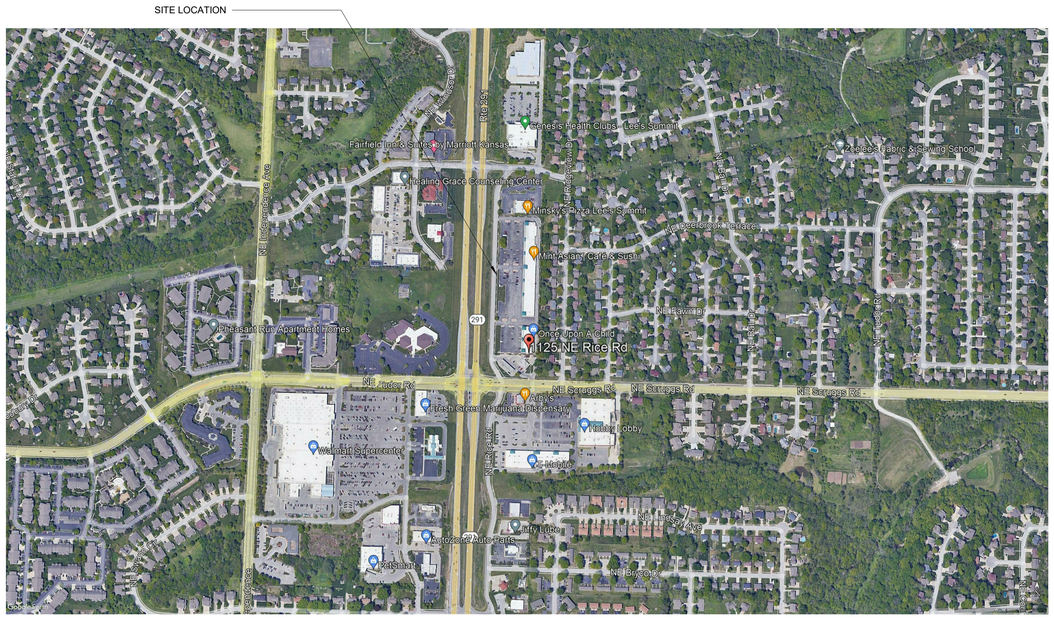
DEER BROOK PLAZA

1121 & 1151 NE RICE ROAD
LEE'S SUMMIT, MO 64086-6788
PERMIT SET

06-10-22

KEY PLAN NOT TO SCALE



GENERAL NOTES

1. ALL CONTRACTORS AND THEIR SUPERVISORY PERSONNEL SHALL REVIEW THE GENERAL AND SUPPLEMENTARY CONDITIONS TO THE CONTRACT.

2. ALL WORK SHALL CONFORM TO APPLICABLE BUILDING CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL OBTAIN ALL REQUIRED BUILDING AND OCCUPANCY PERMITS.

3. ALL SUBCONTRACTORS ARE RESPONSIBLE FOR ANY PERMIT, TAP OR UTILITY FEES RELATED TO THEIR FIELD OF WORK. THESE FEES ARE TO BE IDENTIFIED IN ALL SUBCONTRACTOR PROPOSALS.

4. CONTRACTOR SHALL BECOME FULLY ACQUAINTED WITH CONDITIONS RELATED TO THE WORK.

5. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS, AND SEQUENCES OF CONSTRUCTION AND THE SAFETY OF ALL CONSTRUCTION PERSONNEL AND VISITORS.

6. THE CONTRACTOR SHALL PERFORM ALL TESTS AS SPECIFIED OR AS NECESSARY TO DEMONSTRATE COMPLETE AND SATISFACTORY INSTALLATIONS OF ALL SYSTEMS PROVIDED UNDER THIS CONTRACT. REFER TO SPECIFICATIONS FOR ALL REQUIRED TESTING AND INSPECTIONS.

7. DRAWINGS CONTAINED IN THIS SET SHALL NOT BE REPRODUCED FOR SHOP DRAWINGS. COPIES OF THESE DRAWINGS SUBMITTED AS SHOP DRAWINGS WILL BE REJECTED AND RETURNED TO THE CONTRACTOR.

8. CONTRACTOR TO PROVIDE THE NECESSARY BARRICADES AND TRAFFIC DEVICES AS REQUIRED FOR ALL PERIODS OF CONSTRUCTION.

9. PROTECT ALL SITE FEATURES THAT ARE NOT DESIGNATED FOR REMOVAL. ANY DAMAGE CAUSED BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

10. EACH INSTALLER MUST EXAMINE SUBSTRATE AND/OR CONDITIONS UNDER WHICH THE WORK WILL BE INSTALLED AND REPORT TO THE CONTRACTOR IN WRITING ANY CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY EXECUTION OF THAT INSTALLERS WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED. COMMENCING WITH INSTALLATION SHALL CONSTITUTE ACCEPTANCE OF THE SUBSTRATE AND/OR CONDITIONS.

11. ALL MATERIALS SHALL BE NEW UNLESS SPECIFICALLY NOTED OTHERWISE.

12. DO NOT SCALE DRAWINGS: FOLLOW WRITTEN DIMENSIONS AND NOTES. CONTACT ARCHITECT FOR CLARIFICATIONS, IF REQUIRED.

13. DIMENSIONS SHOWN ON THE FLOOR PLAN ARE TO THE FACE OF GYPSUM BOARD/ WALL (FOG), FACE OF MASONRY (FOM), FACE OF CONCRETE WALLS (FOC), AND COLUMN GRID LINES UNLESS OTHERWISE NOTED OR INDICATED.

14. NOTE: WALL THICKNESSES ARE ACTUAL DIMENSIONS.

15. "TYPICAL", AS USED IN THESE DOCUMENTS, SHALL MEAN THAT THE CONDITION OR DIMENSION IS REPRESENTATIVE OF, OR THE SAME, FOR SIMILAR CONDITIONS THROUGHOUT.

16. IF THERE IS A DISCREPANCY BETWEEN SMALL SCALE AND LARGE SCALE DRAWINGS, (PLAN, SECTION, & DETAIL DRAWINGS, ETC.) - CONTACT ARCHITECT FOR CLARIFICATION. FOR BIDDING PURPOSES: THE MOST EXPENSIVE AND/OR STRICTEST REQUIREMENTS SHALL GOVERN. FOR CLARIFICATIONS DURING CONSTRUCTION: THE MOST EXPENSIVE AND/OR STRICTEST REQUIREMENTS, AS INDICATED BY THE ARCHITECT, SHALL GOVERN.

17. ANY DISCREPANCIES ARE FOUND IN THE CONTRACT DOCUMENTS - CONTACT ARCHITECT FOR CLARIFICATION. FOR BIDDING PURPOSES: THE MOST EXPENSIVE AND/OR STRICTEST REQUIREMENTS SHALL GOVERN. FOR CLARIFICATIONS DURING CONSTRUCTION: THE MOST EXPENSIVE AND/OR STRICTEST REQUIREMENTS, AS INDICATED BY THE ARCHITECT, SHALL GOVERN.

18. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND ACTUAL CONDITIONS SHALL BE REPORTED TO THE ARCHITECT IN WRITING FOR RESOLUTION, PRIOR TO PROCEEDING WITH THE WORK.

19. ANY AND ALL DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT IN WRITING FOR RESOLUTION, PRIOR TO PROCEEDING WITH THE WORK. IN THESE INSTANCES: NO CHANGE ORDERS OR EXTENSIONS OF TIME WILL BE ALLOWED OR ACCEPTED FOR PROCEEDING WITH THE WORK WITHOUT THE ARCHITECTS WRITTEN DIRECTION AND APPROVAL. ALSO - CONTRACTOR MUST REPAIR AND/OR REPLACE ANY UNAUTHORIZED WORK, AS INDICATED BY THE ARCHITECT, AT NO ADDITIONAL COST TO THE OWNER.

20. ALL DISSIMILAR METAL MATERIALS SHALL BE ISOLATED WITH AN APPROVED NONMETAL ISOLATION MATERIAL.

21. ALL MECHANICAL OPENINGS AND OTHER OPENINGS OR PENETRATIONS THROUGH RATED WALLS SHALL BE SEALED TO MAINTAIN RATINGS.

22. OPEN EXTERIOR JOINTS AROUND WINDOW AND DOOR FRAMES, BETWEEN WALLS AND FOUNDATIONS, BETWEEN WALL PANELS, AND AT PENETRATIONS OF UTILITIES THROUGH THE BUILDING ENVELOPE, ETC. - SHALL BE SEALED, CAULKED, FLASHED OR WEATHER-STRIPPED AS REQUIRED FOR COMPATIBILITY WITH ADJACENT MATERIALS & TO ELIMINATE AIR LEAKAGE AND WATER ENTRY.

23. WHERE FIRE EXTINGUISHER CABINETS OCCUR IN GWB/METAL STUD PARTITIONS, PROVIDE AND INSTALL GWB ENCLOSURE BEHIND FIRE EXTINGUISHER CABINET TO PROVIDE CONTINUOUS SOUND BARRIER (OR IF WALL IS A FIRE WALL, TO PROVIDE A CONTINUOUS FIRE BARRIER.

24. PROVIDE SEALANT AND/OR CAULKING BETWEEN DISSIMILAR ADJOINING INTERIOR MATERIALS. (I.E. WINDOW SILLS TO GYP. BD.; ACT CEILINGS TO MASONRY WALLS; ETC.)

25. DOOR OPENINGS NOT LOCATED BY DIMENSION SHALL BE CENTERED IN WALL SHOWN OR LOCATED 4 INCHES FROM FINISH WALL TO FINISH JAMB, ALWAYS ALLOWING A MINIMUM OF 18" FROM THE PULL SIDE TO THE INTERSECTING WALL.

26. AREAS AND/OR ITEMS NOTED AS N.I.C. ARE NOT IN CONTRACT. ALL FURNISHINGS AND EQUIPMENT ARE TO BE PROVIDED BY OWNER.

27. PROVIDE WOOD BLOCKING BEHIND ALL WALL STOPS, FINISH TRIM, BUILDING HARDWARE AND TOILET ACCESSORIES TO BE MOUNTED ON WALLS. PROVIDE CONTINUOUS WOOD BLOCKING HORIZONTALLY AND VERTICALLY BEHIND ALL WALL HUNG EQUIPMENT, ACCESSORIES, COUNTERS AND ANY OTHER BUILDING MATERIALS REQUIRING ANCHORING TO WALLS, CEILINGS AND FLOORS. VERIFY WITH ALL TRADES FOR THESE ITEMS PRIOR TO COVERING STRUCTURE.

28. CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES AND THEIR SERVICE CONNECTIONS WITH THE PROPER UTILITY COMPANY.

29. CONTRACTOR SHALL COORDINATE SIZE, LOCATIONS AND NUMBER OF ALL ROOF OPENINGS AND ROOF ACCESSORIES WITH ALL OTHER TRADES. REFER TO THE ARCHITECTURAL, STRUCTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS.

30. LOCATIONS AND SIZES OF ALL CONCRETE MECHANICAL AND ELECTRICAL PADS SHALL BE COORDINATED BY THE MECHANICAL AND ELECTRICAL CONTRACTORS, WITH THE SELECTED EQUIPMENT MANUFACTURER/SUPPLIER; AND ARE TO BE APPROVED BY THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.

31. EXCEPT AT FIRE-RATED PARTITIONS, ALL WALL AND COLUMN GYPSUM BOARD FACING SHALL BE HELD AT 5/8 INCH BELOW STRUCTURE, UNLESS DETAILED OR NOTED OTHERWISE.

32. ALL STUDS SHALL BE HELD AT LEAST 1/4" AWAY FROM STRUCTURAL STEEL COLUMNS.

33. WHERE METAL STUDS EXTEND TO THE STRUCTURE ABOVE, PROVIDE A DOUBLE HEAD TRACK TO ALLOW SLIPPAGE TO COMPENSATE FOR DEFLECTION OF THE STRUCTURE ABOVE, EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS.

34. GLASS DOORS, ADJACENT PANELS AND ALL GLAZED OPENINGS WITHIN 1'-6" OF THE FLOOR, AND WITHIN A 24-INCH ARC OF EITHER VERTICAL EDGE OF A DOOR, ETC., SHALL BE SAFETY GLAZING AS APPROVED FOR IMPACT BY APPLICABLE BUILDING CODES, AND SHALL BE LABELED AS SUCH.

35. ALL ANGLES ON PLAN ARE 90 DEGREES OR 45 DEGREES UNLESS NOTED OTHERWISE.

36. ALL CEILING HEIGHTS AS SHOWN ON PLANS AND DETAILS ARE FROM SLAB OR TILE FLOOR (FINISHED FLOOR) TO FINISHED CEILING.

37. PROVIDE INDEPENDENT FRAMING & ATTACHMENTS TO THE STRUCTURE - ADEQUATE TO SUPPORT THE CEILING SYSTEM, LIGHT FIXTURES, DUCTS, DIFFUSERS, AND BUS DUCTS.

38. AT THE LARGE SCALE COLUMN DETAILS, WALL TYPES ARE INDICATED. FOR CLARITY, IN SOME INSTANCES, NOT ALL STUDS AND/OR FURRING ARE SHOWN ON THE DETAIL. CONTRACTOR SHALL FRAME USING NORMAL FRAMING METHODS.

39. IF INSTANCES ARISE DURING CONSTRUCTION OF THIS PROJECT THAT REQUIRE PENETRATIONS OF STRUCTURAL MEMBERS DUE TO METHODS OF ROUTING DUCTS, PIPES, ETC. DIFFERENT FROM ROUTING SHOWN ON THE DRAWINGS, COSTS FOR PENETRATION OR STRUCTURAL MEMBERS SHALL BE BORN BY THE CONTRACTOR REQUIRING THE PENETRATION. BEFORE PENETRATION THROUGH A STRUCTURAL CAN BE MADE, THE CONTRACTOR SHALL INFORM THE ARCHITECT OF HIS/HER INTENT AND SHALL AWAIT INSTRUCTIONS FROM THE ARCHITECT AS TO THE EXACT PLACEMENT OF, AND DETAILS FOR, SUCH PENETRATIONS.

40. ANY/ ALL PROPRIETARY PRODUCTS DESCRIBED AND/OR DRAWN IN THE DOCUMENTS (BUT NOT SPECIFIED) ARE TO MEET THE MANUFACTURER'S STANDARD CRITERIA WHICH IS NOT LIMITED TO THE FOLLOWING: PERFORMANCE REQUIREMENTS, QUALITY ASSURANCE REQUIREMENTS, APPLICABLE CODES AND INDUSTRY STANDARDS, FABRICATION, ASSEMBLY, HANDLING, DELIVERY, STORAGE, INSTALLATION, OPERATION, ADJUSTMENTS ETC. PROVIDE THE MANUFACTURER'S STANDARD WARRANTY AND STANDARD FINISH WARRANTY. PROVIDE PRODUCT DATA, SHOP DRAWINGS, SAMPLES AND MAINTENANCE DATA AS REQUIRED. REFER TO DIVISION 01 SECTIONS WHICH ALSO APPLY - SUCH AS SUBSTITUTION PROCEDURES, EXECUTION AND CLOSEOUT PROCEDURES. NOTE: ANY SUBSTITUTION MUST MEET THE DESIGN INTENT, AS WELL AS THE CRITERIA DESCRIBED ABOVE.

41. CONTRACTOR TO MAINTAIN MEANS OF EGRESS AT ALL STAGES OF CONSTRUCTION. 3311.2 MAINTENANCE. REQUIRED MEANS OF EGRESS AND REQUIRED ACCESSIBLE MEANS OF EGRESS SHALL BE MAINTAINED DURING CONSTRUCTION AND DEMOLITION, REMODELING OR ALTERATIONS AND ADDITIONS TO ANY BUILDING. EXCEPTION: APPROVED TEMPORARY MEANS OF EGRESS AND ACCESSIBLE MEANS OF EGRESS SYSTEMS AND FACILITIES.

1

LIST OF DRAWINGS

DWG. NO.	DWG. DESCRIPTION
GENERAL	
CS	COVER SHEET
G1.11	LIFE SAFETY PLAN
ARCHITECTURAL	
A1.11	FLOOR PLAN
A1.14	NEW TENANT SPACE
A1.21	ENLARGED RESTROOM PLANS & ELEVATIONS
A2.11	EXTERIOR ELEVATIONS
A3.31	EXTERIOR DETAILS
A5.12	DOOR SCHEDULE & DETAILS
A6.11	REFLECTED CEILING PLAN
MEP	
ME1.10	MECHANICAL & ELECTRICAL - SYMBOLS AND ABBREVIATIONS
ME2.10	MECHANICAL & ELECTRICAL - SITE PLAN
ME2.11	MECHANICAL & ELECTRICAL - ROOF PLAN
ME3.10	MECHANICAL & ELECTRICAL -SCHEDULES & DETAILS
ME3.11	MECHANICAL & ELECTRICAL -SCHEDULES & DETAILS
ME4.10	MECHANICAL & ELECTRICAL - SPECIFICATIONS
ME4.11	MECHANICAL & ELECTRICAL - SPECIFICATIONS
ME4.12	MECHANICAL & ELECTRICAL - SPECIFICATIONS
DM1.11	DEMOLITION HVAC PLAN - LEVEL 1
DP1.11	DEMOLITION PLUMBING PLAN - LEVEL 1
M1.10	OVERALL MECHANICAL PLAN - LEVEL 1
M1.11	HVAC PLAN - LEVEL 1
P1.11	PLUMBING PLAN - LEVEL 1
DE1.10	DEMOLITION OVERALL ELECTRICAL PLAN - LEVEL 1
DE1.11	DEMOLITION LIGHTING PLAN - LEVEL 1
DE2.11	DEMOLITION POWER PLAN - LEVEL 1
E1.10	OVERALL ELECTRICAL PLAN - LEVEL 1
E1.11	LIGHTING PLAN - LEVEL 1
E2.11	POWER PLAN - LEVEL 1
E3.11	ELECTRICAL - SCHEUDULES & DETAILS
E3.12	ELECTRICAL - SCHEUDULES & DETAILS

ADA COMPLIANCE

ADA COMPLIANCE FOR NEW CONSTRUCTION

THE AMERICAN WITH DISABILITIES ACT (ADA) PROVIDES THAT IT IS A VIOLATION OF THE ADA TO DESIGN AND CONSTRUCT A FACILITY FOR FIRST OCCUPANCY LATER THAN JANUARY 26, 1993, THAT DOES NOT MEET THE ACCESSIBILITY AND USABILITY REQUIREMENTS OF THE ADA EXCEPT WHERE AND ENTITY CAN DEMONSTRATE THAT IT IS STRUCTURALLY IMPRACTICAL TO MEET SUCH REQUIREMENTS. THE CLIENT ACKNOWLEDGES THAT THE REQUIREMENTS OF THE ADA WILL BE SUBJECT OF VARIOUS AND POSSIBLY CONTRADICTORY INTERPRETATIONS. THE DESIGN PROFESSIONAL, THEREFORE, WILL USE HIS OR HERE REASONABLE PROFESSIONAL EFFORTS TO INTERPRET APPLICABLE ADA REQUIREMENTS AND OTHER FEDERAL, STATE AND LOCAL LAWS, RULES, CODES, ORDINANCES AND REGULATIONS AS THEY APPLY TO THE PROJECT. THE DESIGN PROFESSIONAL, HOWEVER, CANNOT AND DOES NOT WARRANT OR GUARANTEE THAT THE CLIENT'S PROJECT WILL COMPLY WITH INTERPRETATIONS OF THE ADA REQUIREMENTS AND/OR THE REQUIREMENTS OF OTHER FEDERAL, STATE AND LOCAL LAWS, RULES, CODES, ORDINANCES AND REGULATIONS AS THEY APPLY TO THE PROJECT.

ADA COMPLIANCE FOR ALTERATIONS

THE AMERICAN WITH DISABILITIES ACT (ADA) PROVIDES THAT ALTERATIONS TO A FACILITY MUST BE MADE IN SUCH A MANNER THAT, TO THE EXTENT FEASIBLE, THE ALTERED PORTIONS OF THE FACILITY ARE READILY ACCESSIBLE TO AND BY INDIVIDUALS WITH DISABILITIES. THE CLIENT ACKNOWLEDGES THAT THE REQUIREMENTS OF THE ADA WILL BE SUBJECT TO VARIOUS AND POSSIBLY CONTRADICTORY INTERPRETATIONS. THE DESIGN PROFESSIONAL, THEREFORE, WILL USE HIS OR HER REASONABLE PROFESSIONAL EFFORTS AND JUDGEMENT TO INTERPRET APPLICABLE ADA REGULATIONS AS THEY APPLY TO THE PROJECT. THE DESIGN PROFESSIONAL, HOWEVER, CANNOT AND DOES NOT WARRANT OR GUARANTEE THAT THE CLIENT'S PROJECT WILL COMPLY WILL ALL INTERPRETATIONS OF THE ADA REQUIREMENTS OR THE REQUIREMENTS OF OTHER FEDERAL, STATE AND LOCAL LAWS , RULES, CODES, ORDINANCES AND REGULATIONS AS THEY APPLY TO THE PROJECT.

CODE INFORMATION

GENERAL:

CONSTRUCTION PURPOSE:	FACADE UPGRADE
PROJECT ADDRESS:	1125 - 1125 NE RICE ROAD LEE'S SUMMIT, MO
COUNTY:	JACKSON
LOCAL FIRE DEPARTMENT:	LEE'S SUMMIT FIRE DEPARTMENT
LOCAL WATER DEPARTMENT:	LEE'S SUMMIT WATER UTILITIES
LOCAL BLDG. INSPECTION DEPT.:	CITY OF LEE'S SUMMIT

CODES/REGULATION UTILIZED TO DESIGN THIS PROJECT:

2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL PLUMBING CODE
2018 INTERNATION FIRE CODE
2017 NATIONAL ELECTRICAL CODE
2009 ICC/ANSI A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES

OCCUPANCY CLASSIFICATION: GROUP B (EXISTING)
TYPE OF CONSTRUCTION: V-B (EXISTING)

1

AUTOMATIC SPRINKLER SYSTEMS:

REQUIRED/EXISTING TO BE MODIFIED PER IBC, SECTION 903.2.1.2

PROJECT TEAM

ARCHITECT
iCON Architecture
506 Grand Boulevard
Kansas City, Missouri 64106
P: 816.221.0250

OWNER
Deer Brook BGOG, LLC
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199 S. High Street, Suite 100
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Attn. Kevin James

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Olathe, KS 66061
P: 913.344.0055

STRUCTURAL ENGINEER
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P: 816.531.4144

ICON architecture + fabrication
506 Grand Boulevard
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REVISIONS

1	Building Plan Review	6-22-22

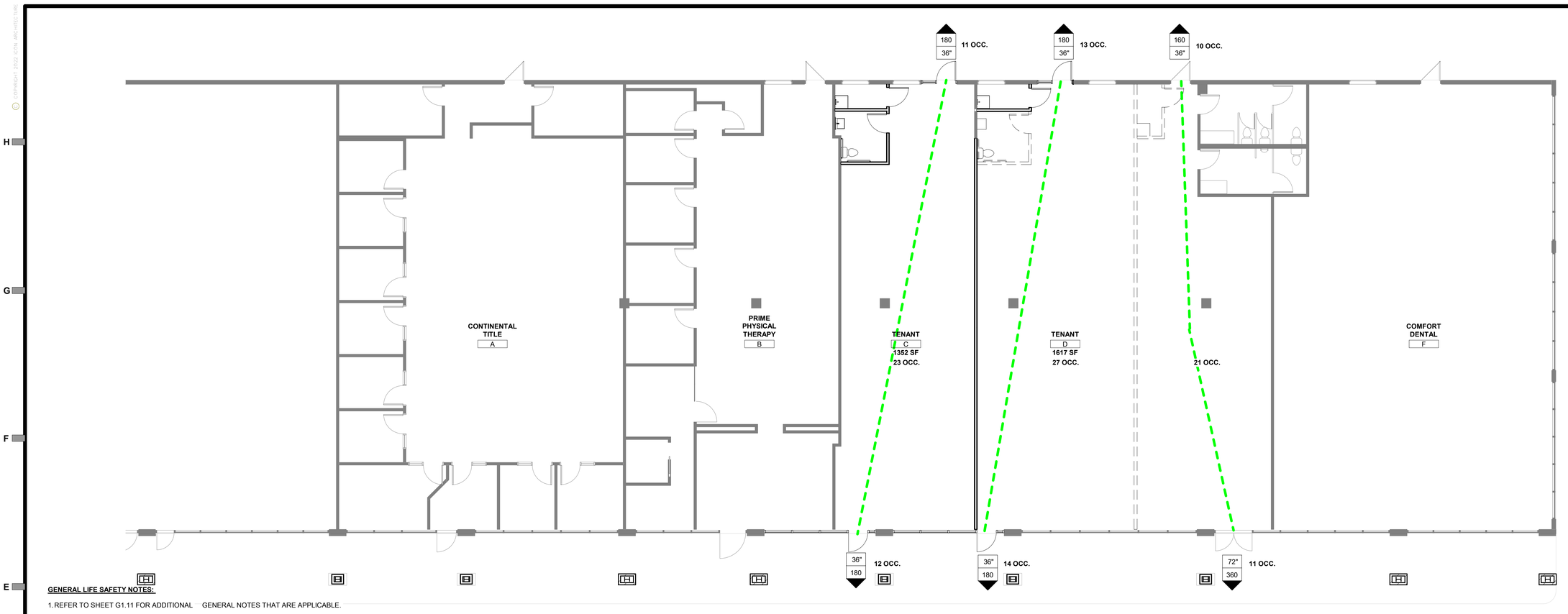
ISSUE DATE
06-10-22

PROJECT NUMBER
2022-000

SHEET NUMBER
CS

COVER SHEET

7/6/2022 10:26:32 AM



GENERAL LIFE SAFETY NOTES:

1. REFER TO SHEET G1.11 FOR ADDITIONAL GENERAL NOTES THAT ARE APPLICABLE.

2. ASSEMBLY AREA OCCUPANCY LOAD SIGN - A DURABLE SIGN LOCATED NEAR THE MAIN EXIT FROM THE ROOM INDICATING THE NUMBER OF OCCUPANTS PERMITTED IN THE AREA/ROOM PER NFPA 101:12.7.9.3.

3. LOCK BOX PROVIDED FOR FIRE DEPARTMENT ACCESS AT THE PRIMARY POINT OF FIRE DEPARTMENT ACCESS TO THE BUILDING. KNOX BOX 3200 OR 4400 WITH HINGED LID REQUIRED. FOR ORDERING INFORMATION CONTACT LOCAL FIRE DEPARTMENT.

4. CLASS K PORTABLE FIRE EXTINGUISHER REQUIRED TO BE LOCATED WITHIN 30' OF COOKING EQUIPMENT, WITH BOTTOM A MINIMUM OF 4" ABOVE FLOOR, AND TOP NO MORE THAN 5' ABOVE FLOOR. INSTALLATION SHALL BE IN ACCORDANCE WITH CALSSIFICATION, RATING, AND DISTRIBUTION REQUIREMENTS OF NFPA 10. LOCATION TO BE VERIFIED PER LOCAL REQUIRMENTS.

5. 503.3 MARKING. WHERE REQUIRED BY THE FIRE CODE OFFICIAL, APPROVED SIGNS OR OTHER APPROVED NOTICES OR MARKINGS THAT INCLUDE THE WORDS NO PARKING—FIRE LANE SHALL BE PROVIDED FOR FIRE APPARATUS ACCESS ROADS TO IDENTIFY SUCH ROADS OR PROHIBIT THE OBSTRUCTION THEREOF. THE MEANS BY WHICH FIRE LANES ARE DESIGNATED SHALL BE MAINTAINED IN A CLEAN AND LEGIBLE CONDITION AT ALL TIMES AND BE REPLACED OR REPAIRED WHEN NECESSARY TO PROVIDE ADEQUATE VISIBILITY.

6. GENERAL CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR FIRE ALARM TO CITY FOR REVIEW AND APPROVAL.\

7. GENERAL CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR FIRE PROTECTION SYSTEMS TO CITY FOR REVIEW AND APPROVAL.

8. GENERAL CONTRACTOR TO PROVIDE ADDRESS NUMBERS IN ACCORDANCE WITH 2018 IFC 505.1.

9. GENERAL CONTRACTOR TO PROVIDE AT LEAST 1 FIRE EXTINGUISHER IN ACCORDANCE WITH 2018 IFC 906.2. 1

C14 LEVEL 1 - TENANT SPACE - LIFE SAFETY PLAN
1/8" = 1'-0"

NORTH

PLUMBING FIXTURE REQUIREMENTS - TENANT C

PLUMBING CODE: TABLE 403.1

PLUMBING FIXTURES REQUIRED/PROVIDED	MALE	FEMALE	UNISEX
WATER CLOSETS (1 PER 250 M AND 1 PER 250 F):	0	0	1/1
LAVATORIES (1 PER 375 M AND 1 PER 375 F):	0	0	1/1
DRINKING FOUNTAINS (1 PER 1000):			0 (per IPC 410.1)
SERVICE SINKS:			1

FIRE EXTINGUISHER REQUIREMENTS

Fire Extinguishers to comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent. Fire Extinguishers to be provided and located as designated by the fire inspector per local requirements.

PLUMBING FIXTURE REQUIREMENTS - TENANT D

PLUMBING CODE: TABLE 403.1

PLUMBING FIXTURES REQUIRED/PROVIDED	MALE	FEMALE	UNISEX
WATER CLOSETS (1 PER 250 M AND 1 PER 250 F):	0	0	1/1
LAVATORIES (1 PER 375 M AND 1 PER 375 F):	0	0	1/1
DRINKING FOUNTAINS (1 PER 1000):			0 (per IPC 410.1)
SERVICE SINKS:			1

FIRE EXTINGUISHER REQUIREMENTS

Fire Extinguishers to comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent. Fire Extinguishers to be provided and located as designated by the fire inspector per local requirements.

PLUMBING FIXTURE REQUIREMENTS - TENANT E

PLUMBING CODE: TABLE 403.1

PLUMBING FIXTURES REQUIRED/PROVIDED	MALE	FEMALE	UNISEX
WATER CLOSETS (1 PER 250 M AND 1 PER 250 F):	1/1	3/1	0/0
URINALS:	1/0	0	0/0
LAVATORIES (1 PER 375 M AND 1 PER 375 F):	1/1	1/1	0 (per IPC 410.1)
DRINKING FOUNTAINS (1 PER 1000):			1
SERVICE SINKS:			

FIRE EXTINGUISHER REQUIREMENTS

Fire Extinguishers to comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent. Fire Extinguishers to be provided and located as designated by the fire inspector per local requirements.

LIFE SAFETY LEGEND

WIDTH PROVIDED (") — " PROV'D
CAPACITY PROVIDED — PROV'D "
1 HR. WALL
TRAVEL DISTANCE

ACCESSIBLE EXIT DISTANCE	
Type	Path of Egress
Egress Path C	72' - 0"
Egress Path D	70' - 11"
Egress Path E	70' - 6"

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
07/14/2022

STATE OF MISSOURI
JAMES W. WARFORD
NUMBER A-2001006535
REGISTERED ARCHITECT
06-10-2022

PERMIT SET

DEER BROOK PLAZA
1121 & 1151 NE RICE ROAD
LEE'S SUMMIT, MO 64086-6788

ICON architecture + fabrication
506 Grand Boulevard
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REVISIONS
1 Building Plan Review 6-22-22

ISSUE DATE
06-10-22

PROJECT NUMBER
2022-000

SHEET NUMBER
G1.11

LIFE SAFETY PLAN

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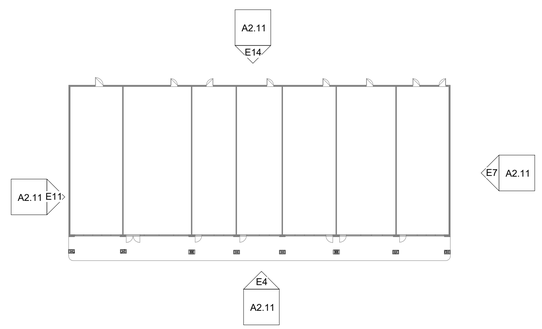
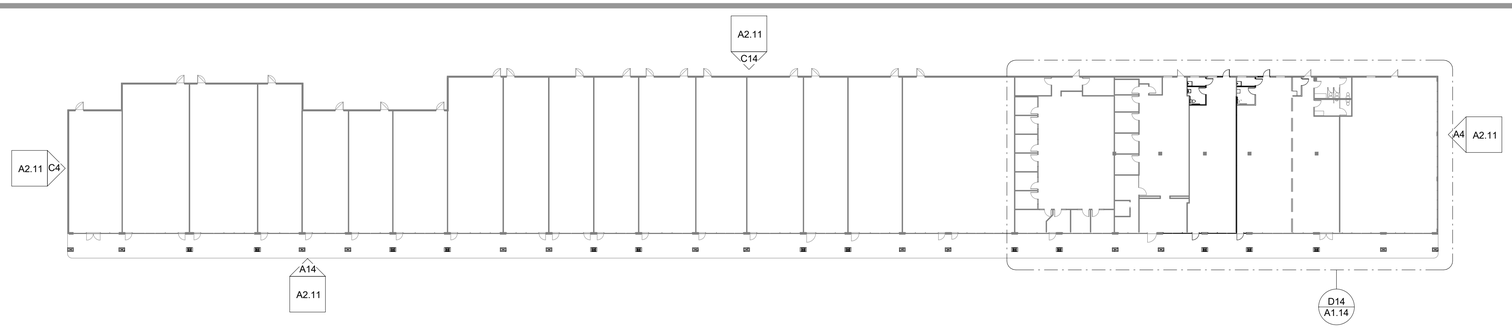


C14 SOUTH BUILDING - OVERALL
1/32" = 1'-0"

NORTH



A14 NORTH BUILDING - OVERALL
1/32" = 1'-0"

NORTH

SYMBOLS:

DISCIPLINE DESIGNATORS:

A	ARCHITECTURAL	F	FURNITURE & EQMT
AS	ARCHITECTURAL SITE	G	GENERAL
C	CIVIL	K	KITCHEN
D	DEMOLITION	L	LANDSCAPE
E	ELECTRICAL	M	MECHANICAL
EL	ELECTRICAL - LIGHTING	P	PLUMBING
EP	ELECTRICAL - POWER	S	STRUCTURAL
		T	TECHNOLOGY

SHEET NUMBER:

A2.51B
- DISCIPLINE
- SERIES
- SHEET IN SERIES
- BUILDING AREA "B" (IF USED)

ROOM NAME/NUMBER:

OFFICE
B-206A
- AREA (B) IF USED
- ROOM NAME
- SUB ROOM NUMBER (06A)
- ROOM NUMBER (06)
- FLOOR LEVEL (2)

REFERENCE MARK:

RE: A6/ A1.21
- DRAWING OR DETAIL NUMBER
- SHEET NUMBER

SYMBOLS:

- NORTH ARROW SYMBOL
- BREAK LINE
- STRUCTURAL GRID BUBBLE
- EXISTING STRUCTURAL GRID BUBBLE
- ELEVATION MARK
- FH — FIRE HYDRANT
- FE — FIRE EXTINGUISHER
- FEC — FIRE EXTINGUISHER & CABINET
- FD — FLOOR DRAIN
- RD — ROOF DRAIN
- ORD — OVERFLOW ROOF DRAIN
- WC-3 — WALL FINISH TYPE
- 22.22G — MATERIAL KEYNOTE

NOTE TAGS:

- 12 — SHEET NOTE NUMBER
- 24 — DEMOLITION NOTE NUMBER
- 4 — FIXTURE ACCESSORY NUMBER

DETAILS:

A4 / A3.41
- DRAWING NUMBER
- SHEET NUMBER

DOOR SYMBOLS:

101-A — DOOR NO. — 101-A
NEW DOOR — EXISTING DOOR

WALL SYMBOLS:

NEW WALL — EXISTING WALL

SYMBOLS - WINDOW TYPES/ DOOR & FRAME TYPES/ LOUVER TYPES:

NEW DOOR — EXISTING DOOR

- F1 — DOOR FRAME NUMBER SYMBOL (F1, F2, F3, ETC...)
- A2 — WINDOW NUMBER SYMBOL (A-Z; AA, AB - AZ; BA, BB - BZ...)
- L2 — LOUVER NUMBER SYMBOL (L1, L2, L3, ...)
- 14 — GLASS TYPES

WALL TYPE INDICATOR:

A4 — WALL TYPE DESIGNATION

BUILDING ADDITION NOTATION:

NEW | EXISTING

ELEVATION SYMBOLS:

A2.11 / A1
EXTERIOR
- SHEET NUMBER
- DRAWING NUMBER
- DIRECTION

A7.11 / A1
INTERIOR
- SHEET NUMBER
- DRAWING NUMBER
- DIRECTION

WALL SECTION AND DETAIL SYMBOLS:

A3 / A3.21
- DRAWING NUMBER
- SHEET NUMBER
- DIRECTION

BUILDING SECTIONS:

F1 A3.11 — SHEET NUMBER — F1 A3.11
- BUILDING SECTION NUMBER
- DIRECTION

REVISION MARK/ CLOUD:

1 — REVISION NUMBER

A4 SYMBOLS
12" = 1'-0"

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
07/14/2022

STATE OF MISSOURI
JAMES W. WARFORD
NUMBER A-2001006335
REGISTERED ARCHITECT

06-10-2022

PERMIT SET

DEER BROOK PLAZA

1121 & 1151 NE RICE ROAD
LEE'S SUMMIT, MO 64086-6788

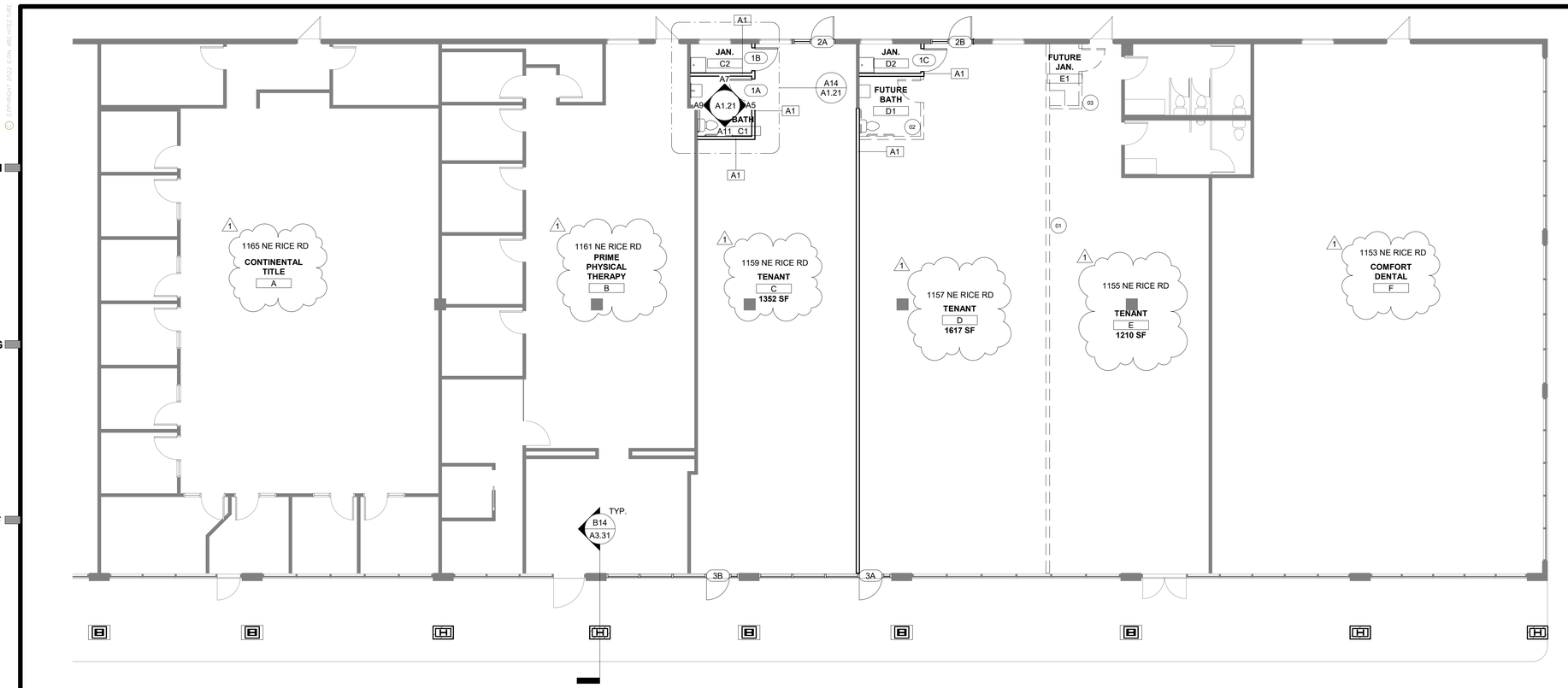
ICON architecture + fabrication
506 Grand Boulevard
Kansas City, MO 64106
p:816.221.0250 f:816.221.0251

REVISIONS

ISSUE DATE: 06-10-22
PROJECT NUMBER: 2022-000
SHEET NUMBER: A1.11
FLOOR PLAN

7/6/2022 10:13:40 AM

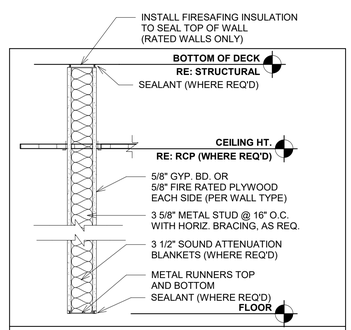
14 13 12 11 10 9 8 7 6 5 4 3 2 1
A B C D E F G H



D14 NORTH BUILDING - NEW TENANT SPACE
1/8" = 1'-0"

NORTH

PLAN NOTES
1. PROPOSED FUTURE TENANT DEMISING WALL.
2. PROPOSED FUTURE TENANT RESTROOM PLUMBING TO BE STUBBED IN PLACE FOR FUTURE FIXTURE INSTALLATION.
3. PROPOSED FUTURE JANITORS ROOM & SINK. PLUMBING TO BE STUBBED IN PLACE FOR FUTURE SINK INSTALLATION.



