700 DRAWING BY: JRT CHECKED BY: HMC DESIGNED BY: JRT

SHEET TITLE:

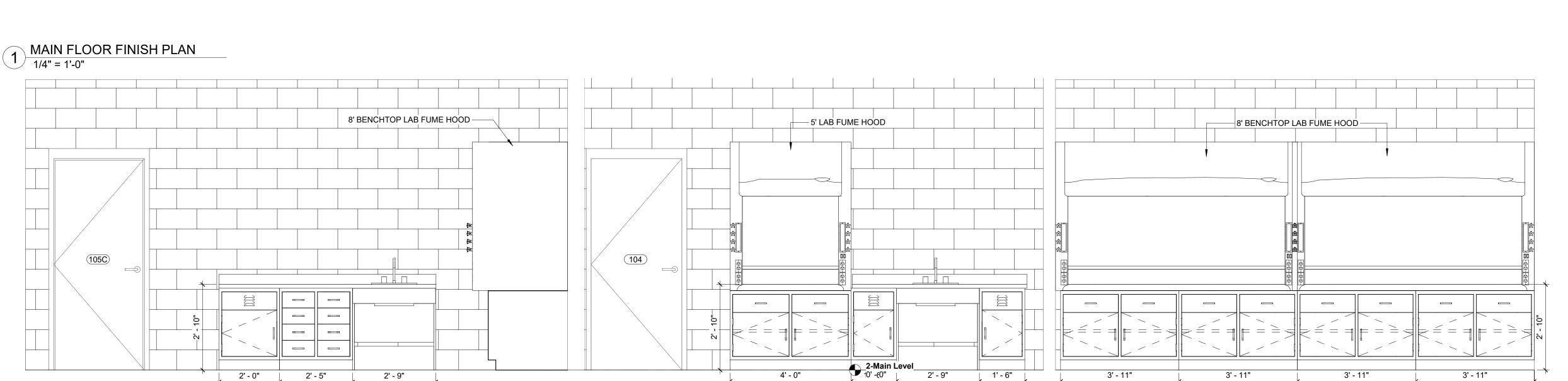
**FLOOR FINISH** PLAN & **SCHEDULES** 

SHEET NUMBER:

11 OF 30 SHEETS

0 2' 4'

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

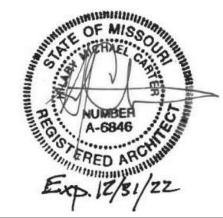


NORTH INTERIOR ELEVATION - CONODONT LAB 104
1/2" = 1'-0"

NORTH INTERIOR ELEVATION - ACID LAB 108

1/2" = 1'-0"

WEST INTERIOR ELEVATION - ACID LAB 108
1/2" = 1'-0"





OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

RENOVATE SUB (ACID) LAB

MISSOURI GEOLOGICAL SURVEY (DNR)

## 111 FAIRGROUNDS ROAD ROLLA, MISSOURI 65401

PROJECT # W2001-01 SITE # 5001 ASSET # 7815001009

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
DATE:

CAD DWG FILE: A800
DRAWING BY: JRT
CHECKED BY: HMC
DESIGNED BY: JRT

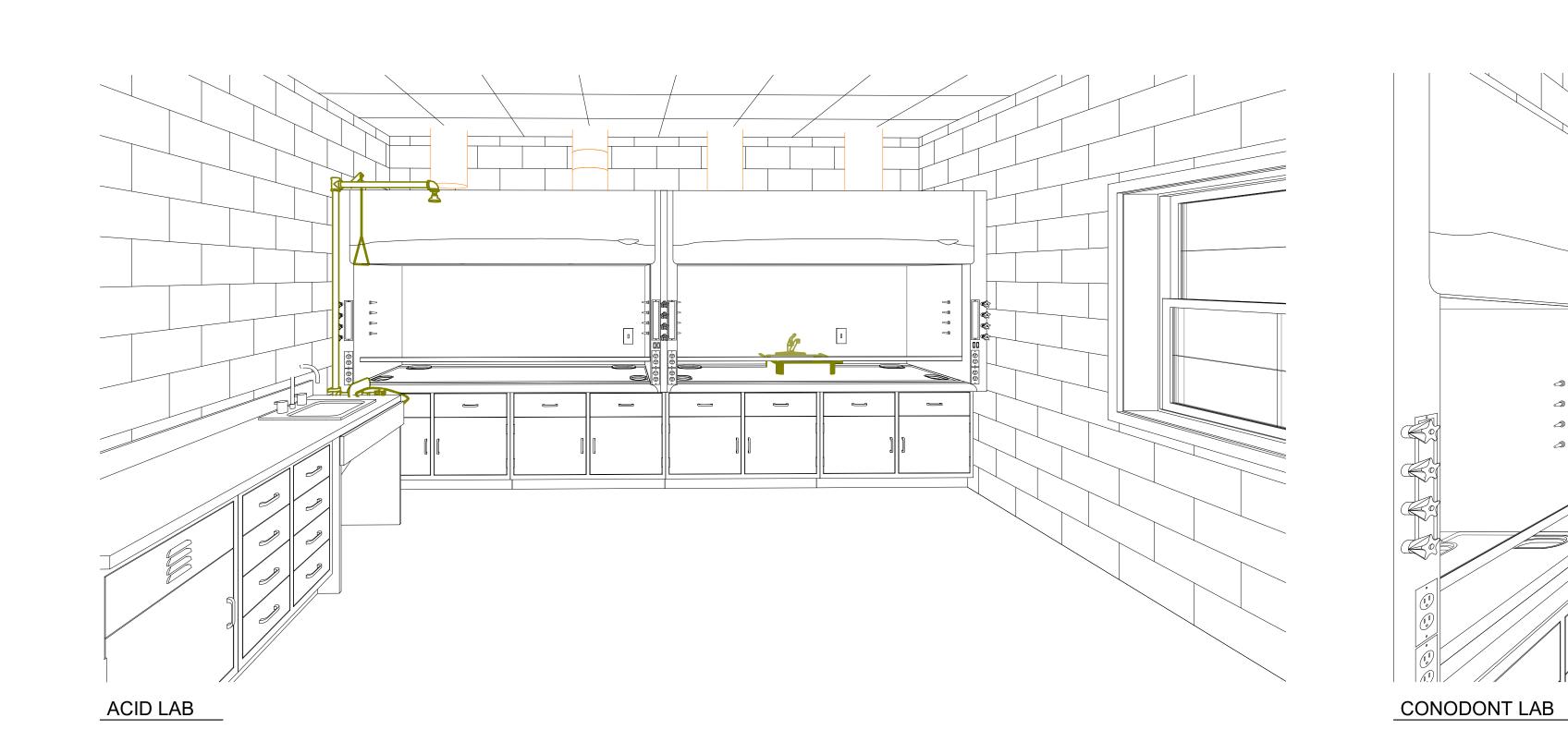
ISSUE DATE: 07/27/2022

SHEET TITLE:

INTERIOR 3D VIEWS

SHEET NUMBER:

A80



#### **DESIGN CRITERIA**

- 1. BUILDING CODES: A. IBC 2018
- B. ASCE 7-16
- 2. DESIGN LOADS A. Occupancy Category II
- B. Dead Loads a. Roof = 20 psf
- b. Colateral = 5 psf c. See roof framing plan & mechanical drawings for additional loads from RTU.
- C. Live Loads
- a. Roof = 20 psf
- D. Roof Snow Load a. Ground Snow Load, Pg = 20 psf
- b. Flat Roof Snow Load, Pf = 14 psf c. Snow Load Importance, I<sub>s</sub> = 1.0
- d. Snow Exposure Factor, C<sub>e</sub> = 1.0 e. Roof Thermal Factor,  $C_t = 1.0$
- f. Drifting: (As per ASCE 7-16)
- E. Wind Loading a. Basic Wind Speed, V<sub>ult</sub> = 114 mph
- b. Risk Category = II
- c. Exposure Category = C
- d. Internal pressure Coefficient,  $GC_{pi} = \pm 0.18$ e. Components and Cladding Design per ASCE 7-16

#### **GENERAL**

- 1. The structure is designed to be self-supporting and stable after the building is fully completed. It is solely the contractor's responsibility to determine erection procedure and sequence and insure the safety of the construction personnel, public, building and its components parts, and adjacent buildings and properties. This includes the addition of whatever temporary or permanent shoring, bracing, needling, underpinning, or sheet piling, etc. that may be necessary to brace new construction, adjacent buildings, so that the structure is braced for wind, seismic, gravity, construction loads, etc. and that no horizontal or vertical settlement or any damage occurs to the adjacent existing structure. Temporary supports shall be maintained in place until permanents
- supports and/or shoring and bracing are installed. 2. Fall protection support from perimeter columns or walls shall be provided in accordance with OSHA requirements as required. Such material shall remain the contractor's property after the completion of the
- 3. It is the contractor's responsibility to enforce all applicable safety codes and regulations during all phases of
- 4. The contractor shall perform all construction for the project in a manner and sequence that are based on accepted industry standards that recognize the interaction of the components that comprise the structure, without causing distress, unanticipated movements or irregular load paths as a result of the construction means and methods employed.
- 5. Construction loads shall not exceed design live loads. The contractor shall be responsible for all design required to support construction equipment used in constructing this project. Shoring and reshoring is the
- 6. Principal openings through the framing are shown on the mechanical drawings. The general contractor shall examine the structural and mechanical drawings for the required openings and shall verify size and location of all openings with the mechanical contractor. Providing all openings required by the mechanical, electrical, plumbing, or other trades shall be part of the general contract, whether or not shown in the structural drawings. Any deviation from the openings shown on the mechanical drawings shall be brought to the engineer's attention
- 7. All contractors are required to examine the drawings and specifications carefully, visit the site and fully inform themselves as to all existing conditions and limitations, prior to agreeing to perform the work. Failure to visit the site and familiarize themselves with the existing conditions and limitations will in no way relieve the contractor from furnishing any materials or performing any work in accordance with drawings and specifications without
- additional cost to the owner. 8. Contractor shall verify all dimensions and conditions at the job site before commencing work and shall report any discrepancies to the engineer.
- 9. Omissions or conflicts between various elements of the drawings, notes, details and specifications shall be brought to the attention of the engineer and resolved before proceeding with the work.
- 10. Details labeled "Typical Details" on drawings apply to situations occurring on the project that are the same or similar to those specifically details. Such details apply whether or not details are referenced at each location.
- Notify engineer of clarification regarding applicability of "Typical Details". 11. Work these drawings with architectural, mechanical, and electrical drawings.
- 12. Do not scale drawings.
- 13. Should any of the general notes conflict with any details or instructions on plans, the strictest provision shall
- 14. Coordinate masonry and concrete work with the plumbing. The plumbing shall not be placed inside of exterior reinforced masonry walls where it could freeze. Route plumbing around masonry cells and knock-out bond beams with reinforcing steel. Do not place plumbing in masonry cells with reinforcing steel. Maintain the continuity of the masonry horizontal joint reinforcing. Do not route plumbing vertically through footings." The plumping engineer needs to be informed when there may be conditions like those described above.

#### <u>ABBREVIATIONS</u>

JST

JOIST

& AB ALT ARCH @	AND ANCHOR BOLT ALTERNATE ARCHITECT AT	LG LL LLH LLV LONG LWC	LONG LIVE LOAD LONG LEG HORIZONTAL LONG LEG VERTICAL LONGITUDINAL LIGHT WEIGHT CONCRETE
BLDG BM BO BOT BRG	BUILDING BEAM BOTTOM OF BOTTOM BEARING	MAX MECH MIN	MAXIMUM MECHANICAL MINIMUM
BRDG BYD	BRIDGING BEYOND	NO (#) NTS	NUMBER NOT TO SCALE
CIP CJ CL (&) CLR CMU	CAST IN PLACE CONSTRUCTION JOINT CENTERLINE CLEAR CONCRETE MASONRY UNIT	OC OH OPNG OPP	ON CENTER OPPOSITE HAND OPENING OPPOSITE
COL CONC CTR	COLUMN CONCRETE CENTER	PAR PEMB PERP PL (P)	PARALLEL PRE-ENGINEERED METAL BUILDING PERPENDICULAR PLATE
DBA DBL DIA (Ø)	DEFORMED BAR ANCHOR DOUBLE DIAMETER	PSF PT	POUNDS PER SQUARE FOOT PRESSURE TREATED
DIAPH DL DWLS	DIAPHRAGM DEAD LOAD DOWELS	REINF RO RTU	REINFORCING ROUGH OPENING ROOF TOP UNIT
EA EF ELEV (EL) EMBED EW EX	EACH EACH FACE ELEVATION EMBEDMENT EACH WAY EXISTING	SCH SIM SL (\$) STAGG STD STIFF	SCHEDULE SIMILAR STEEL LINE STAGGERED STANDARD STIFFENER
FB FDN FF FLR FTG FV	FIELD BEND FOUNDATION FINISHED FLOOR FLOOR FOOTING FIELD VERIFY	TBR THK THRU TO TOF TOS TOW	TO BE REMOVED THICK THROUGH TOP OF TOP OF FOOTING TOP OF STEEL TOP OF WALL
GA GALV	GAUGE GALVANIZED	TRANS TYP	TRANSVERSE TYPICAL
HDG HDR HGR	HOT DIP GALVANIZED HEADER HANGER	UNO VERT	UNLESS OTHERWISE NOTED VERTICAL
HORIZ HS HSS HT	HORIZONTAL HEADED STUD HOLLOW STRUCTURAL SECTION HEIGHT	W/ WF W/O WP	WITH WIDE FLANGE WITHOUT WORKING POINT
ID	INSIDE DIAMETER	WWF W.R.	WELDED WIRE FABRIC WATER REDUCER
ICT	IOIOT		

#### **EXISTING WORK**

- 1. Existing conditions shown or noted on the drawings were obtained from field measurements or were assumed. If conditions other than those shown exist, immediately notify the Engineer before proceeding with the work at that location. If conditions other than those shown exist, alternate methods of construction may need to be used.
- 2. Where specifically noted on the drawings that existing construction be verified, notify the Engineer in writing of the findings. Verification shall take place prior to preparation of shop drawings and shop drawings shall show all field verified existing conditions. Modifications to details may be required should actual condition significantly differ from those presumed. Any required modifications will be made during the review of the shop drawings.
- 3. Use appropriate construction methods and equipment as necessary to support existing structures and to avoid over stressing the existing structures.
- 4. Existing framing is assumed to be in original condition. If deterioration has occurred notify the Engineer in writing of the findings. For example, some types of deterioration are as follows: rotten wood, broken or cracked masonry, and broken wood members.

#### STRUCTURAL STEEL

- 1. Detailing, fabrication and erection shall conform to the AISC Specifications and Standard Code of Practice for the year referenced in the building code noted, except as modified by these notes
- and the project specifications. 2. Steel shall conform to the following grades unless otherwise noted:
- A. W Shapes ASTM A992 Grade 50 (Fy=50 ksi)
- B. Plate, Angles, M, S and C Shapes ASTM A36 (Fy=36 ksi) C. HSS Tubular Shapes – ASTM A500 Grade B (Fy=46 ksi)
- D. Pipes ASTM A53 (Fy=35 ksi) E. Bolts - ASTM 325-N, 3/4" diameter minimum.
- F. Washers ASTM F436 G. Deformed Bar Anchor (DBA) - ASTM A496 (FY-60 ksi) and AWS D1.1
- H. Anchor Rods (Bolts) ASTM F1554 Grade 36 (Fy=36 ksi) (If exposed to weather or incontact with treated timber hot dip galvanize per ASTM A123)
- Welding Electrodes E70xx 3. All structural steel shall be primed. Asphaltic paints are not acceptable. Exposed Steel shall be
- painted to match existing. Field Touch up Primer and Paint.
- 4. All welding shall be in accordance with the "Structural Welding Code", AWS D1.1, Latest Edition. Fabricate all beams with the mill camber up.
- 6. General contractor shall verify all structural beam locations, mechanical units weights and
- opening sizes and locations with mechanical contractor and vendor's drawings for actual
- mechanical unit purchased. 7. Splicing of structural members where not detailed on the drawings is prohibited without prior
- approval of the structural engineer. 8. Cuts, holes, coping, etc. required for work of other trades shall be shown on the shop drawings and made in the shop. Cuts or burning of holes in the structural steel members in the field will
- not be permitted, unless specifically approved in each case by the engineer.
- 9. Unless otherwise noted, all connections at HSS sections shall be designed and detailed in accordance with the AISC "Hollow Structural Sections Connection," first edition.

#### POST INSTALLED ANCHORS

- 1. Concrete adhesive anchors Hilti HY200 or approved equal. Concrete Mechanical Anchors Hilti Kwik Bolt TZ2 or approved equal.
- 2. Masonry adhesive anchors Hilti HY270 or approved equal. Masonry Mechanical Anchors Hilti Kwik Bolt III
- in grouted CMU or approved equal. 3. Submit ICC-ES reports for all post installed anchors.
- 4. Install all post installed anchors per the product's ICC-ES report and the manufacturer's written
- 5. Post installed anchors shall be inspected per the product's ICC-ES report. 6. Install adhesive anchors in dry hammer drilled holes.

- 1. All masonry shall conform to "Building Code Requirements for Masonry Structures" (ACI 530/ASCE 5/TMS 402) and
- "Specifications for Masonry Structures" (ACI 530.1/ASCE 6/TMS 602) for the year referenced in the building code noted. 2. All brick and concrete masonry and construction shall comply with the recommendations of Brick Industry of Association
- (BIA) and the National Concrete Masonry Association (NCMA) and minimum requirement established by noted building
- 3. Shop Drawings: submit reinforcing steel elevations of each wall showing all of the reinforcing steel coordinated with each opening. Show lap splices and reinforcing lengths which are coordinated with the masonry lifts. Reinforcing shall be
- coordinated with plumbing, electrical, and adjacent work of other trades. 4. Grout to fill masonry unit cores shall be ASTM C476, coarse grout (3/8" maximum aggregate) with a minimum
- compressive strength of 2000 psi in 28 days. (3000 psi in 28 days at storm shelter locations) 5. Concrete masonry units shall be units conforming to ASTM C90, Grade N, Type I, Normal Weight (density of unit = 135
- pcf), min. block compressive strength = 2000 psi, specified design strength of masonry, f'm=2000 psi.
- A. ASTM C270 Type "S" mortar with a minimum compressive strength of 1800 psi shall be used for concrete masonry
- B. ASTM C270 Type "N" mortar with a minimum compressive strength of 800 psi shall be used for brick masonry units
- 7. Reinforcing bars shall conform to ASTM A615, Grade 60. 8. All concrete masonry units shall have galvanized horizontal joint reinforcement as follows:
- A. 9 gage side and cross rods (ladder type) spaced 16" o.c. vertically with a 6" minimum lap.
- 9. All concrete masonry cores shall be filled solid with grout. Place reinforcing bars before grouting. Place grout in lifts not exceeding 5 feet. Consolidate each lift by mechanical vibration. The next lift of the pour may be after initial water loss and reconsolidation of the prior lift, while it is still plastic.
- 10. Vertical Concrete Masonry Reinforcement: A. All 10" CMU shall be reinforced with (1) #4 vertical at 48" centers in center of fully grouted cells. Place continuous
- vertical reinforcing at jambs, intersections, corners, and ends of walls unless noted otherwise. 11. Properly secure reinforcing bars to maintain the position indicated on the drawings. Bars are to be located in center of
- cells unless otherwise noted. 12. Walls at intersections shall be connected as follows:
- A. 50% of the Masonry units at the interface shall interlock or B. Walls shall be regularly toothed with 8" maximum offsets and anchored by 1/4"x1 1/2"x28" including 2" long 90 degree bend at each end to form a zee shape grouted at 4'-0" centers maximum or by intersecting bond beams with (2) #4 continuous at 4'-0" centers maximum.
- 13. Mortar protrusions extending into cells or cavities to be reinforced and filled, shall be removed. 14. Lay concrete masonry units with full mortar coverage on horizontal and vertical face shell. Bed webs in mortar in starting course of footing and in all courses of columns and pilasters, and where adjacent to cells or cavities to be reinforced of
- 15. All CMU shall be temporarily braced during construction per the governing building code for lateral loads until permanent restraints have been installed. Temporary bracing is the sole responsibility of the contractor. The contractor is
- responsible for all cost associated with repairs resulting from improper or insufficient bracing. 16. All openings shall have a lintel at the head, see drawings. If a lintel is not shown contact engineer for requirements. All CMU bond beams shall have two continuous #4 bars bottom unless noted otherwise.
- 17. SPLICE LENGTHS: Bar Size

2'-0" 2'-6"

3'-2" A. When lapping two different size bars, use the lap dimension of the smaller bar or the anchorage dimension of the larger bar, use whichever dimension is larger.