WALL TYPE A

TYPE	WALL DESCRIPTION
A1	•3-5/8" METAL STUD @ 16" O.C. TO TO DECK ABOVE •5/8" TYPE "X" GYP. BD. EACH SIDE •3-1/2" SOUND BATT INSUL. TO FULL HT. OF WALL •ACOUSTICAL SEALANT AT FLOOR AND CEILING •NON RATED

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
07/14/2022

STATE OF MISSOURI
JAMES W. WARFORD
NUMBER A-2001006535
REGISTERED ARCHITECT
06-10-2022

PERMIT SET

DEER BROOK PLAZA
1121 & 1151 NE RICE ROAD
LEE'S SUMMIT, MO 64086-6788

ICON architecture + fabrication
506 Grand Boulevard
Kansas City, MO 64106
p:816.221.0250 f:816.221.0251

REVISIONS
1 Building Plan Review 6-22-22

ISSUE DATE
06-10-22

PROJECT NUMBER
2022-000

SHEET NUMBER
A1.14

NEW TENANT SPACE

7/6/2022 10:13:40 AM

H G F E D C B A
14 13 12 11 10 9 8 7 6 5 4 3 2 1

06-10-2022

PERMIT SET

DEER BROOK PLAZA

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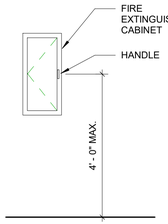
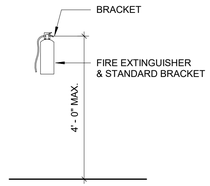
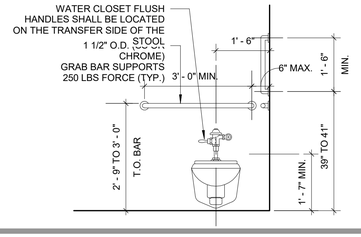


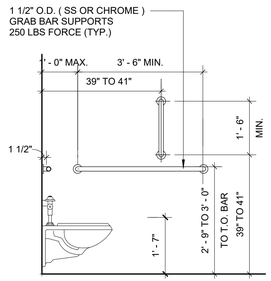
G14 FE CABINET
1/2" = 1'-0"



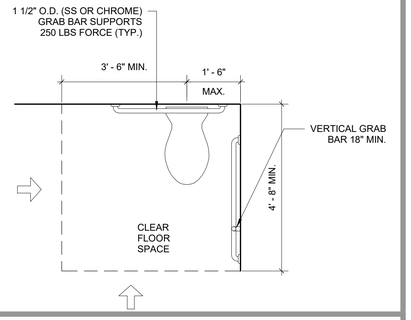
G12 FIRE EXTING
1/2" = 1'-0"



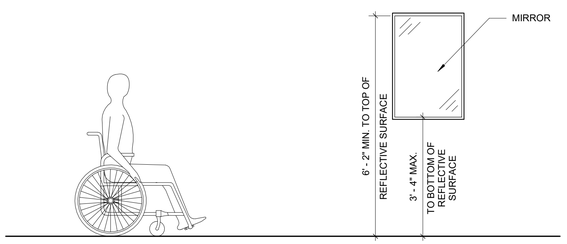
G10 WC ELEVATION
1/2" = 1'-0"



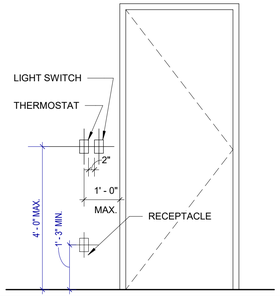
G7 WC SECTION
1/2" = 1'-0"



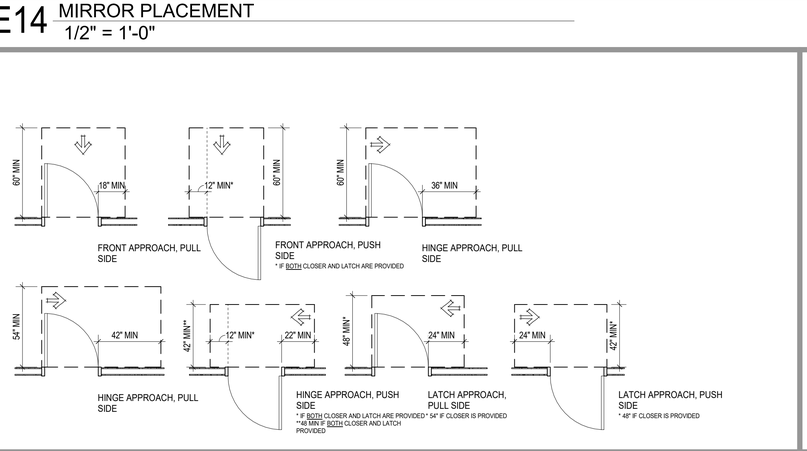
G5 ACCESSIBLE CLEAR FLOOR SPACE
1/2" = 1'-0"



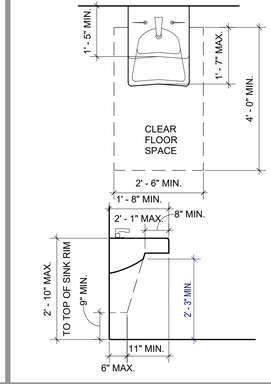
E14 MIRROR PLACEMENT
1/2" = 1'-0"



E5 SWITCH @ DOOR
1/2" = 1'-0"



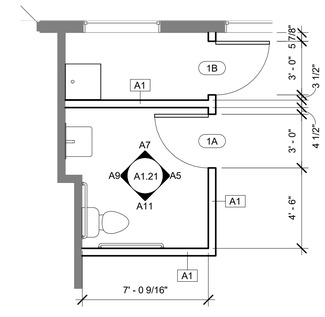
C14 DOOR APPROACH CLEARANCES
1/4" = 1'-0"



C9 WALL HUNG SINK CLEAR.
1/2" = 1'-0"

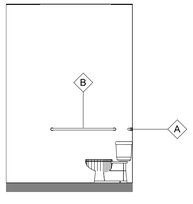
TOILET ACCESSORY SCHEDULE

Type Mark	Description	Manufacturer	Model	WxDxH	FINISH	Comments
A	GRAB BAR, 1-1/2" DIA., SS, 36"	BOBRICK	B-5806-36	1-1/2" DIA x 36"	-	-
B	GRAB BAR, 1-1/2" DIA., SS, 42"	BOBRICK	B-5806-42	1-1/2" DIA x 42"	-	-
C	One-piece, 1/2" x 1/2" x 3/8" (13 x 13 x 9.5mm) channel-frame. Type 430 stainless steel with bright-polished finish. Mitered corners. Frame screw permits easy replacement of glass. No. 1 quality, 1/4" (6mm) glass mirror; warranted against silver spoilage for 15 years. Galvanized steel back. Secured to concealed wall hanger with theft-resistant mounting.	Bobrick	B-165 2448		-	-

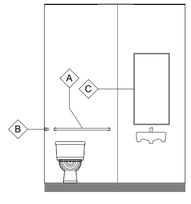


A14 TENANT SPACE - BATHROOM PLAN
1/4" = 1'-0"

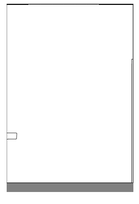
NORTH



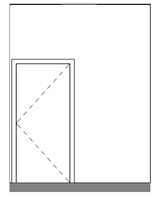
A11 BATH - WEST ELEV.
1/4" = 1'-0"



A9 BATH - NORTH ELEV.
1/4" = 1'-0"



A7 BATH - EAST ELEV.
1/4" = 1'-0"



A5 BATH - SOUTH ELEV.
1/4" = 1'-0"

1

CODE SPECIFIC NOTES:

2018 IBC 1209.2 Finish Materials. Walls, Floors and partitions in toilet and bathrooms shall comply with Sections 209.2.1 through 1209.2.4.
2018 1209.2.1 Floors and wall bases. In other than dwelling units, toilet, bathing and shower room floor finish materials shall have a smooth, hard, nonabsorbent surface. The intersections of such floors with walls shall have a smooth, hard, nonabsorbent vertical base that extends upward onto the walls not less than 4 inches.
2018 1209.2.2 Walls and partitions. Walls and partitions within 2 feet of service sinks, urinals and water closets shall have a smooth, hard, nonabsorbent surface, to a height of not less than 4 feet above the floor, and except for structural elements, the materials used in such walls shall be of a type that is not adversely affected by moisture. (See code section for possible exceptions.)
1209.2.3 Showers. (see code for details)
1209.2.4 Waterproof joints. (see code for details)

ACCESSIBILITY GUIDELINES:

1. UNOBSTRUCTED REACH RANGES (AFF.)
   A. FORWARD REACH = 48" MAX. & 15" MIN.
   B. SIDE REACH = 48" MAX. & 15" MIN.
2. DOOR HARDWARE
   (MEASURED AFF. TO C.L. OF HARDWARE)
   A. STANDARD MOUNTING HEIGHTS:
      1. PUSH PLATES = 42"
      2. PULL HANDLES = 42"
      3. KNOBS/ LEVERS = 40"
      4. PANIC EXIT = 42" CENTERLINE OF BAR
      5. KICK PLATES: WIDTH= DOOR WIDTH MINUS 2", CENTERED HEIGHT= 16" FROM B.O. DOOR
      6. THRESHOLDS: STANDARD = 1/2" MAX. AT EXT. SLIDING DOORS = 3/4" MAX.
   B. ACCESSIBLE HARDWARE = 34" MIN. TO 48" MAX.
3. DRINKING FOUNTAINS & EWC'S
   (MEASURED FROM FLOOR TO SPOUT)
   A. STD. FLOOR MOUNTING = 40" TYP., 42" MAX.
   B.ACCESSIBLE = 36" MAX. (27" MIN. CLEAR KNEE SPACE)
4. WATER CLOSETS (AFF. TO TOP OF SEAT)
   A. STANDARD MOUNTING = 14" TO 15"
   B. ACCESSIBLE (TO TOP OF SEAT) = 17" TO 19"
   C. ACCESSIBLE FLUSH CONTROLS = 44" MAX.
5. URINALS (MEASURED FROM FLOOR TO RIM)
   A. STANDARD MOUNTING = 24" MAX.
   B. ACCESSIBLE =17" MAX.
   C. ACCESSIBLE FLUSH CONTROLS = 44" MAX.
6. LAVATORIES (AFF. TO RIM/ COUNTERTOP)
   A. STANDARD MOUNTING = 36" MAX.
   B. ACCESSIBLE= 34" MAX. (29" MIN. CLEAR KNEE SPACE)
7. MIRRORS (AFF. TO B.O. REFLECTIVE SURFACE)
   A. STANDARD MOUNTING = VARIES
   B. ACCESSIBLE = 40" MAX.
8. ADA GRAB BARS (MEASURED TO TOP OF BAR)
   A. WATER CLOSETS: 33" MIN. TO 36" MAX. AFF.
   B. SHOWERS: 33" MIN.-36" MAX.(AT B.O. SHOWER)
   C. BATHTUBS: TOP OF BAR = 33" MIN.-36" MAX. AFF. BOT. BAR = 9" ABOVE T.O. TUB
9. COUNTERTOPS:
   (MEASURED AFF. TO SINK RIM/ COUNTERTOP)
   A. STANDARD MOUNTING = 36" MAX.
   B. ACCESSIBLE = 28" MIN. TO 34" MAX.
10. TOILET ROOM PARTITIONS (MEASURED AFF.)
    A. AT W.C.'S = 12" TO BOT. & 70" TO TOP.
    B. AT URINALS = 18" TO BOT. & 60" TO TOP.
11. TOILET PAPER DISPENSERS (AFF.TO C.L. OUTLET)
    A. STANDARD MOUNTING = 24"
    B. ACCESSIBLE = 19" MIN. TO 24" MAX.
12. WALL MOUNTED SOAP DISPENSERS
    (MEASURED AFF. TO C. L. OF PUSH BUTTON)
    A. STANDARD MOUNTING = 40"
    B. ACCESSIBLE = 46" MAX.
13. PAPER TOWEL DISP./ WASTE RECEPTACLE
    (MEASURED AFF. TO TOWEL SLOT)
    A. STANDARD MOUNTING = 40" MAX.
    B. ACCESSIBLE FORWARD REACH = 48" MAX. & 15" MIN.
    C. ACCESSIBLE SIDE REACH = 48" MAX. & 15" MIN.
14. WARM AIR HAND DRYER (AFF. TO PUSH SWITCH)
    A. STANDARD MOUNTING = 44" MAX.
    B. ACCESSIBLE FORWARD REACH = 48" MAX. & 15" MIN.
    C. ACCESSIBLE SIDE REACH = 48" MAX. & 15" MIN.
15. SANITARY NAPKIN DISPENSER
    (MEASURED AFF. TO CL. OF COIN SLOT)
    A. STANDARD MOUNTING = 40" MAX.
    B. ACCESSIBLE FORWARD REACH = 48" MAX. & 15" MIN.
    C. ACCESSIBLE SIDE REACH = 48" MAX. & 15" MIN.
16. SANITARY NAPKIN DISPOSAL UNIT
    A. STANDARD MOUNTING = 28" MAX. (T.O. UNIT)
    B. ACCESSIBLE = 19" MIN.-24" MAX. (OPNG.)
17. TOILET SEAT COVER DISPENSERS (TO OPNG.)
    A. STANDARD MOUNTING = 40" MAX.
    B. ACCESSIBLE FORWARD REACH = 48" MAX. & 15" MIN.
    C. ACCESSIBLE SIDE REACH = 48" MAX. & 15" MIN.
18. COAT HOOKS
    A. STANDARD = 68"
    B. ACCESSIBLE = 48" MIN. TO 54" MAX.
19. THERMOSTATS & CONTROL DEVICES (TO TOP)
    A. STANDARD MOUNTING = 42 3/4" MAX.
    B. ACCESSIBLE FORWARD REACH = 48" MAX. & 15" MIN.
    C. ACCESSIBLE SIDE REACH = 54" MAX. & 15" MIN.
20. LIGHT SWITCHES & CARD READERS (TO C.L.)
    A. STANDARD = 42 3/4" & 6" FROM DOOR JAMB
    B. ACCESSIBLE = 48" MAX.
21. CONVENIENCE RECEPTACLES (ELECTRICAL/ TELEPHONE/ DATA)
    A. STANDARD = 18 3/4"
    B. ACCESSIBLE = 15" MIN.
22. EXIT LIGHTS - STANDARD WALL MOUNTED
    A. 2" MIN. BELOW CEILING.
    B. 2" MIN. ABOVE DOOR FRAME.
    C. EQUAL SPACE - CEILING TO TOP OF FRAME.
23. FIRE EXTINGUISHERS (MEASURED AFF.)
    A. GROSS WT. 40 LBS OR LESS = 60" MAX. TO TOP.
    B. GROSS WT. MORE THAN 40 LBS = 42" MAX. TO TOP.
    C. ACCESSIBLE REACH RANGES = 48" MAX. & 15" MIN.
24. FIRE ALARM PULL STATIONS (AFF. TO LEVER)
    A. STANDARD MOUNTING = 48" MAX.
    B. ACCESSIBLE FORWARD REACH = 48" MAX. & 15" MIN.
    C. ACCESSIBLE SIDE REACH = 48" MAX. & 15" MIN.
25. SMOKE AND/OR HEAT DETECTORS
    A. STANDARD = CEILING HEIGHT
26. HORN/ SPEAKER/ VISUAL SIGNALS
    A. STANDARD = 80" AFF. OR 6" BELOW CEILING - WHICHEVER IS LOWER.
27. ROOM SIGNAGE FOR ROOM NAMES (TO C.L.)
    A. STANDARD = 60" HIGH AFF. AND WITHIN 18" OF LATCH SIDE OF DOOR.

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SHEET NUMBER
A1.21

ENLARGED RESTROOM PLANS & ELEVATIONS

7/6/2022 10:13:41 AM

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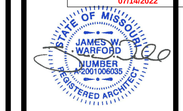
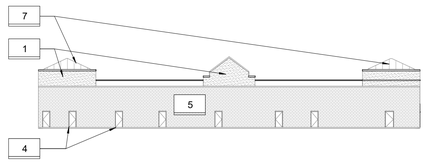


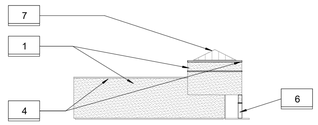
06-10-2022

PERMIT SET

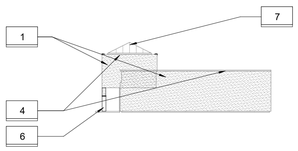
ELEVATION FINISH NOTES
1. PREPARE AND PAINT EXISTING STUCCO PT1 (SW7074 SOFTWARE).
2. PREPARE AND PAINT EXISTING ACCENT STUCCO PT2 (SW7073 ACCENT).
3. PREPARE AND PAINT EXISTING BRICK PT1 (SW7074 SOFTWARE).
4. PREPARE AND PAINT EXISTING METAL, WHERE METAL IS STOREFRONT WINDOW; EVALUATE AND CAULK WHERE NEEDED. PT3 (SW7076 CYBERSPACE).
5. POWER WASH EXISTING CMU BLOCK.
6. NEW ENIDCOTT MANGANESE IRONSPOT BRICK AT COLUMN.
7. PREPARE AND PAINT EXISTING STANDING SEAM METAL ROOF.
8. NEW STANDING SEAM METAL ROOF.



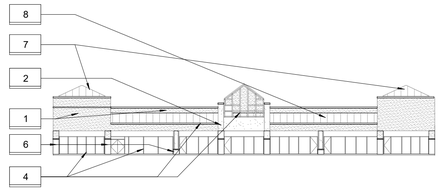
E14 SOUTH BUILDING - EAST ELEVATION
1/32" = 1'-0"



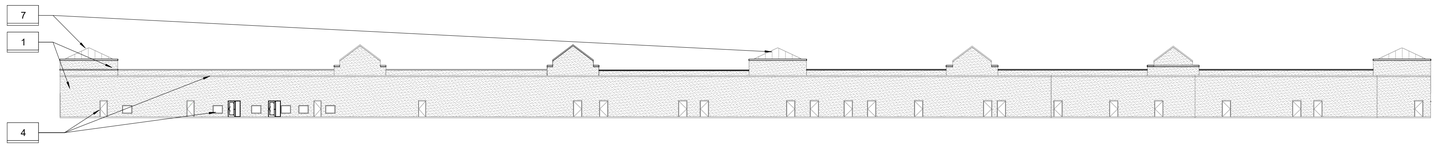
E11 SOUTH BUILDING - NORTH ELEVATION
1/32" = 1'-0"



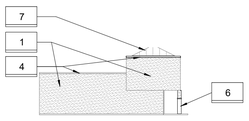
E7 SOUTH BUILDING - SOUTH ELEVATION
1/32" = 1'-0"



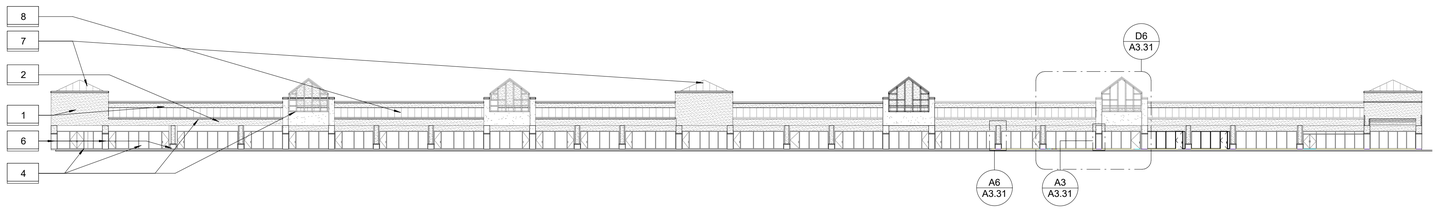
E4 SOUTH BUILDING - WEST ELEVATION
1/32" = 1'-0"



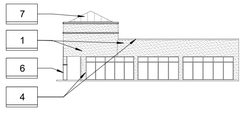
C14 NORTH BUILDING - EAST ELEVATION
1/32" = 1'-0"



C4 NORTH BUILDING - NORTH ELEVATION
1/32" = 1'-0"



A14 NORTH BUILDING - WEST ELEVATION
1/32" = 1'-0"



A4 NORTH BUILDING - SOUTH ELEVATION
1/32" = 1'-0"

DEER BROOK PLAZA
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EXTERIOR ELEVATIONS

7/6/2022 10:13:49 AM

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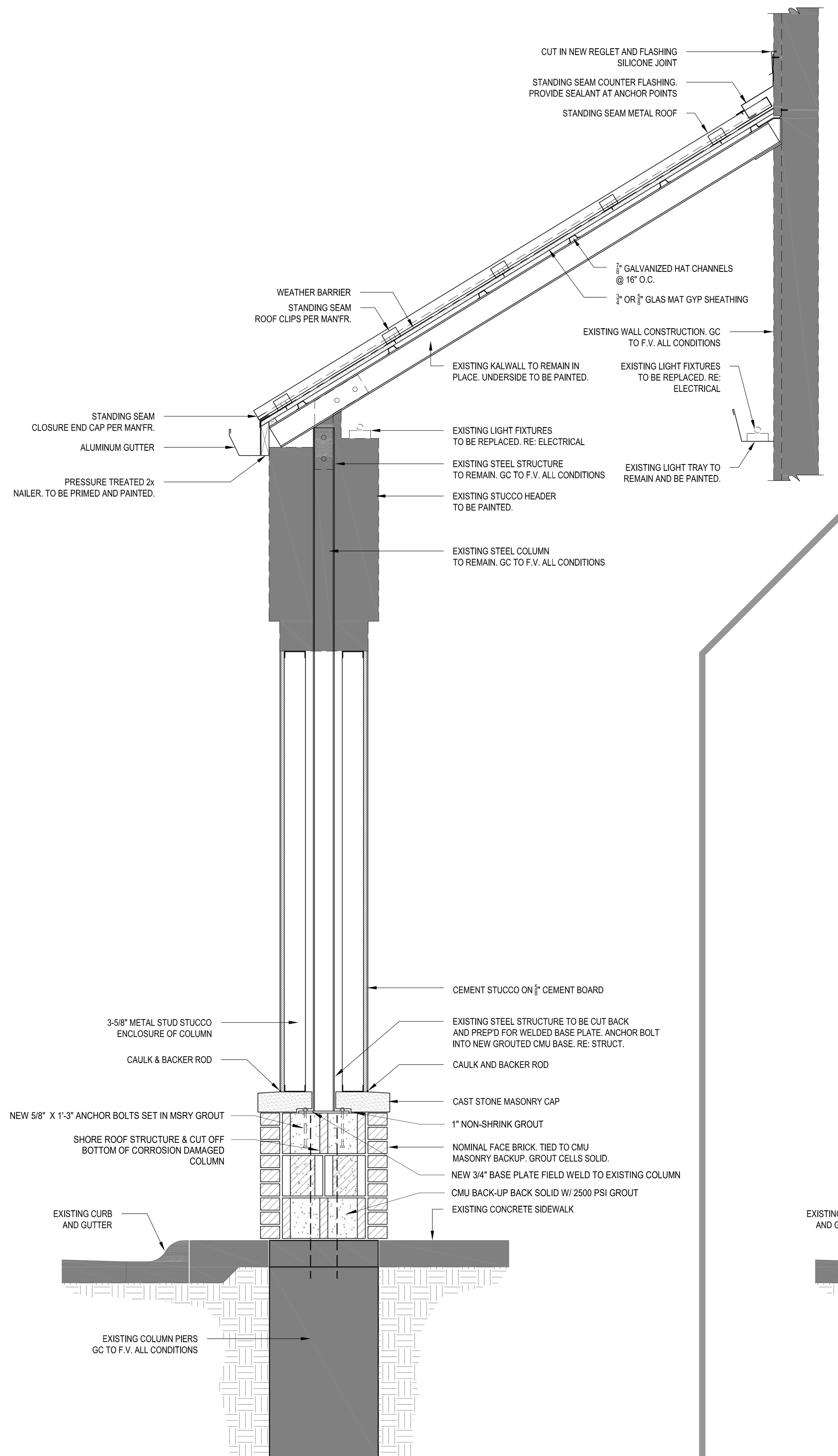
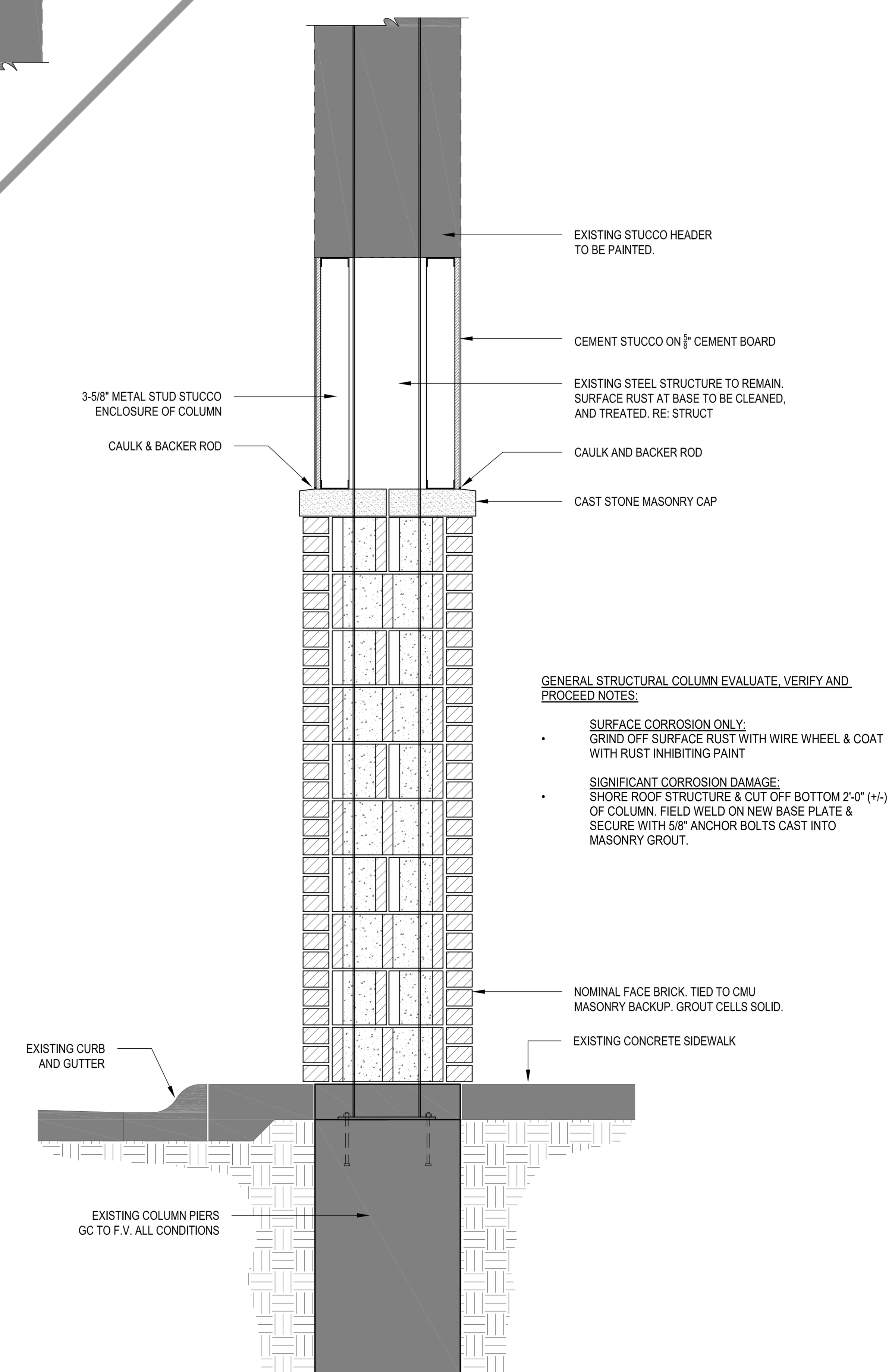


B14 TYP. SECTION @ COLUMN
3/4"= 1'-0"

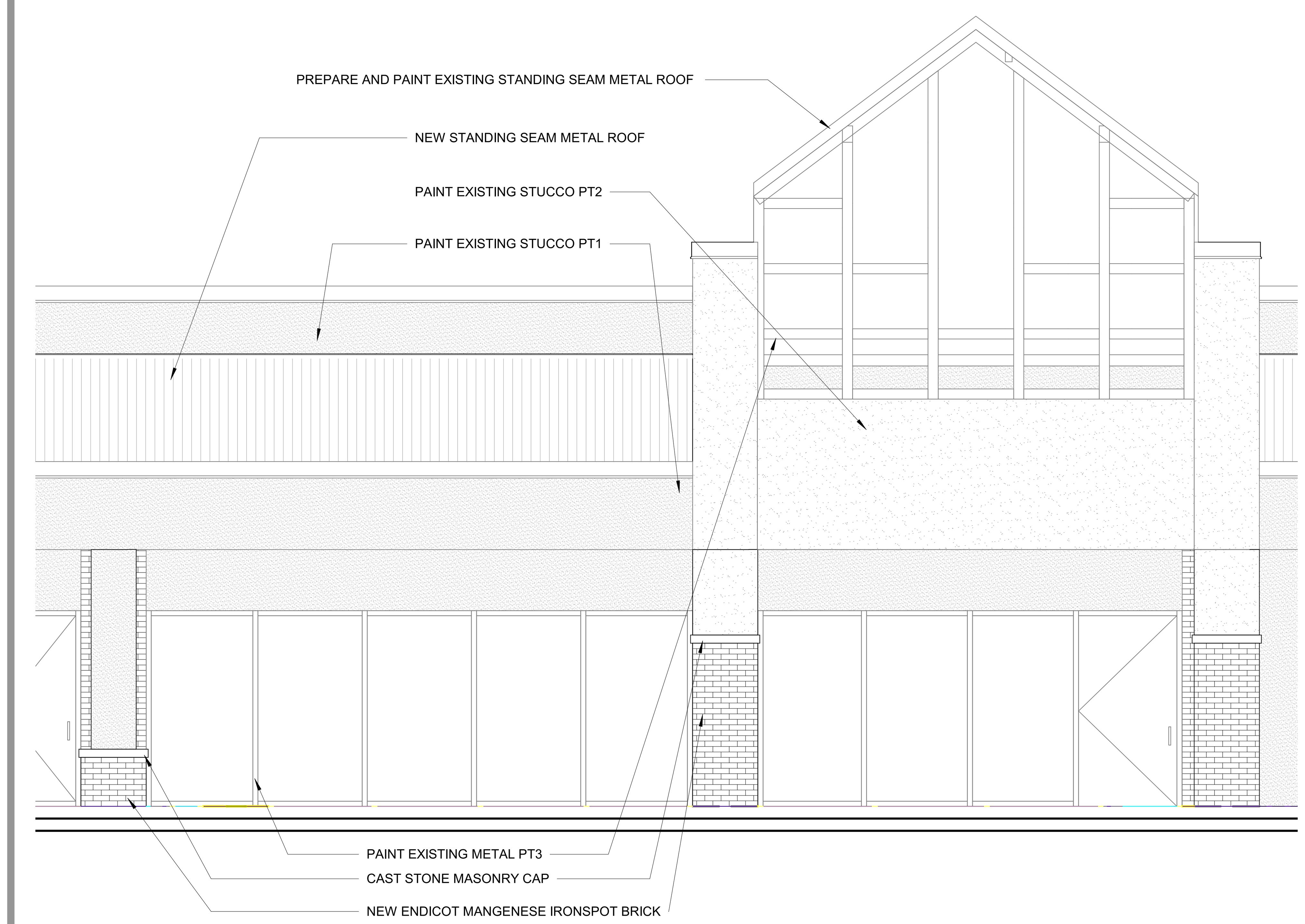


GENERAL STRUCTURAL COLUMN EVALUATE, VERIFY AND PROCEED NOTES:

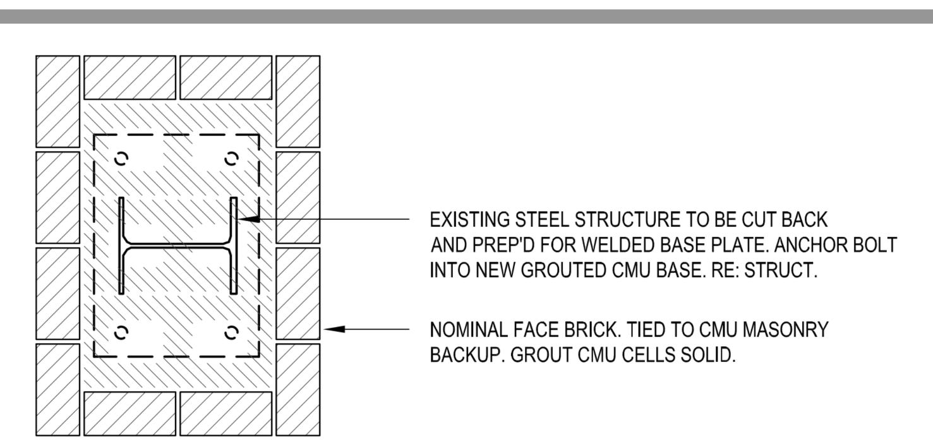
SURFACE CORROSION ONLY:
- GRIND OFF SURFACE RUST WITH WIRE WHEEL & COAT WITH RUST INHIBITING PAINT

SIGNIFICANT CORROSION DAMAGE:
- SHORE ROOF STRUCTURE & CUT OFF BOTTOM 2'-0" (+/-) OF COLUMN. FIELD WELD ON NEW BASE PLATE & SECURE WITH 5/8" ANCHOR BOLTS CAST INTO MASONRY GROUT.

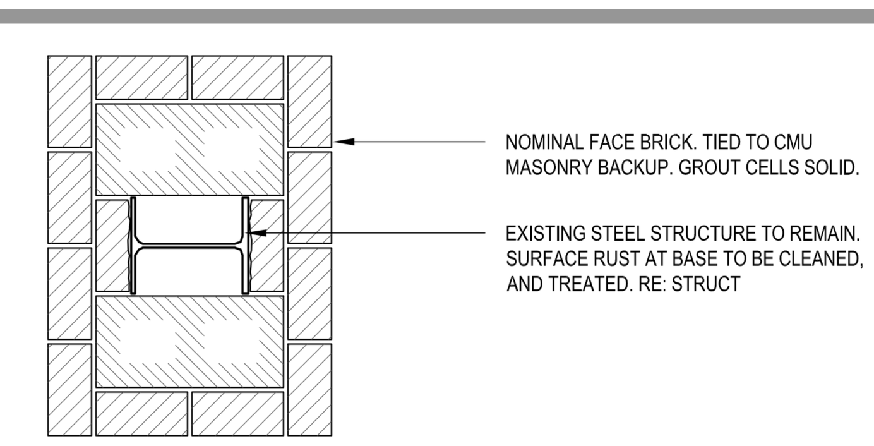
B10 TYP. SECTION @ PILASTER
3/4"= 1'-0"



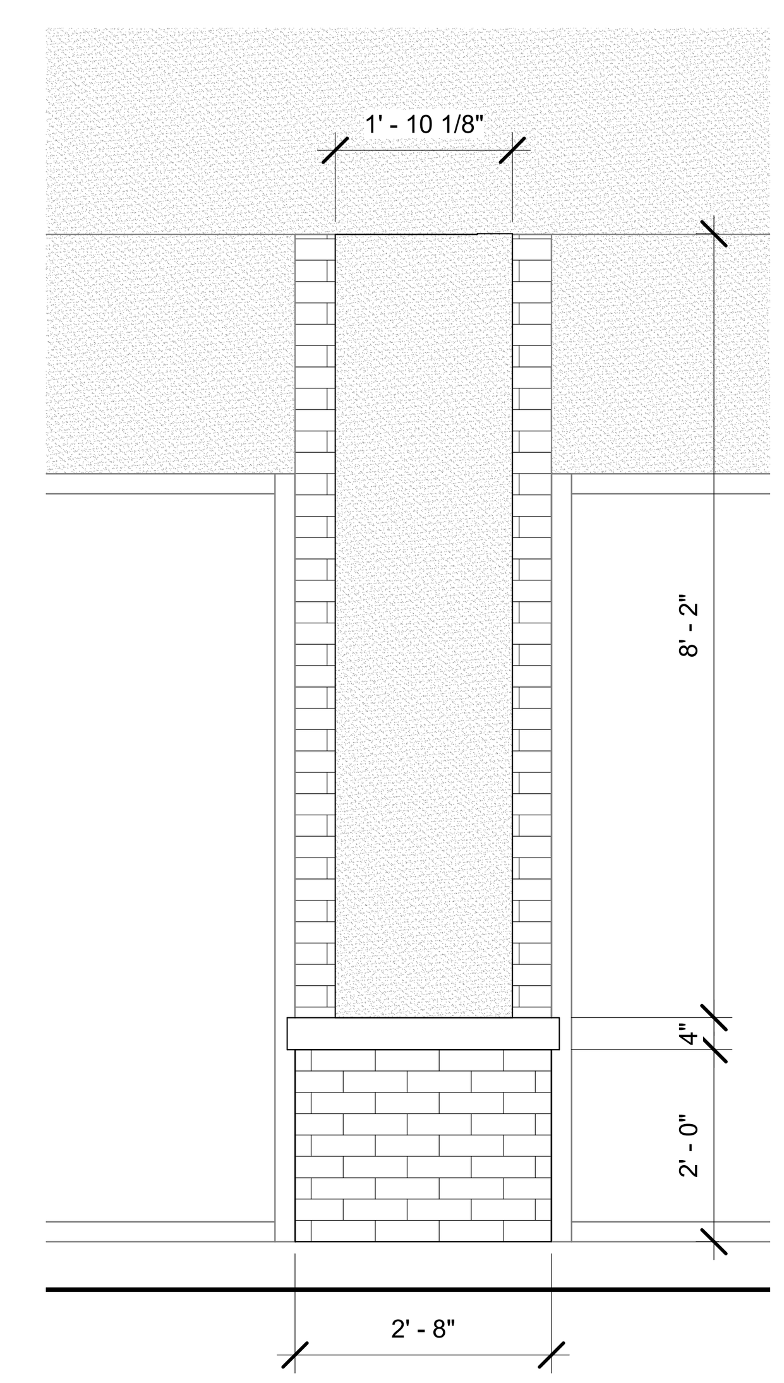
D6 FRONT ELEVATION - TYP. @ ALL FEATURE TOWERS
1/4" = 1'-0"



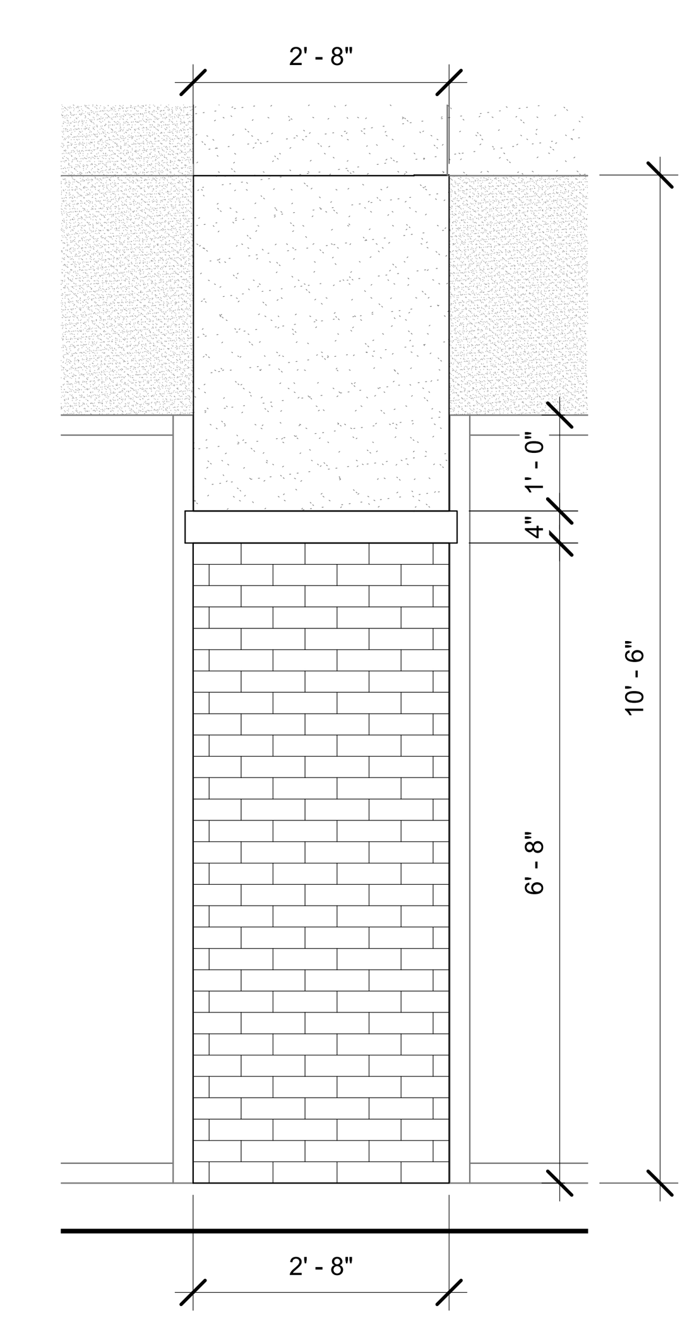
A14 TYP. PLAN @ COLUMN BASE W/ REPAIR
3/4"= 1'-0"



A10 TYP. PLAN @ COLUMN BASE
3/4"= 1'-0"



A6 FRONT ELEV. - TYP. @ ALL COLUMNS
1/2" = 1'-0"



A3 FRONT ELEV. - TYP. @ ALL PILASTERS
1/2" = 1'-0"

SEAL
STATE OF MISSOURI
JAMES W. WARFORD
NUMBER A-2001006035
REGISTERED ARCHITECT
06-10-2022

PERMIT SET

DEER BROOK PLAZA
1121 & 1151 NE RICE ROAD
LEE'S SUMMIT, MO 64086-6788

ICON
architecture + fabrication

506 Grand Boulevard
Kansas City, MO 64106
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EXTERIOR DETAILS

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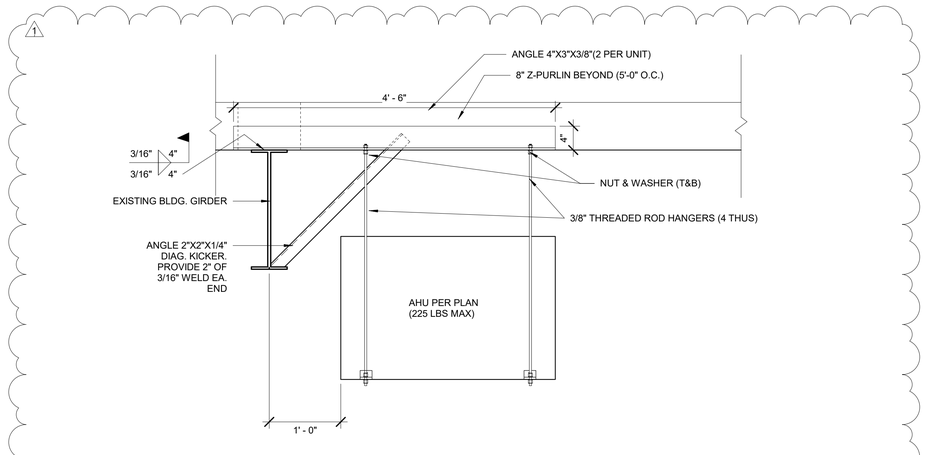
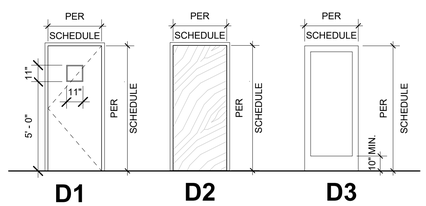


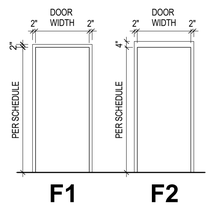
D14 STRUCTURAL SECTION - AHU MOUNTING
1" = 1'-0"

Door Schedule

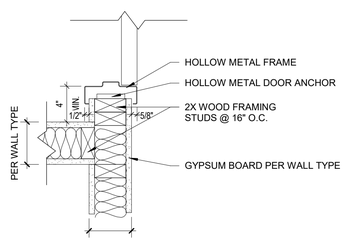
Mark	Width	Height	Frame Material	Frame Type	Door Hardware	Door Material	Door Type	Head Detail	Jamb Detail	Comments
1A	3' - 0"	6' - 8"	WOOD	F1		WOOD	D2	-	-	-
1B	3' - 0"	6' - 8"	WOOD	F1		WOOD	D2	-	-	-
1C	3' - 0"	6' - 8"	WOOD	F1		WOOD	D2	-	-	-
2A	3' - 0"	7' - 0"	STEEL	F1		STEEL	D1	-	-	-
2B	3' - 0"	7' - 0"	STEEL	F1		STEEL	D1	-	-	-
3A	3' - 0"	7' - 9 1/2"	ALUM.	-		ALUM/GLASS	D3	-	-	-
3B	3' - 0"	7' - 9 1/2"	ALUM.	-		ALUM/GLASS	D3	-	-	-



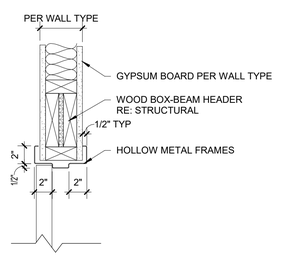
DOOR LEGEND



FRAME LEGEND



A5 HM TYP. SINGLE JAMB
1 1/2" = 1'-0"



A3 HM DOOR HEAD DETAIL TYP.
1 1/2" = 1'-0"

GENERAL NOTES:
A. HM REFERS TO HOLLOW METAL
B. AL REFERS TO ALUMINUM
C. WD REFERS TO WOOD
D. ALL EXTERIOR ALUMINUM DOORS & FRAMES ARE TO BE FINISHED TO MATCH ADJACENT ALUMINUM WINDOW FRAME, U.N.O.

GENERAL STOREFRONT NOTES:

1. FIELD VERIFY ALL OPENINGS PRIOR TO FABRICATION OF WINDOWS.
2. REFER TO PLANS AND ELEVATIONS FOR WINDOW LOCATIONS AND GLASS TYPES.
3. PROVIDE CONTINUOUS SEALANT BEAD AT UNDERSIDE OF ALL DOOR THRESHOLDS.

DOOR HARDWARE:

SET 1 - ENTRY
CLOSER: LCN 4041 CUSH - FINISH:
CODE REQUIRED PANIC HARDWARE
PANIC DEVICE: VONDUPEN-98NL OPX110MD NL
HINGES: BY STOREFRONT MFG.
SIGNAGE "MAXIMUM OCCUPANCY" - POST AT MAIN ENTRY
SIGNAGE "DOOR TO REMAIN UNLOCKED WHEN BUILDINGIS OCCUPIED" W/ 1' HIGH LETTERS ON A CONTRASTING BACKGROUND.