#### CAST-IN-PLACE CONCRETE

- 1. All concrete construction shall conform to ACI 301, "Specification for Structural Concrete" and ACI 302, "Guide for Concrete Floor and Slab Construction", ACI 305 "Specification for Hot Weather Concreting" and ACI 306, "Standard Specification for Cold Weather Concreting", unless noted otherwise for the year referenced in the building code noted.
- 2. All detailing, fabrication and placing of reinforcing bars, unless otherwise noted, shall conform to ACI 318, "Building Code Requirements for Structural Concrete", ACI 117, "Specification for Tolerances for Concrete Construction and Materials", and the latest ACI detailing manual.
- 3. Concrete Types: A. Interior Concrete:
- a. Min. Cementitious Content = 564 lb/cu yd
- b. Max Water-Cement Ratio = 0.45 c. Specified 28-day Compressive Strength, f'c = 4000 psi
- d. Specified Slump Range for Placement 4" max. w/o W.R. (8" max with W.R.)
- e. Specified Air Content % by Volume = 0 3 (Entrapped) f. Max Size Aggregate = 1"
- B. Concrete Permanently Exposed to Weather & Deicing Chemicals; Exterior Stoops:
- a. Min. Cementitious Content = 658 lb/cu yd b. Max Water-Cement Ratio = 0.40
- c. Specified 28-day Compressive Strength, f'c = 5000 psi d. Specified Slump Range for Placement 4" max. w/o W.R. (8" max with W.R.)
- e. Specified Air Content % by Volume = 6.0 to 8.5
- f. Max Size Aggregate = 1" C. All cement shall be Type I or Type III Portland Cement per ASTM C150. Types IA and IP are not acceptable. Use one brand of cement
- D. Minimum cementitious content shall consist of 100% cement or a combination of flyash see note below, or a combination of cement and ground granulated blast furnace slag (GGBFS) see note below. Flyash shall not be used in combination with GGBFS as a substitute for cement.
- E. Flyash is permitted and shall conform to ASTM C618 Type C (for interior use w/no exposure to weather changes) or F, but shall not exceed 20% of cementitious content by weight indicated above on a substitution basis and shall be included in the water-cement ratio.
- F. Ground granulated blast furnace slag (GGBFS) is permitted and shall conform to ASTM C989, but shall not exceed 15% of cementitious content by weight indicated above on a substitution basis and shall be included in the water-cement ratio. G. Concrete used for floors shall have 1800 psi, 3 day strength. Mixes to be pumped shall be so identified on the mix design submittal. All pumped
- mixes shall have a mid-range or high-range water reducer. H. All admixtures other than superplasticizers shall be added at the batch plant. Superplasticizers, designed for addition to the mix at the plant, may be added at the batch plant with verifications from the engineer and verification that the water-cement ratio has not been exceeded.
- Superplasticizers added at the site shall be in pre-measured containers from the batch plant. I. All concrete used for cast-in-place concrete slabs shall contain the specified water reducing or water reducing/retarding admixture. All concrete slabs, placed at air temperature 50°F shall contain the specified non-corrosive, non-chloride accelerator. All concrete placed at air temperature above 80°F shall contain specific water-reducing/retarder admixture. All concrete required to be air-entrained shall contain an approved airentraining admixture. All pumped concrete shall contain the specified high-range water-reducing admixture. Concrete with a water-cement ratio between 0.4 and 0.6 shall contain the specified water-reducer.
- J. Calcium chloride shall not be permitted nor shall any admixture containing calcium chloride be permitted.
- 4. All pipe sleeve openings through concrete slabs shall be formed with standard steel pipe. 5. No electrical conduit shall be placed above the welded wire fabric or top reinforcing of slab.
- 6. All aluminum in contact with concrete or dissimilar metals shall be coated with two coats of coal tar epoxy, approved by the engineer, unless otherwise noted
- 7. Concrete shall be discharged at the site within 1 ½ hours after water has been added to the cement and aggregates. Addition of water to the mix at the project site will not be permitted. All water must be added at the batch plant. Slump may be adjusted only through the use of additional water
- reducing admixtures or high range water reducing admixture. 8. All concrete shall be placed without horizontal construction joints, except where specifically noted.
- 9. All exposed edges of concrete members shall be chamfered 3/4" unless shown otherwise.
- 10. See architectural drawings for concrete finishes. 11. The placement of sleeves, outlet boxes, box-outs, anchors, etc., for the mechanical, electrical and plumbing trades is the responsibility of the trade
- involved; however, any box-outs not covered by typical details in structural drawings shall be submitted for approval. 12. Reinforcing bars shall conform to ASTM A615, Grade 60, No tack welding of reinforcing in the field will be permitted.
- 13. Welded wire fabric reinforcing shall conform to ASTM A185 and be furnished in flat sheets and installed on chairs.
- 14. Wire bar supports shall be furnished for all reinforcing within slabs, inclusive of welded wire fabric. Bottom bars in slabs-on-grade may be supported by other suitable supports. Reinforcing shall be properly positioned prior to concrete placement and may not be re-positioned once concrete operations have begun. Wire bar and other types of supports shall be in accordance with the concrete reinforcing steel institute manual of standard
- 15. Reinforcement shall be continuous through all construction joints unless otherwise noted on drawings.
- 16. All hooks shown on drawings shall be ACI standard hooks, unless otherwise noted. 17. Where continuous bars are called for, they shall run continuously around corners and be lapped at necessary splices. Lap lengths shall be as given
- in the splice and development table. 18. Provide additional reinforcing at the side and corners of all openings in concrete in accordance with typical details
- A. Minimum additional requirements are as follows:
- a. (2)-#5 top and bottom in slabs b. (2)-#5 each face in walls
- c. (2)-#5 x 4'-0" long diagonally each corner of opening
- B. Extend bars a minimum of 2'-0" beyond openings, hook where extension is not possible. 19. In reinforced concrete walls, grade beams and trench footing provide corner dowels of same size and spacing as horizontal reinforcing. Dowels
- shall lap with horizontal reinforcing in each direction. 20. The following minimum concrete cover shall be provide for reinforcement, unless otherwise noted:
- A. Earth formed and cast directly against soil 3" B. Cast against forms but exposed to earth and weather
- a. #6 and Larger 2"
- b. #5 and Smaller 1 ½"

4'-6"

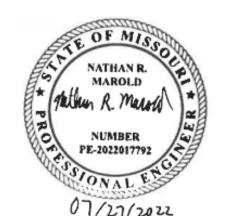
dimension is larger.

- C. Slabs and walls not exposed to earth or weather  $-\frac{3}{4}$ " D. Others - 2"
- 21. Reinforcing bars shall have a minimum clear spacing of 4"
- 22. SPLICE LENGTHS: 1'-7"
- 2'-0" 2'-6" 3'-6" 4'-0"
- A. When lapping two different size bars, use the lap dimension of the smaller bar or the anchorage dimension of the larger bar, use whichever

## SPECIAL STRUCTURAL INSPECTIONS AND TESTING (CONTRACTOR RESPONSIBILITY)

- 1. Owner will engage a qualified testing and inspecting agency to perform field special structural inspections and testing in accordance
- with the applicable International Building Code and to submit reports. 2. The Contractor shall provide a minimum of 48 hours notification to the Special Inspector prior to needing an inspection. The
- Contractor shall provide access to the work so the Special Inspections can be completed. The Contractor shall verify all Special Inspections have been completed and discrepancies corrected prior to covering the work. 3. Special inspection and testing reports shall be furnished to owner, structural engineer, and contractor.
- 4. The special inspector shall submit a final report stating that the structural work was, to the best of the special inspector's knowledge, performed in accordance with the construction documents.
- 5. Special inspections shall conform to Chapter 17 of the International Building Code, IBC, 2018. Special inspections include: A. Steel Construction - 1705.2 (Joists Strengthening Welds) B. Concrete Construction - Table 1705.3 (Interior Concrete Slab)

#### STATE OF MISSOURI MICHAEL L. PARSON, **GOVERNOR**



07/27/2022

C

MANAGEMENT, **DESIGN AND CONSTRUCTION** 

**DIVISION OF FACILITIES** 

**OFFICE OF ADMINISTRATION** 

RENOVATE SUB (ACID) LAB

MISSOURI GEOLOGICAL SURVEY (DNR)

#### 111 FAIRGROUNDS ROAD **ROLLA, MISSOURI 65401**

PROJECT # W2001-01 5001 7815001009 ASSET #

**REVISION:** DATE **REVISION:** DATE **REVISION:** DATE:

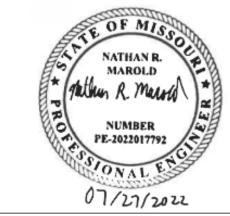
ISSUE DATE: 07/27/202

CAD DWG FILE: S001 DRAWING BY: NRM CHECKED BY: KTH DESIGNED BY: NRM

SHEET TITLE: **STRUCTURAL NOTES** 

SHEET NUMBER:





EYOPS

BYONS

BYONS

Bashurg, IL.

Brainel MO

SOCIATES, P. C S. Architects · Surveyonissouri

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

RENOVATE SUB (ACID) LAB

MISSOURI GEOLOGICAL SURVEY (DNR)

111 FAIRGROUNDS ROAD ROLLA, MISSOURI 65401

PROJECT # W2001-01 SITE # 5001 ASSET # 7815001009

REVISION:
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DATE:
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CAD DWG FILE: S201 DRAWING BY: NRM CHECKED BY: KTH DESIGNED BY: NRM

ISSUE DATE: 07/27/2022

SHEET TITLE:

FRAMING PLAN

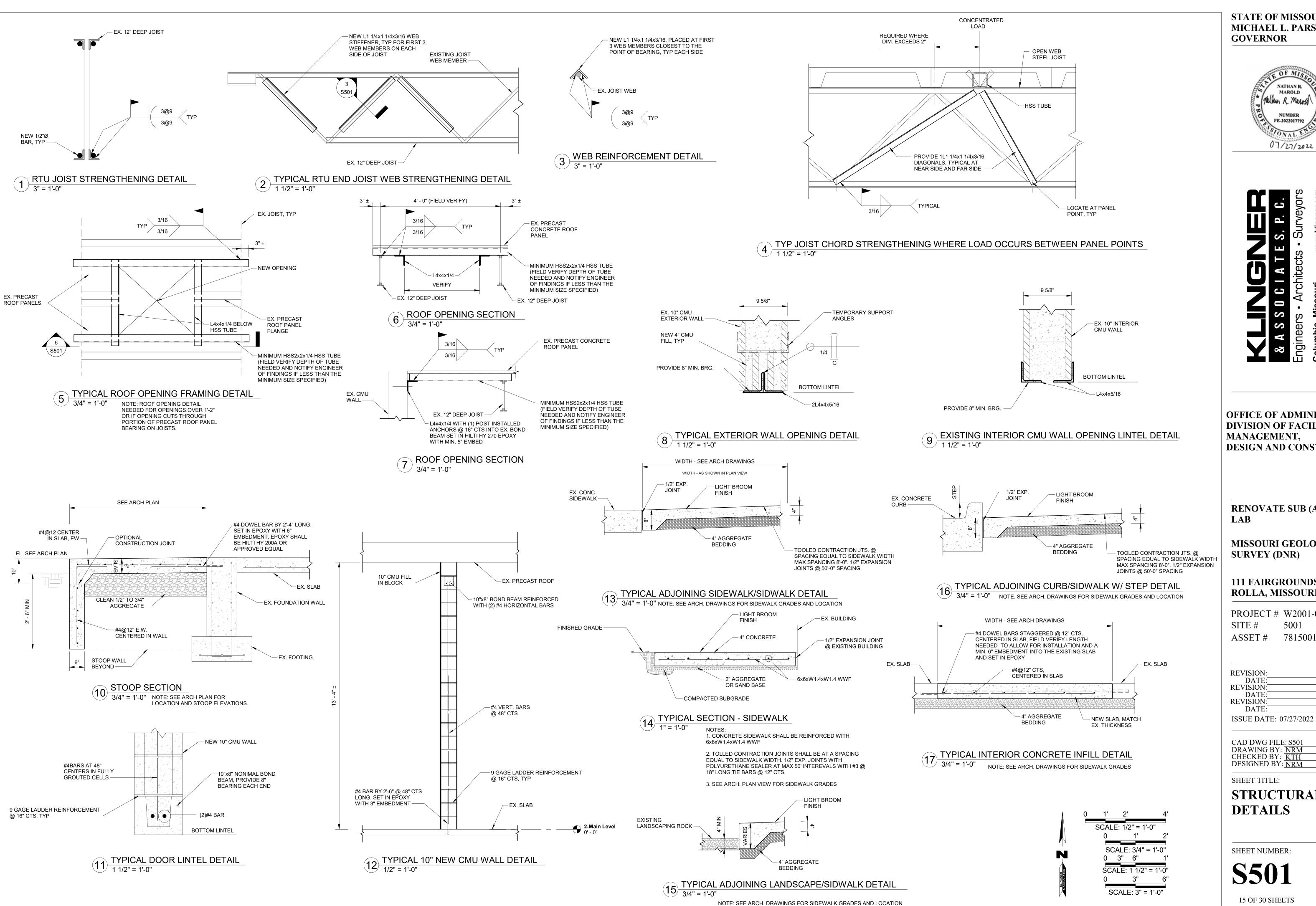
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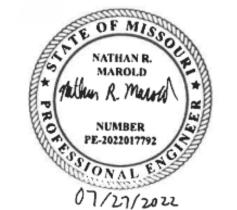
**S201** 

14 OF 30 SHEETS 07/27/2022

SCALE: 3/8" = 1'-0"







OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, **DESIGN AND CONSTRUCTION** 

RENOVATE SUB (ACID) LAB

MISSOURI GEOLOGICAL SURVEY (DNR)

111 FAIRGROUNDS ROAD **ROLLA, MISSOURI 65401** 

PROJECT # W2001-01 5001 7815001009 ASSET#

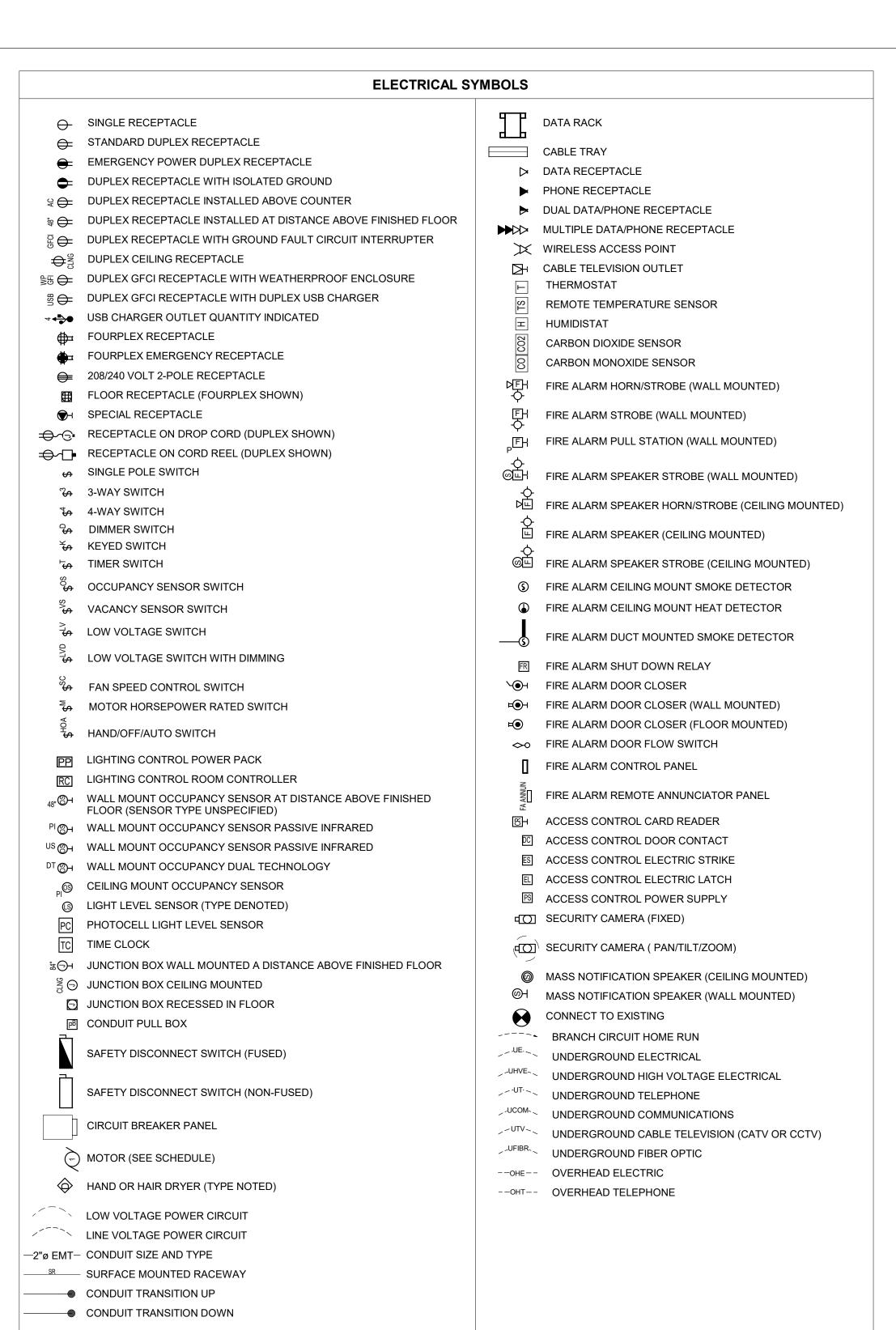
**REVISION:** DATE REVISION: DATE REVISION: DATE:

CAD DWG FILE: S501 DRAWING BY: NRM CHECKED BY: KTH DESIGNED BY: NRM

SHEET TITLE:

**STRUCTURAL DETAILS** 

SHEET NUMBER:



	2"	PIPE	SIZE TAC	G (DIAMETER)
	<u></u>			IND PIPING
			SLOPE T	
1/8'	' / 12" SLOPE			JND PIPING
	ELEV:0' - 1 5/64"			ELEVATION TAG
TINV. E	ELEV.U - 1 5/64			
			TING PIPI	
	—G————————————————————————————————————		JRAL GAS PRESSEI	
				E DRAINAGE
	— – ——CW——			
	HW			
				T WATER-CIRCULATING
	— GV— — —			
	—GW———	GRE	ASE WAS	TE
- <b>-</b> -	v	SANI	TARY VE	NT
	—ss——	SANI	TARY SE	WER
	—SD——	STOF	RM DRAIN	IAGE
	—OSD———	STOF	RM DRAIN	AGE-OVERFLOW
		— PIPE	DROP	
G		— PIPE	RISE	
		— PIPE —CAP	TEE	
4"	4" 2"— >	OAI		
		—PLUC	3	
Δ"—/	X			DEGREE TEE
4		— 45 DI	EGREE T	EE
	OMESTIC WATER M	1ETER		MOTORIZED CONTROL VALVE
	LOW MEASURING A ALANCING DEVICE	ND	<b></b> \$	
⊣Ф⊢ В	ALL VALVE			PRESSURE REDUCING VALVE
– <b>∠</b> – C	HECK VALVE		— <b>§</b> —	SOLENOID VALVE
-₩ T	HREE WAY VALVE		—  <b>/</b>  —	BUTTERFLY VALVE
	<b>→</b>	— PLUM	MBING FIX	XTURE
	HB-1			XTURE TAG
		— TYPE	E (SEE TA	GS BELOW)
				ATCH BASIN STIC CIRCULATION PUMP
		ECO	- EXTERI	OR CLEANOUT
				ON TANK GENCY SHOWER/EYEWASH STATION
			- FLOOR FLOOR D	CLEANOUT PRAIN
		HW -	- WATER	HEATER
		SK -	- LAVATO SINK	
		_	WATER	CLOSET FOUNTAIN
				EXISTING