SET 2 - DELIVERY
CLOSER: LCN 4041CUSH FINISH: US28
PANIC DEVICE: VON DUPEN - 98NL OP X 110MD NL
HINGES: HAGAR (3) X BB1191 4"X4" FINISH: US28
VIEW WINDOW: -
KICK PLATE: SCHLAGE 8400-8X34-619
LEVER SET GRADE - PREPARED FOR BEST CORE

SET 3 - RESTROOMS
HINGES: IVES 3CB1 4.5X4.5 FINISH: 652
RESTROOM ADA INDICATOR DEADBOLT: SCHLAGE B571
PULL PLATE W/ DEADBOLT HOLE: DON JO CFK7115 4"X16"X.05" W/ 3/4" ROUND PULL 6" CTC
PUSH PLATE:
WALL STOP: IVES WS404-CVX FINISH: US26D
SILENCERS: IVES SR64 FINISH: GRY
FOOTPULL: STEPNPULL BLACK FINISH (1 EACH DOOR)
KICKPLATE: EACH SIDE OF DOOR 8" KICKPLATE (US--)
SIGNAGE: "UNISEX"

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
07/14/2022

STATE OF MISSOURI
JAMES W. WARFORD
NUMBER A-2001006335
REGISTERED ARCHITECT
06-10-2022

PERMIT SET

DEER BROOK PLAZA
1121 & 1151 NE RICE ROAD
LEE'S SUMMIT, MO 64086-6788

ICON architecture + fabrication
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p:816.221.0250 f:816.221.0251

REVISIONS
1 Building Plan Review 6-22-22

ISSUE DATE
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PROJECT NUMBER
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SHEET NUMBER
A5.12

DOOR SCHEDULE & DETAILS

7/6/2022 10:14:12 AM

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14 13 12 11 10 9 8 7 6 5 4 3 2 1

D14 LEVEL 1
1/8" = 1'-0"

NORTH

RCP GENERAL NOTES:

1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SUBMITTING A SPRINKLER HEAD LAYOUT TO OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO PERMITTING & INSTALLATION. ALL ROUTING OF PIPE AND HEAD LOCATIONS TO BE COORDINATED WITH FIELD CONDITIONS PRIOR TO SUBMITTAL.
2. REFER TO ELECTRICAL PLANS FOR ALL ALARM NOTIFICATION DEVICES. REFER TO ELECTRICAL SHEETS FOR DETAILED INFORMATION ON LIGHT FIXTURES.
3. REFER TO MECHANICAL SHEETS FOR DETAILED INFORMATION ON DIFFUSERS. COORDINATE ALL FIXTURES WITH ELECTRICAL AND MECHANICAL PLANS. MECHANICAL CONTRACTOR TO COORDINATE DUCT WORK AROUND CURRENT LIGHTING LAYOUT PER RCP.
4. DIFFUSER LOCATIONS ARE FOR INTENT PURPOSES ONLY MECHANICAL CONTRACTOR TO COORDINATE EXACT LOCATIONS AND REQUIREMENTS AS NECESSARY.
5. EMERGENCY LIGHTING TO BE DESIGNED BY ELECTRICAL ENGINEER. LOCATIONS TO BE COORDINATD BY ARCHITECT.
6. ALL OWNER PROVIDED FIXTURES ARE TO BE GENERAL CONTRACTOR INSTALLED.
7. EXISTING CEILING AND FIXTURES TO REMAIN.

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
07/14/2022

STATE OF MISSOURI
JAMES W. WARFORD
NUMBER A-2001006535
REGISTERED ARCHITECT
06-10-2022

PERMIT SET

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REVISIONS

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PROJECT NUMBER
2022-000

SHEET NUMBER
A6.11

REFLECTED CEILING PLAN

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14 13 12 11 10 9 8 7 6 5 4 3 2 1

PERMIT SET

CONDUIT AND WIRE

- ARROWS INDICATE CONDUIT AND WIRE HOME RUN(S) TO PANEL WITH 2–#12 AWG CONDUCTORS UNLESS NOTED OR OTHERWISE REQUIRED.
- CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING.
- CONDUIT RUN UNDERGROUND OR CONCEALED IN FLOOR SLAB.
- —T— TELEPHONE CONDUIT
- —LV— LOW VOLTAGE CONDUIT AND WIRING

LIGHTING

- BATTERY OPERATED EMERGENCY LIGHT (WALL MOUNTED)
- BATTERY OPERATED EMERGENCY LIGHT (CEILING MOUNTED)
- SURFACE/RECESSED LIGHT FIXTURE
- FLUORESCENT LIGHT FIXTURE
- FLUORESCENT STRIP FIXTURE
- SHADING DENOTES EMERGENCY FIXTURE
- POLE MOUNTED LIGHT FIXTURE
- EXIT LIGHT – DOUBLE FACE – ARROWS AS SHOWN
- EXIT LIGHT – SINGLE FACE – ARROWS AS SHOWN
- $,$3,$4,$K,$LV LIGHTING SWITCHES–SINGLE POLE, 3–WAY, 4–WAY, KEY, LOW VOLTAGE, PILOT LIGHT
- $D DIMMER WITH SINGLE POLE SWITCH
- $D3 DIMMER WITH THREE WAY SWITCH (WATTAGE NOTED)
- $M WALL MOUNTED MOTION SENSOR
- (A) CEILING MOUNTED MOTION SENSOR (LETTER DENOTES TYPE)
- SWITCH AND DUPLEX RECEPTACLE
- DENOTES A WALL MOUNTED FIXTURE

WIRING DEVICES

- DUPLEX RECEPTACLE.
- LINE THRU DEVICE INDICATES ABOVE COUNTER
- DUPLEX RECEPTACLE WITH ISOLATED GROUND (SINGLE AND FOURPLEX SIMILAR)
- DUPLEX RECEPTACLE – TOP HALF SWITCHED – BOTTOM HALF TO HAVE POWER AT ALL TIMES
- DUPLEX RECEPTACLE ON EMERGENCY POWER (SINGLE AND FOURPLEX SIMILAR)
- FOURPLEX RECEPTACLE
- SINGLE RECEPTACLE
- CEILING MOUNTED RECEPTACLE
- MULTI–SERVICE FLOOR BOX
- DIVIDED POWER POLE
- FLOOR BOX W/DUPLEX RECEPTACLE
- SPECIAL RECEPTACLE W/NEMA CONFIGURATION AS NOTED
- C CLOCK RECEPTACLE
- MULTI–OUTLET ASSEMBLY

COMMUNICATIONS

- TELEPHONE OUTLET
- LINE THRU DEVICE INDICATES ABOVE COUNTER
- DATA OUTLET
- TELEPHONE/DATA OUTLET
- FLOOR BOX WITH COMMUNICATIONS OUTLET
- TV TELEVISION ANTENNA OUTLET
- TELEPHONE CABINET OR PLYWOOD BOARD

SECURITY

- CLOSED CIRCUIT TV CAMERA
- CR CARD READER
- DL DOOR LOCK
- M SECURITY MONITOR
- WT WATCH TOUR
- EDL ELECTRIC DOOR LOCK
- S MOTION SENSOR – SECURITY
- S MOTION SENSOR (WALL MOUNTED) – SECURITY

PUBLIC ADDRESS

- M MICROPHONE OUTLET
- SH SPEAKER. ('H' DENOTES HORN TYPE)
- V SPEAKER VOLUME CONTROL
- SPEAKER CONDUIT AND WIRING
- PA PUBLIC ADDRESS AMPLIFIER AND CABINET
- BUZZER
- BELL
- INTERCOM OUTLET
- IM INTERCOM OUTLET – MASTER
- CD CLOCK SYSTEM RECEPTACLE WITH SINGLE FACE ('D' DENOTES DOUBLE FACE)

POWER DEVICE AND CONTROLS

- T THERMOSTAT
- DISCONNECT SWITCH. 30A–3P, NON–FUSED EXCEPT AS NOTED
- MANUAL MOTOR STARTER
- MAGNETIC MOTOR STARTER
- J COMBINATION MOTOR STARTER AND DISCONNECT SWITCH
- MOTOR
- PANELBOARD (SEE ONE–LINE)
- DISTRIBUTION PANELBOARD
- CONTACTOR
- AUTOMATIC TRANSFER SWITCH
- PC PHOTOCELL
- J JUNCTION BOX
- PUSHBUTTON
- T TRANSFORMER

FIRE ALARM

- F MANUAL PULL STATION
- PE D PHOTOELECTRIC DETECTOR ('D' DENOTES IN DUCT) ('B' DENOTES BEAM–TYPE) ('R' DENOTES IN RETURN AIR PLENUM)
- ION U D IONIZATION DETECTOR ('D' DENOTES IN DUCT) ('P' DENOTES PLENUM–TYPE)
- INF D INFRARED DETECTOR ('D' DENOTES IN DUCT)
- H 190 D THERMODETECTOR ('D' DENOTES IN DUCT) FIXED TEMPERATURE AS NOTED
- DH DOOR HOLDER
- C CHIME
- B BELL
- FL FIRE ALARM STROBE LIGHT
- FIRE ALARM SPEAKER – ARROWS DENOTE PROJECTORS IF ANY. ('L' DENOTES COMBINATION SPEAKER AND VISUAL FIRE LIGHT)
- L FIRE HORN. ('L' DENOTES COMBINATION HORN AND VISUAL FIRE LIGHT)
- RL REMOTE ALARM LAMP
- PI POST INDICATOR SWITCH
- FS FLOW SWITCH
- GS GATE SWITCH
- F FIREMAN'S PHONE JACK

FIRE PROTECTION

- FP FIRE PROTECTION PIPING
- FHC FIRE HOSE CABINET
- FDV FIRE DEPARTMENT VALVE
- UPRIGHT SPRINKLER HEAD
- PENDENT SPRINKLER
- RECESSED SPRINKLER
- RECESSED SPRINKLER WITH CLOSURE PLATE
- SIDEWALL SPRINKLER.
- DOUBLE CHECK DETECTOR BACKFLOW PREVENTER
- FIRE PROTECTION SIAMESE CONNECTION
- FIRE PROTECTION SIDEWALK SIAMESE CONNECTION
- POST INDICATOR VALVE

MEDICAL GAS

- VAC MEDICAL VACUUM
- OX OXYGEN
- NO NITROUS OXIDE
- MA MEDICAL COMPRESSED AIR
- N NITROGEN
- OXYGEN OUTLET
- VACUUM OUTLET
- MEDICAL AIR OUTLET
- NITROUS OXIDE OUTLET
- NITROGEN OUTLET

HVAC

- CWS CHILLED WATER SUPPLY
- CWR CHILLED WATER RETURN
- CHWS CHILLED/HOT WATER SUPPLY
- CHWR CHILLED/HOT WATER RETURN
- HWS HEATING HOT WATER SUPPLY
- HWR HEATING HOT WATER RETURN
- CTS COOLING TOWER SUPPLY
- CTR COOLING TOWER RETURN
- STM LOW PRESSURE STEAM
- RTN LOW PRESSURE CONDENSATE RETURN
- STM–50 HIGH PRESSURE STEAM – NO'S GIVE GAUGE PRESSURE IN P.S.I.
- –RTN–50– HIGH PRESSURE RETURN – NO'S GIVE GAUGE PRESSURE IN P.S.I.
- RD REFRIGERANT DISCHARGE
- RL REFRIGERANT LIQUID
- RS REFRIGERANT SUCTION
- FOS FUEL OIL SUPPLY
- FOR FUEL OIL RETURN
- A COMPRESSED AIR
- D DRAIN (CONDENSATE)
- T S THERMOSTAT – ('S' DENOTES SENSOR)
- H S HUMIDISTAT – ('S' DENOTES SENSOR)
- H THERMOSTAT/HUMIDITY SENSOR
- CO2 CARBON DIOXIDE SENSOR
- THC THERMOSTAT/HUMIDITY SENSOR/CO2 SENSOR
- HUMIDIFIER
- SUPPLY AIR FLOW INDICATOR
- RETURN AND EXHAUST AIR FLOW INDICATOR
- SUPPLY DIFFUSER
- SUPPLY STRIP DIFFUSER
- RETURN GRILLE OR EXHAUST REGISTER

HOSPITAL

- N NURSE CALL CONDUIT AND WIRING
- M MONITOR CONDUIT AND WIRING
- NMS NURSE CALL MASTER STATION
- N NURSE CALL BEDSIDE STATION – SINGLE PATIENT
- N 2 NURSE CALL BEDSIDE STATION – DOUBLE PATIENT
- E P EMERGENCY PUSHBUTTON STATION ('P' DENOTES PULL CORD)
- DS DUTY STATION
- SS STAFF STATION
- DOME LIGHT – CEILING MOUNTED ('B' DENOTES WITH BUZZER)
- DOME LIGHT – WALL MOUNTED ('B' DENOTES WITH BUZZER)
- Z ZONE DOME LIGHT
- B CODE BLUE PUSHBUTTON

PLUMBING

- DOMESTIC COLD WATER
- DOMESTIC HOT WATER
- RECIRCULATING DOMESTIC HOT WATER
- TW DOMESTIC TEMPERED WATER
- \+ SOFT DOMESTIC COLD WATER
- ++ SOFT DOMESTIC HOT WATER
- +++ SOFT RECIRCULATING HOT WATER
- SAN SOIL OR WASTE ABOVE GRADE OR FLOOR
- SAN SOIL OR WASTE BELOW GRADE OR FLOOR
- ST STORM ABOVE GRADE OR FLOOR
- ST STORM BELOW GRADE OR FLOOR
- ST/O STORM OVERFLOW ABOVE GRADE OR FLOOR
- ST/O STORM OVERFLOW BELOW GRADE OR FLOOR
- V PLUMBING VENT
- G GAS (NATURAL)
- LP LIQUIFIED PETROLEUM
- PD PUMP DISCHARGE
- HB HOSE BIBB
- WH WALL HYDRANT
- WCO WALL CLEAN OUT
- CO CLEAN OUT
- FCO FLOOR CLEAN OUT
- FLOOR DRAIN, AREA DRAIN, FLOOR SINK
- RD ORD ROOF DRAIN, OVERFLOW ROOF DRAIN
- SHOWER HEAD.
- REDUCED PRESSURE BACKFLOW PREVENTER
- P # PLUMBING VENT RISER CALL–OUT NUMBER

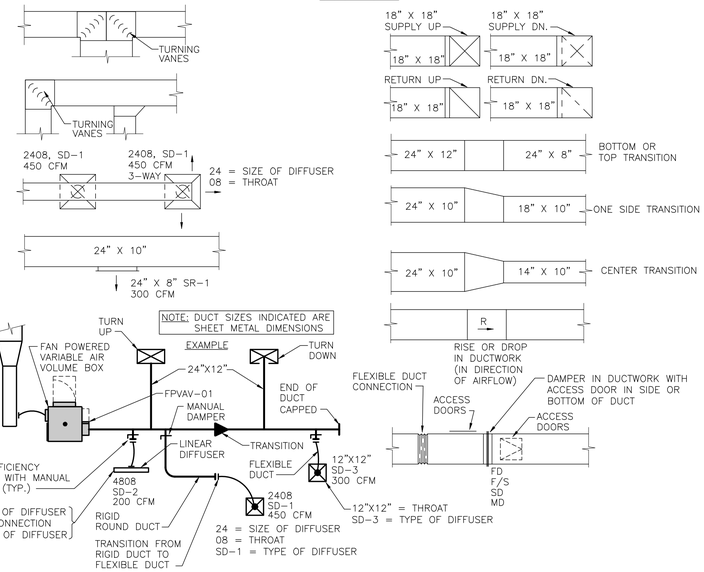
GENERAL

- 1 MECHANICAL NOTE REFERENCE
- 2 ELECTRICAL NOTE REFERENCE
- 3 DEMOLITION NOTE REFERENCE
- 4 REVISION NOTE REFERENCE
- CONNECT TO EXISTING WORK
- I MI DETAIL REFERENCE – NO./SHEET NO.
- A M1 SECTION CUT – SECTION/SHEET NO.

PIPING

- ELBOW DOWN
- ELBOW UP
- TEE UP
- TEE DOWN
- CAP
- UNION
- REDUCER (OR INCREASER)
- PIPE FLEX
- STRAINER
- R RISE IN PIPING
- D DROP IN PIPING
- GUIDE
- ANCHOR
- PRESSURE GAUGE WITH GAUGE COCK
- TEMPERATURE GAUGE
- FLOW INDICATOR
- THERMOMETER.
- SITE GLASS
- EXPANSION JOINT
- FD FILTER–DRIER
- DRIP ASSEMBLY
- BASKET STRAINER
- SHUTOFF VALVE
- SHUTOFF VALVE IN RISER
- BALANCING VALVE
- CALIBRATED BALANCING VALVE
- RELIEF VALVE
- TEST PLUG
- TRIPLE DUTY VALVE
- CHECK VALVE.
- AUTOMATIC CONTROL VALVE (2–WAY)
- AUTOMATIC CONTROL VALVE (3–WAY)
- AUTO FLOW CONTROL VALVE
- S SOLENOID VALVE
- P PRESSURE REDUCING VALVE

DUCTWORK



A	AMPS, AIR (COMPRESSED)	DX	DIRECT EXPANSION	HTG	HEATING	MUAF	MAKE UP AIR FAN
A/C	AIR CONDITIONING	EA	EXHAUST AIR	HTR	HEATER	MV	MIXING VALVE
AD	AREA DRAIN, ACCESS DOOR	EAT	ENTERING AIR TEMPERATURE	HVU	HEATING AND VENTILATING UNIT	N	NITROGEN
AFC	ABOVE FINISH CEILING	EC	ELECTRICAL CONTRACTOR, EMPTY CONDUIT	HW	DOMESTIC HOT WATER	N/A	NOT APPLICABLE
AFG	ABOVE FINISH GRADE	EF	EXHAUST FAN	HWR	HOT WATER RETURN	N/C	NORMALLY CLOSED
AHU	AIR HANDLING UNIT	EM	INDICATES EMERGENCY CIRCUIT	HWS	HOT WATER SUPPLY	N/O	NORMALLY OPEN
AFF	ABOVE FINISHED FLOOR	EPO	EMERGENCY POWER OFF	IE	INVERT ELEVATION	NF	INDICATES NON–FUSED DEVICE
BD	BACKDRAFT DAMPER, BLOWDOWN	ER	EXHAUST REGISTER	IG	ISOLATED GROUND	NIC	NOT IN CONTRACT
BFP	BACKFLOW PREVENTER	ETR	EXISTING TO REMAIN	KCMIL	1000 CIRCULAR MILS	NL	NIGHT LIGHT
BKR	BREAKER	EWB	ENTERING WET BULB	KV	KILOVOLT	NO	NITROUS OXIDE
BOD	BOTTOM OF DUCT	EWC	ELECTRIC WATER COOLER	KVA	KILOVOLT AMPS	OA	OUTSIDE AIR
BOP	BOTTOM OF PIPE	EWH	ELECTRIC WATER HEATER, ELEC. WALL HTR.	KW	KILOWATT	ORD	OVERFLOW ROOF DRAIN
BOS	BOTTOM OF STRUCTURE	EXH	EXHAUST	KWH	KILOWATT HOUR	OX	OXYGEN
BTU	BRITISH THERMAL UNIT	F/S	COMBINATION FIRE AND SMOKE DAMPER	LAT	LEAVING AIR TEMPERATURE	PD	PUMP DISCHARGE
C	CONDUIT	FACP	FIRE ALARM CONTROL PANEL	LDB	LEAVING DRY BULB	PH	PHASE
CATV	CABLE TELEVISION SYSTEM	FAACP	FIRE ALARM ANNUNCIATOR CONTROL PANEL	LP	LIQUIFIED PETROLEUM	PIV	POST INDICATOR VALVE
CB	CIRCUIT BREAKER	FCO	FLOOR CLEANOUT	LRA	LOCKED ROTOR AMPS	PNL	PANEL
CCTV	CLOSED CIRCUIT TELEVISION	FCU	FAN COIL UNIT	LV	LOW VOLTAGE	PRV	PRESSURE REDUCING VALVE
CFM	CUBIC FEET PER MINUTE	FD	FIRE DAMPER, FLOOR DRAIN	LWB	LEAVING WET BULB	QTY	QUANTITY
CHWR	CHILLED/HOT WATER RETURN	FLA	FULL LOAD AMPS	LWT	LEAVING WATER TEMPERATURE	RA	RETURN AIR
CHWS	CHILLED/HOT WATER SUPPLY	FLR	FLOOR	MA	MEDICAL AIR	RD	ROOF DRAIN
CKT	CIRCUIT	FOR	FUEL OIL RETURN	MAU	MAKE UP AIR UNIT	REV	REVISION
CO	CLEANOUT, CARBON MONOXIDE	FOS	FUEL OIL SUPPLY	MBH	1000 BTU PER HOUR	RG	RETURN GRILLE
CO2	CARBON DIOXIDE	FP	FIRE PROTECTION	MC	MECHANICAL CONTRACTOR	RH	RELATIVE HUMIDITY
CTR	COOLING TOWER RETURN	FPB	FAN POWERED TERMINAL UNIT	MCA	MINIMUM CIRCUIT AMPACITY	RHW	DOMESTIC RECIRCULATION HOT WATER
CTS	COOLING TOWER SUPPLY	FPVAV	FAN POWERED TERMINAL UNIT	MCC	MOTOR CONTROL CENTER	RL	REFRIGERANT LIQUID
CU	COPPER, CONDENSING UNIT	FS	FLOOR SINK	MD	MOTORIZED DAMPER	RLA	RUNNING LOAD AMPS
CUH	CABINET UNIT HEATER	G	GAS (NATURAL), GROUND	MDP	MAIN DISTRIBUTION PANEL	RPM	REVOLUTIONS PER MINUTE
CW	DOMESTIC COLD WATER	GCO	GRADE CLEANOUT	MFR	MANUFACTURER	RS	REFRIGERANT SUCTION
CWR	CHILLED WATER RETURN	GFI/GFCI	GROUND FAULT CIRCUIT INTERRUPTER	MH	MANHOLE	RTN	LOW PRESSURE CONDENSATE RETURN
CWS	CHILLED WATER SUPPLY	GND	GROUND	MLO	MAIN LUGS ONLY	RTU	ROOF TOP UNIT
DDC	DIRECT DIGITAL CONTROL	GPM	GALLONS PER MINUTE	MTD	MOUNTED	SA	SUPPLY AIR
DD	DECK DRAIN	HB	HOSE BIBB	MU	MAKE UP	SAN	SANITARY
DN	DOWN	HOA	HAND OFF AUTOMATIC				

SD	SUPPLY DIFFUSER, SMOKE DAMPER	WCO	WALL CLEANOUT
SDCW	SOFT DOMESTIC COLD WATER	WH	WALL HYDRANT
SDHW	SOFT DOMESTIC HOT WATER	WP	WEATHERPROOF
SDRHW	SOFT DOMESTIC RECIRCULATION HOT WATER	XFMR	TRANSFORMER
SF	SQUARE FEET	XP	EXPLOSION PROOF
SP	STATIC PRESSURE		
SR	SUPPLY REGISTER		
ST	STORM		
ST/O	STORM OVERFLOW		
STM	LOW PRESSURE STEAM		
SWBD	SWITCHBOARD		
TSTAT	THERMOSTAT		
TU	TERMINAL UNIT		
TW	TEMPERED WATER		
UH	UNIT HEATER		
UL	UNDERWRITERS LABORATORIES INC.		
UNO	UNLESS NOTED OTHERWISE		
UPS	UNINTERRUPTIBLE POWER SUPPLY		
V	VENT PIPE		
VAC	MEDICAL VACUUM		
VAV	VARIABLE AIR VOLUME		
VD	VOLUME DAMPER		
VTR	VENT THROUGH ROOF		
W	WIRE, WATT(S)		
W/	WITH		
W/O	WITHOUT		
WB	WET BULB		

MECHANICAL AND ELECTRICAL SYMBOLS AND ABBREVIATIONS

"SOME SYMBOLS AND ABBREVIATIONS ON THIS LEGEND MAY NOT BE USED. REFER TO FLOOR PLANS FOR ALL SYMBOLS AND ABBREVIATIONS."

DEER BROOK PLAZA

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REVISIONS

ISSUE DATE	06-10-22
PROJECT NUMBER	2022-000
SHEET NUMBER	ME1.10

Mechanical And Electrical - Symbols And Abbreviations

smith & boucher engineers
25618 west 103rd St olathe, ks 66061
phone 913.345.2127 fax 913.345.0617
project number 2218000

Deer Brook Retail Renovations
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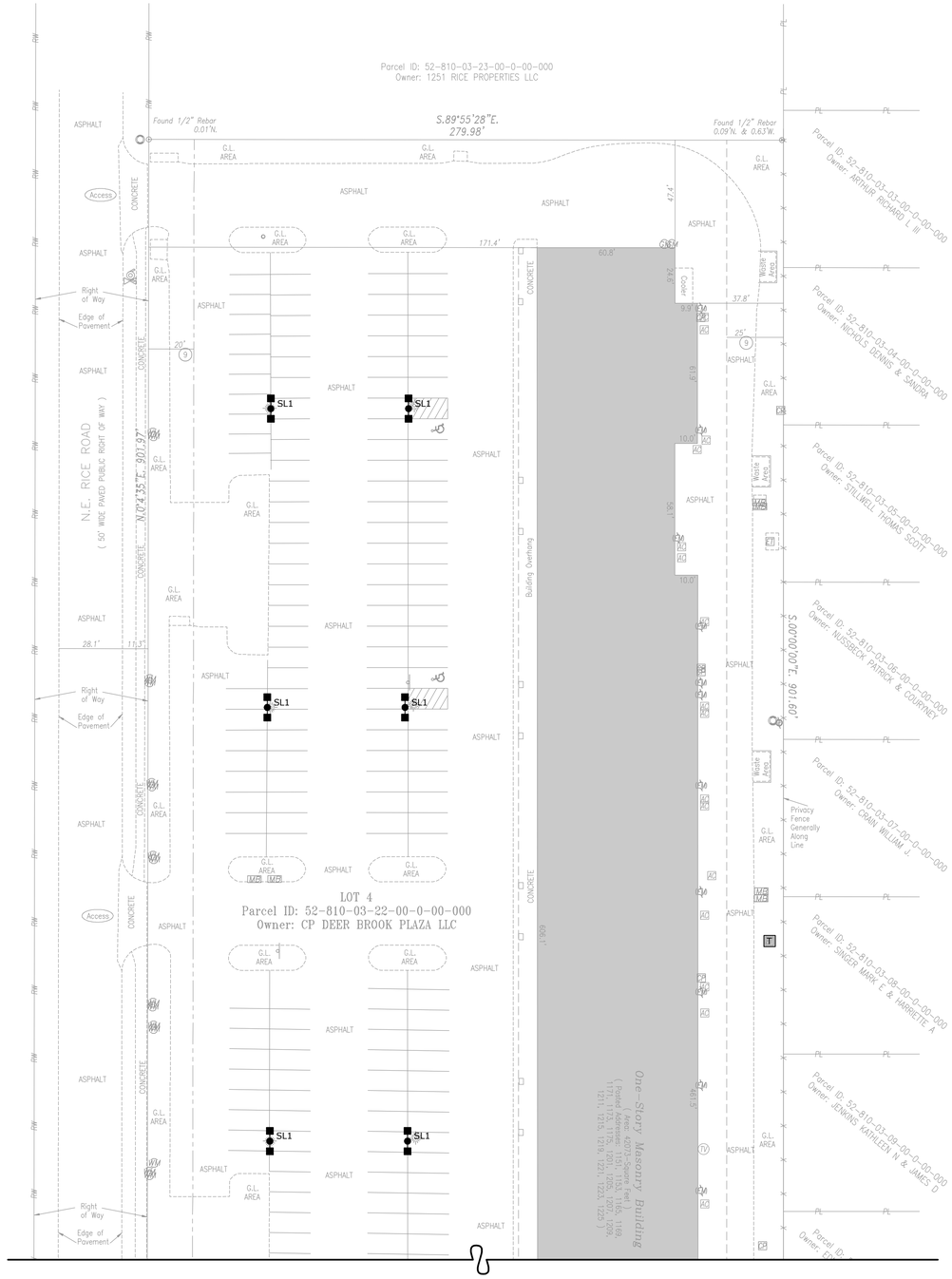
PROJECT NAME:
AUTOCAD FILE LOCATION \ NAME:
LAST CORRECTION BY ◆ DATE ◆ TIME:
PLOTTED BY ◆ DATE ◆ TIME:

GENERAL NOTES:

1. ALL SITE POLE FIXTURES TO REPLACE HEADS. REFER TO FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION. VERIFY EXISTING CONDITIONS IN FIELD AND PROVIDE NECESSARY MOUNTING FOR NEW POLE HEADS.

ELECTRICAL PLAN NOTES:

1 FIXTURE HEAD MOUNTING BRACKETS TO BE RE-INSTALLED WITH A 180 DEGREE MOUNT. COORDINATE IN FIELD AND PROVIDE NECESSARY MOUNTING BRACKETS TO CONVERT FROM (2) 90 DEGREE HEADS TO A 180 DEGREE POLE FIXTURE. REFER TO FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION. CONTACT ENGINEER IF ANY FURTHER QUESTION.



scale: 1" = 30'-0"
0 15 30 45 75 feet

MECHANICAL AND ELECTRICAL - SITE PLAN
SCALE: 1" = 30'-0"

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STATE OF MISSOURI
RYAN JEROD DIEDIKER
NUMBER PE-2010065711
REGISTERED PROFESSIONAL ENGINEER
6/10/22

06-10-2022

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SHEET NUMBER: ME2.10

Mechanical And Electrical - Site Plan

Deer Brook Retail Renovations
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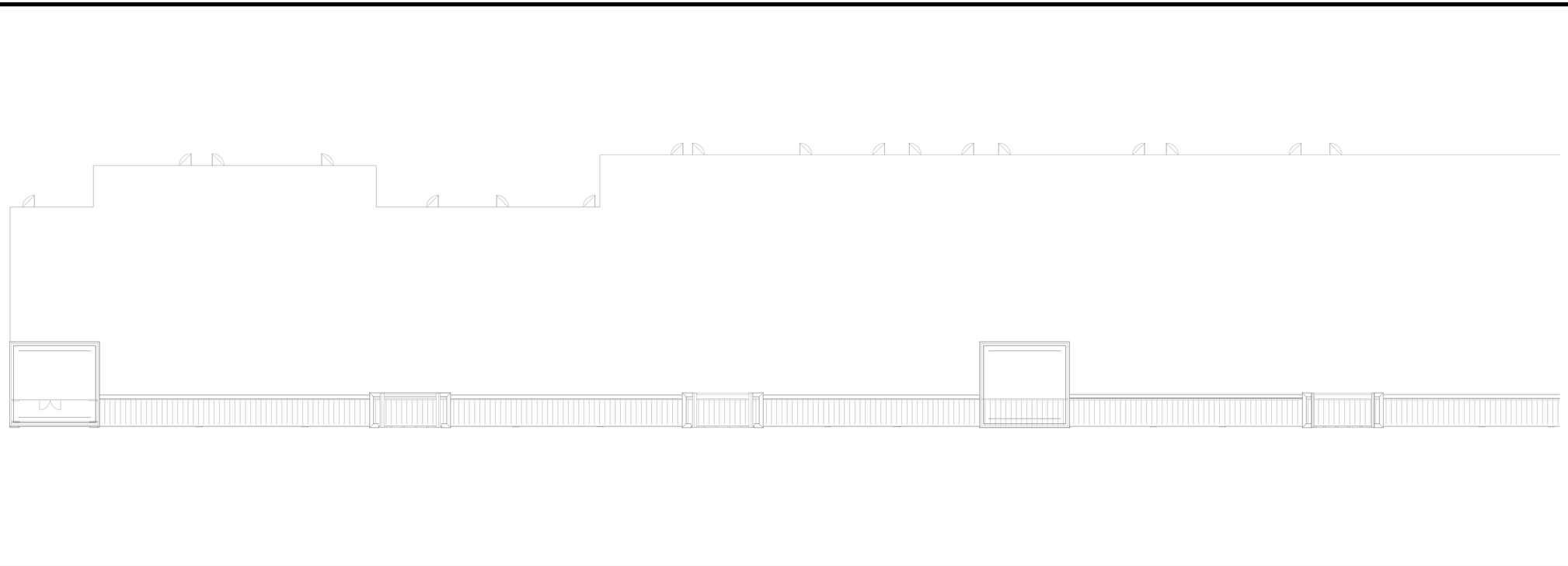
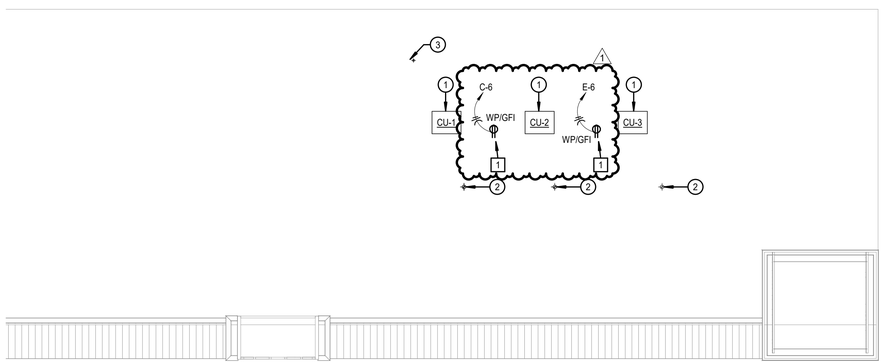


1 MECHANICAL AND ELECTRICAL OVERALL ROOF PLAN
1/16" = 1'-0"

NORTH



2 MECHANICAL AND ELECTRICAL OVERALL ROOF PLAN
1/16" = 1'-0"

NORTH

MECHANICAL/PLUMBING GENERAL NOTES:

1. INFORMATION SHOWN ON THE DRAWINGS IS INTENDED TO CONVEY SCOPE AND IS ARRANGED FOR DRAWINGS CLARITY. IT IS NOT TO BE TAKEN AS AS-BUILT CONDITIONS. THE SYSTEM INSTALLATION SHALL BE COORDINATED WITH STRUCTURE AND ALL OTHER TRADES TO PROVIDE FOR A COMPLETE AND WORKING SYSTEM.
2. COORDINATE INSTALLATION AND PENETRATIONS OF ALL NEW SERVICES WITH STRUCTURAL PRIOR TO CUTTING.

MECHANICAL/PLUMBING PLAN NOTES:

1. ROUTE REFRIGERANT PIPING FROM INDOOR UNIT TO OUTDOOR UNIT ON ROOF, SIZE PER MANUFACTURES INSTRUCTIONS.
2. 10" DIAMETER OA DUCT TERMINATION CAP.
3. 6" EXHAUST DUCT TERMINATION CAP.

1 ELECTRICAL PLAN NOTES:

1. FURNISH AND INSTALL RECEPTACLE ON UNISTRUT UP THROUGH ROOF IN A PINCH PAN.

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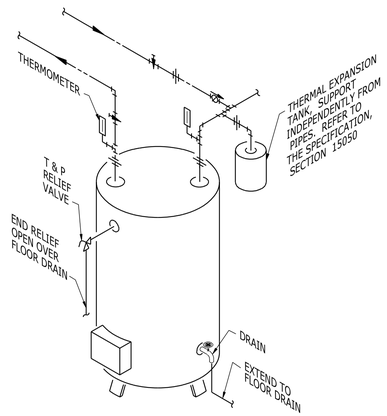
REVISIONS
1 BUILDING PLAN REVIEW 06-22-22

ISSUE DATE
06-10-22

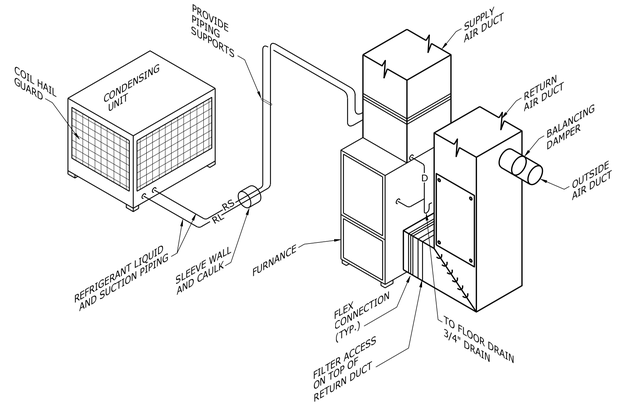
PROJECT NUMBER
2022-000

SHEET NUMBER
ME2.11

Mechanical and Electrical Roof Plan



ELECTRIC WATER HEATER DETAIL WITH RECIRC
NOT TO SCALE



SPLIT SYSTEM UNIT DETAIL
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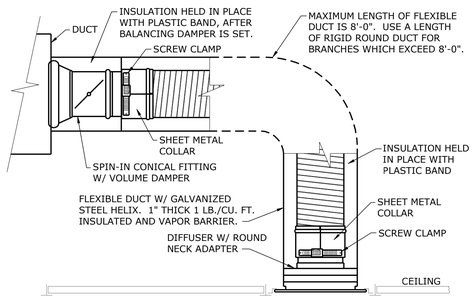

FLEXIBLE BRANCH DUCT DETAIL
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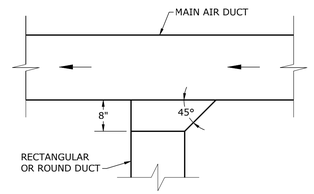
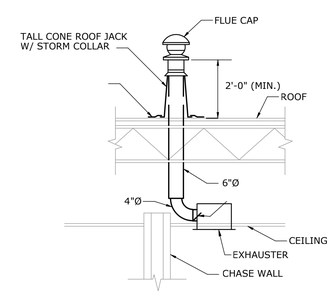
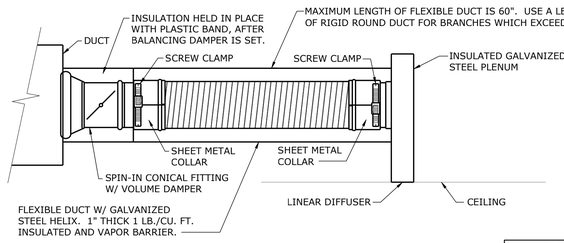


TYPICAL BRANCH DUCT TAKEOFF
NOT TO SCALE



SINGLE TOILET ROOM EXHAUST DETAIL
NOT TO SCALE



FLEXIBLE BRANCH DUCT DETAIL
NOT TO SCALE

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06-10-22

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2022-000

SHEET NUMBER
ME3.10

Mechanical And Electrical - Schedules And Details

PROJECT NAME: Deer Brook Retail Renovations
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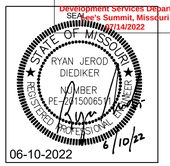

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PERMIT SET

PLUMBING FIXTURE SCHEDULE

MARK	MANUFACTURER/ MODEL	DESCRIPTION	FITTINGS		NOTE	PIPING CONNECTIONS			
			MANUFACTURER/MODEL	DESCRIPTION		CW	HW	SAN	VENT
WC-1	AMERICAN STANDARD CADET 2462.016 BEMIS 1955C	WATER CLOSET: WHITE VITREOUS CHINA, ELONGATED BOWL, FLOOR MOUNTED, TANK, PRESSURE-ASSITED SIPHON JET FLUSH ACTION. 1.6 GPF, ADA COMPLIANT SEAT: SOLID PLASTIC, OPEN FRONT, WHITE, ELONGATED BOWL, INTEGRAL BUMPERS, EXTERNAL CHECK HINGES WITH STAINLESS STEEL POSTS.			2	1/2"	---	4"	2"
L-1	AMERICAN STANDARD DECORUM 9024.004EC WADE	ADA COMPLIANT WALL HUNG LAVATORY: WHITE VITREOUS CHINA, WITH SPLASHBACK AND FRONT OVERFLOW. PROVIDE CARRIER AS REQUIRED TO SUIT APPLICATION.	MOEN 8437	SINGLE LEVER HANDLE, 4" CENTER SET, CAST BRASS BODY, CHROME FINISH POP UP DRAIN, 0.5 GPM FLOW PROVIDE POINT OF USE THERMOSTATIC MIXING VALVE FOR HOT WATER SUPPLY	1,2,3,4	1/2"	1/2"	2"	1-1/2"
JS-1	AMERICAN STANDARD LAKEWELL	ENAMELED CAST IRON (INSIDE ONLY ENAMELED), SUPPLIED WITH WALL HANGER AND RIM GAUARD SERVICE SINK	AMERICAN STANDARD 8351.076	SERVICE SINK FAUCET WITH VACUUM BREAKER, AND STOPS IN SHANK.	---	1/2"	1/2"	3"	2"

NOTES:
1: PROVIDE CHROME PLATED BRASS P-TRAP.
2: PROVIDE BRASS STOPS AND FLEXIBLE RISERS.
3: INSULTE EXPOSED TAILPIECE, P-TRAP, AND WATER RISERS WITH TRUEBRO LAV GUARD MOLDED PROTECTIVE PIPE COVER OVER 1/2" FIBERGLASS INSULATION.
4: FURNISH AND INSTALL ASSE 1070 THERMOSTATIC RATED MIXING VALVE TO PROVIDE TEMPERED WATER.

AIR HANDLING UNIT SCHEDULE- ELECTRIC HEAT

INDOOR UNIT				
DESIGNATION		AHU-1	AHU-2	AHU-3
AHU	MANUFACTURER	CARRIER	CARRIER	CARRIER
	MODEL	FX4DNF049	FX4DNF061	FX4DNF049
	SPACE SERVED	TENANT	TENANT	TENANT
	SUPPLY CFM	1600	1900	1600
	OUTSIDE AIR CFM	150	175	150
	EXTERNAL STATIC PRES. (IN. W.G.)	0.4	0.4	0.4
	MOTOR HORSEPOWER	3/4	3/4	3/4
COOLING	ENT. AIR (DB/WB)	76/63	76/63	76/63
	LVG. AIR (DB/WB)	58/57	58/57	58/57
	TOTAL COOLING CAP (MBH)	45.1	58.3	45.1
	SENSIBLE COOLING CAP (MBH)	32.9	43.4	32.9
	S.E.E.R.	13.00	13.00	13.00
HEATING	ELECTRIC HEAT (KW)	11.3	13.5	11.3
	STAGES OF HEAT	2	2	2
	HEATING CAPACITY (MBH)	38.6	46.1	38.6
FILTER	FILTER TYPE	1" PLEATED	1" PLEATED	1" PLEATED
	SIZE	21-1/2" X 23-5/16"	21-1/2" X 23-5/16"	21-1/2" X 23-5/16"
ELEC. DATA	VOLTAGE/PHASE	208/3	208/3	208/3
	MCA	47.7	55.5	47.7
	M.O.C.P.	50	60	50
	PANEL AND CIRCUIT	C-9,11,13	D-5,7,9	E-5,7,9
	WIRE AND CONDUIT	(3)#6,#10G,3/4"C.	(3)#6,#10G,3/4"C.	(3)#6,#10G,3/4"C.
	OVERCURRENT DEVICE	50A/3P CB	60A/3P CB	50A/3P CB
	DISCONNECT	60A/NF	60A/NF	60A/NF
OUTDOOR UNIT				
DESIGNATION		CU-1	CU-2	CU-3
UNIT DATA	MANUFACTURER	CARRIER	CARRIER	CARRIER
	MODEL NO.	24ABB348	24ABB360	24ABB348
	NOMINAL TONS	4	5	4
	AMBIENT AIR TEMP (°F)	95	95	95
	COMPRESSORS (NO./STEPS)	1/1	1/1	1/1
ELEC DATA	VOLTAGE/PHASE	208/1	208/1	208/1
	MCA	24.3	29	24.3
	MOCP	40	50	40
	PANEL AND CIRCUIT	C-15,17	D-11,13	E-11,13
	WIRE AND CONDUIT	(2)#8,#10G,3/4"C.	(2)#8,#10G,3/4"C.	(2)#8,#10G,3/4"C.
	OVERCURRENT DEVICE	40A/2P CB	50A/2P CB	40A/2P CB
	DISCONNECT	60A/NF NEMA3R	60A/NF NEMA3R	60A/NF NEMA3R
REFERENCE DRAWINGS		ME3.10/M1.11	ME3.10/M1.11	ME3.10/M1.11
REMARKS		----	----	----

FAN SCHEDULE

DESIGNATION		EF-1
FAN TYPE		CEILING
SERVICE		RESTROOM
MANUFACTURER		COOK
MODEL		GC148
UNIT DATA	CFM	70
	STATIC PRESSURE	0.3
	FAN RPM	768
	BRAKE HORSEPOWER	[31.8 W]
	MOTOR HORSEPOWER	---
	VOLTAGE/PHASE	120/1
	DRIVE	DIRECT
ELECT. DATA	PANEL & CIRCUIT	NOTE 2
	WIRE & CONDUIT	(2)#12,#12G.,1/2"C.
	OVERCURRENT DEVICE	NOTE 2
	DISCONNECT	INTEGRAL
	CONTROL	NOTE 2
REFERENCE DRAWING/DETAIL		M1.11
NOTES		1

NOTES:
1: PROVIDE WITH FAN SPEED CONTROLLER
2: CONNECTED TO BATHROOM LIGHTING CIRCUIT.
3. PROVIDE WITH MAKE-ON-RISE THERMOSTAT.
4: COORDINATE WITH CONTROL CONTRACTOR FOR VOLTAGE REQUIRE

DOMESTIC WATER HEATER - ELECTRIC

DESIGNATION		EWH-1
UNIT DATA	MANUFACTURER	LOCHINVAR
	MODEL	LDS-50
	LOCATION	MECH. ROOM
	CAPACITY (GALLONS)	50
	RECOVERY @ 100°F RISE (GPH)	6
	OUTLET TEMP. (°F)	110
	ELECTRIC ELEMENTS (WATTS)	2@1500
	VOLTAGE/PHASE	208/1
ELEC./CONTROL	PANEL & CIRCUIT	C-5,7
	WIRE & CONDUIT	(2)#12,#12G.,1/2"C.
	OVERCURRENT DEVICE	20A-2P CB
	DISCONNECT	NOTE 1
REFERENCE DRAWING/DETAIL		P1.11

NOTES:
1: PROVIDE MOTOR RATED TOGGLE SWITCH .
2: ELECTRICAL ELEMENTS NON-SIMULATANEOUS WIRING.