•	CONNECT TO EXISTING
	HVAC SYMBOLS
16"x8"	SQUARE DUCT SIZE TAG (WIDTH x HEIGHT)
(E)	EXISTING DUCT TAG
r	DUCT BEING DEMOLISHED
SA	SUPPLY AIR
OA 🔀	OUTSIDE AIR
RA	RETURN AIR
EA	EXHAUST AIR
$\bowtie$	AIR INLET/OUTLET
<b>△</b>	TYPE (SEE SCHEDULE)
X 500	GRILLES, REGISTERS, AND DIFFUSERS TAG
<u>AHU-8</u>	MECHANICAL EQUIPMENT
CARBON DIOXIDE SENSOR	CO2 TH TEMPERATURE & HUMIDITY SENSOR
CARBON MONOXIDE SENSOR	CO TS TEMPERATURE SENSOR
NITROGEN DIOXIDE SENSOR	NO2 T THERMOSTAT
HUMIDITY SENSOR	HS SW MANUAL SWITCH
HUMIDISTAT	H RP ROOM STATIC PRESSURE
=	MANUAL BALANCING DAMPER
_ □ <i>_</i>	FIRE DAMPER
□ √s	SMOKE DAMPER
□ M	
	MOTORIZED DAMPER
	BACKDRAFT DAMPER
	COMBINATION FIRE/SMOKE DAMPER
•	CONNECT TO EXISTING

	HVAC SCHEMATI	C DIAGRAM SYM	IBOLS
	R UNIT OR AIR PROCESSING UNIT COVERY VENTILATOR R	(V) >	FIELD CONTROL WIRING FACTORY CONTROL WIRING CONTROLS VENDOR SUPPLIED ANALOG SIGNAL DIGITAL SIGNAL
SA - SUPPLY AIR TA - TRANSFER AI		FS	FREEZE STAT
	DUCTWORK	FDP	FILTER DIFFERENTIAL PRESSURE SWITCH
	FAN		
gwwwg	DX COIL OR HOT GAS RE-HEAT	DP T	DUCT STATIC PRESSURE SENSOR
(A)		ENT	ENTHALPY SENSOR
\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	DAMPER	T	AIR TEMPERATURE SENSOR
Q Q Q	ELECTRIC RESISTANCE HEAT	(AF)	AIDELOW OWITOU
	FILTER		AIRFLOW SWITCH
			AIRFLOW DIRECTION
	FIXED PLATE HEAT EXCHANGER	XX	SPACE SENSOR

	CONTROL DIAGRAM S	TIVIDUL LEGENU		
 	POWER (LINE VOLTAGE) WIRE			
$ \phi$	CONTROL (LOW VOLTAGE) WIRE			
1	ELECTRICAL CONNECTION			
	NO ELECTRICAL CONNECTION			
(xx yy	CONTROL POINT xx = DESCRIPTION, yy = DESIGNATION	N, zz = NOTE		
<u> — -01 10- —</u>	NORMALLY OPEN CONTACT			
<u> </u>	NORMALLY CLOSED CONTACT			
— -0½0- —	NORMALLY CLOSED CONTACT WITH	THERMAL OVERLOAD		
	NORMALLY OPEN TIME DELAY RELAY CLOSES UPON TIME DELAY AFTER AG	CTIVATION		
070-	NORMALLY CLOSED TIME DELAY REL OPENS UPON TIME DELAY AFTER AC	<del>-</del> ···		
	NORMALLY CLOSED TIME DELAY REL OPENS UPON TIME DELAY AFTER DE			
	NORMALLY CLOSED TIME DELAY REL OPENS UPON TIME DELAY AFTER DE	<del>-</del> ···		
	NORMALLY OPEN TEMPERATURE SW CLOSES ON RISE IN TEMEPERATURE			
	NORMALLY CLOSED TEMPERATURES OPENS UPON RISE IN TEMPERATURE			
0_0-	NORMALLY OPEN FLOW SWITCH CLOSES UPON INCREASING FLOW			
<u> </u>	NORMALLY CLOSED FLOW SWITCH OPENS UPON INCREASING FLOW			
0~0-	NORMALLY OPEN LEVEL SWITCH CLOSES UPON INCREASING LEVEL			
050-	NORMALLY CLOSED LEVEL SWITCH OPENS UPON INCREASING LEVEL			
>	NORMALLY OPEN LEVEL SWITCH CLOSES UPON INCREASING PRESSU	RE		
<u> </u>	NORMALLY CLOSED LEVEL SWITCH OPENS UPON INCREASING PRESSUR	RE		
~~-	NORMALLY OPEN LEVEL SWITCH CLOSES UPON LIMIT			
	NORMALLY CLOSED LEVEL SWITCH OPENS UPON LIMIT			
— -OOO- —	NORMALLY OPEN LEVEL SWITCH CLOSES UPON LIMIT			
— - <del></del>	NORMALLY CLOSED LEVEL SWITCH OPENS UPON LIMIT			
—	THREE POSITION SELECTOR SWITCH MAINTAINED CONTACTS XX = AUTOMATIC CONTROL INPUT	<del>{</del>		
<u> </u>	NORMALLY OPEN PUSHBUTTON MOMENTARY CONTACT			
<u> </u>	NORMALLY CLOSED PUSHBUTTON MOMENTARY CONTACT			
<u> </u>	INDICATING LIGHT c = COLOR	LENS COLOR CODE: R = RED Y = YELLOW		
<u></u>	PUSH-TO-TEST INDICATING LIGHT c = COLOR	G = GREEN W = WHITE B = BLUE A = AMBER		
<del></del>	SOLENOID VALVE	<u> </u>		
	THERMAL OVERLOAD ELEMENT			



I A T E S, P. G.
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i www.klingner.com

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

RENOVATE SUB (ACID) LAB

MISSOURI GEOLOGICAL SURVEY (DNR)

111 FAIRGROUNDS ROAD ROLLA, MISSOURI 65401

PROJECT # W2001-01 SITE # 5001 ASSET # 7815001009

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 07/27/2022

CAD DWG FILE: MEP001
DRAWING BY: MHB
CHECKED BY: JJN
DESIGNED BY: MHB

SHEET TITLE:

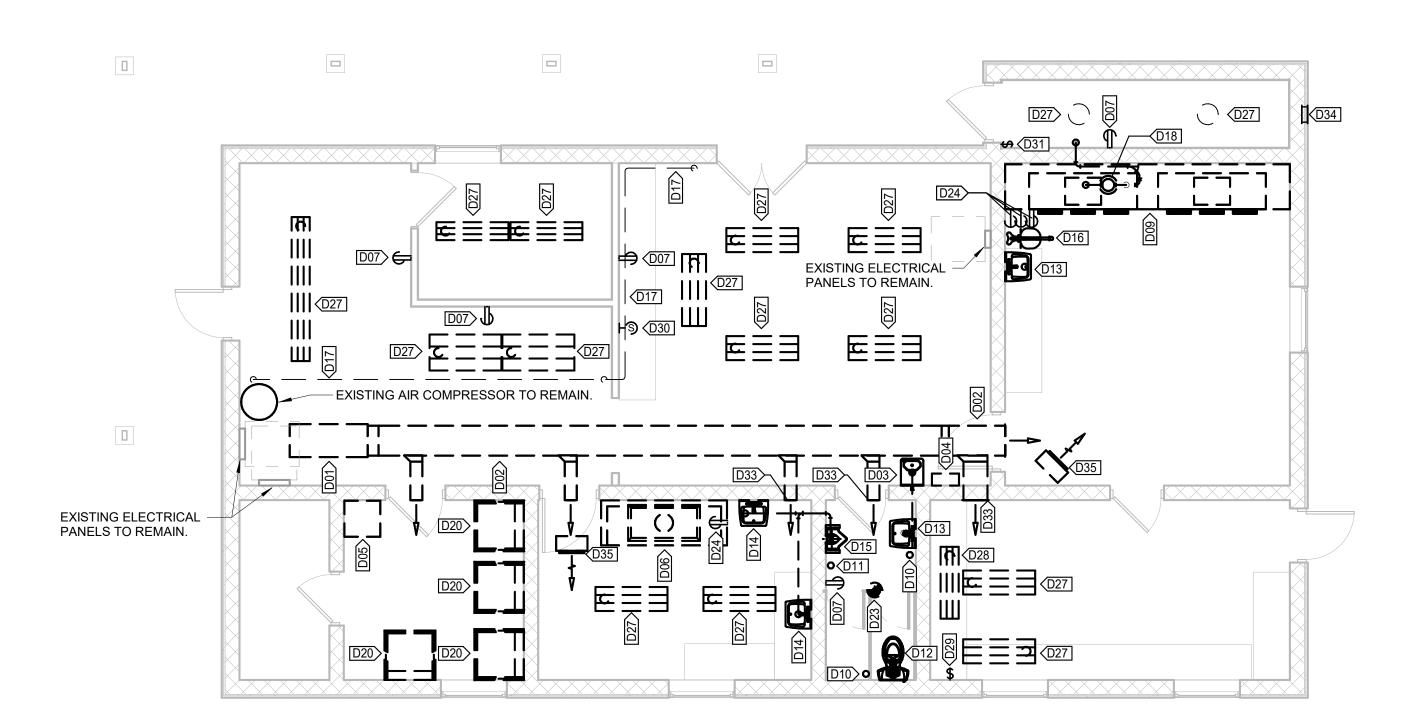
MEP SYMBOLS AND NOTES

SHEET NUMBER:

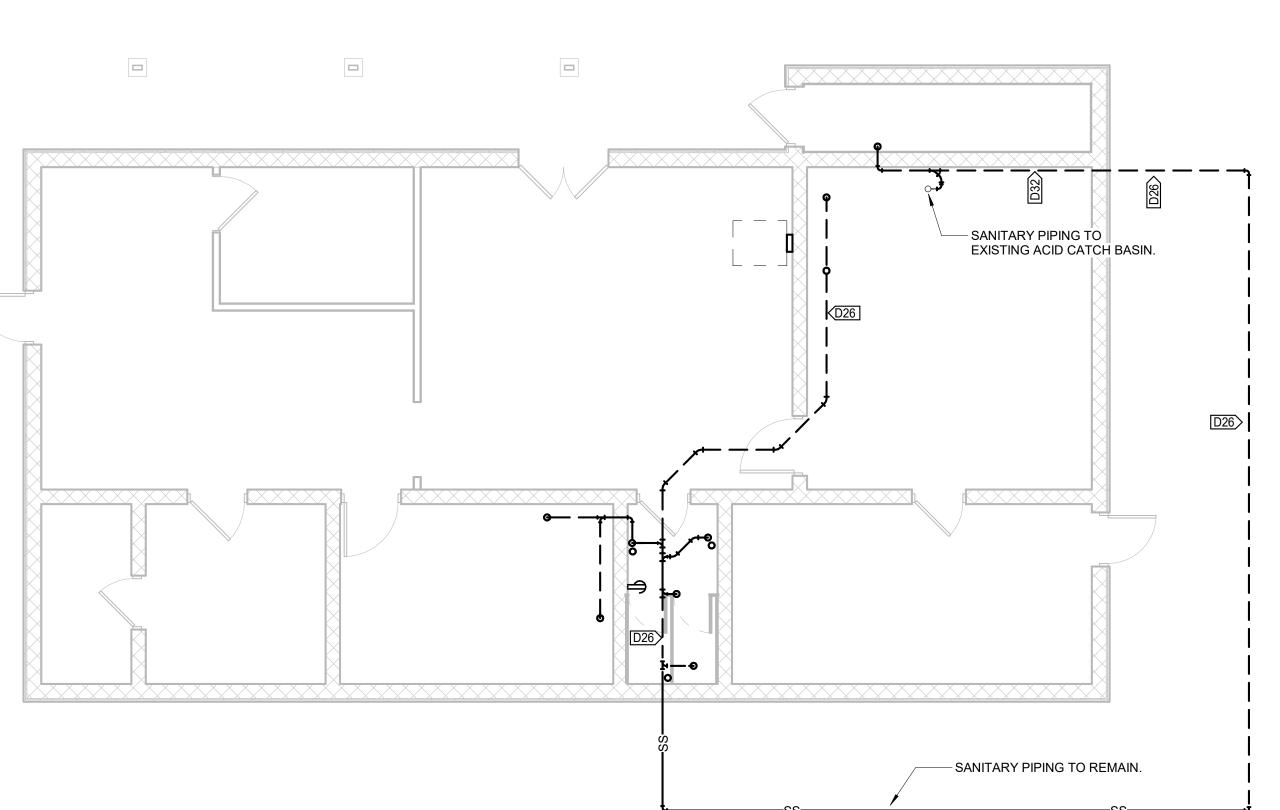
# **MEP001**



1 MEP DEMOLITION ROOF PLAN

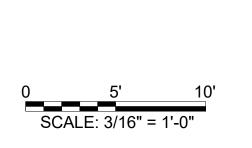


2 MEP DEMOLITION ABOVE FLOOR PLAN
3/16" = 1'-0"



MEP DEMOLITION BELOW FLOOR PLAN

3/16" = 1'-0"



# STATE OF MISSOURI MICHAEL L. PARSON, GOVERNOR SER PIPING WITHIN BUILDING. S. WORK ASSOCIATED WITH STURAL SHEETS FOR MORE IN WATER SUPPLY AS POSSIBLE RUCTION. RY AND VENT PIPING. COMPRESSOR TO REMAN. TE NEW CONSTRUCTION.

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

0 S

& ASSOCIATES, P.C. - ENGINEERI STATE CERTIFICATE OF AUTHORI

RENOVATE SUB (ACID) LAB

MISSOURI GEOLOGICAL SURVEY (DNR)

111 FAIRGROUNDS ROAD ROLLA, MISSOURI 65401

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REVISION:
DATE:
ISSUE DATE: 07/27/2022

CAD DWG FILE: MEP101
DRAWING BY: MHB
CHECKED BY: JJN
DESIGNED BY: MHB

SHEET TITLE:

MEP DEMOLITION PLAN

SHEET NUMBER:

**MEP101** 

17 OF 30 SHEETS 07/27/2022

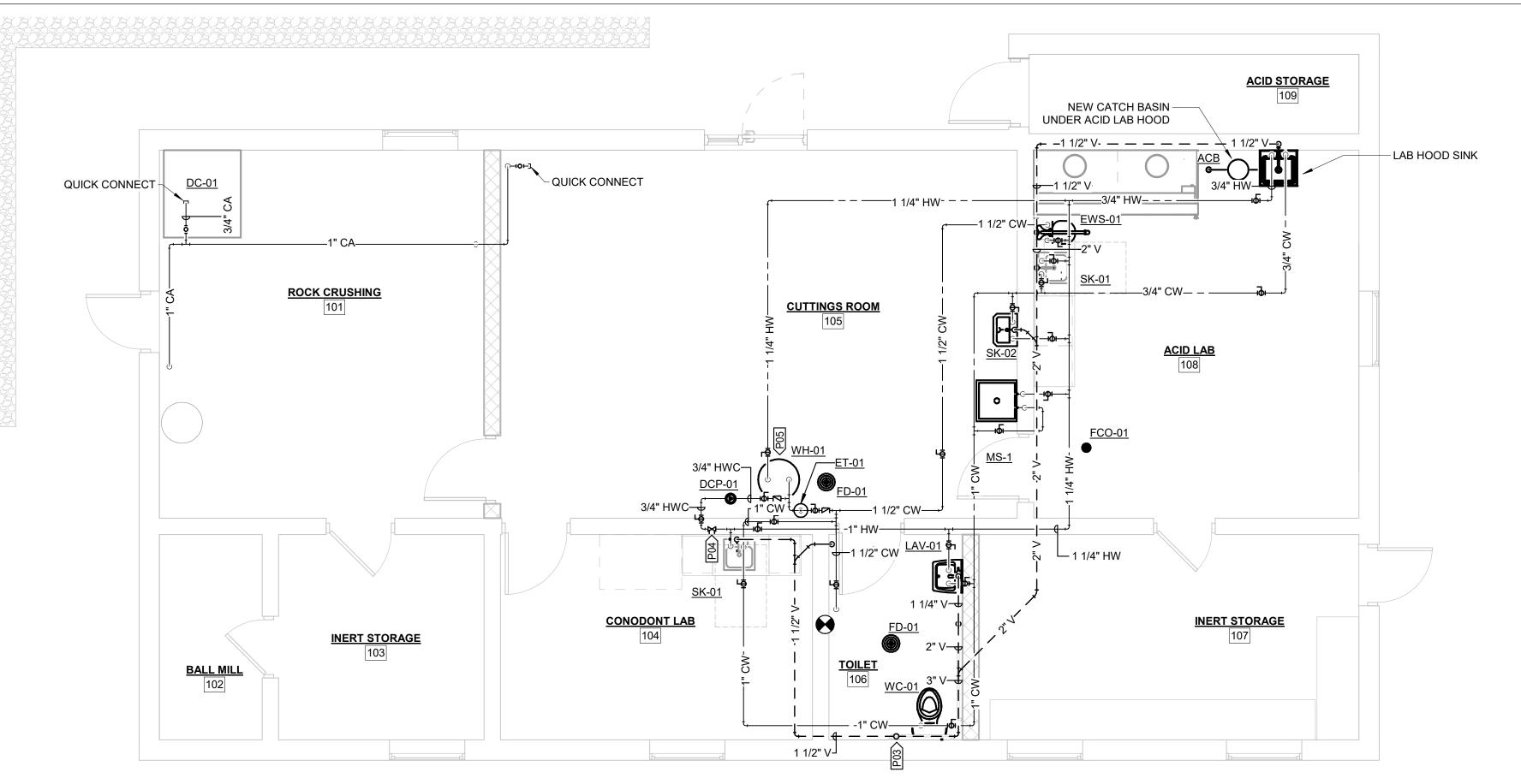


DEMOLITION LEGEND

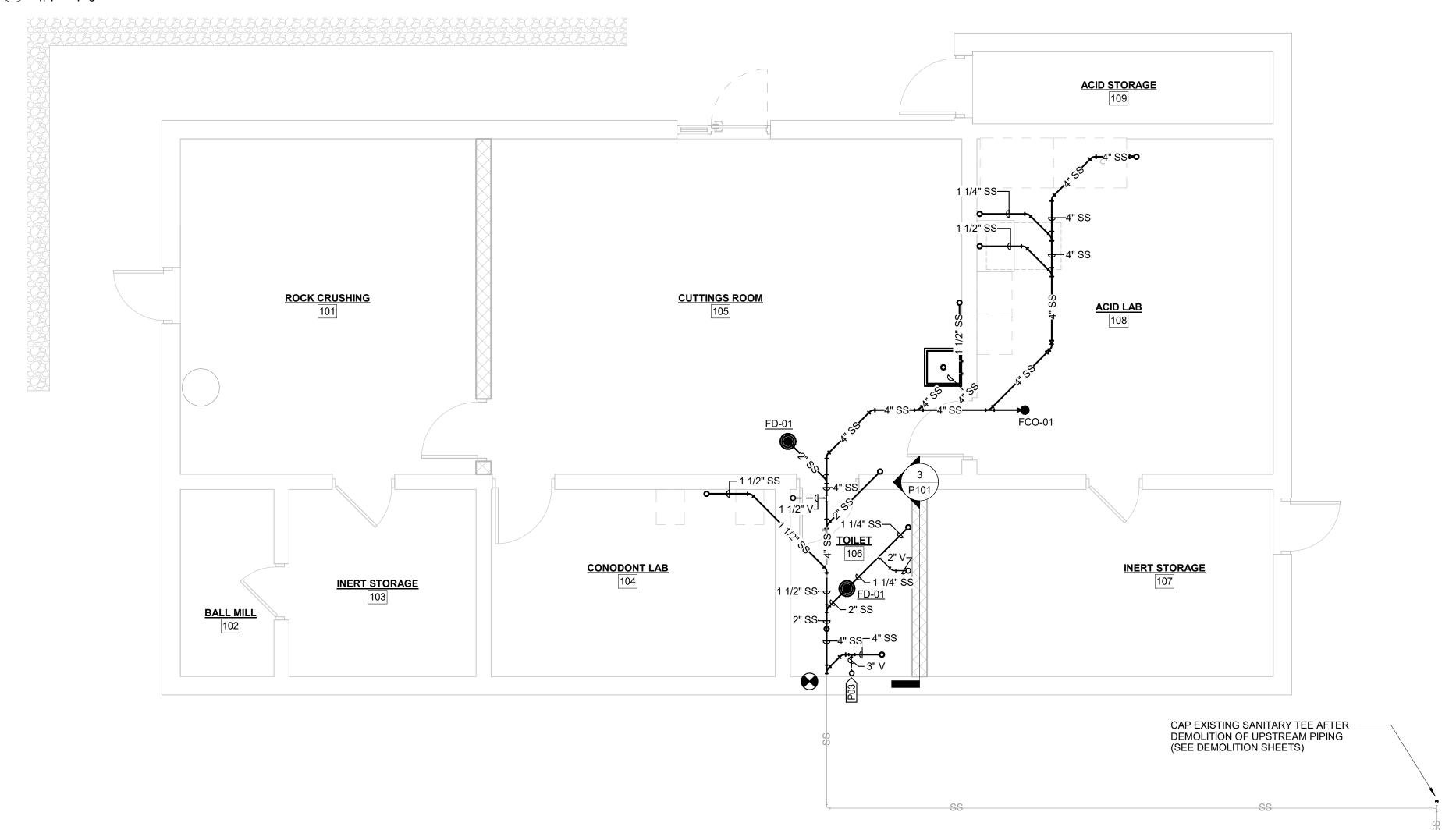
— — — — DEMOLITION LINE TYPE

— EXISTING LINE TYPE

D36 REMOVE ROOF MOUNTED HOOD EXHAUST FANS AND ASSOCIATED DUCTWORK.



ABOVE FLOOR PLUMBING PLAN



<u>LAV-01</u> 2" SS-

**KEYNOTE LEGEND** 

ACCESSORIES.

AND FULL STEM MOVEMENT.

P02 SEE FLOOR PLAN FOR CONTINUATION. P03 3" MAIN STACK VENT THROUGH ROOF. P04 3/4" CIRCUIT SETTER SET TO 0.75 GPM.

DESCRIPTION

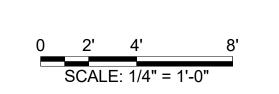
P05 STRAINER, PRESSURE GAUGES, THERMOMETER AND AQUASTAT FOR HOT WATER LOOP NOT SHOWN ON PLAN VIEW. SEE PLUMBING DETAILS FOR MORE INFORMATION ON PIPE

GENERAL SHEET NOTES:

1) BALL VALVE LOCATIONS ARE SCHEMATIC. INSTALL BALL VALVES TO ALLOW EASY ACCESS

2) SEE ARCHITECTURAL SHEETS FOR CONCRETE FLOOR CUTTING AREA TO FACILITATE UNDERGROUND PLUMBING WORK.

3 CONNECTION TO EXISTING SANITARY SEWER NTS



STATE OF MISSOURI MICHAEL L. PARSON, **GOVERNOR** 



RENOVATE SUB (ACID)

OFFICE OF ADMINISTRATION

**DESIGN AND CONSTRUCTION** 

**DIVISION OF FACILITIES** 

MANAGEMENT,

LAB

MISSOURI GEOLOGICAL SURVEY (DNR)

111 FAIRGROUNDS ROAD **ROLLA, MISSOURI 65401** 

PROJECT # W2001-01 5001 7815001009 ASSET#

**REVISION:** DATE: REVISION: DATE: REVISION: DATE: ISSUE DATE: 07/27/2022

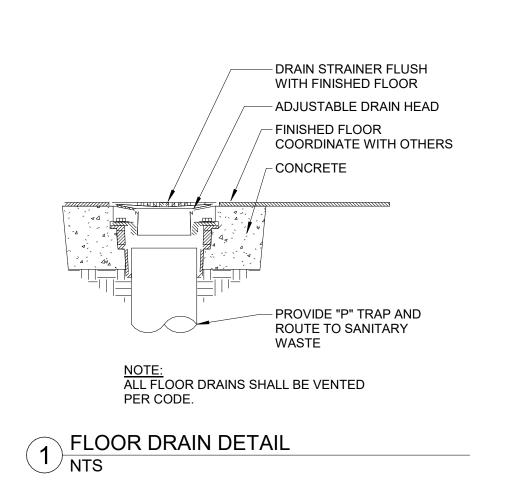
CAD DWG FILE: P101 DRAWING BY: MHB CHECKED BY: JJN DESIGNED BY: MHB

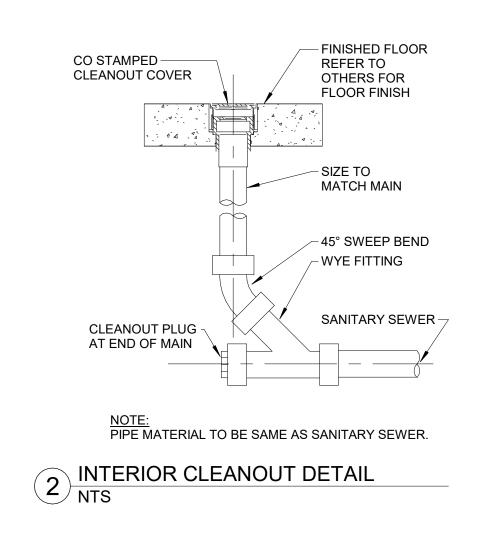
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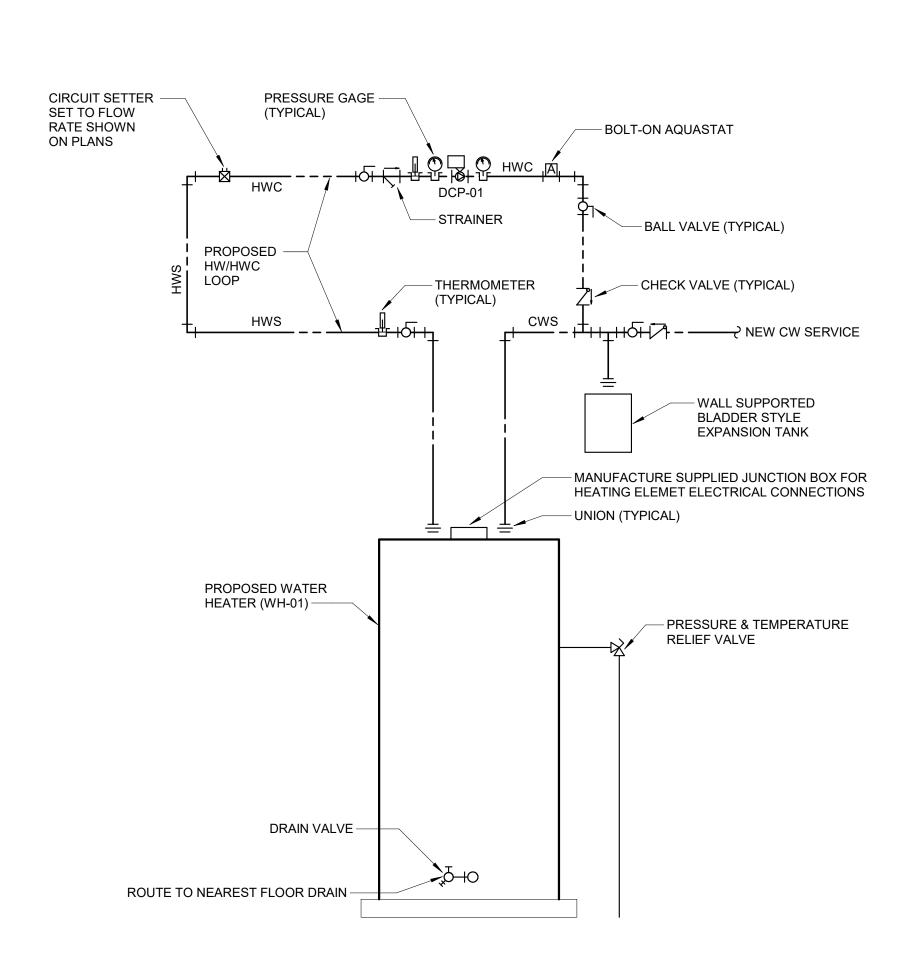
**PLUMBING PLAN** 

SHEET NUMBER:

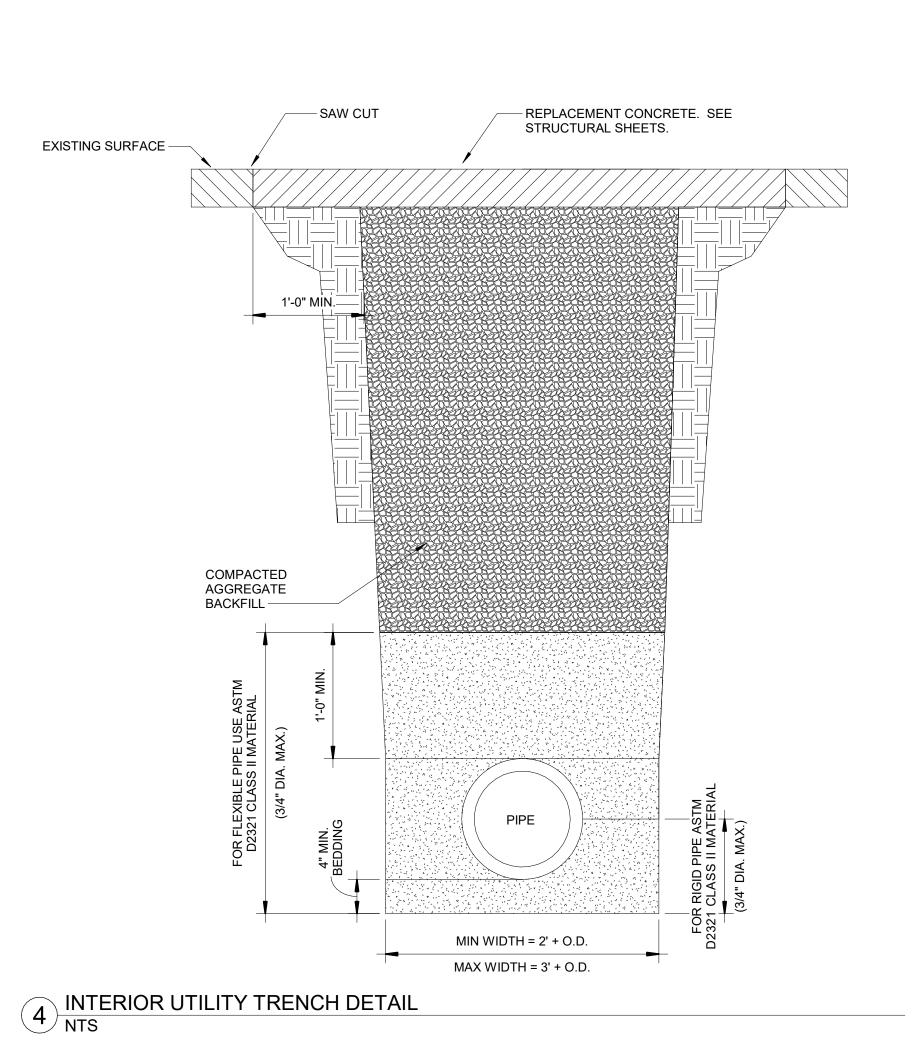


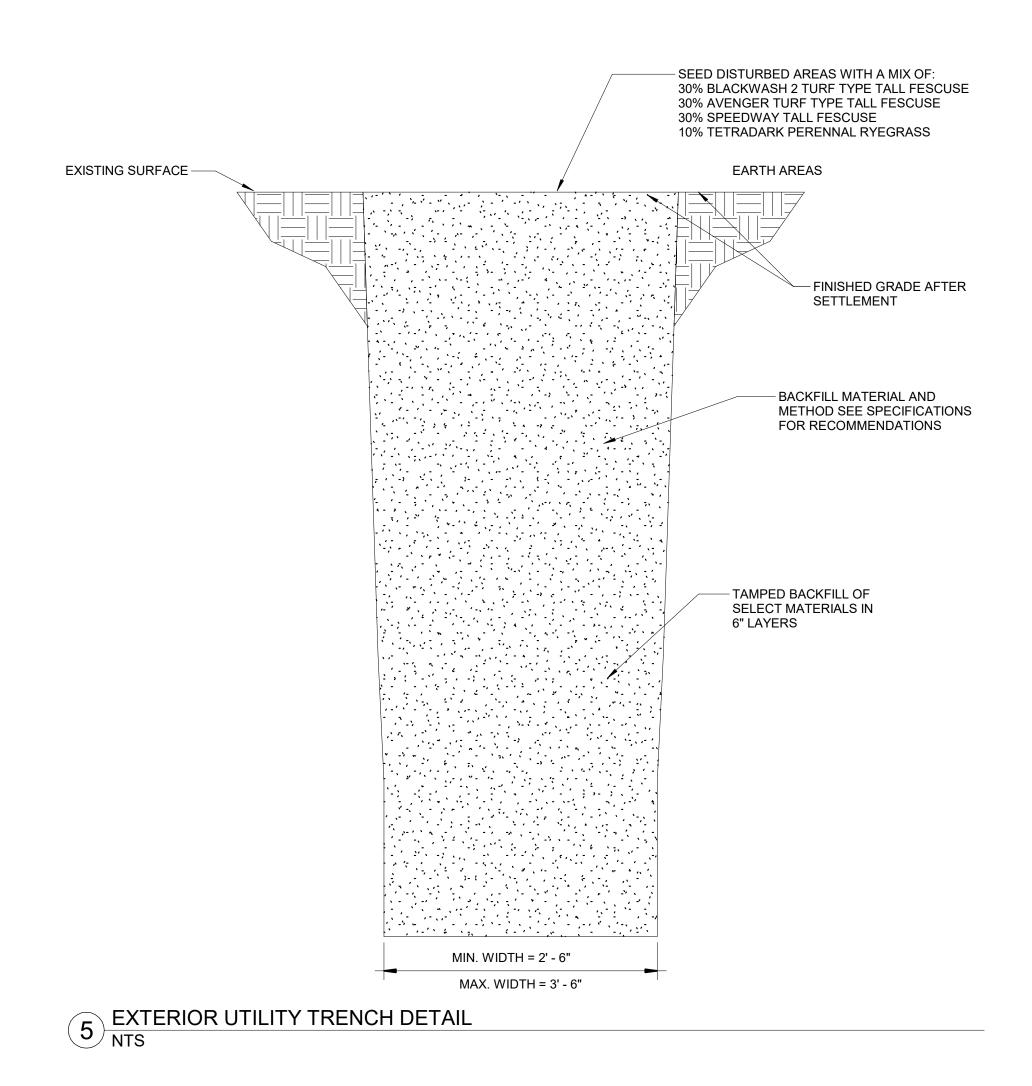






WATER HEATER DETAIL NTS





STATE OF MISSOURI MICHAEL L. PARSON, **GOVERNOR** 



OFFICE OF ADMINISTRATION **DIVISION OF FACILITIES** MANAGEMENT, **DESIGN AND CONSTRUCTION** 

RENOVATE SUB (ACID) LAB

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PROJECT # W2001-01 5001 7815001009

ASSET#

**REVISION:** DATE: **REVISION:** DATE: **REVISION:** DATE:

CAD DWG FILE: P501 DRAWING BY: MHB

ISSUE DATE: 07/27/2022

CHECKED BY: JJN DESIGNED BY: MHB

SHEET TITLE:

**PLUMBING DETAILS** 

SHEET NUMBER:

P501

									PLUMBING FIXTU	JRE SCHEDULE					
		1		PIPE SI	ZE	В	BASIS OF DESIGN			BASIS OF DESIGN FIXTURE ACCESSORIES					
_	ADA DESCRIPTION	CW		SS	V	MAKE	MODEL	FIXTURE REMARKS	TYPE	DESCRIPTION	MAKE	MODEL	ACCESSORY REMARKS		
S-01	No FLOOR MOUNTED, HAND OPERATED, W/ STAINLESS STEEL RECEPTOR & SHOWER HEAD, DUAL EYE/FACE SPRAY HEADS, & 30 GPM FLOW CONTROL	1 1/4"	1 1/4"	1 1/4"		CHICAGO FAUCET HAWS SPEAKMAN	8202-NF 8320CRP SE-697		MIXING VALVE	WALL MOUNTED EMERGENCY WATER MIXING VALVE W/ LOCKING TEMP. REGULATOR, INTERNAL COLD WATER BYPASS, BIMETAL THERMOSTAT, HIGH TEMP. LIMIT STOP, UNION CHECKSTOPS, DIAL THERMOMETER		TM-600-LF W/ TM-600-LF-STSTL-REC ETV500 EFX25			
D-01	No ADJUSTABLE, 2" OUTLET, CAST IRON BODY W/ POLISHED NICKEL BROZE TOP & BRONZE PLUG	-		2"		ZURN JAY R SMITH MIFAB	ZN-1400-BP-SG-SM 4021S C1220-1	COORDINATE FINISH ELEVATION WITH GENERAL CONTRACTOR							
D-01	No POLISHED NICKEL BRONZE STRAINER, CAST IRON BODY, PROVIDE WITH DEEP SEAL TRAP & 5" DIA. TYPE B STRAINER	0"	0"	2"		SIOUX CHIEF JOSAM ZURN	842-2-P-NR 31002-Y FD-370FD2210-PV2	COORDINATE FINISH ELEVATION WITH GENERAL CONTRACTOR							
V-01	Yes WALL MOUNT LAVATORY, 19"W X 17"D, VITREOUS CHINA WITH FAUCET HOLES ON 4" CENTERS	1/2"	1/2"	1 1/4"		AMERICAN STANDARD GERBER KOHLER	DECLYN 0321.075 12-314-98 K-1728		MIXING VALVE		LEONARD BRADLEY WATTS	TA-300-LF W/ TA-300-LF-STSTL-REC S19-2000 ETV200	PROVIDE WITH POINT OF USE THERMOSTATION MIXING VALVE SET TO 104F.		
/IS-1	No 3" DRAIN, MOLDED ONE-PIECE CONSTRUCTION	1/2"	1/2"	3"		FIAT MUSTEE FLORESTONE	TSB3010		FAUCET	8" ADJUSTABLE CENTERS, 1/4-TURN LEVER ACTUATED TYPE W/ SEPARATE HOT & COLD WATER CONTROL, VACUUM BREAKER NOZZLE, WALL BRACE, AND ROUGH CHROME PLATED FINISH	CHICAGO FAUCETS TS BRASS BRADLEY	897-RCF			
K-01	Yes SINGLE WELL SINK, 18 GA. (18-8) NICKEL BEARING STAINLESS STELL WITH SINGLI FAUCET HOLE AND ONE 14"x14"x6" BOWL. PROVIDE WITH LK-36 BASKET STRAINER		1/2"	1 1/2"		ELKAY JUST MANUFACTURIN FRANKE	LR-1720 G SL-2017-A-GR ALBS4406P-1		FAUCET	HIGH RISE SPOUT, SINGLE LEVER, UNDER COUNTER MOUNT, CAST BRASS CHROME PLATED, CERAMIC CARTRIDGE, (2 OR 3) HOLE MOUNT, 2.2 GPM AERATOR	ELKAY GERBER AMERICAN STANDARD	LK3000CR 40-161 4101.350			
K-02	Yes WALL MOUNT LAVATORY, 19"W X 17"D, VITREOUS CHINA WITH FAUCET HOLES ON 4" CENTERS		1/2"	1 1/4"		AMERICAN STANDARD GERBER KOHLER	DECLYN 0321.075 12-314-98 K-1728		FAUCET  CARRIER	4" CENTERS, SELF CLOSING METERING TYPE W/ SEPARATE HOT & COLD WATER CONTROL AND 0.5 GPM FLOW CONTROL  W/ FOOT SUPPORT AND CONEALED ARMS	GERBER TSBRASS WADE JAY R SMITH	802-VE2805-665ABCP 44-340 B-0831 520 0700	PROVIDE WITH POINT OF USE THERMOSTATION MIXING VALVE SET TO 104F.		
									MIXING VALVE	WALL MOUNTED WATER MIXING VALVE W/ LOCKING TEMP.	ZURN LEONARD BRADLEY WATTS	Z1231 TA-300-LF W/ TA-300-LF-STSTL-REC S19-2000 ETV200			
'C-01	Yes FLOOR MOUNTED VITREOUS CHINA, ELONGATED BOWL, SIPHON ACTION, LOW CONSUMPTION, W/ CLOSE	1"	0"	4"		AMERICAN STANDARD GERBER KOHLER	270AA.101 WS-21-818 K-25077	16-1/2" - 17" FLOOR TO RIM	SEAT	ELONGATED HEAVY DUTY, SOLID PLASTIC, OPEN FRONT, WITH LIFT OFF HINGE SYSTEM  MANUAL LEVER OPERATED FLUSH TANK	BEMIS KOHLER AMERICAN STANDARD	2155CTJ K-4666-CA 5901.100			
	COUPLED TANK								TANK		AMERICAN STANDARD KOHLER GERBER	4021.101N K-25100 WS-28-890			