GRILLE, REGISTER & DIFFUSER SCHEDULE

PLAN MARK	MANUFACTURER MODEL NUMBER	SERVICE	MOUNT TYPE	VOLUME DAMPER	MATERIAL	COLOR	NOTES
SD-1	TITUS TMS	SUPPLY	LAY-IN	YES	STEEL	WHITE	---
RG-1	TITUS 355RL	RETURN	SURFACE	NO	STEEL	WHITE	---

DRAIN SCHEDULE

MARK	MANUFACTURER/ MODEL	DESCRIPTION
FD-1	WADE W-1100-STD-6	CAST IRON DRAIN WITH ADJUSTABLE TOP AND 6" NICKEL BRASS STRAINER WITH VANDAL RESISTANT SCREWS. PROVIDE WITH PROSET TRAP GUARD BY PROVENT SYSTEMS INC.

NOTES:
1: REFER TO PLANS FOR OUTLET SIZES

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Mechanical And Electrical - Schedules And Details

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PART 1 - GENERAL REQUIREMENTS - HVAC AND PLUMBING

1.1 SUMMARY OF WORK

A. THE CONTRACT DOCUMENTS REQUIRE THE FURNISHING AND INSTALLING OF COMPLETE FUNCTIONING MECHANICAL SYSTEMS, AND EACH ELEMENT THEREOF, AS SPECIFIED OR INDICATED IN THE CONTRACT DOCUMENTS OR REASONABLY INFERRED, TO COMPLETELY CONSTRUCT AND LEAVE READY FOR OPERATION THE SYSTEMS AS SHOWN ON THE DRAWINGS AND HEREIN DESCRIBED, INCLUDING EVERY ARTICLE, DEVICE OR ACCESSORY, WHETHER OR NOT SPECIFICALLY CALLED FOR BY ITEM. ELEMENTS OF THE WORK INCLUDE MATERIALS, LABOR, SUPERVISION, SUPPLIES, EQUIPMENT, TRANSPORTATION, AND UTILITIES.

B. SPECIFICATIONS AND DRAWINGS ARE COMPLEMENTARY AND WHAT IS CALLED FOR IN ONE SHALL BE AS BINDING AS IF CALLED FOR BY BOTH.

C. ALL WORK PERFORMED UNDER THIS SECTION SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER BY EXPERIENCED MECHANICS OF THE PROPER TRADE.

1.2 COORDINATION, MEASUREMENTS AND LAYOUTS

A. THE CONTRACTOR SHALL INSPECT THE SITE WHERE THIS WORK IS TO BE PERFORMED AND FULLY FAMILIARIZE HIMSELF WITH ALL CONDITIONS RELATED TO THIS PROJECT.

B. THE CONTRACTOR SHALL EMPLOY A COMPETENT FOREMAN ON THE JOB TO SEE THAT WORK IS DONE IN ACCORDANCE WITH THE BEST PRACTICES AND IN A SATISFACTORY AND WORKMANLIKE MANNER. THE FOREMAN SHALL KEEP INFORMED AS TO THE WORK OF OTHER TRADES ENGAGED IN THE CONSTRUCTION OF THE PROJECT, AND SHALL EXECUTE HIS WORK IN SUCH A MANNER AS NOT TO INTERFERE WITH OR DELAY THE WORK OF OTHER TRADES.

C. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF ALL SYSTEMS AND COMPONENTS COVERED UNDER THIS SECTION. WHERE LOCAL CONDITIONS NECESSITATE A REARRANGEMENT, THE CONTRACTOR SHALL PREPARE, AND SUBMIT FOR APPROVAL, DRAWINGS OF THE PROPOSED REARRANGEMENT. BECAUSE OF THE SMALL SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, AND ACCESSORIES THAT MAY BE REQUIRED. THE CONTRACTOR SHALL CAREFULLY INVESTIGATE THE STRUCTURAL AND FINISH CONDITIONS AFFECTING ALL OF HIS WORK AND SHALL ARRANGE SUCH WORK ACCORDINGLY, FURNISHING SUCH OFFSETS, FITTINGS AND ACCESSORIES AS MAY BE REQUIRED TO MEET SUCH CONDITIONS AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS. DRAWINGS SHALL NOT BE SCALED TO DETERMINE DIMENSION.

1.3 PERMITS AND FEES

A. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND LICENSES AND SHALL MAKE ALL DEPOSITS AND PAY ALL FEES REQUIRED FOR THE PERFORMANCE OF WORK UNDER THIS SECTION, OTHER THAN THOSE DEPOSITS OR FEES WHICH ARE FULLY REFUNDABLE TO THE OWNER.

1.4 SUBMITTALS, MATERIALS AND EQUIPMENT

A. ALL ITEMS OF MATERIALS AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE SPECIFIED HEREIN, FREE FROM DEFECTS AND OF THE BEST QUALITY NORMALLY USED FOR THE PURPOSE IN GOOD COMMERCIAL PRACTICE.

B. AS SOON AS POSSIBLE AFTER THE AWARD OF THE CONTRACT, THE CONTRACTOR SHALL SUBMIT FOR REVIEW SIX COPIES OF SHOP DRAWINGS FOR ALL EQUIPMENT TO BE FURNISHED FOR THIS PROJECT. SUBMITTALS SHALL INCLUDE MANUFACTURER'S NAME, MODEL NUMBER, DESCRIPTIVE ENGINEERING DATA AND ALL NECESSARY INFORMATION AS TO FINISH, MATERIAL GAUGES AND ACCESSORIES. AFTER SUCH SHOP DRAWINGS ARE PROCESSED, THREE COPIES WILL BE RETURNED TO THE CONTRACTOR. THE CONTRACTOR SHALL, UPON RECEIPT OF REVIEWED SHOP DRAWINGS PROCEED WITH THE PROCUREMENT AND INSTALLATION OF SUCH EQUIPMENT.

1.5 CODES, LAWS, AND STANDARDS

A. ALL WORK SHALL BE INSTALLED IN COMPLIANCE WITH ALL GOVERNING CODES, APPLICABLE LOCAL LAWS, REGULATIONS, ORDINANCES OR STATUTES OF REGULATORY BODIES HAVING JURISDICTION. THE WORK SHALL BE EXECUTED IN ACCORDANCE WITH SAID LAWS, REGULATIONS, ORDINANCES, STATUES OR CODES, WITHOUT INCREASED COST TO THE OWNER. ANY POINT IN QUESTION SHALL BE REFERRED TO THE ENGINEER FOR APPROVAL. WORK INDICATED ON THE DOCUMENTS THAT IS IN EXCESS OF CODE REQUIREMKNTS SHALL NOT BE REDUCED IN QUALITY AND/OR QUANTITY.

B. COMPLY WITH RULES AND REGULATIONS OF PUBLIC UTILITIES AND MUNICIPAL DEPARTMETNS AFFECTED BY CONNECTIONS OF SERVICES.

1.6 RECORD DOCUMENTS

A. THIS CONTRACTOR SHALL PREPARE A COMPLETE “AS-BUILT” SET OF DRAWINGS INCORPORATING ALL CHANGES MADE DURING CONSTRUCTION. LOCATION OF UNDERGROUND PIPING SHALL BE LOCATED BY DIMENSION FROM COLUMN LINES.

B. THIS CONTRACTOR SHALL PREPARE AND SUBMIT TO THE OWNER'S REPRESENTATIVE FIVE BOUND SETS OF OPERATING AND MAINTENANCE MANUALS INCLUDING FINAL COPIES OF EQUIPMENT SHOP DRAWINGS, MANUFACTURER'S LITERATURE FOR ALL EQUIPMENT INSTALLED ON THE PROJECT SHOWING ALL DETAILS OF EQUIPMENT, REPLACEMENT PART DATA AND MAINTENANCE AND OPERATING INSTRUCTIONS. MANUALS SHALL INCLUDE COPIES OF ALL EQUIPMENT WARRANTIES.

1.7 GUARANTEES AND WARRANTIES

A. THE CONTRACTOR SHALL GUARANTEE COMPLETE SYSTEM OPERATION AND THAT THE MATERIAL AND EQUIPMENT FURNISHED AND INSTALLED WILL BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS AND WILL GIVE SATISFACTORY SERVICE UNDER THE SPECIFIED OPERATING CONDITIONS. THE CONTRACTOR AGREES TO REPLACE, WITHOUT EXPENSE TO THE OWNER, ANY PART OF THE APPARATUS WHICH PROVES OR BECOMES DEFECTIVE WITHIN ONE YEAR AFTER THE SYSTEM IS ACCEPTED. NO EQUIPMENT WARRANTY OR GUARANTEE SHALL START UNTIL THE TIME OF BUILDING ACCEPTANCE.

B. ALL WARRANTIES ISSUED BY EQUIPMENT MANUFACTURERS SHALL BE FILLED OUT IN THE OWNER'S NAME AND GIVEN TO THE OWNER PRIOR TO FINAL ACCEPTANCE OF WORK PERFORMED UNDER THIS SECTION.

1.8 FINAL INSPECTION

A. AFTER COMPLETION OF THE ENTIRE PROJECT THE CONTRACTOR SHALL REQUEST FINAL INSPECTION OF THIS PROJECT IN WRITTEN FORM ADDRESSED TO THE ARCHITECT ALONG WITH A STATEMENT TO THE EFFECT THAT ALL INSTALLATIONS HAVE BEEN COMPLETED, CHECKED, ADJUSTED AND BALANCED IN ACCORDANCE WITH REQUIREMENTS OF THIS PROJECT. UPON RECEIPT OF WRITTEN NOTIFICATION OF COMPLETION AND REQUEST FOR FINAL INSPECTION THE ENGINEER WILL PERFORM A FINAL INSPECTION OF THIS WORK AND, IF ALL INSTALLATIONS ARE AS REPRESENTED BY THE CONTRACTOR, THE ENGINEER WILL SUBMIT WRITTEN RECOMMENDATION OF ACCEPTANCE.

1.9 CLEANING

A. DIRT AND REFUSE RESULTING FROM THE PERFORMANCE OF THE WORK SHALL BE REMOVED TO KEEP THE PREMISES REASONABLE CLEAN AT ALL TIMES.

B. AFTER COMPLETION OF THE WORK DESCRIBED IN THIS SPECIFICATION AND SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL EXPOSED SURFACES AND EQUIPMENT, REMOVE ALL DIRT, DEBRIS, CRATING, CARTONS, ETC., AND LEAVE ALL INSTALLATIONS FINISHED AND READY FOR OPERATION.

1.10 OPENINGS AND SLEEVES

A. ALL PIPING THROUGH EXTERIOR OR FOUNDATION WALLS SHALL PASS THROUGH SCHEDULE 40 GALVANIZED STEEL SLEEVES WHICH SHALL BE LARGE ENOUGH TO ALLOW FOR PIPE SEAL MATERIAL. SLEEVES IN NEW CONSTRUCTION SHALL HAVE A MINIMUM 2 INCH WATERSTOP IN THE CENTER OF THE SLEEVE. NO SLEEVES ARE PERMITTED THROUGH CONCRETE STRUCTURAL MEMBERS.

1. SPACE BETWEEN PIPE AND SLEEVE IN EXTERIOR UNDERGROOUND WALLS SHALL BE SEALED WITH LINK-SEAL, FLEXICRAFT OR METRAFLEX LINK STYLE PIPE SEALS.
2. IN ABOVE GRADE EXTERIOR WALLS PACK THE SPACE BETWEEN PIPE AND SLEEVE WITH MINERAL WOOL AND THEN COMPLETE SEAL WITH APPROVED CAULKING COMPOUND FLUSH WITH FINISHED SURFACE. PROVIDE PIPE COLLAR ON INTERIOR SIDE OF WALL.

B. ALL PIPING THROUGH FLOORS SHALL BE PROVIDED WITH SCHEDULE 40 GALVANIZED STEEL PIPE SLEEVES, EXTENDING 1 INCH ABOVE THE FLOOR.

C. IN FIRE RATED WALLS: CAULKING SHALL BE A PURE CERAMIC FIBER MADE OF ALUMINA-SILICA, "CERAFIBER-FS" BY JOHNS-MANVILLE. SEALANT SHALL BE GUN GRADE. AN ACRYLIC 2-PART GUN APPLIED, FIRE RETARDANT ELASTIC SEALANT, "DYMERIC" BY TREMCO OR EQUAL BY PERMATITE NO. 1113FR.

1. LIMIT THE SIZE OF THE SPACE BETWEEN THE WALL OR FLOOR AND THE OUTSIDE OF THE PIPE OR DUCT TO 1 INCH MAXIMUM. THIS SPACE IS SUFFICIENT TO ALLOW SOME MOVEMENT OF THE PIPES OR DUCT WITHOUT CRACKING THE CAULKING OR SEALANT.
2. FOR OPENINGS IN WALLS, THE CAULKING SHALL BE APPLIED TO A MINIMUM OF 3 INCH TOTAL DEPTH. SEALANT SHALL THEN BE APPLIED ON BOTH SIDES OF THE WALL OPENING A MINIMUM OF 1/2 INCH IN DEPTH, FINISHED FLUSH WITH THE WALL. D.

D. FOR OPENINGS IN FLOORS, THE CAULKING SHALL BE APPLIED FROM THE UPPER SIDE TO A MINIMUM OF 3 INCH TOTAL DEPTH RECESSED 1/2 INCH BELOW THE FINISHED FLOOR. THIS 1/2 INCH RECESS SHALL THEN BE FILLED WITH SEALANT TO FLUSH WITH FINISHED FLOOR.

1.11 CUTTING AND PATCHING

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CUTTING OF WALLS, FLOORS, CEILINGS AND ROOFS REQUIRED FOR PERFORMANCE OF HIS WORK.

B. NO STRUCTURAL MEMBER SHALL BE CUT WITHOUT PERMISSION FROM THE ARCHITECT.

C. PATCH ALL OPENINGS TO MATCH ADJACENT CONSTRUCTION IN BOTH MATERIAL AND FINISH.

D. ALL CUTTING OF EXISTING CONCRETE FLOORS/SLABS ON GRADE IN THE INTERIOR OF THE BUILDING SHALL BE PERFORMED BY "SAW CUTTING" AND SHALL BE PERFORMED BY THIS CONTRACTOR.

1.12 EXCAVATION AND BACKFILL

A. ALL EXCAVATION AND BACKFILL REQUIRED FOR THE INSTALLATION OF THE WORK SHALL BE THE COMPLETE RESPONSIBILITY OF THE CONTRACTOR.

B. NO EXCAVATION AND BACKFILL SHALL BE DONE WITHIN DRIP LINE OF TREES TO REMAIN. NO TREE SHALL BE REMOVED WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE.

C. CONTRACTOR SHALL PROVIDE PROTECTION FOR TREES WITHIN 15 FEET OF UTILITY EXCAVATION.

D. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL TRENCH AREAS AND MAINTAINING A DRY EXCAVATION. ANY DEWATERING OF TRENCHES/EXCAVATION SHALL BE PROVIDED PRIOR TO INSTALLING ANY MATERIAL.

E. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ALL NECESSARY BARRICADES, FENCING, BRACING, SHEET PILING, SHORING, WARNING SIGNS, PUMPS, ETC., FOR THE PROTECTION OF WORKERS, GENERAL PUBLIC, AND PROPERTIES. EXCAVATION WORK SHALL COMPLY WITH ASA STANDARD A10.2 "SAFETY CODE FOR BUILDING CONSTRUCTION" AND AGC STANDARD "MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION" AND THE DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH (OSHA) STANDARDS.

F. LOCATE EXISTING UNDERGROUND UTILITIES IN AREAS OF EXCAVATION WORK. SHOULD UNCHARTED, OR INCORRECTLY CHARTED, PIPING OR OTHER UTILITIES BE ENCOUNTERED DURING EXCAVATION, CONSULT UTILITY OWNER IMMEDIATELY FOR DIRECTIONS.

G. ALL TRENCHES SHALL BE UNIFORMLY GRADED AND BE FREE OF SOFT SPOTS AND STONE. PROVIDE A 4 INCH SAND BED.

H. BACKFILL SHALL NOT BEGIN UNTIL INSTALLATION HAS BEEN TESTED AND INSPECTED. CONTRACTOR SHALL CONSULT WITH THE AUTHORITY HAVING JURISDICTION AND THE ARCHITECT/ENGINEER PRIOR TO BACKFILLING.

1. INITIAL BACKFILL SHALL BE SAND TO A POINT 6 INCHES ABOVE TOP OF INSTALLED WORK.
2. FINAL BACKFILL SHALL BE INSTALLED IN LAYERS NOT EXCEEDING 12 INCHES. FILL SHALL BE WELL TAMPED BEFORE ADDITIONAL BACKFILL MATERIAL IS PLACED. BACKFILL SHALL CONSIST OF EARTH OR SAND FREE OF STONE, BRICKS, OR FOREIGN MATTER.

I. ALL EXCESS EARTH AND OTHER MATERIAL RESULTING FROM THE EXCAVATION SHALL BE REMOVED FROM SITE BY THE CONTRACTOR OR MAY BE PILED AT A LOCATION DESIGNATED AND APPROVED BY THE OWNER. ALL DEBRIS, ROCK AND TRASH SHALL NOT BE ALLOWED TO ACCUMULATE AND SHALL BE REMOVED FROM THE SITE. STREETS, ROADWAYS AND PRIVATE PROPERTY SHALL BE KEPT IN A CLEAN CONDITION.

J. WHEN THE EXCAVATION IS WITHIN THE AREA WHERE FINISHED SITE WORK IS TO BE DONE UNDER THE GENERAL CONTRACT WORK, BACKFILL TO THE HEIGHT OF ROUGH GRADE. FINAL SURFACING WILL BE UNDER GENERAL CONTRACT WORK.

K. WHEN THE EXCAVATION IS BEYOND THE AREA OF GENERAL CONSTRUCTION WORK, FINAL SURFACE AND ADJACENT DISTURBED AREAS SHALL BE RESTORED TO MATCH THE ORIGINAL CONDITION BY SODDING, SEEDING, ASPHALT PAVING, CONCRETE, ETC., AS REQUIRED. WORK SHALL CONFORM TO APPLICABLE SECTIONS OF THESE SPECIFICATIONS.

L. WHEN THE EXCAVATION IS ON PUBLIC PROPERTY, RESTORATION OF SURFACE CONDITIONS SHALL MEET THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.

M. WHEN SERVICES ARE TO BE RUN SIDE-BY-SIDE, A COMMON TRENCH MAY BE USED PROVIDING THE REQUIRED VERTICAL AND HORIZONTAL SEPARATION BETWEEN THE VARIOUS SERVICES ARE MAINTAINED AND PROVIDING THE METHODS OF BEDDING AND BACKFILL MEET THE APPROVAL OF THE ENGINEER. CONTRACTORS INVOLVED SHALL MAKE THEIR OWN AGREEMENT AS TO THE SHARING OF THE COST OF THE COMMON TRENCHING AND BACKFILL WORK.

1.13 TEMPORARY HEAT

A. THE CONTRACTOR SHALL COOPERATE WITH THE GENERAL CONTRACTOR TO PROVIDE TEMPORARY HEAT AS SOON AS POSSIBLE FOR USE DURING CONSTRUCTION IF TEMPORARY HEAT IS REQUIRED. AIR HANDLING EQUIPMENT SHALL NOT BE OPERATED AT ANY TIME WITHOUT FILTERS IN PLACE AND ALL EQUIPMENT SHALL BE PROTECTED FROM DAMAGE. OPERATING THE EQUIPMENT FOR TEMPORARY HEAT SHALL NOT START THE WARRANTY PERIOD OF THE EQUIPMENT USED.

1.14 DEMOLITION AND NEW WORK

A. THE CONTRACTOR SHALL DO ALL DEMOLITION, ALTERATIONS AND REWORK INDICATED AND/OR REQUIRED TO MAINTAIN THE OPERATION OF ALL EXISTING HVAC SYSTEMS AND TO INTEGRATE THE NEW SYSTEMS IN THE RENOVATED BUILDING AS REQUIRED. THE CONTRACTOR SHALL INCLUDE ALL WORK WHICH MAY BE REQUIRED TO ALTERATIONS AND DEMOLITION WORK. THIS SHALL INCLUDE ALL REMOVAL, RELOCATION AND REWORKING OF PIPING, ITEMS OF HVAC EQUIPMENT, ETC. EXISTING SYSTEMS AND NEW SYSTEMS SHALL BE COMPLETELY INTEGRATED AS INTENDED AND AS INDICATED ON THE PLANS AND IN THE SPECIFICATIONS.

B. THE CONTRACTOR SHALL REMOVE FROM THE PREMISES AND DISPOSE OF PROPERLY ALL EXISTING MATERIAL AND EQUIPMENT WHICH NO LONGER SERVES A PURPOSE IN ALTERED AREAS. THE CONTRACTOR SHALL REMOVE UNUSED DUCTWORK AND PIPING. REMOVE PIPING CONNECTED TO EQUIPMENT BACK TO MAIN AND CAP. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL MAINTAIN SERVICES TO ALL EXISTING AREAS REQUIRING SUCH SERVICES. THE CONTRACTOR SHALL REROUTE AS REQUIRED SUCH SERVICES WHERE ARE DISRUPTED DUE TO ARCHITECTURAL CHANGES IN THE EXISTING STRUCTURE. ANY EQUIPMENT WHICH IS DESIGNATED TO BE REUSED AND WHICH IS DAMAGED IN THE PROCESS SHALL BE REPLACED BY THE CONTRACTOR WITH NEW EQUIPMENT OF LIKE KIND AT NO COST TO THE OWNER.

1.15 INTERRUPTION OF SERVICES

A. THE CONTRACTOR SHALL SCHEDULE ANY SERVICE INTERRUPTIONS TO THE EXISTING BUILDING WITH THE OWNER'S REPRESENTATIVE. SUCH INTERRUPTIONS SHALL BE PLANNED SO AS TO BE AT TIMES TO CAUSE THE LEAST INCONVENIENCE AND INTERRUPTION TO THE FACILITY'S SCHEDULE.

1.16 EXISTING CONDITIONS

ALL EXISTING CONDITIONS SHOWN ON THE DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS FOR THIS PROJECT HAVE BEEN DETERMINED FROM AVAILABLE DRAWINGS AND FIELD INVESTIGATIONS. CONTRACTORS MAKING PROPOSALS FOR THIS WORK SHALL INVESTIGATE ALL EXISTING CONDITIONS AND BASE THEIR PROPOSALS ON THEIR OBSERVATIONS TO PROVIDE COMPLETE AND FUNCTIONING INSTALLATIONS IN ACCORDANCE WITH THE INTENT OF THE DRAWING AND SPECIFICATIONS FOR THIS PROJECT AND ALL APPLICABLE GOVERNING CODES, RULES, REGULATIONS AND ORDINANCES. FAILURE TO DETERMINE EXISTING CONDITIONS WHICH CAUSE ADDITIONAL WORK WILL NOT CONSTITUTE GROUNDS FOR ADDITIONAL COMPENSATION.

PART 2 - HEATING, VENTILATING AND AIR CONDITIONING

2.1 GENERAL REQUIREMENTS

A. SEE PART 1 FOR GENERAL REQUIREMENTS.

2.2 BELT DRIVES AND GUARDS

A. ALL BELT DRIVES SHALL BE OF THE MULTIPLE "V" TYPE, DAYTON, GATES OR EQUAL. STANDARD SLIDE RAILS OR OTHER MEANS OF BELT ADJUSTMENT SHALL BE PROVIDED FOR EACH MOTOR USED WITH A BELT DRIVE.

B. REMOVABLE STEEL GUARDS WITH EXPANDED METAL SCREENS OF ACCEPTABLE DESIGN SHALL BE PROVIDED OVER ALL EXPOSED BELT DRIVES AND COUPLINGS.

2.3 FILTERS

A. THE CONTRACTOR SHALL ONLY RUN ALL AIR HANDLING UNITS IN THE BUILDING DURING THE TESTING PERIOD PRIOR TO COMPLETION OF THE WORK. UNITS SHALL NOT BE RUN WITHOUT FILTERS IN PLACE.

B. FILTERS SHALL BE AS MANUFACTURED BY AMERICAN AIR FILTER, CAMFIL FARR OR CAMBRIDGE.

2.4 FLEXIBLE CONNECTORS

A. THE CONTRACTOR SHALL INSTALL FLEXIBLE DUCT CONNECTIONS BETWEEN EACH PIECE OF EQUIPMENT HAVING A FAN, AND ITS SHEET METAL SUPPLY AND RETURN DUCTWORK CONNECTIONS, WHICH, WHEN COMPLETED SHALL BE AIRTIGHT.

B. CONNECTORS SHALL PROVIDE A MINIMUM OF 2 INCHES BETWEEN METAL TO INSURE AGAINST TRANSMISSION OF VIBRATION FROM THE FAN UNIT TO THE DUCTWORK.

2.5 MOTORS AND STARTERS

A. ALL ELECTRIC MOTORS SHALL BE FURNISHED FOR OPERATION ON ELECTRICAL SERVICES AS DESIGNATED AND SHALL HAVE STARTING TORQUE CHARACTERISTICS SUITABLE FOR THE EQUIPMENT SERVED. ANY CHANGES TO THE ELECTRICAL WIRING DUE TO EQUIPMENT BEING FURNISHED, OTHER THAN THAT SPECIFIED, IS THE RESPONSIBILITY OF THE CONTRACTOR.

B. ACROSS-THE-LINE MANUAL STARTERS AND MAGNETIC STARTERS SHALL BE CUTLER-HAMMER PRODUCTS OR APPROVED EQUAL, UNLESS OTHERWISE SPECIFIED, OF SIZES REQUIRED FOR THE MOTOR HORSEPOWER AND PHASE SERVED. STARTERS LOCATED IN EQUIPMENT AREAS AND UNFINISHED SPACES MAY BE SURFACE MOUNTED TYPES WITH FUNCTIONS IDENTIFIED BY ENGRAVED PLASTIC PLATES.

C. THE MECHANICAL CONTRACTOR SHALL FURNISH TO THE ELECTRICAL CONTRACTOR ALL STARTERS AND STARTER OVERLOADS, ALL NECESSARY WIRING DIAGRAMS AND INSTRUCTIONS TO FACILITATE THE INSTALLATION OF POWER AND CONTROL WIRING TO ALL EQUIPMENT.

2.6 SHEET METAL DUCTWORK

A. SHEET METAL DUCTS AND CONNECTIONS SHALL BE CONSTRUCTED OF G90 GALVANIZED SHEETS OF MILD STEEL. THE DUCTS SHALL BE CONSTRUCTED TO THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA) 2” W.G. PRESSURE CLASS STANDARDS. NO DUCT SHALL BE CONSTRUCTED WITH LESS THAN 24 GUAGE METAL. LOCAL CODES REQUIRING HEAVIER GAUGES SHALL GOVERN. ALL DUCTS SHALL BE SEALED TO SMACNA “B” CLASSIFICATION.

B. DUCT SECTIONS SHALL BE JOINED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION AND REQUIREMENTS OF THE BUILDING CODE HAVING JURISDICTION.

C. DUCT DIMENSIONS SHOWN ARE SHEET METAL DIMENSIONS AND DO NOT NEED TO BE ADJUSTED FOR INSULATION/LINING.

D. CURVED ELBOWS SHALL BE CONSTRUCTED WITH INSIDE RADIUS NOT LESS THAN THE DUCT WIDTH IN THE SAME PLANE. SQUARE ELBOWS SHALL HAVE TURNING VANES. TURNING VANES SHALL BE DESIGNED IN ACCORDANCE WITH ASHRAE RECOMMENDATIONS. MANUFACTURED VANES SHALL BE BY TITUS OR APPROVED EQUAL.

E. CROSSBREAK ALL DUCTWORK SURFACES OVER 18 INCHES IN WIDTH.

F. FULL AREAS SHALL BE MAINTAINED IN TRANSITIONS WHERE A CHANGE IN THE CONFIGURATION OF THE DUCT OCCURS. ALL TAPERING JOINTS SHALL BE REDUCED GRADUALLY.

G. JOINTS IN DUCTS SHALL BE MADE PRACTICALLY AIRTIGHT AND ANY OPEN CORNER SHALL BE NEATLY PATCHED AND SOLDERED TIGHT. DUCT TAPE WILL NOT BE ACCEPTED AS A JOINT PATCH. LOW PRESSURE SYSTEM DUCT LEAKAGE SHALL NOT EXCEED 2%.

H. CONCEALED ROUND DUCTS SHALL BE CONSTRUCTED TO SMACNA 2” W.G. STANDARDS WITH GROOVED LONGITUDINAL SEAMS AND SLEEVED TYPE TRANSVERSE JOINTS.

I. EXPOSED ROUND DUCTS SHALL BE CONSTRUCTED TO SMACNA 10” W.G. STANDARDS, SPIRAL LOCK SEAM DUCT AND FITTINGS.

2.7 DUCT LINER

A. ALL RECTANGULAR OUTSIDE AIR INTAKE, SUPPLY, RETURN AND TRANSFER AIR DUCTWORK SHALL BE LINED WITH 1/2" THICK 2 LB. DENSITY CERTAINTEED TOUGH GARD DUCT LINER OR EQUAL FROM MANVILLE, KNAUF INSULATION, OR OWENS CORNING UNLESS NOTED OTHERWISE ON THE DRAWINGS. ALL DUCT LINER IS TO COMPLY AND BE INSTALLED IN ACCORDANCE TO NAIMA FIBROUS GLASS DUCT LINER STANDARD AND SMACNA.

2.8 FLEXIBLE DUCT

A. FLEXIBLE DUCTS SHALL BE UL181 CLASS THERMAFLEX M-KE, OR APPROVED EQUAL, SHALL NOT BE LONGER THAN 8 FEET AND SHALL NOT HAVE ANY AIR FLOW OBSTRUCTION.

2.9 DUCTWORK SUPPORTS

A. ALL HORIZONTAL DUCTS SHALL BE SUPPORTED WITH HANGERS SPACED NOT MORE THAN 8'-0" APART. HANGERS FOR DUCTS SMALLER THAN 31 INCHES SHALL CONSIST OF 22 GUAGE GALVANIZED STEEL STRAPS SECURELY FASTENED TO THE DUCT AND THE BUILDING CONSTRUCTION. DUCTS OVER 31 INCHES IN WIDTH SHALL BE HUNG WITH 1/4 INCH STEEL ANGLE ON THE BOTTOM OF THE DUCT SUPPORTED WITH STEEL RODS OF APPROPRIATE SIZE SECURELY FASTENED TO THE BUILDING STRUCTURE. ALL SUPPORTS TO MEET SMACNA STANDARDS.

2.10 DUCTWORK INSULATION

A. ALL CONCEALED ROUND DUCTS SHALL BE INSULATED WITH 1-1/2 INCH THICK, 1 POUND PER CUBIC FOOT DENSITY, CERTAIN-TEED DUCT WRAP INSULATION FACED ON ONE SIDE WITH .002 INCH ALUMINUM FOIL WITH A 2 INCH TAB, OR EQUAL PRODUCTS BY MANVILLE, KNAUF INSULATION, OR OWENS CORNING UNLESS NOTED OTHERWISE ON THE DRAWINGS. INSULATION SHALL BE APPLIED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

B. ALL INSULATION SHALL BE UL LISTED; FLAME SPREAD/FUEL CONTRIBUTED/SMOKE DEVELOPED RATING OF 25/50/50 OR LESS IN ACCORDANCE WITH ASTM E84, NFPA 255 AND UL 723.

2.11 GRILLES, REGISTERS, DIFFUSERS AND LOUVERS

A. FURNISH AND INSTALL ALL GRILLES, REGISTERS, DIFFUSERS AND LOUVERS AS SHOWN AND DESCRIBED ON THE DRAWINGS OR COMPARABLE PRODUCTS OF TITUS OR PRICE.

B. THE CONTRACTOR SHALL INFORM THE GENERAL CONTRACTOR OF THE REQUIREMENTS FOR OPENING SIZES AND FRAMING FOR ALL EQUIPMENT AND SHALL COORDINATE THE INSTALLATION OF ALL SUCH EQUIPMENT WITH THE STRUCTURAL REQUIREMENTS OF THIS PROJECT.

2.12 OPERATING AND MAINTENANCE MANUALS

A. THE EQUIPMENT MANUFACTURER SHALL FURNISH THE OWNER TWO BOUND SETS OF OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL SYSTEMS.

2.13 START-UP/TESTING, ADJUSTING, BALANCING

A. THE CONTRACTOR SHALL COMPLETE ALL EQUIPMENT INSTALLATIONS, CHECK ALL CONTROL WIRING, START UP AND ADJUST ALL EQUIPMENT AND PLACE ALL SYSTEMS IN OPERATION.

B. AFTER COMPLETION AND START-UP OF ALL SYSTEMS THE CONTRACTOR SHALL ARRANGE FOR TESTING, ADJUSTING AND BALANCING OF ALL AIR SYSTEMS.

C. TESTING, ADJUSTING AND BALANCING OF ALL AIR SYSTEMS SHALL BE PERFORMED IN COMPLETE ACCORDANCE WITH NEBB OR SMACNA STANDARDS.

D. UPON COMPLETION OF TESTING, ADJUSTING AND BALANCING, A COMPLETE REPORT OF ALL FINDINGS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE OF THIS PROJECT. THREE COPIES OF THE REPORT SHALL BE PROVIDED.

2.14 CURBS

A. CURBS FOR EXHAUSTERS AND DUCTWORK THROUGH ROOF SHALL BE PATE TYPE PC AS REQUIRED BY ROOF CONSTRUCTION, OR COMPARABLE THYCURB PRODUCTS OF THE THYBAR CORP. ALL CURBS AND SUPPORTS SHALL BE CONSTRUCTED AS REQUIRED TO COMPENSATE FOR SLOPES OF THE ROOF STRUCTURE TO PROVIDE LEVEL SUPPORT OF EQUIPMENT. CURB HEIGHTS AT THE HIGH POINTS OF THE BUILDING STRUCTURE SHALL NOT BE LESS THAN 14 INCHES.

B. CURBS FOR ROOF MOUNTED HEATING, VENTILATING AND AIR CONDITIONING UNITS SHALL BE PROVIDED BY THE EQUIPMENT MANUFACTURER AND SHALL BE DESIGNED TO COMPENSATE FOR SLOPES OF STRUCTURAL STEEL TO PROVIDE LEVEL SUPPORT OF EQUIPMENT. CURBS SHALL BE INSULATED TYPE WITH 1-1/2 INCH THICK INSULATION AND A MINIMUM DENSITY OF 3 POUNDS.

2.15 DAMPERS

A. VOLUME BALANCING DAMPERS SHALL BE RUSKIN CD-35/CDR-25 OR APPROVED EQUAL. THE DAMPERS SHALL BE CONSTRUCTED OF 16 GAUGE GALVANIZED STEEL, 6 INCH WIDE OPPOSED BLADES AND THE LINKAGE CONCEALED IN FRAME.

B. FIRE DAMPERS SHALL BE PROVIDED WHERE SHOWN ON THE DRAWINGS AND ELSEWHERE AS REQUIRED BY AUTHORITIES HAVING JURISDICTION AND SHALL BE RUSKIN TYPE IBD2, STYLE B, OR COMPARABLE PRODUCTS OF VENT PRODUCTS COMPANY, INC., CURTAIN TYPE HAVING 100% FREE AREA WITH 212 DEGREES F. FUSIBLE LINK APPROVED FOR USE IN PARTITIONS WITH TWO HOUR RATING UNLESS OTHERWISE NOTED. ACCESS PANELS SHALL BE PROVIDED IN DUCTS AND IN THE STRUCTURE FOR ALL FIRE DAMPERS. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S STANDARDS.

2.16 EXHAUST FANS

A. EXHAUST FANS SHALL BE AS SHOWN ON THE DRAWINGS OR COMPARABLE PRODUCTS OF GREENHECK, COOK, OR CARNES.

B. EACH EXHAUSTER SHALL BE PROVIDED WITH A DISCONNECT SWITCH, BACKDRAFT DAMPER AND BIRDSCREEN.

C. ROOF MOUNTED EXHAUST FANS SHALL BE PROVIDED WITH CURBS AS DESCRIBED ABOVE.

D. IN-LINE EXHAUST FANS SHALL BE MOUNTED WITH RIS ISOLATORS.

E. REFER TO PARAGRAPH TITLED "CURBS" IN THIS SECTION OF THE SPECIFICATION.

2.17 PACKAGE ROOFTOP HVAC UNITS: 25 TON AND SMALLER

A. UNITS SHALL BE DEDICATED DOWNFLOW OR HORIZONTAL AIRFLOW. OPERATING RANGE SHALL BE BETWEEN 115 DEGREES F AND 0 DEGREES F. COOLING AS STANDARD FROM THE FACTORY FOR ALL UNITS. COOLING PERFORMANCE SHALL BE RATED IN ACCORDANCE WITH DOE AND/OR ARI TESTING PROCEDURES. ALL UNITS SHALL BE FACTORY ASSEMBLED, INTERNALLY WIRED, FULLY CHARGED WITH R-410A OR R-407C, AND 100% RUN-TESTED BEFORE LEAVING THE FACTORY. WIRING INTERNAL TO THE UNIT SHALL BE COLORED AND NUMBERED FOR SIMPLIFIED IDENTIFICATION. UNITS SHALL BE UL LISTED AND LABELED, CLASSIFIED IN ACCORDANCE TO THE LATEST ANSI AND UL STANDARDS FOR GAS-FIRED CENTRAL FURNACES AND CENTRAL COOLING AIR CONDITIONERS. UNITS SHALL BE TRANE, YORK, MCQUAY, LENNOX OR CARRIER.

B. UNIT CASING SHALL BE CONSTRUCTED OF ZINC COATED, HEAVY GAUGE, GALVANIZED STEEL. EXTERIOR SURFACES SHALL BE CLEANED, PHOSPHATIZED AND FINISHED WITH A WEATHER-RESISTANT BAKED ENAMEL OR ACRYLIC POLYURETHANE FINISH. UNIT'S SURFACE SHALL BE TESTED 500 HOURS IN A SALT SPRAY TEST IN COMPLIANCE WITH ASTM B117. CABINET CONSTRUCTION SHALL ALLOW FOR ALL MAINTENANCE. SERVICE PANELS SHALL PROVIDE A WATER AND AIR TIGHT SEAL.

C. THE TOP COVER SHALL BE ONE PIECE OR WHERE SEAMS EXIST, IT SHALL BE DOUBLE HEMMED AND GASKET SEALED TO PREVENT WATER LEAKAGE.

D. ALL UNITS SHALL BE DIRECT-DRIVE SCROLL TYPE COMPRESSOR(S) WITH CENTRIFUGAL OIL PUMP PROVIDING POSITIVE LUBRICATION TO MOVING PARTS. MOTOR SHALL BE SUCTION GAS-COOLED AND SHALL HAVE A VOLTAGE UTILIZATION RANGE OF PLUS OR MINUS 10% OF UNIT NAMEPLATE VOLTAGE. CRANKCASE HEATER, INTERNAL TEMPERATURE AND CURRENT-SENSITIVE MOTOR OVERLOADS SHALL BE INCLUDED FOR MAXIMUM PROTECTION. THE COMPRESSORS HALL HAVE INTERNAL SPRING ISOLATION AND SOUND MUFFLING TO MINIMIZE VIBRATION TRANSMISSION AND NOISE. EXTERNAL HIGH PRESSURE CUTOUT SHALL BE PROVIDED. LOW PRESSURE SWITCHES SHALL BE STANDARD. INTERNAL TEMPERATURE AND CURRENT SENSITIVE MOTOR OVERLOADS SHALL BE INCLUDED FOR MAXIMUM PROTECTION. EXTERNAL DISCHARGE TEMPERATURE LIMIT, WINDING TEMPERATURE LIMIT AND COMPRESSOR OVERLOAD SHALL BE PROVIDED.

E. EACH REFRIGERANT CIRCUIT SHALL HAVE INDEPENDENT FIXED ORIFICE EXPANSION DEVICES, SERVICE PRESSURE PORTS AND REFRIGERANT LINE FILTER DRYERS FACTORY INSTALLED AS STANDARD. AN AREA SHALL BE PROVIDED FOR REPLACEMENT SUCTION LINE DRIERS.

F. INTERNALLY FINNED MINIMUM 3/8 INCH COPPER TUBES MECHANICALLY BONDED TO CONFIGURED ALUMINUM PLATE FIN SHALL BE STANDARD. COILS SHALL BE LEAK TESTED AT THE FACTORY TO ENSURE PRESSURE INTEGRITY.

G. GAS HEAT SHALL BE AGA OR U.L. APPROVED AS APPLICABLE AND ALL SAFETY FEATURES SHALL COMPLY WITH THE REQUIREMENTS OF ALL AGENCIES HAVING JURISDICTION. BURNERS SHALL BE INDUCED OR FORCED DRAFT COMBUSTION TYPE BLOWER WITH DIRECT SPARK IGNITION SYSTEM AND REDUNDANT MAIN GAS VALVE. THE HEAT EXCHANGER SHALL BE CONSTRUCTED OF CORROSION-RESISTANT STEEL SIMILAR TO ALUMINIZED OR STAINLESS STEEL.

H. THE OUTDOOR FANS SHALL BE DIRECT-DRIVE, STATICALLY AND DYNAMICALLY BALANCED, DRAW THROUGH IN THE VERTICAL DISCHARGE POSITION. THE FAN MOTOR(S) SHALL BE PERMANENTLY LUBRICATED AND HAVE BUILT-IN THERMAL OVERLOAD PROTECTION.

I. UNITS SHALL HAVE BELT-DRIVEN, FC CENTRIFUGAL FANS WITH ADJUSTABLE MOTOR SHEAVES. UNITS SHALL HAVE AN ADJUSTABLE IDLER-ARM ASSEMBLY FOR QUICK-ADJUSTMENT TO FAN BELTS AND MOTOR SHEAVES. ALL MOTORS SHALL BE INTERNALLY PROTECTED. OVERSIZED MOTORS SHALL BE AVAILABLE FOR HIGH STATIC OPERATIONS. UNITS SHALL BE CAPABLE OF PROVIDING A MINIMUM OF 1 INCH EXTERNAL STATIC PRESSURE AT SCHEDULED UNIT CFM. SEE SCHEDULE FOR REQUIRED E.S.P.

J. UNIT(S) SHALL BE COMPLETELY FACTORY WIRED WITH NECESSARY CONTROLS AND CONTACTOR PRESSURE LUGS OR TERMINAL BLOCK FOR POWER WIRING. UNIT SHALL BE PROVIDED WITH A FACTORY MOUNTED FUSED DISCONNECT SWITCH OR CIRCUIT BREAKER FOR SINGLE POINT WIRING.

K. ACCESSORIES:

1. MOTORIZED OUTSIDE AIR DAMPER: FIELD INSTALLED RAIN HOOD AND SCREEN SHALL PROVIDE UP TO SCHEDULED QUANTITY OF OUTSIDE AIR.
2. OVERSIZED MOTORS: FIELD INSTALLED OVERSIZED MOTORS SHALL BE AVAILABLE IF NECESSARY TO ACHIEVE THE SCHEDULED STATIC PRESSURE.
3. 120 VOLT RECEPTACLE WIRED AHEAD OF UNIT DISCONNECT. PROVIDE DISCONNECT SWITCH AND TRANSFORMER, IF REQUIRED, FOR THE SERVICE RECEPTACLE.
4. COIL GUARDS: COIL GUARDS SHALL BE FIELD-INSTALLED FOR CONDENSER COIL PROTECTION ON ALL UNITS.
5. INSULATION KIT: PROVIDE A COMPLETE KIT FOR ALL UNITS TO PREVENT HIGH HUMIDITY CONDENSATION FORMING ON BOTTOM OF UNIT WHEN MOUNTED ON A DOWNFLOW CURB.
6. DIFFERENTIAL PRESSURE SWITCHES: THIS FIELD-INSTALLED OPTION ALERTS ON INDIVIDUAL FAN FAILURE. THE FAN FAILURE SWITCH WILL DISABLE ALL UNIT FUNCTIONS AND "FLASH" THE SERVICE LED ON THE ZONE SENSOR.
7. A COUNTER BALANCED BAROMETRIC RELIEF DAMPER SHALL BE PROVIDED FOR SPACE PRESSURE CONTROL.
8. 7-DAY PROGRAMMABLE SPACE THERMOSTAT SHALL BE PROVIDED FOR TEMPERATURE CONTROL DURING OCCUPIED AND UNOCCUPIED TIMES. THERMOSTAT SHALL HAVE AUTOMATIC CHANGEOVER.

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As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
07/14/2022

SEAL
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06-10-2022

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REVISIONS

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Mechanical And Electrical - Specifications

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9. ECONOMIZER CONTROL PACKAGE WITH OUTDOOR/RETURN/RELIEF DAMPER PACKAGE, AUTOMATIC DAMPER OPERATOR, MIXED AIR CONTROLLER AND CHANGEOVER THERMOSTAT.

2.18 SPLIT SYSTEM HVAC UNIT

A. SPLIT SYSTEM HVAC UNIT SHALL CONSIST OF AN OUTDOOR CONDENSING UNIT, INDOOR FURNACE/BLOWER COIL WITH EVAPORATOR COIL. SPLIT SYSTEM SHALL BE BY CARRIER TRANE, YORK, OR LENNOX.

B. CONDENSING UNIT

1. AIR COOLED CONDENSING UNIT CONSISTING OF COMPRESSOR(S), CONDENSER COILS, FANS AND CONTROLS ALL ENCASED IN A GALVANIZED STEEL CASING WITH BAKED ENAMEL FINISH. COILS SHALL BE PROTECTED WITH WIRE GRILLES OR LOUVERS.
2. THE COMPRESSORS SHALL BE SCROLL TYPE WITH SUCTION AND DISCHARGE SERVICE VALVES, CRANKCASE OIL HEATER AND SUCTION STRAINER. COMPRESSORS SHALL BE MOUNTED ON RIS VIBRATION ISOLATOR PADS.
3. THE CONDENSER COILS SHALL CONSIST OF 3/8 INCH SEAMLESS COPPER TUBES MECHANICALLY BONDED INTO RIPPLED PLATE TYPE FINS. CONDENSER FANS SHALL BE PROPELLER TYPE ARRANGED FOR VERTICAL AIR DISCHARGE AND INDIVIDUALLY DRIVEN BY DIRECT DRIVE FAN MOTORS. EACH FAN SHALL BE EQUIPPED WITH A HEAVY-GAUGE VINYL COATED FAN GUARD. FAN MOTORS SHALL BE WEATHER PROTECTED, DIRECT-DRIVE, OPEN DRIP-PROOF TYPE. EXTERIOR COIL SURFACES SHALL BE PROTECTED BY COIL GUARDS.
4. A UNIT MOUNTED WEATHERPROOF CONTROL PANEL SHALL CONTAIN THE FIELD POWER CONNECTION POINTS, CONTROL INTERLOCK TERMINALS, AND CONTROL SYSTEM. CAPACITY CONTROL FOR COMPRESSOR STAGING SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR. UNIT SHALL BE PROVIDED FOR ONE POINT POWER CONNECTION.
5. THE FOLLOWING ITEMS ARE TO BE INCLUDED WITH THE UNIT: HOT GAS BYPASS ON ALL CIRCUITS (FIELD INSTALLED), WIRE MESH GUARDS FOR BASE SECTION PROTECTION, FACTORY MOUNTED REFRIGERANT PRESSURE GAUGES FOR EACH CIRCUIT, FIELD INSTALLED NONFUSED DISCONNECT SWITCH.
6. THE UNIT IS TO BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS, SHOP DRAWINGS, AND CONTRACT DOCUMENTS. PROVIDE REFRIGERANT PIPING AND WIRING DIAGRAMS WITH SPECIALTIES, SIZES AND CONFIGURATION. COORDINATE CONTROLS WITH CONTROL CONTRACTOR. PROVIDE ALL DEVICES REQUIRED TO ENSURE A FULLY OPERATIONAL AND FUNCTIONAL COOLING SYSTEM. LEAK TEST, EVACUATE AND CHARGE SYSTEM WITH PROPER CHARGE OF REFRIGERANT AND OIL. PROVIDE TESTING, AND STARTING OF EQUIPMENT, AND INSTRUCT THE OWNER IN ITS PROPER OPERATION AND MAINTENANCE.
7. UNLESS INDICATED OTHERWISE, CAPACITIES SHALL BE AT 105 DEG. F AMBIENT TEMPERATURE. THE CONDENSING UNIT SHALL BE BY THE SAME MANUFACTURER AS THE ASSOCIATED FURNACE/BLOWER COIL UNIT AND EVAPORATOR COIL. THE SYSTEM CAPACITY SHALL BE EQUAL TO THAT SPECIFIED/SCHEDULED FOR THE ASSOCIATED AIR HANDLING UNIT.
8. FURNISH AND INSTALL PATE, OR APPROVED EQUAL, MODEL ES2 EQUIPMENT SUPPORTS FOR CONDENSING UNIT MOUNTING.

2.19 REFRIGERANT PIPING

A. REFRIGERANT PIPING SHALL BE TYPE K COPPER, ACR WITH WROUGHT COPPER FITTINGS AND SILVER SOLDER OR BRAZED JOINTS.

B. REFRIGERANT LIQUID PIPE HANGERS SHALL BE ANVIL #CT65 COPPER PLATED CARBON STEEL ADJUSTABLE SWIVEL RING HANGERS.

C. REFRIGERANT SUCTION PIPE HANGERS SHALL BE ANVIL #260 ADJUSTABLE CLEVS HANGER WITH SHIELD.

D. SPACING FOR REFRIGERANT PIPING HANGERS AND SUPPORTS SHALL BE:

1. 6 FEET ON CENTER FOR PIPING 1-1/4” AND SMALLER.
2. 10 FEET ON CENTER FOR PIPING 1-1/2” AND LARGER.

E. INSULATION FOR REFRIGERANT SUCTION LINES SHALL BE ARMAFLEX AP OR EQUAL, CLOSED CELL FLEXIBLE FOAM INSULATION, 1” THICK WITH SEAL STRIP. PROVIDE GALVANIZED PIPE SHIELD AT HANGER LOCATIONS.

2.20 PAINTING: (SEE ARCHITECTURAL SECTION "PAINTING")

A. PAINTING, EXCEPT AS SPECIFIED HEREIN, SHALL BE DONE BY OTHERS.

B. EQUIPMENT WHICH HAS DAMAGED FINISH SHALL BE REPAINTED TO MATCH THE ORIGINAL FACTORY FINISH.

C. ALL EXPOSED FERROUS METAL FURNISHED UNDER THIS CONTRACT, SUCH AS HANGERS, STRUTS, STRUCTURAL STEEL, ETC., SHALL BE GIVEN ONE COAT OF TNEMEC GRAY PRIMER.

PART 3 - PLUMBING

3.1 GENERAL REQUIREMENTS

A. SEE PART 1 FOR GENERAL REQUIREMENTS.

3.2 TRAPS

A. ALL FLOOR DRAINS AND FIXTURES WITH WASTE CONNECTIONS SHALL BE SEPARATELY TRAPPED WITH A WATER SEALED TRAP PLACED AS CLOSE TO THE FIXTURE OR DRAIN AS POSSIBLE. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TRAPS REQUIRED INCLUDING TRAPS NOT FURNISHED IN COMBINATION WITH FIXTURES AND EQUIPMENT. ALL EXPOSED TRAPS IN FINISHED SPACES SHALL BE CHROMIUM PLATED BRASS. PROVIDE DEEP SEAL TRAPS AND RUNNING TRAPS WHERE REQUIRED.

B. IN LIEU OF DEEP SEAT TRAPS, FLOOR DRAINS CAN BE PROVIDED WITH PROSET SYSTEMS TRAP GUARD OR EQUAL.

3.3 PIPING INSTALLATION

A. ENDS OF PIPE SHALL BE REAMED AND ALL BURRS REMOVED BEFORE INSTALLATION. PIPING SHALL BE CUT ACCURATELY TO MEASUREMENTS TAKEN ON THE JOB AND SHALL BE INSTALLED WITH AMPLE CLEARANCE FOR INSTALLATION OF COVERINGS.

B. PIPING PASSING THROUGH WALLS OR FLOOR SHALL BE RUN FREE, USING PIPE SLEEVES AND SHALL NOT BE GROUTED IN PLACE. SLEEVES FOR PIPING TO BE INSULATED SHALL BE SIZED TO ALLOW FOR INSULATION THICKNESS. PIPING SHALL BE INSTALLED CONCEALED IN FINISHED ROOMS AND WHEREVER POSSIBLE. EXPOSED PIPES, WHERE PASSING THROUGH FLOORS, FINISHED WALL, OR FINISHED CEILINGS SHALL BE FITTED WITH CHROMIUM PLATED ESCUTCHEON PLATES. PLATES SHALL BE LARGE ENOUGH TO COMPLETELY CLOSE THE HOLES AROUND THE PIPES AND SHALL BE ROUND, NOT LESS THAN 1-1/2” LARGER THAN THE DIAMETER OF THE PIPE. PLATES SHALL BE SECURELY FASTENED IN PLACE.

C. AT LEAST ONE PIPE UNION SHALL BE INSTALLED ADJACENT TO ALL VALVES THAT ARE SCREWED. HOT AND COLD SUPPLIES TO EACH FIXTURE AND WATER HEATER SHALL BE VALVED SEPARATELY AT THE FIXTURE. ALL SUPPLY PIPES TERMINATING AT VALVES OR FIXTURES SHALL BE PROVIDED WITH A WATER HAMMER ARRESTOR OF SUFFICIENT CAPACITY TO PREVENT WATER HAMMER.

D. ALL HOT AND COLD WATER BRANCH LINES SHALL BE VALVED IN AN ACCESSIBLE LOCATION.

E. ALL HOT AND COLD WATER PIPING SHALL BE ARRANGED TO DRAIN THE LOWEST POINT AND DRAIN VALVES WITH HOSE THREADS SHALL BE PROVIDED SO THAT THE ENTIRE SYSTEM CAN BE EMPTIED.

3.4 PIPING JOINTS

A. THREADED JOINTS SHALL BE CUT FULL AND CLEAN, WITH NOT MORE THAN THREE THREADS EXPOSED BEYOND FITTINGS. JOINTS SHALL BE MADE UP TIGHT WITH GRAPHITE BASE PIPE JOINT COMPOUND APPLIED TO MALE THREADS ONLY. EXPOSED THREADS OF FERROUS PIPE SHALL BE PAINTED WITH ACID-RESISTING PAINT AFTER PIPING HAS BEEN TESTED AND PROVEN TIGHT. NO CAULKING, LAMP WICK OR OTHER MATERIAL WILL BE ALLOWED FOR CORRECTION OF DEFECTIVE JOINTS.

B. SWEAT OR SOLDERED JOINTS IN COPPER WATER PIPING SHALL BE MADE BY THE APPROPRIATE USE OF APPROVED BRASS WATER FITTINGS PROPERLY SWEATED OR SOLDERED TOGETHER. FLARED JOINTS WHERE SPECIFIED FOR SOFT COPPER TUBING SHALL BE MADE WITH FITTINGS MEETING APPROVED STANDARDS. SURFACES TO BE SOLDERED OR SWEAT SHALL BE CLEANED BRIGHT, PROPERLY FLUXED WITH APPROVED NONCORROSIVE PASTE TYPE FLUX AND MADE WITH 95-5 OR 94-6 SOLDER. THE USE OF SELF-CLEANING FLUXES, 50-50 SOLDER OR PASTE TYPE SOLDER IS PROHIBITED. FLARED JOINTS SHALL BE MADE BY EXPANDING THE TUBE WITH A PROPER FLARING TOOL. ALL TUBES SHALL BE PROPERLY REAMED.

C. JOINTS IN BELL AND SPIGOT CAST IRON SOIL PIPE SHALL BE OF SOFT PIG LEAD AND OAKUM WITH LEAD NOT LESS THAN 1” DEEP, AND INSTALLED IN ONE POUR OR TYLER TY-SEAL GASKETS UNDERGROUND ONLY.

D. JOINTS FOR NO-HUB PIPE SHALL BE NEOPRENE WITH STAINLESS STEEL BANDS.

E. JOINTS FOR PLASTIC PIPE, WHEN PERMITTED, SHALL BE SOLVENT WELDED IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS.

3.5 DOMESTIC HOT AND COLD WATER PIPING

A. ALL DOMESTIC HOT AND COLD WATER PIPING WITHIN THE BUILDING SHALL BE COPPER. UNDERGROUND WATER SERVICE OUTSIDE OF THE BUILDING MAY BE TYPE "K" SOFT TEMPER COPPER OR DUCTILE IRON OR CAST IRON PIPE WITH SUPER BELL-TITE, MECHANICAL OR FLANGED JOINTS.

B. COPPER PIPING INSTALLED UNDERGROUND SHALL BE SOFT TEMPER TYPE "K" AND INSTALLED WITHOUT JOINTS.

C. ALL OTHER COPPER PIPING SHALL BE HARD TEMPER TYPE "L". ALL COPPER PIPING SHALL CONFORM TO ASTM-B-88 REQUIREMENTS. SERVICE PIPING OF CAST IRON OF DUCTILE IRON PIPE SHALL CONFORM TO USASI, AWWA AND FEDERAL SPECIFICATIONS.

D. FITTINGS FOR USE WITH TYPE "K" AND "L" COPPER PIPING SHALL BE WROUGHT COPPER SOLDER-JOINT. UNIONS SHALL BE GROUND JOINT TYPE AND SHALL BE INSTALLED WHERE NECESSARY TO PROVIDE EASE OF DISCONNECTION OF THE PIPING SYSTEM. PRESS FITTINGS FOR COPPER WATER PIPING ARE ACCEPTABLE WHERE PERMITTED BY GOVERNING CODES.

E. WHEN A CONNECTION BETWEEN COPPER PIPE AND FERROUS PIPE IS NECESSARY, SAID CONNECTION SHALL BE MADE BY USING BRASS CONVERTER FITTING.

F. DRAINS INDICATED ON THE DRAWINGS AND AT LOW POINTS IN CONNECTION WITH THE HOT AND COLD WATER DISTRIBUTION SYSTEM SHALL CONSIST OF 1/2" FAUCET WITH HOSE THREADS. DRAINS SHALL BE INSTALLED AT LOW POINTS IN THE HOT AND COLD WATER PIPING AND ALL PIPING SHALL GRADE TO DRAIN.

3.6 VALVES FOR DOMESTIC WATER

A. FOR PIPING 1/2" - 2”: MILWAUKEE BA-150 BALL VALE, BRONZE, TEFLON SEATS AND PACKING, 400 LBS W.O.G., SOLDER END.

B. FOR PIPING 2-1/2” AND LARGER: MILWAUKEE ML224E BUTTERFLY VALVE, FULL LUG BODY, EPDM SEATS, STAINLESS STEEL DISC, LEVER OPERATOR.

3.7 CROSS CONNECTIONS AND INTERCONNECTIONS

A. NO INSTALLATION SHALL BE MADE OF PLUMBING FIXTURE, DEVICE OR PIPING THAT WILL PROVIDE A CROSS CONNECTION OR INTERCONNECTION BETWEEN A DISTRIBUTING WATER SUPPLY FOR DRINKING OR DOMESTIC PURPOSES AND A POLLUTED SUPPLY SUCH AS A DRAINAGE SYSTEM OR A SOIL OR WASTE PIPE THAT WILL PERMIT OR MAKE POSSIBLE A BACKFLOW OF SEWAGE, POLLUTED WATER OR WASTE INTO THE WATER SUPPLY SYSTEM.

3.8 SOIL, WASTE, DRAIN AND VENT PIPING

A. UNDERGROUND SOIL, WASTE, DRAIN AND VENT PIPE AND FITTINGS, THROUGHOUT THE BUILDING BELOW THE BASE SLAB TO THE LOCATIONS NOTED OUTSIDE OF THE BUILDING, SHALL BE COATED HUB-AND- SPIGOT SERVICE WEIGHT CAST IRON. SCHEDULE 40 PVC SOLID PLASTIC PIPE MAY BE USED WHERE PERMITTED BY GOVERNING CODES. NO-HUB PIPE WILL NOT BE PERMITTED UNDERGROUND.

B. SOIL, WASTE, DRAIN, VENT PIPE, AND FITTINGS ABOVE GROUND INSIDE OF THE BUILDING SHALL BE SERVICE WEIGHT HUB-AND- SPIGOT OR NO-HUB CAST IRON PIPE. SCHEDULE 40 PVC SOLID PLASTIC PIPE MAY BE USED WHERE PERMITTED BY GOVERNING CODES. PVC PIPING RUN IN RETURN AIR PLENUM SPACE SHALL BE INSTALLED WITH A 1 HOUR RATED COVERING OVER ALL PIPE, FITTINGS AND VALVES.

C. CHANGES IN PIPE SIZE ON SOIL, WASTE, AND DRAIN LINES SHALL BE MADE WITH REDUCING FITTINGS. CHANGES IN DIRECTION IN DRAINAGE PIPING SHALL BE MADE BY THE APPROPRIATE USE OF 45 DEGREE Y'S, LONG OR SHORT SWEEP QUARTER BENDS, SIXTH, EIGHTH, OR SIXTEENTH BENDS, OR BY A COMBINATION OF THESE OR EQUIVALENT FITTINGS. SINGLE AND DOUBLE SANITARY TEES AND SHORT QUARTER BENDS MAY BE USED IN DRAINAGE LINES ONLY WHERE THE DIRECTION OF FLOW IS FROM THE HORIZONTAL TO THE VERTICAL. QUARTER BENDS MAY BE USED IN SOIL AND WASTE LINES ON THE DISCHARGE FROM WATER CLOSETS IN SLAB ON GRADE AREAS.

D. SEWER LINES SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO INSURE DRAINAGE.

E. HORIZONTAL SOIL, WASTE, AND DRAIN PIPES SHALL BE GIVEN A GRADE OF NOT LESS THAN 1/4" PER FOOT FOR SIZES UP TO 3” UNLESS OTHERWISE SHOWN ON THE DRAWINGS OR APPROVED IN WRITING BY THE ENGINEER. HORIZONTAL SOIL, WASTE, AND DRAIN PIPES SHALL BE GIVEN A GRADE OF NOT LESS THAN 1/8” PER FOOT FOR SIZES 4” AND LARGER WHEN FIRST APPROVED BY THE ADMINISTRATIVE AUTHORITY.

F. VENT STACKS SHALL BE EXTENDED FULL SIZE THROUGH THE ROOF AND FLASHED WITH 4 POUND LEAD SHEETS TURNED DOWN INTO THE STACK AT LEAST 2” AND EXTENDED 12” IN ALL DIRECTIONS FROM THE PIPE AT THE ROOF LINE. VENTS THROUGH ROOF SHALL NOT BE LESS THAN 3”. PVC PIPING SHALL NOT BE USED FOR VENT PIPING THROUGH THE ROOF.

G. WHERE APPLICABLE FOR THE ROOFING SYSTEM USED, PROVIDE FLASHING VIA PLEATED EPDM CONE IN LIEU OF LEAD.

H. VENTS SHALL BE AIR AND WATER TIGHT.

I. VENT CONNECTIONS SHALL BE INSTALLED ON ALL FIXTURES AND EQUIPMENT CONNECTED TO SOIL AND WASTE SYSTEMS AND ALL FLOOR DRAINS SHALL BE VENTED OR CONNECTED TO A VENTED LINE AS SHOWN ON THE DRAWINGS AND AS REQUIRED BY CODE.

J. ALL VENT STACKS IN OR AT OUTSIDE WALLS SHALL BE OFFSET 1'-6" MINIMUM FROM OUTSIDE WALLS BEFORE GOING THROUGH THE ROOF, TO FACILITATE FLASHING.

K. RISERS SHALL BE INSTALLED ABSOLUTELY PLUMB AND STRAIGHT. BRANCHES SHALL BE RUN IN STRAIGHT LINES AND PITCH UNIFORMLY TO MAINS.

L. RISERS, BRANCHES AND MAINS SHALL BE CONCEALED IN THE CONSTRUCTION EXCEPT WHERE SHOWN OTHERWISE. BRANCHES FOR CLOSETS SHALL BE FINISHED AT THE WALL LINE WITH PROPER FLANGE TO RECEIVE THE FIXTURE WHEN SET, AND THEY SHALL BE TRUE AND LEVEL SO THAT CLOSET BASE WILL HAVE FULL BEARING ON THE WALL.

M. ALL SOIL AND VENT STACKS SHALL OFFSET WHERE REQUIRED TO MISS OBSTRUCTIONS AND AS REQUIRED TO CLEAR FLOOR BEAMS AND SPANDREL BEAMS AT FLOOR LINES AND HUG WALL CONSTRUCTION ABOVE FLOOR.

N. PROHIBITED FITTINGS. THE DRILLING AND TAPPING OF BUILDING DRAINS, SOIL, WASTE OR VENT PIPE AND THE USE OF SADDLE HUBS OR BANDS IS PROHIBITED. ANY FITTING OR CONNECTION WHICH HAS AN ENLARGEMENT CHAMBER OR RECESS WITH A LEDGE, SHOULDER OR REDUCTION OF THE PIPE AREA THAT OFFERS AN OBSTRUCTION TO THE FLOW IS PROHIBITED.

O. PROHIBITED CONNECTIONS. NO FIXTURES, DEVICES OR CONSTRUCTION SHALL BE INSTALLED WHICH WOULD ALLOW A BACKFLOW CONNECTION BETWEEN A DISTRIBUTION SYSTEM OF WATER FOR DRINKING AND DOMESTIC PURPOSES TO THE DRAINAGE SYSTEM, SOIL OR WASTE PIPING SO AS TO PERMIT OR MAKE POSSIBLE THE BACKFLOW OF SEWAGE OR WASTE INTO THE WATER SYSTEM.

3.9 INSULATION

A. ALL COLD WATER PIPING SHALL BE INSULATED WITH CERTAIN-TEED 1/2" THICK GLASS FIBER PIPE INSULATION IN MOLDED SECTIONS WITH FACTORY APPLIED ALL SERVICE VAPOR BARRIER JACKET OR APPROVED EQUAL. THE END JOINT STRIPS AND OVERLAP SEAMS SHALL BE SEALED WITH A VAPOR BARRIER MASTIC AND STAPLED WITH OUTWARD CLINCHING STAPLES SPACED NOT TO EXCEED 4” CENTERS. STAPLES AND SEAMS SHALL BE SEALED WITH A COAT OF VAPOR BARRIER MASTIC. JOINTS SHALL BE COVERED BY JOINT TAPE.

B. ALL DOMESTIC HOT WATER PIPING SHALL BE INSULATED WITH 1” THICK CERTAIN-TEED GLASS FIBER PIPE INSULATION IN MOLDED SECTIONS WITH FACTORY APPLIED ALL SERVICE JACKET OR APPROVED EQUAL. THIS INSULATION SHALL BE CLOSELY BUTTED TOGETHER AND SECURED BY JOINT TAPE MATCHING THE INSULATION COVER.

C. ALL PIPING SURFACES TO BE INSULATED SHALL BE CLEAN AND DRY AND PIPING SHALL HAVE BEEN TESTED AND APPROVED BEFORE THE INSULATION IS APPLIED.

D. ALL VALVES, FITTINGS AND FLANGES SHALL BE INSULATED WITH CERTAIN-TEED GLASS FIBER PIPE INSULATION, OR APPROVED EQUAL. INSULATION SHALL BE SECURELY HELD IN PLACE AND COVERED WITH ZESTON PRE-MOLDED PVC FITTING COVERS. FITTING COVERS MAY BE PROVIDED WITH FIBERGLASS INSULATION INSERTS.

E. HORIZONTAL ROOF DRAIN PIPING AND ROOF DRAIN BODIES SHALL BE INSULATED WITH 1” THICK CERTAIN-TEED GLASS FIBER PIPE INSULATION IN MOLDED SECTIONS WITH FACTORY APPLIED ALL SERVICE JACKET OR APPROVED EQUAL. THIS INSULATION SHALL BE CLOSELY BUTTED TOGETHER AND SECURED BY PASTING THE CANVAS LAP.

F. ALL PIPE INSULATION SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER BY AN INSULATION CONTRACTOR REGULARLY ENGAGED IN INSULATION WORK.

G. PROVIDE HEAVY DENSITY RIGID FOAM INSERTS AT ALL HANGER LOCATIONS ON LINES 2” AND LARGER TO BE INSULATED, UNLESS OTHERWISE NOTED OR SPECIFIED.

3.10 WATER HAMMER ARRESTORS

A. WATER HAMMER ARRESTORS SHALL BE PROVIDED FOR ALL QUICK CLOSING VALVES INCLUDING BUT NOT LIMITED TO DRINKING FOUNTAINS, DISHWASHERS, FAUCETS, FLUSHOMETER VALVES, ICE MAKERS, SELF-CLOSING VALVES, SPRING LOADED VALVES, AND WASHING MACHINES AND AS REQUIRED BY THE LOCAL INSPECTION AUTHORITY HAVING JURISDICTION.

B. WATER HAMMER ARRESTORS SHALL BE INSTALLED PER MANUFACTURES SPECIFICATIONS AND SHALL CONFORM TO ASSE 1010 AND PER STANDARD PDI-WH-201.

C. WATER HAMMER ARRESTOR SHALL BE SIOUX CHIEF MODEL OR APPROVED EQUAL. AIR CHAMBERS ARE NOT PERMITTED.

3.11 PIPE HANGERS AND SUPPORTS

A. ALL NON-INSULATED COPPER PIPING SHALL BE SUPPORTED BY ANVIL FIGURE CT65 COPPER PLATED CARBON STEEL HANGERS.

B. NON-INSULATED STEEL PIPING 2” AND SMALLER SHALL BE SUPPORTED BY ANVIL FIGURE 108 SPLIT PIPE RING HANGER WITH FIGURE 114 TURNBUCKLE ADJUSTER. NON-INSULATED STEEL PIPING 2-1/2” AND LARGER SHALL BE SUPPORTED BY ANVIL 260 HANGERS WITH TURNBUCKLE ADJUSTERS.

C. ALL CAST IRON PIPE SHALL BE SUPPORTED WITH ANVIL FIGURE 260 CLEVIS HANGERS WITH TURNBUCKLE ADJUSTERS.

D. ALL SCHEDULE 40 SOLID PLASTIC PVC PIPING SHALL BE SUPPORTED WITH ANVIL FIGURE 260 ADJUSTABLE CLEVIS HANGERS WITH #168 SHIELD.

E. ALL INSULATED PIPING SHALL BE PROVIDED WITH ANVIL FIGURE 260 ADJUSTABLE CLEVIS HANGER WITH #168 SHIELD. HANGER SHALL BE INSTALLED EXTERIOR TO INSULATION UNLESS OTHERWISE NOTED OR SPECIFIED.

F. ALL HANGERS SHALL UTILIZE THREADED RODS. NO PERFORATED STRAP IRON HANGERS OR WIRE HANGERS WILL BE ALLOWED.

G. HANGERS AND SUPPORTS SHALL BE SPACES AS FOLLOWS:

1. COPPER PIPE: 1-1/4” AND SMALLER - 6 FEET, 1-1/2” AND LARGER - 10 FEET.
2. STEEL PIPE: 1” AND SMALLER - 8 FEET, 1-1/4” AND LARGER - 10 FEET.
3. CAST IRON PIPE: ALL SIZES - 5 FEET. (10 FEET WITH 10' LENGHTS OF PIPE. MINIMUM ONE HANGER AT EACH JOINT.)
4. PVC PIPE: 4 FEET.

H. PROVIDE ANVIL FIGURE CT-121 RISER CLAMP FOR COPPER PIPING UP THROUGH 4”. PROVIDE VERTICAL SUPPORT EVERY 10 FEET.

I. STEEL AND CAST IRON PIPE PROVIDE ANVIL FIGURE 261 RISER CLAMP FOR PIPING 1-1/2” AND SMALLER AND FIGURE 40 RISER CLAMP FOR PIPING ABOVE 2”. PROVIDE VERTICAL SUPPORT EVERY 15 FEET.

3.12 TESTING

A. ALL PLUMBING SYSTEMS INSTALLED UNDER THIS SECTION OF THESE SPECIFICATIONS SHALL BE TESTED AND APPROVED AS HEREIN DESCRIBED AND AS REQUIRED BY THE LOCAL INSPECTION AUTHORITY HAVING JURISDICTION.

B. THE NEW DRAINAGE AND VENT SYSTEM SHALL BE TESTED BY PLUGGING ALL OPENINGS WITH TEST PLUGS, EXCEPT THOSE AT THE TOPS OF STACKS, AND FILLING THE SYSTEM WITH WATER. TEST RESULTS WILL BE SATISFACTORY IF THE WATER LEVEL REMAINS STATIONARY FOR NOT LESS THAN ONE HOUR WHEN ALL PARTS OF THE SYSTEM ARE SUBJECTED TO A PRESSURE OF AT LEAST 10 FEET OF WATER. IF LEAKS DEVELOP, THEY SHALL BE REMEDIED AND THE TEST REPEATED AFTER THE SYSTEM IS MADE TIGHT.

C. THE WATER SYSTEM TEST PROCEDURE SHALL CONSIST OF CHARGING THE ENTIRE SYSTEM TO OPERATING PRESSURE AND THEN ISOLATING THE SYSTEM FROM ITS SOURCE. THE SYSTEM SHALL REMAIN CLOSED FOR A PERIOD OF 24 HOURS WITH NO FIXTURE BEING USED. THE PRESSURE DIFFERENTIAL FOR THIS 24-HOUR PERIOD SHALL NOT EXCEED 5 PSIG.

D. THE INSPECTION AUTHORITY HAVING JURISDICTION AND THE ARCHITECT SHALL BE NOTIFIED AT LEAST 24 HOURS PRIOR TO PERFORMANCE OF ALL TESTS SO THAT THE TESTS MAY BE WITNESSED IF DEEMED NECESSARY.

E. ALL PLUMBING FIXTURES AND ACCESSORIES SHALL BE TESTED, ADJUSTED AND MADE FREE OF LEAKS.

F. NATURAL GAS SYSTEMS SHALL BE TESTED WITH COMPRESSED AIR PER THE LOCAL PLUMBING CODE REQUIREMENTS.

3.13 WATER SYSTEM FLUSHING AND STERILIZATION

A. IMMEDIATELY UPON COMPLETION OF THE NEW WATER DISTRIBUTION SYSTEM AND PRIOR TO PLACING THIS SYSTEM IN SERVICE, THE ENTIRE NEW SYSTEM SHALL BE FLUSHED AND STERILIZED.

B. THIS SYSTEM SHALL BE FILLED WITH WATER SLOWLY AND CAREFULLY SO THAT AIR MAY READILY ESCAPE THROUGH OPEN DRAINS AND FIXTURE VALVES. ALL DRAINS AND FIXTURE VALVES SHALL BE OPENED, STARTING WITH VALVES NEAREST THE WATER SERVICE ENTRY, AND WATER RUN UNTIL IT HAS RUN CLEAR FROM ALL OUTLETS FOR NOT LESS THAN 10 MINUTES.

C. AFTER THIS ENTIRE WATER SYSTEM HAS BEEN THOROUGHLY FLUSHED, THE CONTRACTOR SHALL STERILIZE THE ENTIRE SYSTEM AS REQUIRED BY LOCAL CODES AND THE STATE BOARD OF HEALTH. IN THE EVENT THAT LOCAL CODES OR THE STATE BOARD OF HEALTH DO NOT HAVE SPECIFIC REQUIREMENTS FOR WATER SYSTEM STERILIZATION, THE FOLLOWING PROCEDURE SHALL BE EMPLOYED:

1. A CHLORINE WATER MIXTURE OF A CHLORINE BEARING COMPOUND SUCH AS HIGH TEST CALCIUM HYPOCHLORITE OR SODIUM HYPOCHLORITE SHALL BE INTRODUCED INTO THE SYSTEM AT THE BEGINNING OF THE BUILDING WATER SERVICE.
2. IF A CHLORINE GAS WATER MIXTURE IS USED, IT SHALL BE FED INTO THE SYSTEM BY MEANS OF A SOLUTION FEED CHLORINA TING DEVICE WHICH MUST BE EQUIPPED WITH MEANS FOR PREVENTING THE BACKFLOW OF WATER INTO THE CHLORINE CYLINDER.
3. IF CHLORINE BEARING COMPOUND SUCH AS A HIGH TEST CALCIUM HYPOCHLORITE OR SODIUM HYPOCHLORITE IS USED, THE POWDER SHALL FIRST BE MADE INTO A PASTE AND THEN THINNED TO APPROXIMATELY 1% CHLORINE SOLUTION (10,000 PPM).
4. THE RATE OF CHLORINE MIXTURES FLOW INTO THE SYSTEM SHALL BE PROPORTIONED TO THE RATE OF WATER ENTERING THE PIPE SO THAT A CHLORINE DOSE OF NOT LESS THAN 10 PPM WILL BE PRODUCED THROUGHOUT THE SYSTEM. THIS SOLUTION SHALL BE RETAINED IN THE SYSTEM FOR NOT LESS THAN 24 HOURS AND SHALL PRODUCE NOT LESS THAN 10 PPM OF CHLORINE AT THE END OF THE RETENTION PERIOD.
5. THE SYSTEM BEING STERILIZED SHALL BE ISOLATED FROM THE WATER SUPPLY SOURCE SO AS TO POSITIVELY ASSURE THAT TREATED WATER WILL NOT BACKFLOW INTO THE SUPPLY LINE. SYSTEM STERILIZATION SHALL BE PERFORMED IN COOPERATION WITH THE SERVING UTILITY AND SHALL COMPLY IN ALL RESPECTS WITH THEIR REQUIREMENTS.
6. AFTER STERILIZATION IS COMPLETED THE ENTIRE SYSTEM SHALL BE FLUSHED AND TESTED. TEST RESULTS SHALL BE SUBMITTED TO THE AUTHORITIES HAVING JURISDICTION FOR REVIEW PRIOR TO ACCEPTANCE OF THIS PROJECT.

3.14 ACCESS DOORS

A. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING THE ARCHITECTURAL PLANS/ SPECIFICATIONS AND ADVISING THE GENERAL CONTRACTOR PRIOR TO BIDDING OF THE NEED FOR ACCESS DOORS IN SHEETROCK OR PLASTERED CEILINGS AND WALLS AND ALL OTHER LOCATIONS WHERE ACCESS IS REQUIRED FOR PLUMBING COMPONENTS.

B. ACCESS DOORS SHALL BE FLUSH-MOUNTED OF A STYLE SPECIFICALLY SUITED FOR THE TYPE OF CONSTRUCTION IN WHICH THEY ARE TO BE USED, AND SIZES AND COLORS SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL. IN AREAS WHERE THERE ARE REMOVABLE CEILINGS, ACCESS DOORS MAY BE OMITTED, PROVIDED CEILING PANELS USED FOR ACCESS ARE CLEARLY MARKED. THE TYPE OF ACCESS DOOR USED SHALL BE MILCOR, OR AN APPROVED EQUAL.

C. ACCESS DOORS SHALL BE FURNISHED BY THE PLUMBING CONTRACTOR FOR INSTALLATION BY THE GENERAL CONTRACTOR.

D. IN THE EVENT THAT THE PLUMBING CONTRACTOR FAILS TO ADVISE THE GENERAL CONTRACTOR OF REQUIRED ACCESS DOORS PRIOR TO BIDDING, THE COST TO FURNISH AND INSTALL ACCESS DOORS SHALL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR.

3.15 PLUMBING FIXTURES

A. ALL FIXTURES SHOWN OR SCHEDULED ON THE DRAWINGS SHALL BE FURNISHED AND INSTALLED, SET FIRM AND TRUE, CONNECTED TO ALL REQUIRED PIPING SERVICES, THOROUGHLY CLEANED, AND LEFT READY FOR USE.

B. ALL EXPOSED FITTINGS AND PIPING AT THE FIXTURES SHALL BE CHROME PLATED. SUPPLY PIPING SHALL BE VALVED AT EACH FIXTURE.

C. ALL CHINA FIXTURES SHALL BE NEW, OF THE BEST GRADE VITREOUS WARE, WITHOUT PIT HOLES OR BLEMISHES, AND THE OUTLINES SHALL BE GENERALLY TRUE. ALL FIXTURES OF THE SAME TYPE SHALL BE OF ONE MANUFACTURER THROUGHOUT THE ENTIRE INSTALLATION. THE ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT WHICH, IN HIS OPINION, IS FAULTY. ALL FIXTURES AND FLANGES ON SOIL PIPE SHALL BE MADE ABSOLUTELY GASTIGHT AND WATERTIGHT. RUBBER GASKETS OR PUTTY WILL NOT BE PERMITTED FOR THIS CONNECTION. CLOSET BOLTS SHALL BE STAINLESS STEEL AND NOT LESS THAN 1/4" IN DIAMETER AND SHALL BE EQUIPPED WITH CHROMIUM PLATED NUTS AND WASHERS. FIXTURES WITH OUTLET FLANGES SHALL BE SET AT THE PROPER DISTANCE FROM FLOOR OR WALL TO MAKE A FIRST CLASS JOINT WITH THE CLOSET SETTING COMPOUND OR GASKET AND THE FIXTURES USED.

D. PLUMBING FIXTURES SHALL BE AS SPECIFIED, OR EQUIVALENT PRODUCTS MANUFACTURED BY ELJER, CRANE, OR AMERICAN STANDARD. ALL WATER CLOSETS, LAVATORIES, URINALS AND SINKS SHALL BE PRODUCTS OF ONE MANUFACTURER. FIXTURES SHALL BE INSTALLED COMPLETE WITH ALL NECESSARY ACCESSORIES AND TRIM. INSTALLATION OF COUNTERTOP SINKS SHALL BE COORDINATED WITH THE COUNTERTOP SUPPLIER.

E. DRAINS AND ACCESSORIES SHALL BE AS SPECIFIED OR EQUIVALENT PRODUCTS OF WADE, JAY R. SMITH, OR JOSAM.

F. INSULATE EXPOSED LAVATORY “P” TRAP ON ADA LISTED FIXTURES WITH PLUMBEREX TRAP GEAR OR EQUAL.

3.16 PAINTING (SEE ARCHITECTURAL SECTION "PAINTING")

A. PAINTING, EXCEPT AS SPECIFIED HEREIN, SHALL BE DONE BY OTHERS.

B. EQUIPMENT WHICH HAS DAMAGED FINISH SHALL BE REPAINTED TO MATCH THE ORIGINAL FACTORY FINISH.

C. ALL EXPOSED FERROUS METAL FURNISHED UNDER THIS CONTRACT, SUCH AS HANGERS, STRUTS, STRUCTURAL STEEL, ETC. SHALL BE GIVEN ONE COAT OF TNEMEC GRAY PRIMER.

PART 1 - GENERAL REQUIREMENTS - ELECTRICAL

1.1 SUMMARY OF WORK

A. THE CONTRACT DOCUMENTS REQUIRE THE FURNISHING AND INSTALLING OF COMPLETE FUNCTIONING ELECTRICAL SYSTEMS, AND EACH ELEMENT THEREOF, AS SPECIFIED OR INDICATED IN THE CONTRACT DOCUMENTS OR REASONABLY INFERRED, TO COMPLETELY CONSTRUCT AND LEAVE READY FOR OPERATION THE SYSTEMS AS SHOWN ON THE DRAWINGS AND HEREIN DESCRIBED, INCLUDING EVERY ARTICLE, DEVICE OR ACCESSORY, WHETHER OR NOT SPECIFICALLY CALLED FOR BY ITEM. ELEMENTS OF THE WORK INCLUDE MATERIALS, LABOR, SUPERVISION, SUPPLIES, EQUIPMENT, TRANSPORTATION, AND UTILITIES.

B. SPECIFICATIONS AND DRAWINGS ARE COMPLEMENTARY AND WHAT IS CALLED FOR IN ONE SHALL BE AS BINDING AS IF CALLED FOR BY BOTH.

C. ALL WORK PERFORMED UNDER THIS SECTION SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER BY EXPERIENCED MECHANICS OF THE PROPER TRADE.

1.2 COORDINATION, MEASUREMENTS AND LAYOUTS

A. THE CONTRACTOR SHALL INSPECT THE SITE WHERE THIS WORK IS TO BE PERFORMED AND FULLY FAMILIARIZE HIMSELF WITH ALL CONDITIONS RELATED TO THIS PROJECT.

B. THE CONTRACTOR SHALL EMPLOY A COMPETENT FOREMAN ON THE JOB TO SEE THAT WORK IS DONE IN ACCORDANCE WITH THE BEST PRACTICES AND IN A SATISFACTORY AND WORKMANLIKE MANNER. THE FOREMAN SHALL KEEP INFORMED AS TO THE WORK OF OTHER TRADES ENGAGED IN THE CONSTRUCTION OF THE PROJECT, AND SHALL EXECUTE HIS WORK IN SUCH A MANNER AS NOT TO INTERFERE WITH OR DELAY THE WORK OF OTHER TRADES.

C. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF ALL SYSTEMS AND COMPONENTS COVERED UNDER THIS SECTION. WHERE LOCAL CONDITIONS NECESSITATE A REARRANGEMENT, THE CONTRACTOR SHALL PREPARE, AND SUBMIT FOR APPROVAL, DRAWINGS OF THE PROPOSED REARRANGEMENT. BECAUSE OF THE SMALL SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, AND ACCESSORIES THAT MAY BE REQUIRED. THE CONTRACTOR SHALL CAREFULLY INVESTIGATE THE STRUCTURAL AND FINISH CONDITIONS AFFECTING ALL OF HIS WORK AND SHALL ARRANGE SUCH WORK ACCORDINGLY, FURNISHING SUCH OFFSETS, FITTINGS AND ACCESSORIES AS MAY BE REQUIRED TO MEET SUCH CONDITIONS AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS. DRAWINGS SHALL NOT BE SCALED TO DETERMINE DIMENSION.

1.3 PERMITS AND FEES

A. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND LICENSES AND SHALL MAKE ALL DEPOSITS AND PAY ALL FEES REQUIRED FOR THE PERFORMANCE OF WORK UNDER THIS SECTION, OTHER THAN THOSE DEPOSITS OR FEES WHICH ARE FULLY REFUNDABLE TO THE OWNER.

1.4 SUBMITTALS, MATERIALS AND EQUIPMENT

A. ALL ITEMS OF MATERIALS AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE SPECIFIED HEREIN, FREE FROM DEFECTS AND OF THE BEST QUALITY NORMALLY USED FOR THE PURPOSE IN GOOD COMMERCIAL PRACTICE.

B. AS SOON AS POSSIBLE AFTER THE AWARD OF THE CONTRACT, THE CONTRACTOR SHALL SUBMIT FOR REVIEW SIX COPIES OF SHOP DRAWINGS FOR ALL EQUIPMENT TO BE FURNISHED FOR THIS PROJECT. SUBMITTALS SHALL INCLUDE MANUFACTURER'S NAME, MODEL NUMBER, DESCRIPTIVE ENGINEERING DATA AND ALL NECESSARY INFORMATION AS TO FINISH, MATERIAL GAUGES AND ACCESSORIES. AFTER SUCH SHOP DRAWINGS ARE PROCESSED, THREE COPIES WILL BE RETURNED TO THE CONTRACTOR. THE CONTRACTOR SHALL, UPON RECEIPT OF REVIEWED SHOP DRAWINGS PROCEED WITH THE PROCUREMENT AND INSTALLATION OF SUCH EQUIPMENT.

1.5 CODES, LAWS, AND STANDARDS

A. ALL WORK SHALL BE INSTALLED IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE, THE NATIONAL BOARD OF FIRE UNDERWRITERS, THE NATIONAL ELECTRICAL SAFETY CODE, AND ALL GOVERNING CODES, APPLICABLE LOCAL LAWS, REGULATIONS, ORDINANCES OR STATUTES OF REGULATORY BODIES HAVING JURISDICTION. THE WORK SHALL BE EXECUTED IN ACCORDANCE WITH SAID LAWS, REGULATIONS, ORDINANCES, STATUES OR CODES, WITHOUT INCREASED COST TO THE OWNER. ANY POINT IN QUESTION SHALL BE REFERRED TO THE ENGINEER FOR APPROVAL. WORK INDICATED ON THE DOCUMENTS THAT IS IN EXCESS OF CODE REQUIREMKNTS SHALL NOT BE REDUCED IN QUALITY AND/OR QUANTITY.

B. COMPLY WITH RULES AND REGULATIONS OF PUBLIC UTILITIES AND MUNICIPAL DEPARTMETNS AFFECTED BY CONNECTIONS OF SERVICES.

1.6 RECORD DOCUMENTS

A. THIS CONTRACTOR SHALL PREPARE A COMPLETE “AS-BUILT” SET OF DRAWINGS INCORPORATING ALL CHANGES MADE DURING CONSTRUCTION. LOCATION OF UNDERGROUND CONDUIT SHALL BE LOCATED BY DIMENSION FROM COLUMN LINES.

B. THIS CONTRACTOR SHALL PREPARE AND SUBMIT TO THE OWNER'S REPRESENTATIVE FIVE BOUND SETS OF OPERATING AND MAINTENANCE MANUALS INCLUDING FINAL COPIES OF EQUIPMENT SHOP DRAWINGS, MANUFACTURER'S LITERATURE FOR ALL EQUIPMENT INSTALLED ON THE PROJECT SHOWING ALL DETAILS OF EQUIPMENT, REPLACEMENT PART DATA AND MAINTENANCE AND OPERATING INSTRUCTIONS. MANUALS SHALL INCLUDE COPIES OF ALL EQUIPMENT WARRANTIES.

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REVISIONS	
ISSUE DATE	06-10-22
PROJECT NUMBER	2022-000
SHEET NUMBER	ME4.11

Mechanical And Electrical - Specifications

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AUTOCAD FILE LOCATION \ NAME: X:\22\22180\2218000\Drawings\01-2218000_ME4.11.dwg
LAST CORRECTION BY ◆ DATE ◆ TIME: CBooty Thursday, June 9, 2022 4:05:29 PM
PLOTTED BY ◆ DATE ◆ TIME: Charles Booty Friday, June 10, 2022 1:46:40 PM

1.7 GUARANTEES AND WARRANTIES

A. THE CONTRACTOR SHALL GUARANTEE COMPLETE SYSTEM OPERATION AND THAT THE MATERIAL AND EQUIPMENT FURNISHED AND INSTALLED WILL BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS AND WILL GIVE SATISFACTORY SERVICE UNDER THE SPECIFIED OPERATING CONDITIONS. THE CONTRACTOR AGREES TO REPLACE, WITHOUT EXPENSE TO THE OWNER, ANY PART OF THE APPARATUS WHICH PROVES OR BECOMES DEFECTIVE WITHIN ONE YEAR AFTER THE SYSTEM IS ACCEPTED. NO EQUIPMENT WARRANTY OR GUARANTEE SHALL START UNTIL THE TIME OF BUILDING ACCEPTANCE.

B. ALL WARRANTIES ISSUED BY EQUIPMENT MANUFACTURERS SHALL BE FILLED OUT IN THE OWNER'S NAME AND GIVEN TO THE OWNER PRIOR TO FINAL ACCEPTANCE OF WORK PERFORMED UNDER THIS SECTION.

1.8 FINAL INSPECTION

A. AFTER COMPLETION OF THE ENTIRE PROJECT THE CONTRACTOR SHALL REQUEST FINAL INSPECTION OF THIS PROJECT IN WRITTEN FORM ADDRESSED TO THE ARCHITECT ALONG WITH A STATEMENT TO THE EFFECT THAT ALL INSTALLATIONS HAVE BEEN COMPLETED, CHECKED, ADJUSTED AND BALANCED IN ACCORDANCE WITH REQUIREMENTS OF THIS PROJECT. UPON RECEIPT OF WRITTEN NOTIFICATION OF COMPLETION AND REQUEST FOR FINAL INSPECTION THE ENGINEER WILL PERFORM A FINAL INSPECTION OF THIS WORK AND, IF ALL INSTALLATIONS ARE AS REPRESENTED BY THE CONTRACTOR, THE ENGINEER WILL SUBMIT WRITTEN RECOMMENDATION OF ACCEPTANCE.

1.9 CLEANING

A. DIRT AND REFUSE RESULTING FROM THE PERFORMANCE OF THE WORK SHALL BE REMOVED TO KEEP THE PREMISES REASONABLE CLEAN AT ALL TIMES.

B. AFTER COMPLETION OF THE WORK DESCRIBED IN THIS SPECIFICATION AND SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL EXPOSED SURFACES AND EQUIPMENT, REMOVE ALL DIRT, DEBRIS, CRATING, CARTONS, ETC., AND LEAVE ALL INSTALLATIONS FINISHED AND READY FOR OPERATION.

1.10 OPENINGS AND SLEEVES

A. ALL PIPING THROUGH EXTERIOR OR FOUNDATION WALLS SHALL PASS THROUGH SCHEDULE 40 GALVANIZED STEEL SLEEVES WHICH SHALL BE LARGE ENOUGH TO ALLOW FOR PIPE SEAL MATERIAL. SLEEVES IN NEW CONSTRUCTION SHALL HAVE A MINIMUM 2 INCH WATERSTOP IN THE CENTER OF THE SLEEVE. NO SLEEVES ARE PERMITTED THROUGH CONCRETE STRUCTURAL MEMBERS.

1. SPACE BETWEEN PIPE AND SLEEVE IN EXTERIOR UNDERGROUND WALLS SHALL BE SEALED WITH LINK-SEAL, FLEXICRAFT OR METRAFLEX LINK STYLE PIPE SEALS.
2. IN ABOVE GRADE EXTERIOR WALLS PACK THE SPACE BETWEEN PIPE AND SLEEVE WITH MINERAL WOOL AND THEN COMPLETE SEAL WITH APPROVED CAULKING COMPOUND FLUSH WITH FINISHED SURFACE. PROVIDE PIPE COLLAR ON INTERIOR SIDE OF WALL.

B. ALL PIPING THROUGH FLOORS SHALL BE PROVIDED WITH SCHEDULE 40 GALVANIZED STEEL PIPE SLEEVES, EXTENDING 1 INCH ABOVE THE FLOOR.

C. IN FIRE RATED WALLS: CAULKING SHALL BE A PURE CERAMIC FIBER MADE OF ALUMINA-SILICA, "CERAFIBER-FS" BY JOHNS-MANVILLE. SEALANT SHALL BE GUN GRADE. AN ACRYLIC 2-PART GUN APPLIED, FIRE RETARDANT ELASTIC SEALANT, "DYMERIC" BY TREMCO OR EQUAL BY PERMATITE NO. 1113FR.

1. LIMIT THE SIZE OF THE SPACE BETWEEN THE WALL OR FLOOR AND THE OUTSIDE OF THE PIPE OR DUCT TO 1 INCH MAXIMUM. THIS SPACE IS SUFFICIENT TO ALLOW SOME MOVEMENT OF THE PIPES OR DUCT WITHOUT CRACKING THE CAULKING OR SEALANT.
2. FOR OPENINGS IN WALLS, THE CAULKING SHALL BE APPLIED TO A MINIMUM OF 3 INCH TOTAL DEPTH. SEALANT SHALL THEN BE APPLIED ON BOTH SIDES OF THE WALL OPENING A MINIMUM OF 1/2 INCH IN DEPTH, FINISHED FLUSH WITH THE WALL. D.

D. FOR OPENINGS IN FLOORS, THE CAULKING SHALL BE APPLIED FROM THE UPPER SIDE TO A MINIMUM OF 3 INCH TOTAL DEPTH RECESSED 1/2 INCH BELOW THE FINISHED FLOOR. THIS 1/2 INCH RECESS SHALL THEN BE FILLED WITH SEALANT TO FLUSH WITH FINISHED FLOOR.

1.11 CUTTING AND PATCHING

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CUTTING OF WALLS, FLOORS, CEILINGS AND ROOFS REQUIRED FOR PERFORMANCE OF HIS WORK.

B. NO STRUCTURAL MEMBER SHALL BE CUT WITHOUT PERMISSION FROM THE ARCHITECT.

C. PATCH ALL OPENINGS TO MATCH ADJACENT CONSTRUCTION IN BOTH MATERIAL AND FINISH.

D. ALL CUTTING OF EXISTING CONCRETE FLOORS/SLABS ON GRADE IN THE INTERIOR OF THE BUILDING SHALL BE PERFORMED BY "SAW CUTTING" AND SHALL BE PERFORMED BY THIS CONTRACTOR.

1.12 EXCAVATION AND BACKFILL

A. ALL EXCAVATION AND BACKFILL REQUIRED FOR THE INSTALLATION OF THE WORK SHALL BE THE COMPLETE RESPONSIBILITY OF THE CONTRACTOR.

B. NO EXCAVATION AND BACKFILL SHALL BE DONE WITHIN DRIP LINE OF TREES TO REMAIN. NO TREE SHALL BE REMOVED WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE.

C. CONTRACTOR SHALL PROVIDE PROTECTION FOR TREES WITHIN 15 FEET OF UTILITY EXCAVATION.

D. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL TRENCH AREAS AND MAINTAINING A DRY EXCAVATION. ANY DEWATERING OF TRENCHES/EXCAVATION SHALL BE PROVIDED PRIOR TO INSTALLING ANY MATERIAL.

E. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ALL NECESSARY BARRICADES, FENCING, BRACING, SHEET PILING, SHORING, WARNING SIGNS, PUMPS, ETC., FOR THE PROTECTION OF WORKERS, GENERAL PUBLIC, AND PROPERTIES. EXCAVATION WORK SHALL COMPLY WITH ASA STANDARD A10.2 "SAFETY CODE FOR BUILDING CONSTRUCTION" AND AGC STANDARD "MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION" AND THE DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH (OSHA) STANDARDS.

F. LOCATE EXISTING UNDERGROUND UTILITIES IN AREAS OF EXCAVATION WORK. SHOULD UNCHARTED, OR INCORRECTLY CHARTED, PIPING OR OTHER UTILITIES BE ENCOUNTERED DURING EXCAVATION, CONSULT UTILITY OWNER IMMEDIATELY FOR DIRECTIONS.

G. ALL TRENCHES SHALL BE UNIFORMLY GRADED AND BE FREE OF SOFT SPOTS AND STONE. PROVIDE A 4 INCH SAND BED.

H. BACKFILL SHALL NOT BEGIN UNTIL INSTALLATION HAS BEEN TESTED AND INSPECTED. CONTRACTOR SHALL CONSULT WITH THE AUTHORITY HAVING JURISDICTION AND THE ARCHITECT/ENGINEER PRIOR TO BACKFILLING.

1. INITIAL BACKFILL SHALL BE SAND TO A POINT 6 INCHES ABOVE TOP OF INSTALLED WORK.
2. FINAL BACKFILL SHALL BE INSTALLED IN LAYERS NOT EXCEEDING 12 INCHES. FILL SHALL BE WELL TAMPED BEFORE ADDITIONAL BACKFILL MATERIAL IS PLACED. BACKFILL SHALL CONSIST OF EARTH OR SAND FREE OF STONE, BRICKS, OR FOREIGN MATTER.

I. ALL EXCESS EARTH AND OTHER MATERIAL RESULTING FROM THE EXCAVATION SHALL BE REMOVED FROM SITE BY THE CONTRACTOR OR MAY BE PILED AT A LOCATION DESIGNATED AND APPROVED BY THE OWNER. ALL DEBRIS, ROCK AND TRASH SHALL NOT BE ALLOWED TO ACCUMULATE AND SHALL BE REMOVED FROM THE SITE. STREETS, ROADWAYS AND PRIVATE PROPERTY SHALL BE KEPT IN A CLEAN CONDITION.

J. WHEN THE EXCAVATION IS WITHIN THE AREA WHERE FINISHED SITE WORK IS TO BE DONE UNDER THE GENERAL CONTRACT WORK, BACKFILL TO THE HEIGHT OF ROUGH GRADE. FINAL SURFACING WILL BE UNDER GENERAL CONTRACT WORK.

K. WHEN THE EXCAVATION IS BEYOND THE AREA OF GENERAL CONSTRUCTION WORK, FINAL SURFACE AND ADJACENT DISTURBED AREAS SHALL BE RESTORED TO MATCH THE ORIGINAL CONDITION BY SODDING, SEEDING, ASPHALT PAVING, CONCRETE, ETC., AS REQUIRED. WORK SHALL CONFORM TO APPLICABLE SECTIONS OF THESE SPECIFICATIONS.

L. WHEN THE EXCAVATION IS ON PUBLIC PROPERTY, RESTORATION OF SURFACE CONDITIONS SHALL MEET THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.

M. WHEN SERVICES ARE TO BE RUN SIDE-BY-SIDE, A COMMON TRENCH MAY BE USED PROVIDING THE REQUIRED VERTICAL AND HORIZONTAL SEPARATION BETWEEN THE VARIOUS SERVICES ARE MAINTAINED AND PROVIDING THE METHODS OF BEDDING AND BACKFILL MEET THE APPROVAL OF THE ENGINEER. CONTRACTORS INVOLVED SHALL MAKE THEIR OWN AGREEMENT AS TO THE SHARING OF THE COST OF THE COMMON TRENCHING AND BACKFILL WORK.

1.13 TEMPORARY HEAT

A. THE CONTRACTOR SHALL COOPERATE WITH THE GENERAL CONTRACTOR TO PROVIDE TEMPORARY HEAT AS SOON AS POSSIBLE FOR USE DURING CONSTRUCTION IF TEMPORARY HEAT IS REQUIRED. AIR HANDLING EQUIPMENT SHALL NOT BE OPERATED AT ANY TIME WITHOUT FILTERS IN PLACE AND ALL EQUIPMENT SHALL BE PROTECTED FROM DAMAGE. OPERATING THE EQUIPMENT FOR TEMPORARY HEAT SHALL NOT START THE WARRANTY PERIOD OF THE EQUIPMENT USED.

1.14 DEMOLITION AND NEW WORK

A. THE CONTRACTOR SHALL DO ALL DEMOLITION, ALTERATIONS AND REWORK INDICATED AND/OR REQUIRED TO MAINTAIN THE OPERATION OF ALL EXISTING ELECTRICAL SYSTEMS AND TO INTEGRATE THE NEW SYSTEMS IN THE RENOVATED BUILDING AS REQUIRED. THE CONTRACTOR SHALL INCLUDE ALL WORK WHICH MAY BE REQUIRED TO ALTERATIONS AND DEMOLITION WORK. THIS SHALL INCLUDE ALL REMOVAL, RELOCATION AND REWORKING OF WIRE AND CONDUIT, OUTLET BOXES, JUNCTION BOXES, ETC. EXISTING SYSTEMS AND NEW SYSTEMS SHALL BE COMPLETELY INTEGRATED AS INTENDED AND AS INDICATED ON THE PLANS AND IN THE SPECIFICATIONS.

B. THE CONTRACTOR SHALL REMOVE FROM THE PREMISES AND DISPOSE OF PROPERLY ALL EXISTING MATERIAL AND EQUIPMENT WHICH NO LONGER SERVES A PURPOSE IN ALTERED AREAS. THE CONTRACTOR SHALL REMOVE CONNECTIONS TO EQUIPMENT BACK TO PANEL OR JUNCTION BOX. MAINTIAN CIRCUIT CONNECTIVITY. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL MAINTAIN SERVICES TO ALL EXISTING AREAS REQUIRING SUCH SERVICES. THE CONTRACTOR SHALL REROUTE AS REQUIRED SUCH SERVICES WHERE ARE DISRUPTED DUE TO ARCHITECTURAL CHANGES IN THE EXISTING STRUCTURE. ANY EQUIPMENT WHICH IS DESIGNATED TO BE REUSED AND WHICH IS DAMAGED IN THE PROCESS SHALL BE REPLACED BY THE CONTRACTOR WITH NEW EQUIPMENT OF LIKE KIND AT NO COST TO THE OWNER.

1.15 INTERRUPTION OF SERVICES

A. THE CONTRACTOR SHALL SCHEDULE ANY SERVICE INTERRUPTIONS TO THE EXISTING BUILDING WITH THE OWNER'S REPRESENTATIVE. SUCH INTERRUPTIONS SHALL BE PLANNED SO AS TO BE AT TIMES TO CAUSE THE LEAST INCONVENIENCE AND INTERRUPTION TO THE FACILITY'S SCHEDULE.

1.16 EXISTING CONDITIONS

ALL EXISTING CONDITIONS SHOWN ON THE DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS FOR THIS PROJECT HAVE BEEN DETERMINED FROM AVAILABLE DRAWINGS AND FIELD INVESTIGATIONS. CONTRACTORS MAKING PROPOSALS FOR THIS WORK SHALL INVESTIGATE ALL EXISTING CONDITIONS AND BASE THEIR PROPOSALS ON THEIR OBSERVATIONS TO PROVIDE COMPLETE AND FUNCTIONING INSTALLATIONS IN ACCORDANCE WITH THE INTENT OF THE DRAWING AND SPECIFICATIONS FOR THIS PROJECT AND ALL APPLICABLE GOVERNING CODES, RULES, REGULATIONS AND ORDINANCES. FAILURE TO DETERMINE EXISTING CONDITIONS WHICH CAUSE ADDITIONAL WORK WILL NOT CONSTITUTE GROUNDS FOR ADDITIONAL COMPENSATION.

PART 2 - ELECTRICAL

2.1 GENERAL REQUIREMENTS

A. SEE PART 1 FOR GENERAL REQUIREMENTS.

2.2 IDENTIFICATION OF SWITCHES AND APPARATUS

A. ALL CABINETS, SAFETY SWITCHES, AND OTHER APPARATUS USED FOR OPERATION AND CONTROL OF CIRCUITS, APPLIANCES, AND EQUIPMENT UNDER THIS CONTRACT SHALL BE PROPERLY IDENTIFIED BY MEANS OF ENGRAVED PLASTIC PLATES EITHER BLACK WITH WHITE LETTERS OR WHITE WITH BLACK LETTERS.

2.3 GROUNDING

A. ALL CONDUCTORS, MOTOR FRAMES, RACEWAYS, CABINETS, ETC., THAT REQUIRE GROUNDING SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE, THOSE OF THE SERVING UTILITY AND LOCAL AUTHORITIES HAVING JURISDICTION.

2.4 SAFETY SWITCHES

A. SAFETY SWITCHES, AS MANUFACTURED BY GENERAL ELECTRIC, CROUSE-HINDS, CUTLER-HAMMER, SQUARE D, SIEMENS, OR APPROVED EQUAL, SHALL BE FURNISHED AND INSTALLED (WHERE NOT FURNISHED BY OTHERS) WHEREVER SHOWN ON THE DRAWINGS SPECIFIED, OR REQUIRED BY THE NATIONAL ELECTRICAL CODE.

B. SAFETY SWITCHES SHALL BE HEAVY DUTY TYPE, UNDERWRITERS' LABORATORIES SHORT CIRCUIT LABELED FOR AT LEAST 100,000 AMPERES WITH CLASS R REJECTION FUSEHOLDERS SO AS TO COMPLY WITH NEC 100-9. SWITCHES INSIDE OF BUILDING SHALL BE FURNISHED IN NEMA 1 GENERAL PURPOSE ENCLOSURES. SWITCHES OUTSIDE OF BUILDING SHALL BE FURNISHED IN NEMA 3R ENCLOSURES UNLESS OTHERWISE SPECIFIED.

C. EACH MOTOR SHALL BE PROVIDED WITH A DISCONNECTING MEANS IN ACCORDANCE WITH REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.

2.5 FUSES

A. THIS CONTRACTOR SHALL FURNISH AND INSTALL CARTRIDGE AND PLUG TYPE FUSES AS MANUFACTURED BY THE BUSSMAN MANUFACTURING COMPANY, GOULD/SHAWMUT, CEFCO, OR APPROVED EQUAL, IN ALL FUSIBLE EQUIPMENT. TIME-DELAY TRIONIC OR FUSETRON FUSES, UL CLASS RK5, SHALL BE INSTALLED ON ALL MOTOR CIRCUITS. NON TIME-DELAY AMP-TRAP (A2K OR A6K) OR BUSSMAN LIMITRON (KTN OR KTS), UL CLASS RK1 SHALL BE INSTALLED ON CIRCUITS FEEDING PANELBOARDS. ALL OTHER CIRCUITS SHALL BE PROTECTED BY FAULT-TRAP, UL CLASS RK5, FUSES OR APPROVED EQUAL. CLASS K FUSES ARE NOT ACCEPTABLE.

2.6 CONDUIT

A. ALL ELECTRICAL WIRING, INCLUDING LOW VOLTAGE WIRING, SHALL BE INSTALLED IN CONDUIT AS HEREIN SPECIFIED. NO CONDUIT OR TUBING OF LESS THAN 3/4 INCH NOMINAL SIZE SHALL BE USED BELOW GRADE; NO LESS THAN 1/2 INCH NOMINAL SIZE SHALL BE USED ABOVE GRADE.

B. UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 EPC-40-PVC. ALL CONDUITS SHALL BE INSTALLED WITH MINIMUM 24 INCH COVER.

C. CONDUIT INSTALLED IN CONCRETE SLABS OR ABOVE GROUND SHALL BE GALVANIZED RIGID STEEL OR EPC-40-PVC.

D. WHEN PVC CONDUITS PENETRATE CONCRETE FLOOR CONSTRUCTION, CONTRACTOR SHALL USE RIGID STEEL OR IMC ELBOWS AND EXTENSION. PVC CONDUIT/FITTINGS SHALL NOT BE PERMITTED TO BE EXPOSED ABOVE THE FLOOR.

E. THINWALL TUBING SHALL BE E.M.T.

F. ALL FITTINGS SHALL BE OF THE COMPRESSION TYPE AND WATERTIGHT FOR UNDERGROUND AND IN SLAB LOCATIONS. COMPRESSION OR SCREWED FITTINGS FOR INDOOR.

G. CONDUIT FOR INTERIOR WIRING, IN GENERAL, SHALL BE THINWALL TUBING UNLESS OTHERWISE NOTED.

H. RACEWAYS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET AND FITTING TO FITTING. A RUN OF CONDUIT BETWEEN OUTLETS OR FITTINGS SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER-BENDS INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE OUTLET OR FITTING. THE RADIUS OF BENDS SHALL NEVER BE SHORTER THAN THAT OF THE CORRESPONDING TRADE ELBOW. THE SYSTEM SHALL BE COMPLETE WITH OUTLETS, DISTRIBUTION BOXES, ETC., SMOOTH INSIDE AND MECHANICALLY SECURE IN PLACE. APPROVED STRAPS, HANGERS, OR SUPPORTS SHALL BE USED TO SECURE CONDUITS IN PLACE. CONDUITS SHALL, IN GENERAL, BE SUPPORTED AT INTERVALS NOT EXCEEDING 10'-0" AND WITHIN 3'-0" OF EACH OUTLET BOX, JUNCTION BOX, CABINET OR FITTING.

I. CONDUITS SHALL BE PROTECTED DURING CONSTRUCTION; PLUG AND KEEP CLEAN AND DRY. CONDUIT ENDS SHALL BE BUTTED IN CENTERS OF COUPLINGS. NO CRACKS OR FLATTENED SECTIONS WILL BE PERMITTED AT BENDS OR ELSEWHERE. ALL ENDS OF CONDUIT SHALL BE REAMED TO REMOVE ROUGH EDGES. RUNNING THREADS WILL NOT BE PERMITTED.

J. CONDUITS SHALL BE CONCEALED WITHIN THE WALLS, CEILINGS, AND FLOORS WHERE POSSIBLE AND UNLESS OTHERWISE NOTED. EXPOSED CONDUIT SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES WITH THE BUILDING LINES.

2.7 WIRE AND CABLE

A. WIRE AND CABLE SHALL BE COPPER.

B. ALL CONDUCTORS SHALL BE COPPER.

C. NO. 10 AWG AND SMALLER CONDUCTORS SHALL BE SOLID WITH TYPE THHN INSULATION AND NO. 8 AWG AND LARGER CONDUCTORS SHALL BE STRANDED WITH TYPE THHN INSULATION EXCEPT THAT CONDUCTORS WITHIN 3 INCHES OF LIGHT FIXTURE BALLASTS SHALL HAVE RHH, THHN, OR EQUAL INSULATION RATED FOR 90 DEGREES C. APPLICATION.

2.8 LOCATIONS OF OUTLETS AND EQUIPMENT

A. ELECTRICAL OUTLETS AND EQUIPMENT ARE SO LOCATED ON THE DRAWINGS TO SHOW INTENT OF DESIGN. MINOR VARIATIONS IN THESE LOCATIONS MAY BE MADE BY THIS CONTRACTOR TO COMPLY WITH STRUCTURAL AND OTHER REQUIREMENTS AS DETERMINED IN THE COURSE OF CONSTRUCTION. IT SHALL BE THE DUTY OF THIS CONTRACTOR TO TAKE HIS OWN MEASUREMENTS AND BE RESPONSIBLE FOR SAME. THIS CONTRACTOR SHALL ALSO REVIEW THE ARCHITECTURAL DRAWINGS AND THOSE DRAWINGS USED BY OTHER CONTRACTORS IN ORDER TO DETERMINE EXACT LOCATIONS FOR ELECTRICAL OUTLETS AND EQUIPMENT. DO NOT SCALE DRAWINGS FOR OUTLET LOCATIONS.

B. EQUIPMENT MOUNTING HEIGHTS:

1. INTERIOR RECEPTACLES:
   (A) FLOOR TO BOTTOM: 16”.
2. EXTERIOR RECEPTACLES:
   (A) FLOOR TO CENTERLINE: 24”.
3. TELEPHONE OUTLETS:
   (A) FLOOR TO BOTTOM: 16”.
4. SWITCHES:
   (A) FLOOR TO TOP: 48”.
5. RECEPTACLES ABOVE COUNTERS: CENTERLINE 10-INCHES ABOVE COUNTER AND HORIZONTAL.

2.9 WALL PLATES

A. GROUPS OF SWITCHES, OUTLETS OR SWITCH AND OUTLET COMBINATIONS SHALL BE MOUNTED UNDER ONE GANG-PLATE.

B. WALL PLATES SHALL FIT AND COVER PROPERLY THE DEVICE AND WALL OPENING. NO OPEN OR UNFINISHED SURFACES SHALL SHOW AFTER INSTALLATION OF THE WALL PLATES.

C. WALL PLATES SHALL BE SET VERTICAL AND SHALL FINISH FLUSH WITH ALL SURROUNDING SURFACES.

D. WALL PLATES FOR ALL DEVICES AND TELEPHONE OUTLETS SHALL MATCH THE EXISTING DEVICES.

2.10 WIRING DEVICES

A. SINGLE-POLE WALL TUMBLER SWITCHES FOR GENERAL USE SHALL BE SPECIFICATION GRADE HUBBELL NO. 1121, OR APPROVED EQUAL, MECHANICALLY SILENT TYPE WITH PLASTIC HANDLES, RATED 20 AMPERES AC, 120/277 VOLTS. GENERAL USE SWITCHES INDICATED ON PLANS AS DOUBLE POLE, 3-WAY, 4-WAY OR LOCK TYPE WITH KEY GUIDE SHALL BE THE SAME SERIES AS THE SINGLE-POLE SWITCHES. DEVICE COLOR SHALL MATCH EXISTING.

B. CONVENIENCE OUTLETS IN FINISHED SPACES SHALL BE SPECIFICATION GRADE HUBBELL NO. 5362, OR APPROVED EQUAL, DUPLEX GROUNDING TYPE RECEPTACLES RATED 20 AMPERES AC, 120 VOLT. DEVICE COLOR SHALL MATCH EXISTING.

C. RECEPTACLES DESIGNATED WITH GROUND FAULT PROTECTION SHALL BE HUBBELL NO. GF-5362, OR APPROVED EQUAL, 120 VOLT, 20 AMP GROUND FAULT INTERRUPTER TYPE. DEVICE COLOR SHALL MATCH EXISTING.

2.11 PANELBOARDS

A. PANELBOARDS SHALL BE GENERAL ELECTRIC, SQUARE D, OR SIEMENS ITE CIRCUIT BREAKER TYPES, WITH CIRCUIT BREAKERS AS NOTED IN THE SCHEDULE ON THE DRAWINGS.

B. PANELBOARDS SHALL BE EQUIVALENT TO SQUARE D TYPE NQOD, 120/208 VOLT, WITH BOLTED BREAKERS, NEMA RATED FOR THE AVAILABLE FAULT CURRENT.

C. FURNISH AND INSTALL A TYPEWRITTEN DIRECTORY FOR EACH PANELBOARD, SHOWING THE FUNCTION OF EACH BREAKER.

2.12 LIGHTING FIXTURES

A. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL LIGHTING FIXTURES AND LAMPS AS INDICATED ON THE DRAWINGS AND HEREIN DESCRIBED. MATERIAL, EQUIPMENT, OR SERVICES NECESSARY TO COMPLETE THE INSTALLATION OF THESE FIXTURES, BUT NOT SPECIFICALLY MENTIONED, SHALL BE FURNISHED AS THOUGH SPECIFIED. ALL FIXTURES AND LAMPS SHALL BE PROPERLY CLEANED AND ADJUSTED AFTER INSTALLATION.

B. ALL ADJUSTABLE LIGHTING FIXTURES SHALL BE CAREFULLY POSITIONED BY THIS CONTRACTOR IN THE PRESENCE OF THE ARCHITECT OR HIS REPRESENTATIVE.

C. LAMPS SHALL BE AS MANUFACTURED BY GENERAL ELECTRIC, SYLVANIA OR PHILLIPS.

D. BALLASTS SHALL BE AS NOTED IN FIXTURE SCHEDULE. BALLASTS IN FIXTURES DESIGNATED FOR EMERGENCY LIGHTING MUST BE COMPATIBLE WITH THE EMERGENCY UNIT USED WITH MINIMUM LEAKAGE.

E. THIS CONTRACTOR SHALL FURNISH AND INSTALL FIXTURES HEREIN SPECIFIED OR AS SHOWN ON THE DRAWINGS.

F. LIGHT FIXTURES SHALL BE SUPPORTED FROM ROOF STRUCTURE PER UBC 47-18.

G. GENERAL CONTRACTOR SHALL PROVIDE ALL FIRE-RATED ENCLOSURES FOR LIGHT FIXTURES INSTALLED IN FIRE-RATED CEILINGS.

2.13 IDENTIFICATION OF EQUIPMENT

A. ALL SERVICE ENTRANCE EQUIPMENT, DISCONNECT SWITCHES, PANELBOARDS, RELAYS, MOTOR STARTERS, CONTACTORS, TELEPHONE TERMINAL CABINETS, TV EQUIPMENT AND RISER JUNCTION BOXES, AND OTHER ELECTRICAL EQUIPMENT UNDER THIS CONTRACT, SHALL BE PROVIDED WITH PROPER IDENTIFICATION. IDENTIFICATION SHALL BE BY THE USE OF ENGRAVED COLOR CODED PLASTIC NAMEPLATES WITH WHITE LETTERING SCREWED TO THE COVER OF THE EQUIPMENT. USE OF EMBOSSED PLASTIC "TAPE" LABELS AS PREPARED BY "TYPEWRITER" TYPE EQUIPMENT SHALL NOT BE USED. COLOR CODING SHALL BE AS FOLLOWS:

1. EQUIPMENT CONNECTED TO A NORMAL POWER SOURCE SHALL BE BLACK WITH WHITE LETTERS.

2.14 FIRE ALARM SYSTEM

A. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT, WIRE, CONDUIT AND ENGINEERING SERVICES NECESSARY TO INSURE A COMPLETE AND FUNCTIONAL FIRE ALARM SYSTEM AS DESCRIBED HEREIN AND AS SHOWN ON THE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL MATERIAL AND EQUIPMENT COMPATIBLE TO THE SYSTEM SUPPLIED. ANY EQUIPMENT NOT SPECIFICALLY MENTIONED IN THIS SPECIFICATION OR NOT SHOWN ON THE DRAWINGS BUT REQUIRED FOR THE PROPER OPERATION OF THE FIRE ALARM SYSTEM SHALL BE FURNISHED AND INSTALLED.

B. ALL EQUIPMENT AND COMPLETED INSTALLATION SHALL BE IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE, NFPA, LOCAL CODES, THESE SPECIFICATIONS AND AUTHORITIES HAVING JURISDICTION WITH THE STRICTER REQUIREMENTS GOVERNING IN CASE OF POSSIBLE VARIANCES. ALL COMPONENTS OF THE SYSTEM SHALL BE STANDARD OF THE MANUFACTURER, LISTED BY UNDERWRITERS' LABORATORIES, INC. AND BEAR THEIR MARK.

C. THE FIRE ALARM EQUIPMENT SHALL BE THAT OF THE GE-EST COMPANY OR COMPARABLE SYSTEMS BY PYROTRONICS, NOTIFIER OR SIMPLEX. THE ALARM CONTRACTOR SHALL PROVIDE, AT THE REQUEST OF THE OWNER, MEANS BY WHICH THE SYSTEM CAN BE SERVICED, MAINTAINED AND MONITORED BY COMPETENT QUALIFIED INDIVIDUALS.

D. THE SYSTEM SHALL BE ADDRESSABLE, ELECTRICALLY SUPERVISED AND UTILIZE 2-WIRE, CLASS B CIRCUITS FOR ALL ALARM INITIATION ZONES AND SIGNAL CIRCUITS. THE SYSTEM SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FIRE ALARM CONTROL PANEL, MANUAL AND AUTOMATIC ALARM INITIATING DEVICES AND AUDIBLE/VISUAL ALARM INDICATING DEVICES. THE SYSTEM SHALL HAVE THE CAPABILITY OF BEING MONITORED VIA AN OUTSIDE PHONE LINE PROVIDED BY THE OWNER.

E. ACTUATION OF ANY MANUAL OR AUTOMATIC INITIATING DEVICE SHALL CAUSE THE FOLLOWING:

1. ALL AUDIBLE INDICATING DEVICES TO SOUND.
2. VISUAL INDICATING DEVICES TO FLASH.
3. SHUTDOWN ALL AIR HANDLING UNITS.

F. THE FIRE ALARM CONTROL PANEL SHALL BE GE QUICKSTART. PANEL AND SHALL BE OF SOLID STATE MODULAR CONSTRUCTION. ALL MODULES, RELAYS, PRINTED CIRCUIT BOARDS, POWER SUPPLIES, BATTERIES, CHARGER, TRANSFORMER AND TERMINAL CONNECTIONS NECESSARY FOR THE PROPER OPERATION OF THE SYSTEM SHALL BE AS HEREIN DESCRIBED, MOUNTED IN ONE SEMI-FLUSH CABINET AT THE LOCATION SHOWN ON THE DRAWINGS.

1. THE CONTROL CABINET SHALL BE SUPPLIED WITH AN OUTER DOOR AND FRAME ASSEMBLY WHICH SHALL BE EQUIPPED WITH A LOCK AND TRANSPARENT DOOR PANEL. THE TRANSPARENT DOOR PANEL SHALL PREVENT TAMPERING, BUT ALLOW FULL VIEWING OF THE MODULE LED'S AND SWITCHES.
2. AN ALARM INITIATING CIRCUIT MODULE SHALL PROVIDE 2-WIRE, CLASS B CIRCUITRY UTILIZING END-OF-LINE RESISTOR MONITORING FOR ALARM TROUBLE AND GROUND FAULT. THE MODULE SHALL PROVIDE ALARM AND TROUBLE LED'S, LED LAMP TEST FEATURE, SUPERVISED ALARM AND TROUBLE RELAYS, ALARM AND TROUBLE AUXILIARY ALARM AND TROUBLE RELAYS, ALARM AND TROUBLE AUXILIARY CONTACTS AND ALARM RESOUND FEATURE.
3. A POWER SUPPLY SHALL BE PROVIDED INCLUDING SEALED LEAD ACID 10 A.H. BATTERY WITH AUTOMATIC CHARGER. 3.5 AMPS CONTINUOUS FILTERED POWER OUTPUT OF THE PROPER VOLTAGE SHALL FURNISH SYSTEM POWER FOR ALARM INITIATING AND INDICATING DEVICES.

G. SMOKE AND THERMAL DETECTORS SHALL BE SIGA-PHS WITH SIGA-SB LISTED BY UNDERWRITERS' LABORATORIES. DETECTORS SHALL BE INTERCHANGEABLE AND COMPATIBLE WITH IONIZATION DETECTORS USING THE SAME TYPE BASES. INTERNAL DETECTOR CIRCUITS SHALL BE SHIELDED AGAINST ELECTRICAL INTERFERENCE, AND SHALL BE RESISTANT TO TRANSIENTS, "NOISE" AND RF INTERFERENCE. THE DETECTORS SHALL BE CAPABLE OF OPERATING ON EITHER A 2-WIRE LOOP WITH END-OF-LINE RESISTOR OR ON A 4-WIRE LOOP USING 24VDC. A 135 DEGREE F. FIXED TEMPERATURE HEAT ELEMENT SHALL BE INCLUDED IN THE BASE.

H. MANUAL STATIONS SHALL BE GE-EST MODEL SIGA-278 NONCODED, SINGLE ACTION TYPE. THE STATION SHALL BE DESIGNED FOR SEMI-FLUSH MOUNTING ON A 4 INCH OUTLET BOX. STATIONS SHALL BE CONSTRUCTED SO THAT ONCE IT HAS BEEN PULLED, IT CAN BE RESET ONLY BY AUTHORIZED PERSONNEL USING A RESET KEY.

I. FIRE ALARM AUDIBLE/VISUAL UNITS SHALL BE GE-EST AND G1R SERIES FLUSH-MOUNTED COMBINATION HORN AND FLASHING LIGHT. HORN SHALL BE RED VIBRATING TYPE OPERATING AT 24VDC. THE FLASHING LIGHT SHALL BE XENON STROBE AND OPERATE AT GREATER THAN 1000 CANDLEPOWER. THE UNIT SHALL FLASH AT APPROXIMATELY TWO FLASHES PER SECOND. A FLASH RATE OF GREATER THAN TWO FLASHES PER SECOND IS NOT ACCEPTABLE. BOTH THE HORN AND STROBE SHALL OPERATE ON 24VDC SUPPLIED FROM THE CONTROL PANEL.

J. THERMAL HEAT DETECTORS SHALL BE SIGA-HFS, 190 DEGREE F. FIXED TEMPERATURE TYPE. WHEN UNIT IS ACTIVATED, THE UNITS SHALL BE NON-RESTORABLE AND GIVE VISUAL EVIDENCE OF SUCH OPERATION.

K. DUCT SMOKE DETECTORS SHALL BE SIGA-SD AND SHALL BE OF THE SOLID STATE PHOTOELECTRIC TYPE. NO RADIOACTIVE MATERIALS SHALL BE USED. DETECTOR CONSTRUCTION SHALL BE OF THE SPLIT TYPE, THAT IS, MOUNTING BASE WITH TWIST-LOCK DETECTING HEAD. CONTACTS BETWEEN THE BASE AND HEAD SHALL BE OF THE BIFURCATED TYPE USING SPRING-TYPE, SELFWIPING CONTACTS. REMOVAL OF THE DETECTOR HEAD SHALL INTERRUPT THE SUPERVISORY CIRCUIT OF THE FIRE ALARM DETECTION LOOP AND CAUSE A TROUBLE SIGNAL AT THE CONTROL PANEL. DUCT HOUSING COUPLINGS SHALL BE SLOTTED TO INSURE PROPER ALIGNMENT OF THE SAMPLING AND EXHAUST TUBES. DETECTOR SHALL HAVE AN ALARM LED VISIBLE THROUGH A TRANSPARENT FRONT COVER. DETECTORS SHALL OBTAIN THEIR OPERATING POWER FROM THE SUPERVISED CURRENT IN THE FIRE ALARM LOOP. INSTALLATION MUST COMPLY WITH NFPA-90A. PROVIDE SIGA-LED REMOTE ALARM LED INDICATOR/KEY TEST SWITCH FOR EACH UNIT. MOUNT SWITCH ON WALL NEAR EACH UNIT AND LABEL.

L. MAGNETIC DOOR HOLDERS SHALL BE 1504-AQ AND SHALL HAVE AN APPROXIMATE HOLDING FORCE OF 35 POUNDS. THE DOOR PORTION SHALL HAVE A STAINLESS STEEL PIVOTAL MOUNTED ARMATURE WITH SHOCK ABSORBING NYLON BEARING. UNIT SHALL BE CAPABLE OF BEING EITHER SURFACE, FLUSH, SEMI-FLUSH OR FLOOR-MOUNTED AS REQUIRED. DOOR HOLDERS SHALL BE UL LISTED FOR THEIR INTENDED PURPOSE.

M. POWER LIMITED CIRCUIT CABLES SHALL BE UL LISTED AND AS MANUFACTURED BY GE., WEST PENN OR BELDON. CONDUCTORS SHALL BE SOLID GAUGES #18 (FOR PULL STATIONS AND SMOKE DETECTOR) AND #16 FOR HORNS, LIGHTS AND DOOR HOLDERS). CABLES SHALL BE TWISTED PAIRS TO REDUCE SUSCEPTIBILITY TO TRANSIENT NOISE. ALL FIRE ALARM WIRING SHALL BE INSTALLED IN CONDUIT UNLESS NOTED OTHERWISE.

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
07/14/2022

SEAL
RYAN JEROD DIEDIKER
NUMBER PE-2015006511
6/10/22
06-10-2022

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REVISIONS

ISSUE DATE
06-10-22

PROJECT NUMBER
2022-000

SHEET NUMBER
ME4.12

Mechanical And Electrical - Specifications

smith & boucher
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project number 2218000

PROJECT NAME: Deer Brook Retail Renovations
AUTOCAD FILE LOCATION \ NAME: X:\22\22180\2218000\Drawings\01-2218000_ME4.12.dwg
LAST CORRECTION BY ◆ DATE ◆ TIME: CBooty Thursday, June 9, 2022 4:05:23 PM
PLOTTED BY ◆ DATE ◆ TIME: Charles Booty Friday, June 10, 2022 1:46:53 PM

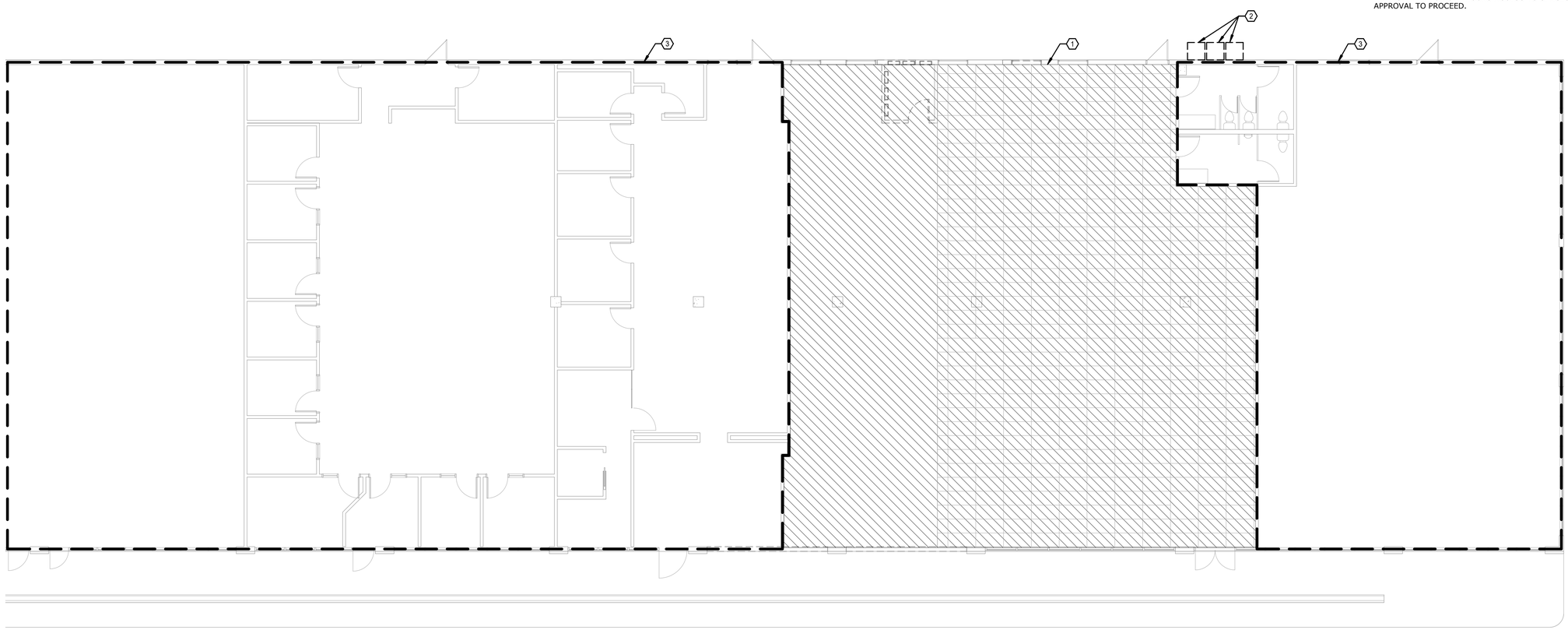
DEMOLITION PLAN NOTES:

1. ALL HVAC EQUIPMENT IN THIS HATCHED AREA ARE TO BE DISCONNECTED AND REMOVED.
2. DEMO AND REMOVE EXISTING CONDENSING UNITS.
3. AREA WITHIN DASHED LINE IS NOT PART OF SCOPE OF WORK.

GENERAL DEMOLITION NOTES:

1. THE EXISTING CONDITIONS INDICATED ON THE DRAWINGS ARE TAKEN FROM THE BEST INFORMATION AVAILABLE AND FROM VISUAL SITE INSPECTION AND ARE NOT TO BE CONSTRUED AS "AS BUILT" CONDITIONS. THE INFORMATION IS SHOWN TO HELP ESTABLISH THE EXTENT OF THE WORK. VERIFY ALL ACTUAL EXISTING CONDITIONS AT THE PROJECT SITE AND PERFORM THE WORK AS REQUIRED TO MEET THE EXISTING CONDITIONS AND THE EXTENT OF THE WORK INDICATED.
2. BOLD DASHED LINES INDICATE MECHANICAL OR ELECTRICAL EQUIPMENT THAT SHALL BE REMOVED. LIGHT, THIN LINES REPRESENT EXISTING EQUIPMENT OR MATERIAL TO REMAIN, EXCEPT WHERE OTHERWISE NOTED.

   EXISTING ————————————————
   DEMO — — — — — — — — — — — —
3. DISCONNECT AND REMOVE ALL PIPING, WIRING, AND CONDUIT THAT BECOMES UNNECESSARY AS A RESULT OF THE REMOVAL OF EQUIPMENT INDICATED TO BE REMOVED. PROVIDE FOR THE CONTINUITY OF ALL REMAINING SYSTEMS AND CIRCUITS.
4. RELOCATE AND RECONNECT ANY MECHANICAL AND ELECTRICAL FACILITIES THAT MUST BE RELOCATED IN ORDER TO ACCOMPLISH THE REMODELING SHOWN IN THE DRAWINGS OR INDICATED IN THE SPECIFICATIONS. WHERE MECHANICAL AND ELECTRICAL FIXTURES OR EQUIPMENT ARE REMOVED ALL UNUSED CONDUIT, WIRING, AND PIPING ARE TO BE DISCONNECTED AND REMOVE COMPLETELY BACK TO SOURCE.
5. WHERE REMOVAL OF EXISTING WIRING INTERRUPTS ELECTRICAL CONTINUITY OF CIRCUITS WHICH ARE TO REMAIN IN USE, FURNISH AND INSTALL ALL REQUIRED WIRE, CONDUIT, JUNCTION BOXES, ETC. TO INSURE CONTINUED ELECTRICAL CONTINUITY.
6. DISCONNECT EXISTING SUPPLY DIFFUSERS AS SHOWN. CLEAN AND PREPARE DIFFUSERS AS REQUIRED TO BE RE-INSTALLED IN NEW LOCATION. PROVIDE NEW GRILLE IF EXISTING GRILLE IS DAMAGED IN ANY WAY. CAP AND SEAL ANY BRANCH TAKEOFF OPENINGS NOT REUSED.
7. ALL CORE DRILLING, SAW CUTTING, AND OTHER LOUD ACTIVITIES SHALL BE PERFORMED DURING OFF HOURS. EXAMINE SLAB AS REQUIRED BY SPECIFICATIONS. COORDINATE WITH BUILDING MANAGEMENT FOR OFF-HOURS ACCESS TO SPACES AS APPROVAL TO PROCEED.



1 DEMOLITION HVAC PLAN - LEVEL 1
1/8" = 1'-0"

NORTH

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project number 221800

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06-10-2022

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REVISIONS

ISSUE DATE
06-10-22

PROJECT NUMBER
2022-000

SHEET NUMBER
DM1.11

Demolition HVAC Plan - Level 1

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RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
07/14/2022

SEAL
STATE OF MISSOURI
RYAN JEROD DIEDIKER
NUMBER PE-2015006511
REGISTERED PROFESSIONAL ENGINEER
6/10/22
06-10-2022

PERMIT SET

GENERAL DEMOLITION NOTES:

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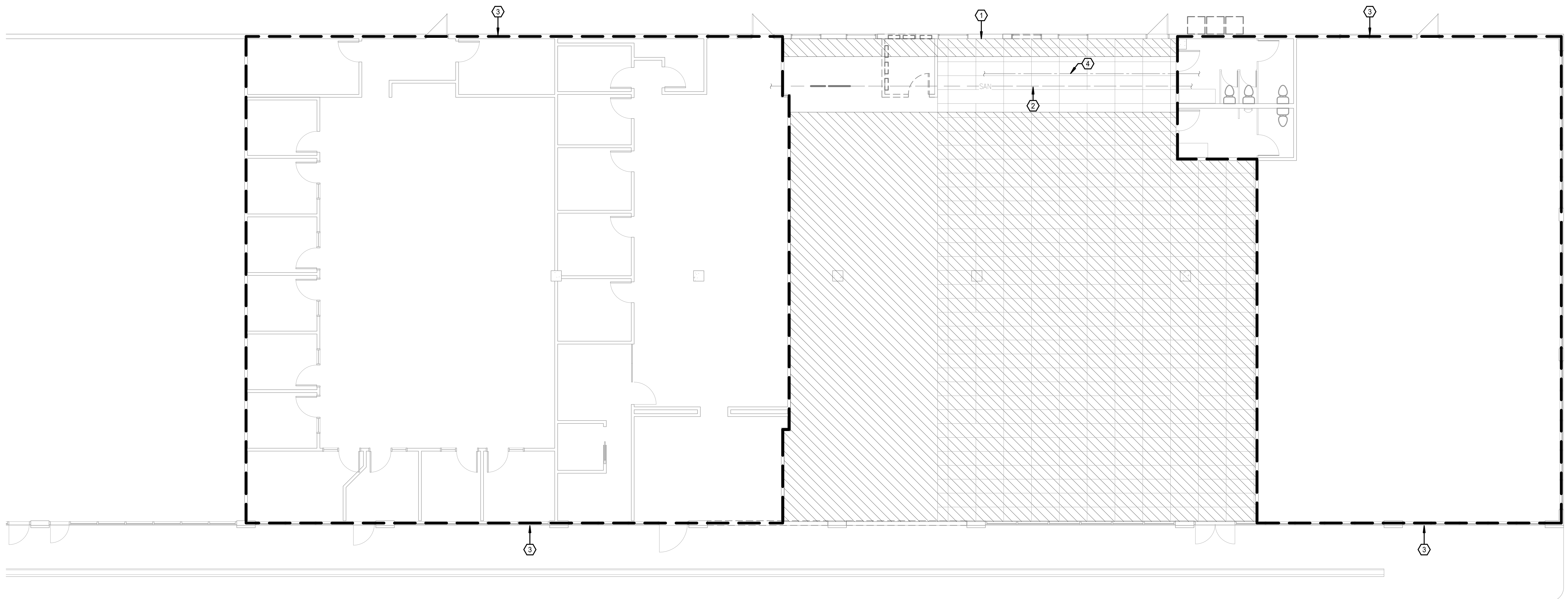
2. BOLD DASHED LINES INDICATE MECHANICAL OR ELECTRICAL EQUIPMENT THAT SHALL BE REMOVED. LIGHT, THIN LINES REPRESENT EXISTING EQUIPMENT OR MATERIAL TO REMAIN, EXCEPT WHERE OTHERWISE NOTED.

   EXISTING
   DEMO
3. DISCONNECT AND REMOVE ALL PIPING, WIRING, AND CONDUIT THAT BECOMES UNNECESSARY AS A RESULT OF THE REMOVAL OF EQUIPMENT INDICATED TO BE REMOVED. PROVIDE FOR THE CONTINUITY OF ALL REMAINING SYSTEMS AND CIRCUITS.
4. RELOCATE AND RECONNECT ANY MECHANICAL AND ELECTRICAL FACILITIES THAT MUST BE RELOCATED IN ORDER TO ACCOMPLISH THE REMODELING SHOWN IN THE DRAWINGS OR INDICATED IN THE SPECIFICATIONS. WHERE MECHANICAL AND ELECTRICAL FIXTURES OR EQUIPMENT ARE REMOVED ALL UNUSED CONDUIT, WIRING, AND PIPING ARE TO BE DISCONNECTED AND REMOVE COMPLETELY BACK TO SOURCE.
5. WHERE REMOVAL OF EXISTING WIRING INTERRUPTS ELECTRICAL CONTINUITY OF CIRCUITS WHICH ARE TO REMAIN IN USE, FURNISH AND INSTALL ALL REQUIRED WIRE, CONDUIT, JUNCTION BOXES, ETC. TO INSURE CONTINUED ELECTRICAL CONTINUITY.
6. ALL CORE DRILLING, SAW CUTTING, AND OTHER LOUD ACTIVITIES SHALL BE PERFORMED DURING OFF HOURS. EXAMAINE SLAB AS REQUIRED BY SPECIFICATIONS. COORDINATE WITH BUILDING MANAGEMENT FOR OFF-HOURS ACCESS TO SPACES AS APPROVAL TO PROCEED.

PLAN DEMOLITION NOTES:

1. REMOVE EXISTING PLUMBING FIXTURES IN THE HATCHED AREA.
2. EXISTING SANITARY MAIN TO REMAIN. FIELD VERIFY EXACT LOCATION.
3. AREA WITHIN DASHED LINE IS NOT PART OF SCOPE OF WORK.
4. EXISTING WATER LINE TO REMIAN. FIELD VERIFY EXACT LOCATION AND SIZE.



1 DEMOLITION PLUMBING PLAN - LEVEL 1
1/8" = 1'-0"

NORTH

DEER BROOK PLAZA
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REVISIONS

ISSUE DATE
06-10-22
PROJECT NUMBER
2022-000
SHEET NUMBER
DP1.11

Demolition Plumbing Plan - Level 1

smith & boucher engineers
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project number 2218000

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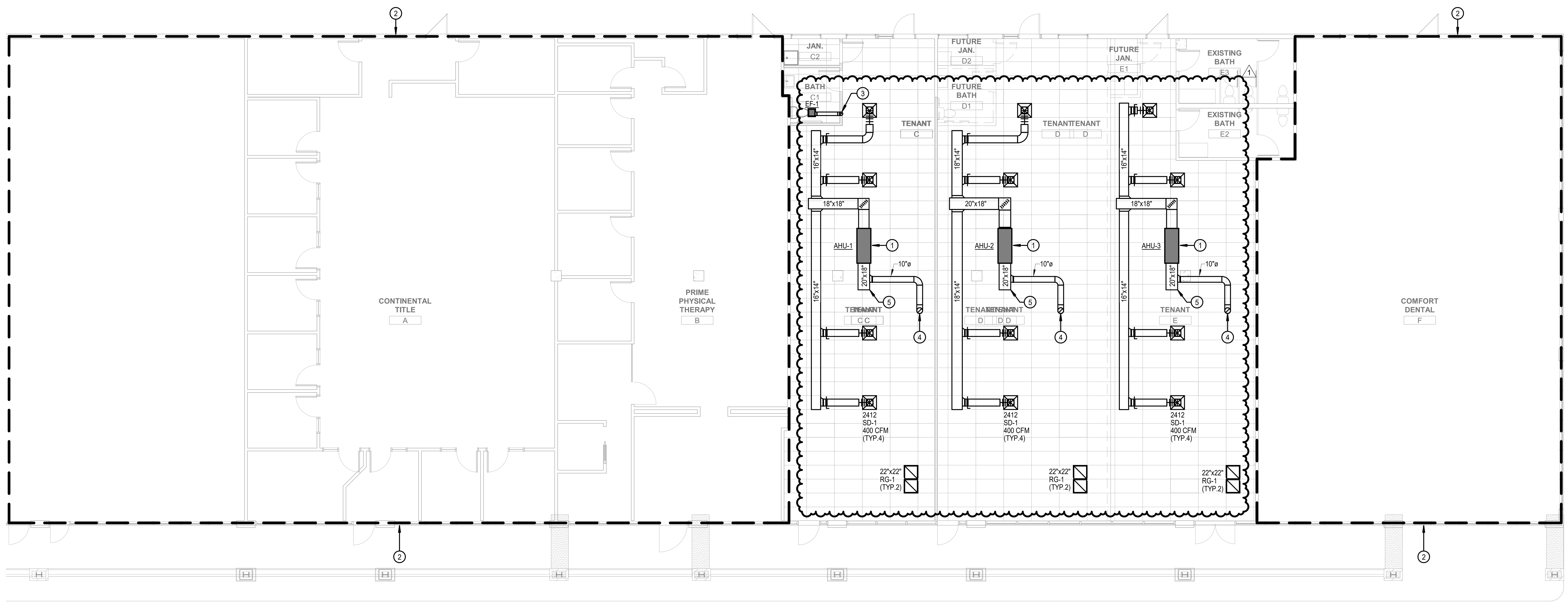
GENERAL NOTES:

1. INFORMATION SHOWN ON THE DRAWINGS IS INTENDED TO CONVEY SCOPE AND IS ARRANGED FOR DRAWING CLARITY. IT IS NOT TO BE TAKEN AS AN AS-BUILT CONDITION. THE SYSTEM INSTALLATION SHALL BE COORDINATED WITH STRUCTURE, CEILINGS, WALLS, AND ALL OTHER TRADES TO PROVIDE FOR A COMPLETE AND WORKING SYSTEM.
2. ALL DUCTWORK AND PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT INCLUDE ALL OFFSETS, DROPS, AND RISES. CAREFULLY COORDINATE DUCT AND PIPE ROUTING WITH STRUCTURE AS WELL AS ALL OTHER TRADES TO MAINTAIN EQUIPMENT CLEARANCES, EQUIPMENT ACCESSIBILITY, DESIRED CEILING HEIGHTS, AND AESTHETICS. THE CONTRACTOR SHALL INCLUDE ANY NEEDED OFFSETS AND CHANGES OF DIRECTION IN THE BID PRICING.
3. WALL MOUNTED DEVICES SUCH AS THERMOSTATS, TEMPERATURE SENSORS, HUMIDITY SENSORS, AND PRESSURE SENSORS ARE SHOWN ON PLANS FOR CLARITY AND GENERAL REFERENCE OF LOCATIONS. LOCATIONS SHOW ARE NOT TO BE CONSIDERED THE EXACT MOUNTING LOCATION. COORDINATE THE INSTALLATION OF ALL WALL MOUNTED DEVICES WITH THE ARCHITECTURAL ELEVATIONS AND OTHER TRADES WALL MOUNTED DEVICES. GROUP THE INSTALLATION OF ALL THE DEVICES TO THE EXTENT POSSIBLE AND LOCATED DEVICES SUCH THAT THEY DO NOT CONFLICT WITH MILL WORK, TELEVISIONS, FURNITURE, TEACHING BOARDS, AND OTHER SIMILAR OBSTRUCTIONS.
4. FURNISH ALL EXPOSED DUCTWORK IN FINISHED SPACES WITH PAINTABLE FINISH.
5. DUCT SIZES SHOWN ARE SHEET METAL DIMENSIONS. WHERE DUCT LINER IS REQUIRED, DUCT SIZES ARE NOT REQUIRED TO BE INCREASED TO ACCOUNT FOR LINER.
6. ALL SERVICES SHOWN WITH HALF TONE LINE WEIGHT ARE EXISTING.

PLAN NOTES: 1

(1) SUSPEND UNIT HORIZONTALLY ABOVE CEILING PER MANUFACTURER'S INSTRUCTIONS. COORDINATE WITH STRUCTURAL DRAWINGS FOR EXACT LOCATION.
(2) AREA WITHIN DASHED LINE IS NOT PART OF SCOPE OF WORK.
(3) 6"Ø EXHAUST DUCT UP THRU ROOF. REFER TO DETAIL.
(4) 10" DIAMETER DUCT TO OA CAP. FURNISH AND INSTALL WITH OUTSIDE AIR AUTO DAMPER AND BALANCING DAMPER. REFER TO SCHEDULE FOR REQUIRED OA TO BALANCE TO.
(5) OPEN DUCT INTO RETURN AIR PLENUM.



1 HVAC PLAN - LEVEL 1
1/8" = 1'-0"

NORTH

STATE OF MISSOURI
RYAN JEROD DIEDIKER
NUMBER PE-2015006571
PROFESSIONAL ENGINEER
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REVISIONS

1	BUILDING PLAN REVIEW	06-22-22

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06-10-22
PROJECT NUMBER
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SHEET NUMBER
M1.11

HVAC Plan - Level 1

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project number 2218000

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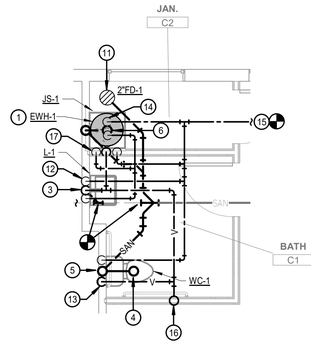
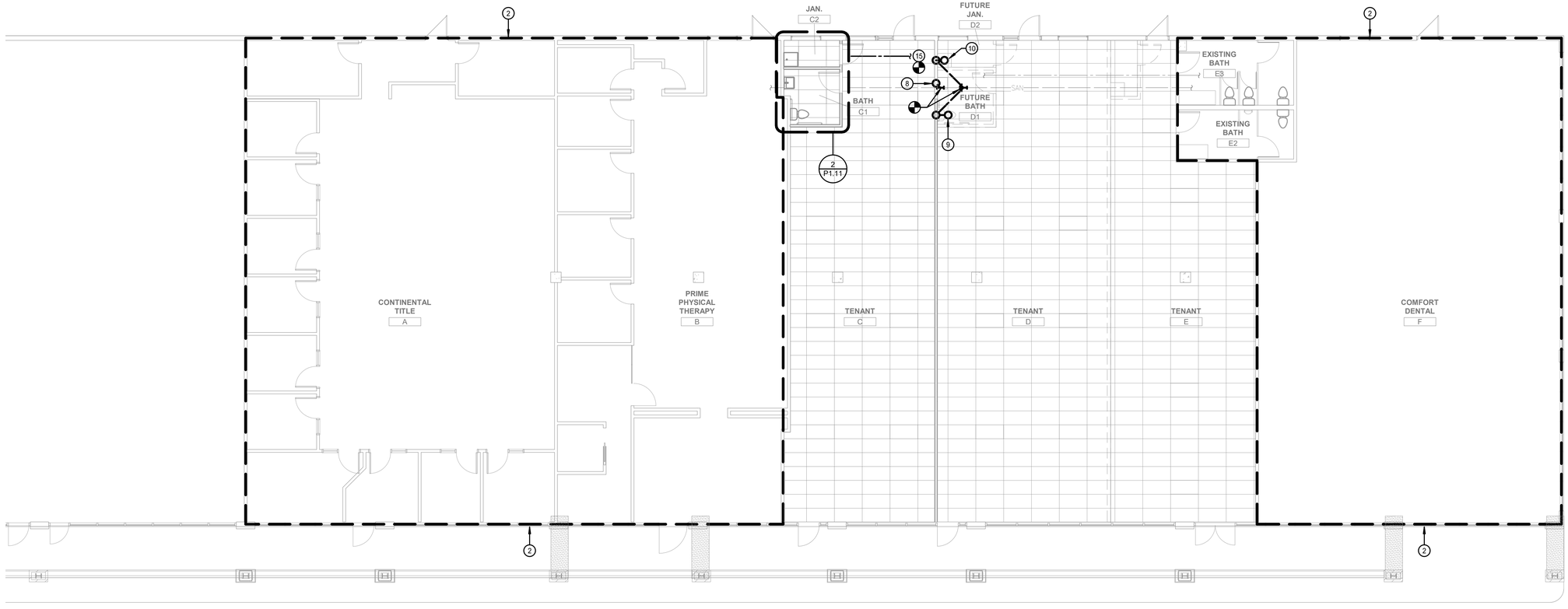


2 ENLARGED PLUMBING - JAN. C2/BATH C1 - LEVEL 1
1/4" = 1'-0"



1 PLUMBING PLAN - LEVEL 1
1/8" = 1'-0"

NORTH

GENERAL NOTES:

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2. CAREFULLY COORDINATE PIPE ROUTING WITH NEW STRUCTURE AS WELL AS ALL OTHER TRADES.
3. COORDINATE ALL PIPING PENETRATIONS WITH STRUCTURAL PRIOR TO CORE DRILLING.
4. REFER TO RISER DIAGRAM FOR ADDITIONAL PLUMBING INFORMATION.
5. SAW CUT AND PATCH AS REQUIRED.

PLAN NOTES:

1. SUSPEND WATER HEATER ABOVE JANITOR SINK.
2. AREA WITHIN DASHED LINE IS NOT PART OF SCOPE OF WORK.
3. 2" SAN UP TO LAV.
4. 4" SAN UP TO WATER CLOSET.
5. 4" SAN UP TO 2" VENT.
6. 3" SAN UP TO JANITOR'S SINK.
7. 3" SAN UP TO 1-1/2" VENT.
8. 2" SAN STUB UP. PROVIDE CAP.
9. 4" SAN STUB UP. PROVIDE CAP.
10. 3" SAN STUB UP. PROVIDE CAP.
11. 2" SAN UP TO FLOOR DRAIN.
12. 1/2" CW, 1/2" HOW AND 1-1/2" VENT DOWN TO LAV.
13. 1-1/4" CW AND 2" VENT DOWN TO WATER CLOSET.
14. 1-1/2" CW AND 1-1/2" HW DOWN TO WATER HEATER. REFER TO WATER HEATER DETAIL.
15. 1-1/2" CW LINE, EXTEND AND CONNECT TO EXISTING CW LINE. FIELD VERIFY EXACT LOCATION.
16. 3" VTR.
17. 3/4" CW, 3/4" HW AND 1-1/2" VENT DOWN TO JANITOR SINK.

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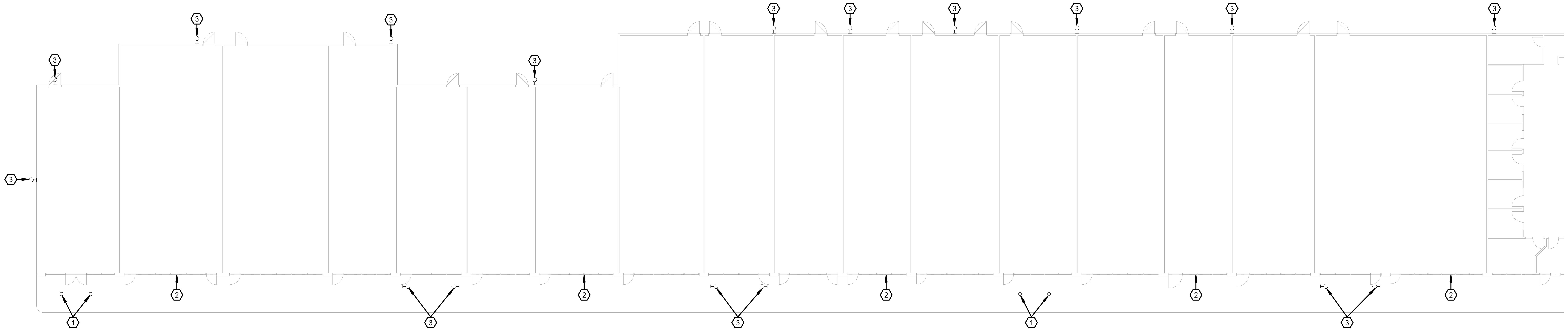
PROJECT NUMBER
2022-000

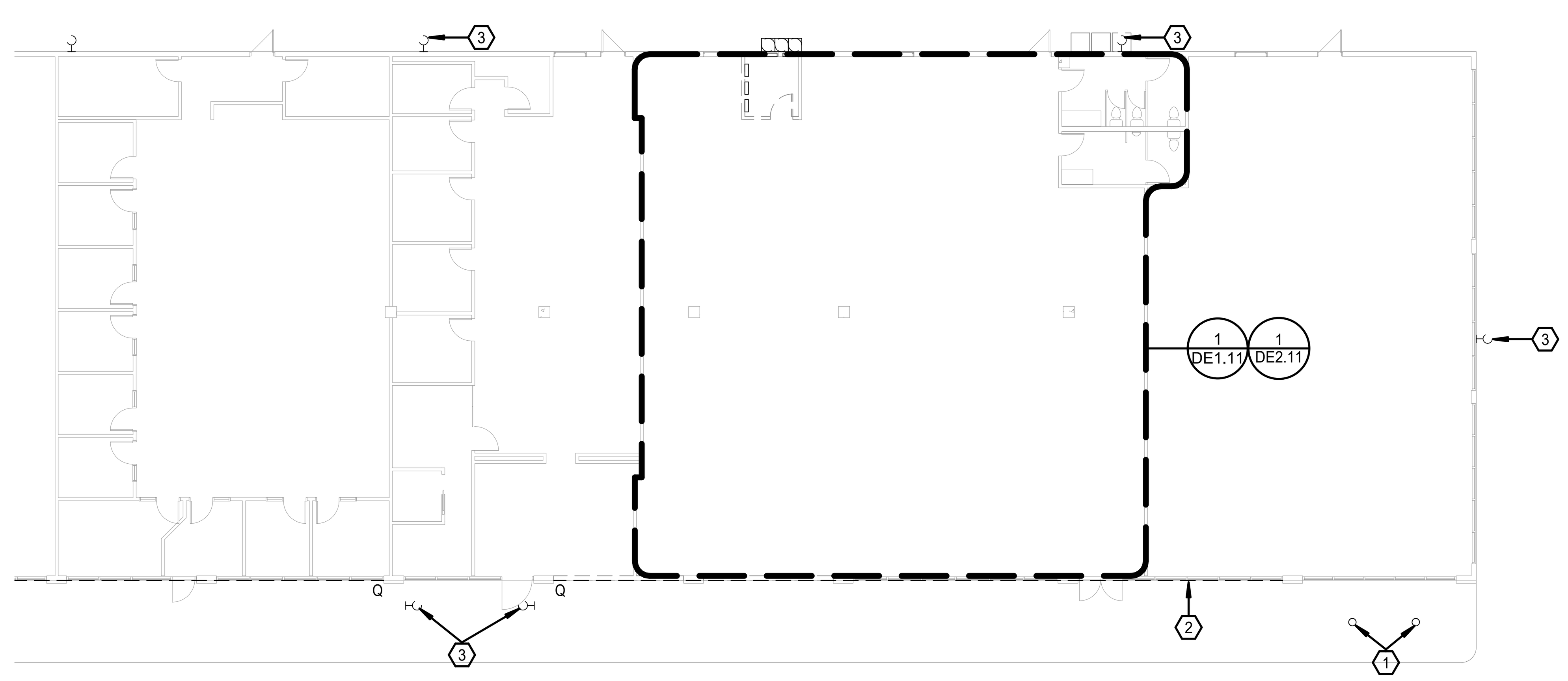
SHEET NUMBER
P1.11

Plumbing Plan - Level 1



1 DEMOLITION OVERALL ELECTRICAL PLAN - LEVEL 1
1/16" = 1'-0"

NORTH



2 DEMOLITION OVERALL ELECTRICAL PLAN - LEVEL 1
1/16" = 1'-0"

NORTH

DEMOLITION GENERAL NOTES:

1. UNLESS NOTED OTHERWISE, SERVICES AND EQUIPMENT SHOWN FULL TONE ARE NEW WORK, HALF TONE ARE EXISTING TO REMAIN, AND FULL TONE AND DASHED ARE EXISTING TO BE DEMOLISHED.
2. THE EXISTING CONDITIONS INDICATED ON THE DRAWINGS ARE TAKEN FROM THE BEST INFORMATION AVAILABLE AND ARE NOT TO BE CONSTRUED AS "AS BUILT" CONDITIONS. THE INFORMATION IS SHOWN TO HELP ESTABLISH THE EXTENT OF THE NEW WORK. VERIFY ALL ACTUAL EXISTING CONDITIONS AT THE PROJECT SITE AND PERFORM WORK AS REQUIRED TO MEET THE EXISTING CONDITIONS AND THE EXTENT OF THE WORK INDICATED.
3. DISCONNECT AND REMOVE ALL CIRCUITRY, DISCONNECTS, CONTROLLERS AND CONDUIT THAT BECOMES UNNECESSARY AS A RESULT OF THE REMOVAL OF FIXTURES, DEVICES OR EQUIPMENT INDICATED TO BE REMOVED. LABEL ALL CIRCUIT BREAKERS IN EXISTING PANELBOARDS NO LONGER IN USE AS SPARE. CAP ALL UNUSED CONDUIT AND WIRING BEYOND THE FLOOR LINE OR WALL LINE TO FACILITATE RESTORATION OF FINISH.
4. VERIFY AND RESTORE CONTINUITY OF ALL EXISTING CIRCUITRY INDICATED TO REMAIN IN USE. WHERE REMOVAL OF EXISTING WIRING INTERRUPTS ELECTRICAL CONTINUITY OF CIRCUITS WHICH ARE TO REMAIN, FURNISH AND INSTALL ALL REQUIRED CIRCUITRY, CONDUIT, JUNCTION BOXES, ETC. TO INSURE CONTINUED ELECTRICAL CONTINUITY.
5. RELOCATE AND RECONNECT ANY MECHANICAL EQUIPMENT AND ANY ELECTRIC FIXTURES, DEVICES OR EQUIPMENT THAT MUST BE RELOCATED IN ORDER TO ACCOMPLISH THE REVISIONS INDICATED ON THE DRAWINGS OR INDICATED IN THE SPECIFICATIONS OR TO MEET NEC CODE REQUIRED CLEARANCES.
6. ELECTRIC CONTRACTOR TO FURNISH AND INSTALL BLANK JUNCTION BOX COVERS ON ALL EXISTING JUNCTION BOXES WITHIN THE CONSTRUCTION AREA THAT ARE NOT BEING DEMOLISHED.

DEMOLITION PLAN NOTES:

(1) ALL EXISTING EXTERIOR DOWNLIGHT TO BE REPLACED WITH NEW LED. REFER TO NEW WORK PLANS FOR ADDITIONAL INFORMATION.
(2) ALL EXISTING EXTERIOR COVE FIXTURE TO BE REPLACED WITH NEW LED. REFER TO NEW WORK PLANS FOR ADDITIONAL INFORMATION.
(3) ALL EXISTING EXTERIOR WALL PACKS TO BE REPLACED WITH NEW LED. REFER TO NEW WORK PLANS FOR ADDITIONAL INFORMATION.

SEAL
STATE OF MISSOURI
RYAN JEROD DIEDIKER
NUMBER PE-2015006511
REGISTERED PROFESSIONAL ENGINEER
6/10/22
06-10-2022

PERMIT SET

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project number 2218000

REVISIONS

ISSUE DATE 06-10-22
PROJECT NUMBER 2022-000
SHEET NUMBER DE1.10

Demolition Overall Electrical Plan - Level 1

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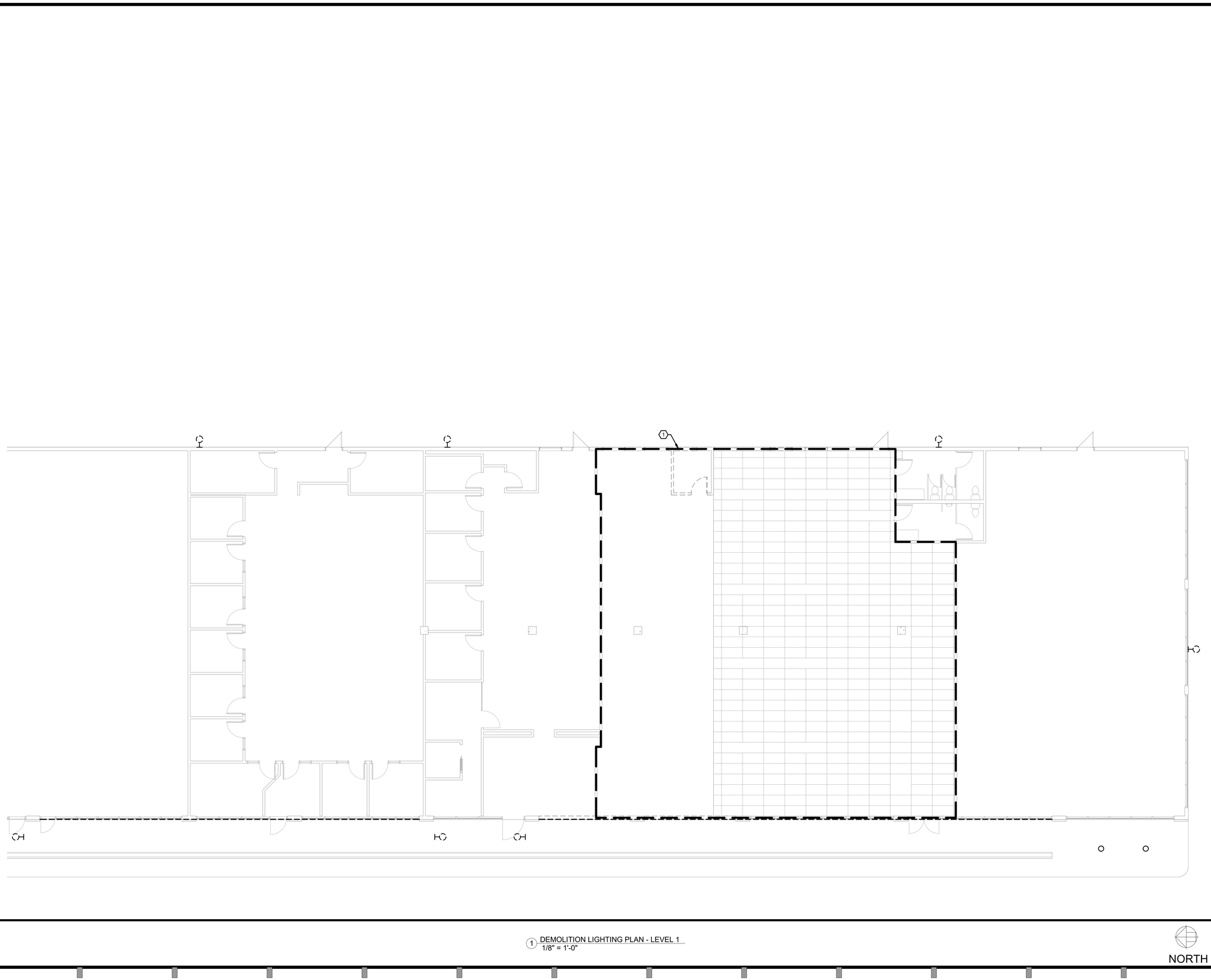
PERMIT SET



1 DEMOLITION LIGHTING PLAN - LEVEL 1
1/8" = 1'-0"

NORTH

DEMOLITION GENERAL NOTES:

1. UNLESS NOTED OTHERWISE, SERVICES AND EQUIPMENT SHOWN FULL TONE ARE NEW WORK, HALF TONE ARE EXISTING TO REMAIN, AND FULL TONE AND DASHED ARE EXISTING TO BE DEMOLISHED.
2. THE EXISTING CONDITIONS INDICATED ON THE DRAWINGS ARE TAKEN FROM THE BEST INFORMATION AVAILABLE AND ARE NOT TO BE CONSTRUED AS "AS BUILT" CONDITIONS. THE INFORMATION IS SHOWN TO HELP ESTABLISH THE EXTENT OF THE NEW WORK. VERIFY ALL ACTUAL EXISTING CONDITIONS AT THE PROJECT SITE AND PERFORM WORK AS REQUIRED TO MEET THE EXISTING CONDITIONS AND THE EXTENT OF THE WORK INDICATED.
3. DISCONNECT AND REMOVE ALL CIRCUITRY, DISCONNECTS, CONTROLLERS AND CONDUIT THAT BECOMES UNNECESSARY AS A RESULT OF THE REMOVAL OF FIXTURES, DEVICES OR EQUIPMENT INDICATED TO BE REMOVED. LABEL ALL CIRCUIT BREAKERS IN EXISTING PANELBOARDS NO LONGER IN USE AS SPARE. CAP ALL UNUSED CONDUIT AND WIRING BEYOND THE FLOOR LINE OR WALL LINE TO FACILITATE RESTORATION OF FINISH.
4. VERIFY AND RESTORE CONTINUITY OF ALL EXISTING CIRCUITRY INDICATED TO REMAIN IN USE. WHERE REMOVAL OF EXISTING WIRING INTERRUPTS ELECTRICAL CONTINUITY OF CIRCUITS WHICH ARE TO REMAIN, FURNISH AND INSTALL ALL REQUIRED CIRCUITRY, CONDUIT, JUNCTION BOXES, ETC. TO INSURE CONTINUED ELECTRICAL CONTINUITY.
5. RELOCATE AND RECONNECT ANY MECHANICAL EQUIPMENT AND ANY ELECTRIC FIXTURES, DEVICES OR EQUIPMENT THAT MUST BE RELOCATED IN ORDER TO ACCOMPLISH THE REVISIONS INDICATED ON THE DRAWINGS OR INDICATED IN THE SPECIFICATIONS OR TO MEET NEC CODE REQUIRED CLEARANCES.
6. ELECTRIC CONTRACTOR TO FURNISH AND INSTALL BLANK JUNCTION BOX COVERS ON ALL EXISTING JUNCTION BOXES WITHIN THE CONSTRUCTION AREA THAT ARE NOT BEING DEMOLISHED.

DEMOLISHED PLAN NOTES:

1 ALL EXISTING INTERIOR LIGHTING AND CONTROLS TO BE DEMOLISHED IN THIS AREA.

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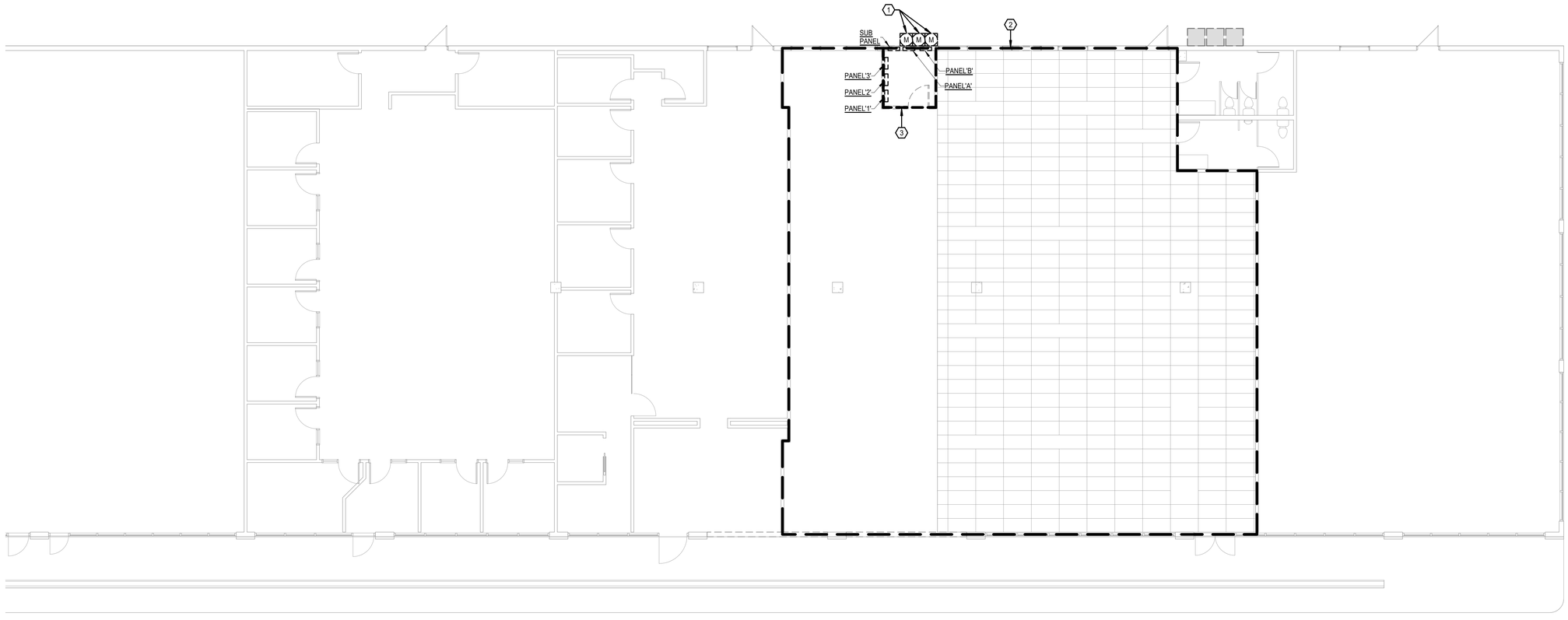
REVISIONS

ISSUE DATE
06-10-22

PROJECT NUMBER
2022-000

SHEET NUMBER
DE1.11

Demolition Lighting Plan - Level 1



1 DEMOLITION POWER PLAN - LEVEL 1
1/8" = 1'-0"

NORTH

DEMOLITION GENERAL NOTES:

1. UNLESS NOTED OTHERWISE, SERVICES AND EQUIPMENT SHOWN FULL TONE ARE NEW WORK, HALF TONE ARE EXISTING TO REMAIN, AND FULL TONE AND DASHED ARE EXISTING TO BE DEMOLISHED.
2. THE EXISTING CONDITIONS INDICATED ON THE DRAWINGS ARE TAKEN FROM THE BEST INFORMATION AVAILABLE AND ARE NOT TO BE CONSTRUED AS "AS BUILT" CONDITIONS. THE INFORMATION IS SHOWN TO HELP ESTABLISH THE EXTENT OF THE NEW WORK. VERIFY ALL ACTUAL EXISTING CONDITIONS AT THE PROJECT SITE AND PERFORM WORK AS REQUIRED TO MEET THE EXISTING CONDITIONS AND THE EXTENT OF THE WORK INDICATED.
3. DISCONNECT AND REMOVE ALL CIRCUITRY, DISCONNECTS, CONTROLLERS AND CONDUIT THAT BECOMES UNNECESSARY AS A RESULT OF THE REMOVAL OF FIXTURES, DEVICES OR EQUIPMENT INDICATED TO BE REMOVED. LABEL ALL CIRCUIT BREAKERS IN EXISTING PANELBOARDS NO LONGER IN USE AS SPARE. CAP ALL UNUSED CONDUIT AND WIRING BEYOND THE FLOOR LINE OR WALL LINE TO FACILITATE RESTORATION OF FINISH.
4. VERIFY AND RESTORE CONTINUITY OF ALL EXISTING CIRCUITRY INDICATED TO REMAIN IN USE. WHERE REMOVAL OF EXISTING WIRING INTERRUPTS ELECTRICAL CONTINUITY OF CIRCUITS WHICH ARE TO REMAIN, FURNISH AND INSTALL ALL REQUIRED CIRCUITRY, CONDUIT, JUNCTION BOXES, ETC. TO INSURE CONTINUED ELECTRICAL CONTINUITY.
5. RELOCATE AND RECONNECT ANY MECHANICAL EQUIPMENT AND ANY ELECTRIC FIXTURES, DEVICES OR EQUIPMENT THAT MUST BE RELOCATED IN ORDER TO ACCOMPLISH THE REVISIONS INDICATED ON THE DRAWINGS OR INDICATED IN THE SPECIFICATIONS OR TO MEET NEC CODE REQUIRED CLEARANCES.
6. ELECTRIC CONTRACTOR TO FURNISH AND INSTALL BLANK JUNCTION BOX COVERS ON ALL EXISTING JUNCTION BOXES WITHIN THE CONSTRUCTION AREA THAT ARE NOT BEING DEMOLISHED.

DEMOLISHED PLAN NOTES:

1. EXISTING BUS AND METERS TO BE DEMOLISHED AND REPLACED WITH NEW. REFER TO NEW WORK PLANS FOR ADDITIONAL INFORMATION.
2. ALL EXISTING POWER/FIRE ALARM/ COMMUNICATIONS DEVICES AND EQUIPMENT TO BE DEMOLISHED UNLESS OTHERWISE NOTED.
3. EXISTING PANELS TO BE DEMOLISHED. VERIFY IN FIELD IF THESE PANELS GO BACK TO A METER THAT IS NOT SHOWN ON PLAN. EITHER DISCONNECT METER POWERING UNUSED PANEL OR CONTACT ENGINEER FOR DIRECTION.

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project number 2218000

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
7/14/2022

STATE OF MISSOURI
RYAN JEROD DIEDIKER
NUMBER PE-2010150065
REGISTERED PROFESSIONAL ENGINEER
6/10/22
06-10-2022

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REVISIONS

ISSUE DATE
06-10-22

PROJECT NUMBER
2022-000

SHEET NUMBER
DE2.11

Demolition Power Plan - Level 1

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
07/14/2022

SEAL
STATE OF MISSOURI
RYAN JEROD DIEDIKER
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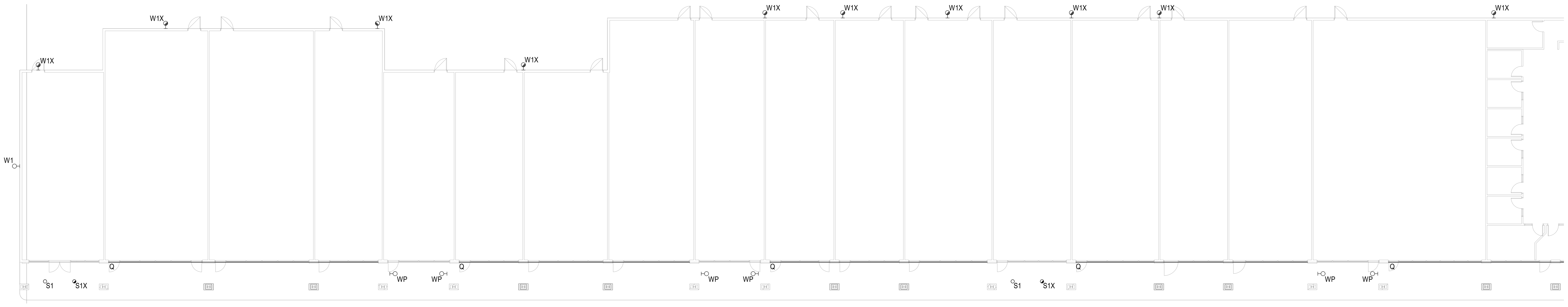
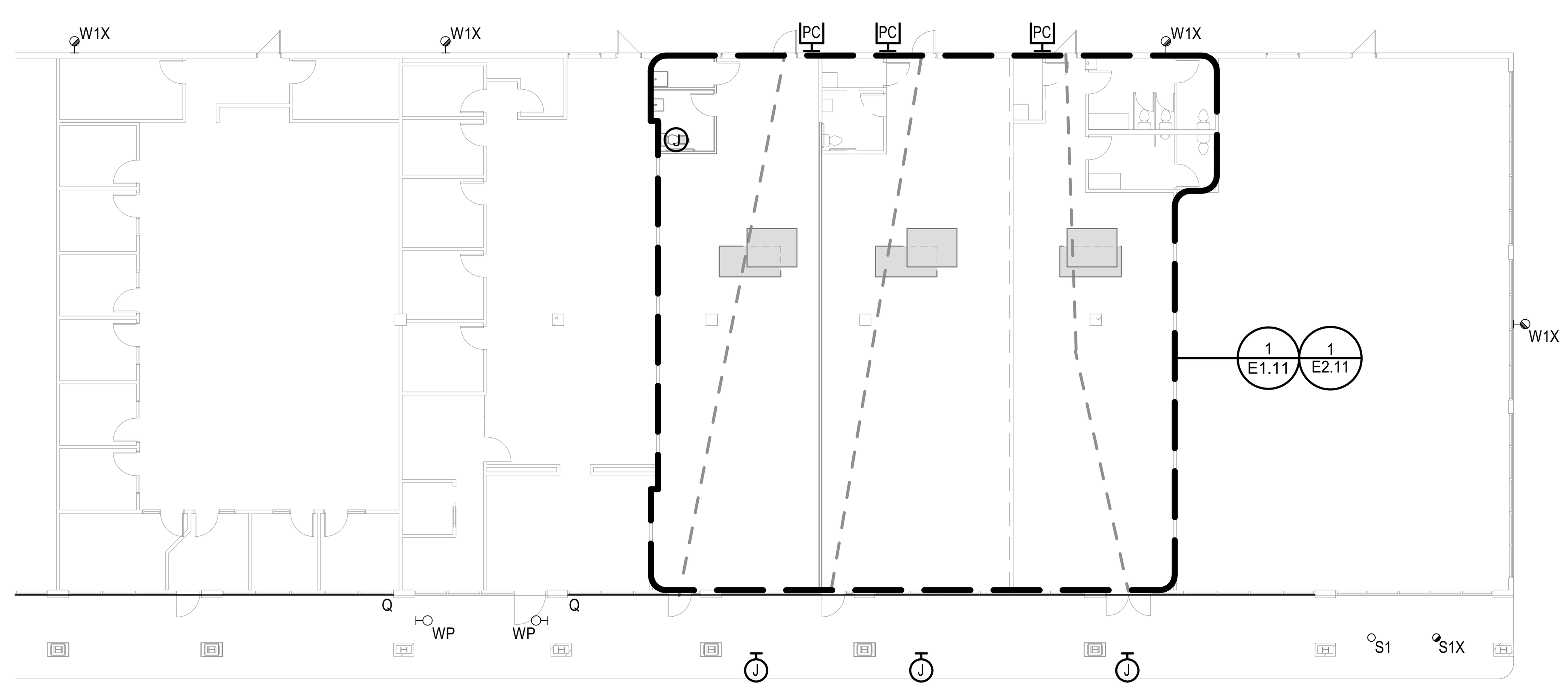
GENERAL NOTES:

1. REFER TO M/E SCHEDULES AND DETAILS FOR MECHANICAL EQUIPMENT CIRCUITING INFORMATION.
2. FIRESTOP ALL CONDUIT PENETRATIONS THROUGH FIRE ROUTED WALLS AND FLOORS AFTER INSTALLATION IS COMPLETE.
3. WHERE ANY DEVICE JUNCTION BOXES ARE RECESSED WITHIN OPPOSITE SIDES OF A FIRE RATED WALL AND ARE WITHIN 24" OF EACH OTHER MEASURED HORIZONTALLY, FURNISH AND INSTALL AN INTUMESCENT MOLDABLE FIRE STOP PUTTY PAD AROUND EACH JUNCTION BOX.
4. CIRCUIT ALL EMERGENCY BALLASTS, EMERGENCY FIXTURES AND EXIT SIGNS WITH AN UNSWITCHED HOT CONDUCTORS.
5. 120V BRANCH CIRCUITING SHALL BE AS FOLLOWS:(UNLESS NOTED OTHERWISE).
   0'-100'=12 AWG.
   101'-150'=10AWG.
   151'-250'=8AWG.
6. ALL EXTERIOR LIGHTING IS REPLACED 1 FOR 1 WITH NEW LED. REFER TO LIGHT FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION. MAINTAIN EXISTING CIRCUITRY.



1 OVERALL ELECTRICAL PLAN - LEVEL 1
1/16" = 1'-0"

NORTH



2 OVERALL ELECTRICAL PLAN - LEVEL 1
1/16" = 1'-0"

NORTH

14 13 12 11 10 9 8 7 6 5 4 3 2 1

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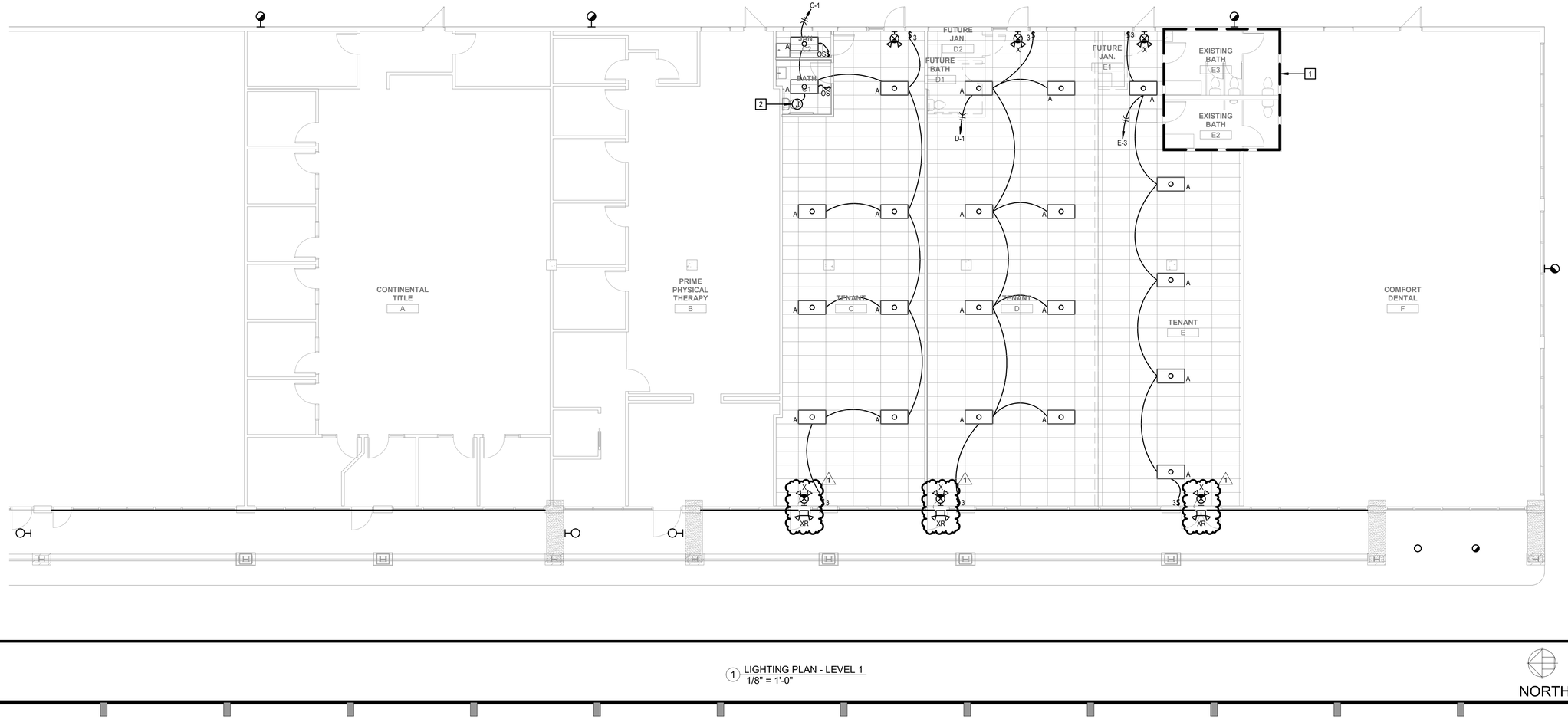
project number 2218000

REVISIONS	
ISSUE DATE	06-10-22
PROJECT NUMBER	2022-000
SHEET NUMBER	E1.10

Overall Electrical Plan - Level 1



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

NORTH

GENERAL NOTES:

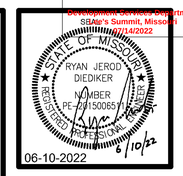
1. REFER TO M/E SCHEDULES AND DETAILS FOR MECHANICAL EQUIPMENT CIRCUITING INFORMATION.
2. FIRESTOP ALL CONDUIT PENETRATIONS THROUGH FIRE ROUTED WALLS AND FLOORS AFTER INSTALLATION IS COMPLETE.
3. WHERE ANY DEVICE JUNCTION BOXES ARE RECESSED WITHIN OPPOSITE SIDES OF A FIRE RATED WALL AND ARE WITHIN 24" OF EACH OTHER MEASURED HORIZONTALLY, FURNISH AND INSTALL AN INTUMESCENT MOLDABLE FIRE STOP PUTTY PAD AROUND EACH JUNCTION BOX.
4. CIRCUIT ALL EMERGENCY BALLASTS, EMERGENCY FIXTURES AND EXIT SIGNS WITH AN UNSWITCHED HOT CONDUCTORS.
5. 120V BRANCH CIRCUITING SHALL BE AS FOLLOWS:(UNLESS NOTED OTHERWISE).

   0'-100'=12 AWG.
   101'-150'=10AWG.
   151'-250'=8AWG.

PLAN NOTES:

1 CONNECT EXISTING LIGHT FIXTURES IN THIS BATHROOM TO NEW PANEL 'E' CIRCUIT #1. REFER TO PANEL SCHEDULE FOR ADDITIONAL INFORMATION.

2 PROVIDE ELECTRIC CONNECTION TO EXHAUST FAN. REFER TO MECHANICAL PLANS & SCHEDULE FOR ADDITIONAL INFORMATION.



PERMIT SET

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REVISIONS
1 BUILDING PLAN REVIEW 06-22-22

ISSUE DATE 06-10-22
PROJECT NUMBER 2022-000
SHEET NUMBER E1.11

Lighting Plan - Level 1

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project number 2218000

06-10-2022

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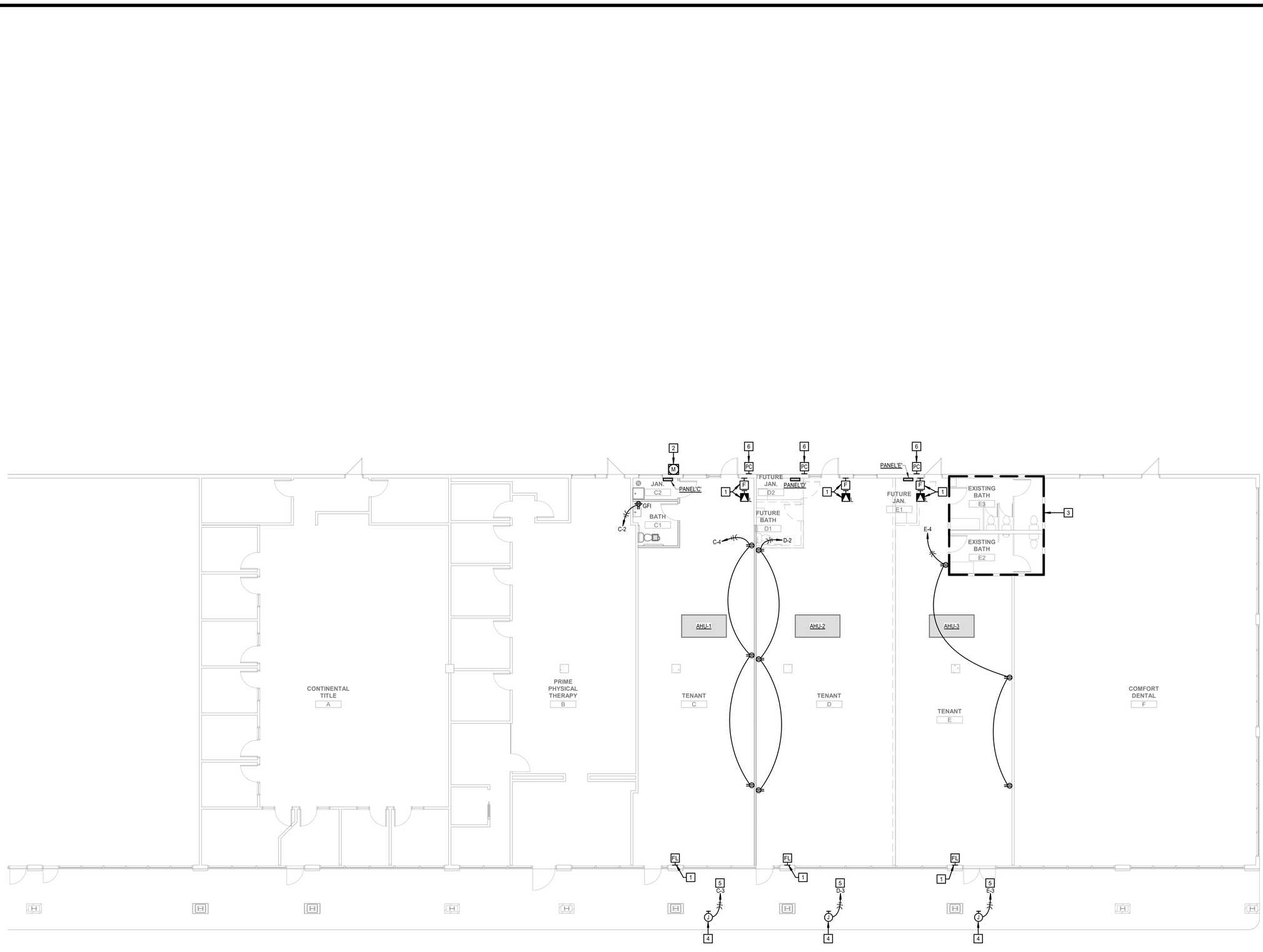

1 POWER PLAN - LEVEL 1
1/8" = 1'-0"

NORTH

GENERAL NOTES:

1. REFER TO M/E SCHEDULES AND DETAILS FOR MECHANICAL EQUIPMENT CIRCUITING INFORMATION.

   FIRESTOP ALL CONDUIT
2. PENETRATIONS THROUGH FIRE ROUTED WALLS AND FLOORS AFTER INSTALLATION IS COMPLETE.

3. WHERE ANY DEVICE JUNCTION BOXES ARE RECESSED WITHIN OPPOSITE SIDES OF A FIRE RATED WALL AND ARE WITHIN 24" OF EACH OTHER MEASURED HORIZONTALLY, FURNISH AND INSTALL AN INTUMESCENT MOLDABLE FIRE STOP PUTTY PAD AROUND EACH JUNCTION BOX.

4. CIRCUIT ALL EMERGENCY BALLASTS, EMERGENCY FIXTURES AND EXIT SIGNS WITH AN UNSWITCHED HOT CONDUCTORS.

5. 120V BRANCH CIRCUITING SHALL BE AS FOLLOWS: (UNLESS NOTED OTHERWISE).

   0'-100'=12 AWG.
   101'-150'=10AWG.
   151'-250'=8AWG.

PLAN NOTES:

1 CONNECT FIRE ALARM DEVICES BACK TO EXISTING FIRE ALARM SYSTEM FOR THE BUILDING. FIRE ALARM DEVICE TO MATCH EXISTING MANUFACTURER USED IN OTHER TENANTS OR TO PROVIDE COMPATIBLE DEVICE TO CURRENT FIRE ALARM SYSTEM. VERIFY IN FIELD EXACT MODELS AND COORDINATE COMPATIBLE WITH FIRE ALARM CONTRACTOR PRIOR TO INSTALL. EXISTING INFORMATION KNOWN AND IS TO BE USED FOR REFERENCE ONLY:
- PULL STATION BY FIRE-LITE.
- HORN/STROBE BY SYSTEM SENSOR.
- FIRE ALARM PANEL BY DMP

2 UTILIZE EXISTING METER BANK LOCATION IF SPACE PERMITS. IF SPACE DOESN'T FIT, MOVE TO A FITTING LOCATION. REFER TO ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.

3 VERIFY IN FIELD FOR EXISTING OUTLETS LOCATED IN EXISTING BATHROOM. IF CIRCUITS WERE REMOVED FROM EXISTING PANEL. RECIRCUIT TO NEW PANEL 'E' CIRCUIT #2.

4 PROVIDE POWER LOCATION FOR FUTURE TENANT SIGNAGE. COORDINATE EXACT REQUIREMENTS AND LOCATION WITH BUILDING OWNER/ARCHITECT PRIOR TO ROUGH-IN.

5 CIRCUIT TO RUN BACK TO PHOTOCELL LOCATED ON THE EXTERIOR BEHIND THE BUILDING.

6 PROVIDE INTERMATIC PHOTOCONTROL NIGHTFOX EK4236S AS BASIS OF DESIGN. MOUNT PHOTOCELL ON ROOF PARAPET FACING NORTH.

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Power Plan - Level 1

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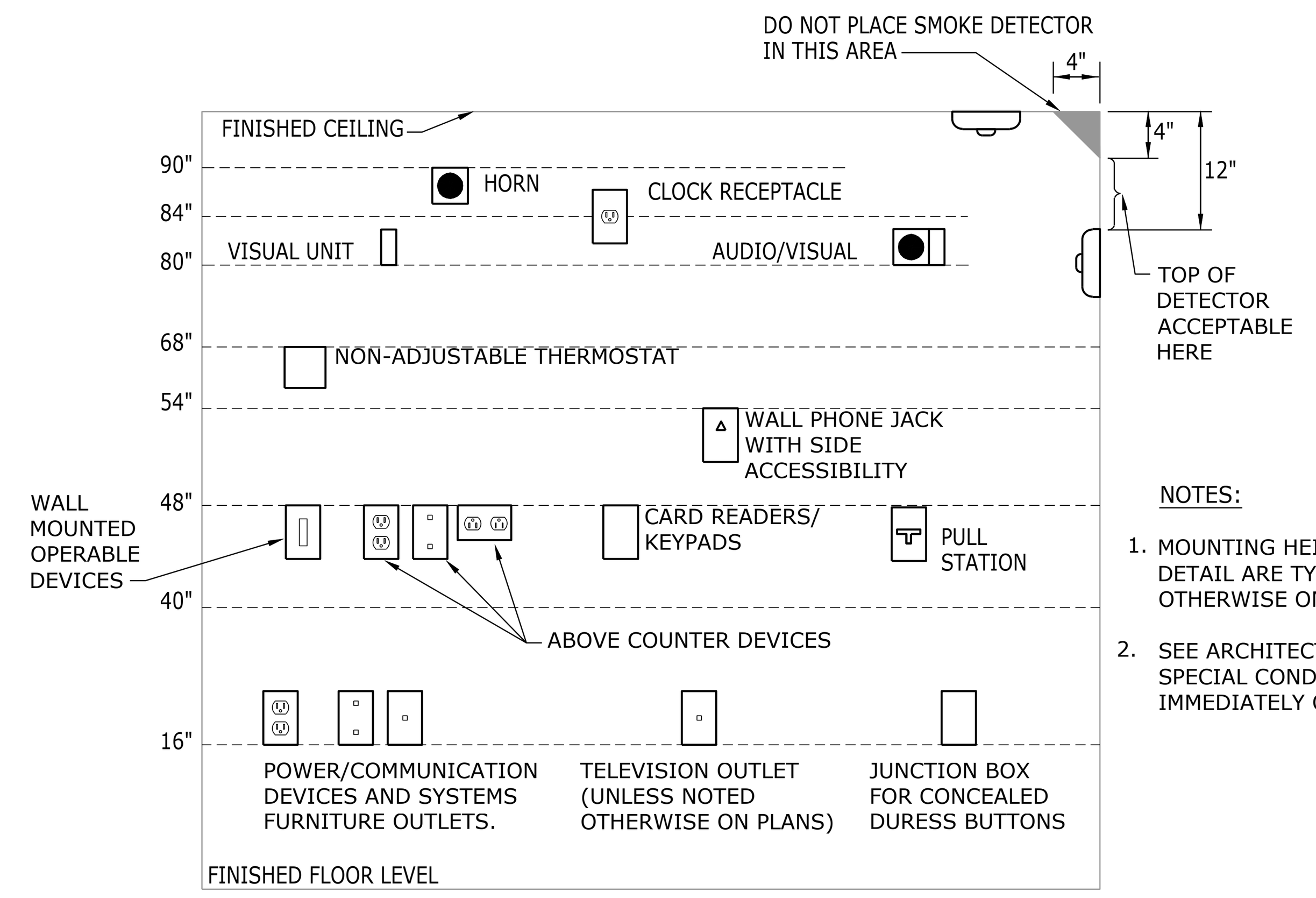


NOTES:

1. MOUNTING HEIGHTS SHOWN IN THIS DETAIL ARE TYPICAL UNLESS SHOWN OTHERWISE ON THE PLANS.
2. SEE ARCHITECTURAL ELEVATIONS FOR SPECIAL CONDITIONS. NOTIFY ARCHITECT IMMEDIATELY OF ANY CONFLICTS.

VISUAL UNIT (FIRE ALARM NOTIFICATION DEVICES) DEVICE 80" ABOVE HIGHEST FLOOR LEVEL OR 6" BELOW CEILING WHICH EVER IS LOWER (ADA 2010). BOTTOM OF DEVICE 80" AFF (NFPA).

AUDIO UNIT (FIRE ALARM NOTIFICATION DEVICE) TOP OF UNIT AT LEAST 90" AFF OR 6" BELOW CEILING WHICH EVER IS LOWER (NFPA).

AUDIO/VISUAL UNIT (FIRE ALARM NOTIFICATION DEVICE) LOCATION DETERMINED BY VISUAL UNIT REQUIREMENTS (NFPA).

PULL STATION (FIRE ALARM ACTIVATION DEVICE) HIGHEST OPERABLE PART SHALL NOT BE MORE THAN 48" ABOVE THE FLOOR (FRONT APPROACH) ADA 2010. OPERABLE PART (T-HANDLE) SHALL BE NOT LESS THAN 42" AFF (NFPA).

WALL MOUNTED OPERABLE DEVICES

OPERABLE DEVICES SHALL BE LOCATED 48" AFF. TO THE TOP OF OPERABLE PORTION OF DEVICE. WALL MOUNTED TELEPHONES WITH SIDE ACCESSIBILITY MAY BE MOUNTED UP TO 54" AFF. WALL MOUNTED OPERABLE DEVICES INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
- ADJUSTABLE THERMOSTATS.
- LIGHTING SWITCHES/DIMMERS/CONTROLS
- PUSH BUTTONS
- OTHER CONTROL OR "CALL" DEVICES

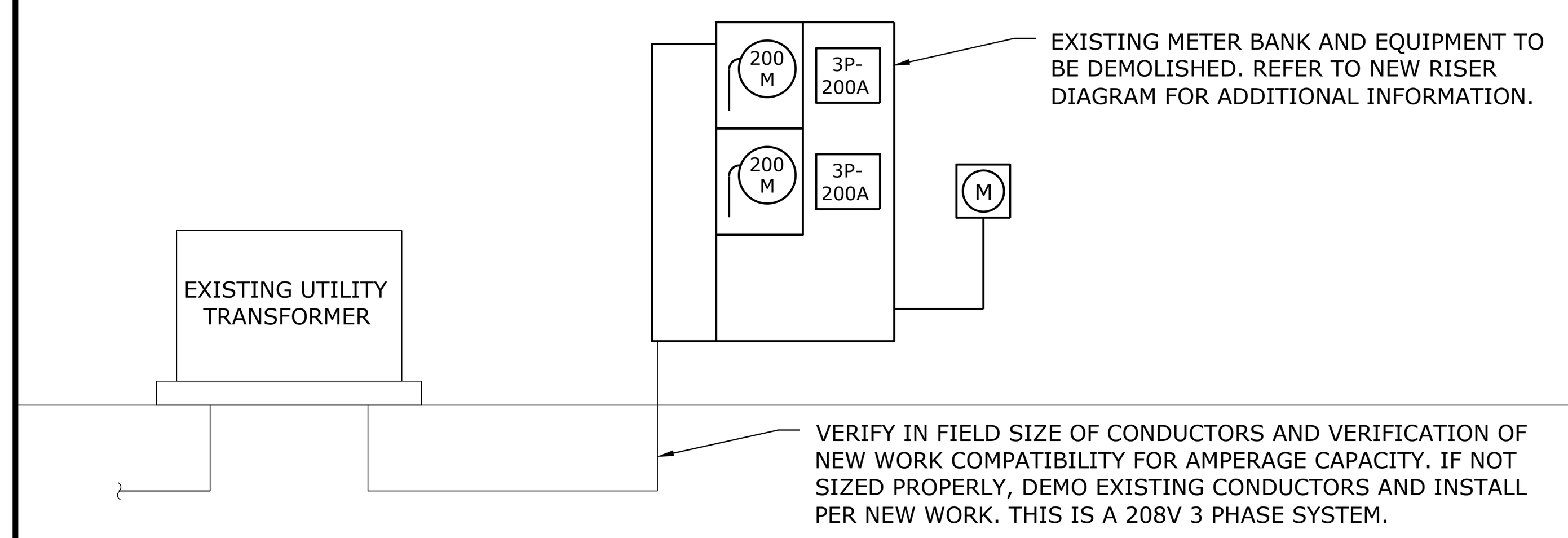
POWER/COMMUNICATION DEVICES:

OUTLETS SHALL BE LOCATED 16" AFF TO THE BOTTOM OF THE BOX. "ABOVE COUNTER" DEVICES SHALL BE LOCATED AT 48" TO THE TOP, OR 2" ABOVE BACKSPLASH TO THE BOTTOM OF THE BOX WHEN LOCATED ABOVE FIXED CASEWORK. (PLAN DESIGNATION A). VERIFY W/ ARCHITECTURAL DETAILS.

WALL MOUNTED DEVICES: MOUNTING HEIGHTS
NO SCALE

DEMOLITION GENERAL NOTES:

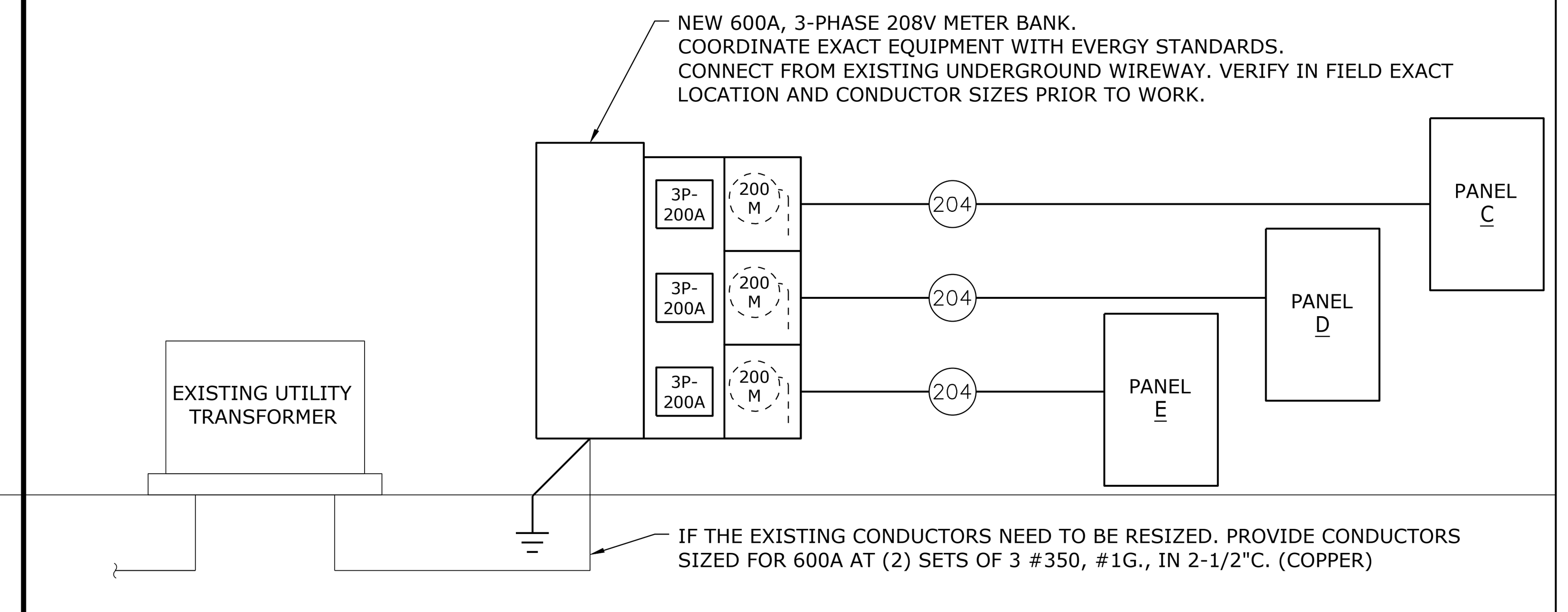
1. UNLESS NOTED OTHERWISE, SERVICES AND EQUIPMENT SHOWN IN FULL TONE OR FULL TONE AND DASHED ARE EXISTING TO BE DEMOLISHED AND HALF TONE ARE EXISTING TO REMAIN.



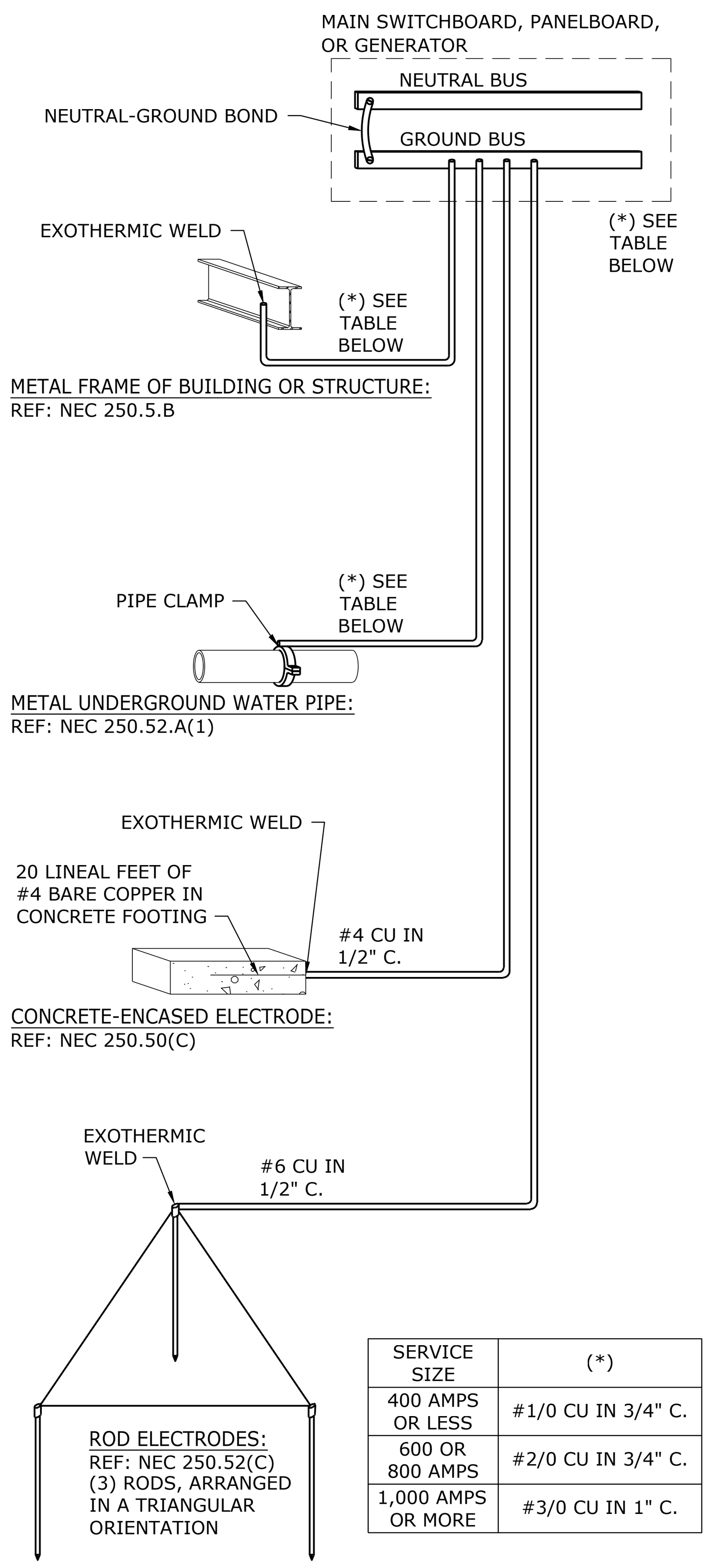
ELECTRICAL DEMO RISER DIAGRAM
NO SCALE

FEEDER SCHEDULE

TAG	MATL	DESCRIPTION
204	CU	(4)#3/0,#6G,2"C

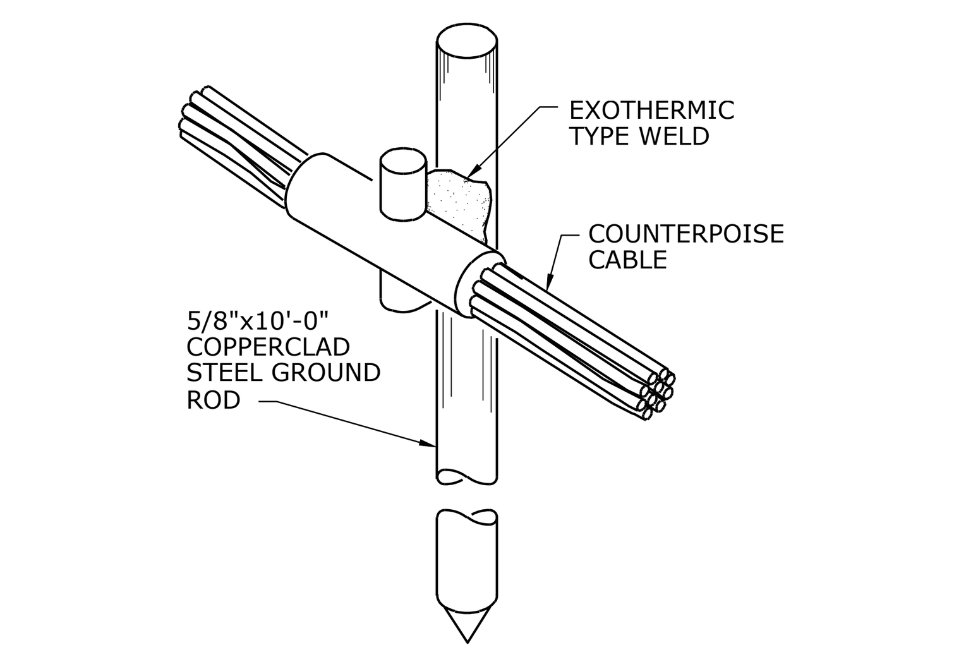


ELECTRICAL NEW RISER DIAGRAM
NO SCALE



SERVICE SIZE	(*)
400 AMPS OR LESS	#1/0 CU IN 3/4" C.
600 OR 800 AMPS	#2/0 CU IN 3/4" C.
1,000 AMPS OR MORE	#3/0 CU IN 1" C.

SERVICE GROUNDING DIAGRAM
NOT TO SCALE



TYPICAL GROUND ROD CONNECTION
NOT TO SCALE

SEAL
STATE OF MISSOURI
RYAN JEROD DIEDIKER
NUMBER PE-2015006577
PROFESSIONAL ENGINEER
6/10/22
06-10-2022

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REVISIONS

ISSUE DATE
06-10-22

PROJECT NUMBER
2022-000

SHEET NUMBER
E3.11

Electrical - Schedules & Details

smith & boucher engineers
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phone 913.345.2127 fax 913.345.0617
project number 2218000

PANEL E

MAIN BUS AMPS: 225 A
MAIN BREAKER: N/A
VOLTAGE: 208Y/120 V
PHASES/WIRES: 3 PH / 4 W
AIC: 22,000 A
SECTIONS: 1 - 42 SPACE
MOUNTING: RECESSED
ENCLOSURE TYPE: NEMA 1
MAIN LUGS ONLY
EQUIPMENT GROUND BUS

CIRCUIT DESCRIPTION	POLES	AMPS	CKT NO	CKT NO	AMPS	POLES	CIRCUIT DESCRIPTION
LTG - EXISTING BATHROOM	1	20	1	2	20	1	REC - BATHROOM.
LTG - SIGNAGE	1	20	3	4	20	1	REC - SHELL
AHU-3	3	50	5	6	20	1	REC - ROOFTOP
			7	8	20	1	SPARE
			9	10	20	1	SPARE
CU-3	2	40	11	12	20	1	SPARE
			13	14	20	1	SPARE
SPARE	1	20	15	16	20	1	SPARE
SPARE	1	20	17	18	20	1	SPARE
SPARE	1	20	19	20	20	1	SPARE
SPARE	1	20	21	22	20	1	SPARE
SPARE	1	20	23	24	20	1	SPARE
SPARE	1	20	25	26	20	1	SPARE
SPARE	1	20	27	28	20	1	SPARE
SPARE	1	20	29	30	20	1	SPARE
SPARE	1	20	31	32	20	1	SPARE
SPARE	1	20	33	34	20	1	SPARE
SPARE	1	20	35	36	20	1	SPARE
SPACE ONLY	1		37	38		1	SPACE ONLY
SPACE ONLY	1		39	40		1	SPACE ONLY
SPACE ONLY	1		41	42		1	SPACE ONLY

PANEL C

MAIN BUS AMPS: 225 A
MAIN BREAKER: N/A
VOLTAGE: 208Y/120 V
PHASES/WIRES: 3 PH / 4 W
AIC: 22,000 A
SECTIONS: 1 - 54 SPACE
MOUNTING: RECESSED
ENCLOSURE TYPE: NEMA 1
MAIN LUGS ONLY
EQUIPMENT GROUND BUS

CIRCUIT DESCRIPTION	POLES	AMPS	CKT NO	CKT NO	AMPS	POLES	CIRCUIT DESCRIPTION
LTG - JAN/BATHRM/SHELL	1	20	1	2	20	1	REC - BATHROOM
LTG - SIGNAGE	1	20	3	4	20	1	REC - SHELL
EWH-1	2	20	5	6	20	1	REC - ROOFTOP
WATER HEATER			7	8	20	1	SPARE
AHU-1	3	50	9	10	20	1	SPARE
			11	12	20	1	SPARE
			13	14	20	1	SPARE
CU-1	2	40	15	16	20	1	SPARE
			17	18	20	1	SPARE
SPARE	1	20	19	20	20	1	SPARE
SPARE	1	20	21	22	20	1	SPARE
SPARE	1	20	23	24	20	1	SPARE
SPARE	1	20	25	26	20	1	SPARE
SPARE	1	20	27	28	20	1	SPARE
SPARE	1	20	29	30	20	1	SPARE
SPARE	1	20	31	32	20	1	SPARE
SPARE	1	20	33	34	20	1	SPARE
SPARE	1	20	35	36	20	1	SPARE
SPARE	1	20	37	38	20	1	SPARE
SPARE	1	20	39	40	20	1	SPARE
SPARE	1	20	41	42	20	1	SPARE
SPARE	1	20	43	44	20	1	SPARE
SPARE	1	20	45	46	20	1	SPARE
SPARE	1	20	47	48	20	1	SPARE
SPACE ONLY	1		49	50		1	SPACE ONLY
SPACE ONLY	1		51	52		1	SPACE ONLY
SPACE ONLY	1		53	54		1	SPACE ONLY

PANEL D

MAIN BUS AMPS: 225 A
MAIN BREAKER: N/A
VOLTAGE: 208Y/120 V
PHASES/WIRES: 3 PH / 4 W
AIC: 22,000 A
SECTIONS: 1 - 54 SPACE
MOUNTING: RECESSED
ENCLOSURE TYPE: NEMA 1
MAIN LUGS ONLY
EQUIPMENT GROUND BUS

CIRCUIT DESCRIPTION	POLES	AMPS	CKT NO	CKT NO	AMPS	POLES	CIRCUIT DESCRIPTION
LTG - SHELL	1	20	1	2	20	1	REC - SHELL
LTG - SIGNAGE	1	20	3	4	20	1	SPARE
AHU-2	3	60	5	6	20	1	SPARE
			7	8	20	1	SPARE
			9	10	20	1	SPARE
CU-2	2	50	11	12	20	1	SPARE
			13	14	20	1	SPARE
SPARE	1	20	15	16	20	1	SPARE
SPARE	1	20	17	18	20	1	SPARE
SPARE	1	20	19	20	20	1	SPARE
SPARE	1	20	21	22	20	1	SPARE
SPARE	1	20	23	24	20	1	SPARE
SPARE	1	20	25	26	20	1	SPARE
SPARE	1	20	27	28	20	1	SPARE
SPARE	1	20	29	30	20	1	SPARE
SPARE	1	20	31	32	20	1	SPARE
SPARE	1	20	33	34	20	1	SPARE
SPARE	1	20	35	36	20	1	SPARE
SPARE	1	20	37	38	20	1	SPARE
SPARE	1	20	39	40	20	1	SPARE
SPARE	1	20	41	42	20	1	SPARE
SPARE	1	20	43	44	20	1	SPARE
SPARE	1	20	45	46	20	1	SPARE
SPARE	1	20	47	48	20	1	SPARE
SPACE ONLY	1		49	50		1	SPACE ONLY
SPACE ONLY	1		51	52		1	SPACE ONLY
SPACE ONLY	1		53	54		1	SPACE ONLY

LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	MOUNTING	SOURCE	VOLTS	MANUFACTURER	V-A
A	2X4 LED FLAT PANEL. INTEGRAL 0-10V DIMMING DRIVER STANDARD.	RECESSED	LED 4000K 5000 LUMENS 80 CRI	UNV	LSI SFP24 SERIES OR APPROVED EQUAL	50
Q	EXTERIOR STRIP LIGHT FOR COVE. 120 DEGREE BEAM SPREAD. IP65 RATED. PROVIDE FLAT ALUMINUM CHANNEL. REFER TO AND MEASURE OFF PLANS FOR EXACT LENGTHS. MAX LENGTH 120FT PER POWER FEED AT 250 LUM/FT OUTPUT.	SURFACE	LED 268 LM/FT 4000K 90 CRI	120	KELVIX - OREX SERIES (RX-40K) OR APPROVED EQUAL	3/LF
S1 S1X	EXTERIOR 4" DOWNLIGHT LED. 0-10V DIMMING DRIVER. WIDE 75 DEGREE BEAM. SELF-FLANGED, MATTE WHITE FINISH. X = EMERGENCY BATTERY PACK.	RECESSED	LED 1,500 LUMENS 4000K 80 CRI	UNV	COOPER - LD4B SERIES OR APPROVED EQUAL	15.5
W1 W1X	EXTERIOR WALLPACK LED. TYPE IV WIDE DISTRIBUTION. BRONZE FINISH. X = EMERGENCY BATTERY PACK.	WALL	LED 4,500 LUMENS 4000K 70 CRI	UNV	LUMARK - PREVAIL PETITE DISCRETE WALL SERIES ACUITY - WDGE2 LED HE WILILAMS - VWP HORIZONTAL. OR APPROVED EQUAL	31
WP	EXTERIOR WALLPACK LED. WET LOCATION RATED. INSTALL SO LIGHTS POINTING UPWARDS.	WALL	LED 7,108 LUMENS 4000K 70 CRI	UNV	LUMARK - WPSQLED SERIES ACUITY - TWX2 LED SERIES OR APPROVED EQUAL	64
SL1	DOUBLE HEAD 180 DEGREE ARCHITECTURAL LED EXTERIOR PARKING LOT FIXTURE. BRONZE FINISH. TYPE V DISTRIBUTION. UL LISTED FOR WET LOCATION. (TENON MOUNTING PROHIBITED). INTEGRAL 10% 0-10V DIMMING DRIVER. REPLACE HEAD FIXTURE ON EXISTING POLE.	CONCRETE BASE	LED 20,000 LUM/HEAD 4000K 70 CRI	120	LUMARK - PREVAIL SERIES	153/ HEAD
SL2	DOUBLE HEAD 180 DEGREE ARCHITECTURAL LED EXTERIOR PARKING LOT FIXTURE. BRONZE FINISH. TYPE IV W/ ROTATED OPTICS. UL LISTED FOR WET LOCATION. (TENON MOUNTING PROHIBITED). INTEGRAL 10% 0-10V DIMMING DRIVER. REPLACE HEAD FIXTURE ON EXISTING POLE.	CONCRETE BASE	LED 20,000 LUM/HEAD 4000K 70 CRI	120	LUMARK - PREVAIL SERIES	153/ HEAD
XR	EMERGENCY DOUBLE REMOTE HEAD FIXTURE. ALUMINUM MATERIAL. 25 FEET COVERAGE. WHITE FINISH. WET LOCATION. (1) DOUBLE REMOTE HEAD CAPACITY PER EXIT SIGN (TYPE X). XR IS TO BE POWERED OFF TYPE X.	UNIVERSAL	LED	UNV	SURE-LITES - SRM SERIES OR APPROVED EQUAL	2.5
X	COMBINATION EXIT SIGN EGRESS LIGHT WITH REMOTE HEAD CAPACITY. RED LETTERING. NUMBER OF FACES TO CORRESPOND TO PLANS. WHITE FINISH. NICKEL CALDMIUM BATTERY.	UNIVERSAL	LED	UNV	SURE-LITES - APCH SERIES (APCH7R) OR APPROVED EQUAL	<5

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
07/14/2022

STATE OF MISSOURI
RYAN JEROD DIEDIKER
NUMBER PE-2010065711
REGISTERED PROFESSIONAL ENGINEER
06-10-2022

PERMIT SET

DEER BROOK PLAZA
1121 & 1151 NE RICE ROAD
LEE'S SUMMIT, MO 64086-6788

ICON architecture + fabrication
506 Grand Boulevard
Kansas City, MO 64106
p:816.221.0250 f:816.221.0251

REVISIONS
1 BUILDING PLAN REVIEW 6-22-22

ISSUE DATE
06-10-22

PROJECT NUMBER
2022-000

SHEET NUMBER
E3.12

Electrical - Schedules & Details

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phone 913.345.2127 fax 913.345.0617
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