		WAT	ER HEATER	SCHEDULE			
TAG	DESCRIPTION	MAKE	MODEL	PHASE	VOLTAGE	POWER	REMARKS
WH-01	COMMERICAL GRADE, ELECTRIC TANK WATER HEATER	AO SMITH HUBBELL BRADFORD WHITE	DRE-80 SE80 LE280T3-3	1	240V	6.0 kW	

				DON	IESTIC CIRC	CULATING F	PUMP S	CHEDULE			
					ELECTRICAL P	ARAMETERS		BAS	IS OF DESIGN		
TAG	TYPE	FLOW	HEAD	VOLT	POLES	HP	MOP	MAKE	MODEL	WEIGHT	REMARKS
DCP-01	IN-LINE DOMESTIC HOT WATER CIRCUI ATING PUMP	8.0 GPM	10.2 ftH2O	120 V	1	1/25	20 A	TACO	MODEL 008	7 lb	1,2,3

- REMARKS:

  1) THE MANUFACTURER LISTED IS BASIS OF DESIGN. SEE SPECIFICATIONS FOR ADDITIONAL MAUFACTURERS.
  2) PROVIDE WITH BOLT ON AQUASTAT.
  3) HOT WATER CIRCULATOR SHALL RUN WHEN HWC TEMPERATURE AT AQUASTAT DROPS BELOW 120F.

				DOMESTIC	EXPANSI	ON TANK SCI	HEDULE			
					TANK	ACCEPTANCE	BAS	SIS OF DESIGN		
TAG	DESCRIPTION	MAX. PRES.	MAX. TEMP.	PRE-CHARGE	VOLUME	VOLUME	MAKE	MODEL	WEIGHT	REMARKS
ET-01	POTABLE WATER, BLADDER STYLE EXPANSION TANK	150 psi	200 °F	50 psi	4.4 gal	2.2 gal	AMTROL BELL & GOSSETT ZURN	ST PT WTTA	10 lb	1

REMARKS:

1) PROVIDE WALL SUPPORT HARDWARE.

				ACID CATC	H BASIN SCI	HEDULE				
		BASIS OF	DESIGN				TANK DIMENSIO	NS		
TAG	DESCRIPTION	MAKE	MODEL	CAPACITY (GALLONS)	TANK HEIGHT (IN.)	TANK DIAMETER (IN.)	INLET CONNECTION (IN.)	OUTLET CONNECTION (IN.)	VENT CONNECTION (IN.)	REMARKS
ACB	ACID NEUTRALIZATION TANK	ZURN WATTS CHEM-TAINER	Z9A-NT-5 T5 TC1114KB	5	16	11	2	2	2	1

REMARKS:

1) PROVIDE WITH ONE 50LB BAG OF STANDARD LIMESTONE CHIPS.

# STATE OF MISSOURI MICHAEL L. PARSON, GOVERNOR



OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, **DESIGN AND CONSTRUCTION** 

RENOVATE SUB (ACID) LAB

MISSOURI GEOLOGICAL SURVEY (DNR)

111 FAIRGROUNDS ROAD **ROLLA, MISSOURI 65401** 

PROJECT # W2001-01 5001 SITE# ASSET # 7815001009

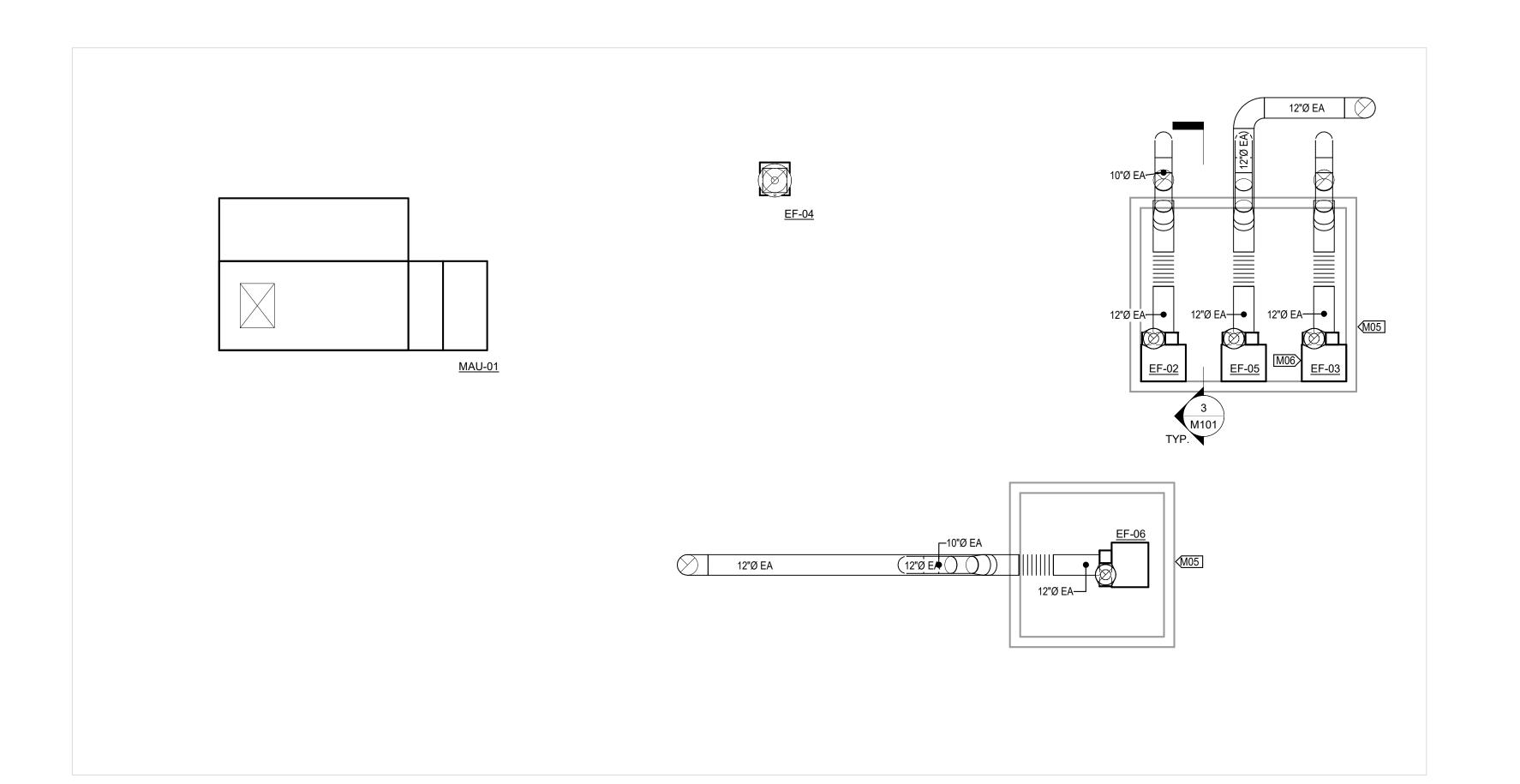
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CAD DWG FILE: P601 DRAWING BY: MHB CHECKED BY: JJN DESIGNED BY: MHB

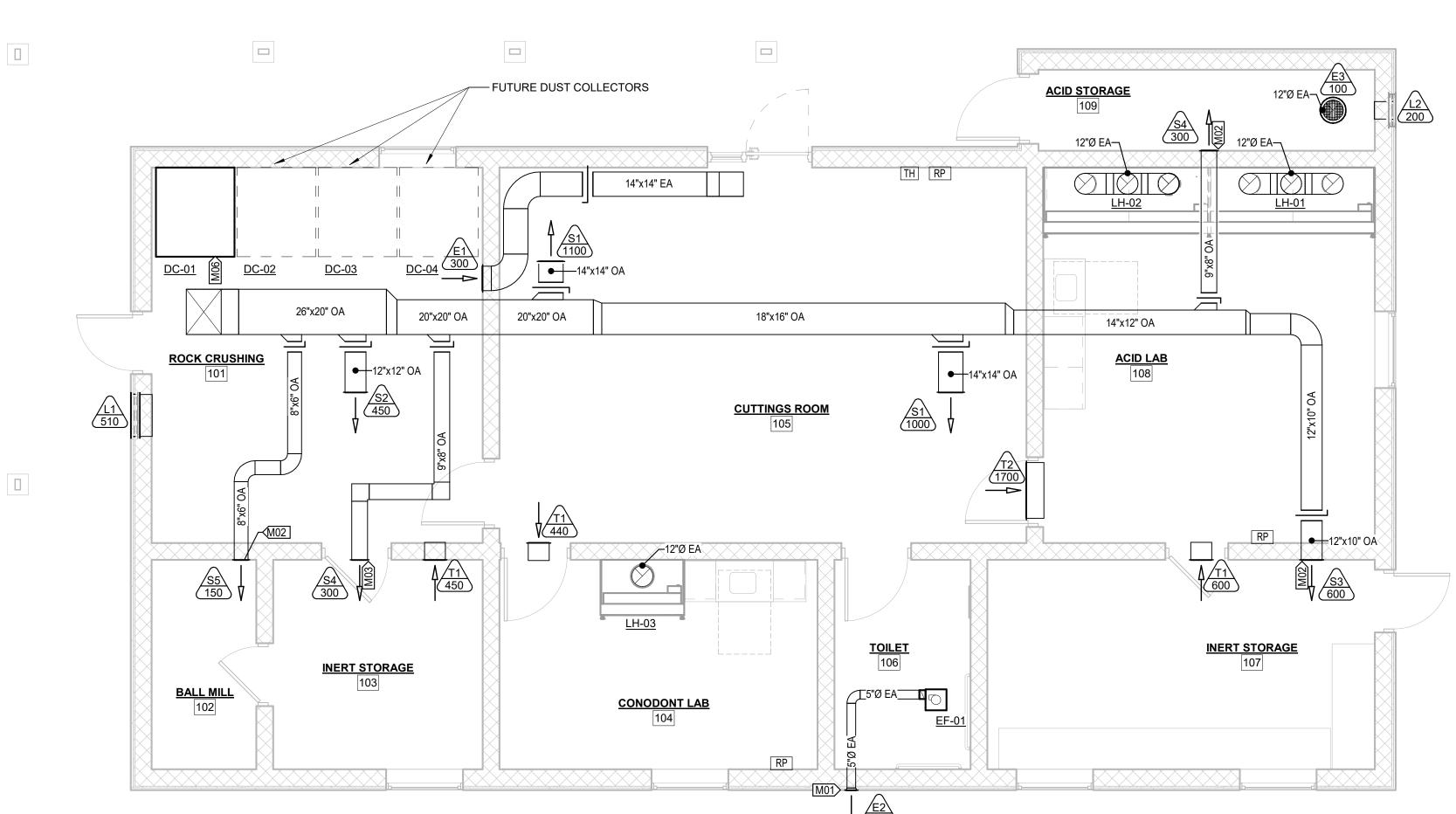
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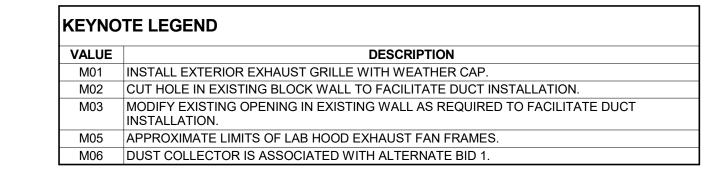
**PLUMBING SCHEDULES** 

SHEET NUMBER:

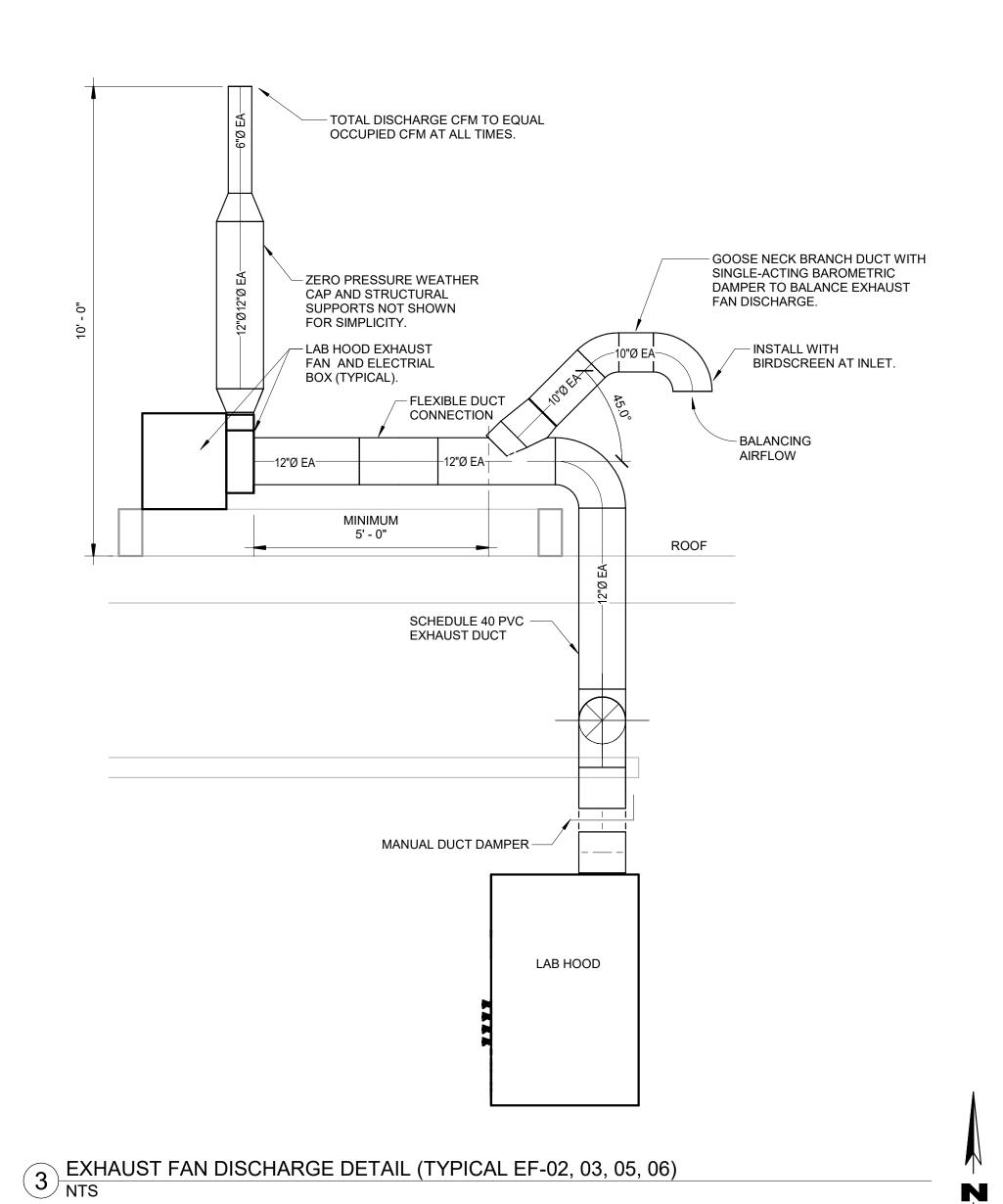


1 HVAC ROOF PLAN
1/4" = 1'-0"





GENERAL SHEET NOTES:
1) ALL AIR TERMINAL CFM TAGS SHOW MAXIMUM AIRFLOW.



STATE OF MISSOURI MICHAEL L. PARSON, **GOVERNOR** 



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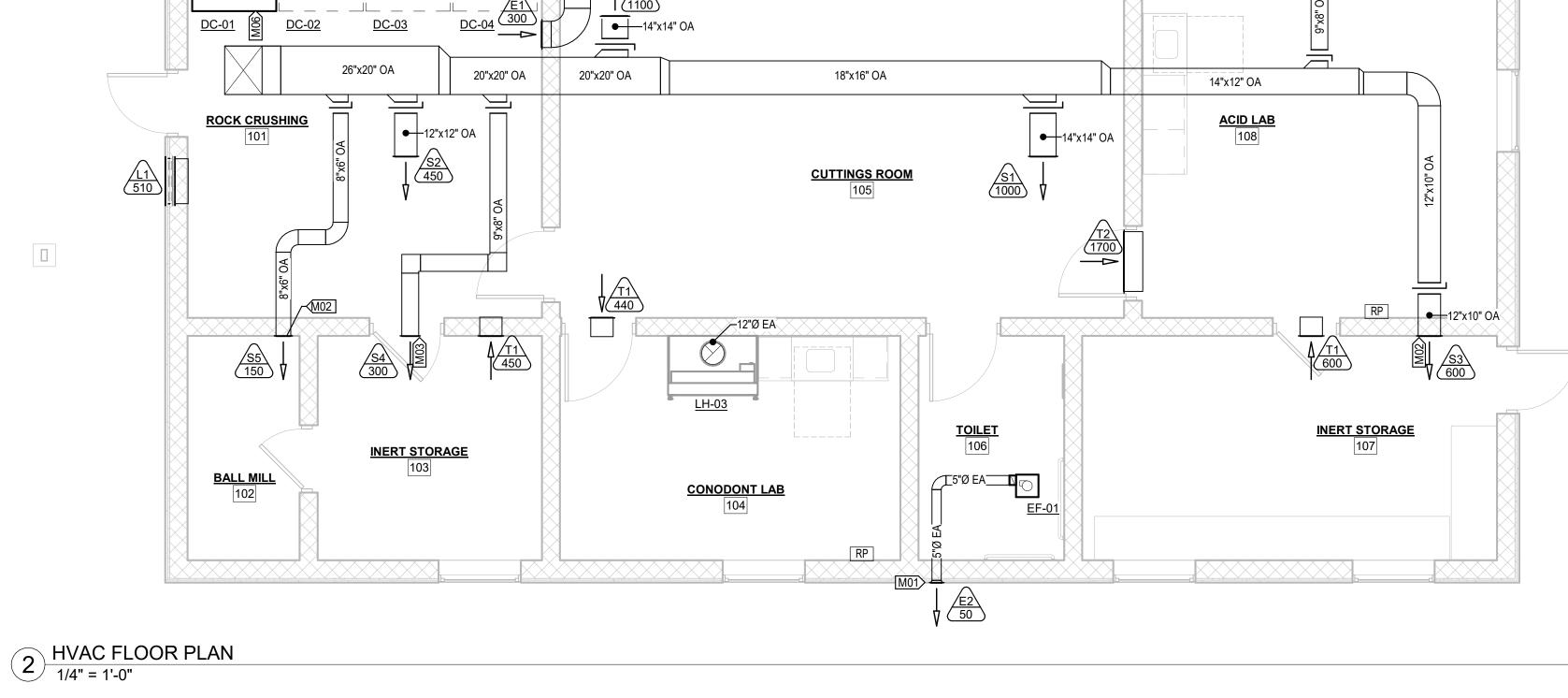
CAD DWG FILE: M101 DRAWING BY: MHB CHECKED BY: JJN DESIGNED BY: MHB

SHEET TITLE:

**HVAC PLAN** 

SHEET NUMBER:

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



OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

RENOVATE SUB (ACID) LAB

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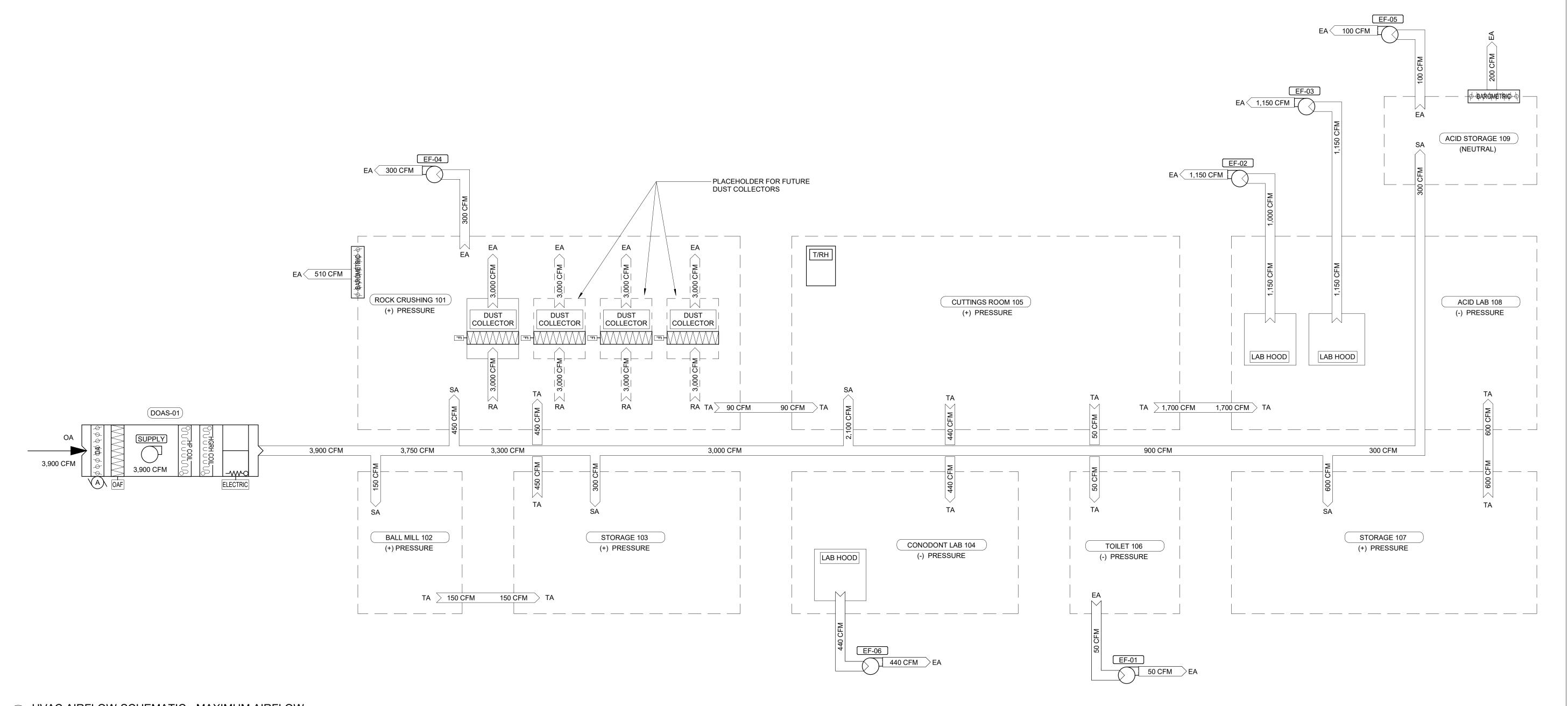
CAD DWG FILE: M401
DRAWING BY: MHB
CHECKED BY: JJN
DESIGNED BY: MHB

SHEET TITLE:

HVAC AIRFLOW SCHEMATIC -MAXIMUM

SHEET NUMBER:

**M40** 



1 HVAC AIRFLOW SCHEMATIC - MINIMUM AIRFLOW NTS

STATE OF MISSOURI MICHAEL L. PARSON, GOVERNOR



CIATES, P. C.
Architects · Surveyors

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

RENOVATE SUB (ACID) LAB

MISSOURI GEOLOGICAL SURVEY (DNR)

111 FAIRGROUNDS ROAD ROLLA, MISSOURI 65401

PROJECT # W2001-01 SITE # 5001 ASSET # 7815001009

REVISION:
DATE:
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CAD DWG FILE: M402
DRAWING BY: MHB
CHECKED BY: JJN
DESIGNED BY: MHB

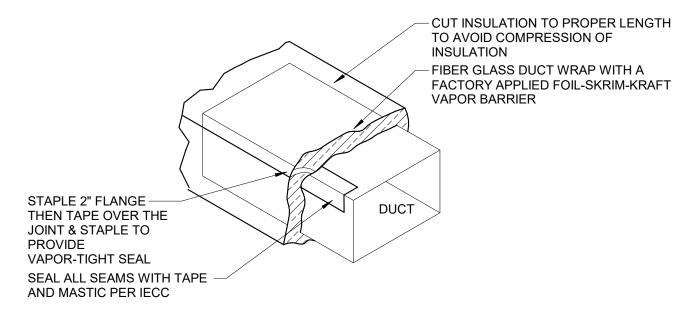
SHEET TITLE:

HVAC AIRFLOW SCHEMATIC -MINIMUM

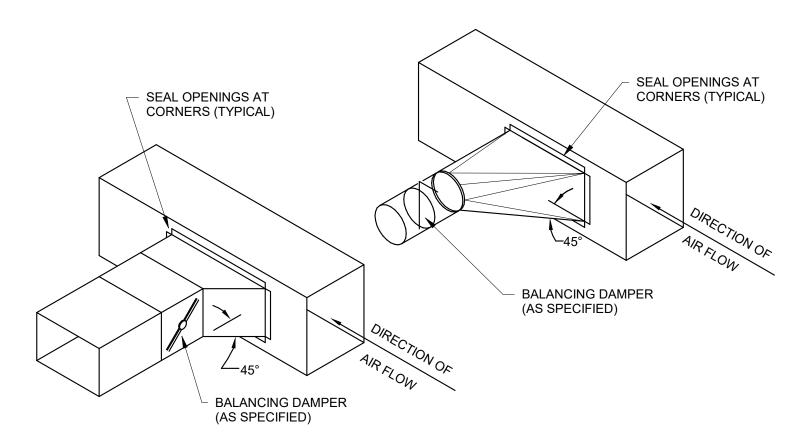
SHEET NUMBER:

M402

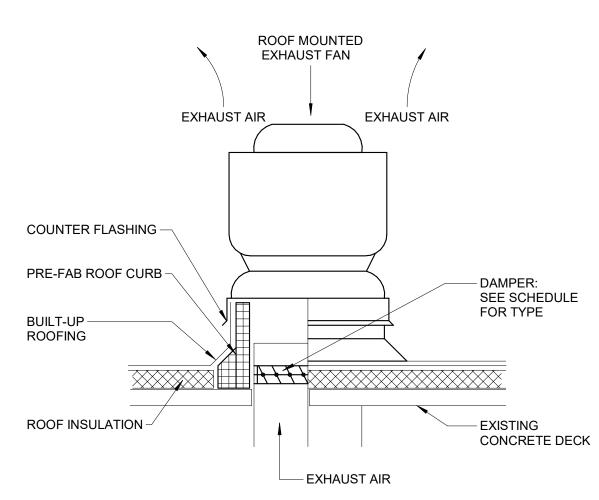
# 1 DUCT THROUGH ROOF DETAIL NTS



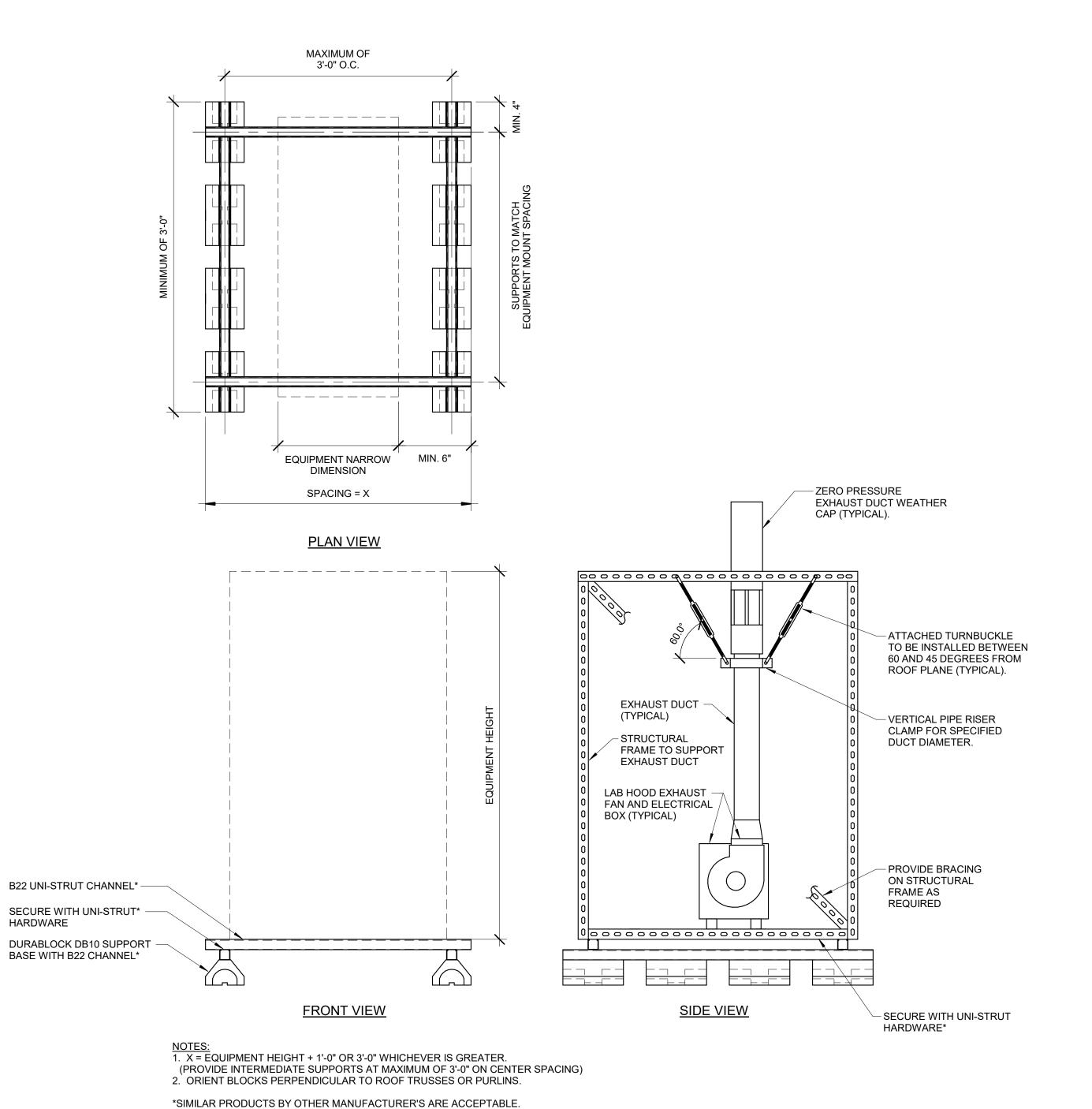
## DUCT WRAP DETAIL



# 3 BRANCH DUCT CONNECTION DETAIL NTS



4 EXHAUST FAN (ROOF UPBLAST)
NTS



800F MOUNTED MECHANICAL EQUIPMENT DETAIL

NTS

STATE OF MISSOURI MICHAEL L. PARSON, GOVERNOR



ASSOCIATES, P. G. neers · Architects · Surveyors mbia, Missouri www.klingner.com

KLINGNER & ASSOCIATES, P.C. - ENGINEERIN MISSOURI STATE CERTIFICATE OF AUTHORIT

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

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DATE:
ISSUE DATE: 07/27/2022

CAD DWG FILE: M501 DRAWING BY: MHB CHECKED BY: JJN DESIGNED BY: MHB

SHEET TITLE:

MECHANICAL DETAILS

SHEET NUMBER:

M50

										MAI	KE-UP AIR	UNIT SCHED	ULE										
	BASIS OF	DESIGN		PRE	HEAT PUMP	COIL (BTU/HR)	HOT GAS	POST		AIR FL	ows			AIR TEMPERATUR	RES (DEG. F)				ELECTRICAL	PARAMETERS			
				ELECTRIC		HEATING @	REHEAT	ELECTRIC	MAX	KIMUM	MIM	NIMUM	SUN	MER	WIN	ITER							
TAG	MANUFACTURER	MODEL	REFRIGERANT	HEAT (KW)	COOLING	42F AMBIENT	(BTU/HR)	HEAT (KW)	CFM	ESP (in wg)	CFM	ESP (in wg)	ENTERING UNI	T LEAVING UNIT	ENTERING UNIT	LEAVING UNIT	VOLT	HZ	PHASE	FLA	MCA	MOP	REMARKS
MAU-01	AAON	RN-30-8-0-E609-14A	R-410A	60	334,460	273,000	49,000	30	3,900	0.50	1,300	0.13	85/79	55/55	0	80	208	60	3	299	312	350	1,2

REMARKS:

1) THE MANUFACTURER LISTED IS BASIS OF DESIGN. SEE SPECIFICATIONS FOR ADDITIONAL MAUFACTURERS.
2) PROVIDE WITH 14" FLAT ROOF CURB.

						EXHAUST				
	BASIS OF D	ESIGN	<b>AIRFLOW</b>			ELEC	TRICAL PARAME	TERS		
TAG	MANUFACTURER	MODEL	(CFM)	ESP (in. wg)	VOLT	HZ	PHASE	FLA	MOCP	REMARKS
EF-01	GREENHECK BROAN PANASONIC	SP-AP0511 688 FV-0511VF1	50	0.4	120	60	1	0.2	20	1
EF-02	LABCONCO TEXEL-SEIKOW PLASTEC	7183412 CES MODEL 25	1150	1.9	120	60	1	10	20	1,2,3,4
EF-03	LABCONCO TEXEL-SEIKOW PLASTEC	7183412 CES MODEL 25	1150	1.9	120	60	1	10	20	1,2,3,4
EF-04	GREENHECK LOREN COOK CAPTIVEAIRE	CUE-120 ACRU DU	300	0.25	120	60	1	5	20	1
EF-05	LABCONCO TEXEL-SEIKOW PLASTEC	7183412 CES MODEL 25	100	0.1	120	60	1	10	20	1,3,4
EF-06	LABCONCO TEXEL-SEIKOW PLASTEC	7183412 CES MODEL 25	440	0.5	120	60	1	10	20	1,2,3,4

REMARKS:

1) THE MANUFACTURER LISTED IS BASIS OF DESIGN. SEE SPECIFICATIONS FOR ADDITIONAL MAUFACTURERS.
2) PROVIDE WITH THREE SPEED CONTROLLER.
3) NOT DESIGNED FOR USE WITH PERCHLORIC OR HYDROFLUORIC ACID.
4) TO BE PROVIDED BY LAB HOOD VENDOR.

							GRILI	LES, REGIST	ΓERS, Δ	AND D	IFFUS	ERS S	SCHEDULE						
			FACE	E SIZE	CON	NECTION	SIZE			THROW	1						BASIS (	OF DESIGN	
	7.07	DISCRIPTION	. = =	\4.00T.L		NGULAR	201112		150	100	50	MAX.	5444555		=11.11.01.1				<b>D</b>
TAG	TYPE	DISCRIPTION  35 DEG. FIXED DEFLECTION	LENGTH	WIDTH	LENGTH	WIDTH	ROUND	TOTAL P.D.	FPM	FPM	FPM	NC	DAMPER	MATERIAL	FINISH	FRAME	MAKE	MODEL	REMARKS
E1	EXHAUST GRILLE	REGISTER WITH BLADES PARALLEL TO LONG DIMENSION. 3/4" SPACING.	16"	16"	14"	14"		0.12 in-wg	0'	0'	0'	30	OPPOSED BLADE DAMPER	STEEL	WHITE ENAMEL	STEEL	TITUS	350RL	1
E2	EXHAUST GRILLE	35 DEG. FIXED DEFLECTION REGISTER WITH BLADES PARALLEL TO LONG DIMENSION. 3/4" SPACING.	8"	8"	6"	6"		0.01 in-wg	0'	0'	0'	0	OPPOSED BLADE DAMPER	STEEL	WHITE ENAMEL	STEEL	TITUS	350RL	1
E3	EXHAUST GRILLE	SINGLE DEFLECTION CIRCULAR EXAHUST GRILLE.	12"				12"	0.01 in-wg	0'	0'	0'		SINGLE BLADE			ALUMINUM	TITUS	R-301F	1
S1	SUPPLY GRILLE	DOUBLE DEFLECTION GRILLE WITH FRONT BLADES PARALLEL TO SHORT DIMENSION. 3/4" SPACING.	16"	16"	14"	14"		0.20 in-wg	28'	19'	16'	36		STEEL	WHITE ENAMEL	STEEL	TITUS	300RS	1
S2	SUPPLY GRILLE	DOUBLE DEFLECTION GRILLE WITH FRONT BLADES PARALLEL TO SHORT DIMENSION. 3/4" SPACING.	14"	14"	12"	12"		0.18 in-wg	23'	16'	13'	32		STEEL	WHITE ENAMEL	STEEL	TITUS	300RS	1
S3	SUPPLY GRILLE	DOUBLE DEFLECTION GRILLE WITH FRONT BLADES PARALLEL TO SHORT DIMENSION. 3/4" SPACING.	14"	12"	12"	10"		0.17 in-wg	20'	14'	11'	31		STEEL	WHITE ENAMEL	STEEL	TITUS	300RS	1
S4	SUPPLY GRILLE	DOUBLE DEFLECTION GRILLE WITH FRONT BLADES PARALLEL TO SHORT DIMENSION. 3/4" SPACING.	11"	10"	9"	8"		0.13 in-wg	14'	10'	8'	24		STEEL	WHITE ENAMEL	STEEL	TITUS	300RS	1
S5	SUPPLY GRILLE	DOUBLE DEFLECTION GRILLE WITH FRONT BLADES PARALLEL TO SHORT DIMENSION. 3/4" SPACING.	10"	8"	8"	6"		0.08 in-wg	10'	7'	4'	16		STEEL	WHITE ENAMEL	STEEL	TITUS	300RS	1
T1	TRANSFER GRILLE	SIGHT PROOF GRILLE WITH INVERTED-V BLADES IN HORIZONTAL POSITION.	14"	10"	12"	8"						0		ALUMINUM	WHITE ENAMEL	ALUMINUM	TITUS	350RL	1
T2	TRANSFER GRILLE	SIGHT PROOF GRILLE WITH INVERTED-V BLADES IN HORIZONTAL POSITION.	34"	10"	32"	8"						0		ALUMINUM	WHITE ENAMEL	ALUMINUM	TITUS	350RL	1

REMARKS:

1) THE MANUFACTURER LISTED IS BASIS OF DESIGN. SEE SPECIFICATIONS FOR ADDITIONAL MAUFACTURERS.

								LOUVE	R SCHEDU	LE					
							MINIMUM		MAX				BASIS OI	F DESIGN	
TAG	DESCRIPTION	FUNCTION	AIR FLOW	WIDTH	HEIGHT	FRMAE DEPTH	FREE AREA	MAX P.D.	VELOCITY	DAMPER	MATERIAL	FINISH	MAKE	MODEL	REMARKS
L1	STATIONARY	EXHAUST AIR OUTLET	510	24"	8"	4"	40%	0.1 in-wg	400 FPM	BACKDRAFT	ALUMINUM	BAKED ENAMEL	RUSKIN	ELBD813	INCLUDE EXTENDED SILL AND END DAMS, INSECT SCREEN. COORDINATE LOUVER COLOR WITH ARCHITECT. NOTE 1.
L2	STATIONARY	EXHAUST AIR OUTLET	200	NOTE 2	NOTE 2	4"	40%	0.1 in-wg	400 FPM	BACKDRAFT	ALUMINUM	BAKED ENAMEL	RUSKIN	ELBD813	INCLUDE EXTENDED SILL AND END DAMS, INSECT SCREEN. COORDINATE LOUVER COLOR WITH ARCHITECT. NOTE 1.

REMARKS:

1) THE MANUFACTURER LISTED IS BASIS OF DESIGN. SEE SPECIFICATIONS FOR ADDITIONAL MAUFACTURERS.
2) SIZE TO MATCH EXISTING LOUVER ROUGH-IN DIMENSIONS.

STATE OF MISSOURI MICHAEL L. PARSON, **GOVERNOR** 



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111 FAIRGROUNDS ROAD **ROLLA, MISSOURI 65401** 

PROJECT # W2001-01 5001 ASSET # 7815001009

REVISION:\_ DATE:\_ REVISION:\_

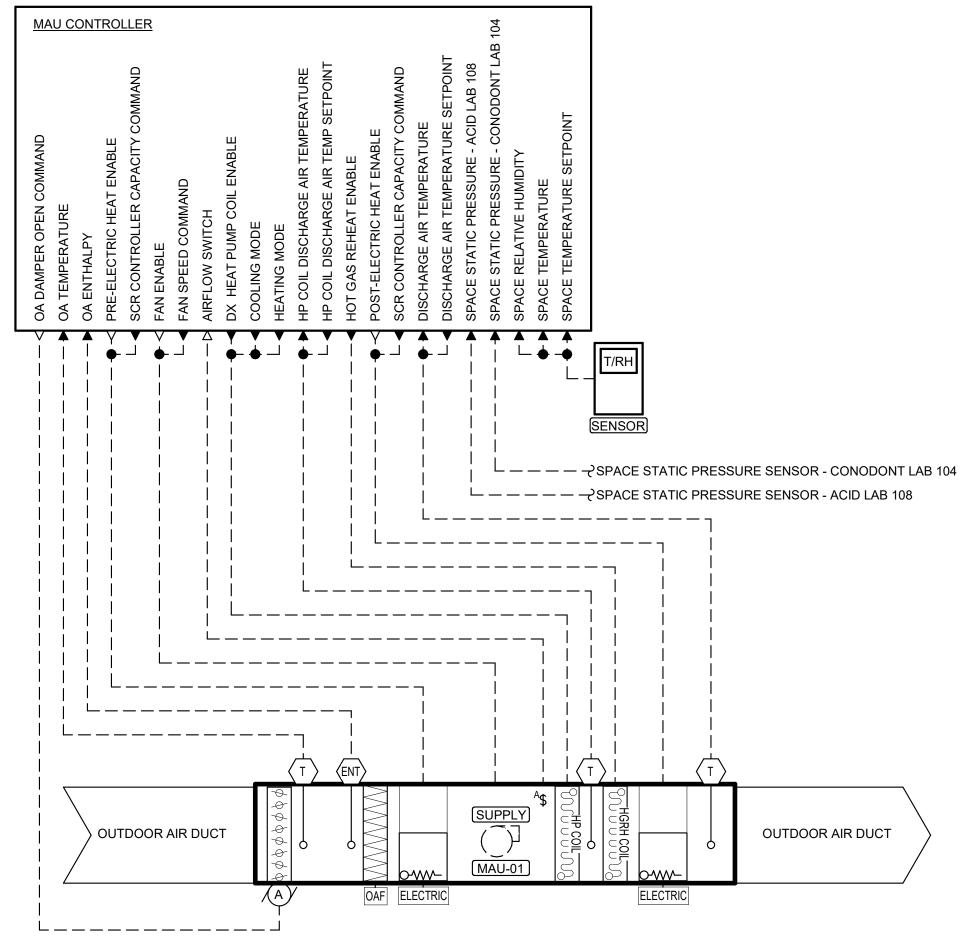
DATE: REVISION: DATE: ISSUE DATE: 07/27/2022

CAD DWG FILE: M601 DRAWING BY: MHB CHECKED BY: JJN DESIGNED BY: MHB

SHEET TITLE:

**MECHANICAL SCHEDULES** 

SHEET NUMBER:



MA	KE-U	JP A	IR UN	NIT D	DC (	CONTROL SUMMARY
CONTROL POINT	LOCAL CONTROLLER DISPLAY	BAS DISPLAY	ADJUSTABLE	TREND	ALARM	COMMENTS
MAU ON/OFF	•					
OUTDOOR AIR TEMPERATURE	•					
OUTDOOR AIR ENTHALPY	•					
SUPPLY FAN ON/OFF	•					
SUPPLY FAN SPEED COMMAND	•					
SUPPLY DISCHARGE AIR TEMPERATURE	•					
COOLING MODE	•					
HOT GAS REHEAT ENABLE	•					
HEATING MODE	•					
PRE-ELECTRIC HEAT ON/OFF	•					
POST-ELECTRIC HEAT ON/OFF	•					

#### MAKE-UP AIR UNIT (MAU-01) SEQUENCE OF OPERATION

- A. LOCAL DOAS CONTROLLER
- 1. THE MAU OPERATING MODE SHALL AUTOMATICALLY SWITCH BETWEEN HEATING AND COOLING BASED ON THE SPACE TEMPERATURE RELATIONSHIP TO SETPOINT. COOLING OR HEATING SHALL BE ENABLED WHENEVER THE SPACE TEMPERATURE IS +/. 5°F FROM SETPOINT (ADJUSTABLE BETWEEN 2°F AND 10°F).
- 2. IN HEATING MODE, THE HEAT PUMP HEATING CYCLE SHALL BE THE PRIMARY HEATING SOURCE. PRE-ELECTRIC HEAT SHALL BE ENABLED WHENEVER OUTDOOR AIR TEMPERATURES ARE BELOW 45°F. POST-ELECTRIC HEAT SHALL BE ENABLED ONLY WHEN THE HEAT PUMP CYCLE CANNOT MEET THE HEATING DEMAND.
- 3. SUPPLY FAN
- a. THE SUPPLY FAN SHALL PROVIDE SUFFICIENT AIR FLOW TO MAINTAIN THE SPACE STATIC PRESSURE SETPOINTS FOR THE CONODONT LAB 104 AND ACID LAB 108 TO WITHIN 0.02 IN W.C.
- b. CONODONT LAB 104: SPACE STATIC PRESSURE SETPOINT SHALL BE NEGATIVE 0.09 IN. W.C. (ADJUSTABLE BETWEEN -0.07 AND -0.10 IN. W.C.).
- c. ACID LAB 108: SPACE STATIC PRESSURE SETPOINT SHALL BE NEGATIVE 0.17 IN. W.C. (ADJUSTABLE BETWEEN -0.10 AND -0.20 IN. W.C.).
- 4. THE OUTDOOR AIR DAMPER SHALL BE OPEN WHENEVER THE MAU SUPPLY FAN IS ENABLED.
- 5. THE MAU CONTROLLER SHALL DETERMINE DISCHARGE AIR SETPOINTS ACCORDING TO THE FOLLOWING: a. IF THE OUTDOOR AIR DEWPOINT IS LESS THAN 55°F:
- THE MAU COOING OR HEATING COIL SHALL OPERATE TO PROVIDE A SUPPLY AIR TEMPERATURE OF 55°F IN COOLING MODE (ADJUSTABLE BETWEEN 50°F AND 65°F) AND 70°F IN HEATING MODE (ADJUSTABLE BETWEEN
- b. IF THE OUTDOOR AIR DEWPOINT IS GREATER THAN 55°F: • THE MAU COOING COIL SHALL COOL THE INCOMING AIR TO 55°F. HOT GAS REHEAT SHALL REHEAT THE AIR TO 65°F (ADJUSTABLE BETWEEN 55°F AND 70°F). IF HOT GAS REHEAT IS NOT SUFFICIENT TO WARM THE SUPPLY AIR TO 65°F, THE POST-ELECTRIC HEAT SHALL BE ENABLED.

## MAKE-UP AIR UNIT CONTROLS DIAGRAM



STATE OF MISSOURI



#### RESTROOM EXHAUST SYSTEM SEQUENCE OF OPERATION

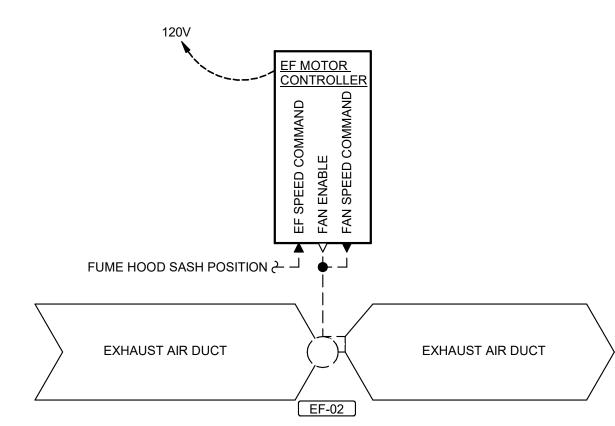
1— 120V, 1Ø O O----- M EF

A. EXHAUST SYSTEM CONTROL

**EXHAUST AIR DUCT** 

1. THE RESTROOM EXHAUST FAN SHALL RUN ON CONTINUOUSLY.

#### RESTROOM EXHAUST FAN CONTROLS DIAGRAM

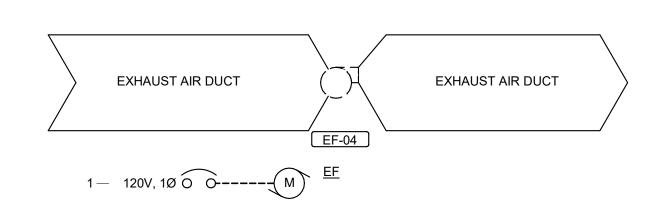


EXHAUST AIR DUCT

#### FUME HOOD EXHAUST SYSTEM (EF-02, 03, 06)

- A. FUME HOOD EXHAUST SYSTEM CONTROL
- 1. THE EXHAUST SHALL RUN CONTINUOUSLY
- 2. FUME HOOD SASH POSITION SHALL CONTROL THE ASSOCIATED EXHAUST FAN SPEED COMMAND: A. EF-02 & 03
- a. SASH CLOSED: 350 CFM
- b. SASH OPEN UP TO 18": 1,000 CFM
- c. SASH OPEN ABOVE 18": 1,150 CFM
- a. SASH CLOSED: 150 CFM b. SASH OPEN UP TO 18": 440 CFM c. SASH OPEN ABOVE 18": 565 CFM

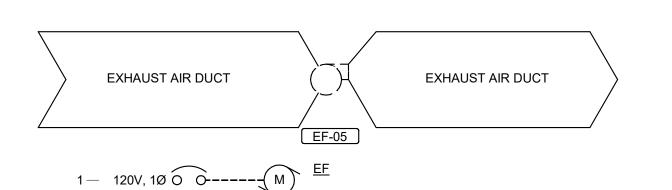
#### FUME HOOD EXHAUST FAN CONTROLS DIAGRAM



#### ROCK CRUSHING ROOM EXHAUST SYSTEM SEQUENCE OF OPERATION

- A. EXHAUST SYSTEM CONTROL
- 1. THE ROCK CRUSHING ROOM EXHAUST FAN SHALL RUN ON CONTINUOUSLY.

#### ROCK CRUSHING EXHAUST FAN CONTROLS DIAGRAM



#### ACID STORAGE EXHAUST SYSTEM SEQUENCE OF OPERATION

- A. EXHAUST SYSTEM CONTROL
- 1. THE ACID STORAGE ROOM EXHAUST FAN SHALL RUN ON CONTINUOUSLY.

ACID STORAGE EXHAUST FAN CONTROLS DIAGRAM

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PROJECT # W2001-01

5001 ASSET # 7815001009

REVISION:
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ISSUE DATE: 07/27/2022

CAD DWG FILE: M701 DRAWING BY: MHB CHECKED BY: JJN DESIGNED BY: MHB

SHEET TITLE:

**HVAC CONTROLS SCHEMATICS** 

SHEET NUMBER:

KEYNOTE LEGEND

VALUE DESCRIPTION

E07 EXTEND EXISTING CONDUITS TO CT CABINET.

STATE OF MISSOURI MICHAEL L. PARSON, GOVERNOR





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ISSUE DATE: 07/27/2022

CAD DWG FILE: E100
DRAWING BY: MHB
CHECKED BY: JJN
DESIGNED BY: MHB

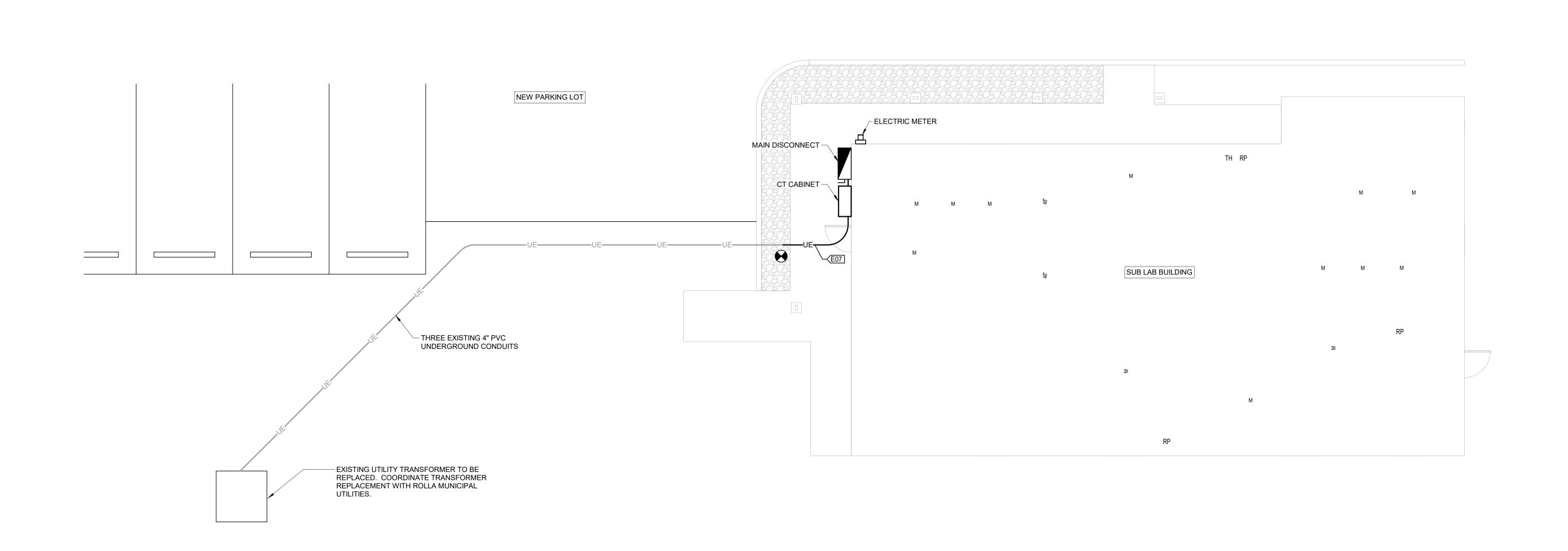
SHEET TITLE:

ELECTRICAL SITE PLAN

SHEET NUMBER:

E100

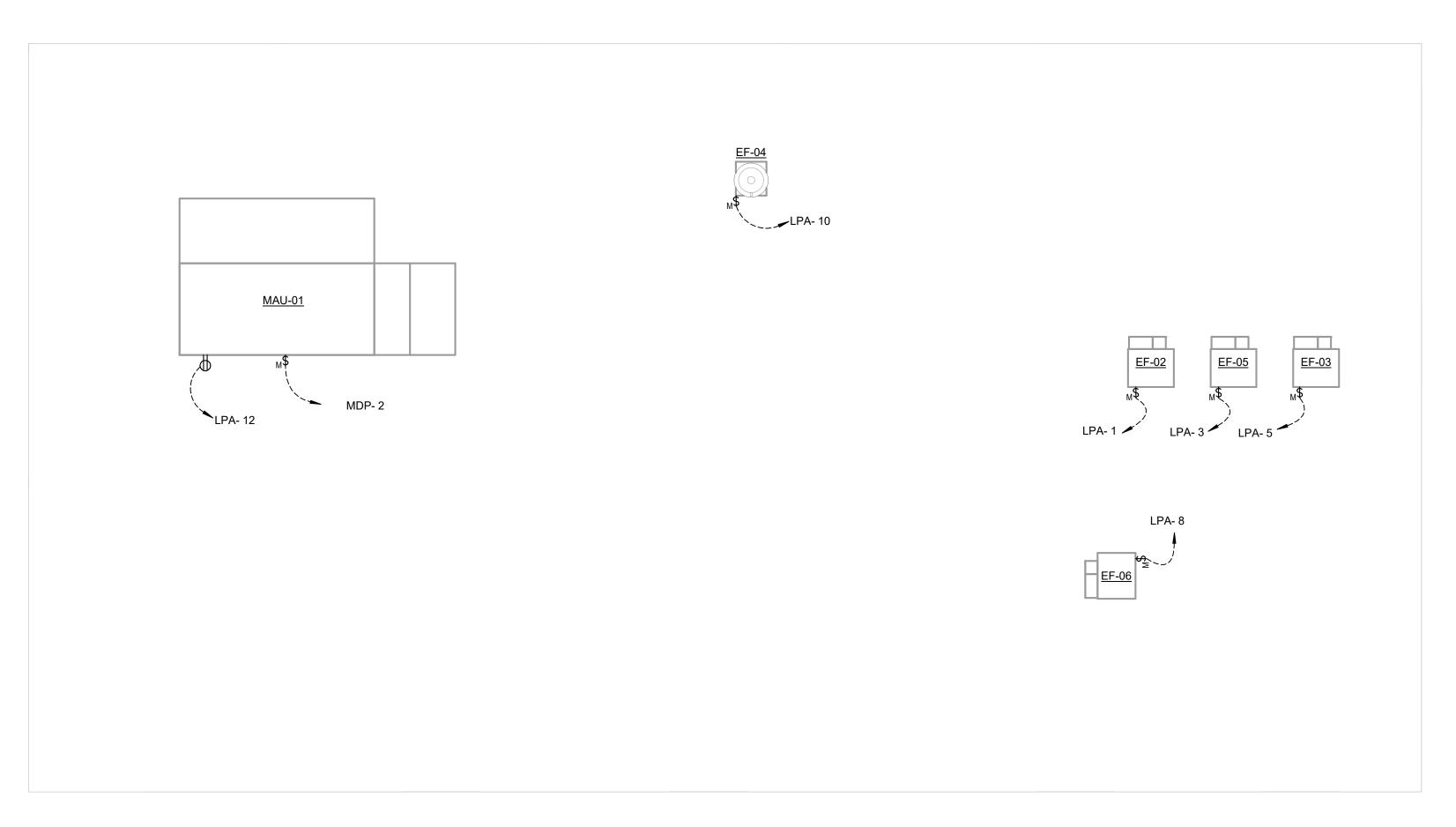
27 OF 30 SHEETS 07/27/2022



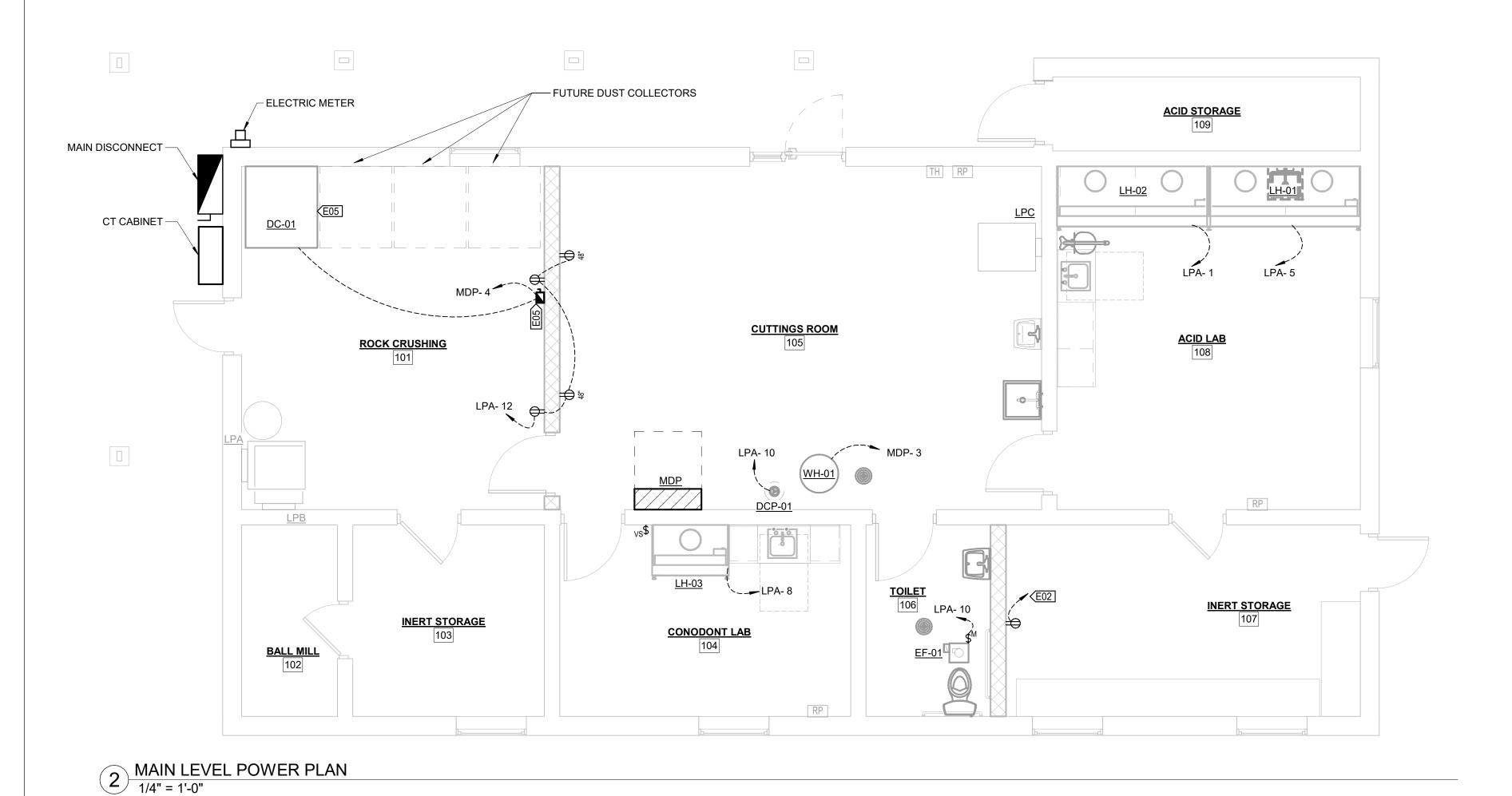
MISSOURI GEOLOGICAL SURVEY

1 ELECTRICAL SITE PLAN
3/16" = 1'-0"

0 5' 1



1 ROOF LEVEL POWER PLAN
1/4" = 1'-0"



#### KEYNOTE LEGEND

VALUE

DESCRIPTION

E02 CONNECT NEW RECEPTICAL TO EXISTING RECEPTICAL CIRCUIT WITHIN THE GENERAL VICINITY.

E05 ASSOCIATED WITH ALTERNATE BID 1.

STATE OF MISSOURI MICHAEL L. PARSON, GOVERNOR





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ISSUE DATE: 07/27/2022

CAD DWG FILE: E1

CAD DWG FILE: <u>E101</u> DRAWING BY: <u>MHB</u> CHECKED BY: <u>JJN</u> DESIGNED BY: <u>MHB</u>

SHEET TITLE:

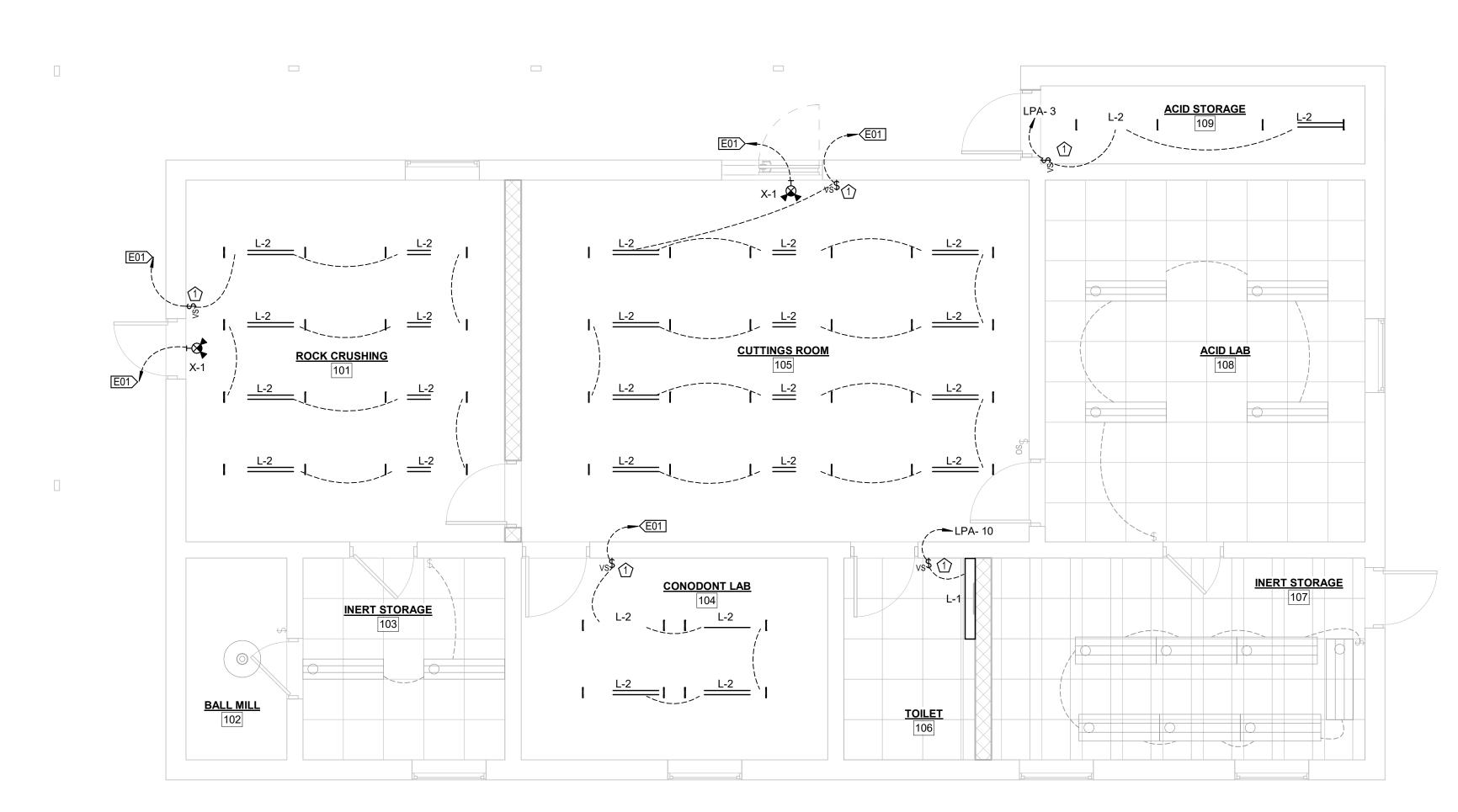
**POWER PLAN** 

SHEET NUMBER:

E101

28 OF 30 SHEETS 07/27/2022

0 2' 4' 8' SCALE: 1/4" = 1'-0"



1 LIGHTING PLAN
1/4" = 1'-0"

#### **KEYNOTE LEGEND**

DESCRIPTION

E01 CONNECT TO EXISTING LIGHTING BRANCH CIRCUIT FOR THIS SPACE.



#### LIGHTING CONTROL SEQUENCES OF OPERATION

- 1. LINE VOLTAGE, WALL MOUNT, VACANCY SENSOR CONTROL:
- A. LIGHTING SHALL BE SWITCHED ON BY MANUAL PUSHBUTTON.

  B. AFTER NO MOTION DETECTION FOR 15 MIN. LIGHTING SHALL BE AUTOMATICALLY SWITCHED OFF.

  C. LIGHTING MAY BE SWITCHED OFF BY MANUAL PUSHBUTTON.

- CONTRACTOR NOTES:

  1. COORDINATE COMPATIBILITY OF ALL LIGHTING CONTROLS AND LIGHT FIXTURE DRIVERS.

  2. PROVIDE ALL WIRE, DEVICES, POWER PACKS, SENSORS, ETC. AS NECESSARY TO CREATE A STAND ALONE SYSTEM THAT ACCOMPLISHES THE DESCRIBED SEQUENCE OF OPERATION.
- ACCEPTABLE CONTROL DEVICE MANUFACTURER'S SHALL INCLUDE CRESTRON, ACUITY, WATTSTOPPER, HUBBELL AND LUTRON. SUBSTITUTIONS SHALL BE ALLOWED WITH ENGINEERS PRIOR APPROVAL ONLY.

  4. WHERE OCCUPANCY AND/OR VACANCY SENSORS ARE SHOWN, PROVIDE SUFFICIENT QUANTITY OF SENSORS TO ENSURE COMPLETE COVERAGE OF THE ENTIRE SPACE.

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ASSET # 7815001009

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REVISION: DATE: REVISION: DATE: REVISION: DATE: ISSUE DATE: 07/27/2022

CAD DWG FILE: E102 DRAWING BY: MHB CHECKED BY: JJN DESIGNED BY: MHB

SHEET TITLE:

LIGHTING PLAN

SHEET NUMBER:

E102

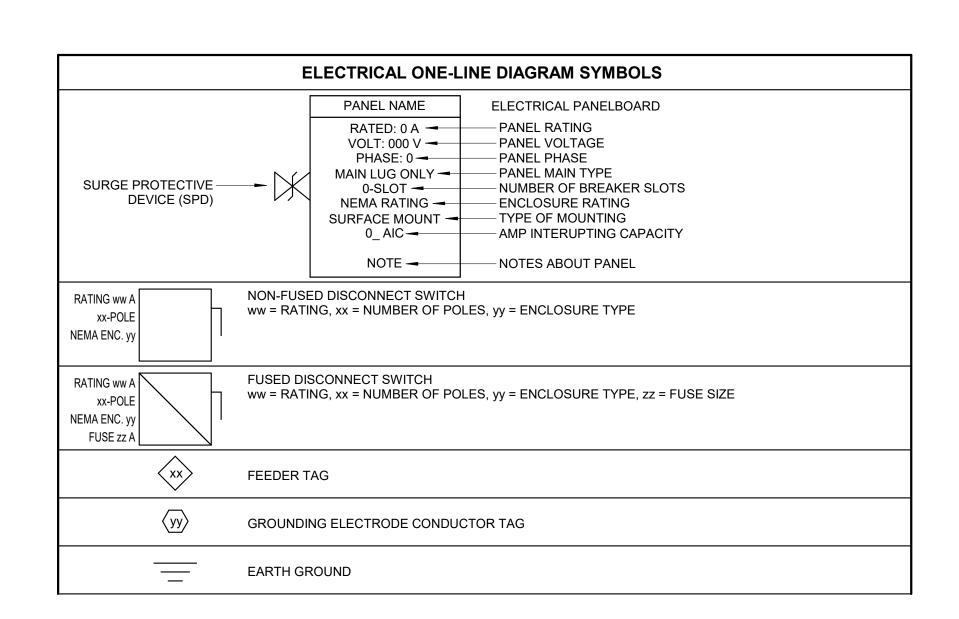
29 OF 30 SHEETS 07/27/2022

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

RENOVATE SUB (ACID) **LAB** 

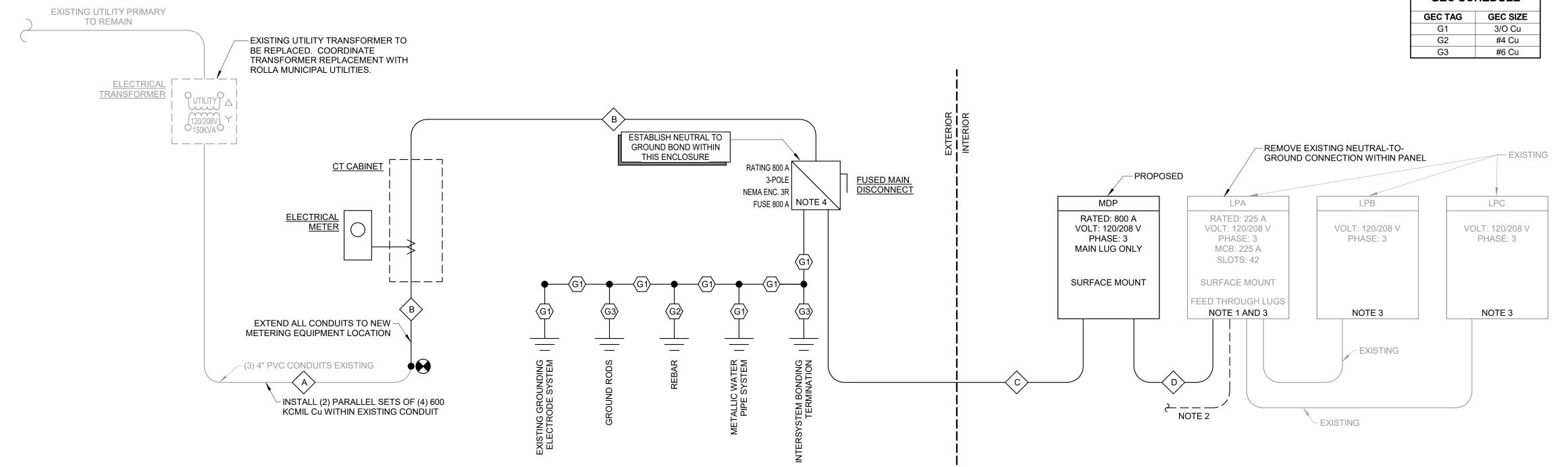
									LIGHT FIXT	URE SCHED	ULE		
				I	_AMP		DRIVER				BASIS OF DESIGN		
TAG	DESCRIPTION	MOUNT	LENS	TYPE	COLOR TEMP.	OUTPUT	CONTROL	VOLT	LOAD	MAKE	MODEL	ACCESSORIES	REMARKS
L-1	WALL BRACKET	WALL		LED	4000 K	2000 lm		120 V	19 VA	LITHONIA	TAB4L-SYM-120-40K WL4 20L P830 4BCED-LD4-8SL-UNV-L840		
L-2	4' LED STRIPLIGHT	SURFACE SUSPENDED	FROSTED, SNAP ON	LED	4000 K	3000 lm	DIMS TO 10%	120 V	30 VA	EATON	ZL1N L48 3000LM FST 120 30K 80CRI WH 4SNLED-LD4-27SL-LW-UNV-L830-CD1-U LF4FR31301DZT		PROVIDE WITH ACCESSORIES NECESSARY TO SUSPEND FIXTURE 8' AF
X-1	EXIT/UNIT COMBO	WALL		LED	4000 K	200 lm		120 V	4 VA	LITHONIA	VLTCR3R ECR LED M6 APCH7RSQ		

lotes:	Switchboard: MDP  Location: CUTTING ROOM 105  Supply From: UTILITY  Mounting: SURFACE Enclosure: NEMA1	Volts: 120/208 Phases: 3 Wires: 4	3		A.I.C. Rating: 42,000 Mains Type: MLO Mains Rating: 800 A	
OLET		#		<b>T.</b> . <b>D</b> . (1)		
CKT 1	Circuit Description  LPA	# of Poles	Frame Size 400 A	Trip Rating 225 A	Load Remark	is
2	MAU-01	3 3	400 A 400 A	350 A	64896 VA	
3	WH-1	3	50 A	30 A	6000 VA	
4	DUST COLLECTOR 1	3	100 A	50 A	9104 VA	
5	DUST COLLECTOR 1 (FUTURE)	3	100 A	50 A	9104 VA 9104 VA	
6	DUST COLLECTOR 3 (FUTURE)	3	100 A	50 A	9104 VA	
7	DUST COLLECTOR 4 (FUTURE)	3	100 A	50 A	9104 VA	
8	Boot occeptore (Foronce)		10071	0071	3104 771	
9						
10						
11						
12						
			To	tal Conn. Load:	143426 VA	
				Total Amps:	398 A	
					Panel	Totals
					Total Conn. Load:	
					Total Est. Demand:	
					Total Conn.:	
					Total Est. Demand:	398 A
Notes:						



FEEDER SCHEDULE								
	PHASE CONDUCTORS					CONDUIT		
FEEDER TAG	PARALLEL SETS	QUANTITY	SIZE	NEUTRAL SIZE	EGC SIZE	SIZE	TYPE	
Α	2	3	600 KCMIL	600 KCMIL		4"	EXISTING	
В	2	3	600 KCMIL	600 KCMIL		4"	PVC/RMC	
С	2	3	600 KCMIL	600 KCMIL	1/O AWG	4"	RMC	
D	1	3	4/O AWG	4/O AWG	#4 Cu	2-1/2"	EMT	

GEC SCHEDULE						
GEC TAG	GEC SIZE					
G1	3/O Cu					
G2	#4 Cu					
G3	#6 Cu					



1. INSTALL (7) NEW 20A, SINGLE POLE BREAKERS WITHIN EXISTING OPEN SPACES TO FEED NEW LOADS. CIRCUIT NUMBERS 1, 3, 5, 8, 10, 12, AND 41. 2. EXISTING FEEDER TO BE REMOVED. BELOW GRADE CONDUIT MAY BE ABANDONED IN PLACE. EXPOSED CONDUIT TO BE REMOVED. 3. PANEL SCHEDULES TO BE UPDATED FOR ANY EQUIPMENT/CIRCUITS THAT ARE DEMOLISHED/MODIFIED AS PART OF THIS PROJECT. 4. PROVIDE WITH CURRENT LIMITING FUSES.

1 ELECTRICAL ONE-LINE DIAGRAM NTS

STATE OF MISSOURI MICHAEL L. PARSON, **GOVERNOR** 



KLINGNER & ASSOCIATES, P.C. - ENGINEERING MISSOURI STATE CERTIFICATE OF AUTHORITY

OFFICE OF ADMINISTRATION **DIVISION OF FACILITIES** MANAGEMENT, **DESIGN AND CONSTRUCTION** 

RENOVATE SUB (ACID) LAB

MISSOURI GEOLOGICAL SURVEY (DNR)

111 FAIRGROUNDS ROAD **ROLLA, MISSOURI 65401** 

7815001009

PROJECT # W2001-01 5001

ASSET#

**REVISION:** DATE: REVISION: DATE **REVISION:** DATE:

CAD DWG FILE: <u>E601</u> DRAWING BY: <u>MHB</u> CHECKED BY: JJN DESIGNED BY: MHB

ISSUE DATE: 07/27/2022

SHEET TITLE:

**SCHEDULES & ONE-LINE DIAGRAM** 

SHEET NUMBER: