LM2 OFFICE RENOVATION

100% CONSTRUCTION DOCUMENTS

INTERIOR PERSPECTIVE:



DRAWING LIST 1 - GENERAL CODE REVIEW ACCESSIBIITY DIAGRAMS ENERGY CODE ANALYSIS ECA.02 ENERGY CODE NOTES ECA.03 ENERGY CODE NOTES Missouri Certificate of Authority 3 - ARCHITECTURE D1.01 DEMO PLAN Structural Engineer: Bob D. Campbell & Co. DIMENSION PLAN Missouri Certificate of Authority KEYNOTE PLAN **ELEVATIONS** 4338 Belleview Ave. WALL SECTIONS & DETAILS Kansas City, MO 64111 WALL SECTIONS & DETAILS 816.531.4144 INTERIOR ELEVATIONS MEP Engineer: INTERIOR ELEVATIONS PKMR Engineers REFLECTED CEILING PLAN Missouri Certificate of Authority DOOR SCHEDULE & WINDOW DETAILS #E-2002020886 INTERIOR SCHEDULES 13300 W. 98th Street FINISH PLAN Lenexa, KS 66215 FF&E PLAN 913.492.2400 INTERIOR DETAILS INTERIOR DETAILS 4 - STRUCTURAL GENERAL NOTES FOUNDATION PLAN **SECTIONS** 5 - MECHANICAL, PLUMBING & ELECTRICAL COVER SHEET **SPECIFICATIONS SPECIFICATIONS** SITE PLAN MEP2.01 FLOOR PLAN - MECHANICAL DEMOLITION FLOOR PLAN - HVAC JOB NUMBER 23011 MECHANICAL SCHEDULES MECHANICAL DETAILS

FLOOR PLAN - PLUMBING DEMOLITION

FLOOR PLAN - ELECTRICAL DEMOLITION

ELECTRICAL RISER DIAGRAM & SCHEDULES

PLUMBING SCHEDULES & DETAILS

FLOOR PLAN - SPECIAL SYSTEMS

ELECTRICAL SCHEDULES & DETAILS

FLOOR PLAN - PLUMBING

FLOOR PLAN - LIGHTING FLOOR PLAN - POWER

SYMBOLS

Detail Section

Sheet Number -

Detail Number —

Sheet Number

Detail Number

Sheet Number

Detail Number —

Sheet Number ———

Room Name ————

Window Designation

Keynote Designation

Revision Symbol

Room Designation

Room Number

Room name

#2003011262

Dalyn Novak - Architect MO # 2011006178

ISSUE DATE No Description

I HEREBY CERTIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THE COVER AND THOSE SHEETS LISTED UNDER THE ARCHITECTURAL HEADER OF THE DRAWING LIST. I HEREBY DISCLAIM RESPONSIBILITY FOR ALL OTHER PLANS, SPECIFICATIONS, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OF PARTS OF THE ARCHITECTURAL OR

ENGINEERING PROJECT. Dalyn Movak - Architect

MO # 2011006178

COVER

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ADOPTED CODES

2009 ANSI A117.1

CHAPTER 3 - OCCUPANCY CLASSIFICATION AND USE 303 - ASSEMBLY GROUP A-3 304 - BUSINESS GROUP B

311 - STORAGE GROUP S-2

CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS

503 - GENERAL BUILDING HEIGHT AND AREA LIMITATIONS 504 - BUILDING HEIGHT AND NUMBER OF STORIES

BUILDING AREA (PER TABLE 506.2) A-2 (II-B) ALLOWABLE 9500 SF B (II-B) ALLOWABLE 23000 SF

EQUATION 5-2 $Aa = [At + (NS \times If)] \times Sa$ $Aa = [9500 + (9500 \times .75) \times 1]$

Aa = ALLOWABLE AREA SF At = APPLICABLE(NS,S1,S13R, S13D) TABULAR ALLOWABLE AREA FACTOR PER 506.2 NS = NONSPRINKLERED TABULAR ALLOWABLE AREA FACTOR PER 506.2

Sa = STORIES ABOVE GRADE PLANE 506.3 FRONTAGE INCREASE

If = [F/P-0.25]W/30If = [456/456-.25]30/30 If = .75

W = WIDTH OF PUBLIC WAY PER 506.3.2

508 - MIXED USE AND OCCUPANCY NON SEPARATED OCCUPANCIES GROUP A-2 MOST RESTRICTIVE

ROOF CONSTRUCTION

903 - AUTOMATIC SPRINKLER SYSTEMS BUILDING IS NON-SPRINKLERED 906 - PORTABLE FIRE EXTINGUISHERS

CHAPTER 10 - MEANS OF EGRESS

MAX TRAVEL DISTANCE

1004 - OCCUPANT LOAD SEE PLAN FOR ROOM OCCUPANCIES 1004.8 CONCENTRATED BUSINESS USE AREAS ≤ 50SF/OCCUPANT

TOTAL EGRESS WIDTH PROVIDED REQUIRED 2

MAX COMMON PATH OF EGRESS TRAVEL W/O SPRINKLER A-2 B/S-2 OCC LOAD ≤ 30 - 75FT 100FT OCC LOAD ≥ 30 - 75FT 75FT

W/O SPRINKLER REQUIRED 200 FT PROVIDED 194 FT

CORRIDOR WIDTH (PER TABLE 1020.2) REQUIRED 44"

KANSAS CITY, MO

2018 INTERNATIONAL BUILDING CODE 2017 NATIONAL ELECTRICAL CODE 2018 INTERNATIONAL FUEL GAS CODE 2018 INTERNATIONAL MECHANICAL CODE 2018 UNIFORM PLUMBING CODE 2018 INTERNATIONAL EXISTING BUILDING CODE 2018 NFPA 101 LIFE SAFETY 2018 INTERNATIONAL FIRE CODE 2021 INTERNATIONAL ENERGY CONSERVATION CODE

CODE REVIEW INFORMATION

506 - BUILDING AREA 506.2 - ALLOWABLE AREA DETERMINATION

S-2 (II-B) ALLOWABLE 26000 SF

506.2.2 MIXED-OCCUPANCY ONE STORY BUILDINGS

ACTUAL AREA -12,075 SF

Aa = 16,625 SF

If = AREA FACTOR FRONTAGE INCREASE

MIN PERIMETER ON PUBLIC WAY ≥ 25% EQUATION 5-5

If = FRONTAGE AREA FACTOR INCREASE F = BUILDING PERIMETER ON PUBLIC WAY > 20FT P = PERIMETER OF BLDG

508.3 - MIXED USE AND OCCUPANCY

CHAPTER 6 - TYPE OF CONSTRUCTION

601 - GENERAL FIRE RESISTANCE REQUIREMENTS - II-B(TABLE 601) STRUCTURAL FRAME 0 HR EXTERIOR BEARING WALLS 0 HR INTERIOR BEARING WALLS 0 HR INTERIOR NON-BEARING WALLS 0 HR FLOOR CONSTRUCTION 0 HR

0 HR

CHAPTER 8 - INTERIOR FINISHES

FINISH REQUIREMENTS BY OCCUPANCY (TABLE 803.13) NONSPRINKLERED A-2 B S-2 EXIT STAIRWAY & PASSAGEWAY A A B CORRIDORS A B B ROOMS & ENCLOSED SPACES

CHAPTER 9 - FIRE PROTECTION AND LIFE SAFETY SYSTEMS

OCCUPANT LOAD SHALL BE ACTUAL OCC LOAD NOT 1005 - MEANS OF EGRESS SIZING

SEE CODE PLAN FOR WIDTHS AT EACH EXIT 1006 - NUMBER OF EXITS AND EXIT ACCESS DOORWAYS TOTAL EXITS PROVIDED (PER TABLE 1006.3.2) PROVIDED 3

1017 - EXIT ACCESS TRAVEL DISTANCE MAX TRAVEL DISTANCE (PER TABLE 1017.2)

1020 - CORRIDORS PROVIDED MIN 68"

CHAPTER 29 - PLUMBING SYSTEMS 2902 - MINIMUM PLUMBING FACILITIES FIXTURE REQUIREMENTS (TABLE 2902.1)

A-2 OCC = 155B = 80S-2 = 5 OCCTOTAL = 240

WATER CLOSETS REQUIRED A-2 OCC = 155 OCC / 2 = 78 OCC MEN = 1/125 = 78/125 = .62 WCWOMEN = 1/65= 78/65 = 1.2 WC B OCC = 80 OCC / 2 = 40 OCC MEN = 1/25 = 40/25 = 1.6 WC

WOMEN = 1/25= 40/65 = 1.6 WC S-2 OCC = 5 OCC / 2 = 3 OCCMEN = 3/100 = 78/125 = .03 WCWOMEN = 3/100= 78/65 = .03 WC

TOTAL MEN = 2.25 WCWOMEN = 2.83 WCWATER CLOSETS PROVIDED MEN = 3 WCWOMEN = 3+1 WC

LAVATORIES REQUIRED

A-2 OCC = 155 OCC / 2 = 78 OCCMEN = 1/200 = 78/200 = .39 LAVWOMEN = 1/200 = 78/200 = .39 LAVB OCC = 80 OCC / 2 = 40 OCC MEN = 1/40 = 40/40 = 1 LAVWOMEN = 1/40 = 40/40 = 1 LAVS-2 OCC = 5 OCC / 2 = 3 OCC MEN = 1/100 = 3/100 = .3 LAVWOMEN = 1/100 = 3/100 = .3 LAV

MEN = 1.69WCWOMEN = 1.69 WC LAVATORIES PROVIDED MEN = 1? LAVWOMEN = **1?+1** LAV

DRINKING FOUNTAINS REQUIRED A-2 OCC = 155 OCC = 155/500 = .31 DF

B OCC = 80 OCC= 80/100 = .8 DFS-2 OCC = 5 OCC= 5/1000 = .005 DFTOTAL = 1.12 DF

DRINKING FOUNTAINS PROVIDED

TOTAL = 2 DF

SERVICE SINK REQUIRED ALL OCC = 1 SERVICE SINK SERVICE SINK PROVIDED TOTAL = 1 SERVICE SINK

Missouri Certificate of Authority #2003011262

Structural Engineer: Bob D. Campbell & Co. Missouri Certificate of Authority #000442 4338 Belleview Ave. Kansas City, MO 64111 816.531.4144

MEP Engineer: PKMR Engineers Missouri Certificate of Authority #E-2002020886 13300 W. 98th Street Lenexa, KS 66215 913.492.2400

JOB NUMBER 23011



Dalyn Novak - Architect MO # 2011006178

ISSUE DATE 04/17/2024 No Description

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CODE REVIEW

G0.0

<u>LEGEND</u>

∠ DIRECTION OF TRAVEL

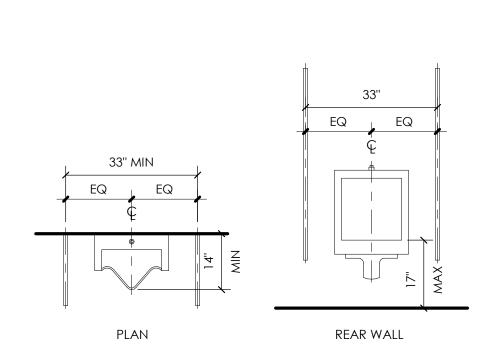
COMBINED OCCUPANCY LOAD ∠ DIRECTION OF TRAVEL

ROOM OCCUPANCY LOAD

F.E. FIRE EXTINGUISHER & BRACKET F.E.C. FIRE EXTINGUISHER & CABINET

A10 01 FIRST FLOOR

10

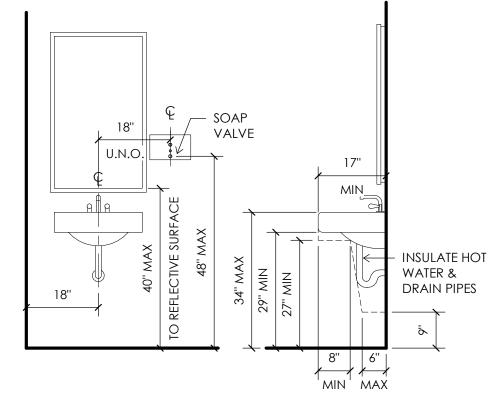


URINAL CLEARANCES

D

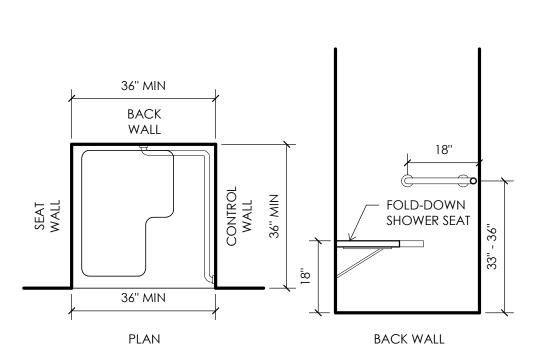
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ALL DIMENSIONS ARE TO FINISH FACE OF WALL, **NOT** STUD



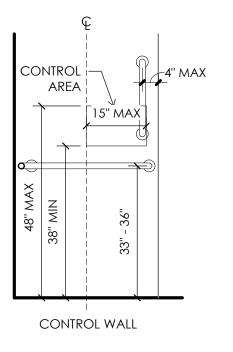
LAVATORY CLEARANCES

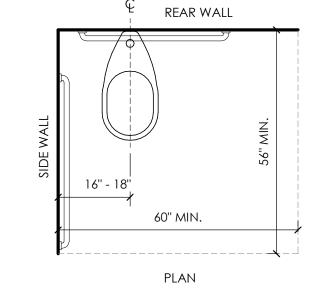
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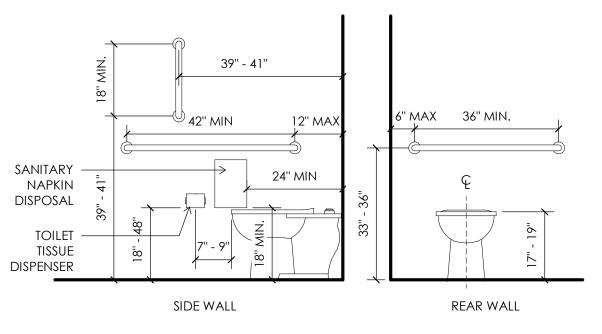


TRANSFER TYPE SHOWER COMPARTMENT

ALL DIMENSIONS ARE TO FINISH FACE OF WALL, **NOT** STUD



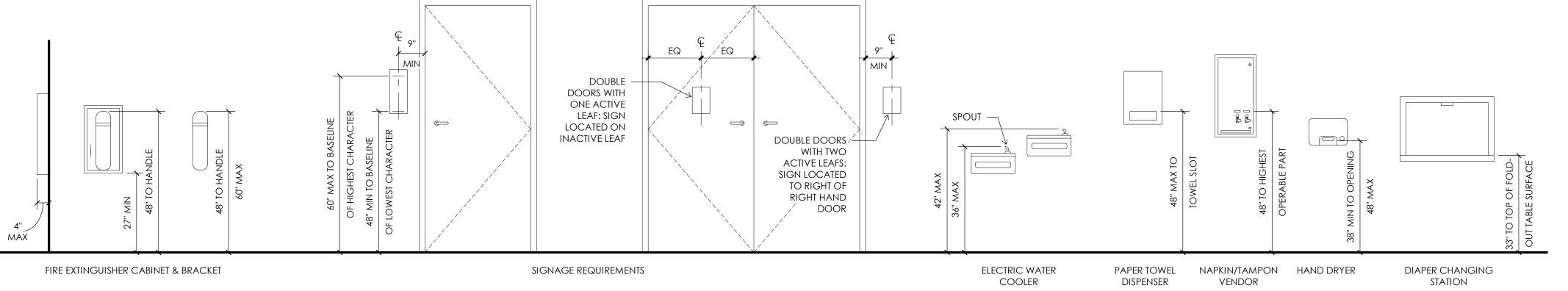




9 8 7 6 5 2

WATER CLOSET CLEARANCES

ALL DIMENSIONS ARE TO FINISH FACE OF WALL, **NOT** STUD



ACCESSIBILITY

A 10 DIAGRAMS

1/2" = 1'-0"



Structural Engineer:
Bob D. Campbell & Co.
Missouri Certificate of Authority
#000442
4338 Belleview Ave.
Kansas City, MO 64111
816.531.4144

MEP Engineer:
PKMR Engineers
Missouri Certificate of Authority
#E-2002020886
13300 W. 98th Street
Lenexa, KS 66215
913.492.2400

JOB NUMBER 23011

SANTE FE ROAD ITY, MO 64138

LM2 OFFICE RENOVA

DALYN NOVAK
NUMBER
A2011006178

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04/17

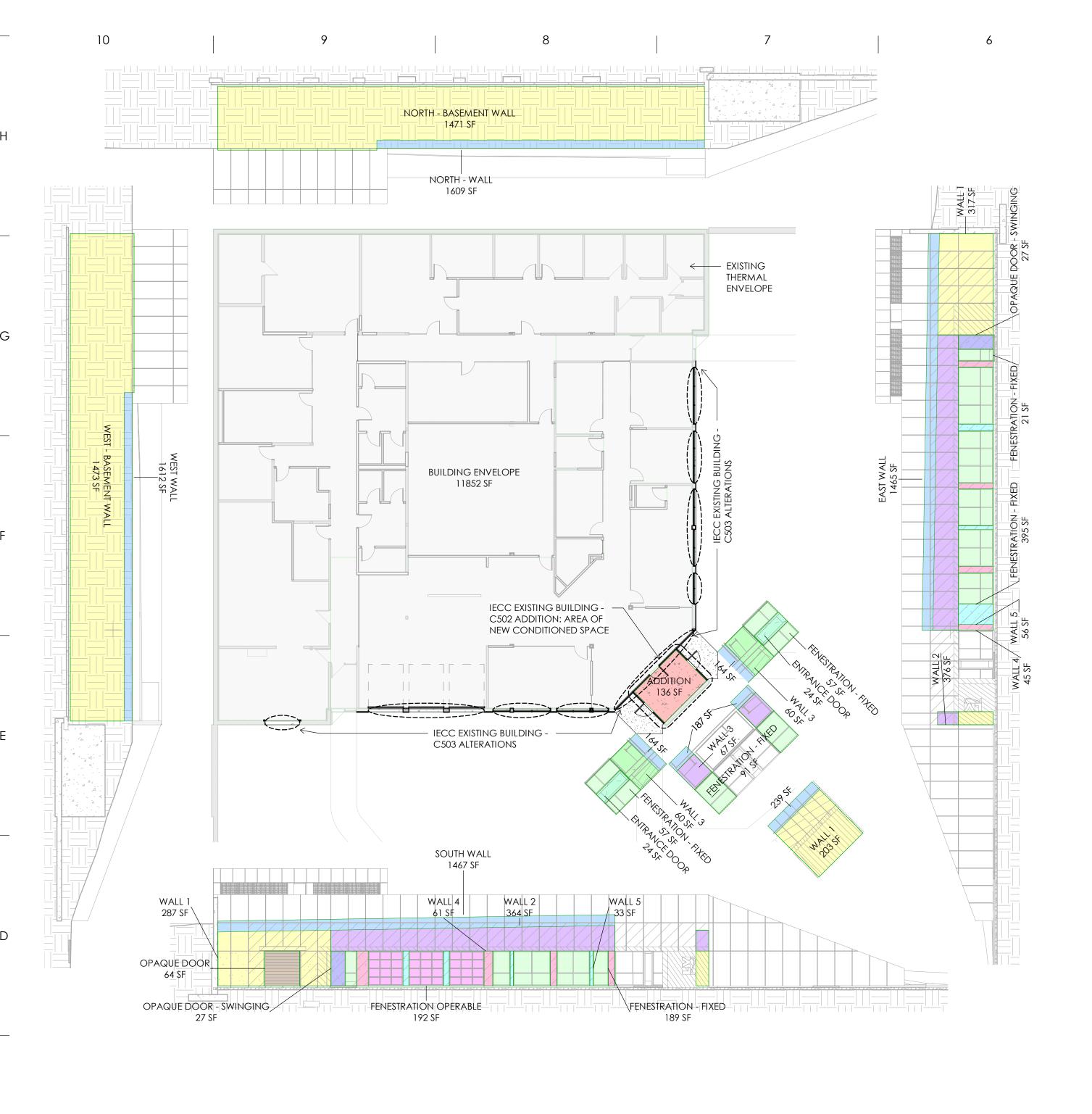
Dalyn Novak - Architect MO # 2011006178

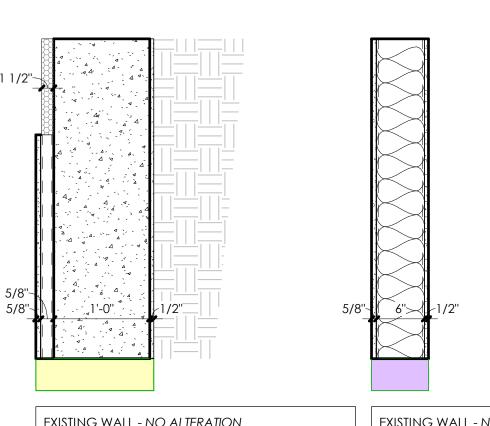
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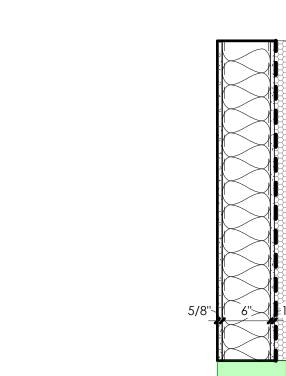
ACCESSIBIITY DIAGRAMS

G0.02



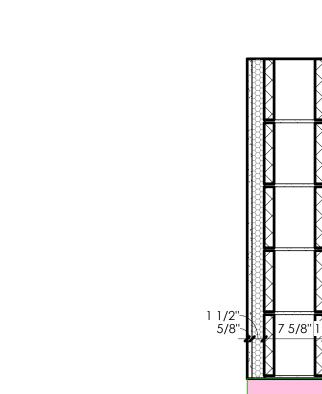


U-VALUE



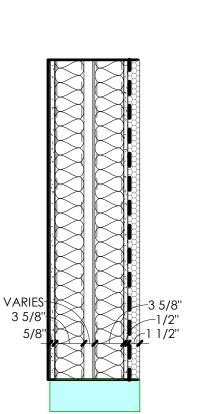
U-0.096

U-VALUE



U-0.056

U-VALUE



		_			
STING WALL - NO ALTERATION			EXISTING WALL - NO ALTERATION		NEW WA
ALL TYPE 1			WALL TYPE 2		WALL TY
	-		-	-	-
TERIOR	EXTERIOR		EXTERIOR	EXTERIOR	EXTERIO
EARTH	~		~		1 1/2"
1/2" COVERBOARD	R-1.32		1/2" GYP SHEATHING	R-1.32	AIR B
WATERPROOFING MEMBRANE	-		6" MTL STUD FURRING @ 24" O.C.	-	1/2" (
12" CAST IN PLACE CONCRETE	R-8.5		W/ 6" BATT INSULATION	R-8.55	6" MT
1 5/8" MTL STUD FURRING @ 24" O.C.	-		5/8" FOIL BACKED GYP BD	R-0.5625	W/ 6"
5/8" GYP BD	R-0.5625		INTERIOR	INTERIOR	5/8" C
ERIOR					INTERIOR

U-VALUE

U-0.097

/ALL -YPE 3 **EXTERIOR** /2" RIGID INSULATION BARRIER GYP SHEATHING ATL STUD FURRING @ 16" O.C. 5" BATT INSULATION R-8.55 R-0.5625 " GYP BD INTERIOR

ADDED TO EXTERIOR OF WALL WALL TYPE 4 EXTERIOR EXTERIO 1 1/2" EIFS W R7.5 INSULATION 8" CMU BLOCK W/JAMBS GROUTED FULL R-1." 1 1/2" RIGID INSULATION R-7.5 5/8" FOIL BACKED GYP BD R-.5625 INTERIOR INTERIOR

EXISTING WALL - NEW AIR BARRIER AND EIFS

EIFS	NEW WALL - WALL TYPE 5	
EXTERIOR R-7.5 JLL R-1.1 R-7.5 R5625 INTERIOR	EXTERIOR 1 1/2" EIFS AIR BARRIER 1/2" GYP SHEATHING 3 5/8" MTL STUDS @ 16" O AIR SPACE 3 5/8" MTL STUDS @ 16" O 5/8" GYP BD INTERIOR	-
U- 0.060	U-VALUE	U-0.044

ENERGY CODE NARRATIVE

THIS IS A RENOVATION OF AN EXISTING BUILDING: PER CHAPTER 5 OF THE IECC THIS BUILDING HAS BOTH ADDITION AND ALTERATION COMPONETS

THIS BUILDING WILL BE FOLLOWING THE PRESCRIPTIVE COMPLIANCE PATH AS OUTLINED IN C5 AND C401.2.1

THERMAL ENVELOPE CERTIFICATE - SEE COMCHECK ON THIS PAGE - FULL PDF COPY WILL ALSO BE SUBMITTED

THE SCOPE OF WORK THAT IMPACTS THE THERMAL ENVELOPE OF THE BUILDING ARE AS FOLLOWS

C502 ADDITIONS:

AN EXISTING COVERED SPACE IS BEING ENCLOSED FOR THE NEW VESTIBULE. THIS RESULTS IS AN ADDITION OF ~136 SF OF CONDITIONED SPACE TO THE BUILDING

PER <u>C502.2</u> THE ADDITION IS EXCEPTED FROM APPLYING WITH SECTION <u>C502</u> OF THE CODE BECAUSE THE PROPOSED UA (0.100) IS NOT > 110% OF THE TARGET UA(0.110)

THE BUILDING WILL COMPLY WITH THE PROVISIONS OF C503 FOR ALTERATIONS (BELOW)

C503 ALTERATIONS:

EXISTING HOLLOW METAL WINDOWS AND SINGLE WYTHE CMU WALLS BELOW THE EXISTING OPENINGS ARE BEING REMOVED AND ARE REPLACED BY FULL HEIGHT STOREFRONT AND 3 GLAZED OVERHEAD SECTIONAL DOORS

AN EXISTING HOLLOW METAL SERVICE DOOR IS BEING REMOVED AND REPLACED BY A NEW LARGER COILING OVERHEAD DOOR

THERE WILL BE SOME INFILL OF MTL STUD WALLS BETWEEN THE OPENINGS AND ALL NEW METAL STUD WALLS AND REMAINING EXSTING CMU WALLS WILL BE COVERED WITH

NEW BUILDING ENVELOPE ASSEMBLIES THAT ARE PART OF the alterations shall comply with <u>C402.1-C402.5</u> as

<u>C402.1</u> - GENERAL

C402.1.3 INSULATION COMPONENT R VALUE C402.1.4 ASSEMBLY U/C/F - FACTOR SEE WALL ASSEMBLIES ON THIS PAGE

C402.2 - SPECIFIC BUILDING THERMAL ENVELOPE INSULATIONS REQUIREMENTS C402.2.1 - ROOF ASSEMBLY N/A - ROOF WILL NOT BE ALTERED C402.2.2 - ABOVE GRADE WALLS

SEE WALL ASSEMBLIES ON THIS PAGE C402.2.3 - FLOORS C402.2.4 - SLAB ON GRADE

<u>C402.3</u> - ROOF SOLAR REFLECTANCE AND THERMAL **FMITANCE** THE ROOF WILL NOT BE ALTERED BY THIS WORK

SEE C402.1.3

C402.4 - FENESTRATION C402.4.1 - MAX AREA THR MAX AREA OF FENESTRATION WILL BE 29% OF THE ABOVE GRADE WALLS, THIS PERCENTAGE IS HIGH BECAUSE THIS IS AN EARTH CONTACT BUILDING AND HALF OF THE WALLS ARE BELOW GRADE AND ARE NOT USED IN THE CALCULATION. IF FENESTRATION IS CALCULATED AS A PERCENTAGE OF TOTAL BUILDING ENVELOPE WALL AREA IT IS WELL WITHIN THE REQUIREMENT - SEE CALCULATIONS

C402.5 - AIR LEAKAGE - THERMAL ENVELOPE

C402.5.1 AIR BARRIERS

AS THIS IS AN ALTERATION TO AN EXISTING BUILDING THERE WILL NOT BE A CONTINUOUS AIR BARRIER, NEW ASSEMBLIES WILL COMPLY WITH C402.5.1.3 C402.5.2 - DWELLING/SLEEPING UNITS

C402.5.3 - THERMAL ENVELOPE TESTING AS THIS IS AN ALTERATION TO A VERY SMALL PERCENTAGE OF THE EXISTING BUILDING ENVELOPE IT MAY NOT BE POSSIBLE TO DO ANY MEANINGFUL TESTS OF THE THERMAL ENVELOPE, SEE C402.5.4 C402.5.4 - AIR LEAKAGE OF FENESTRATION

PER EXCEPTION 1 THIS PROJECT IS EXCEPTED BECAUSE FENESTRATION WILL BE FIELD FABRICATED C402.5.5 - ROOMS W/ FUEL APPLIANCES

C402.5.6 - DOORS/ACCESS TO SHAFT SPACES

C402.5.7 - AIR INTAKES

RE:MEP SHEETS C402.5.8 - N/A NO LOADING DOCKS IN THE PROJECT C402.5.9 - A NEW VESTIBULE IS BEING CREATED UNDER THE SCOPE OF THIS PROJECT

C402.5.10 - N/A NO RECESSED LIGHTING WILL BE PROVIDED IN THE THERMAL ENVELOPE

FENESTRATION CALCULATIONS

SE - 209SF / 363SF

239 = 6,906SF

Construction Site:

2-Office : Nonresidential

Post-Alteration Assembly Floor: Unheated Slab-On-Grade, [Bldg. Use 2 - Office] la Door: Glass (over 50% glazing): Metal Frame, rance Door, Entrance Door, Entrance Door, [Bidg. Use - Office]

- Office] -- -- 0.310 0.360 0.450 0.426 136a: Glass (over 50% glazing): Metal Frame, Non-Entrance Door, Non-Entrance Door, Non-Entrance Door,

Inspection Checklist Energy Code: 2021 IECC

Plan Review □Not Applicable
□Complies
□Does Not
■Exception: Requirement does not apply

Additional Comments/Assumptions: Section # Rough-in Electrical Inspection Complies? Comments/Assumptions

C402.5.11 - INTERLOCKING DUE TO THE REUSE OF EXISTING MECHANICAL SYSTEMS IT IS NOT POSSIBLE TO RETROFIT INTERLOCK

EXISTING ELEVATIONS

E - 185SF + 21SF / 1237SF S - 173SF + 21SF / 1238SF

EXISTING FENESTRATION = 185+21+173+21+209=609SF existing above grade envelope=1237+1238+363=2,838\$F 609SF/2,838SF = 21.5%

FENESTRATION/ELEVATION AREA

N - OSF / 1610SF E - 395SF + 21SF / 1465SF S - 189SF + 192SF + 21SF / 1467SF W - OSF / 1610SF SE - 91 / 187SF + 239SF VESTIBULE NE - 80SF / 164SF VESTIBULE SW - 80SF / 164SF

FENESTRATION SF = 395+21+189+192+21+80+80+91=1,069SF ABOVE GRADE ENVELOPE SF=1465+1467+164+187+164 + 239 = **3,689SF** TOTAL ENVELOPE SF=1610+1610+1465+1467+164+187+164+

1,069SF/**3,689**SF = **29%** OF ABOVE GRADE WALLS 1,069SF/**6,906**SF = **15.5%** OF BUILDING ENVELOPE Envelope Compliance Certificate

E - Ext. Wall: Steel-Framed, 16in. o.c., [Bldg. Use 1 - 19.0 7.5 0.060 -- 0.064 Office)
Window: Metal Frame with Thermal Break: Fixed, Clear, — 0.310 0.360 0.360 0.426
Fixed, Fixed, [Bidg. Use 2 - Office]
1.00 Door: Glass (over 50% glazing): Metal Frame, — 0.630 0.360 0.630 0.426
Entrance Door, Entrance Door, Entrance Door, [Bidg. Use 2 - Office] Window: Metal Frame with Thermal Break: Fixed, Clear, — 0.310 0.360 0.380 0.426

Fixed, Fixed, Bldg. Use 1 - Office |
4-se - Ext. Wall: Other Mass Wall, Heat capacity 0.0, (Bldg. Use 2 - Office), Exemption: Framing cavity not sposed, (a)

↑ COMcheck Software Version COMcheckWeb

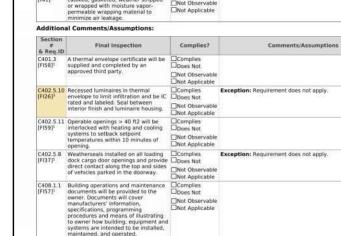
Requirements: 50.0% were addressed directly in the COMcheck software

Rough-in Electrical Inspection
Complies?
Complies?
Complies?
Ele.26/3 electric transformers meet the minimum efficiency requirements of training the Complies and Complies and Complies (Complies) electric transformers meet the minimum efficiency requirements of Tables (Complies) electric motors meet the minimum efficiency reading the Complies (Complies) efficiency reprinted through certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).

Codo.5.9.1 Escalators and moving walks compty (Codo.9.2) with ASME A17.1/CSA 844 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA 844 or applicable local code when not conveying passengers.

Codo.10.1 Codo voltage drop across the Complies Complies Codo (Codo (Codo) en accordance with ASME A17.1/CSA 844 or applicable local code when not conveying passengers.

Additional Comments/Assumptions per manufacturer's instructions. Upoes Not Unit Observable Unit Observable Unit Applicable Installed above-grade wall insulation type and R-value consistent with insulation specifications reported in plans and OMEnets reports. Unit Observable Unit Applicable Unit Applicable Unit Observable Unit Observ Section # Final Inspection Complies?



Project Title: LM2 Office Renovation - Alterations
Data filename:

2021 IECC C402 TABLE VALUES

> 2021 IECC TABLE C402.1.3

> > WALLS, BELOW GRADE

OPAQUE THERMAL ENVELOPE INSULATION COMPONENT MINIMUM REQUIREMENTS, R-VALUE METHOD CLIMATE ZONE 4A

INSULATION ABOVE DECK: METAL BUILDINGS: R-19+R-11LS

WALLS, ABOVE GRADE METAL BUILDING: R-13+R-13ci METAL FRAMED: R-13+R-7.5ci R-13+R3.8ci or R-20 WOOD FRAMED:

BELOW GRADE WALL: R-7.5c MASS: JOIST/FRAMING:

SLAB ON GRADE FLOORS R-15 FOR 24" BELOW HEATED SLABS: R-15 FOR 24" BELOW + R-5 FULL SLAB

2021 IECC TABLE C402.1.4 OPAQUE THERMAL ENVELOPE MAXIMUM REQUIREMENTS, U-FACTOR METHOD CLIMATE ZONE 4A

INSULATION ABOVE DECK: METAL BUILDINGS: U-0.035 ATTIC: U-0.021 WALLS, ABOVE GRADE U-0.104 METAL BUILDING: U-0.052 METAL FRAMED: U-0.064 WOOD FRAMED: U-0.064

WALLS, BELOW GRADE BELOW GRADE WALL: **FLOORS** MASS: JOIST/FRAMING: **SLAB ON GRADE FLOORS** UNHEATED SLABS: **HEATED SLABS:**

GARAGE DOOR <14% GLAZING

TABLE C402.4 BUILDING ENVELOPE FENESTRATION MAXIMUM U-FACTOR AND SHGC REQUIREMENTS

CLIMATE ZONE 4A **VERTICAL FENESTRATION**

OPAQUE DOORS

NONSWINGING DOOR

SWINGING DOOR

U-FACTOR FIXED FENESTRATION U-0.36 OPERABLE FENESTRATION U-0.45 ENTRANCE DOORS U-0.63 SHGC (FIXED) PF < 0.2 $0.2 \le PF \le 0.5$ PF ≥ 0.5

U-0.36 | **LL** U-0.43 | () U-0.58 | <u></u> SHGC (OPERABLE) PF < 0.2U-0.33 $0.2 \le PF \le 0.5$ U-0.40 PF ≥ 0.5 U-0.53 SKYLIGHTS U-0.50

KCMO IB171 CE

SHGC

GENERAL STANDARDS FOR COMMERCIAL INSPECTIONS

The following items will require inspection:

1. Insulation inspections by the city, prior to concealment A. Wall and floor insulation to be verified after framing is approved and before concealment, this includes attic baffles. Exterior insulation must be verified prior to concealment.

B. Attic insulation will be verified prior to final but after sheetrock is installed.

2. Duct Leakage Testing to be completed and submitted by third party inspector prior to occupancy per the approved commissioning plan. 3. Whole House leakage test to be completed and

submitted by third party inspector prior to occupancy per the approved commissioning plan. 4. Energy Certificate to be installed per code and verified on final.

5. Final report from Third Party Inspector verifying compliance with the design for Mechanical Commissioning prior to Certificate of Occupancy. 6. Final report from Third Party Inspector verifying compliance with the design for Electrical Commissioning

prior to Certificate of Occupancy.

Energy Rating Index Option I. Insulation inspections by third party inspector per the design documents (since this method allows for code compliance that does not meet the letter of the code

third party is required). 2. Duct Leakage Testing to be completed and submitted by third party inspector prior to occupancy. 3. Whole House leakage test to be completed and

submitted by third party inspector prior to occupancy. 4. Energy Certificate to be installed per code and verified 5. Final report from Third Party Inspector verifying

compliance with the design and code.



Bob D. Campbell & Co. Missouri Certificate of Authority 4338 Belleview Ave. Kansas City, MO 64111 816.531.4144

MEP Engineer: PKMR Engineers Missouri Certificate of Authority #E-2002020886 13300 W. 98th Street Lenexa, KS 66215 913.492.2400

JOB NUMBER 23011

C-0.119

U-0.057

U-0.033

F-0.52

F-0.62

U-0.31

U-0.37

U-0.31

U-0.40

NUMBER

Dalyn Novak - Architect MO # 2011006178

04/17/2024 **ISSUE DATE** No Description

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ENERGY CODE ANALYSIS

MECHANICAL COMMISSIONING NOTES

THE BUILDING OPERATIONS AND MAINTENANCE DOCUMENTS SHALL BE PROVIDED TO THE OWNER AND SHALL CONSIST OF MANUFACTURERS' INFORMATION, SPECIFICATIONS AND RECOMMENDATIONS: PROGRAMMING PROCEDURES AND DATA POINTS: NARRATIVES: AND OTHER MEANS OF ILLUSTRATING TO THE OWNER HOW THE BUILDING, EQUIPMENT AND SYSTEMS ARE INTENDED TO BE INSTALLED, MAINTAINED AND OPERATED. REQUIRED REGULAR MAINTENANCE ACTIONS FOR EQUIPMENT AND SYSTEMS SHALL BE CLEARLY STATED ON A READILY VISIBLE LABEL. THE LABEL SHALL INCLUDE THE TITLE OR PUBLICATION NUMBER FOR THE OPERATION

PRIOR TO THE FINAL MECHANICAL AND PLUMBING INSPECTIONS, AN APPROVED AGENCY SHALL PROVIDE EVIDENCE OF MECHANICAL SYSTEMS COMMISSIONING AND COMPLETION IN ACCORDANCE WITH THE PROVISIONS OF IECC 2021 C408.2.

AND MAINTENANCE MANUAL FOR THAT PARTICULAR MODEL AND TYPE OF PRODUCT.

COPIES OF ALL DOCUMENTATION SHALL BE GIVEN TO THE OWNER OR OWNER'S AUTHORIZED AGENT AND MADE AVAILABLE TO THE CODE OFFICIAL UPON REQUEST.

A COMMISSIONING PLAN SHALL BE DEVELOPED IN ACCORDANCE WITH C408.2.1 BY AN

APPROVED AGENCY AND SHALL INCLUDE THE FOLLOWING ITEMS: • A NARRATIVE DESCRIPTION OF THE ACTIVITIES THAT WILL BE ACCOMPLISHED DURING EACH PHASE OF COMMISSIONING, INCLUDING THE PERSONNEL INTENDED TO ACCOMPLISH EACH OF

THE ACTIVITIES. • A LISTING OF THE SPECIFIC EQUIPMENT, APPLIANCES OR SYSTEMS TO BE TESTED AND A DESCRIPTION OF THE TESTS TO BE PERFORMED.

• FUNCTIONS TO BE TESTED INCLUDING, BUT NOT LIMITED TO, CALIBRATIONS AND ECONOMIZER

• CONDITIONS UNDER WHICH THE TEST WILL BE PERFORMED. TESTING SHALL AFFIRM WINTER AND SUMMER DESIGN CONDITIONS AND FULL OUTSIDE AIR CONDITIONS. • MEASURABLE CRITERIA FOR PERFORMANCE.

SYSTEMS ADJUSTING AND BALANCING HVAC SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING STANDARDS. AIR AND WATER FLOW RATES SHALL BE MEASURED AND ADJUSTED TO DELIVER FINAL FLOW RATES WITHIN THE TOLERANCES PROVIDED IN THE PRODUCT SPECIFICATIONS. TEST

AND BALANCE ACTIVITIES SHALL INCLUDE AIR SYSTEM AND HYDRONIC SYSTEM BALANCING.

<u>AIR SYSTEMS BALANCING</u>
EACH SUPPLY AIR OUTLET AND ZONE TERMINAL DEVICE SHALL BE EQUIPPED WITH MEANS FOR AIR BALANCING IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 6 OF THE INTERNATIONAL MECHANICAL CODE. AIR SYSTEMS SHALL BE BALANCED IN A MANNER TO FIRST MINIMIZE THROTTLING LOSSES THEN, FOR FANS WITH SYSTEM POWER OF GREATER THAN 1 HP

(0.746 KW). FAN SPEED SHALL BE ADJUSTED TO MEET DESIGN FLOW CONDITIONS. FANS WITH FAN MOTORS OF 1 HP (0.74 KW) OR LESS ARE NOT REQUIRED TO BE PROVIDED WITH A MEANS FOR AIR BALANCING. FUNCTIONAL PERFORMANCE TESTING. FUNCTIONAL PERFORMANCE TESTING SHALL BE CONDUCTED AS OUTLINED BELOW:

1. EQUIPMENT FUNCTIONAL PERFORMANCE TESTING SHALL DEMONSTRATE THE INSTALLATION AND OPERATION OF COMPONENTS, SYSTEMS AND SYSTEM-TO-SYSTEM INTERFACING RELATIONSHIPS IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS SUCH THAT OPERATION, FUNCTION AND MAINTENANCE SERVICEABILITY FOR EACH OF THE COMMISSIONED SYSTEMS ARE CONFIRMED. TESTING SHALL INCLUDE ALL MODES AND SEQUENCE OF OPERATION, INCLUDING UNDER FULL-LOAD, PART-LOAD AND THE FOLLOWING EMERGENCY

A. ALL MODES AS DESCRIBED IN THE SEQUENCE OF OPERATION. B. REDUNDANT OR AUTOMATIC BACK-UP MODE.

C. PERFORMANCE OF ALARMS. D. MODE OF OPERATION UPON A LOSS OF POWER AND RESTORATION OF POWER. E. EXCEPTION: UNITARY OR PACKAGED HVAC EQUIPMENT LISTED IN THE TABLES IN

HVAC AND SERVICE WATER-HEATING CONTROL SYSTEMS SHALL BE TESTED TO DOCUMENT THAT CONTROL DEVICES, COMPONENTS, EQUIPMENT AND SYSTEMS ARE CALIBRATED AND ADJUSTED AND OPERATE IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS. SEQUENCES OF OPERATION SHALL BE FUNCTIONALLY TESTED TO DOCUMENT THEY OPERATE IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS.

SECTION C403.3.2 THAT DO NOT REQUIRE SUPPLY AIR ECONOMIZERS.

AIR ECONOMIZERS SHALL UNDERGO A FUNCTIONAL TEST TO DETERMINE THAT THEY OPERATE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

PRELIMINARY MECHANICAL COMMISSIONING REPORT A PRELIMINARY REPORT OF COMMISSIONING TEST PROCEDURES AND RESULTS SHALL BE COMPLETED AND CERTIFIED BY AN APPROVED AGENCY AND PROVIDED TO THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT. THE REPORT SHALL BE ORGANIZED WITH MECHANICAL AND REPORT SHALL BE IDENTIFIED AS "PRELIMINARY COMMISSIONING REPORT," SHALL INCLUDE THE COMPLETED COMMISSIONING COMPLIANCE CHECKLIST BELOW, AND SHALL IDENTIFY:

1. ITEMIZATION OF DEFICIENCIES FOUND DURING TESTING REQUIRED BY THIS SECTION THAT HAVE NOT BEEN CORRECTED AT THE TIME OF REPORT PREPARATION. 2. DEFERRED TESTS THAT CANNOT BE PERFORMED AT THE TIME OF REPORT PREPARATION

BECAUSE OF CLIMATIC CONDITIONS. 3. CLIMATIC CONDITIONS REQUIRED FOR PERFORMANCE OF THE DEFERRED TESTS.

4. RESULTS OF FUNCTIONAL PERFORMANCE TESTS. 5. FUNCTIONAL PERFORMANCE TEST PROCEDURES USED DURING THE COMMISSIONING PROCESS, INCLUDING MEASURABLE CRITERIA FOR TEST ACCEPTANCE.

BUILDINGS, OR PORTIONS THEREOF, SHALL NOT BE CONSIDERED AS ACCEPTABLE FOR A FINAL INSPECTION PURSUANT TO SECTION C105.2.6 UNTIL THE CODE OFFICIAL HAS RECEIVED THE PRELIMINARY COMMISSIONING REPORT FROM THE BUILDING OWNER OR OWNER'S AUTHORIZED

FINAL MECHANICAL COMMISSIONING REPORT
THE DOCUMENTS DESCRIBED BELOW SHALL BE PROVIDED TO THE OWNER OR OWNER'S

AUTHORIZED AGENT WITHIN 90 DAYS OF THE DATE OF RECEIPT OF THE CERTIFICATE OF

1. A WRITTEN REPORT DESCRIBING THE ACTIVITIES AND MEASUREMENTS COMPLETED WHILE BALANCING HVAC SYSTEMS.

2. A REPORT OF TEST PROCEDURES AND RESULTS IDENTIFIED AS "FINAL COMMISSIONING REPORT" SHALL BE DELIVERED TO THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT. THE REPORT SHALL BE ORGANIZED WITH MECHANICAL SYSTEM AND SERVICE HOT WATER SYSTEM FINDINGS IN SEPARATE SECTIONS TO ALLOW INDEPENDENT REVIEW. THE REPORT SHALL INCLUDE THE FOLLOWING:

A. RESULTS OF FUNCTIONAL PERFORMANCE TESTS.

B. DISPOSITION OF DEFICIENCIES FOUND DURING TESTING, INCLUDING DETAILS OF CORRECTIVE MEASURES USED OR PROPOSED.

C. FUNCTIONAL PERFORMANCE TEST PROCEDURES USED DURING THE COMMISSIONING PROCESS INCLUDING MEASURABLE CRITERIA FOR TEST ACCEPTANCE, PROVIDED HEREIN

ELECTRICAL COMMISSIONING NOTES

FUNCTIONAL TESTING OF LIGHTING CONTROLS

PRIOR TO PASSING FINAL INSPECTION, AN APPROVED AGENCY SHALL PROVIDE EVIDENCE THAT THE LIGHTING CONTROL SYSTEMS HAVE BEEN TESTED TO ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED. ADJUSTED. PROGRAMMED AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTRUCTIONS. FUNCTIONAL TESTING SHALL BE PERFORMED FOR EACH APPLICABLE CONTROL TYPE IN ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS BELOW.

WHERE OCCUPANT SENSOR CONTROLS ARE PROVIDED, THE FOLLOWING PROCEDURES SHALL BE 1. CERTIFY THAT THE OCCUPANT SENSOR HAS BEEN LOCATED AND AIMED IN ACCORDANCE

WITH MANUFACTURER RECOMMENDATIONS. 2. FOR PROJECTS WITH SEVEN OR FEWER OCCUPANT SENSORS, EACH SENSOR SHALL BE

3. FOR PROJECTS WITH MORE THAN SEVEN OCCUPANT SENSORS, TESTING SHALL BE DONE FOR EACH UNIQUE COMBINATION OF SENSOR TYPE AND SPACE GEOMETRY. WHERE MULTIPLES OF EACH UNIQUE COMBINATION OF SENSOR TYPE AND SPACE GEOMETRY ARE PROVIDED, NOT LESS THAN 10 PERCENT AND IN NO CASE FEWER THAN ONE, OF EACH COMBINATION SHALL BE TESTED UNLESS THE CODE OFFICIAL OR DESIGN PROFESSIONAL REQUIRES A HIGHER PERCENTAGE TO BE TESTED. WHERE 30 PERCENT OR MORE OF THE TESTED CONTROLS FAIL, ALL REMAINING IDENTICAL COMBINATIONS SHALL BE TESTED.

FOR OCCUPANT SENSOR CONTROLS TO BE TESTED PER ITEM 3 ABOVE, VERIFY THE

A. WHERE OCCUPANT SENSOR CONTROLS INCLUDE STATUS INDICATORS, VERIFY CORRECT OPFRATION.

B. THE CONTROLLED LIGHTS TURN OFF OR DOWN TO THE PERMITTED LEVEL WITHIN THE REQUIRED TIME.

C. FOR AUTO-ON OCCUPANT SENSOR CONTROLS, THE LIGHTS TURN ON TO THE PERMITTED LEVEL WHEN AN OCCUPANT ENTERS THE SPACE. D. FOR MANUAL-ON OCCUPANT SENSOR CONTROLS, THE LIGHTS TURN ON ONLY WHEN

MANUALLY ACTIVATED. E. THE LIGHTS ARE NOT INCORRECTLY TURNED ON BY MOVEMENT IN ADJACENT AREAS OR BY HVAC OPERATION.

WHERE TIME-SWITCH CONTROLS ARE PROVIDED, THE FOLLOWING PROCEDURES SHALL BE PFRFORMFD:

1. CONFIRM THAT THE TIME-SWITCH CONTROL IS PROGRAMMED WITH ACCURATE WEEKDAY, WEEKEND AND HOLIDAY SCHEDULES. 2. PROVIDE DOCUMENTATION TO THE OWNER OF TIME-SWITCH CONTROLS PROGRAMMING INCLUDING WEEKDAY, WEEKEND, HOLIDAY SCHEDULES, AND SET-UP AND PREFERENCE

PROGRAM SETTINGS. 3. VERIFY THE CORRECT TIME AND DATE IN THE TIME SWITCH.

4. VERIFY THAT ANY BATTERY BACK-UP IS INSTALLED AND ENERGIZED. 5. VERIFY THAT THE OVERRIDE TIME LIMIT IS SET TO NOT MORE THAN 2 HOURS.

6. SIMULATE OCCUPIED CONDITION. VERIFY AND DOCUMENT THE FOLLOWING: A. ALL LIGHTS CAN BE TURNED ON AND OFF BY THEIR RESPECTIVE AREA CONTROL

B. THE SWITCH ONLY OPERATES LIGHTING IN THE ENCLOSED SPACE IN WHICH THE

SWITCH IS LOCATED. 7. SIMULATE UNOCCUPIED CONDITION. VERIFY AND DOCUMENT THE FOLLOWING: A. NONEXEMPT LIGHTING TURNS OFF.

B. MANUAL OVERRIDE SWITCH ALLOWS ONLY THE LIGHTS IN THE ENCLOSED SPACE WHERE THE OVERRIDE SWITCH IS LOCATED TO TURN ON OR REMAIN ON UNTIL THE NEXT SCHEDULED SHUTOFF OCCURS.

8. ADDITIONAL TESTING AS SPECIFIED.

WHERE DAYLIGHT RESPONSIVE CONTROLS ARE PROVIDED, THE FOLLOWING SHALL BE VERIFIED: 1. CONTROL DEVICES HAVE BEEN PROPERLY LOCATED, FIELD CALIBRATED AND SET FOR

ACCURATE SETPOINTS AND THRESHOLD LIGHT LEVELS. 2. DAYLIGHT CONTROLLED LIGHTING LOADS ADJUST TO LIGHT LEVEL SETPOINTS IN RESPONSE

3. THE CALIBRATION ADJUSTMENT EQUIPMENT IS LOCATED FOR READY ACCESS ONLY BY AUTHORIZED PERSONNEL.

<u>LIGHTING CONTROL MANUALS</u> AN OPERATING AND MAINTENANCE MANUAL SHALL BE PROVIDED TO THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT WITHIN 90 DAYS OF THE RECEIPT OF THE CERTIFICATE OF OCCUPANCY. IT SHALL INCLUDE THE FOLLOWING:

1. NAME AND ADDRESS OF NOT LESS THAN ONE SERVICE AGENCY FOR INSTALLED

2. A NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING RECOMMENDED 3. SUBMITTAL DATA INDICATING ALL SELECTED OPTIONS FOR EACH PIECE OF LIGHTING

EQUIPMENT AND LIGHTING CONTROLS. 4. OPERATION AND MAINTENANCE MANUALS FOR EACH PIECE OF LIGHTING EQUIPMENT. REQUIRED ROUTINE MAINTENANCE ACTIONS, CLEANING AND RECOMMENDED RELAMPING

SHALL BE CLEARLY IDENTIFIED. 5. A SCHEDULE FOR INSPECTING AND RECALIBRATING ALL LIGHTING CONTROLS.

<u>LIGHTING CONTROL TESTING REPORT</u>
A REPORT OF TEST RESULTS SHALL BE PROVIDED TO THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT WITHIN 90 DAYS OF THE RECEIPT OF THE CERTIFICATE OF OCCUPANCY. IT SHALL INCLUDE THE FOLLOWING:

COMMISSIONING PLAN WAS USED DURING CONSTRUCTION AND INCLUDES ALL ITEMS REQUIRED BY SECTION C408.2.1

HVAC EQUIPMENT FUNCTIONAL TESTING HAS BEEN EXECUTED. IF APPLICABLE, DEFERRED AND FOLLOW-UP TESTING IS

HVAC CONTROLS FUNCTIONAL TESTING HAS BEEN EXECUTED. IF APPLICABLE, DEFERRED AND FOLLOW-UP TESTING IS

ECONOMIZER FUNCTIONAL TESTING HAS BEEN EXECUTED. IF APPLICABLE, DEFERRED AND FOLLOW-UP TESTING IS

SERVICE WATER HEATING SYSTEM FUNCTIONAL TESTING HAS BEEN EXECUTED. IF APPLICABLE, DEFERRED AND

I HEREBY CERTIFY THAT THE COMMISSIONING PROVIDER HAS PROVIDED ME WITH EVIDENCE OF MECHANICAL, SERVICE WATER

LIGHTING CONTROLS FUNCTIONAL TESTING HAS BEEN EXECUTED. IF APPLICABLE, DEFERRED AND FOLLOW-UP TESTING IS

PRELIMINARY COMMISSIONING REPORT SUBMITTED TO OWNER AND INCLUDES ALL ITEMS REQUIRED BY SECTION C408.2.

1. RESULTS OF FUNCTIONAL PERFORMANCE TESTS. 2. DISPOSITION OF DEFICIENCIES FOUND DURING TESTING, INCLUDING DETAILS OF CORRECTIVE MEASURES USED OR PROPOSED.

COMMISSIONING CHECKLIST

SYSTEMS ADJUSTING AND BALANCING HAS BEEN COMPLETED.

SERVICE WATER HEALING STSTEM FUNCTIONAL TESTING IS SCHEDULED TO BE PROVIDED ON:_____

MANUAL, RECORD DOCUMENTS AND TRAINING HAVE BEEN COMPLETED OR SCHEDULED.

HEATING AND LIGHTING SYSTEMS COMMISSIONING IN ACCORDANCE WITH THE 2021 IECC.

SCHEDULED TO BE PROVIDED ON:_____

SCHEDULED TO BE PROVIDED ON:____

SCHEDULED TO BE PROVIDED ON:_____

SCHEDULED TO BE PROVIDED ON:____

SIGNATURE OF BUILDING OWNER OR OWNER'S REPRESENTATIVE:

PROJECT NAME: Name

ADDRESS: Project Address

COMMISSIONING AUTHORITY: AHJ

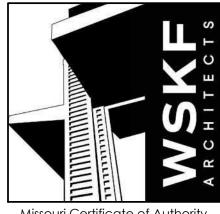
COMMISSIONING PLAN (SECT C408.2.1)

IECC 2021 NOTES

1 LIGHTING COMPLIANCE WITH IECC 2021 FOR THIS BUILDING ALTERATION IS REQUIRED PER C503.5. THE INTERIOR LIGHTING LOAD COMPLIES WITH SECTION C405.3.2:

- TOTAL ALLOWABLE WATTAGE = 7685

- TOTAL PROPOSED WATTAGE = 6683 - % PASSING = 13%



Missouri Certificate of Authority #2003011262

Structural Engineer: Bob D. Campbell & Co. Missouri Certificate of Authority #000442 4338 Belleview Ave.

Kansas City, MO 64111

816.531.4144

Lenexa, KS 66215

913.492.2400

MEP Engineer: PKMR Engineers Missouri Certificate of Authority #E-2002020886 13300 W. 98th Street

JOB NUMBER 23011

PE-2014007277

Dalyn Novak - Architect

MO # 2011006178 PERMIT SET

ISSUE DATE No Description

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13300 W 98TH STREET LENEXA, KS 66215 WWW.PKMRENG.COM 913 492 2400 MO State Certificate of Authority #E-2002020886

ZIMMERMAN NUMBER PE-2017029408

MO# PE-2017029408

ENERGY CODE NOTES

Project Information

2021 IECC Energy Code: Project Title: 24.027 LM2 Project Type: Alteration

Construction Site: Owner/Agent: Designer/Contractor: PKMR Engineers 13300 W 98th St. 9000 Old Sante Fe Road Kansas City, Missouri 64138 Lenexa, Kansas 66215

Allowed Interior Lighting Power

Area Category	Floor Area (ft2)	Allowed Watts / ft		Allowed Watts
1-Office	12008	0.64		7685
	Tot	al Allowed Wa	atts =	7685
Proposed Interior Lighting Power				
A	В	С	D	Е
Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	Lamps/		Fixture	(C X D)
	Fixture	Fixture	Watt.	
Office (12008 sq.ft.)				
LED: A: 2x4: Other:	1	4	34	137
LED: A1: 2x2: Other:	1	116	30	3422
LED: B: 6" Downlight: Other:	1	54	14	745
LED: B1: 6" Downlight: Other:	1	22	19	420
LED: C: Decorative Pendant: Other:	1	4	12	48
LED: D/D1: Decorative Linear: Other:	1	2	48	96
LED: F/F1: Linear: Other:	1	14	42	588
LED: G/G1: Linear: Other:	1	13	27	348
LED: G: Linear: Other:	1	3	34	100
LED: G: Linear: Other:	1	4	100	400
LED: G: Linear: Other:	1	2	189	378
		Total Propose	ed Watts =	6683

913-492-2400

Interior Lighting Compliance

Statement Compliance Statement: The proposed interior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with his permit application. The proposed interior lighting systems have been designed to meet the 2021 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Trenton Turner - Staff Engineer Trenton Turner 4/02/2024

Project Title: 24.027 LM2 Report date: 04/02/24 Data filename: Page 1 of 6

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3. 1 [EL22]1	Spaces required to have light- reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C405.2.1, C405.2.1. 1 [EL18]1	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, corridors, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met. Location on plans/spec: E1.01
C405.2.1. 2 [EL19]1	Occupancy sensors control function in warehouses: In warehouses, the lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more within 20 minutes of when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor. Lights not turned off by occupant sensors is done so by timeswitch.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
C405.2.1. 3 [EL20]1	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) general lighting in each zone permitted to turn on upon occupancy in control zone, 3) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 4) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
C405.2.2, C405.2.2. 1 [EL21]2	Each area not served by occupancy sensors (per C405.2.1.1) have timeswitch controls and functions detailed in sections C405.2.2.1.	Complies Does Not Not Observable Not Applicable	Exception: Luminaires requiring specific controls in accordance with C405.2.4.

	1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)
Project Title:	24.027 LM2		Report date: 04/02/2
Data filename:			Page 4 of

COMcheck Software Version COMcheckWeb

Project Information

2021 IECC Energy Code: Project Title: 24.027 LM2

Project Type: Alteration 2 (Residential mixed use area (LZ2)) Exterior Lighting Zone

Construction Site: Owner/Agent: Designer/Contractor: 9000 Old Sante Fe Road PKMR Engineers Kansas City, Missouri 64138 13300 W 98th St. Lenexa, Kansas 66215

Allowed Exterior Lighting Power

Tradable Allowed Watts Area/Surface Category Allowed Quantity Watts / Wattage (B X C) Entry canopy Parking area Total Tradable Watts (a) = 1152 Total Allowed Watts = Total Allowed Supplemental Watts (b) =

913-492-2400

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces. (b) A supplemental allowance equal to 400 watts may be applied toward compliance of both non-tradable and tradable

Proposed Exterior Lighting Power

D Lamps/ # of Fixture (C X D) Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast Fixture Fixture Watt. Entry canopy (164 ft2): Tradable Wattage LED: B2: Downlight: Other: 1 6 14 Parking area (27786 ft2): Tradable Wattage 1 6 124 744 LED: S1/S2: Pole Fixture: Other: Total Tradable Proposed Watts =

terior Lighting PASSES Exterior Lighting Compliance

Statement Compliance Statement: The proposed exterior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2021 IECC requirements in COMcheck Version COMcheckWeb and to comply with any

applicable mandatory requirements listed in the Inspection Checklist. Trenton Turner - Staff Engineer Trenton Turner

Project Title: 24.027 LM2 Report date: 04/02/24 Data filename: Page 2 of 6

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.4, C405.2.4. 1, C405.2.4. 2 [EL23]2	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 Daylight-responsive controls for applicable spaces, C405.2.3.1 Daylight responsive control function and section C405.2.3.2 Sidelit zone.	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.
C405.2.5 [EL27]1	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C405.2.7 [EL28]1	Automatic lighting controls for exterior lighting installed. Controls will be daylight controlled, set based on business operation time-of-day, or reduce connected lighting > 30%.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C405.7 [EL26]2	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
C405.8 [EL27]2	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C405.9.1, C405.9.2 [EL28]2	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.
C405.10 [EL29]2	Total voltage drop across the combination of feeders and branch circuits <= 5%.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C405.1.1 [EL30]2	At least 90% of dwelling unit permanently installed lighting shall have lamp efficacy >= 65 lm/W or luminaires with efficacy >= 45 lm/W or comply with C405.2.4 or C405.3.	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.
C405.11, C405.11.1 [EL31]2	50% of 15/20 amp receptacles installed in enclosed offices, conference rooms, copy rooms, break rooms, classrooms and workstations and > 25% of branch circuit feeders for modular furniture will have automatic receptacle control in accordance with C405.11.1.	Complies Does Not Not Observable Not Applicable	Requirement will be met. Location on plans/spec: E2.01

Additional Comments/Assumptions:

	1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)	
Project Title:	24.027 LM2		Repo	ort date: 04/02/24
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COMcheck Software Version COMcheckWeb

Requirements: 100.0% were addressed directly in the COMcheck software Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4]1	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C103.2 [PR8]1	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and	Complies Does Not Not Observable Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

control devices.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Title: 24.027 LM2 Report date: 04/02/24 Data filename: Page 3 of 6

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5. 2 [FI17]3	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C405.5.1 [FI19]1	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	Complies Does Not Not Observable Not Applicable	See the Exterior Lighting fixture schedule for values.
C408.1.1 [FI57]1	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C408.2.5 [FI16]3	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C408.3 [FI33]1	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	Complies Does Not Not Observable Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2)

3 Low Impact (Tier 3)

Report date: 04/02/24

Page 6 of 6

Additional Comments/Assumptions:

Project Title: 24.027 LM2

Data filename:



Dalyn Novak - Architect

Missouri Certificate of Authority

#2003011262

Missouri Certificate of Authority

Missouri Certificate of Authority

JOB NUMBER 23011

Structural Engineer: Bob D. Campbell & Co.

4338 Belleview Ave.

Kansas City, MO 64111

#000442

816.531.4144

MEP Engineer:

PKMR Engineers

#E-2002020886

913.492.2400

13300 W. 98th Street Lenexa, KS 66215

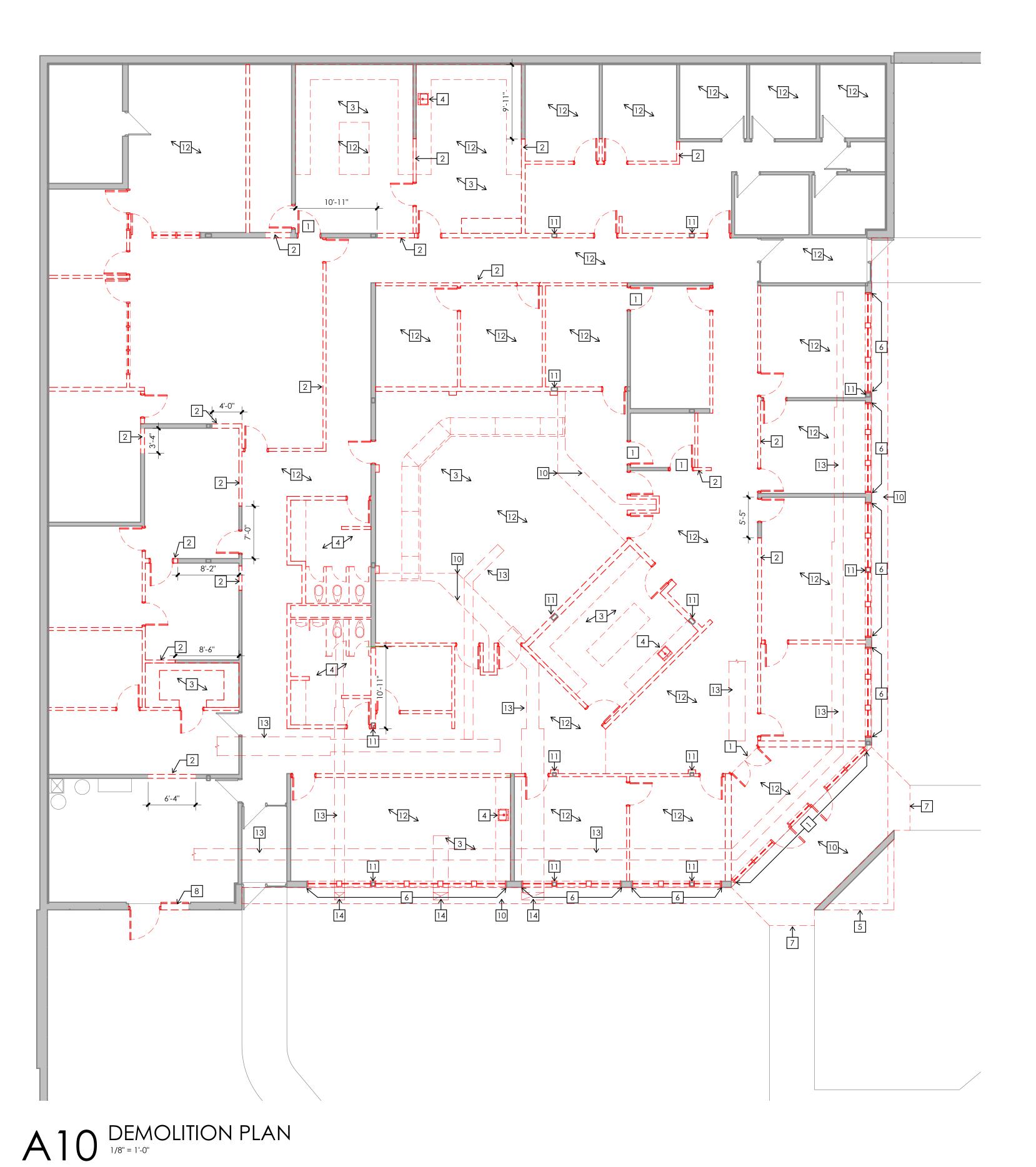
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ENERGY CODE

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9 8 7 6 5

GENERAL DEMO NOTES:

REPRESENTED IN THIS DRAWING.

. CONTRACTOR TO REVIEW ALL EXISTING CONDITIONS AND ADVISE ARCHITECT/ENGINEER OF ALL DESIGN

. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND EXISTING CONDITIONS. ANY DISCREPANCIES WHICH WILL PREVENT THE ACCOMPLISHMENT OF INTENT SHOWN ON DRAWINGS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT.

. WHERE A CONDITION IS NOTED 'TYPICAL' (TYP.), IT IS UNDERSTOOD THAT ALL SIMILAR CONDITIONS BE CONSTRUCTED OF THE SAME MATERIALS AND/OR DIMENSIONS.

STL. STRUCTURE, UNLESS NOTED OTHERWISE.

. DAMAGE TO WALLS, FLOORS, & CEILINGS NOT MARKED FOR DEMO, SHALL BE REPAIRED.

DEMO PLAN LEGEND:

———————— WALLS/ELEMENTS TO BE -----

WALLS/ELEMENTS TO REMAIN

<u>DEMO PLAN NOTES:</u>

THEIR ENTIRETY

5 REMOVE EXISTING PRECAST PLANTING BED, PATCH AND SMOOTH EXPOSED FACE, PREP TO RECEIVE NEW FINISH RE:EXTERIOR ELEVATIONS

BELOW; SOLID GROUTED CMU JAMBS TO REMAIN IN

7 REMOVE EXISTING SIDEWALK TO EXTENTS NECESSARY FOR

8 REINFORCE AND REMOVE EXISTING PRECAST WALL; RE:STRUCTURAL

AND REPLACE FRAMING AS REQUIRED

10 DEMO MOVABLE PARTITION, TRACKS, AND SOFFIT

DEMO STRUCTURAL SURROUND; EXISTING STRUCTURE TO REMAIN IN PLACE

MEP DRAWINGS FOR SCOPE OF CEILING DEMO WORK

MEP DEMO PLANS FOR MORE DETAIL



THIS DRAWING REPRESENTS THE GENERAL SCOPE OF CONTRACTOR REQUIRED DEMOLITION FOR THE REFERENCED AREA, REFER TO NEW CONSTRUCTION DRAWINGS FOR REQUIRED WORK THAT MAY NOT BE

DOCUMENT DISCREPANCIES.

ALL DIMENSIONS ARE TO FACE OF STUD, FACE OF CMU, FACE OF CONCRETE FOUNDATION WALL, OR CENTER OF

1 DOOR, FRAME, AND HARDWARE TO BE REMOVED IN

2 PORTION OF WALL TO BE REMOVED IN ITS ENTIRETY, REFER TO FLOOR PLAN FOR EXTENTS

3 REMOVE CASEWORK IN ITS ENTIRETY

4 REMOVE PLUMBING FIXTURE(S) IN THEIR ENTIRETY, RE: PLUMBING DEMO PLANS

6 REMOVE EXISTING HM WINDOWS & CMU WALL DIRECTLY

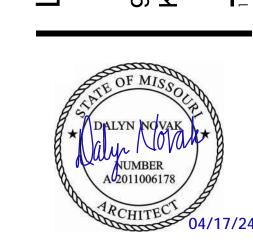
NEW FOUNDATIONS; RE:STRUCTURAL

9 REMOVE EXTERIOR SOFFIT, FRAMING TO REMAIN; REPAIR

12 REMOVE ALL EXISTING CEILINGS IN THEIR ENTIRETY; RE:

13 SELECTIVE DEMOLITION OF EXISTING DUCTWORK; RE:

14 REMOVE EXISTING EXTERIOR SOFFIT LOUVERS



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JOB NUMBER 23011

Structural Engineer:

4338 Belleview Ave.

Kansas City, MO 64111

#000442

816.531.4144

MEP Engineer:

PKMR Engineers

#E-2002020886

13300 W. 98th Street

Lenexa, KS 66215

913.492.2400

Bob D. Campbell & Co.

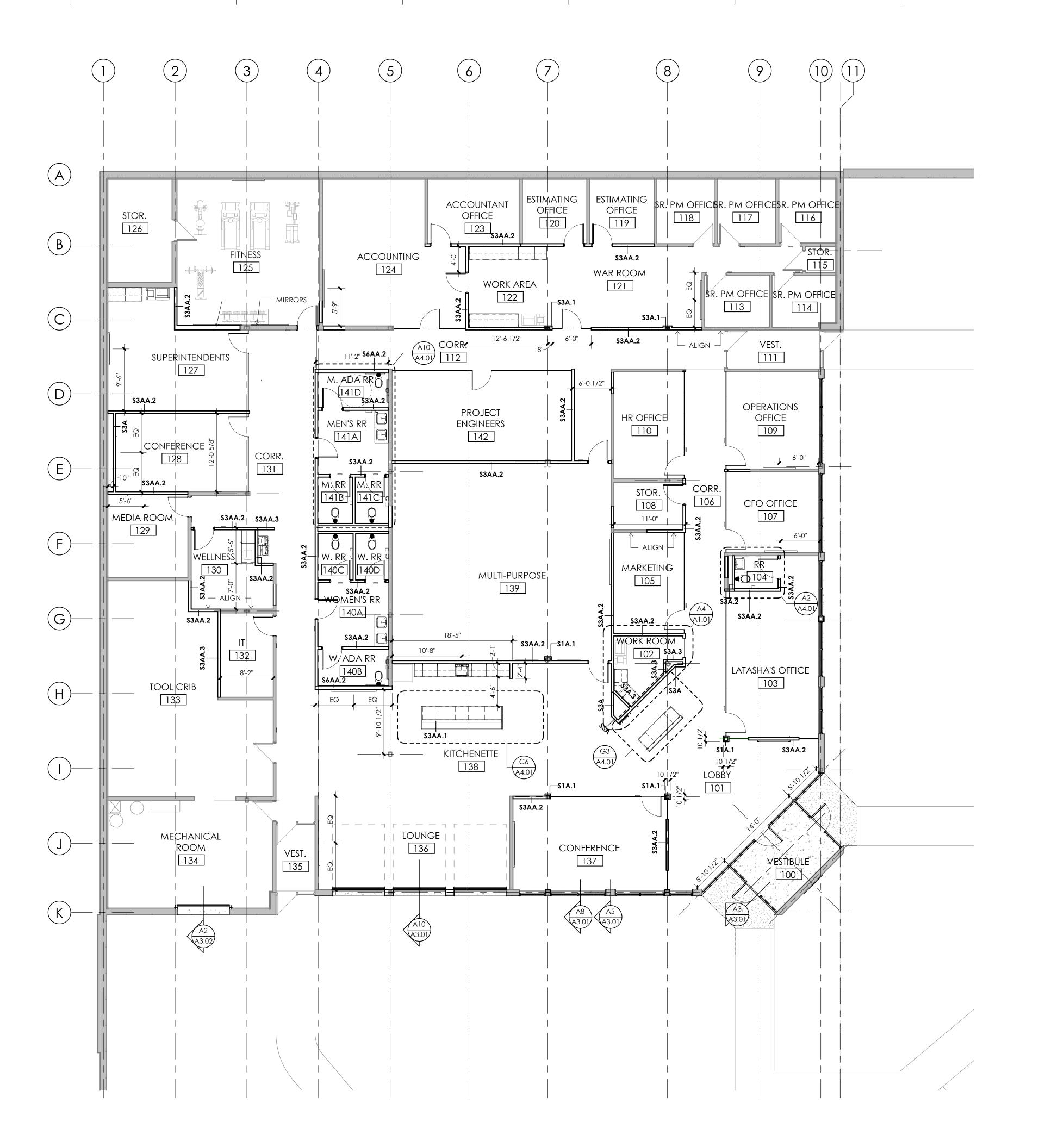
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DEMO PLAN

D1.01



CONCRETE (NON-STRUCTURAL WALLS ONLY)

METAL STUD

2 1/2" STUD

6" CONCRETE, MASONRY, METAL OR WOOD STUDS

8" CONCRETE, MASONRY

B. 2 LAYERS 5/8" DRYWALL / TILE BACKING PANEL

C. 1 LAYER 5/8" DRYWALL ON 7/8" METAL FURRING

D. 1 LAYER 5/8" DRYWALL ON 1 5/8" STUD FURRING E. 1 LAYER 5/8" DRYWALL ON 3 5/8" STUD FURRING

MODIFYING CONDITIONS:

. PROVIDE ACOUSTIC BATT INSULATION; FULL CAVITY

B. COMPLETE WALL ASSEMBLY EXTENDS TO 6" ABOVE

. COMPLETE WALL ASSEMBLY IS CONTINUOUS TO BOTTOM OF ROOF DECK OR BOTTOM OF ASSEMBLY ABOVE

2. ALL INTERIOR WALL TYPES ARE **S3AA** UNLESS NOTED OTHERWISE. . PROVIDE TILE BACKER BOARD WHERE REQUIRED AS

WALL FINISH AND SPECIFICATIONS. 4. PROVIDE MOISTURE RESISTANT DRYWALL PER FINISH

5. REFER TO STRUCTURAL DETAILS FOR MASONRY

DESIGNATION TO THE POINT OF AN INTERSECTING WALL. IF NO CHANGE IN DESIGNATION IS SHOWN BEYOND THE INTERSECTION, THE PREVIOUS PARTITION DESIGNATION

TO 4'-0" A.F.F.

P. LEVEL 5 FINISH AT ALL WALL COVERINGS & DEEP TONED

FINISH.

PARTITION TYPE SYMBOL

- BASIC MATERIAL - NOMINAL SIZE - APPLIED LAYERS CODE MODIFYING CONDITIONS CODE



M MASONRY (CMU)

NOMINAL SIZE: 7/8" FURRING CHANNEL

1 5/8" STUD

3 5/8" STUD 4" CONCRETE, MASONRY, METAL OR WOOD STUDS

10 10" CONCRETE, MASONRY

12 12" CONCRETE, MASONRY

APPLIED LAYERS:

A. 1 LAYER 5/8" DRYWALL / TILE BACKING PANEL

CHANNEL

I. PARTIAL HEIGHT WALL. REFER TO SECTIONS / ELEVATIONS ON FLOOR PLAN FOR HEIGHT OF WALL.

WIDTH AND FULL WALL HEIGHT.

ADJOINING CEILING. BRACE WALL AS REQUIRED.

UNLESS CHANGED BY MODIFYING CONDITION.

SUBSTRATE FOR FINISHES. REFER TO FINISH SCHEDULE FOR

SCHEDULE AND SPECIFICATIONS.

REQUIREMENTS. S. THE PARTITION CONSTRUCTION WILL MAINTAIN ITS

APPLIES TO BOTH. . ALL CORRIDORS TO RECEIVE ABUSE RESISTANT DRYWALL

B. REFERENCE ENLARGED PLANS FOR ADDITIONAL PARTITION CALL OUTS.

10. ALL DRYWALL ABOVE FINISH CEILING TO HAVE LEVEL 3

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PKMR Engineers

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913.492.2400

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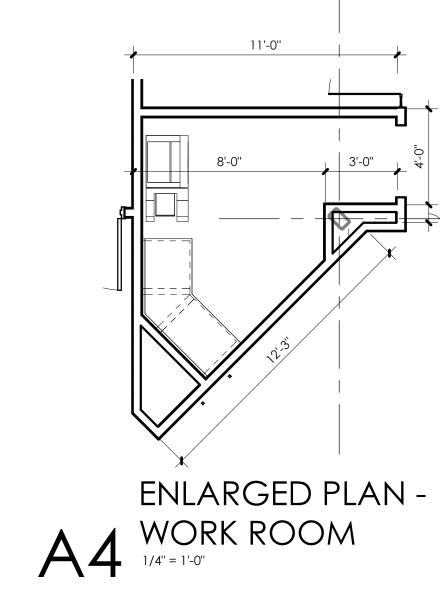
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DIMENSION PLAN

A1.01



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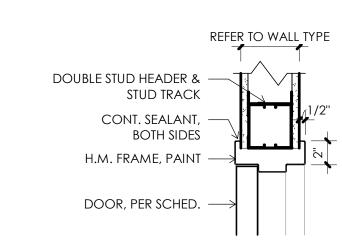
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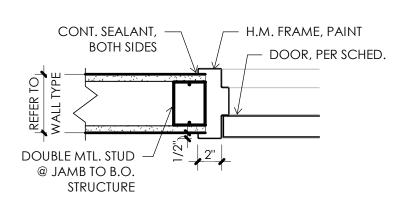
117

SR. PM OFFICE

8 7

E10 /A2.01





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- ACCOMPLISHMENT OF INTENT SHOWN ON DRAWINGS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT.
- . WHERE A CONDITION IS NOTED 'TYPICAL' (TYP.), IT IS UNDERSTOOD THAT ALL SIMILAR CONDITIONS BE CONSTRUCTED OF THE SAME MATERIALS AND/OR DIMENSIONS.
- . ALL DIMENSIONS ARE TO FACE OF STUD, FACE OF CMU, FACE OF CONCRETE FOUNDATION WALL, OR CENTER OF STL. STRUCTURE, UNLESS NOTED OTHERWISE. . ALL DOOR OPENINGS ARE TO BE LOCATED 4" FROM
- HINGE SIDE OF ADJACENT WALL UNLESS CENTERED IN ROOM OR NOTED OTHERWISE. . COORDINATE ROOF AND FLOOR PENETRATIONS W/ MEF
- AND STRUCTURAL DRAWINGS. . SIGNAGE SCHEDULE ON A7.01 FOR INTERIOR WALL
- MOUNTED ADA SIGNAGE AND LOCATIONS. . REFER TO ROOM FINISH SCHEDULE ON A7.01 FOR INTERIOR FINISHES.
- 3. REFER TO TYPICAL ADA FIXTURE MOUNTING GUIDE ON
- . REFER TO ENLARGED FLOOR PLANS FOR FURTHER INFORMATION ON PARTITION TYPE TAGS, DIMENSIONS,

PLAN NOTES:

- 1 ALIGN NEW WALL AND FINISHES WITH EXISTING WALL; BOTH SIDES
- 2 ALIGN NEW WALL AND FINISHES WITH EXISTING WALL; ONE SIDE
- 3 EXISTING STL COLUMN; PAINT
- 4 EXISTING CMU WALL TO REMAIN
- 5 NEW MTL STUD WALL W/ EIFS FINISH; RE:A3.01
- 6 NEW CONCRETE SLAB ON NEW FOOTING; RE: STRUCTURAL
- 7 NEW CURB, DOWEL INTO EXISTING SLAB; RE:STRUCTURAL
- 8 NEW 4" CONCRETE SIDEWALK TO TIE INTO EXISTING SIDEWALK
- 9 MONITOR
- 10 INTERIOR STOREFRONT FRAMING SYSTEM; RE:A6.01
- 11 FRAME FAUX COLUMN TO MATCH FURRING AT EXISTING COLUMN

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Structural Engineer: Bob D. Campbell & Co. Missouri Certificate of Authority #000442 4338 Belleview Ave. Kansas City, MO 64111 816.531.4144

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LM2 OFFICE RENOVA

Dalyn Novak - Architect MO # 2011006178

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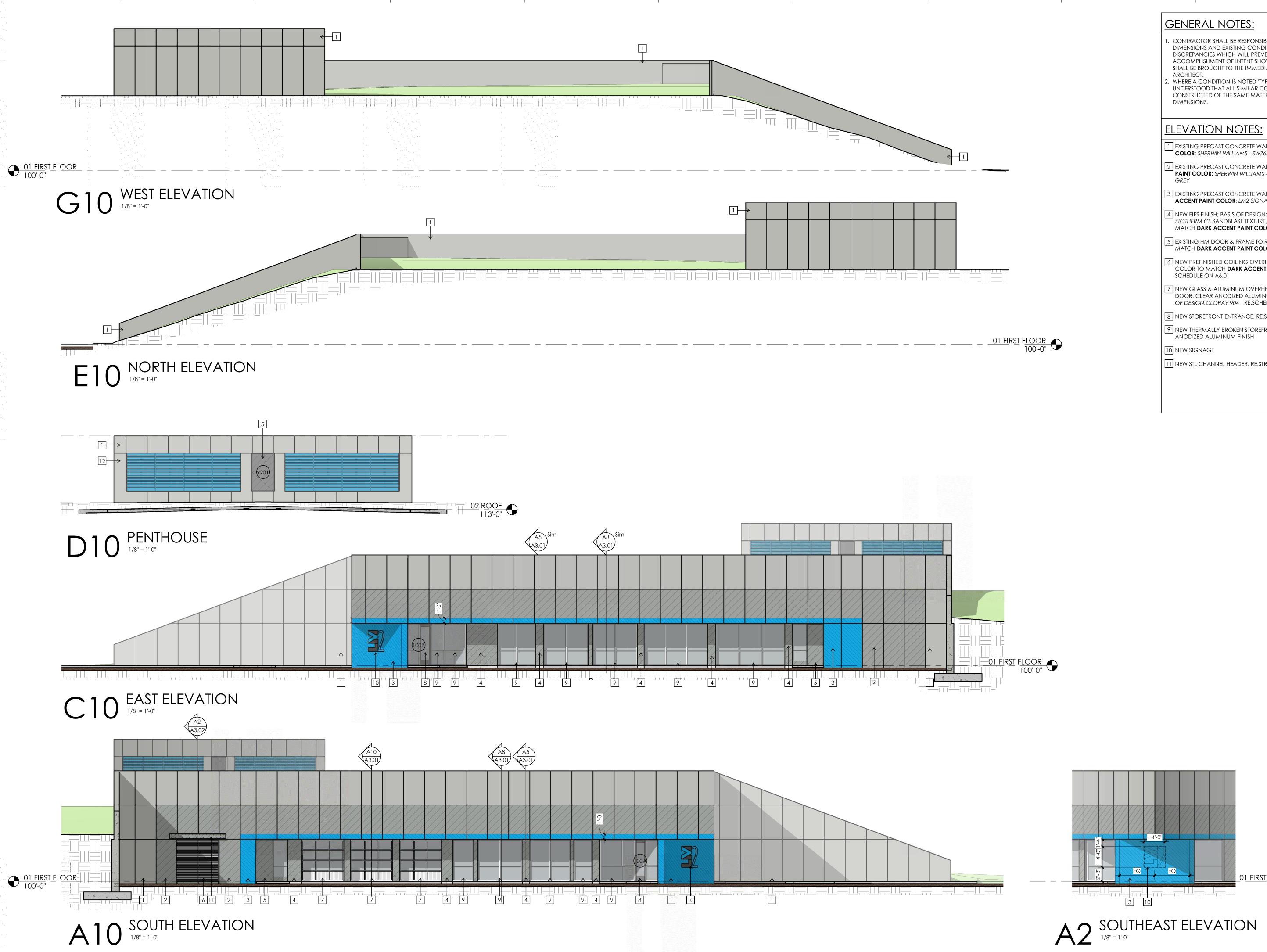
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KEYNOTE PLAN

A1.02

A 10 KEYNOTE PLAN
1/8" = 1'-0"

С



. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND EXISTING CONDITIONS. ANY DISCREPANCIES WHICH WILL PREVENT THE ACCOMPLISHMENT OF INTENT SHOWN ON DRAWINGS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE

. WHERE A CONDITION IS NOTED 'TYPICAL' (TYP.), IT IS UNDERSTOOD THAT ALL SIMILAR CONDITIONS BE CONSTRUCTED OF THE SAME MATERIALS AND/OR

ELEVATION NOTES:

- 1 EXISTING PRECAST CONCRETE WALLS; FIELD PAINT COLOR: SHERWIN WILLIAMS - SW7658 GRAY CLOUDS
- 2 EXISTING PRECAST CONCRETE WALLS; DARK ACCENT PAINT COLOR: SHERWIN WILLIAMS - SW7660 EARL
- 3 EXISTING PRECAST CONCRETE WALLS; BRIGHT ACCENT PAINT COLOR: LM2 SIGNATURE BLUE
- 4 NEW EIFS FINISH; BASIS OF DESIGN:STO CORP -STOTHERM CI, SANDBLAST TEXTURE, COLOR TO MATCH DARK ACCENT PAINT COLOR
- 5 EXISTING HM DOOR & FRAME TO REMAIN; PAINT TO MATCH DARK ACCENT PAINT COLOR
- 6 NEW PREFINISHED COILING OVERHEAD DOOR, COLOR TO MATCH **DARK ACCENT PAINT COLOR**; RE:
- 7 NEW GLASS & ALUMINUM OVERHEAD SECTIONAL DOOR, CLEAR ANODIZED ALUMINUM FINISH; BASIS OF DESIGN:CLOPAY 904 - RE:SCHEDULE ON A6.01
- 8 NEW STOREFRONT ENTRANCE; RE:SCHEDULE ON A6.01
- 9 NEW THERMALLY BROKEN STOREFRONT, CLEAR
- 11 NEW STL CHANNEL HEADER; RE:STRUCTURAL

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ELEVATIONS

A2.01

Missouri Certificate of Authority #2003011262 T.O. WALL
121'-0"

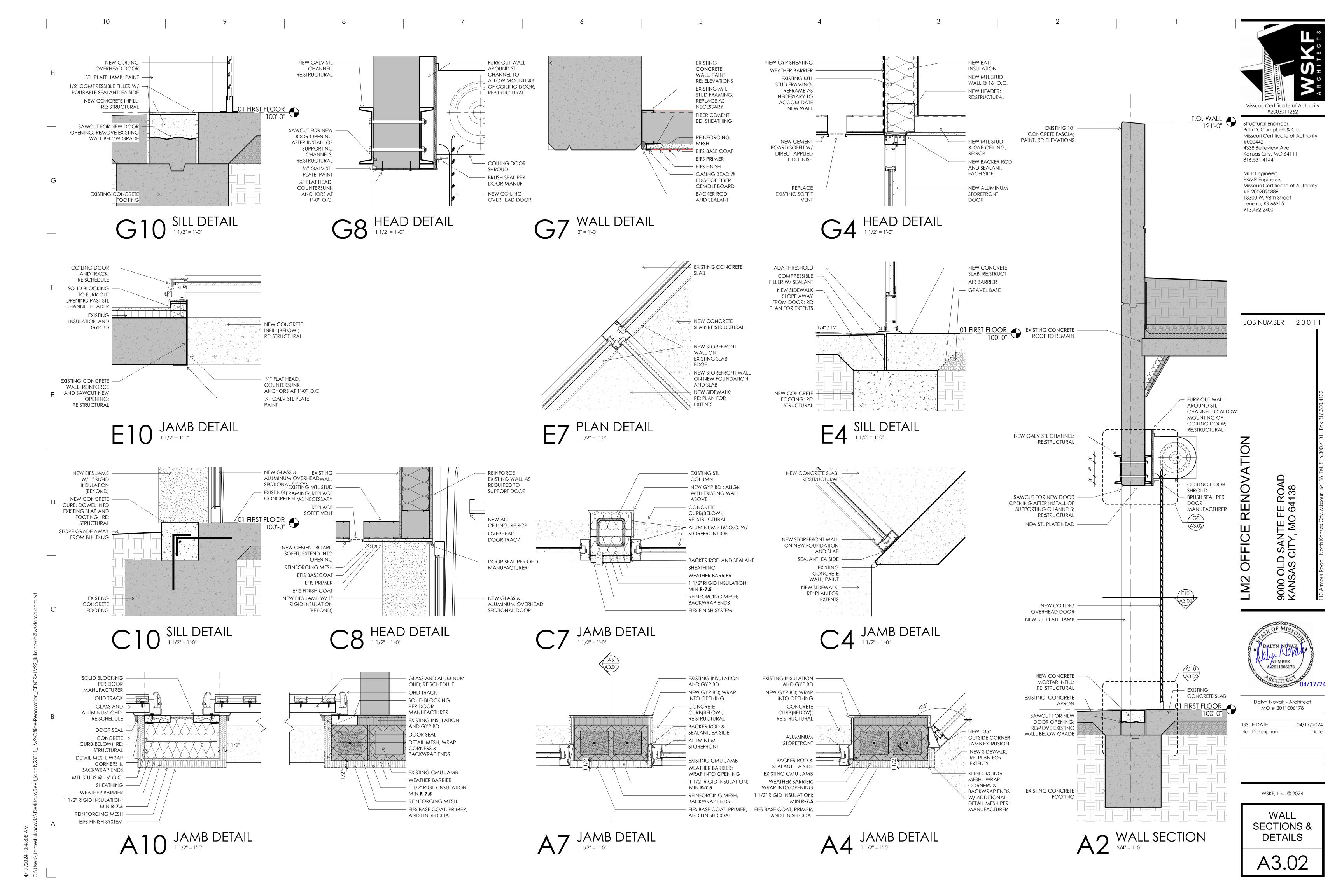
Structural Engineer:
Bob D. Campbell & C T.O. WALL 121'-0" T.O. WALL 121'-0" T.O. WALL 121'-0" EXISTING 10" -EXISTING 10" — EXISTING 10" — EXISTING 10" \longrightarrow Bob D. Campbell & Co. CONCRETE FASCIA; CONCRETE FASCIA; CONCRETE FASCIA; CONCRETE FASCIA; Missouri Certificate of Authority PAINT, RE: ELEVATIONS PAINT, RE: ELEVATIONS PAINT, RE: ELEVATIONS PAINT, RE: ELEVATIONS #000442 4338 Belleview Ave. Kansas City, MO 64111 816.531.4144 MEP Engineer: PKMR Engineers Missouri Certificate of Authority #E-2002020886 13300 W. 98th Street Lenexa, KS 66215 913.492.2400 EXISTING CONCRETE EXISTING CONCRETE ROOF TO REMAIN EXISTING CONCRETE JOB NUMBER 23011 **ROOF TO REMAIN ROOF TO REMAIN** EXISTING CONCRETE -ROOF TO REMAIN NEW OHD TRACK AND EXISTING STL EXISTING STL -EXISTING STL SPRING MOUNT AS HIGH AS STRUCTURE STRUCTURE STRUCTURE POSSIBLE; COORDINATE EXISTING STL WITH DUCTWORK STRUCTURE NEW DUCT AND LINEAR SLOT DIFFUSER, SUSPEND ACROSS _OHD OPENING, PROVIDE $__$ ADDITIONAL STRUCTURE AS EIFS FINISH 7 REQUIRED, COORDINATE W/ NEW 1 1/2" RIGID + OHD; RE:MEP INSULATION; MIN R-7.5 NEW GYP SHEATING 4 EXISTING GYP EXISTING GYP EXISTING GYP SHEATING SHEATING SHEATING WEATHER BARRIER - NEW ACT CEILING; RE:RCP EXISTING MTL STUD $\frac{1}{2}$ EXISTING MTL STUD -EXISTING MTL STUD -EXISTING MTL STUD FRAMING; REPLACE AS FRAMING; REPLACE FRAMING; REPLACE AS FRAMING; REPLACE AS NECESSARY AS NECESSARY NECESSARY NECESSARY EXISTING CONCRETE WALL; — EXISTING CONCRETE + **EXISTING CONCRETE** EXISTING CONCRETE WALL; — & GYP CEILING; WALL; 1'-0" BAND OF ACCENT PAINT, RE: ELEVATIONS NEW ACT CEILING;RE:RCP 1'-0" BAND OF ACCENT PAINT, RE: ELEVATIONS 1'-0" BAND OF ACCENT WALL, 1'-0" BAND OF PAINT, RE: ELEVATIONS ACCENT PAINT; RE: RENOV, NEW ACT CEILING, NO ELEVATIONS HANGERS IN PATH OF EXISTING GYP BD; OVERHEAD DOOR, PREP AND PAINT SUPPORT CEILING ACROSS NEW GYP BD, WRAP OPENING; RE:RCP - EXISTING INSULATION AND GYP BD FINISH INTO OPENING EXISTING GYP BD; WINDOW PREP AND PAINT NEW CEMENT BOARD NEW CEMENT BOARD -NEW CEMENT BOARD NEW CEMENT BOARD TREATMENT; RE: OFFICE SOFFIT W/ DIRECT SOFFIT W/ DIRECT SOFFIT W/ DIRECT SOFFIT W/ DIRECT FINISH PLAN APPLIED EIFS FINISH APPLIED EIFS FINISH APPLIED EIFS FINISH APPLIED EIFS FINISH G4 A3.02 REPLACE SOFFIT VENT REPLACE SOFFIT VENT REPLACE SOFFIT VENT REPLACE SOFFIT VENT -NEW EIFS JAMB W/ 1 1/2" **NEW STOREFRONT** RIGID INSULATION DOOR; RE:SCHEDULE (BEYOND) NEW GLASS & ALUMINUM NEW EIFS FINISH W/ 1 1/2" OVERHEAD RIGID INSULATION; MIN R-7.5 SECTIONAL DOOR NEW WEATHER BARRIER **NEW STOREFRONT** POLYCARBONATE **WINDOWS** EXISTING CMU WALL TO REMAIN; RE: PLAN GLAZING IN LOWER NEW CONCRETE CURB, E4 A3.02 PANEL OF DOOR DOWEL INTO EXISTING C10 A3.02 SLAB AND FOOTING; RE: STRUCTURAL ADA THRESHOLD COMPRESSIBLE FILLER NEW CONCRETE - NEW CONCRETE SLAB; RE:STRUCT EXISTING W/ SEALANT CURB, DOWEL INTO EXISTING CONCRETE SLAB EXISTING SLAB AND NEW SIDEWALK; RE: CONCRETE SLAB CONCRETE SLAB WEEP SCREED / STARTER TRACK FOOTING; RE: PLAN FOR EXTENTS SLOPE GRADE AWAY — Dalyn Novak - Architect MO # 2011006178 STRUCTURAL FROM BUILDING 01 FIRST FLOOR 100'-0" 01 FIRST FLOOR O1 FIRST FLOOR 100'-0" O1 FIRST FLOOR SLOPE GRADE AWAY SLOPE GRADE AWAY FROM BUILDING **ISSUE DATE** No Description **NEW CONCRETE** FOOTING; RE: EXISTING CONCRETE FOOTING EXISTING CONCRETE FOOTING EXISTING WSKF, Inc. © 2024 CONCRETE FOOTING STRUCTURAL WALL A5 WALL SECTION
3/4" = 1'-0" A3 WALL SECTION

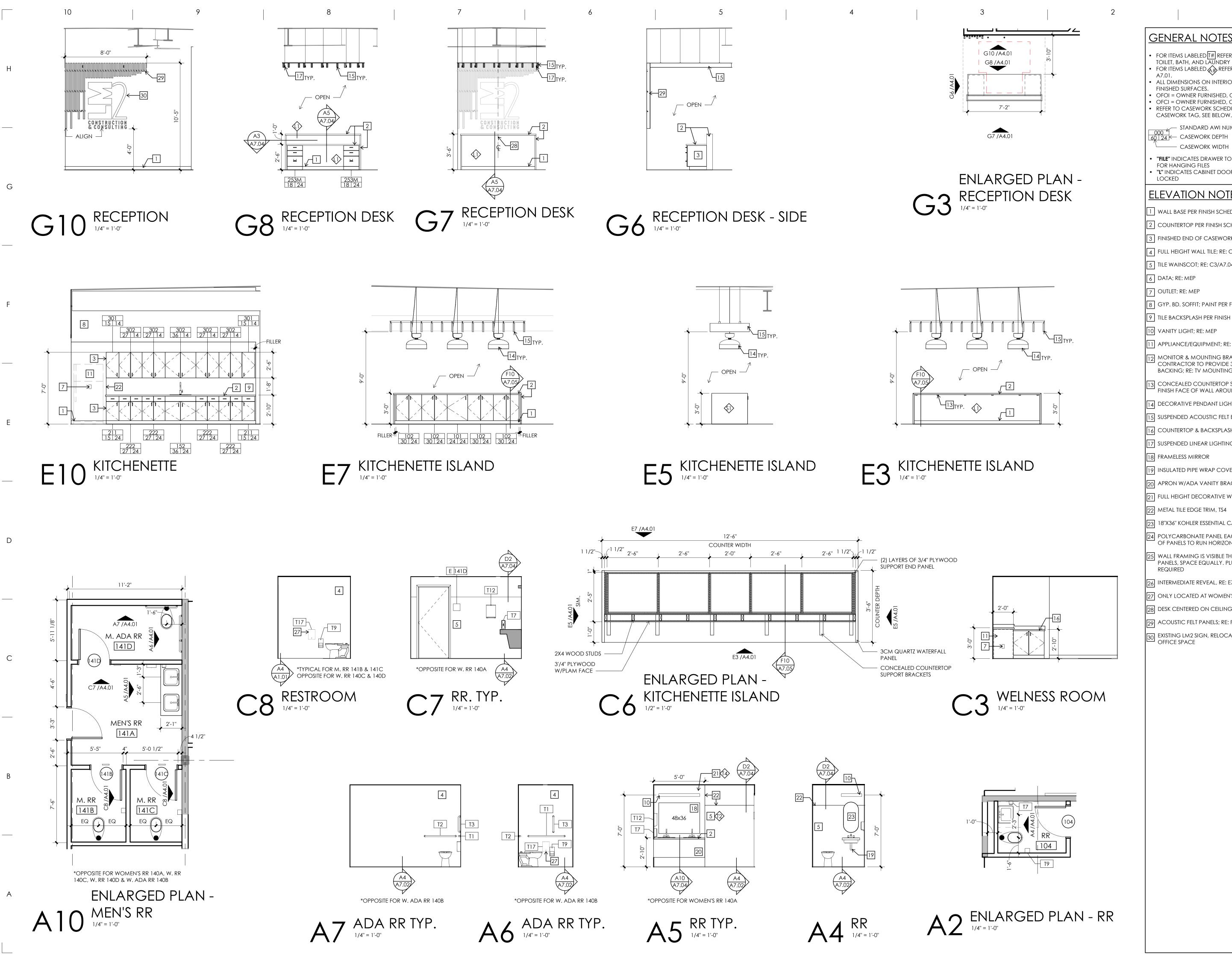
3/4" = 1'-0" A8 WALL SECTION
3/4" = 1'-0" SECTIONS & **DETAILS**

9 8 7 6 5 2

04/17/2024

A3.01



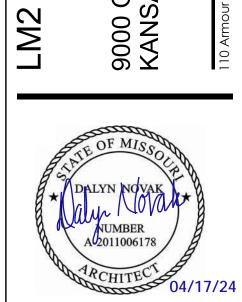


GENERAL NOTES

- FOR ITEMS LABELED T# REFER TO SPEC SECTION 102800 TOILET, BATH, AND LAUNDRY ACCESSORIES.
 FOR ITEMS LABELED REFER TO FINISH SCHEDULE ON A 7 01
- ALL DIMENSIONS ON INTERIOR ELEVATIONS ARE FROM FINISHED SURFACES.
- OFOI = OWNER FURNISHED, OWNER INSTALLED. OFCI = OWNER FURNISHED, CONTRACTOR INSTALLED. REFER TO CASEWORK SCHEDULE ON A7.01 AND
- CASEWORK WIDTH
- "FILE" INDICATES DRAWER TO BE SIZED & OUTFITTED FOR HANGING FILES
- "L" INDICATES CABINET DOOR/DRAWER TO BE

ELEVATION NOTES:

- 1 WALL BASE PER FINISH SCHEDULE
- 2 COUNTERTOP PER FINISH SCHEDULE
- 3 FINISHED END OF CASEWORK
- 4 FULL HEIGHT WALL TILE; RE: C3/A7.04
- 5 TILE WAINSCOT; RE: C3/A7.04
- 6 DATA; RE: MEP
- 7 OUTLET; RE: MEP
- 8 GYP. BD. SOFFIT; PAINT PER FINISH SCHEDULE ON A7.01
- 9 TILE BACKSPLASH PER FINISH SCHEDULE ON A7.01
- 10 VANITY LIGHT; RE: MEP
- 11 APPLIANCE/EQUIPMENT; RE: FFE PLAN ON A7.03
- $\overline{12}$ MONITOR & MOUNTING BRACKET BY OWNER. CONTRACTOR TO PROVIDE 36"X36" IN WALL SOLID BACKING; RE: TV MOUNTING GUIDE ON A7.04
- 13 CONCEALED COUNTERTOP SUPPORT BRACKET, NOTCH FINISH FACE OF WALL AROUND BRACKETS
- 14 DECORATIVE PENDANT LIGHTING; RE: MEP
- 15 SUSPENDED ACOUSTIC FELT BAFFLE; RE: RCP
- 16 COUNTERTOP & BACKSPLASH PER FINISH SCHEDULE
- 17 SUSPENDED LINEAR LIGHTING; RE: MEP
- 18 FRAMELESS MIRROR
- 19 INSULATED PIPE WRAP COVER; RE: MEP
- 20 APRON W/ADA VANITY BRACKET
- 21 FULL HEIGHT DECORATIVE WALL TILE; RE: C3/A7.04
- 22 METAL TILE EDGE TRIM, TS4
- 23 18"X36" KOHLER ESSENTIAL CAPSULE VANITY MIRROR
- 24 POLYCARBONATE PANEL EACH SIDE OF STUDS, FLUTES OF PANELS TO RUN HORIZONTALLY
- 25 WALL FRAMING IS VISIBLE THROUGH POLYCARBONATE PANELS, SPACE EQUALLY. PLUMB AND TRUE FRAMING IS
- 26 INTERMEDIATE REVEAL, RE: E7/A7.04
- 27 ONLY LOCATED AT WOMEN'S RESTROOMS
- 28 DESK CENTERED ON CEILING ELEMENT
- 29 ACOUSTIC FELT PANELS; RE: F3/A7.05 FOR PATTERN
- EXISTING LM2 SIGN, RELOCATED FROM PREVIOUS OFFICE SPACE



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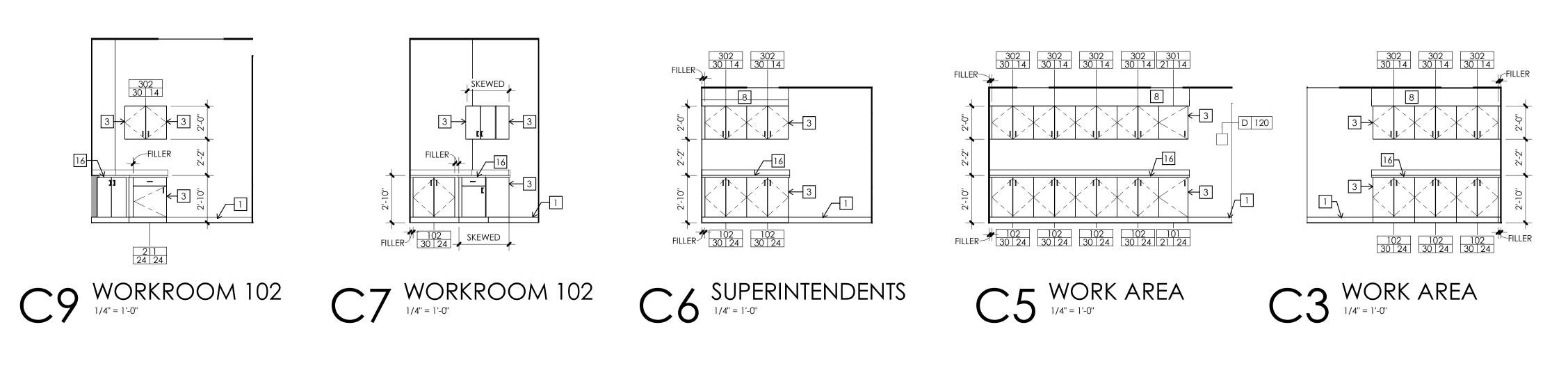
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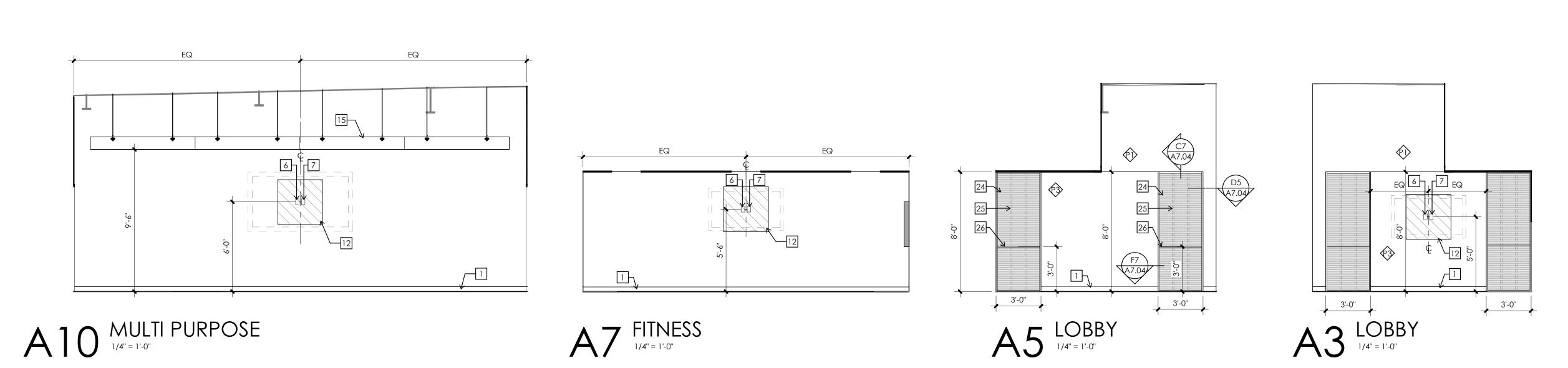
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INTERIOR ELEVATIONS

A4.01



9 8 7 6 5 4



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- OFOI = OWNER FURNISHED, OWNER INSTALLED. OFCI = OWNER FURNISHED, CONTRACTOR INSTALLED. REFER TO CASEWORK SCHEDULE ON A7.01 AND

STANDARD AWI NUMBER

000 CASEWORK DEPTH

CASEWORK TAG, SEE BELOW.

CASEWORK WIDTH

"FILE" INDICATES DRAWER TO BE SIZED & OUTFITTED FOR HANGING FILES "L" INDICATES CABINET DOOR/DRAWER TO BE

ELEVATION NOTES:

LOCKED

- 1 WALL BASE PER FINISH SCHEDULE
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- 27 ONLY LOCATED AT WOMEN'S RESTROOMS
- 28 DESK CENTERED ON CEILING ELEMENT
- 29 ACOUSTIC FELT PANELS; RE: F3/A7.05 FOR PATTERN
- EXISTING LM2 SIGN, RELOCATED FROM PREVIOUS OFFICE SPACE



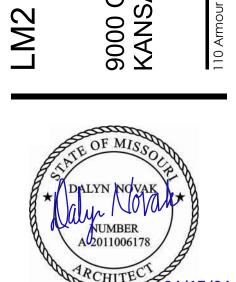
#2003011262 Structural Engineer:

Bob D. Campbell & Co. Missouri Certificate of Authority #000442 4338 Belleview Ave. Kansas City, MO 64111 816.531.4144

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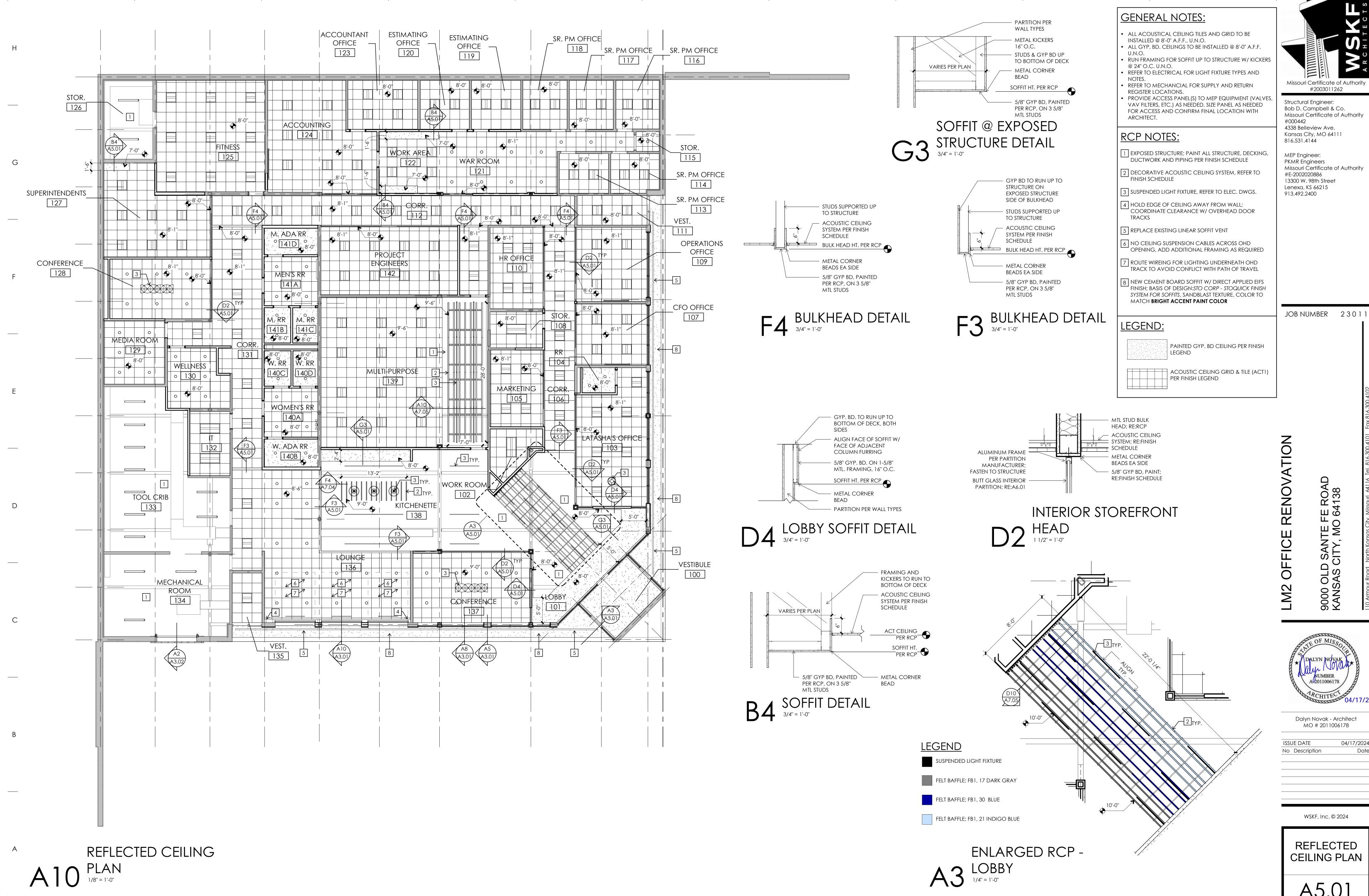
Dalyn Novak - Architect MO # 2011006178

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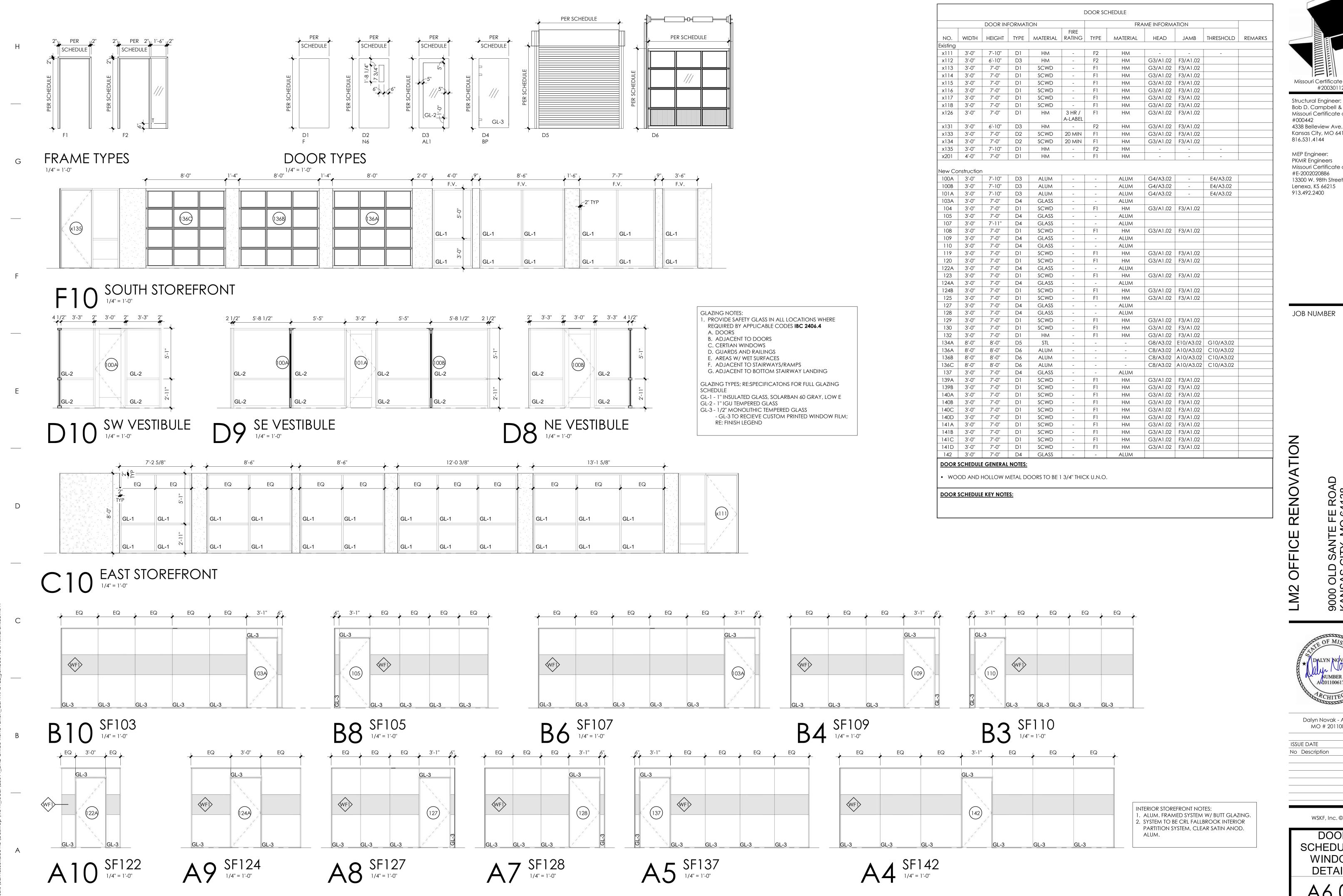
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INTERIOR **ELEVATIONS**

A4.02



A5.01



Missouri Certificate of Authority #2003011262

Bob D. Campbell & Co. Missouri Certificate of Authority 4338 Belleview Ave. Kansas City, MO 64111 816.531.4144

MEP Engineer: PKMR Engineers Missouri Certificate of Authority #E-2002020886 13300 W. 98th Street Lenexa, KS 66215 913.492.2400

JOB NUMBER 23011

9000 OLD SANTE FE ROAD KANSAS CITY, MO 64138

Dalyn Novak - Architect MO # 2011006178

ISSUE DATE

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DOOR SCHEDULE & WINDOW **DETAILS** A6.01

						FINIS	SH SCHED	ULE				
200M		FLOOR		WALLS					CASEWORK			
NO	ROOM NAME	FINISH	BASE	NORTH	EAST	SOUTH	WEST	CEILING	BASE	COUNTER	UPPER	REMARK
00	VESTIBULE	F3	B1	P1	P1	P7	P1	GYP				
01	LOBBY	F4	B1	P1/AF1	P1/P3	P1	P1/P3	STR./FB1/FB2/FB3/FB6/FB7	L1	S1		NOTES: 3 & 4
)2	WORK ROOM	F4	B1	P1	P1	P1	P1	ACT1	L1	S1	L1	NOTE: 4
03	LATASHA'S OFFICE	F1	B1	P1	P1	P3	P1	ACT1				
04	RR	T1	B2	T2	P1	T2	T4	GYP				
05	MARKETING	F1	B1	P1	P1	P1	P1	ACT1				
06	CORR.	F4	В1		P1		Р1	STR.				NOTES: 1 & 4
07	CFO OFFICE	F1	B1	P1	P1	P1	P1	ACT1				
D8	STOR.	F1	P1	P1	P1	P1	P1	ACT1				
09	OPERATIONS OFFICE	F1	B1	P1	P1	P1	P1	ACT1				
10	HR OFFICE	F1	B1	P1	P1	P1	P1	ACT1				
11	VEST.	F3	B1	P1	P1	P1	P1	ETR				
12	CORR.	F4	B1	P1	P1	P1	P1	ACT1				NOTES: 1 & 4
13	SR. PM OFFICE	F1	B1	P1	P1	P1	P1	ACT1				
14	SR. PM OFFICE	F1	B1	P1	P1	P1	P1	ACT1				
15	STOR.	F1	B1	P1	P1	P1	P1	ACT1				
16	SR. PM OFFICE	F1	B1	P1	P1	P1	P1	ACT1				
17		F1	B1	P1	P1	P1	P1	ACT1				
	SR. PM OFFICE			P1	P1	P1						
18	SR. PM OFFICE	F1	B1				P1	ACT1				
19	ESTIMATING OFFICE	F1	B1	P1	P1	P1	P1	ACT1				
20	ESTIMATING OFFICE	F1	B1	P1	P1	P1	P1	ACT1				
21	WAR ROOM	F1	B1	P1	P1	P1	P1	ACT1				
22	WORK AREA	F1	B1	P1	P1	P1	P1	ACT1	L1	S1	L1	
23		F1	B1	P1	P1	P1	P1	ACT1				
24	ACCOUNTING	F1	B1	P1	P1	P1	P1	ACT1				
	FITNESS	F2	B1	P1	P1	P1	P1	ACT1				
26	STOR.	F5	B1	P1	P1	P1	P1	ETR				
27	SUPERINTENDENTS	F1	B1	P1	P1	P1	P1	ACT1				
28	CONFERENCE	F1	B1	P1	P1	P1	P3	ACT1				
29	MEDIA ROOM	F1	B1	WP1	P4	P4	WC1	ACT1				
30	WELLNESS	F1	B1	P1	P1	P1	P1	ACT1	L1	S1		
31	CORR.	F4	B1	P1	P1	P1	P1	ACT/STR.				NOTES: 1 & 4
32	IT	F5	B1	P1	P1	P1	P1	ACT1				
33	TOOL CRIB	F5		P2	P2	P2	P2	STR.				
34	MECHANICAL ROOM	F5		P2	P2	P2	P2	STR.				
35	VEST.	F3	B1	P1	P1	P1	P1	ETR				
36	LOUNGE	F4	B1		P1	P1	P1	STR.				NOTE: 4
37	CONFERENCE	F1	B1	P1	P3	P1	P3	ACT1				NOTE: 3
38	KITCHENETTE	F4	B1	P1	P1	P1	P1	ACT1/FB5/STR.	L1	S1	L1	NOTE: 4
39	MULTI-PURPOSE	F1	B1	P1	P1	P1	P1	ACT1/FB4				
40A	WOMEN'S RR	T1	B2	P1/T2	T2/T4	P1/T2	P1	ACT1	L1	S1		
40B	W. ADA RR	T1	B2	P3	T2	T2	T2	GYP				
40C	W. RR	T1	B2	T2	T2	P3	T2	GYP				
40C 40D	W. RR	T1	B2	T2	T2	P3	T2	GYP		<u> </u>		
	MEN'S RR	T1	B2	P1/T2	T2/T4	P1/T2	P1	ACT1	L1	S1		
	M. RR	T1	B2	P3	T2	T2	T2	GYP	L I	31		
		T1	B2	P3	T2	T2	T2	GYP				
	M. RR	-					_					
41D 42	M. ADA RR PROJECT ENGINEERS	T1 F1	B2 B1	T2 P1	T2 P1	P3	T2 P1	GYP ACT1				

GENERAL FINISH SCHEDULE NOTES:

• ETR = EXISTING TO REMAIN

PROVIDE ABUSE RESISTANT GYPSUM BOARD UP TO 4'-0" A.F.F. REFER TO WALL TYPE FOR CONTINUATION OF WALL CONSTRUCTION ABOVE ABUSE RESISTANT. 2. INSTALL TILE BACKER PANELS WHERE TILE IS TO BE INSTALLED.

8" TYP.

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RAISED BRAILE TO

MATCH ACRYLIC

- 3. REFER TO FINISH PLAN FOR LOCATIONS OF ACCENT WALL.
- 4. F6 FOR FLOORING AS PART OF ALTERNATE #1.

				FINISH LEGEND		
KEY	DESCRIPTION	MANUFACTURER	PRODUCT NAME	PATTERN/COLOR/SIZE	COMMENTS	CONTACT
FLOORIN	NG MATERIALS	1	1			
F1	CARPET TILE	J+J FLOORING	KINETEX	1857 RENEWAL/3517 STAND-IN/24"X24"	ASHLAR INSTALLATION	JOE DINEEN 785.550.5300
F2	RUBBER FITNESS FLOORING	ROPPE	RECOIL	195 LIGHT GRAY 10% COLOR CHIP CONTENT	ROLL GOODS, 3/8" THICK	
F3	WALK OFF CARPET TILE	J&J CONTRACT	7069 INCOGNITO	1837 OPERATIVE/24"X24"	ASHLAR INSTALLATION	JOE DINEEN 785.550.5300
F4	STAINED CONCRETE	RE: SPEC				
F5	SEALED CONCRETE	RE: SPEC				
F6	LVT - ALTERNATE #1	J&J CONTRACT	V5020 POWER PLAY	1086 INFLUENCE/9"X48"/5MM THICKNESS	1/3 DROP INSTALLATION	JOE DINEEN 785.550.5300
BASE MA	ATERIALS			ITIICKINE33		
		DODDE	DININIA CLE TVDE TC	100 DLACK/CTANDADD TOF/AILLIT	1	WENDY DDELAED. (20.077.1414
B1	RUBBER WALL BASE	ROPPE	PINNACLE TYPE TS	100 BLACK/STANDARD TOE/4" HT.		WENDY BREMER: 630.277.1414
B2	PORCELAIN TILE BASE	AMERICAN OLEAN	COLOR STORY FLOOR	34 MATTE BALANCE/ 3X12 BULLNOSE		NATALIE BROCATO: 913.449.3014
PAINT M	ATERIALS				,	
P1	PAINT - OVERALL	SHERWIN WILLIAMS	LATEX SYSTEM	SW7100 ARCADE WHITE	EGGSHELL SHEEN	PETER KREMM: 303.902.7239
P2	PAINT - ACCENT	SHERWIN WILLIAMS	LATEX SYSTEM	SW7672 KNITTING NEEDLES	EGGSHELL SHEEN	PETER KREMM: 303.902.7239
P3	PAINT - ACCENT	SHERWIN WILLIAMS	LATEX SYSTEM	SW9177 SALTY DOG	EGGSHELL SHEEN	PETER KREMM: 303.902.7239
P4	PAINT - ACCENT	SHERWIN WILLIAMS	LATEX SYSTEM	SW6992 INKWELL	EGGSHELL SHEEN	PETER KREMM: 303.902.7239
P5	PAINT - CEILING	SHERWIN WILLIAMS	WATERBORNE ACRYLIC	SW6992 INKWELL	EXPOSED STRUCTURE, FLAT SHEEN	PETER KREMM: 303.902.7239
			DRYFALL SYSTEM			
P6	PAINT - CEILING	SHERWIN WILLIAMS	LATEX SYSTEM	SW7007 CEILING BRIGHT WHITE	GYP. BD. CEILINGS, FLAT SHEEN	PETER KREMM: 303.902.7239
P7	PAINT - ACCENT	SHERWIN WILLIAMS	EXTERIOR LATEX SYSTEM	LM2 "SIGNATURE BLUE" - TO MATCH EXTERIOR	SATIN SHEEN	PETER KREMM: 303.902.7239
TILE MAT	ERIALS					
GRT1	GROUT	MAPEI	ULTRACOLOR PLUS FA	10 BLACK	USE W/T1	CONNIE DREES: 785.521.5252
GRT2	GROUT	MAPEI	ULTRACOLOR PLUS FA	5077 FROST	USE W/T2, T3 &T4	CONNIE DREES: 785.521.5252
TI	PORCELAIN FLOOR TILE	DALTILE	INDUSTRIAL PARK			
				IPO9 CHARCOAL GRAY/MATTE/12X24	STACKED BOND INSTALLATION	JAIME RUFFING: 214.394.9498
T2	PORCELAIN WALL TILE	AMERICAN OLEAN	COLOR STORY FLOOR	34 MATTE BALANCE/ 12X24	STACKED BOND INSTALLATION	NATALIE BROCATO: 913.449.3014
T3	GLASS MOSAIC TILE	ANTHOLOGY	MONET MAGIC	MARINA BRICKS	INSTALL HORIZONTALLY	CENTRAL STATES TILE: 913.681.6629
T4	ACCENT CERAMIC WALL TILE	KATE-LO	CD CHEVRON II	NAVY - LEFT & NAVY - RIGHT	INSTALL VERTICALLY	CENTRAL STATES TILE: 913.681.6629
CABINET	TRY AND COUNTERTOP MATERIALS					
EB1	3MM PVC EDGEBANDING	WILSONART	EDGEBANDING	7981 LANDMARK WOOD	USE W/L1	MANDY BRIDGES: 913.484.2691
L1	PLASTIC LAMINATE	WILSONART	HIGH PRESSURE LAMINATE	7981 LANDMARK WOOD	BASE & UPPER CASEWORK	MANDY BRIDGES: 913.484.2691
S1	QUARTZ SURFACE	CAMBRIA	-	AINSLEY	COUNTERTOPS THROUGHOUT	SONJA RUDOLF: 816.890.1176
	MATERIALS	C/ (IVIDICI/ C		MINOLET	COUNTERIOR OF TIME COUNTER	30113/110B0EL: 010.0/0.11/0
	LAY-IN ACOUSTICAL CEILING TILE	A DA ACTDONIC	1774 DUNE	TECHLAD EDGE (\A/L IITE / 24"\Y24"		FUZA DETU A A O O NI - 01 / 01 / 0000
			1774 DUNE	TEGULAR EDGE/ WHITE/ 24"X24"		ELIZABETH MOON: 816.216.2890
FB1	ACOUSTIC FELT BAFFLE	FRASCH	LINYFELT 8L	5"H X 24"W X 96"L	CABLE SUSPENSION, REFER TO A3/A5.01 FOR COLOR & PATTERN LAYOUT	BRENNA HOOVER: 816.787.1815
FB2	ACOUSTIC FELT BAFFLE	FRASCH	BAFL KIT	30 BLUE/ 10"H X 84" W X 84" L	CABLE SUSPENSION	BRENNA HOOVER: 816.787.1815
FB3	ACOUSTIC FELT BAFFLE	FRASCH	BLADE BAFL	30 BLUE/ 10" H X 2.75" W X 48" L	UNISTRUCT TO AIRCRAFT CABLE SUSPENSION	BRENNA HOOVER: 816.787.1815
GR1	ACOUSTICAL CEILING GRID	ARMSTRONG	PRELUDE XL	WHITE/ 15/16"/ EXPOSED TEE		ELIZABETH MOON: 816.216.2890
GYP	GYPSUM BOARD CEILING	RE: SPEC				
	ON STRIPS				1	
		COLULITED	VINIDDO II	CATINI ANIODIZED ALLIAMNIJAA	LVI TO CONCRETE	
T10		SCHLUTER	VINPRO-U	SATIN ANODIZED ALUMINUM	LVT TO CONCRETE	WENDY DEELED, (00.077.1.11.1
TS1	TRANSITION STRIP	ROPPE	#38 GLUE DOWN CARPET EDGE	100 BLACK	CARPET TO CONCRETE	WENDY BREMER: 630.277.1414
TS2	TRANSITION STRIP	SCHLUTER	RENO RAMP	SATIN ANODIZED ALUMINUM	PORCELAIN TILE TO CONCRETE	
TS3	TRANSITION STRIP	ROPPE	#48 REDUCER STRIP	100 BLACK	RUBBER FITNESS FLOORING TO CONCRETE	WENDY BREMER: 630.277.1414
TS4	TRANSITION STRIP	SCHLUTER	SCHIENE	SATIN ANODIZED ALUMINUM	WALL TILE TO GYP.	
TS5	TRANSITION STRIP	SCHLUTER	DILEX-AHK	SATIN ANODIZED ALUMINUM	WALL TILE TO FLOOR TILE	
TS6	TRANSITION STRIP	SCHLUTER	RENO-TK	SATIN ANODIZED ALUMINUM	CARPET TO PORCELAIN TILE	
TS7		SCHLUTER	RENO-TK	SATIN ANODIZED ALUMINUM	LVT TO PORCELAIN TILE	
TS8	TRANSITION STRIP - ALTERNATE #1		#50 TILE/CARPET	100 BLACK	CARPET TO LVT	 WENDY BREMER: 630.277.1414
TS9	TRANSITION STRIP - ALTERNATE #1	SCHLUTER	JOINER RENO-TK	SATIN ANODIZED ALUMINUM	LVT TO RUBBER FITNESS FLOORING	
H-1-1	SHADE MATERIALS	1	I			
RS1	ROLLER SHADE MATERIAL	DRAPER	FLEX SHADE NEXD	PHIFER SHEERWAVE BASIC/ CHARCOAL	MANUAL; MESH 5% OPEN; CLEAR ANODIZED ALUM. FASCIA	JILL KELLY: 720.545.4649
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\) 2\/FDINICS				/ INOUILLU ALUIVI. I ASCIA	
AF1	OVERINGS ACOUSTIC FELT WALL PANELS	FRASCH	LINYFELT 8L	07 WHITE/ 17 DARK GRAY/ 21 INDIGO	CUSTOM PATTERN	BRENNA HOOVER: 816.787.1815
1	, , , , , , , , , , , , , , , , , , , ,	I.	ĺ	BLUE/ 30 BLUE/ 24"W X 96" L		
WC1	CUSTOM WALL COVERING	LEVEL DIGITAL	CUSTOM PRINTED ON	CUSTOM	WITH PROTECTIVE COATING	
	CUSTOM WALL COVERING		VINYL WALL COVERING			NICK STEWART W/ DIGITAL NICHE
WC1 WF1		LEVEL DIGITAL MANUFACTURER ANTHOLOGY WOODS	VINYL WALL COVERING 3M CLEAR W/ CUSTOM PRINTED GRAPHICS		WITH PROTECTIVE COATING CUSTOM PATTERN RANDOM LENGTHS/1/3 DROP	NICK STEWART W/ DIGITAL NICHE 816.373.5049

GENERAL FINISH LEGEND NOTES:

OFFICE←

- A. ALL INTERIOR HOLLOW METAL FRAMES, DOORS AND DOOR LITE TRIM TO BE PAINTED W. PRE-CATALYZED EPOXY SYSTEM, COLOR TO MATCH NEW ALUM. STOREFRONT SYSTEM.
- B. ALL NEW WOOD DOORS TO MATCH EXISTING.
- C. PROVIDE APPROPRIATE TRANSITION STRIPS AT ALL FLOORING MATERIAL CHANGES. D. ALL MECHANICAL GRILLES TO BE FIELD PAINTED TO MATCH ADJACENT WALL. PREP GRILLE W/ LIGHT SANDING.
- E. ALL GYP. BD. CEILINGS TO BE PAINTED P6; U.N.O. ON RCP.
- F. REFER TO FINISH PLAN ON A7.02 & FOR EXTENTS OF ACCENT PAINT COLORS. G. ALL EXPOSED DUCTWORK OR STEEL TO BE PAINTED P5.
- H. ROLLERSHADES TO BE INSTALLED AT ALL EXTERIOR WINDOW LOCATIONS EXCEPT FOR THE LOBBY WINDOWS.

RIDGID VINYL BACKER 8" TYP. PANEL RAISED PICTOGRAM, BALCK RAISED LETTERING COPY - RAISED LETTERING, RAISED BRAILE BLACK 5/8" → TO MATCH ACRYLIC MEN SANDBLASTED FIRST \cdots : RAISED BRAILE TO FACE CLEAR ACRYLIC -MATCH ACRYLIC SECOND SURFACE PAINTED WHITE -8" TYP. 8" TYP. RAISED PICTOGRAM, RAISED PICTOGRAM, BLACK BLACK RAISED LETTERING, - RAISED LETTERING, BLACK 5/8" BLACK 5/8" ACCESSIBLE STALL WOMEN

RAISED BRAILE TO

MATCH ACRYLIC

PAINTED WHITE —

- SANDBLASTED FIRST FACE CLEAR

ACRYLIC - SECOND SURFACE

SIGNAGE TYPES

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		8" TYP.	<u></u>	8" TYP.	_
<u>.</u>			RAISED PICTOGRAM, BLACK		RAISED PICTOGRAM, BLACK
— RAISED LETTERING, BLACK	9" TYP.		RAISED LETTERING, 5, BLACK 5/8"		RAISED LETTERING, BLACK 5/8"
 RAISED BRAILLE TO MATCH ACRYLIC 		WOMEN		MEN	
WINDOW FOR PAPER INSERT		::∴:≪	RAISED BRAILE TO MATCH ACRYLIC	∵.∴ <i>×</i>	RAISED BRAILE TO MATCH ACRYLIC
 SANDBLASTED FIRST FACE CLEAR ACRYLIC - SECOND SURFACE PAINTED WHITE 		Α	ANDBLASTED FIRST FACE CLEAR CRYLIC - SECOND SURFACE AINTED WHITE	F	

ROLLER SHADE SCHEDULE L/R MESH/BLACKOUT type number MOTORIZED NOTES RS1 103-1 103-2 No 103-3 No RS1 107-1 No 109-1 RS1 137-1 MESH No RS1 137-2 137 RS1 137-3 R MESH No

GENERAL ROLLER SHADE NOTES:

A. REFER TO FINISH PLANS ON A7.02 FOR ROLLER SHADE LOCATIONS

	OOM LOCATION		
NO.	NAME	TYPE	SIGN TEXT
103	LATASHA'S OFFICE	D	CEO OFFICE
105	MARKETING	D	MARKETING DIRECTOR
103	CFO OFFICE	D	CFO
107	OPERACTIONS OFFICE	<u></u> D	COO
110	HR OFFICE	D	HUMAN RESOURCES
113	SR. PM OFFICE	D	OFFICE
114	SR. PM OFFICE	D	OFFICE
116	SR. PM OFFICE	D	OFFICE
117	SR. PM OFFICE	D	OFFICE
118	SR. PM OFFICE	D	OFFICE
119	ESTIMATING OFFICE	D	OFFICE
120	ESTIMATING OFFICE	D	OFFICE
121	WAR ROOM	A	TBD
123	ACCOUNTANT OFFICE	D	OFFICE
125	FITNESS	A	FITNESS
126	STOR.	Α	STORAGE
129	MEDIA ROOM	Α	TBD
130	WELLNESS ROOM	Α	TBD
132	IT	Α	IT
133	TOOL CRIB	Α	TOOL CRIB
137	CONFERENCE	Α	CONFERENCE ROOM
139	MULT-PURPOSE	Α	TBD
139	MULT-PURPOSE	Α	TBD
140A	WOMEN'S RR	С	SEE SIGNAGE TYPE "C"
140B	W/. ADA RR	Е	ACCESSIBLE STALL
140C	W.RR	Е	SEE SIGNAGE TYPE "E"
140D	W.RR	Е	SEE SIGNAGE TYPE "E"
141A	MEN'S RR	В	SEE SIGNAGE TYPE "B"
141B	M. RR	F	SEE SIGNAGE TYPE "F"
141C	M. RR	F	SEE SIGNAGE TYPE "F"
141D	M. ADA RR	Е	ACCESSIBLE STALL

GENERAL SIGNAGE SCHEDULE NOTES:

- A. REFER TO FINISH PLAN ON A7.02 FOR SIGNAGE LOCATIONS
- B. SIGNS MOUNTED ON GLASS PROVIDE OPAQUE SHEET MATCHING SIGN MATERIAL, FINISH & SIZE ONTO OPPOSITE OF GLASS TO CONCEAL BACK OF SIGN
- C. ROOM NUMBERS AND SIGNAGE TO BE COORDINATED W/ OWNER DURING SHOP
- D. COORDINATE SIGNAGE LOCATIONS W/ OWNER

	TOILET ACCESSORY SCHEDULE	
KEY	DESCRIPTION	NOTES
T1	42" GRAB BAR - BRADLEY 812 SERIES	
T2	36" GRAB BAR - BRADLEY 812 SERIES	
T3	18" VERTICAL GRAB BAR - BRADLEY 812 SERIES	
T7	AUTOMATIC SURFACE MOUNTED SOAP DISPENSER - BRADLEY 6A01 SERIES	
T9	SURFACE MOUNTED TOILET TISSUE DISPENSER - BRADLEY 5402 SERIES	
T12	SURFACE MOUNTED PAPER TOWER DISPENSER - BRADLEY 250-15 SERIES	
T17	SURFACE MOUNTED NAPKIN DISPOSAL - BRADLEY 4781-15 SERIES	
T30	SINGLE COAT HOOK - BRADLEY 9114	NOTE: 1

TOILET ACCESSORY SCHEDULE - KEYED NOTES:

. T30 TO BE INSTALLED ON THE INSIDE FACE OF DOORS @ 48" A.F.F. IN ALL TOILET COMPARTMENTS AND PRIVATE RESTROOM.

GENERAL TOILET ACCESSORY NOTES:

A. IN WALL BLOCKING REQUIRED AT ALL WALL MOUNTED ACCESSORIES.

	CASEWORK SCHEDULE	
AWI #	DESCRIPTION	NOTES
101	SINGLE DOOR BASE WITH ADJUSTABLE SHELF	
102	DOUBLE DOOR BASE WITH ADJUSTABLE SHELF	
152	DOUBLE DOOR SINK BASE WITH FALSE FRONT	
211	SINGLE DOOR BASE WITH DRAWER AND AJUSTABLE SHELF	
222	DOUBLE DOOR BASE WITH 2 DRAWERS AND ADJUSTABLE SHELF	
253M	2 DRAWER BASE W/ FILE DRAWER	
301	SINGLE DOOR UPPER WITH ADJUSTABLE SHELF	
302	DOUBLE DOOR UPPER WITH ADJUSTABLE SHELF	

GENERAL CASEWORK NOTES:

- A. RE: A7.04 FOR TYPICAL WALL AND BASE CABINET CONSTRUCTION ISOMETRIC DRAWINGS
- B. ALL CASEWORK TO INCLUDE BACK PANELS U.N.O. C. FOR SINGLE DOOR UPPER AND LOWER CABINET TYPES, RE: ELEVATIONS FOR HINGE SWING
- D. COORDINATE ELECTRICAL PUNCH THROUGH AND GROMMETS WITH OWNER AND MEP. E. MANUF. TO PROVIDE UPPER AND BASE CABINET FILLERS AS REQUIRED OR AS SHOWN ON
- ADJUSTABLE SHELVES THAT ARE CONCEALED WITH A SOLID DOOR ARE TO BE 1" THICK MDF
- WITH WHITE MELAMINE FINISH AND MATCHING 3MM EDGING G. MANUF. TO PROVIDE UNDER COUNTER SUPPORT BRACKETS AS REQUIRED. RE: SPEC.
- H. ALL BACKSPLASHES TO BE FIELD FABRICATED, 4". U.N.O. CONTRACTOR TO VERIFY ALL EQUIPMENT SIZES WITH OWNER AND ARCHITECT TO ENSURE PROPER SPACE IS ALLOTTED. COORDINATE INSTALLATION AND SPACE REQUIREMENTS FOR
- ALL OWNER PROVIDED CONTRACTOR INSTALLED EQUIPMENT. J. ALL UPPER WALL CABINETS TO BE 14" DEEP U.N.O.
- K. ALL BASE CABINETS TO BE 24" DEEP U.N.O.
- . ALL LOCKABLE CABINETS TO BE KEYED ALIKE OR UNIQUE PER INTERIOR ELEVATIONS.

Missouri Certificate of Authority

#2003011262

Structural Engineer: Bob D. Campbell & Co. Missouri Certificate of Authority 4338 Belleview Ave. Kansas City, MO 64111 816.531.4144

MEP Engineer: PKMR Engineers Missouri Certificate of Authority #E-2002020886 13300 W. 98th Street Lenexa, KS 66215 913.492.2400

JOB NUMBER 23011

Dalyn Novak - Architect MO # 2011006178

ISSUE DATE 04/17/2024

No Description

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INTERIOR SCHEDULES

SR. PM OFFICE SR. PM OFFICE SR. PM OFFICE 116 **ACCOUNTANT** ESTIMATING **ESTIMATING** A 126 OFFICE **OFFICE** OFFICE STOR. 3 119 **FITNESS** D 123 D 120 D 119 D 118 125 ACCOUNTING SR. PM OFFICE **WORK AREA** 114 WAR ROOM SR. PM OFFICE 121 113 ←1 A 125 3 VEST. CORR. 112 111 A 121 **SUPERINTENDENTS** M. ADA RRU **OPERATIONS PROJECT** OFFICE **ENGINEERS** 109 109-1 HR OFFICE CONFERENCE A 139 B 141A 142 MEN'S RR 141A CFO OFFICE 141B 141C STOR. CORR. 108 131 107-1 A 129 MEDIA ROOM MULTI-PURPOSE 129 139 WELLNESS 106 MARKETING 130 105 WOMEN'S RR 104 A 132 WORK ROOM RS1 103-2 132 LATASHA'S OFFICE 103 A 139 KITCHENETTE 138 — A 133 TOOL CRIB 133 101 CONFERENCE 137 LOUNGE 136 **MECHANICAL** VESTIBULE VEST. ROOM 100 RS1 137-2 134

7

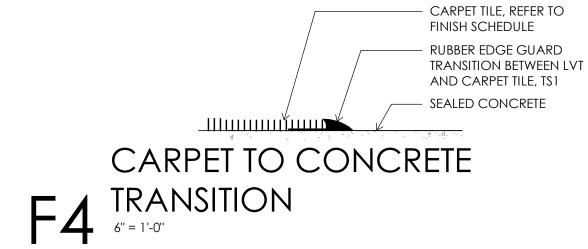
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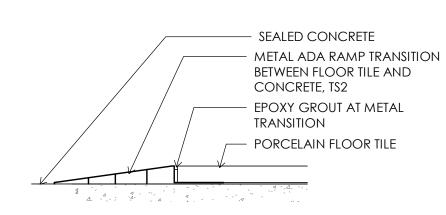
RUBBER ATHLETIC
FLOORING

RUBBER
TRANSITION , TS7

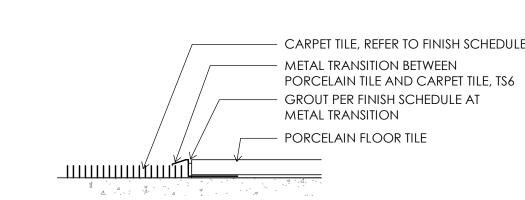
SEALED CONCRETE

RUBBER ATHLETIC
FLOORING TO
CONCRETE
6"= 1'-0"

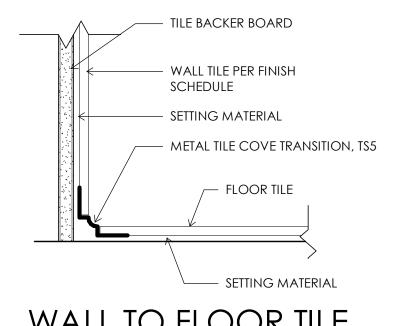




TILE TO CONCRETE TRANSITION 6" = 1'-0"



CARPET TO TILE B4 TRANSITION 6" = 1'-0"



WALL TO FLOOR TILE

COVE TRIM

3" = 1'-0"

FINISH PLAN GENERAL NOTES:

- CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND EXISTING CONDITIONS. ANY DISCREPANCIES WHICH WILL PREVENT THE ACCOMPLISHMENT OF INTENT SHOWN ON DRAWINGS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF
- THE ARCHITECT.

 WHERE A CONDITION IS NOTED 'TYPICAL' (TYP.), IT IS UNDERSTOOD THAT ALL SIMILAR CONDITIONS BE CONSTRUCTED OF THE SAME MATERIALS AND/OR DIMENSIONS
- DIMENSIONS.

 REFER TO ROOM FINISH SCHEDULES ON A7.01 FOR INTERIOR FINISH INFORMATION.
- INTERIOR FINISH INFORMATION.

 REFER TO SIGNAGE SCHEDULE ON A7.04 FOR INTERIOR WALL MOUNTED ADA SIGNAGE AND LOCATIONS.

FINISH PLAN NOTES:

CONCRETE

1 TRANSITION BETWEEN CARPET TILE & CONCRETE
2 TRANSITION BETWEEN PORCELAIN TILE & CONCRETE
3 TRANSITION BETWEEN RUBBER FITNESS FLOORING &

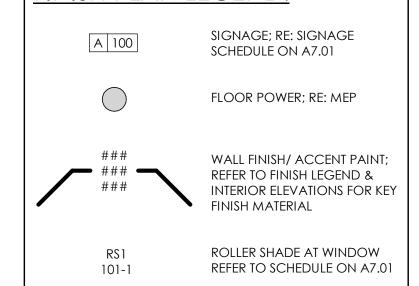
4 TRANSITION BETWEEN CARPET TILE & PORCELAIN TILE
5 ALT. #1 - TRANSITION BETWEEN LVT & PORCELAIN TILE

6 ALT. #1 - TRANSITION BETWEEN CARPET TILE & LVT

7 ALT. #1 - TRANSITION BETWEEN LVT & RUBBER FITNESS FLOORING

8 ALT. #1 - TRANSITION BETWEEN LVT & CONCRETE

FINISH PLAN LEGEND:



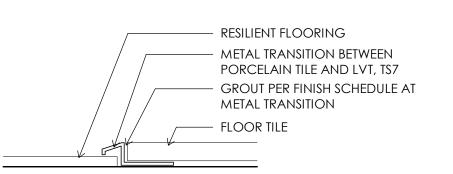
CARPET TILE

RUBBER EDGE GUARD TRANSITION
BETWEEN LVT AND CARPET TILE, TS8

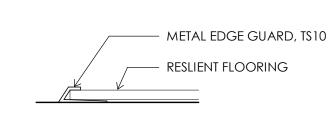
RESILIENT FLOORING

CARPET TO LVT - ALT.

D2 #1
6" = 1'-0"



C2 TILE TO LVT - ALT. #1



B2 ALT. #1

RUBBER FITNESS FLOORNG

RUBBER EDGE GUARD TRANSITION
BETWEEN LVT AND RUBBER FITNESS
FLOORING, TS9

RESILIENT FLOORING

LVT TO RUBBER FITNESS

FLOORING - ALT. #1



Missouri Certificate of Authori #2003011262

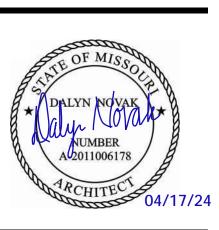
Structural Engineer:
Bob D. Campbell & Co.
Missouri Certificate of Authority
#000442
4338 Belleview Ave.
Kansas City, MO 64111
816.531.4144

MEP Engineer:
PKMR Engineers
Missouri Certificate of Authority
#E-2002020886
13300 W. 98th Street
Lenexa, KS 66215
913.492.2400

JOB NUMBER 23011

E ROAD 64138

9000 OLD SANTE FE ROAD KANSAS CITY, MO 64138



Dalyn Novak - Architect MO # 2011006178

ISSUE DATE 04/17/2
No Description D

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FINISH PLAN

A7.02

A 10 FINISH PLAN
1/8" = 1'-0"

D

С



GENERAL NOTES:

A. ALL ITEMS ARE OWNER FURNISHED; OWNER INSTALLED

KEYED NOTES:

PROVIDE IN-WALL BLOCKING 2. RE: MEP FOR CONNECTION REQUIREMENTS

FFE SCHEDULE:

E8 FITNESS EQUIPMENT

TAG DESCRIPTION

E1 COPY MACHINE E2 MICROWAVE

NOTES

E3 TV/MONITOR & BRACKET 1, 2 E4 REFRIGERATOR E5 UNDER COUNTER REFRIGERATOR

E6 FURNITURE E7 COFFEE MAKER

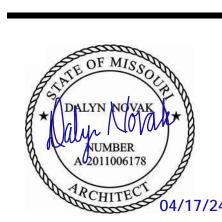
Missouri Certificate of Authority #2003011262

Structural Engineer: Bob D. Campbell & Co. Missouri Certificate of Authority #000442 4338 Belleview Ave. Kansas City, MO 64111 816.531.4144

MEP Engineer: PKMR Engineers Missouri Certificate of Authority #E-2002020886 13300 W. 98th Street Lenexa, KS 66215 913.492.2400

JOB NUMBER 23011

LM2 OFFICE RENOVA



Dalyn Novak - Architect MO # 2011006178

ISSUE DATE No Description

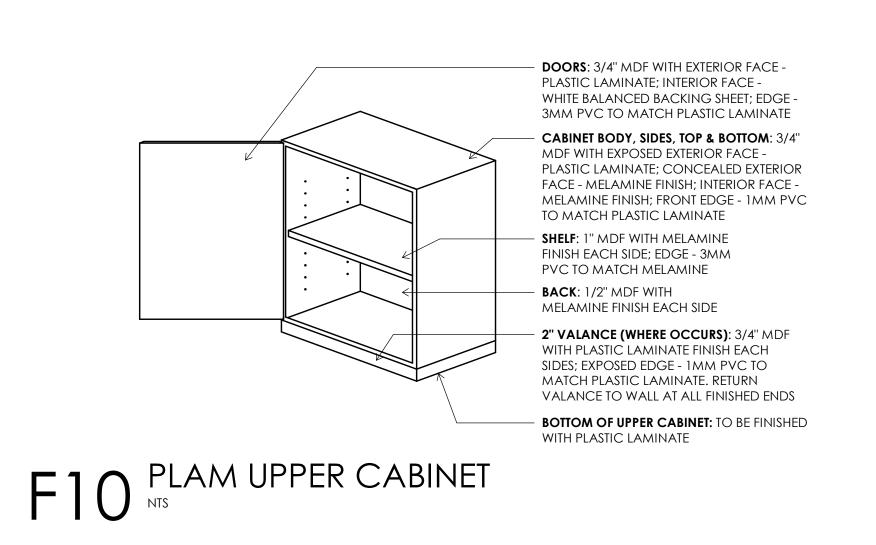
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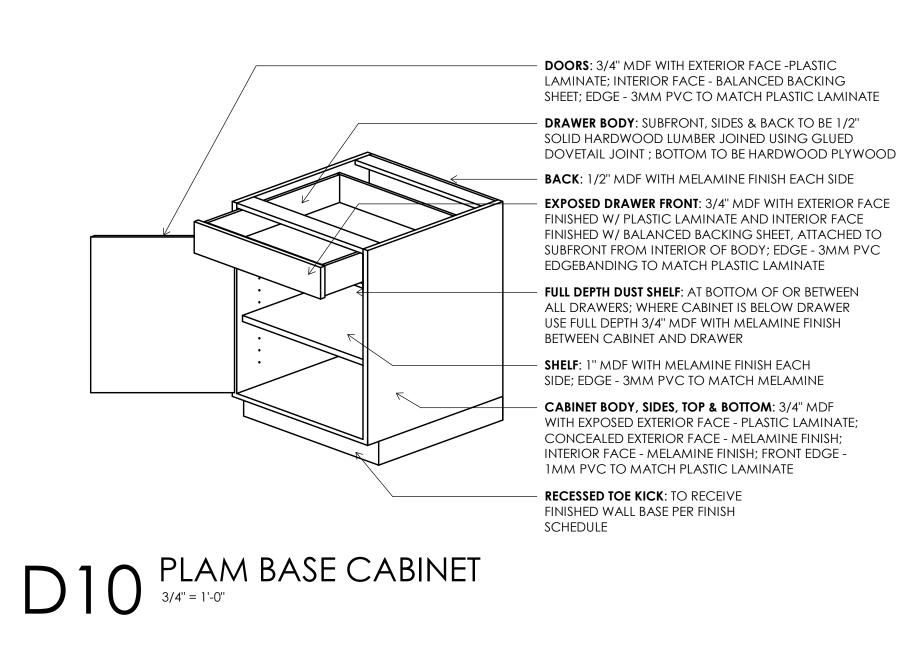
FF&E PLAN

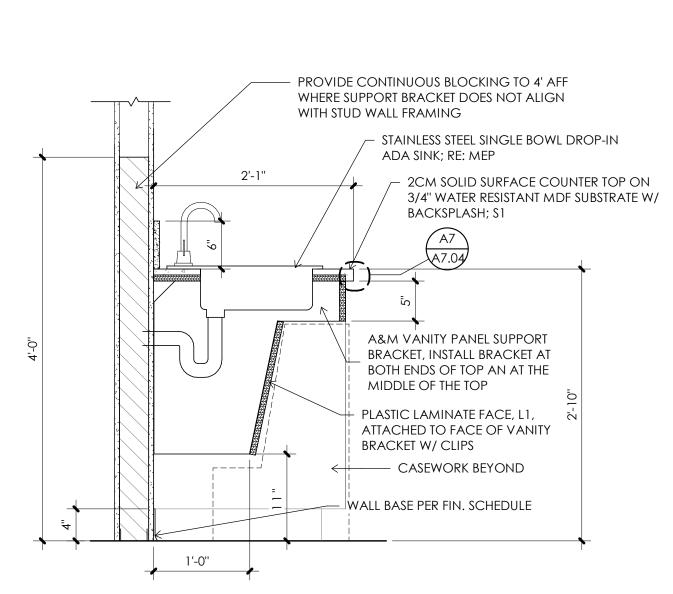
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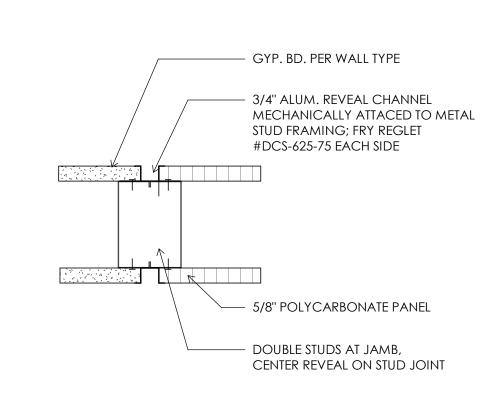
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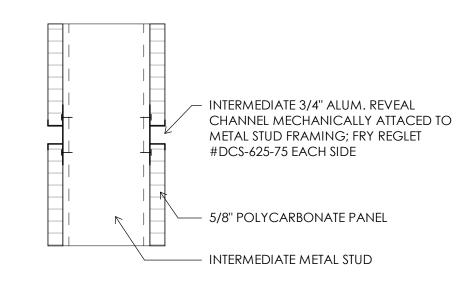




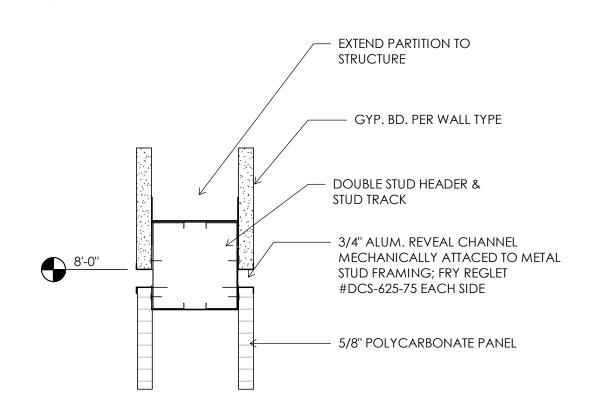
A 10 SECTION @ SINK A7 QUARTZ EDGE DETAIL



POLYCARBONATE F7 PANEL JAMB DETAIL



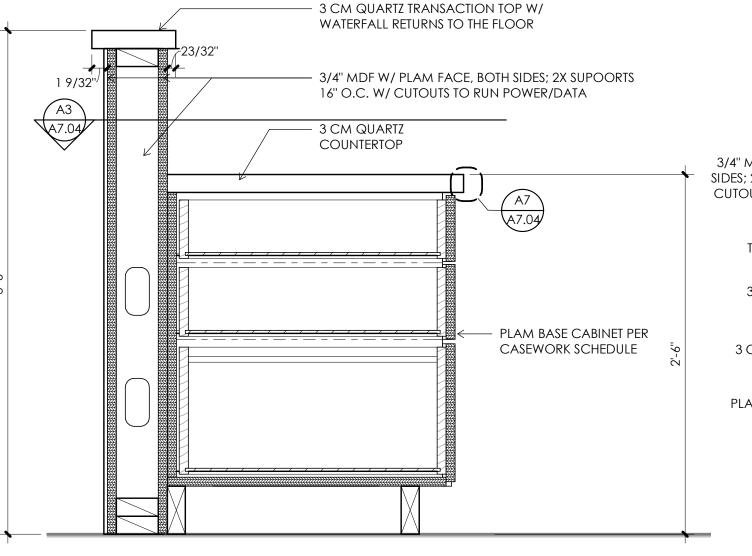
POLYCARBONATE E7 PANEL MULLION DETAIL
3" = 1'-0"



POLYCARBONATE 7 PANEL HEAD DETAIL
3" = 1'-0"

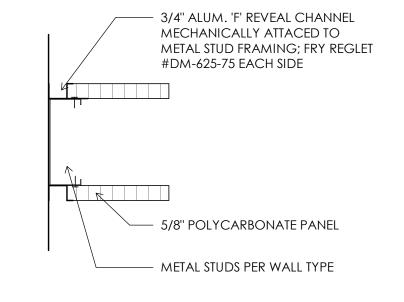
3CM QUARTZ SURFACE TOP W/

MICROBEVELED EDGES

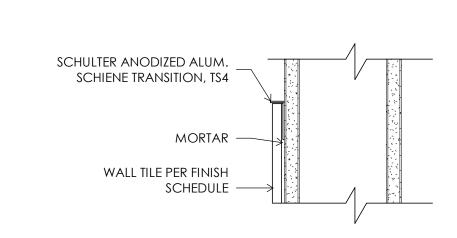


INSTALL CONE NUT TO SECURE BAFFLE CABLE TO UNISTRUT UNISTRUT @ B.O. EXISTING STRUCTURE CABLE GRIPPER, INSTALLED IN CONE NUT AIRCRAFT CABLE PROVIDED BY FRASCH CABLE GRIPPER, INSTALLED IN FLAT BRACKET FLAT BRACKET, PROVIDED BY FRASCH ----- FB3 TYP. SPACING BAFFLE PER RCP 2 3/4"

F4 FELT BAFFLE DETAIL
3" = 1'-0"



POLYCARBONATE PANEL JAMB DETAIL



3'-0''

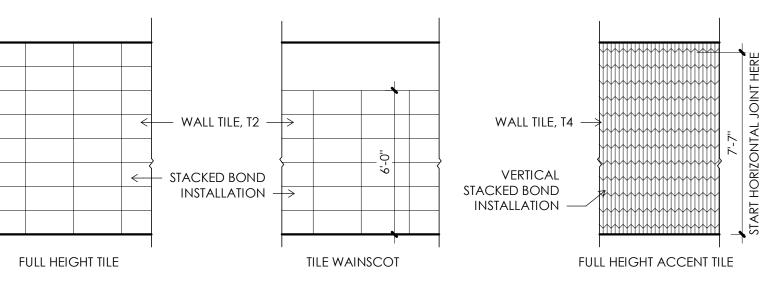
*NOTE: TV MONITOR TO BE MOUNTED AT 6'-0" A.F.F., UNLESS OTHERWISE NOTED ON ELEVATION

TYP. WALL MOUNTED

- SOLID FIRE-TREATED PLYWOOD

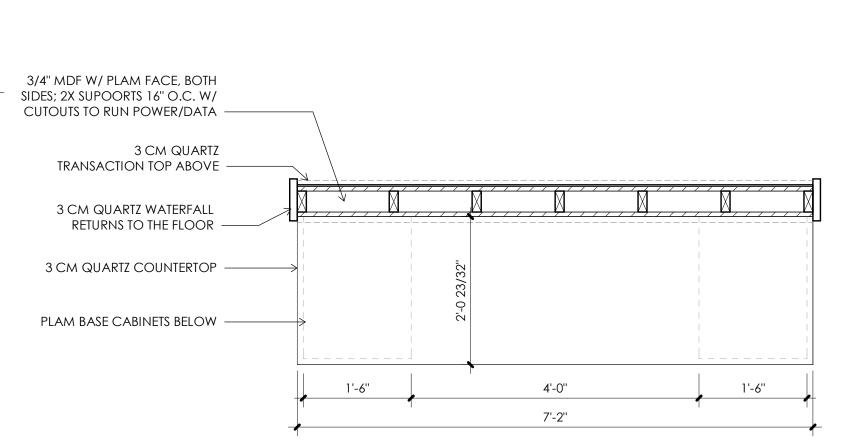
BLOCKING

D2 TILE TO GYP. DETAIL



C3 TILE PATTERNS

1/4" = 1'-0"





Structural Engineer: Bob D. Campbell & Co. Missouri Certificate of Authority #000442 4338 Belleview Ave. Kansas City, MO 6411 816.531.4144

MEP Engineer: PKMR Engineers Missouri Certificate of Authority #E-2002020886 13300 W. 98th Street Lenexa, KS 66215 913.492.2400

JOB NUMBER 23011

MO # 2011006178

Dalyn Novak - Architect **ISSUE DATE**

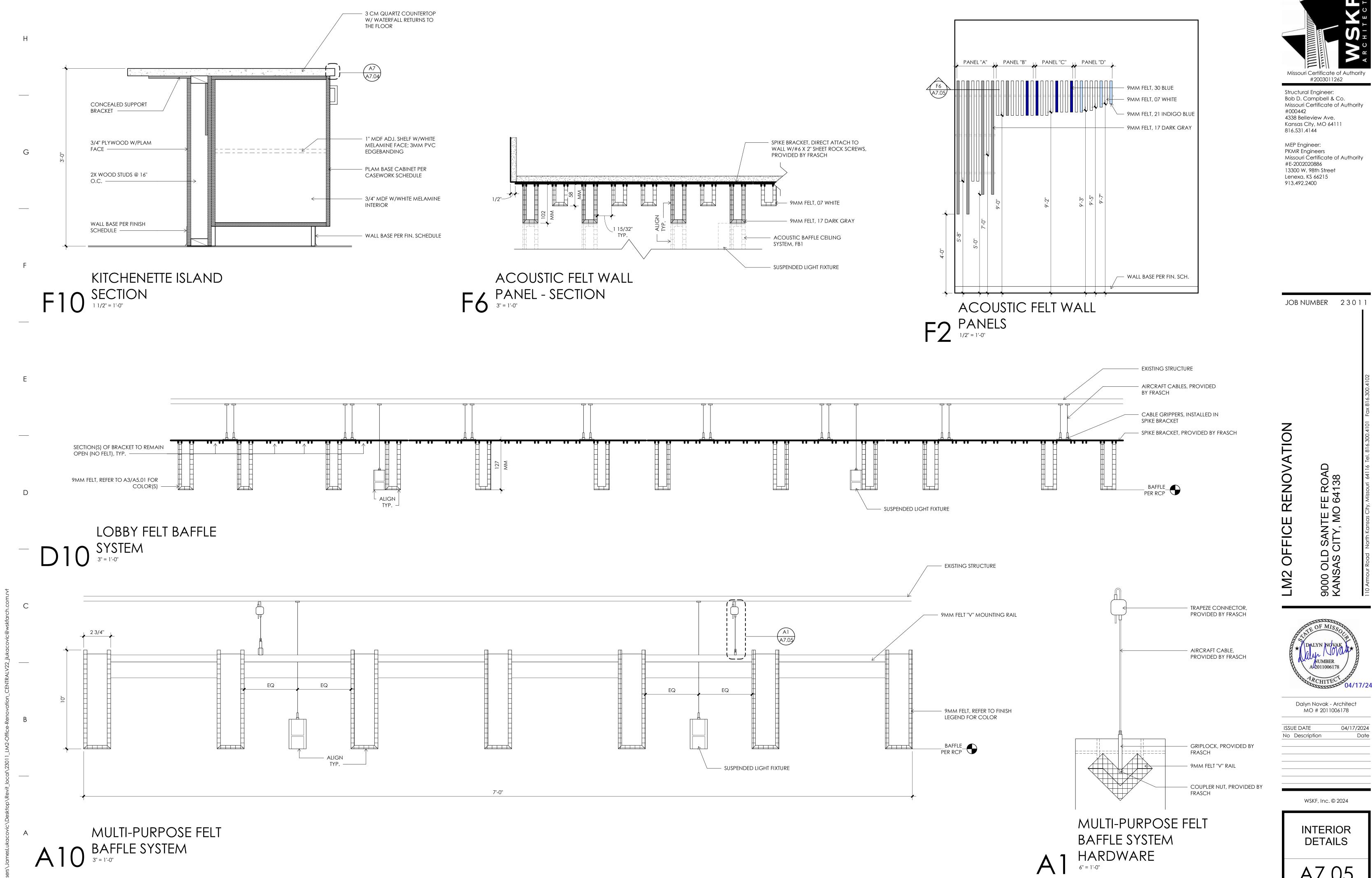
04/17/2024

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INTERIOR DETAILS A7.04

A5 RECEPTION DESK

A3 RECEPTION DESK



7 5 5 3

A7.05

1. General Information

- A. The contractor shall verify dimensions and conditions before construction and notify the engineer of any discrepancies, inconsistencies, or difficulties affecting the work before proceeding.
- B. The contractor shall coordinate all disciplines, verifying size and location of all openings, whether shown on structural drawings or not, as called for on architectural, mechanical, or electrical drawings. In the case of work in an existing building the contractor shall scan existing structure to locate all rebar in the area of the new core/opening using ground penetrating radar and notify the engineer of record for review prior to coring/cutting. Conflicts, inconsistencies, or other difficulties affecting structural work shall be called to the architect or engineer's attention for direction before proceeding.
- C. All design and construction work for this project shall conform to the requirements of the following governing design codes:
- 1. International Building Code (IBC 2018) and referenced standards as amended by the city of Kansas City, MO
- Minimum Design Loads for Buildings and Other Structures (ASCE7-16)
- 3. Specification for Structural Steel Buildings (AISC 360-16) Member Design Basis is Allowable Stress Design (ASD)
- Connection Design Basis is Allowable Stress Design (ASD)
- 4. Structural Welding Code (AWS D1.4/D1.4M 2017) Building Code Requirements for Structural Concrete (ACI 318-14)

Supplements (ANSI/AWC NDS-2018)

- 6. Building Code Requirements for Masonry Structures (TMS 402-16) 7. North American Specification for the Design of Cold-Formed Steel Structural
- Members (AISI S100-16) 8. National Design Specification (NDS) for Wood Constriction with 2018
- 9. Special Design Provisions for Wind and Seismic (AWC SDPWS-2015) D. These drawings are for this specific project and no other use is authorized.

2. Structural Load Design Criteria

- A. Floor Live = 50 psf (offices), 80 psf (corridors above first floor), 100 psf (lobbies and first-floor corridors
- B. Roof Live = 20 psf C. Snow: Pg = 20psf, Pf =14psf, Is = 1.0, Ce = 1.0, Ct = 1.0, Drift per ASCE/SEI 7
- D. Lateral Loads:
 - Wind: V = 109 mph, Exposure B
 - Occupancy [Risk] Category II, lw=1.0 GCpi=+/-0.18 Design wind pressures to be used for the design of exterior component and cladding materials on the designated zones of wall and roof surfaces shall be per section 30.7 and Table 30.7-2 of ASCE/SEI 7. Tabulated
 - pressures shall be multiplied by effective area reduction factors, exposure adjustment factors, and topographic factors where applicable
 - Seismic: • Ss = 0.098, S1 = 0.069
 - Occupancy [Risk] Category II, le=1.0,
 - Site Classification D; Sds = 0.104; Sd1 = 0.111 Seismic Design Category B
- E. This project is designed to resist the most critical effects resulting from the load combinations of section 1605.3 of the International Building Code.

3. Concrete

- A. All concrete for foundations (walls, grade beams, footings and piers) shall develop minimum ultimate compressive design strength of 3500 psi in 28 days, but not less than 500 pounds of cement shall be used per cubic yard of concrete regardless of strengths obtained, not over 6 gallons of water per 100 pounds of cement and not over 4 inches of slump.
- B. All concrete for interior flatwork shall develop minimum ultimate compressive design strength of 4000 psi in 28 days, but not less than 540 pounds of cement shall be used per cubic yard of concrete regardless of strengths obtained, not over 5.40 gallons of water per 100 pounds of cement and not over 4 inches of slump. Concrete mix shop drawing shall contain testing data proving concrete design mix shrinkage is less than 0.034% at 28 days when tested according to ASTM C157 (air drying method only).
- C. All concrete for exterior flatwork shall have a minimum design compressive strength of 4500 psi in 28 days, with not less than 560 pounds of cement per cubic yard of concrete, not over 5 gallons of water per 100 pounds of cement, with 6%
- +/- 1% air entrainment, and a maximum of 4 inches of slump. D. The preceding minimum mix requirements may have water-reducing admixtures conforming to ASTM C494 added to the mix at manufacturer's dosage rates for
- improved workability. E. The preceding minimum mix requirements may have up to 15% maximum of the cement content replaced with an approved ASTM C618 Class C fly ash, provided the total minimum cementitious content is not reduced.
- F. All interior concrete slabs on grade shall be placed over 15 mil, Class A Vapor Barrier per ASTM E1745 with less than 0.01 perms, tested after mandatory conditioning. All joints shall be lapped and sealed per manufacturer's recommendations. All penetrations, as well as damaged vapor barrier material shall also be sealed per manufacturer's recommendation prior to concrete placement. Install barrier per manufacturer recommended details at all discontinuous edges (at interior columns, exterior edge of slab, etc.) to ensure terms of warranty are followed. The vapor barrier shall be placed over freedraining granular material as prescribed by the project soils report.
- G. All concrete is reinforced concrete unless specifically called out as unreinforced. Reinforce all concrete not otherwise shown with same steel as in similar sections or areas. Any details not shown shall be detailed per ACI 315 and meet
- requirements of ACI 318, current editions. H. Control joints in dirt formed slab to be as shown on plans. Where not shown, limit controlled areas to not more than 144 square feet, or 12 feet on any side. Slab
- panel side ratio shall not exceed 1 1/2 to 1. I. Contractor shall verify that all concrete inserts, reinforcing and embedded items
- are correctly located and rigidly secured prior to concrete placement. J. Construction joints in beams, slabs, and grade beams shall occur at midspan
- (middle third) unless noted otherwise. Provide 2 x 4 horizontal keys at construction joints for shear transfer.
- K. No aluminum items shall be embedded in any concrete.

4. Reinforcing Steel

- A. All reinforcing steel shall conform to the requirements of ASTM A615 or A706 grade 60 steel. Welded plain wire fabric shall be supplied in sheets and conform
- B. Clear coverage of concrete over reinforcing steel shall be as follows:
- 1. Concrete placed against earth: 3" 2. Formed concrete against earth: 2"

to the requirements of ASTM A185.

- All coverage shall be nominal bar diameter minimum.

5 instead of 2 - #5, respectively.

- C. All dowels shall be the same size and spacing as adjoining main bars (splice lap 48 bar diameters or 24" minimum unless noted otherwise).
- D. At corners of all walls, beams, and grade beams supply corner bars (minimum 2'-0" in each direction or 48 bar diameters) in outside face of wall, matching size and spacing of horizontal bars. Where there are no vertical bars in outside face of wall, supply 3 - #4 vertical support bars for corner bars.
- E. Bars marked continuous and all vertical steel shall be lapped 48 bar diameters (2'-0" minimum) at splices and embedments, unless shown otherwise. Splice top
- bars near midspan and splice bottom bars over supports, unless noted otherwise. F. At all holes in concrete walls and slabs, add 2 - #5 bars (opening dimension plus 96 diameters long) at each of four sides and add 2 - #5 x 5'-0" diagonally at each of four corners of hole. Openings in 8" thick walls are reinforced similar, but with 1 - #
- G. Unless otherwise covered on architectural plans or specifications, vertical control joints in concrete wall shall be spaced at a maximum of 20'-0" on center and coordinated with the architect. Every other horizontal wall reinforcing bar shall be discontinuous at control joints except heavy top and bottom bars unless noted otherwise. Provide base seal waterstop style number 772 (by Greenstreak Inc. or
- approved equal) on dirt face side of wall at all walls below grade. H. Accessories shall be as specified in latest edition of the ACI Detailing Handbook and the concrete Reinforcing Steel Institute Design Handbook. Maximum accessory spacing shall be 4'-0" on center, and all accessories on exposed surfaces are to have plastic coated feet.
- I. All slabs and stairs not shown otherwise shall be 6" thick with #4 bars at 12" on center each way. All exterior porches and stoops not otherwise detailed may be constructed in any standard manner, solid or hollow, but must be reinforced with #4 bars at 12" on center each way minimum. Porches shall be doweled to adjacent walls or grade beams with #4 bars at 12" on center, hooked or embedded 48 diameters into both members. Slope porches 1/8" per foot for drainage unless
- noted otherwise. J. Allow 1/2 ton of reinforcing bars #4 or larger to be used as directed in the field for special conditions by the engineer of record (labor for placing same to be included).

5. Structural Steel

- A. All structural steel beams and columns shall be ASTM A992, grade 50 steel and all miscellaneous steel shall be ASTM A36 grade steel (except at moment connections where plates shall be ASTM A572, grade 50). Hollow Structural Sections (HSS) shall be ASTM A500, grade C. Fabrication and erection shall be in accordance with AISC 303 "Code of Standard Practice for Steel Buildings and Bridges" in the referenced
- edition of the AISC Steel Construction Manual. B. All welding shall conform to the recommendations of the AWS.
- C. All exterior steel and connections, and brick relief angles shall be hot-dip galvanized. D. All bolts not otherwise specified shall be 3/4" diameter high strength (ASTM A325-N). All bolts shall be fully pretensioned. All beam connections shall be designed per the AISC Manual of Steel Construction "Framed Beam Connections" for the indicated reactions or at least 0.4 x beam total shear capacity, Vn/Omega, shown in the maximum total uniform load tables, whichever is greater; and, shall account for eccentricity when the bolt line is more than 2" from the center of the support. All connections must be two bolt minimum. Additional connection elements may not be specifically shown in the conceptual details in this set but may be required by the final connection design, such as stiffener plates, doubler plates, supplement/reinforcing plates or other connection material. Connection design and shop drawing preparation shall be completed under the direct supervision of a professional engineer licensed in the state the project is located and shop drawings and connection calculations shall
- E. All anchor bolts shall be 3/4" diameter, ASTM F1554, Grade 36 unless noted otherwise. Plate washers of minimum size and thickness for the given anchor diameter in Table 14-2 of the AISC Steel Construction Manual shall be provided at every column anchor bolt. Plate washers shall have a standard size hole for the anchor bolt. At braced frames, plate washers shall be welded all around to the column base plate with 3/16" fillet weld.
- F. Loose lintels for support of masonry veneer over all openings up to 8'-0" wide in new and existing masonry walls not otherwise noted shall be one L 6x3 1/2x5/16 (LLV) with 8" bearing at each end. All exterior lintels shall be hot-dip galvanized.
- G. Allow 1.0 tons of miscellaneous structural steel to be used as directed in the field for special conditions by the engineer of record. Cost for shop drawings, fabrication, delivery, detailing, and erection to be included.

6. Post-installed Anchors

bear his/her seal.

- A. Post-installed anchors shall be used only where specified on the drawings unless approved in writing by the engineer of record. See drawings for anchor diameter, spacing and embedment. Performance values of the anchors shall be obtained for specified products using appropriate design procedures and/or standards as required by the governing building code. Anchors installed in concrete shall have an ICC-ES Evaluation Service Report. Special inspection is required for all post installed anchors. The contractor shall coordinate an on-site meeting with the post installed anchor manufacturer field representative to educate the construction team on the anchor
- installation guidelines and requirements. B. Mechanical anchors used in cracked and uncracked concrete shall have been tested and qualified for use in accordance with ACI 355.2 and ICC-ES AC193. All anchors
- shall be installed per the anchor manufacturer's written instructions. C. Adhesive anchors used in cracked and uncracked concrete shall have been tested and qualified for use in accordance with ICC-ES AC308. All anchors shall be installed per the anchor manufacturer's written instructions.
- D. Mechanical anchors used in solid grouted masonry shall have been tested and qualified for use in accordance with ICC-ES AC01. All anchors shall be installed per the anchor manufacturer's written instructions.
- E. Adhesive anchors used in solid grouted masonry shall have been tested and qualified for use in accordance with ICC-ES AC58. All anchors shall be installed per the anchor manufacturer's written instructions. F. Anchors used in hollow concrete masonry shall have been tested and qualified in
- accordance with ICC-ES AC106 or ICC-ES AC58 as appropriate. All anchors shall be installed per the anchor manufacturer's written instructions with appropriate screen tubes used for adhesives.

7. Foundations

- A. All new footings are designed to bear on engineered fill or undisturbed soil capable of safely sustaining 1,500 psf.
- B. All foundation excavations shall be inspected by a qualified soil engineer, approved by the architect and/or structural engineer, prior to placement of steel or concrete. This nspection shall be at the owner's expense.
- C. All concrete in the structural portion retaining the backfill shall have attained its design strength prior to being backfilled.
- D. Moisture content in soils beneath building locations should not be allowed to change after footing excavations and after grading for slabs on grade are completed. If subgrade materials become desiccated or softened by water or other conditions, recompact materials to the density and water content specified for engineered fill. Do not place concrete on frozen ground.

8. Cold-Formed Metal Framing

- A. All cold-formed structural studs, track, and bridging shall be of the type, size, gage,
- and spacing as shown on the drawings, minimum. B. All materials shall be 33,000 psi minimum yield, except studs of 16 gage or
- heavier shall have a minimum yield of 50,000 psi.
- C. All properties, fabrication, and erection shall be in accordance with latest editions of the AISI "Specifications for the Design of Cold-Formed Structural Members." D. All framing components shall be cut squarely or at an angle to fit squarely
- against abutting members. Splicing of axially loaded members is not permitted. Members shall be held firmly in place until properly fastened. Attachments of similar components shall be by welding, screw attachment, or bolting. Wire tying of components is not permitted.
- E. Tracks shall be securely anchored to floor and overhead members. Special
- anchorage requirements required for wind bracing shall be as shown on the plans. F. Prior to fabrication and/or erection, the contractor shall submit shop drawings complete with detail of erection, fabrication, attachments, anchorages, lintels, etc., for review by the architect/engineer.

9. Shop Drawings and Deferred Submittals

- A. Bob D. Campbell and Company, Inc. will review the General Contractor's (GC) shop drawings and related submittals (as indicated below) with respect to the ability of the detailed work, when complete, to be a properly functioning integral element of the
- overall structural system designed by Bob D. Campbell and Company, Inc. B. Deferred submittals shall be submitted to the architect of record for review who shall forward to the building official for review and approval. Design calculations for deferred sub mittals shall be submitted at the same time as the shop drawings for review. Design calculations shall be prepared and sealed by a Professional Engineer licensed in the state of the project. The deferred submittal items shall not be installed until the deferred submittal documents have been approved by the building official.
- C. Prior to submittal of a shop drawing or any related material to Bob D. Campbell and Company, Inc., the GC shall: 1. Review each submission for conformance with the means, methods, techniques,
- sequences and operations of construction and safety precautions and programs incidental thereto, all of which are the sole responsibility of the GC. 2. Review and approve each submission.
- 3. Stamp each submission as approved. D. Bob D. Campbell and Company, Inc. shall assume that no submission comprises a variation unless the GC advises Bob D. Campbell and Company, Inc. with written
- documentation. E. Bob D. Campbell and Company, Inc. shall review shop drawings and related materials with comments provided that each submission has met the above requirements. Bob D. Campbell and Company, Inc. shall return without comment
- unrequired material or submissions without GC approval stamp. F. Required shop drawings and related material (if any) are indicated below Should Bob D. Campbell and Company, Inc. require more than ten (10) working days to perform the review, Bob D. Campbell and Company, Inc. shall so notify the GC.
- 1. Concrete mix designs and material certificates including admixtures and compounds applied to the concrete after placement. 2. Reinforcing steel shop drawings including erection drawings and bending details.Bar list will not be reviewed for correct quantities.
- Grout mix designs (for CMU). 4. Structural steel shop drawings including erection drawings and piece details. Include joist, decking and connector submittals. Include miscellaneous framing specified on the structural drawings, but do not submit framing specified on nonstructural drawings for Bob D. Campbell and Company, Inc. review.
- 5. Deferred Submittal: Cold-formed metal framing 6. Miscellaneous anchors shown on the structural drawings.

10. Statement of Structural Special Inspections

- A. The structural design for this project is based on completion of special inspections during construction in accordance with section 1704 of the International Building Code. The owner shall employ one or more qualified special inspectors to provide the required special inspections.
- B. The special inspector shall furnish inspection reports to the building official, owner,
- architect and structural engineer, and any other designated person. C. All discrepancies shall be brought to the immediate attention of the contractor for correction, then, if uncorrected, to the proper design authority, building official and
- structural engineer. D. The special inspector shall submit a final signed report stating that the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans and specifications and the applicable workmanship provisions of
- the building code. E. The following inspections and tests are required with the frequency (continuous or periodic) as defined within the referenced section or standard listed below. The
- General Contractor shall provide notification to the inspector when items requiring
- inspection are ready to be inspected and provide access for those inspections. 1. Shop Fabrication – structural steel per Section 1704.2.5 unless AISC certified
- 2. Steel Construction per Section 1705.2 and the quality assurance requirements
- of AISC 341 Chapter J (as referenced by AISC 360) 3. Concrete Construction per Section 1705.3 and Table 1705.3
- a. Reinforcing Steel Placement b. Cast in Place Anchors
- c. Post Installed Anchors
- d. Design Mix Verification e. Concrete Sampling and Testing
- Concrete Placement g. Concrete Curing
- 4. Verification of Soils per Table 1705.6

11. Copyright and Disclaimer

- A. All drawings in the structural set (S-series drawings) are the copyrighted work of Bob D. Campbell and company, Inc. These drawings may not be photographed, traced, or copies in any manner without the written permission of Bob D. Campbell and Company, Inc. Exception: Original drawings may be printed for distribution to the owner, architect, and general contractor for coordination, bidding, and construction. Subcontractors may not reproduce these drawings for any purpose
- or in any manner. B. I, Christopher W. Boos, P.E., registered engineer and a representative of Bob D. Campbell and Company, Inc., do hereby accept professional responsibility as required by the professional registration laws of this state for the structural design drawings consisting of S-series drawings. I hereby disclaim responsibility for all other drawings in the construction document package, they being the responsibility of other design professionals whose seals and signed statements may appear elsewhere in the construction document package.

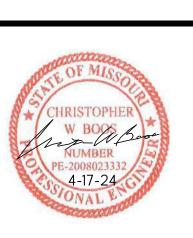


Structural Engineer Bob D. Campbell & Co. State Certificate of Authority #000000000 4338 Belleview Ave Kansas City, MO 6411 816.531.4144

MEP Engineer PKMR Engineers State Certificate of Authority #000000000 13300 W 98th Street Lenexa, KS 66215 913.492.2400

JOB NUMBER 23011

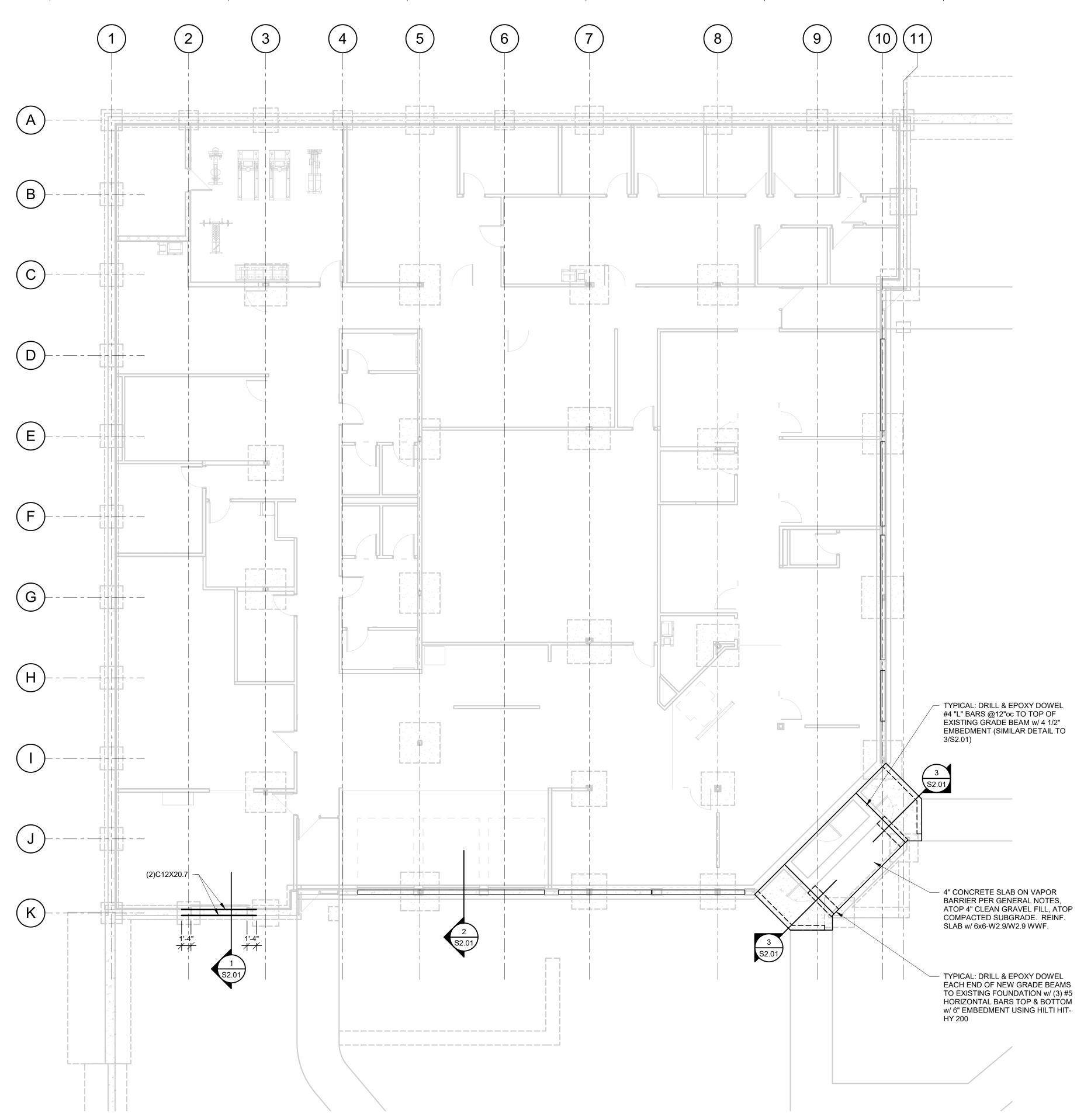
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ISSUE DATE 04/17/2024

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GENERAL NOTES





NOTES:

1. REFER TO GENERAL NOTES ON SHEET S0.01.
2. VERIFY ALL DIMENSIONS & ELEVATIONS w/ ARCHITECTURAL DRAWINGS.
3. FIELD VERIFY EXISTING CONDITIONS, INCLUDING DIMENSIONS & ELEVATIONS.



Structural Engineer Bob D. Campbell & Co. State Certificate of Authority #0000000000 4338 Belleview Ave Kansas City, MO 64111 816.531.4144

MEP Engineer
PKMR Engineers
State Certificate of Authority
#0000000000
13300 W 98th Street
Lenexa, KS 66215
913.492.2400

JOB NUMBER 23011

D NOMBER 250

RENOVATION

000 OLD SANTE FE RC ANSAS CITY, MO 6413

CHRISTOPHER
W BOOK
NUMBER
PE-2008023332
4-17-24
ONAL

ISSUE DATE 04/17/2024
No Description Date

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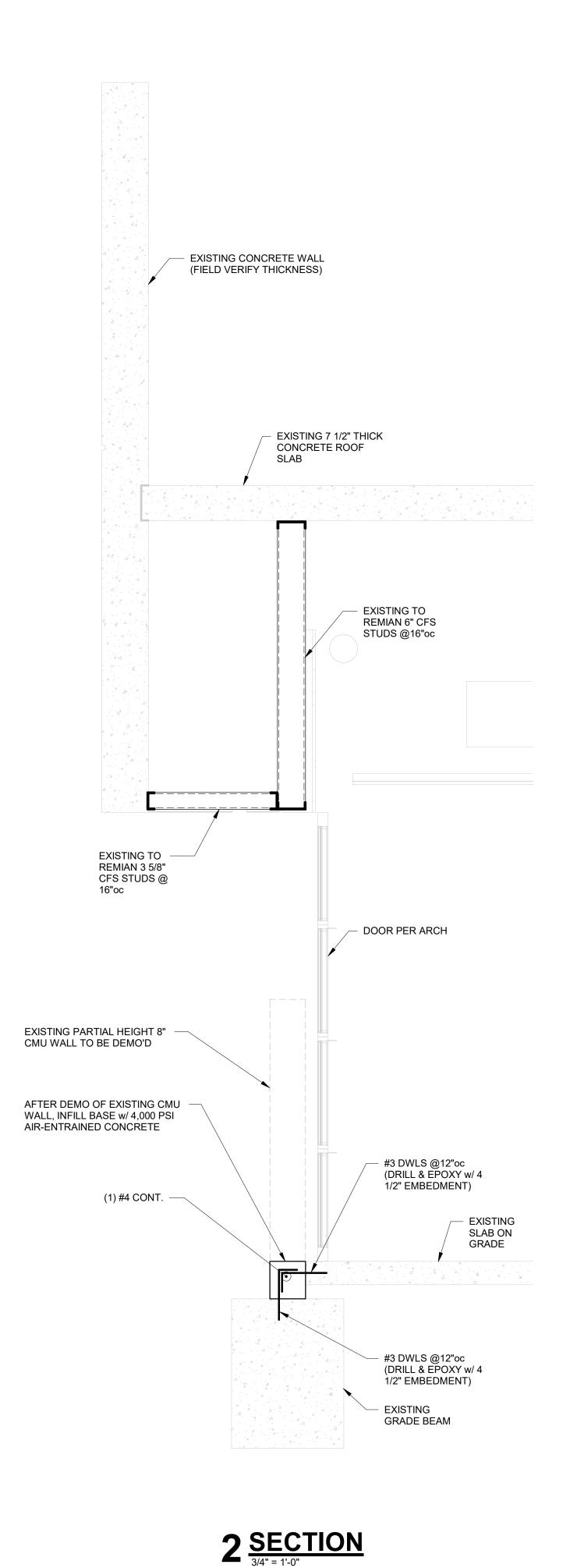
FOUNDATION PLAN

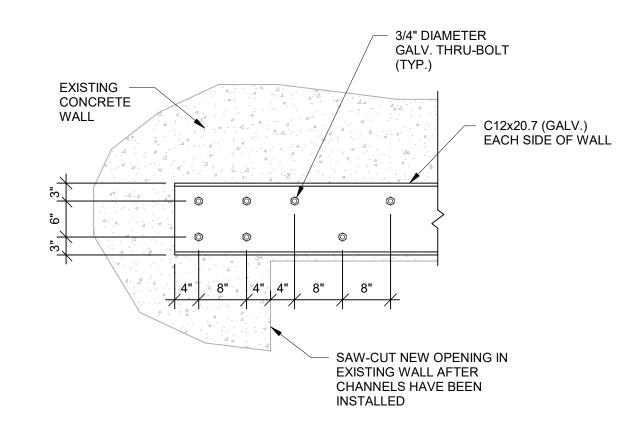
\$1.01

- EXISTING CONCRETE WALL (FIELD VERIFY THICKNESS) EXISTING 7 1/2" THICK CONCRETE ROOF C12x20.7 (GALV.) EACH SIDE — OF WALL. EXTEND 1'-4" BEYOND EDGE OF OPENING AT EACH END PER DETAIL 4/S2.01. 3/4" DIAMETER GALV. THRU-BOLTS @8"oc STAGGERED TOP & BOTTOM. PROVIDE (4) BOLTS AT EACH END. EXISTING CONCRETE WALL —
TO BE SAW-CUT & REMOVED
AFTER NEW CHANNELS ARE INSTALLED AFTER SAW-CUTTING NEW OPENING, CAREFULLY REMOVE PORTION OF EXISTING CONCRETE WALL WITH CHIPPING HAMMERS. PROVIDE CLEAN, ROUGHENED SURFACE & PATCH BACK WITH APPROVED CONCRETE REPAIR MORTAR. EXISTINGSLAB ON GRADE EXISTING **GRADE BEAM**

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

8 7

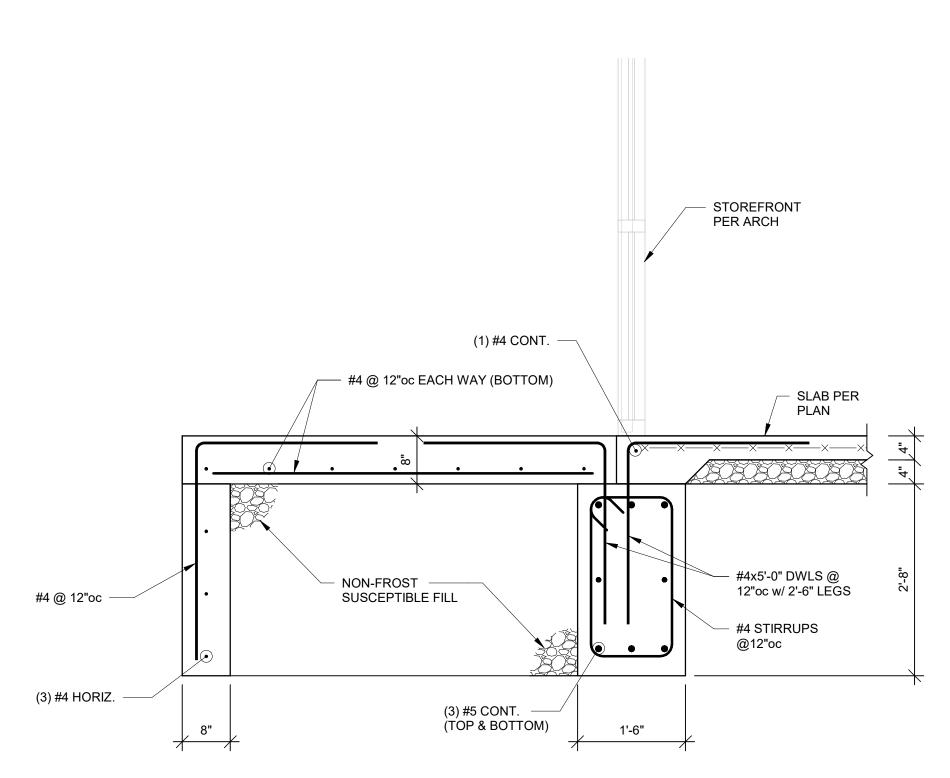




TYPICAL DETAIL AT END OF

DOUBLE CHANNEL LINTEL

3/4" = 1'-0"



3 <u>SECTION</u>



Structural Engineer
Bob D. Campbell & Co.
State Certificate of Authority
#000000000
4338 Belleview Ave
Kansas City, MO 64111
816.531.4144

MEP Engineer
PKMR Engineers
State Certificate of Authority
#0000000000
13300 W 98th Street
Lenexa, KS 66215
913.492.2400

JOB NUMBER 23011

2 OFFICE RENOVATION
0 OLD SANTE FE ROAD
USAS CITY, MO 64138

CHRISTOPHER

W BOOK

NUMBER

PE-2008023332

4-17-24

ONAL

ISSUE DATE 04/17/2024
No Description Date

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SECTIONS

\$2.01

ARRDEV/IATIONS

EDF ELECTRIC DRINKING FOUNTAIN

10

AB	BREVIATIONS				
A/E	ARCHITECT / ENGINEER	ELEV	ELEVATION	МН	MANHOLE
ÁFF	ABOVE FINISHED FLOOR	ЕМ	EMERGENCY FIXTURE/DEVICE	MLO	MAIN LUGS ONLY
AFG	ABOVE FINISHED GRADE	EWT	ENTERING WATER TEMPERATURE	NFA	NET FREE AREA
AG	ABOVE GRADE	EΧ	EXISTING ITEM	NL	NIGHT LIGHT
AHJ	AUTHORITY HAVING JURISDICTION	FFA	FROM FLOOR ABOVE	OA	OUTSIDE AIR
AHU	AIR HANDLING UNIT	FFB	FROM FLOOR BELOW	ORD	OVERFLOW ROOF DRAIN
ARCH	ARCHITECT	FFC0	FINISHED FLOOR CLEAN OUT	P/C	PLUMBING CONTRACTOR
BFP	BACKFLOW PREVENTER	FGC0	FLUSH GRADE CLEAN OUT	PSI	POUNDS PER SQUARE INCH
BG	BELOW GRADE	FL	FLOW LINE	PVC	POLYVINYLCHLORIDE
BLDG	BUILDING	FLR	FLOOR	RA	RETURN AIR
BMS	BUILDING MANAGEMENT SYSTEM	FP	FIRE PROTECTION	RE/REF	REFER / REFERENCE
С	CONDUIT	FPM	FEET PER MINUTE	RF	RELIEF FAN
CD	CANDELA	<i>FWCO</i>	FLUSH WALL CLEAN OUT	RL	RELOCATED ITEM
CD	COLD DECK	G	GROUND / GANG	RPZ	REDUCED PRESSURE ZONE
CLG	COOLING	G/C	GENERAL CONTRACTOR	RR	RESTROOM
СМ	COORDINATE MOUNTING HEIGHT	ĠFI	GROUND FAULT CIRCUIT INTERUPTER	SA	SUPPLY AIR
CO	CLEAN OUT	GFIP	GFI-PROTECTED DEVICE	SPD	SURGE PROTECTIVE DEVICE
CTE	CONNECT TO EXISTING	GPM	GALLONS PER MINUTE	ST	SHUNT TRIP
DCVA	DOUBLE CHECK VALVE ASSEMBLY	HD	HOT DECK	TA	TRANSFER AIR
DCW	DOMESTIC COLD WATER	HTG	HEATING	TFA	TO FLOOR ABOVE
DDC	DIRECT DIGITAL CONTROLS	IG	ISOLATED GROUND	TFB	TO FLOOR BELOW
DF	DRINKING FOUNTAIN	JB	JUNCTION BOX	TP	TAMPERPROOF
DHW	DOMESTIC HOT WATER	LED	LIGHT EMITTING DIODE	TYP	TYPICAL
DHWR	DOMESTIC HOT WATER RETURN	LWT	LEAVING WATER TEMPERATURE	UNO	UNLESS NOTED OTHERWISE
DIA	DIAMETER	M/C	MECHANICAL CONTRACTOR	VRF	VARIABLE REFRIGERANT FLOW
DN	DOWN	MA	MIXED AIR	VTR	VENT THROUGH ROOF
E/C	ELECTRICAL CONTRACTOR	MAU	MAKE UP AIR UNIT	WCO	WALL CLEANOUT
EA	EXHAUST AIR	MCB	MAIN CIRCUIT BREAKER	WG	WIRE GUARD
EDE	ELECTRIC DRINIVING EQUINITAIN			W/D	WEATHEDDDAAE

MECH MECHANICAL

WP WEATHERPROOF

FIRE SEALING NOTES

- 1. COORDINATE CONSTRUCTION OF OPENINGS AND PENETRATING ITEMS TO ENSURE THAT THROUGH-PENETRATION FIRESTOP SYSTEMS ARE INSTALLED ACCORDING TO SPECIFIED AND APPLICABLE UL REQUIREMENTS.
- 2. COORDINATE SIZING OF SLEEVES, OPENINGS, CORE-DRILLED HOLES, OR CUT OPENINGS TO ACCOMMODATE THROUGH—PENETRATION FIRESTOP SYSTEMS. 3. DO NOT COVER UP THROUGH-PENETRATION FIRESTOP SYSTEM
- INSTALLATIONS UNTIL EXAMINED BY INSPECTOR, IF REQUIRED BY AUTHORITIES HAVING JURISDICTION. 4. COMPATIBILITY: PROVIDE THROUGH—PENETRATION FIRESTOP SYSTEMS
- THAT ARE COMPATIBLE WITH ONE ANOTHER: WITH THE SUBSTRATES FORMING OPENINGS; AND WITH THE ITEMS, IF ANY, PENETRATING THROUGH-PENETRATION FIRESTOP SYSTEMS, UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURER BASED ON TESTING AND FIELD EXPERIENCE. 5. PROVIDE COMPONENTS FOR EACH THROUGH—PENETRATION FIRESTOP
- SYSTEM THAT ARE NEEDED TO INSTALL FILL MATERIALS. USE ONLY COMPONENTS SPECIFIED BY THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURER AND APPROVED BY QUALIFIED TESTING AND INSPECTING AGENCY FOR FIRESTOP SYSTEMS INDICATED. 6. PROVIDE SLEEVES THROUGH ALL FIRE—RATED WALLS AND FILL VOIDS SURROUNDING SLEEVES AND INTERIOR TO SLEEVES AROUND PIPING
- WITH FIRE STOP PUTTY WITH U.L. LISTED 3 HOUR RATING INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS 7. FIRE SEAL ALL PIPING, CONDUIT, CABLE, ETC PENETRATIONS ROUTED THROUGH FIRE RATED WALLS.
- 8. PROVIDE FIRE RATED ENCLOSURES OR WRAPS ON LIGHT FIXTURES AND OTHER ITEMS PENETRATING FIRE RATED CEILINGS, FLOOR/CEILING/ CEILING/ROOF ASSEMBLIES TO MAINTAIN UL LISTING

SHEET METAL		MECHANICAL PIPING	PIPING SYMBO	<u>LS</u>
TH Th	HIGH EFFICIENCY ROUND DUCT TAKEOFF	RL REFRIGERANT LIQUID	$-\!\!\bowtie\!\!-$	SHUTOFF VALVE
1,1° 1,1°	(WITH & WITHOUT MANUAL DAMPER)	RS REFRIGERANT SUCTION		SHUTOFF VALVE IN RISER
	SPIN-IN ROUND DUCT TAKEOFF	—— D —— DRAIN (CONDENSATE)	—⋈ू	BALANCING VALVE
	(WITH & WITHOUT MANUAL DAMPER)	CA COMPRESSED AIR	 ≥ -	PLUG VALVE
Τ'n	CONICAL BELLMOUTH ROUND TAKEOFF		—•	AUTO FLOW CONTROL VALVE
1412		CWR CHILLED WATER RETURN	—ю	PIPING ELBOW UP
I	ROUND DUCT RUNOUT WITH FLEX DUCT	— C/HWS — CHILLED/HOT WATER SUPPLY	— 	PIPING ELBOW DOWN
<u> </u>		— C/HWR — CHILLED/HOT WATER RETURN		PIPING TEE
100 T	DUCTWORK ELBOW (WITH & WITHOUT TURNING VANES)		 - - - -	PIPING ELBOW
1 ₄ 1 1 ₄ 1	,			PIPING TEE UP
(a)	FD:FIRE DAMPER FS:FIRE/SMOKE DAMPER SD:SMOKE DAMPER BD:BACKDRAFT DAMPER (GRAVITY)		- ICI -	PIPING TEE DOWN
~ <u></u>	SU:SMUKE DAMPER BU:BACKDRAFT DAMPER (GRAVITT)			INCREASER / REDUCER
VD G	AUTOMATIC MOTORIZED DAMPER	STM — STEAM (ANY #'S DENOTE PRESSURE)		UNION
~ _	OURREW RIFFURER AND RIFFURER AND RIFF	CR CONDENSATE RETURN (#'S DENOTE PRESSURE)	 3	CAP BIDE ELEX
8"ø(A) 225	SUPPLY DIFFUSER AND DIFFUSER CALLOUT (NECK SIZE, TYPE AND CFM)			PIPE FLEX
	LINEAR/SLOT DIFFUSER	RD RUPTURE DISK	- - - - - - - 	STRAINER
	•	DI LIMPINO DIDINO	 √1 - -+[]+-	CHECK VALVE
	RETURN GRILLE OR EXHAUST REGISTER	PLUMBING PIPING	T.	INLINE STRAINER
←	SUPPLY AIR FLOW INDICATOR	DOMESTIC COLD WATER DOMESTIC HOT WATER		TEST PLUG GUIDE
∧ —►	RETURN AND EXHAUST AIR FLOW INDICATOR	DOMESTIC HOT WATER RECIRCULATING DOMESTIC HOT WATER	— —	ANCHOR
-	THERMOSTAT			
•	TEMPERATURE SENSOR	— — SAN — — WASTE BELOW GRADE OR FLOOR	– ₫–	TRIPLE DUTY VALVE
⊬ ()	HUMIDISTAT		⊸ \$⊢	AUTOMATIC 2-WAY CONTROL VALVE
	CONTROL WIRING	— ST — STORM BELOW GRADE OR FLOOR	── \$़—	AUTOMATIC 3-WAY CONTROL VALVE
			· 수 ·	
IEDICAL GAS		— ST/O — STORM OVERFLOW BELOW GRADE OR FLOOR	—战—	SOLENOID VALVE
—— мv ——	MEDICAL VACUUM PIPING			. =.=
<u> </u>	OXYGEN PIPING	W WATER SERVICE	PIPING SPECIAL	LHES
— N0 —	NITROUS OXIDE PIPING	G GAS (NATURAL)	$\mathcal{P}_{\mathcal{H}} \mathcal{P}_{\mathcal{H}}$	PRESS/ TEMP GAUGE WITH COCK
—— SA —	MEDICAL COMPRESSED AIR PIPING	——————————————————————————————————————	— ———————————————————————————————————	
<u> </u>	NITROGEN PIPING	——————————————————————————————————————	Щ	THERMOMETER.
— co —	CARBON DIOXIDE PIPING	—— LP —— PROPANE	— T 	
— <i>v v</i> —	VACUUM VENT PIPING		HI LOW	PRESSURE REDUCING VALVE
WAGD	WASTE ANESTHETIC GAS DISPOSAL PIPING		\cup	
—— GV ——	MEDICAL GAS VENT PIPING		⊸ \$ `	RELIEF VALVE
\vdash_{χ}	MEDICAL GAS OUTLET W/ DESIGNATION (RE: BELOW)	—— ACID —— ACID WASTE	l N	
	O OXYGEN	VACID ACID WASTE VENT	. .∓.	WATER HAMMER ARRESTER
	N NITROGEN	NP NON-POTABLE		
	NO NITROUS OXIDE	—— DI ——— DEIONIZED WATER		
	WAGD WASTE ANESTHETIC GAS DISPOSAL	RO	PLUMBING FIXT	TURES/EQUIPMENT
	CO CARBON DIOXIDE		—ı HB	HOSE BIBB
	MV MEDICAL VACUUM	PLUMBING RISER CALLOUT (REFERS TO RISER DIAGRAM)		WALL HYDRANT
	SA SURGICAL AIR	XX Y ZOMBINO MOZIN GIZZOON (NZI ZNO NO MOZIN BINOTOM)	— <u> </u>	CLEAN OUT
	S MEDICAL SLIDE		RPZ	REDUCED PRESSURE BACKFLOW PREVENTER
			DCRP	DOLLBLE CHECK BACKELOW DREVENTED

GENERAL ELECTRICAL NOTES COORDINATION NOTES

FIRE SPRINKLER

1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE NATIONAL ELECTRICAL CODE, 2. COORDINATE LOCATIONS OF RECEPTACLES, SWITCHES, ETC. WITH ARCHITECTURAL CASEWORK AND ELEVATIONS. 3. REFER TO MOUNTING HEIGHTS DETAIL FOR MOUNTING HEIGHTS OF

ALL DEVICES NOT INDICATED OTHERWISE.

INDICATES CONNECT TO EXISTING

EQUIPMENT TAG. REFER TO CONNECTIONS SCHEDULE

FOR MECHANICAL CONNECTIONS AND LOAD INFO

FOR KITCHEN, SHOP, ETC. EQUIPMENT

INDICATES ELEVATION

GENERAL SYMBOLS

- 4. PROVIDE ALL EMPTY CONDUITS WITH PULL STRINGS AND BUSHED 5. CONTRACTOR SHALL CONCEAL ALL CONDUIT, FITTINGS, AND DEVICES FROM VIFW WHFRE REASONABLY POSSIBLE
- 5.2. REFER TO SPECIFICATIONS FOR ALLOWABLE WIRING METHODS THROUGHOUT PROJECT. 5.3. ALL EXPOSED WIRING SHALL BE IN EMT OR METALLIC CONDUIT, EXCEPT AS PERMITTED BY SPECIFICATIONS FOR WHIPS TO
- FOUIPMENT 6. ALL CONDUCTOR SIZES INDICATED ON DRAWINGS ARE FOR COPPER CONDUCTORS UNLESS SPECIFICALLY NOTED OTHERWISE. ALUMINUM CONDUCTORS MAY BE USED ONLY UNDER THE FOLLOWING
- CONDITIONS 6.1. CONTRACTOR SHALL INCLUDE A DEDUCT ALTERNATE FOR USE OF SAME WITH BIDS, FOR OWNER ACCEPTANCE.
- 6.2. AL CONDUCTORS MAY ONLY BE USED ON FEEDERS 100A OR GREATER - NO EXCEPTIONS
- 6.3. ALUMINUM CABLING SHALL BE COMPACTED ALUMINUM 6.4. PROVIDE COMPRESSION-TYPE ONE-HOLE OR TWO-HOLE LUG
- TERMINATIONS
- 6.5. PROVIDE ANTI-OXIDANT COMPOUND AT TERMINATIONS 6.6. CABLE TERMINATIONS SHALL BE MARKED "AL/CU". 6.7. FINAL SIZES OF CONDUCTORS TO BE CONFIRMED BY ENGINEER.
- 6.8. ALUMINUM SERVICE CONDUCTORS MUST HAVE "AA-8000" SERIES LABELING ON CABLE JACKETS PER EVERGY REQUIREMENTS — NO FXCFPTIONS.

ENGINEER RESERVES FINAL RIGHT TO ACCEPT/DENY USE OF ALUMINUM CONDUCTORS FOR PART OR ALL OF PROJECT.

LOW VOLTAGE SCOPE OF WORK

ELECTRICAL CONTRACTOR'S SCOPE OF WORK FOR THE LOW VOLTAGE SYSTEMS SHOWN ON THESE DRAWINGS SHALL BE AS FOLLOWS:

PROVIDE ROUGH-IN (INCLUDING PATHWAYS) ONLY*:) TELEPHONE/DATA SYSTEMS. LOCATIONS AND WORK SHOWN ON THESE DRAWINGS ARE CONCEPTUAL IN NATURE AND SHOWN FOR COORDINATION PURPOSES AND ROUGH—IN REQUIREMENTS ONLY.

2) SECURITY / ACCESS CONTROL 3) HVAC CONTROLS (AS REQUIRED - COORDINATE WITH MECH. CONTRACTOR)

---- FIRE PROTECTION PIPING

SPRINKLER HEAD

SIDEWALL SPRINKLER HEAD

POST INDICATOR VALVE

FIRE PROTECTION SIAMESE CONNECTION

- 1. COORDINATE REQUIREMENTS FOR INSTALLATION OF SYSTEMS AND EQUIPMENT WITH ALL OTHER TRADES. 2. THE CONTRACTOR SHALL COORDINATE ALL SYSTEMS, CONDUITS, PIPES, DUCTS, ETC WITH THE POSITION AND LAYOUT OF THE STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING NECESSARY OFFSETS, TURNS, RISES AND DROPS FOR SYSTEMS AND COMPONENTS AS NEEDED TO INSTALL THE MEP SYSTEMS TO CLEAR STRUCTURE, CEILINGS, ETC AND OTHER SYSTEMS
- IN POTENTIAL CONFLICT WITH ROUTING. 3. COORDINATE WORK WITH OTHER TRADES TO INSTALL SYSTEMS ABOVE CEILING HEIGHTS INDICATED ON ARCHITECTURAL PLANS.
- 4. CHECK SPACE REQUIREMENTS WITH OTHER TRADES AND STRUCTURE/CONSTRUCTION TO ENSURE THAT ALL MATERIALS AND EQUIPMENT CAN BE INSTALLED IN THE SPACE ALLOTTED INCLUDING FINISHED SUSPENDED CEILINGS AND OTHER SPACES, CHASES, ETC WITHIN THE BUILDING. MAKE MODIFICATIONS THERETO AS REQUIRED
- AND APPROVED. 5. TRANSMIT TO OTHER TRADES ALL INFORMATION REQUIRED FOR WORK TO BE PROVIDED UNDER THEIR RESPECTIVE SECTIONS IN AMPLE TIME FOR INSTALLATION.
- 6. WHEREVER WORK INTERCONNECTS WITH WORK OF OTHER TRADES. COORDINATE WITH THOSE TRADES TO ENSURE THAT ALL SUBCONTRACTORS HAVE THE INFORMATION NECESSARY SO THAT THEY MAY PROPERLY INSTALL ALL CONNECTIONS AND EQUIPMENT. IDENTIFY ALL ITEMS OF WORK THAT REQUIRE ACCESS SO THAT THE CEILING TRADE WILL KNOW WHERE TO INSTALL ACCESS DOORS AND
- 7. COORDINATE. PROJECT AND SCHEDULE WORK WITH OTHER TRADES IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE.
- 8. DRAWINGS SHOW THE GENERAL RUNS OF CONDUITS, PIPING AND DUCTWORK AND APPROXIMATE LOCATION OF OUTLETS. ANY SIGNIFICANT CHANGES IN LOCATION OF ITEMS NECESSARY IN ORDER TO MEET FIELD CONDITIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/ENGINEER AND RECEIVE HIS APPROVAL BEFORE SUCH ALTERATIONS ARE MADE. ALL SUCH MODIFICATIONS SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER. 9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND REPAIR
- OF SURFACES, AREAS AND PROPERTY THAT MAY BE DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES. 10. ADJUST LOCATION OF PIPING, DUCTWORK, ETC. TO PREVENT INTERFERENCES, BOTH ANTICIPATED AND ENCOUNTERED. DETERMINE THE EXACT ROUTE AND LOCATION OF EACH ITEM PRIOR TO
- FABRICATION. MAKE OFFSETS, TRANSITIONS AND CHANGES IN DIRECTION IN SYSTEMS AS REQUIRED TO MAINTAIN ADEQUATE CLEARANCES AND HEADROOM. 11. WHEREVER THE WORK IS OF SUFFICIENT COMPLEXITY, PREPARE ADDITIONAL COORDINATION DRAWINGS AND ORGANIZE ON-SITE MEETINGS WITH ALL RELATED SUBCONTRACTORS TO COORDINATE THE

WORK BETWEEN TRADES . DRAWINGS SHALL CLEARLY SHOW THE

WORK AND ITS RELATION TO THE WORK OF OTHER TRADES. AND BE

- SUBMITTED FOR REVIEW PRIOR TO COMMENCING SHOP FABRICATION OR ERECTION IN THE FIELD. 12. COORDINATE WITH LOCAL UTILITY PROVIDERS FOR THEIR REQUIREMENTS FOR SERVICE CONNECTIONS AND PROVIDE ALL NECESSARY PAYMENTS, MATERIALS, LABOR AND TESTING TO ACCOMPLISH THE WORK.
- 13. COORDINATE THE MOUNTING OF SUSPENDED LIGHT FIXTURES UTILIZING INDIRECT LIGHT SO THAT CONDUIT, DUCTWORK, STRUCTURAL MEMBERS, ETC. ARE NOT LOCATED DIRECTLY ABOVE THE LIGHT FIXTURE. MAINTAIN A MINIMUM OF 24" CLEARANCE FROM THESE ITEMS WHENEVER POSSIBLE.

GENERAL NOTES

RD: ROOF DRAIN

(Ć)) <u>RD–1</u>

SOME ROOM NAMES MAY NOT BE SHOWN FOR PURPOSE OF CLARIFYING PLAN. REFER TO ARCHITECTURAL PLANS FOR REFERENCE TO ROOM NAMES NOT SHOWN.

DOUBLE CHECK BACKFLOW PREVENTER

PLUMBING FIXTURE AND CALLOUT

ORD: OVERFLOW ROOF DRAIN

FD: FLOOR DRAIN, AD: AREA DRAIN,

- 2 IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN AND KEEP AT THE JOB SITE, AN UP TO DATE SET OF "RECORD DRAWINGS" SHOWING ALL CHANGES FROM THE ORIGINAL PLANS. THE CONTRACTOR SHALL DELIVER THE "RECORD DRAWINGS" TO THE ENGINEER AT THE CONCLUSION OF THE PROJECT ELECTRONICALLY.
- 3. THESE DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS (NEW AND EXISTING), DIMENSIONS, AND CLEARANCES PRIOR TO THE COMMENCEMENT OF WORK AND SHALL INCLUDE ALL COSTS, EQUIPMENT, MATERIAL, ACCESSORIES, ETC. REQUIRED FOR A FULLY COMPLETE, FUNCTIONAL AND CODE COMPLIANT INSTALLATION.
- 4. FINAL LOCATIONS OF ALL DEVICES, LIGHT FIXTURES, EQUIPMENT ETC SHALL BE INDICATED ON THE ARCHITECTURAL DRAWINGS. ALL DIMENSIONAL INFORMATION SHALL BE OBTAINED FROM ARCHITECTURAL PLANS. NO DIMENSIONAL INFORMATION SHALL BE OBTAINED FROM MEP DRAWINGS.
- 5. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS. APPROVALS, LICENSES, ETC. AS NEEDED FOR THE COMPLETE INSTALLATION AND PROJECT. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR ALL FEES AND DATA NEEDED FOR THIS.

GEN. MECHANICAL NOTES

- 1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE INTERNATIONAL MECHANICAL CODE, LOCAL AND STATE CODES, AND REQUIREMENTS OF THE AHJ.
- 2. ANY POWER FOR CONTROL SYSTEMS TO BE PROVIDED BY E/C IS INDICATED ON ELECTRICAL PLANS. ANY ADDITIONAL LINE VOLTAGE OR LOW VOLTAGE POWER REQUIRED BY THE M/C OR SUBCONTRACTORS TO HAVE A FULLY FUNCTIONING SYSTEM SHALL BE PROVIDED BY THE M/C CONTRACTOR OR SUBS.
- 3. ALL EQUIPMENT SHALL BE ADEQUATELY AND PROPERLY SUPPORTED AND FASTENED FROM STRUCTURE. 4. ALL EQUIPMENT AND ACCESSORIES INSTALLED IN CONCEALED SPACES
- REQUIRING ACCESS SHALL BE PROVIDED WITH ACCESS DOORS MEETING ANY FIRE REQUIREMENTS OF THE WALL/CEILING THEY ARE 5. EACH AIR HANDLING UNIT OVER 2000CFM SHALL BE PROVIDED WITH
- A SMOKE DETECTOR TO SHUT DOWN THE UNIT PER IMC 606 AS REQUIRED BY AHJ. COORDINATE WITH OTHER TRADES. 6. START UP AND ADJUST ALL EQUIPMENT AND VERIFY ALL MECHANICAL SYSTEMS IN OPERATE IN ACCORDANCE WITH THEIR INTENDED
- PURPOSES. SUBMIT BALANCE AND START UP REPORTS TO THE A/E. REFER TO SPECIFICATIONS FOR ANY ADDITIONAL REQUIREMENTS.

GENERAL PLUMBING NOTES

- 1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE INTERNATIONAL PLUMBING CODE, LOCAL AND STATE CODES, AND REQUIREMENTS OF THE AHJ.
- 2. NO PIPING SHALL BE INSTALLED WHERE IT WILL SUBJECT TO FREEZING TEMPERATURES. PIPING IN EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF BUILDING INSULATION, INSULATED AND THE CHASE SHALL BE VENTILATED WITH GRILLES ALLOWING
- INDOOR AMBIENT CONDITIONS TO CIRCULATE THROUGH THE CHASE. 3. PROVIDE CLEANOUTS IN THE FOLLOWING LOCATIONS: 3.1. IN ALL HORIZONTAL DRAINS (WITHIN THE BUILDING) NOT MORE
- THAN 100 FEET APART. 3.2 IN RUII DING SEWERS LOCATED NO MORE THAN 100 FEFT APART MEASURED FROM THE UPSTREAM ENTRANCE OF THE CLEANOUT. 3.3. EACH CHANGE OF DIRECTION OF THE BUILDING DRAIN OR

SEWER.

HORIZONTAL WASTE OR SOIL LINES GREATER THAN 45 DEGREES. WHERE MORE THAN ONE CHANGE OF DIRECTION OCCURS IN A RUN OF PIPING, ONLY ONE CLEANOUT SHALL BE REQUIRED FOR EACH 40 FEET OF DEVELOPED LENGTH OF THE DRAINAGE PIPING. 3.4. AT THE BASE OF EACH WASTE OR SOIL STACK. 3.5. NEAR THE JUNCTION OF THE BUILDING DRAIN AND BUILDING

SHEET INDEX

ECA.02 ENERGY CODE NOTES ECA.03 ENERGY CODE NOTES MEP0.01 COVER SHEET MEP1.01 SPECIFICATIONS MEP1.02 SPECIFICATIONS MEP2.01 SITE PLAN

DEMOLITION PLAN M1.01 HVAC PLAN MECHANICAL SCHEDULES

MECHANICAL DETAILS DEMOLITION PLAN P0.01

PLUMBING PLAN PLUMBING SCHEDULES & DETAILS

DEMOLITION PLAN LIGHTING PLAN

POWER PLAN E3.01 SPECIAL SYSTEMS PLAN

ELECTRICAL RISER DIAGRAM & SCHEDULES **ELECTRICAL SCHEDULES & DETAILS**

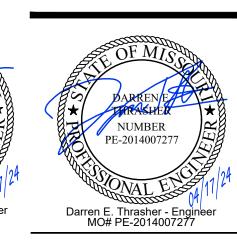
DEMOLITION NOTES

- 1. ALL WORK SHOWN DARK AND DASHED IS TO BE DEMOLISHED. WORK SHOWN LIGHT IS EXISTING TO REMAIN. 2. REFER TO ARCHITECTURAL PLANS FOR FURTHER EXTENT OF
- DEMOLITION REQUIREMENTS. 3. ALL EXISTING PIPING SCHEDULED FOR DEMOLITION THAT ROUTES BELOW SLAB SHALL BE GROUND FLUSH WITH FLOOR. PLUGGED AND THE FLOOR PATCHED TO MATCH SURROUNDING FLOOR.
- 4. COORDINATE ALL DEMOLITION WORK WITH OWNER. 5. CONTACT UTILITY LOCATING SERVICE TO LOCATE EXACT LOCATION OF UTILITIES BELOW GRADE.
- 6. MAINTAIN ALL EXISTING DEVICES, EQUIPMENT, ASSOCIATED CIRCUITS ETC, SHOWN AS EXISTING TO REMAIN OR OTHERWISE UNRELATED TO THE SCOPE OF THE PROJECT IN WORKING ORDER.
- 7. CONTRACTOR SHALL REMOVE LAY-IN CEILINGS, LIGHT FIXTURES, ETC. AS REQUIRED FOR CONSTRUCTION WHERE NEEDED PRIOR TO DEMOLITION AND REPLACE SAME AFTER CONSTRUCTION. EXISTING CONDUITS ABOVE CEILINGS SHALL BE RELOCATED AND/OR TEMPORARILY REMOVED TO FACILITATE THE INSTALLATION OF NEW FOUIPMENT.
- 8. THE OWNER SHALL REMOVE ALL ITEMS THEY DESIRED TO SALVAGE PRIOR TO CONSTRUCTION BEGINNING.
- 9. NOTES AND DRAWINGS ARE BASED UPON A FIELD EXAMINATION OF THE SITE AND MAY NOT INDICATE ALL ITEMS. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE SITE AND THE SCOPE OF WORK FOR THE CONTRACT PRIOR TO BID. ANY EXISTING CONDITION WHICH IS APPARENT OR COULD BE REASONABLY INFERRED FROM A VISIT TO THE SITE SHALL NOT BE THE BASIS FOR A CHANGE IN THE CONTRACT AMOUNT.
- 10. REFER TO NEW WORK PLANS FOR ANY ITEMS THAT MAY REQUIRE
- RELOCATION AFTER DEMOLITION. 11. PROPERLY DISPOSE OF ALL DEMOLISHED ITEMS OFF SITE.
- 12. REMOVE ALL MISCELLANEOUS CONDUITS. PIPES. ETC. THOUGH NOT BECOME UNUSED DUE DEMOLITION ACTIVITIES, IN ORDER TO PROVIDE
- A "CLEAN" SPACE FOR THE OWNER. 1.3. PROTECT ALL EXISTING SURFACES AND EQUIPMENT DURING CONSTRUCTION. EXISTING ITEMS TO REMAIN SHALL BE ADEQUATELY PROTECTED FROM DEMOLITION AND NEW CONSTRUCTION WORK, AS REQUIRED. ANY ITEMS DAMAGED OR MARRED SHALL BE ADEQUATELY CLEANED OR REPLACED TO THE OWNERS SATISFACTION
- TO ORIGINAL CONDITION BEFORE CONSTRUCTION. 14. PATCH ANY HOLES IN STRUCTURE CREATED BY REMOVAL OF DUCTWORK, CONDUITS, PIPES, ETC.
- 15. REMOVE ALL ITEMS SHOWN IN WALLS TO BE DEMOLISHED. ALL ELECTRICAL CONDUIT AND WIRING SHALL BE REMOVED BACK TO
- PANELBOARDS AND PROPERLY TERMINATED 16. SAW CUT FLOOR FOR THE INSTALLATION OF NEW SANITARY PIPING. REFER TO PLUMBING PLANS SHOWING NEW WORK.
- 17. SAVE, CLEAN, AND RE-LAMP ALL LIGHT FIXTURES NOTED AS BEING RELOCATED. REFER TO NEW WORK PLANS AND LIGHT FIXTURE SCHEDULE FOR DESCRIPTIONS, QUANTITIES, AND LOCATIONS OF FIXTURES TO BE RE-USED.

GEN. RENOVATION NOTES

- . DISCONNECT AND REMOVE ANY EQUIPMENT, PIPING OR DUCTWORK THAT WAS INSTALLED AS PART OF THE BUILDING SHELL THAT IS NOT NEEDED OR CONFLICTS WITH THIS BUILD OUT. 2. EXISTING UNDERGROUND PIPING LOCATIONS ARE ESTIMATED BASED
- UPON ANTICIPATED ROUTINGS. FIELD VERIFY EXACT LOCATIONS DURING CONSTRUCTION AND PROVIDE ALL NECESSARY MODIFICATIONS. 3. SAWCUT GRADE FLOOR SLABS TO INSTALL NEW PIPING, MECHANICAL SYSTEMS. ELECTRICAL FLOOR BOXES AND ALL ASSOCIATED CONDUIT. ETC. PATCH FLOOR TO MAKE LIKE NEW AFTER INSTALLATION. TAKE
- CARE TO LOCATE EXISTING CONDUIT, ETC AND AVOID CUTTING EXISTING CONDUITS BY NOT OVER-CUTTING SLAB DEPTH. 4. SAWCUT AND CORE DRILL OPENINGS AS REQUIRED FOR ABOVE GRADE SLAB PENETRATIONS. X-RAY SLABS TO ASCERTAIN STEEL AND EXISTING CONDUIT PENETRATIONS PRIOR TO CUTTING. VERIFY
- OPENINGS WITH STRUCTURAL ENGINEER PRIOR TO CUTTING. 5. HOMERUN CIRCUITS TO 20 AMP, SINGLE POLE BREAKERS IN PANELBOARDS INDICATED. UTILIZE SPARE BREAKERS MADE Kevin J. Zimmerman - Engineer MO# PE-2017029408 AVAILABLE BY DEMOLITION, IF NO SPARE BREAKER IS AVAILABLE, PROVIDE NEW BREAKER.
- 6. EXISTING CIRCUITING MAY BE RE-USED WHERE POSSIBLE. 7. CONCEAL NEW CIRCUITING IN WALLS WHERE POSSIBLE. FOR NEW DEVICES INSTALLED ON EXISTING SOLID WALLS, CONCEAL CIRCUITING IN WIREMOLD. COORDINATE FINISH AND GENERAL ROUTING OF WIREMOLD WITH ARCHITECT TO BE AS CONCEALED AND/OR ROUTED IN A NEAT AND ORGANIZED CONSISTENT MANNER.
- 8. ALL LIGHTING FIXTURES THAT ARE RELOCATED OR OTHERWISE AFFECTED BY THE SCOPE OF WORK SHALL BE CLEANED AND RELAMPED.





Missouri Certificate of Authority

Missouri Certificate of Authority

Missouri Certificate of Authority

JOB NUMBER 23011

Structural Engineer:

4338 Belleview Ave.

Kansas City, MO 64111

#000442

816.531.4144

MEP Engineer:

PKMR Engineers

#E-2002020886

Lenexa, KS 66215

913.492.2400

13300 W. 98th Street

Bob D. Campbell & Co.

#2003011262

MO # 2011006178

Dalyn Novak - Architect

PERMIT SET ISSUE DATE No Description

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COVER SHEET

13300 W 98TH STREET LENEXA, KS 66215 WWW.PKMRENG.COM 913 492 2400

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GENERAL MECHANICAL/ELECTRICAL SPECIFICATIONS

GENERAL MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS

- APPLICABILITY
- A. These general requirements apply to all divisions (22, 23, 26). Refer to individual divisions as included for specific information regarding each trade or scope of

2. GENERAL REQUIREMENTS

- A. Furnish & install all labor & materials required for complete, functioning, mechanical & plumbing systems w/ all associated equipment & apparatus as shown on plans.
- B. Obtain & pay for all permits required for execution of this work & shall make arrangements for modifications to water, gas & sewer connections to building as required.

shall be called to architect's attention. No subsequent allowance will be made in

- C. All materials shall be new & shall bare UL label where applicable. D. Visit site & observe conditions under which work will be done. Any discrepancies
- contract for any error or negligence on contractor's part E. Final acceptance of work shall be subject to condition that all systems equipment, apparatus & appliances operate satisfactorily as designed & intended. Work shall include required adjustment of systems & control
- equipment installed under these specifications. F. Warrant to owner quality of materials, equipment, workmanship & operation of equipment provided under these specifications for one year from & after completion of building & acceptance of mechanical systems by owner.
- G.All materials installed in plenums shall be noncombustible or have flame/smoke index of no more than 25/50 in accordance w/ ASTM e 84.
- H. Requirements under Division one & general & supplementary conditions of these specifications shall be part of this section. Contractor shall become thoroughly acquainted w/ its contents as to requirements that affect this Division of work required under this section includes material. Equipment, appliances. Transportation. Services. & labor required to complete entire system as required by drawings & specifications.
- I. The specifications & drawings for project are complementary, & portions of work described in one, shall be provided as if described in both. In event of discrepancies, notify engineer & request clarification prior to proceeding w/ work

EXTENT OF CONTRACT WORK

- A. Provide MEP systems indicated on drawings, specified or reasonably implied. In addition to specific equipment called out in plans and specifications, provide every device, component, programming, interlocking and accessory necessary for proper operation and completion of totally functional MEP systems.
- B. In case of an inconsistency between the Drawings and Specifications or within either document, the better quality or the greater quantity of work shall be provided in accordance with the Architect or Engineer's interpretation

C.In no case will claims for "Extra Work" be allowed for work about which

- Contractor could have been informed before bids were taken. D. Contractor shall become familiar with equipment provided by other contractors
- that require plumbing connections and controls. E. Electrical work required to install and control plumbing equipment, which is not shown on plans or specified under Division 26, shall be included in Contractor's base bid proposal.
- F. All automatic temperature control devices shall be mounted as indicated in automatic temperature control section of specifications.
- G. The cost of larger wiring, conduit, control and protective devices resulting from installation of equipment which was not used for basis of design as outlined in specifications shall be paid for by the supplying Contractor at no cost to Owner
- H. Contractor shall be responsible for providing supervision to other trade Contractors to insure that required connections, interlocking and interconnection of MEP equipment is made to attain intended control sequences and system
- I. Contractor shall obtain complete MEP data on shop drawings and shall list this data on an approved form that shall be presented on request, to other trade Contractors. Data shall be complete with wiring diagrams received to date and shall contain necessary data on electrical components of plumbing equipment such as HP, voltage, amperes, watts, locked rotor current to allow other trade Contractors to order support or other equipment coordinated as required in his

4. DEFINITIONS

- A. Whenever used in these specifications or drawings, following terms shall have indicated meanings:
- B. Furnish: term "Furnish" is used to mean "supply & deliver to project site. Ready for unloading, unpacking, assembly. Installation & similar operations.
- C.Install: term "Install" is used to describe operations at project site including actual "unloading, unpacking. Assembly. Erection. Placing. Anchoring. Applying, working to dimension. Finishing, curing, protecting, cleaning. & similar
- D. Provide: term "Provide" means "to Furnish & Install. Complete & ready for intended use." furnished by owner or furnished by others: item will be furnished by owner or others. It is to be installed & connected under requirements of this Division, complete & ready for operation, including items incidental to work including services necessary for proper installation & operation. Installation shall be included under guarantee required by this Division.
- E. Engineer: where referenced in this Division, "Engineer" is engineer of record & design professional for work under this Division, & is consultant to, & an authorized representative of, architect. As defined in general &/or supplementary conditions. When used in this Division. It means increased involvement by. & obligations to, engineer, in addition to involvement by. & obligations to,
- F. AHJ: local code &/or inspection agency (authority) having jurisdiction over work. G.The terms "Approved equal", "Equivalent". Or "Equal" are used synonymously & shall mean "accepted by or acceptable to engineer as equivalent to item or manufacturer specified".
- H. The term "approved" shall mean labeled, listed. Or both. By nationally recognized testing laboratory (e.g. UL. ETL. CSA). & acceptable to AHJ over this project. 5. PREBID SITE VISIT
- A. Prior to submitting bid. Visit site of proposed work & become fully informed as to conditions under which work is to be done. Failure to do so will not be considered sufficient justification to request or obtain extra compensation over & above

contract price 6. MATERIAL & WORKMANSHIP

- A. Provide new material, equipment. & apparatus under this contract unless otherwise stated herein. Of best quality normally used for purpose in good commercial practice & free from defects. Model numbers listed in specifications or shown on drawings are not necessarily intended to designate required trim, written descriptions of trim govern model numbers.
- B. Pipe, fittings, specialties & valves shall be manufactured in USA. Work performed under this contract shall provide neat & "workmanlike" appearance when completed to satisfaction of architect & engineer. Workmanship shall be finest possible by experienced mechanics. Installations shall comply w/ applicable codes & laws. Complete installation shall function as designed & intended w/ respect to efficiency, capacity, noise level. etc. Abnormal noise caused by rattling equipment, piping, ducts, air devices & squeaks in rotating components will not be acceptable. In general materials & equipment shall be of commercial specification grade in quality. Light duty & residential equipment is not
- C.Remove from premises waste material present from work, including cartons, crating, paper, stickers, &/or excavation material not used.
- D. Clean equipment installed under this contract to present neat & clean installation at completion.
- E. Repair or replace public & private property damaged as result of work performed under this contract to satisfaction of authorities & regulations having jurisdiction.

7. COORDINATION

- A. Coordinate work w/ other trades so various components of systems will be installed at proper time will fit available space & will allow proper service access for maintenance. Components which are installed without regard to above shall be relocated at no additional cost to owner.
- B. Obtain equipment submittal information for all pieces of equipment to be connected to from other trades that clearly indicates all connection requirements, locations, sizes, and similar requirements. Obtain this information in ample time to coordinate other trade submittals and equipment coordination. Where requirements differ from that on plans or differs from provisions made in the work, immediately notify the architect/engineer. Do not proceed with work that is incompatible with equipment provided.
- C.Unless otherwise indicated, general contractor will provide chases & openings in building construction required for installation of systems specified herein. Contractor shall furnish general contractor w/ information where chases & openings are required.
- D. Keep informed as to work of other trades engaged in construction of project & execute work in manner as to not interfere w/ or delay work of other trades. Figured dimensions shall be taken in preference to scale dimensions.
- E. Contractor shall take his own measurements at building, as variations may occur. Contractor will be held responsible for errors that could have been avoided by proper checking & inspection.

- F. Provide materials w/ trim that will properly fit types of ceiling, wall. Or floor finishes actually installed. Model numbers listed in specifications or shown on drawings are not intended to designate required trim.
- G.Coordinate construction operations included in different sections of the specifications to ensure efficient and orderly installation of each part of the work. Coordinate construction operations, included in different sections, that depend on each other for proper installation, connection, and operation.
- H. Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the work. Each contractor shall coordinate its operations with operations. included in different sections, that depend on each other for proper installation, connection, and operation.
- . Schedule construction operations in sequence required to obtain the best results where installation of one part of the work depends on installation of other components, before or after its own installation
- J. Coordinate installation of different components with other contractors to ensure
- maximum accessibility for required maintenance, service, and repair. K. Make adequate provisions to accommodate items scheduled for later installation. L. Where availability of space is limited, coordinate installation of different
- components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and M.Prepare coordination drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if
- scale. Do not base coordination drawings on reproductions of the contract documents or standard printed data. Include the following information, as applicable: 1) Indicate functional and spatial relationships of components of architectural,

coordination is required for installation of products and materials fabricated by

separate entities. Content: project-specific information, drawn accurately to

- structural, civil, mechanical, and electrical systems. 2) Indicate required installation sequences. 3) Indicate dimensions shown on the contract drawings and make specific
- note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the contract.
- N.Meetings: conduct project coordination meetings at regular intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
- 1) Attendees: each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with project and authorized to conclude matters relating to the work. Notify architect of meeting. 2) Agenda: review and correct or approve minutes of the previous
- coordination meeting. Review other items of significance that could affect progress.
- 3) Combined contractor's construction schedule: review progress since the last coordination meeting. Determine whether each contractor is on time, ahead or behind schedule, in relation to construction schedule. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the contract time. Discuss impact of various contractor schedules upon other contractors and how to remedy impacts.
- 4) Review present and future needs of each contractor present O. After shop drawings have been reviewed and approved by all parties, transmit a set of submittals to each other trade (eg Plumbing, Mechanical, Electrical, Controls, etc) that will interface with installation. Each other contractor shall review the submittal for coordination and return a stamped submittal indicating

they have reviewed the submittal for coordination purposes. ARCHITECTURAL VERIFICATION AND RELATED DOCUMENTS A. Contractor shall consult all Architectural Drawings and specifications in their

- entirety incorporating and certifying all millwork, furniture, and equipment rough-in including utility characteristics such as voltage, phase, amperage, pipe sizes, duct sizes, including height, location and orientation. Shop drawings incorporating these requirements should be submitted to the Architect for approval prior to installation or rough in. 9. ORDINANCES & CODES
- A. Work performed under this contract shall. At minimum, be in conformance w/ applicable national, state & local codes having jurisdiction.
- B. Installation work performed under this contract shall be in strict compliance w/ current applicable codes adopted by local AHJ including any amendments & standards as set forth by National Fire Protection Association (NFPA). Underwriters Laboratories (UL), Occupational Safety & Health Administration (OSHA). American Society of Mechanical Engineers (ASME), American Society of Heating, Refrigeration, & Air Conditioning Engineers (ASHRAE). American national standards institute (ANSI), American Society of Testing Materials (ASTM) & other national standards & codes where applicable
- C. Where contract documents exceed requirements of referenced codes. Standards, etc., contract documents shall take precedence
- D. Procure & pay for permits & licenses required for accomplishment of work herein described. Where required, obtain. Pay for & furnish certificates of inspection to owner. Contractor will be held responsible for violations of law.

0. STANDARDS

A. Drawings and specifications indicate minimum construction standard. Should any work indicated be sub standard to any ordinances, laws, codes, rules or regulations bearing on work, Contractor shall promptly notify Architect Engineer in writing before proceeding with work so that necessary changes can be made. However, if the Contractor proceeds with work knowing it to be contrary to any ordinances, laws, rules, and regulations, Contractor shall thereby have assumed full responsibility for and shall bear all costs required to correct non complying

1. PROTECTION OF EQUIPMENT & MATERIAL

- A. Store & protect from damage equipment & materials delivered to job site. Cover as required to protect from dirt & damage. Plug or cap open ends of ductwork & piping systems while stored & installed during construction when not in use to prevent entrance of debris into systems. Equipment & material that has been damaged by construction activities will be rejected, & contractor is obligated to furnish new equipment & material of like kind. Keep premises broom clean from foreign material created during work performed under this contract. Piping, equipment, etc. Shall have neat & clean appearance at completion.
- 12. SUBSTITUTIONS A. The base bid shall include only products from manufacturers specifically named in drawings & specifications. No substitution will be considered prior to receipt of bids unless written request for approval to bid has been received by engineer at least ten calendar days prior to date for receipt of bids. Request shall include name of material or equipment for substitution & complete description of proposed substitute including drawings, cuts, performance & test data & other information for evaluation. Statement setting forth changes in other materials, equipment or other work that incorporation of substitute would require shall be
- B. The intent of these specifications is to allow ample opportunity for Contractor to use his ingenuity and abilities to perform the work to his and the Owner's best advantage, and to permit maximum competition in bidding on standards of
- materials and equipment required. C.Material and equipment installed under this contract shall be first class quality, new, unused and without damage.
- D.In general, these specifications identify required materials and equipment by naming one or more manufacturer's brand, model, catalog number and/or other identification. The first named manufacturer or product is used as the basis for design; other manufacturers named must furnish products consistent with specifications of first named product as determined by Engineer. Base bid proposal shall be based only on materials and equipment by manufacturers named, except as hereinafter provided.
- E. Where materials or equipment are described but not named, provide required items of first quality, adequate in every respect for intended use. Such items shall be submitted to Architect Engineer for review prior to procurement.
- F. Materials and equipment proposed for substitutions shall be equal to or superior to that specified in construction, efficiency, utility, aesthetic design, and color as determined by Architect Engineer whose decision shall be final and without further recourse. Physical size of substitute brand shall be no larger than space provided including allowances for access for installation and maintenance. Requests must be accompanied by complete descriptive and technical data including manufacturer's name, model and catalog number, photographs or cuts, physical dimensions, operating characteristics and any other information needed for comparison.
- G. The burden of proof of merit of proposed substitute is upon proposer. Engineer's decision of approval or disapproval to bid of proposed substitution shall be final. Terms approved", "approved equal", & "equal" refer to approval by engineer as an acceptable alternate bid. No substitutions will be considered that are not bid
- H. No material substitutions shall be considered for approval after to award of contract. Coordinate & verify w/ other trades whether or not substituted equipment can be installed as shown on construction drawings without modification to associated systems or architectural or engineering design

Include additional costs for architectural & engineering design fees in bid if drawing modifications are required because of substituted equipment.

- 13. SHOP DRAWINGS A. Equipment to be furnished under this contract, items requiring coordination between contractors & sheet metal ductwork fabrication drawings. Before submitting shop drawings verify equipment submitted is mutually compatible & suitable for intended use & will fit available space & allow ample room for maintenance. Engineer's checking & subsequent approval of such shop drawings will not relieve contractor from responsibility for errors in dimensions, details, size of members, quantities, omissions of components or fittings; coordination of electrical requirements; or for coordinating items w/ actual building conditions. Proceed w/ procurement & installation of equipment only after receiving
- approved shop drawings relative to each item. B. Submittal data shall be neatly organized, identified & indexed. Each item or model number shall be clearly marked & accessories indicated. Label catalog data w/ equipment identification acronym or number as used on drawings & include performance curves, capacities, sizes, materials, finishes, wiring diagrams & deviations from specified equipment or materials. Mark out inapplicable items. Shop drawings will be returned without review if above mentioned requirements are not met
- C.Requirements shall be met electronically & submitted as pdf in files less than
- D. Contractor's stamp, which shall certify that stamped drawings have been checked by contractor, comply w/ drawings & specifications, & have been coordinated w/ other trades
- E. Transmit submittals as early as required to support project schedule. Allow for two weeks a/e review time, plus duplication of this time for resubmittals, if required. Transmit submittals as soon as possible after notice to proceed & before construction starts. Engineer's submittal reviews will not relieve contractor from responsibility for errors in dimensions, details, size of members, or quantities; or for omitting components or fittings; or for not coordinating items w/ actual building conditions.
- F. Final copies shall be furnished to owner as part of O&M documents in hard & electronic formats.

4. OPERATION & MAINTENANCE INSTRUCTIONS

- A. Collect & compile complete brochure of equipment furnished & installed on this project. Include operational & maintenance instructions, manufacturer's catalog sheets, wiring diagrams, parts lists, approved shop drawings, test & balance reports, & descriptive literature as furnished by equipment manufacturer. Include an inside cover sheet that lists project name, date, owner, architect, consulting engineer, general contractor, sub-contractor, & an index of contents. Submit three copies of literature bound in 3-ring binders w/ index & tabs separating equipment types to architect at termination of work. Final approval of plumbing systems will be withheld until manual is received & deemed complete by architect & engineer. Provide "as-built" drawings (see Division 1 & general
- B. These requirements may shall also be provided to the owner in a well organized pdf electronic submission & delivered on a DVD or USB thumbdrive.

A. Provide factory trained & authorized representative to train owner's designated personnel on operation & maintenance of equipment provided for this project. Provide training to include but not be limited to an overview of system &/or equipment as it relates to facility as whole; operation & maintenance procedures & schedules related to startup & shutdown, troubleshooting, servicing, preventive maintenance & appropriate operator intervention; & review of data included in operation & maintenance manuals. Submit certification letter to architect stating that owner's designated representative has been trained as specified herein. Letter shall include date, time, attendees & subject of training. Contractor & owner's representative shall sign certification letter indicating agreement that training has been provided. Schedule owner training w/ at least 7 days' advance

16. SPARE PARTS

A. Furnish to owner, w/ receipt one set of spare filters of each type required for each unit. In addition to spare set of filters, install new filters prior to testing, adjusting, & balancing work & before turning system over to owner.

B. Furnish one complete set of belts for each fan. 17. EQUIPMENT LABELS:

- A.Material and thickness: multilayer, multicolor, plastic labels for mechanical engraving, 1/16 inch thick, and having predrilled holes for attachment hardware. Black letters on white background
- B. Minimum label size: length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.
- C.Minimum letter size: 1/4" for name of units if viewing distance is less than 24 inches, 1/2" for viewing distances up to 72" & proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering. 18. WARRANTIES
- A. Warrant each system & each element thereof against all defects due to faulty workmanship design or material for period of 12 months from date of substantial completion unless specific items are noted to carry longer warranty in construction documents or manufacturer's standard warranty exceeds 12 months. Remedy all defects, occurring within warranty period(s) stated in general conditions & Division 1. Warranties shall include labor & material. Make repairs or replacements without any additional costs to owner. Perform remedial work
- promptly, upon written notice from engineer or owner. B. At time of substantial completion, deliver to owner all warranties in writing & properly executed including term limits for warranties extending beyond one year period. Each warranty instrument being addressed to owner & stating commencement date & term.

A.Perform cutting of walls, floors, ceilings, etc. As required to install work under this

19. CUTTING & PATCHING

- section. Obtain permission from architect prior to cutting. Do not cut or disturb structural members without prior approval from architect. Cut holes as small as possible. General contractor shall patch walls, floors, etc. As required by work under this section. Patching shall match original material & construction. Repair & refinish areas disturbed by work to condition of adjoining surfaces in manner satisfactory to architect. 20. EXCAVATION AND BACKFILL
- A.Perform necessary excavation to receive work. Provide necessary sheathing, shoring, cribbing, tarpaulins, etc. For this operation, and remove it at completion of work. Perform excavation in accordance with appropriate section of these specifications, and in compliance with osha safety standards.
- B. Excavate trenches of sufficient width to allow ample working space, and no deeper than necessary for installation work.
- C. Conduct excavations so no walls or footings are disturbed or injured. Backfill excavations made under or adjacent to footing with selected earth or sand and tamp to compaction required by architect_engineer. Mechanically tamp backfill under concrete and pavings in six inch layers to 95% standard density, reference Division 2.
- D.Backfill trenches and excavations to required heights with allowance made for settlement. Tamp fill material thoroughly and moistened as required for specified compaction density. Dispose of excess earth, rubble and debris as directed by
- E. When available, refer to test hole information on architectural or civil drawings or specifications for types of soil to be encountered in excavations.

A. Coordinate rough-in w/ general construction & other trades. Conceal piping &

A. Structural steel used for support of equipment, ductwork & piping shall be new, clean, & conform to ASTM a-36. Support mechanical components from building structure. Do not support mechanical components from ceilings, other mechanical or electrical components, & other non-structural elements.

conduit rough-in except in unfinished areas & where otherwise shown.

A. Provide access doors in ceilings, walls, etc. Where indicated or required for access or maintenance to concealed valves & equipment installed under this section. Provide concealed hinges, screwdriver-type lock, anchor straps; manufactured by Milcor, Zurn, Titus, or equal. Obtain architect's approval of type, size. Location & color before ordering. 4.PENETRATIONS A. Seal mechanical floor, exterior wall & roof penetrations watertight & weathertight.

Seal around mechanical penetrations w/ 3M CP-25 fire barrier caulk (thickness

as required & recommended by manufacturer) to maintain resistance rating of

Curb, Pate, Thycurb or approved equal. Provide roof curb w/ factory installed

wood nailer: welded, 18 gauge galvanized steel shell, base plate & flashing:

1-1/2" thick, 3 pound rigid insulation; fully mitered 3-inch raised cant; cover of

fire-rated assemblies. Provide prefabricated roof curbs manufactured by Custom

weather-resistant, weather-proof material & pipe collar of weather-resistant material w/ stainless steel pipe clamps. Make roof penetrations by authorized

roofing contractor when required. 25.MOTORS & STARTERS A. Provide motors & starting equipment where not furnished w/ equipment package. Motors shall have copper windings, class b insulation, & standard squirrel cage w/ starting torque characteristics suitable for equipment served. Motors for air

handling equipment shall be selected for quiet operation. Each motor shall be

checked for proper rotation after electrical connection has been completed Provide dripproof enclosure for locations protected from weather & not in air stream of fan; & totally enclosed fan cooled enclosure for motors exposed to weather. Motors shall be manufactured by Century, GE, Westinghouse, or approved equal. Provide every motor, except fractional horsepower single phase motors w/ an approved type of "built-in" thermal overload protection, w/ motor starter. Each starter shall be provided w/ overload heaters sized to motor rating & every three phase motor starter shall have overload heaters in each phase. Ambient compensated heaters shall be installed wherever necessary. Unless noted otherwise, motor starters shall be furnished by Division 22/23 contractor for installation & connection by Division 26 contractor. Starters shall be Allen-Bradley, Clark, Furnas, Square D, or approved equal.

A. Line voltage wiring shall be provided by Division 26. Line voltage control & interlock wiring for mechanical systems shall also be provided by Division 26 contractor. Low voltage control wiring shall be provided by Division 22/23 contractor. Furnish wiring diagrams to Division 26 contractor as required for proper equipment hookup. Coordinate w/ Division 26 contractor actual wire sizing amps for submitted mechanical equipment to ensure proper installation

27. DISCONNECT SWITCHES A. Provide heavy-duty horsepower rated safety switches rated in accordance with

- NEMA enclosed switch standard KS 1_1969 and I98 standard. B. Each piece of electrical equipment shall be provided with a disconnecting means.
- C.Equivalents by: GE, Eaton, Siemens, Square D.

A. Provide full refrigerant & oil charge in refrigeration systems. Maintain for full term of warranty.

29. EQUIPMENT FURNISHED BY OTHERS A. Provide necessary equipment & accessories that are not provided by equipment supplier or owner to complete installation of cooking equipment, washing equipment, etc., furnished by others, in locations as indicated on drawings &/or described in general notes to this contractor. Equipment & accessories not provided by equipment supplier may include flues, vents, intakes, associated roof jacks & caps to outdoors, dampers, In-line fans, roof fans, control interlocks. etc. As required for proper operation of complete system in accordance w/ manufacturer's instructions. Contractor shall be responsible for correct rough-in dimensions, & shall verify same w/ architect &/or equipment supplier prior to

service installations. 0. SETTING, ADJUSTMENT AND EQUIPMENT SUPPORTS

- A. Work shall include mounting, alignment and adjustment of systems and equipment. Set equipment level on adequate foundation and provide proper anchor bolts and isolation as shown, specified or required by manufacturers in installation instructions. Level, shim and grout equipment bases as recommended by manufacturer. Mount motors, align and adjust drive shafts and belts according to manufacturer's instructions.
- B. Equipment failures resulting from improper installation or field alignment shall be repaired or replaced by Contractor at no cost to Owner.
- C.Floor or pad mounted equipment shall not be held in place solely by its own dead weight. Include anchor fastening in all cases. D. Provide floor or slab mounted equipment with 3_1/2" high concrete bases unless specified otherwise. Individual concrete pad shall be no less than 4" wider and 4" longer than equipment, and shall extend no less than 2" from each side of
- E. Provide each piece of equipment or apparatus suspended from ceiling or mounted above floor level with suitable structural support, platform or carrier in accordance with best-recognized practice. Verify that structural members of buildings are adequate to support equipment and unless otherwise indicated on plans or specified, arrange for their inclusion and attachment to building structure. Provide hangers with vibration isolators.
- F. Submit details of hangers, platforms and supports together with total weights of mounted equipment to Architect_Engineer for review before proceeding with fabrication or installation.

31. MISCELLANEOUS REMODELING WORK

A. Remove all unused equipment, ductwork, piping & associated supports. Cap ductwork & piping at mains & seal air & water tight. Provide items of HVAC systems modification required because of building remodeling, as noted on drawings or necessary for proper operation. Match existing materials & construction techniques when modifying existing systems unless specified otherwise. Coordinate additional requirements w/ general contractor & architect Seal airtight existing ductwork required to be abandoned in place or not in use at termination of work. Cap & seal weathertight existing roof curbs & roof openings to be abandoned in place as result of equipment removal. Clean & rebalance existing ductwork, diffusers, registers, & grilles intended for reuse as required or as indicated on drawings. Clean & refurbish existing HVAC equipment intended for reuse as required for proper operation including replacement of filters, belts,

motors, remote controls, & safety interlocks. 32.BUILDING OPERATION

- A. Comply w/ schedule of operations as outlined in architectural portions of this specification. Building shall be in continuous operation. Accomplish work requiring interruption of building operation at time when building is not in operation, & only w/ written approval of building owner &/or tenant. Coordinate interruption of building operation w/ owner &/or tenant minimum of seven days in
- B. The following Work shall be performed at night or weekend other than holiday weekends as directed and coordinated with the Owner: All tie-in, cut-over and modifications to the existing electrical system and other existing system requiring tie-ins or modifications shall be arranged and scheduled with the Owner to be done at a time as to maintain continuity of the service and not interfere with normal building operations.

33. VIBRATION ISOLATION

A. Provide vibration isolation equipment & materials by single manufacturer. Amber booth, kinetics noise control, mason industries, inc., vibration eliminator co., inc., & vibration mounting & controls. General requirements: select vibration isolators by weight distribution to produce uniform deflection. Isolators shall operate in linear portion of their load versus deflection curves. Spring isolators shall have 50 percent excess capacity without becoming coil bound. Coat vibration isolators w/ factory-applied paint. Coat vibration isolators exposed to weather & corrosion w/ factory-applied protection. Install & adjust isolators in accordance w/ manufacturers instructions.

34. FIRE BARRIERS

A. General: for penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items, provide through-penetration firestop systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated.

END OF GENERAL MEP REQUIREMENTS



Bob D. Campbell & Co. Missouri Certificate of Authority #000442 4338 Belleview Ave. Kansas City, MO 64111

816.531.4144

MEP Engineer: PKMR Engineers Missouri Certificate of Authority #E-2002020886 13300 W. 98th Street Lenexa, KS 66215 913.492.2400

JOB NUMBER 23011

ZIMMERMAN

NUMBER

PE-2017029408

LENEXA, KS 66215

WWW.PKMRENG.COM

13300 W 98TH STREET

MO State Certificate of Authority #E-2002020886

913 492 2400

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Dalyn Novak - Architect

MO # 2011006178

ISSUE DATE

No Description

SPECIFICATIONS

2. PIPING & INSULATION

A. Water service piping shall be copper type K tubing, ductile iron with mechanical joints or PVC AWWA C900 piping properly bedded and supported. B. Water piping - all water piping shall be 95-5 tin-antimony solder or press fit joined

type L copper. Insulate w/ fiberglass w/ ASJ & PVC covers. Thickness in

accordance w/ ASHRAE 90.1. C. Waste & vent piping - CI bell & spigot below grade or hubless CI w/ neoprene gasket fittings w/ stainless steel bands above grade. Sched 40 PVC w/ solvent

welds may be used where allowed by local code. PVC not allowed in plenums. 3. PIPING IDENTIFICATION

A. Provide pipe markers and flow direction arrows at 10' 0" maximum spacing to identify piping in mechanical rooms and 20'_0" maximum spacing in all other

B. Pipe marker nomenclature/colors shall meet applicable ANSI standard and OSHA requirements from Seaton or equal. Submit for approval list of colors and wording prior to purchase of pipe markers.

4. <u>VALVES</u>

A. Equivalent valves listed on current comparison charts of specified valve manufacturers by Milwaukee, Stockham, Powell, Red-White, Crane, Apollo Mueller, Muessco, Watts, Havs, Rockwell-Nordstrom. B. Ball valves - 2" & under - bronze full port w/ teflon seats, bronze ball & insulated

C.Balancing valves - Armstrong model CBV I or CBV II, 125 psi-wp at 250 degrees f., meter connections w/ built-in check valves screwed or flanged ends. Provide

polyurethane insulation cover D. Check valves - 2" & smaller screwed or solder bronze check valve, 200 psi-wog/125 psi-wsp, teflon or bronze disc & seat ring. 2-1/2" & larger flanged,

ASTM 126 iron body, bronze trimmed, 200psi-wog/125 psi-wsp.

E. Plug valves - 1" & smaller iron body gas cock, 175 PSI WOG bronze plug washer and nut, screwed ends. 1 1/4" & larger, semi steel lubricated plug valve, 175 PSI WOG coated plug, two bolt cover, and short pattern screwed ends. Provide w/ std. pattern cast handle

F. Butterfly valves - 3" & larger lever ASTM A126 CI drilled & tapped full lug body, 200 PSI-WOG, extended neck, bronze disc, stainless steel stem, field-replaceable EPDM sleeve & stem seals.

G.Installation

1) Install necessary valves within piping systems to provide required flow control, to allow isolation for inspection, maintenance and repair of each piece of equipment or fixture, and on each main and branch service loop. 2) Each valve shall be installed so that it is easily accessible for operation, visual inspection, and maintenance and wherever possible, gate, check and ball valves shall be installed on a horizontal run with the handle upright and within 15 degrees of vertical. Butterfly valves shall be installed with the stem in the horizontal position and the handle at 90 degrees from vertical. 3) Valves installed in piping systems shall be compatible w/ system maximum test pressure, pipe materials, pipe joining method, and fluid or gas conveved in system

A. See schedules for further requirements and specific fixtures. B. Fixtures: American Standard, Kohler, Crane, Zurn, Toto. C. Stainless steel fixtures: Elkay, Just, Moen Commercial

D. Fittings & supports: Josam, Smith, Wade, Zurn, Or Jonespec. E. Seats: Church, Olsonite, Bemis Or Beneke.

F. Drinking fountains: Halsey Taylor, Elkay, Oasis, Or Haws. G. Trim by Moen, Delta, Eljer, Kohler, American Standard, Crane, Sloan.

H.Flushvalves: Sloan, Zurn, Toto

I. Drains by Wade, Zurn, Woodford, Smith, Josam. 6. PLUMBING EQUIPMENT

A. See schedules for further requirements and specific equipment. B. Cleanouts provide floor cleanouts in shape to match architectural flooring w/ heavy duty, scoriated nickel bronze top, adjustable above to finished floor. Wall cleanout w/ CI ferrule & cadmium plated CI counter sunk plug w/ round smooth

nickel bronze wall access cover & flush over wall frame. C. Provide water pressure reducing valves; ASSE 1003, working pressure of 150 psig. Bronze for NPS 2 & smaller; cast iron w/ interior AWWA C550 or FDA

D. Water hammer arresters piston type w/ pressurized metal-tube cushioning chamber. Provide where any flush valves or quick acting valves are used. Manufacturers: Amtrol. Josam. Sioux Chief. Watts. Zurn.

7. BACKFLOW PREVENTERS

A.Backflow preventers provide where shown on plans or as required by Code/AHJ the following types of backflow preventers. Provide isolation valve ahead of backflow preventers. Equivalent backflow prevents by Watts, Febco, Lawler. 1) Reduced pressure zone principle (1/4"-1/2"): watts series 009 reduced

pressure backflow preventer complete with strainers and valves. 2) Reduced pressure zone principle (3/4"-10"): watts series 909 reduced pressure backflow preventer complete with strainers and valves. Provide isolation valve ahead of backflow preventers. Provide with air gap fitting and pipe to floor drain.

3) Double check valve (1/2"-2"): watts series 007 double check valve assembly complete with ball type test cocks, full port ball valve shut offs

4) Double check valve (2-1/2"-10"): watts series 707 double check valve assembly complete with ball type test cocks, os&y valve shut offs and strainer. Epoxy coated cast iron check valve bodies with bronze seats. 5) Pressure vacuum breakers (1/2"-2"): watts series 800m4qt pressure vacuum breaker with integral ball valve shut offs.

6) Pressure vacuum breakers (3/8"-1/2"): watts series 008qt pressure vacuum breaker for anti-spill applications, with integral ball valve shut offs. 7) Atmospheric vacuum breaker (1/4"-3"): watts series 288a atmospheric

vacuum breaker in plain brass finish 8) Hose bibb vacuum breakers vacuum breakers for hose end connections shall be Watts series 8 non-removable type.

8. PLUMBING EXECUTION

A.Do not route any water piping in areas subject to freezing conditions such as exterior walls, attics, exterior soffits, etc. All water piping shall be routed inside

the insulated envelope of the structure. B. All cold surface piping and equipment shall be insulated. All hot water piping and equipment shall insulated to meet adopted energy code.

C. Provide trap primers or trap seal devices for all floor drains. D. Provide unions or flanged joints in each pipe line preceding connections to equipment to allow removal for repair or replacement. Provide all screwed & control valves w/ unions adjacent to each connection. Provide screwed end valves w/ union adjacent to valve unless valve can be otherwise easily removed from line.

E. All piping shall be properly supported with hangers and supports specifically intended for that purpose. Provide clevis hangers, unistrut brackets and pipe clamps and similar systems. Protect integrity of insulation and provide rigid insulation inserts or pipe saddles as necessary.

F. After piping is in place test lines to insure no leaks.

G.All piping & equipment shall be supported properly from structure. H. Escutcheons - provide nickel-brass or chrome plated on all exposed pipes when passing thru wall or ceiling of finished rooms.

I. Verify floor materials used from architectural plans & provide proper cleanout tops, where they occur in carpet, quarry tile, vinyl tile or ceramic tile. J. Provide water hammer arrestors for all plumbing banks w/ fixtures utilizing flush valves in any capacity. Locate arrester between last two fixtures served on

DIVISION 230000 - MECHANICAL

1. MECHANICAL GENERAL REQUIREMENTS

A. Refer to GENERAL MECHANICAL, ELECTRICAL & PLUMBING requirements

2. SHEET METAL WORK A.HVAC ductwork shall be galv sheet metal of gauges & joint types specified in SMACNA manual. Provide turning vanes in elbows

B. Coordinate routing of ductwork w/ other contractors such that piping, electrical conduit, & associated supports are not routed through ductwork. Construct supply ducts to meet SMACNA positive pressure of 3" WG. Construct return, outdoor & exhaust ductwork upstream of fans to meet SMACNA negative pressure of 1" WG. construct exhaust ductwork downstream of fans to meet SMACNA positive pressure of 1" WG.

C. Exposed ductwork to be field painted shall have galvanized metal primer applied in shop after fabrication & prior to shipping.

D. Seal ductwork w/ heavy liquid sealant, Hardcast Irongrip 601, Design Polymer DP 1010, United McGill duct sealer or approved equal, applied according to sealant manufacturer's instructions.

E. Exposed spiral duct shall be Lindab or approved equal gasketed style. F. Ducts shall be connected to fans, fan casings & fan plenums by means of flexible connectors. Flexible connectors shall be neoprene coated glass cloth canvas connections, Duro-Dyne, Elgen, Ventfabric or equal. Flexible connectors shall have flame spread of 25 or less & smoke developed rating not higher than 50. Make airtight joints & install w/ minimum 1-1/2" slack.

G. All ductwork must be supported properly from structure.

3. DUCTWORK SPECIALTIES

A.Flexible ducts - Thermaflex or equal sound rated type G-KM insulated. (duct w/o published acoustical attenuation ratings not acceptable). Take off fitting shall be hi-eff style w/ locking damper. Maximum length of flexible ductwork shall be

B. Diffusers & grilles - see schedule. Equivalent by Price, Tuttle & Bailey, Titus, Metal-Aire Krueger Coordinate color mounting w/ duct frame locations & ceilings with architectural plans. Select air devices to limit room noise level to no higher than NC-30 unless otherwise shown. Provide devices w/ soft plastic gasket to make an airtight seal against mounting surface. Submit complete shop drawings including information on noise level, pressure drop, throw, cfm for each air device, styles, borders, etc. Clearly marked w/ specified equipment number. Provide ceiling supply air diffusers & return air grilles of lay-in or surface mounted type as required to be compatible w/ ceiling construction. Provide ceiling diffusers & grilles w/ white enamel finish unless noted otherwise. Provide slot plenums by diffuser manufacturer. Plenums shall be internally insulated by manufacture

C.Louvers - Greenheck type FSK-400 fabricated galvanized steel louver w/ trim flange. Equivalent by Ruskin, Louvers & Dampers, Greenheck, American Warming & Ventilating, Industrial Louvers, Acme. Coordinate finish w/ architect.

D. Provide balancing dampers, manufactured by Ruskin, Greenheck, Nailor Industries, Cesco, Louvers & Dampers, Pottorff or approved equal, where 'shown on drawings & wherever necessary for complete control of air flow. Splitter dampers shall be controlled by locking quadrants; provide young regulator or ventlok end bearings for damper rod. Rectangular volume dampers shall be opposed blade interlocking type. Round volume dampers shall be butterfly type consisting of circular blade mounted to shaft.

E. Fire Dampers - Static & dynamic; UL 555. Closing rating up to 4" WG static pressure class & min. 4000-fpm velocity. Rating of 1-1/2 & 3 hours as reg'd. Curtain type with blades outside airstream except when located behind grille where blades may be inside airstream. Provide with mounting sheet metal

F. Fire/Smoke & Smoke Dampers - Multiple-blade type; galvanized steel frame & construction. UL 555S. Roll-formed blades, horizontal, interlocking, 0.034-inchthick, galvanized sheet steel. Leakage Class I. Rated pressure & velocity to exceed design airflow conditions. Provide with mounting sheet metal mounting sleeve to suit installation location. Damper Motors: two-position action. Electrical Connection: 115 V, single phase, 60 Hz. Coordinate voltage with Fire alarm contractor prior to ordering. Where building is not equipped with a fire alarm system, provide a stand alone 120v smoke detector & remote LED indicator light mounted in ceiling below duct detector. Mount detector within 5' of damper & provide all necessary wiring & interconnections to damper & detector & relays/power supplies. Power open, locked & reset, spring closed.

G.Damper leakage for outside air and control dampers shall not exceed 6.5 cfm/square foot in full closed position at 4" wg pressure differential across damper. Reference manufacturer & model number for outside air dampers is Ruskin model CD-50.

4. DUCT INSULATION WORK

A.Duct insulation & wraps shall meet flame/smoke rating of 25/50 per ASTM E 84. B. Line all low pressure supply & return air ductwork w/ 1/2" liner. Line all medium pressure supply w/ 1" liner.

C.Line all transfer boots w/ ½" liner. D.Do no wrap exposed spiral ducts. Provide pre-manufactured 1/2" or 1" round liner for all exposed round ducts. Contractor has the option to use double wall perforated lined round spiral ducts for exposed ducts. Wrap all concealed round supply HVAC ductwork w/ Certainteed 1-1/2" thick insulation w/ vapor barrier in concealed locations or in unfinished shell spaces.

E. Wrap all outside air HVAC ductwork w/ Certainteed 1-1/2" thick insulation w/ vapor barrier in concealed locations. Exposed rectangular installations shall use 1-1/2" thick rigid board insulation or lined with 1" liner. 5. EXHAUST FANS

A. Equivalent by Cook, Penn, Acme, Greenheck, Jennaire, Captive Air. B. Bearings shall be designed for 200,000 hours operation. Variable pitch motor

sheaves shall be standard C.Fans shall be furnished with acceptable electrical disconnect & birdscreen.

Provide single phase motor equipped fans with motor rated start relay. Provide multiphase motor equipped fans with magnetic motor starter. Provide local disconnect means for all fans. Coordinate location of starter & disconnects with

D. Ceiling & Cabinet Exhaust Fans - Available Manufacturers: Cook, Penn, Acme, Greenheck, Jennaire, Panasonic, Shall bear the AMCA Certified Ratings Seal for sound and air performance. Provide speed controls to be furnished to E/C for mounting at fan. Provide wall/roof jacks as indicated on plans.

E. Centrifugal inline fans - Belt driven or direct drive type as scheduled. The wheel & spun inlet venturi shall be a centrifugal design of non-sparking construction. The fans shall be constructed out of the heavy gauge paintable steel. Motor & drives shall be isolated from the exhaust airstream. The wheel shaft shall be ground, polished, coated with a rust inhibitive finish & mounted in heavy duty, permanently sealed pillow block ball bearings 200,000 hours of life, average operation. Sheaves shall be fully machined cast iron or pressed steel, keyed & securely attached to the shafts. Variable pitch motor sheaves shall be standard. Horsepower & noise levels shall not exceed the published values & oversized motors will not be acceptable.

WALL & CEILING HEATERS

A. Nickel-chromium heating wire, free from expansion noise & hum, mounted in ceramic inserts in a galvanized-steel housing; with fuses in terminal box for overcurrent protection & limit controls for high-temperature protection. Terminate elements in stainless-steel machine-staked terminals secured with stainless-steel hardware. Manufacturers: Berko, Chromalox, Indeeco, Markel, Marley, QMark. '. MODIFICATIONS TO EXISTING HVAC CONTROL SYSTEMS

A. Existing control equipment and components shall be reused as much as possible. Any new control equipment and components shall be compatible with the existing building control system & be of the same manufacturer.

B. Modify operator workstation graphics & interface for all building plan & system

modifications/additions. C. Verify location of wall sensors & other exposed control sensors with drawings &

room details before installation. Install adjustable devices 48 inches above the

D.Install guards on thermostats in areas subject to damage. E. Coordinate all control cabinets & other wall mounted controllers with other trades. F. Panels & cabinets shall be located in mechanical spaces. These locations shall be submitted & approved as part of the submittal process. Do not locate control cabinets in spaces dedicated to other uses such as it closets, data rooms,

chases, etc without prior approval. G.Provide a 20A/1p 120 or 277 volt circuit from the nearest panelboard related to the work for miscellaneous HVAC control system power needed for operation of the system actuators, controllers, etc. Contractor may provide multiple circuits at their option. Utilize spare circuit breakers or provide new when one is not

H. Provide all necessary line voltage interconnecting wiring & connections for control equipment, power supplies, dampers, actuators, & other items requiring line voltage power. This work shall be coordinated with other trades & shall be in conformance with other portions of this contract & requirements.

I. Train the designated staff of owner's representative & owner to enable them to proficiently operate the system; create, modify & delete programming; add, remove & modify physical points for the system; add additional panels when

J. The temperature control contractor shall have a technical representative present with the balancing contractor on the first day of balancing for a minimum of four hours of active balancing & temperature controls coordination.

K. For the remainder of the balancing the temperature contractor may either have a technical representative present, or may furnish the balancer with the latest DDC software & all required interface devices. This includes instructions & coordination in the use of all interface devices, including laptop computers. There shall be no charge to the balancing contractor for the use of these interface devices & they shall be returned to the temperature controls contractor at the end of the balancing process.

8. MECHANICAL EXECUTION

A. Coordinate w/ e/c to provide all wiring between equipment, dampers, thermostats & all other required controls & devices. M/C is responsible for all control & interlock wiring unless specifcally shown on electrical drawings. All electrical work shall comply w/ electrical specifications. B. All piping shall be properly supported with hangers & supports specifically

intended for that purpose. Provide clevis hangers, unistrut brackets & pipe clamps & similar systems. Protect integrity of insulation & provide rigid insulation inserts or pipe saddles as necessary.

C. All exterior control wiring shall be in conduit. D. Provide any required interfaces to fire alarm or similar systems.

E. Provide ground-mounted units on 4", reinforced concrete base, 6" larger than F. Roof-mounted units on equipment supports or curbs, sloped as reg'd. Anchor

units to supports. Coordinate all requirements to maintain roof warranties. G.Provide factory-authorized service start up on equipment. Train owner's maintenance personnel on startup, shutdown, troubleshooting, servicing, preventive maintenance.

H. Provide clean filters at time of project turnover. Provide FINAL TESTING & ADJUSTMENTS

A. Final system testing. Balancing & adjustments shall be performed by contractor certified by NEBB, AABC or other approved agency. Perform test readings on fans, units, coils, etc. & adjust equipment to deliver specified amounts of air or water. Prepare testing & balancing report log showing air supply quantities, air entering & leaving temperatures & pressures, fan & unit test readings, motor voltage & amp draws. etc., & submit PDF of final compilation of data to architect for evaluation & approval before final inspection of project. Balance air systems to within plus or minus 10 percent for terminal devices & branch lines & plus or minus 5 percent for main ducts & air handling equipment of amount of air shown on drawings. Further adjustments shall be made to obtain uniform temperature in spaces. Adjust equipment to operate as intended by specification. Align bearings & replace bearings that have dirt or foreign material in them w/ new bearings without additional cost to owner. Balance contractor shall include in report any improperly installed or missing balancing devices that would negatively impact system operation. Adjust thermostats & control devices to operate as intended. Adjust burners, pumps, fans, etc. For proper & efficient operation. Certify to architect that adjustments have been made & that system is operating satisfactorily. Further adjustments shall be made to obtain uniform temperature in spaces. Calibrate, set. & adjust automatic temperature controls. Check proper sequencing of interlock systems, & operation of safety controls. Verify clean

10. STARTUP SERVICE

filters are installed

A. Contractor shall perform startup service for all equipment & systems. B. Complete installation & startup checks according to manufacturer's written instructions. Maintain written records of all startup activities & also do the

1) Inspect for visible damage to any part, casing or component.

2) Verify that labels are clearly visible. 3) Verify service clearances are provided. 4) Verify that controls are connected & operable. Verify that filters are installed

6) Clean all interior and exterior components of construction debris. 7) Release and adjust vibration isolators.

8) Inspect all rotating components for direction and correct. 9) Start unit according to manufacturer's written instructions.

10)Inspect & record performance of interlocks & protective devices; verify sequences. 11)Calibrate thermostats, sensors and similar equipment.

12)Inspect controls for correct sequencing of heating, mixing dampers, refrigeration, & normal & emergency shutdown. 13) After startup & performance testing, change filters, vacuum heat

exchanger & cooling & outside coils, lubricate bearings, adjust belt tension, & inspect operation of power vents. 14)Provide one spare set of clean filters & deliver to owner.

C. Adjusting 1) Adjust initial temperature & humidity set points.

2) Set field-adjustable switches & circuit-breaker trip ranges as indicated. 3) Occupancy adjustments: when requested within 12 months of date of substantial completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to site outside normal occupancy hours for this purpose, without additional cost.

D. Demonstration 1) Contractor shall train owner's maintenance personnel to adjust, operate, & maintain all HVAC equipment & systems.

END OF DIVISION 230000

ELECTRICAL SPECIFICATIONS

SECTION 260000 - ELECTRICAL

1. GENERAL ELECTRICAL REQUIREMENTS

A. Refer to GENERAL MECHANICAL, ELECTRICAL & PLUMBING requirements. B. Wiring of Mechanical Equipment

1) Provide all raceways & power wiring for all division 23 equipment requiring electrical connections, including, but not limited to, pumps, water heaters, & HVAC equipment, & all line voltage control & interlock wiring not provided under division 23. Connect per manufacturers' wiring diagrams. Coordinate with division 23 for disconnects furnished w/ equipment, & provide all disconnect switches as required. After installing wiring, verify that each motor load has correct phase rotation.

2) Verify actual "maximum overcurrent protection" (MOCP) device ratings & "minimum circuit ampacity" (MCA) conductor sizing for mechanical equipment from equipment nameplate. Base electrical installations on actual required amperages, which may vary somewhat from conductor & equipment sizes shown on drawings; however, in no case, reduce size of conductors indicated on drawings without authorization from engineer Provide properly sized electrical wiring & equipment without extra cost to owner. Notify engineer of all changes required in electrical installation due to equipment variances so that effects on feeders, branch circuits, panelboards, fuses & circuit breakers can be checked prior to purchasing & installation. Be responsible for coordinating w/ division 23 to verify actual ampacities & correct sizes of all conductors & overcurrent protective devices for all equipment, & correct overload heaters for all motors, when starters are provided under division 26.

C. Wiring of Thermostats. Time, & Temperature Controls

1) Provide all raceways, power wiring, & line-voltage control and interlock wiring not provided under division 23. for all thermostats, temperature control devices, & controls, including, but not limited to, night-stats, water heater interlocks, time switches & override timers. See mechanical drawings for locations & temperature control diagrams. Low-voltage conductors for thermostats & temperature control system may be run exposed above finished accessible ceilings, if approved & listed for this purpose, but shall be installed in conduit within walls & where exposed in work areas

2. CONDUIT & CONDUCTORS

A. Follow circuiting shown on plans. Use no conduit smaller than 3/4" & no conductors smaller than #12 ga. Unless noted otherwise.

B. Conductors #10 and smaller shall be solid. C.If no conductor size is indicated on drawings for branch circuit, provide conductors & conduit sized per NFPA 70 & based on indicated branch circuit overcurrent protective device (OCPD) rating & number of poles.

D. Wire shall be in non-flexible metallic conduit (EMT, IMC or RMC) for: 1) All circuits & feeders greater than 30A. 2) Kitchen circuits.

E.MC cable acceptable for branch convenience circuits & lighting circuits. Do not daisy chain light fixtures. Provide cable whips of sufficient lengths to allow for relocating each light fixture within 5-foot radius of its installed location, but not

exceeding 6 feet in unsupported lengths 1) Do not use MC cable for following: homeruns to panelboards, where exposed to view or damage, hazardous locations, in concrete, block walls or wet locations, & when disallowed by local AHJ or landlord.

2) Provide health care rated MC for patient care areas (as defined by the NEC) when not in conduit. F. Lighting & receptacle circuit conductors shall be copper THHN-THWN-2 600 volt, 75 deg c, color coded as described under applicable codes. No romex, plastic

flex tubing etc permitted. Light fixture wire insulation shall have temp rating not less than individual fixture manufacturers recommended rating. G.Circuits w/ no. 8 or larger conductors, motor circuits, power & feeder circuits & building service feeders shall be copper THHN-THWN-2 600 volt, 75 deg c. H. All materials used to terminate, splice or tap conductors: designed for, properly

sized for, & UL listed for specific application & conductors involved, & installed in

strict accordance w/ manufacturer's recommendations, using the manufacturer's recommended tools. I. Where wiring is indicated as installed, but connection is indicated "future" or "by other division, trades, or contracts", leave minimum 3-foot "pigtail" at box, tape ends of conductors, & cover box.

J. Number of conductors in specific raceway "home run" is indicated w/ cross lines (tick marks) on each "circuit run" on drawings. In general, direction of branch circuit "home run" routing is indicated on drawings, complete w/ circuit numbers & panelboard designation. Continue all such "home run" wiring to designated panelboard, as though "circuit runs" were indicated in their entirety.

K. Wiring shall have insulation of proper color to match NEC color code. In larger sizes, where properly colored insulation is not available, use vinyl plastic electrical tape of appropriate color around each conductor at all termination points, junction & pull boxes.

3. GROUNDING

A. Supplement grounded neutral of secondary distribution system w/ equipment grounding system, installed so that metallic structures, enclosures, raceways, junction boxes, outlet boxes, cabinets, machine frames, portable equipment & other conductive items operate continuously at ground potential & provide low impedance path for ground fault currents.

B. System shall comply w/ national electrical code, drawings & as specified. C.Provide equipment ground bus in base of low voltage, switchgear brazed or otherwise adequately connected by an approved method to ground rods. D. Provide in conduit green insulated copper ground conductor to main metallic

water service entrance & connect by means of adequate ground clamps.

E. Equipment grounding conductors for branch circuit home runs shown on drawings shall indicate an individual & separate ground conductor for that branch circuit which shall be terminated at branch circuit panelboard, switchboard, or other distribution equipment F. Provide low voltage distribution system w/ separate green insulated equipment grounding conductor for each single or three-phase feeder. Single phase 120 volt branch circuits for lighting & power shall consist of phase & neutral

conductors & green ground conductor installed in common conduit which shall serve as grounding conductor. G.Grounding conductors shall be as shown on plans or if not specifically shown shall be no smaller than that required by NEC.

4. RACEWAY INSTALLATION A.Install all conductors & cable in raceways continuous without taps or splices. Splice or tap only in approved boxes & enclosures w/ approved solderless connectors, or crimp connectors & terminal blocks for control wiring, & keep to

minimum required. Insulate all splices, taps, & joints as required by codes. B. Install all circular raceways concealed above suspended ceilings or concealed in walls or floors wherever possible except where otherwise indicated. 1) All conduit, junction boxes, etc. Above ceilings shall be supported from

structure. Pipe sleeves, hangers & supports shall be furnished & set & contractor shall be responsible for proper & permanent locations. 2) Support all conductors & cables in vertical installations, as required by NFPA 70, by installing cable supports or plug-type conduit riser supports,

or wire-mesh safety grips. C. Conduit installed below grade shall be PVC conduit meeting NEMA standards & UL listed for underground & exposed (UV-resistant) use.

1) Schedule 40 PVC acceptable for most underground installations.

2) Schedule 80 PVC shall be used where conduit is exposed above grade or otherwise susceptible to damage, or where otherwise required by code for mechanical protection. 3) For underground runs of over 300' and/or more than (2) 90° elbows,

provide GRS radius bends & risers as conduits rise above grade or above

bonded-plastic or approved mastic coating. This shall include 90-degree

D. Metal raceway below grade or exposed to weather or other hazardous conditions shall be GRS. 1) Provide any GRS installed below grade w/ corrosion resistant

elbow below grade & entire vertical transition to above grade. E. Provide interlocking spacers for multiple runs of UG conduits in same trench. F. All other raceway may be EMT where approved by local code. Use compression type fittings for EMT, w/ all fittings UL listed for environment in which they are

G.Use FMC for final connection to each motor & transformer, & to any device that would otherwise transmit motion, vibration, or noise. Use LFMC where exposed to liquids, vapors or sunlight.

I. Install raceways to requirements of structure & to requirements of all other work

minimum possible number of bends & not more than equivalent of four

1) Provide all FMC & LFMC w/ an insulated bonding conductor. H. Install raceways parallel & perpendicular to building lines.

on project. Install raceway to clear all openings, depressions, pipes, ducts, reinforcing steel, & other immovable obstacles. Install raceways set in forms for concrete structure in such manner that installation will not affect strength of J. Install raceways continuous between connections to outlets, boxes & cabinets w/

90-degree bends between connections. Use manufactured elbows for all 45- &

90-degree bends, unless approved by engineer in advance. Make other bends

smooth & even & without flattening raceway or flaking galvanizing or enamel.

Radii of bends shall be as long as possible & never shorter than corresponding trade elbow. Use long radius elbows where necessary, indicated, or both. K. Securely fasten raceways in place w/ approved straps, hangers & steel supports as required. Attach raceway supports to building structure. Hang single raceways for feeders w/ malleable split ring hangers w/ rod & turnbuckle suspension from

inserts spaced not over 10 feet apart in construction above. L. Clamp groups of horizontal feeder raceways to steel channels that are suspended from inserts spaced not over 10 feet apart in construction above. Securely clamp vertical feeder raceways to structural steel members attached to structure. Install cable clamps for support of vertical feeders where required. Add

support raceways from suspended ceiling components. M.Ream raceway ends, thoroughly clean raceways before installation, & keep clean after installation. Plug or cover openings & boxes as required to keep raceways clean during construction & fish all raceways clear of obstructions before pulling conductors wires. Provide raceways of ample size for pulling of

raceway supports within 12 inches of all bends, on both sides of bends. Do not

wire & not smaller than code requirements & not less than 3/4", unless indicated otherwise on drawings. N. Protect all raceway installations against damage during construction. Repair all raceways damaged or moved out of line after roughing-in to meet engineer's

approval without additional cost to owner. O. Align & install true & plumb all raceway terminations at panelboards,

switchboards, motor control equipment & junction boxes. P. Install approved expansion/deflection fittings where raceways pass through (if

embedded) or across (if exposed) expansion joints. Q.Install pull wire in each empty raceway that is left for installation of conductors or cables under other divisions or contracts. Use polypropylene or monofilament plastic line. Leave min. 24" slack at each end.

R.Make all joints & connections in manner that will ensure mechanical strength &

electrical continuity. S. Effectively seal raceways, by installing conduit fitting at boundary of two spaces, & filling it w/ an approved pliable material, after conductors or cables have been installed & tested, whenever raceways pass from non-cooled to cooled spaces or transition from outside facility or enclosure to inside, whether buried or exposed.

5. BUSHINGS & LOCKNUTS A. Rigidly terminate conduits entering sheet metal enclosures to enclosure w/ bushing & locknut on inside & locknut or an approved hub on outside. Conduit

shall enter enclosure squarely B. Provide bushings & locknuts made of galvanized malleable iron w/ sharp, clean-cut threads. Where EMT enters box, provide approved EMT compression

C.Use insulated, grounding, or combination, bushings wherever connection is subject to vibration or moisture when required by NFPA 70, or both. 6. JUNCTION & OUTLET BOXES A. All boxes including light fixture, switch, receptacle, & similar outlet boxes:

National Electrical, Appleton, Steel City, Raco, or approved equal, galvanized steel knockout boxes, suitable in design to purpose they serve & space they occupy. Size as required for specific function or as required by NFPA 70, whichever is larger.

1) Lighting fixture boxes in ceilings shall not be less than 4" octagonal

knockout type. B. Set all outlet boxes in walls, columns, floors, or ceilings so they are flush w/ finished surface, accurately set, & rigidly secured in position. Provide plaster rings, extension rings &/or masonry rings as reg'd for flush mounting. Provide approved cast outlet boxes, w/ hubs & weatherproof covers, in all areas subject

to damp, wet, or harsh conditions.

calculations were performed.

D. Execution:

C. Convenience outlets:

C. Coordinate locations of outlet boxes. Outlets are only approx located on small scale drawings. Use great care in actual location by consulting various large scale detailed drawings used by other division trades, & by securing definite locations from architect. D. All outlets, shall be mounted w/ bottom at 18" AFF & switches w/ bottom at 44"

AFF floor unless noted otherwise on plans. Refer to arch for other required

elevations & cabinetry coordination **ELECTRICAL IDENTIFICATION** A.Manufactured labels for each Panelboard & Transformer. Typewritten panel schedules mounted in panels. Where electrical equipment is installed as service entrance equipment, contractor shall furnish & install nameplate listing the following: Equip Short-Circuit Current Rating in Amps (RMS SYM), as indicated on the drawings, Whether or not equipment is fully or series-rated, Available Fault Current in Amps. Contractor shall perform available fault current calculation. to obtain available fault at Service Equipment, Date fault current

B. Printed tape style label for each receptacle indicating Panel & Ckt #.

C.Manufactured labels for all disconnect switches indicating equipment served. D. Branch circuits - identify each circuit w/ wire markers when enclosure label & wire colors do not provide enough information to identify each circuit without tracing. Feeders & branch circuit home runs w/ wire marker w/ Panel & Ckt #. Box covers above lay-in ceilings neatly marked w/ indelible marker.

E. Fire alarm - nameplate on each fire alarm terminal cabinet. Label all wiring. 8. DIGITAL LIGHTING CONTROLS A. Provide DLM systems consisting of lighting control panels, room controllers, motion sensors, daylight sensors, & other other controls as necessary to achieve lighting switching & dimming control indicated on the drawings. Coordinate all

B. Provide all interconnecting wiring, controls, programming & owner training for the C.Provide systems by: Cooper, Hubbell, Leviton, Phillips, Sensor Switch, Watt Stopper, Lutron, nLight.

interfaces, dimming styles etc with lighting fixtures and other loads controlled.

1) Calibrate all sensor time delays & sensitivity for proper detection of occupants & energy savings. Adjust time delays 2) Provide documentation of room by room system configuration including: sensor parameters, time delays, sensitivities, & daylighting setpoints, sequence of operation, load parameters.

3) Post start-up tuning - 30 days after occupancy contractor shall adjust

sensors to meet the owner's requirements. Provide a detailed report to the

9. CIRCUIT BREAKERS IN EXISTING PANELBOARDS A. Provide new circuit breakers, for installation in existing panelboards, of same manufacturer, type & short circuit current interrupting ratings as existing

panelboard circuit breakers B. Circuit breakers shall provide AFCI and/or GFCI protection where required by

10. WIRING DEVICES

architect / owner of post start-up activity.

A. Color of devices as directed by architect. B. Provide clear label with black text on each coverplate for associated circuit #.

1) Spec grade 20 amp duplex w/ ground & SS wall plates. Other outlets shall be verified w/ equipment suppliers for proper NEMA configurations. Provide GFCI rated devices where indicated & as req'd per code. 2) Equivalent devices by Cooper/Eaton, Hubbell, Leviton, Pass & Seymour/Legrand

1) Light switches - spec grade 20 amp toggle switches w/ SS wall plates. 2) Wall motion switches - spec grade, PIR, override.

room configuration, all necessary power packs & relays.

for operation of exhaust fan delay. 5) Dimmer Switches: Modular, full-wave, solid-state units with integral, quiet on-off switches, with audible frequency and EMI/RFI suppression filters. Continuously adjustable slider; with single-pole or three-way switching. Comply with UL 1472. 600W or 1200W as required by load.

Incandescent Lamp Dimmers: 120 V; control shall follow square-law

LED Dimmers: Modular; compatible with dimming drivers in fixture(s); if

2) For wet locations: in-use NEMA 3R, UL-labeled plates die cast metal and

dimming curve. On-off switch positions shall bypass dimmer module.

3) Ceiling motion switches - spec grade, dual technology, model as req'd by

4) Wall motion switches (bathroom) - dual relay, spec grade, PIR, 2nd relay

other than 0-10V dimming is provided, verify dimmer is compatible with driver for full range of dimming (100-10%). 6) Equivalent devices by Leviton, Bryant, Hubbell, Wattstopper, Lithonia, Sensor Switch.

E. Weatherproof cover plates: 1) Provide GFCI receptacles for weatherproof receptacles.

3) For damp locations: UL-listed for wet locations w/ cover(s) closed; die-cast aluminum or type 302 SS: single-cover for switches & vertically mounted receptacles; double-cover for horizontally mounted receptacles; self-closing

11. DISCONNECT (SAFETY) SWITCHES A.Disconnect (safety) switches: Square D, Siemens, Eaton, or GE fused or non-fused (as indicated on drawings or required) NEMA KS1, heavy duty, externally operated visible-blade safety switches: NFMA enclosure type indicated on drawings or suitable for environment in which installed. Based on fusible switch & fuse sizes indicated, include class R, J, or L fuse provisions as

applicable. B. Where indicated, provide fusible switches permanently labeled as suitable for use as service entrance equipment, w/ integral & separate neutral & ground assemblies, suitable for sizes of conductors indicated. Do not double-lug any terminations not specifically listed as suitable for more than one conductor. C.Provide switches where not furnished w/ starting equipment, at all other points

required by NFPA 70, & where indicated on drawings. D. Provide printed label for each disconnect as to load served.

12. <u>LUMINAIRES</u>, <u>LAMPS & BALLASTS</u>

A.Refer to lighting fixture schedule plans for fixture types. B. Equivalent luminaires by Hubbell, Infinity, Lithonia, Williams, Eaton [Cooper]. C.Fluorescent Fixtures:

1) Lamps shall be type recommended by fixture manuf. Lamp none above manuf recommended max wattage. Color temperature shall be coordinated throughout project, with generally 4100k interior lamps and min 85 CRI. Equivalent lamps by G.E., Venture, Phillips Or Sylvania 2) Ballasts - Fluorescent - electronic, <20%THD, Equivalent by Advance, G.E., Motorola, Or Magnetek. D.LED Fixtures:

1) Lamps & modules: Philips, General Electric, Osram/Sylvania, Cree, Nichia.

2) LED components, lamps, drivers, and fixtures shall comply with: PCC 47

C82.77, IESNA Standards TM-16-05, RP-16, LM-79, LM-80 and TM-21.

CFR Part 15; UL 8750; ANSI/NEMA Standards C78.377, NEMA SSL-1,

3) Drivers shall be integral to the fixture unless otherwise shown or specified. Coordinate dimming drivers with any dimming DLM or other systems. E. Emergency ballasts/drivers/batteries/inverters - shall be Bodine, lota. Coordinate voltages and outputs for min. 90 minute operation with fixtures scheduled and

controls indicated and provided. F. Execution

1) Provide lighting fixtures w/ lamps & accessories reg'd for hanging. Coord mounting of lighting fixtures w/ architect & G/C. Additional fixture supports shall be provided by E/C. Supports shall comply w/ latest edition of NEC. Provide lighting fixture securing clips as required. Consult arch plans for ceiling types & provide surface & recessed lighting fixtures w/ appropriate

mounting components & accessories. 2) Fixtures mounted in fire rated ceilings shall be provided & installed w/ fire rated enclosures to maintain ceiling integrity.

A. Adjust, align, & test all electrical equipment on this project provided under this

division & all electrical equipment furnished by others for installation or wiring

3) Poles & support components: comply w/ AASHTO LTS-4. Provide steel poles in color as specified or selected by architect. Provide bolt covers. Provide concrete base for pole & ground rod. 13. ADJUSTING. ALIGNING & TESTING

under this division for proper operation. Test all systems & equipment according to requirements in NETA ATS (latest edition) & all additional requirements B. In following sections. Maintain following on project premises at all times: true RMS reading voltmeter, true RMS reading ammeter, & megohmmeter insulation

resistance tester. Provide test data readings as requested or as required by 14. SYSTEM START UP

A. Prior to starting up electrical systems: 1) Check all components & devices. 2) Lubricate items accordingly.

3) Tighten screws & bolts for connectors & terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486a & UL 486b. 4) Check & record building's service entrance voltage, grounding conditions, grounding resistance, & proper phasing.

B. Replace all burned-out lamps & lamps used for temporary construction lighting in permanent light fixtures.

C. After all systems have been inspected & adjusted, confirm all operating features required by drawings & specifications & make final adjustments as necessary.

Dalyn Novak - Architect

MO # 2011006178

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ISSUE DATE

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PE-2017029408

#2003011262 Structural Engineer: Bob D. Campbell & Co. Missouri Certificate of Authority #000442 4338 Belleview Ave. Kansas City, MO 6411 816.531.4144 MEP Engineer: PKMR Engineers Missouri Certificate of Authority #E-2002020886 13300 W. 98th Street Lenexa, KS 66215

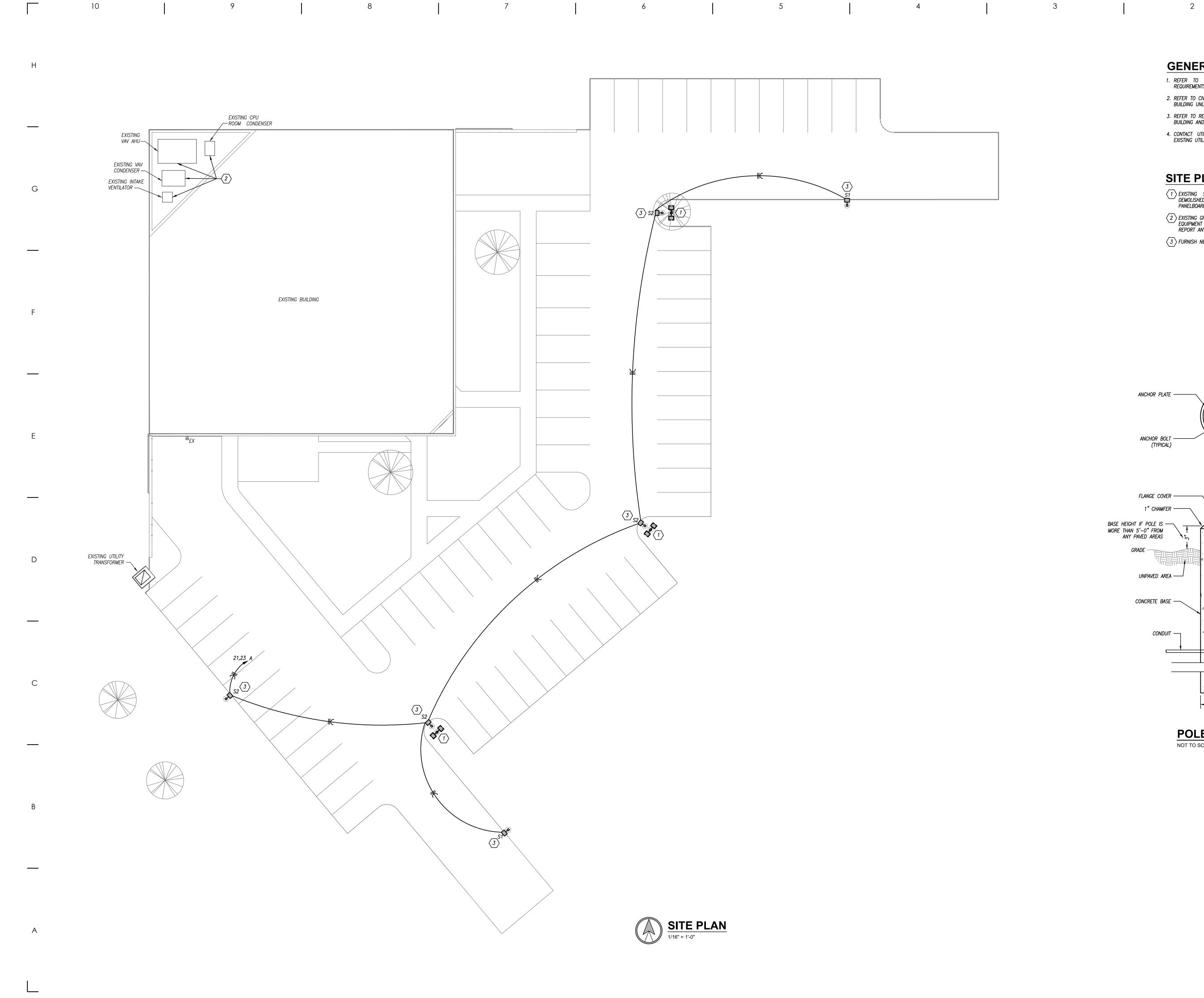
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SPECIFICATIONS



GENERAL SITE PLAN NOTES

- REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.
- 2. REFER TO CIVIL PLANS FOR CONTINUATION OF SERVICES BEYOND 5'-0" FROM BUILDING UNLESS OTHERWISE SHOWN.
- 3. REFER TO RESPECTIVE FLOOR PLANS FOR CONTINUATION OF SERVICES INSIDE BUILDING AND/OR EXACT LOCATIONS OF EQUIPMENT.
- 4. CONTACT UTILITY LOCATING SERVICE TO LOCATE EXACT LOCATION OF ALL EXISTING UTILITIES BELOW GRADE.

SITE PLAN KEYED NOTES

- 1) EXISTING SITE POLE FIXTURES AND CONCRETE BASES TO BE DEMOLISHED. REMOVE ALL EXISTING CONDUIT AND WIRING BACK TO PANELBOARD.
- 2 EXISTING GROUND MOUNTED HVAC EQUIPMENT TO REMAIN. ENSURE EQUIPMENT IS FULLY FUNCTIONAL. PROVIDE SERVICE CHECK AND REPORT ANY ISSUES OR DEFICIENCIES TO OWNER FOR REPAIR.
- 3 FURNISH NEW EXTERIOR FIXTURES WITH INTEGRAL PHOTOCELL CONTROL.



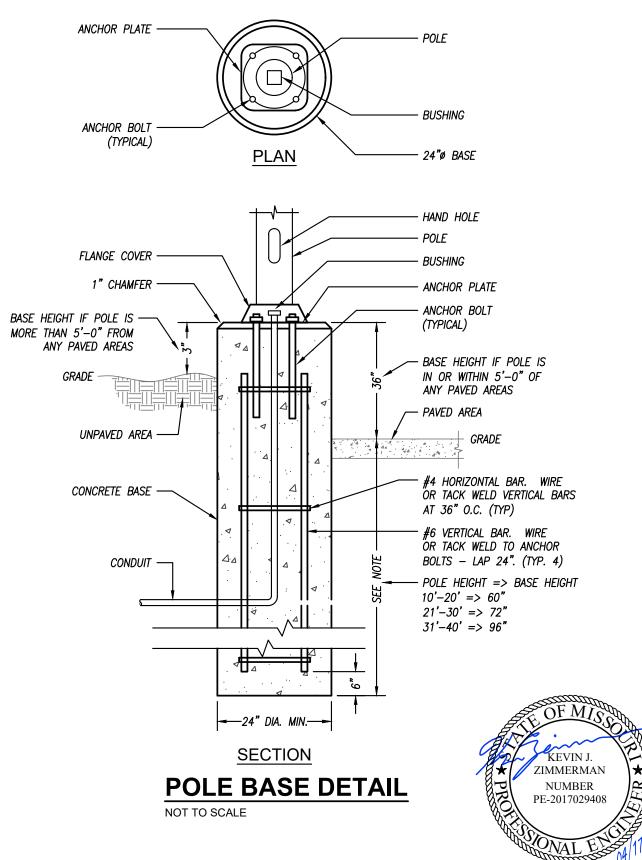
Missouri Certificate of Authority #2003011262

Structural Engineer:
Bob D. Campbell & Co.
Missouri Certificate of Authority
#000442
4338 Belleview Ave.
Kansas City, MO 64111

816.531.4144

MEP Engineer:
PKMR Engineers
Missouri Certificate of Authority
#E-2002020886
13300 W. 98th Street
Lenexa, KS 66215
913.492.2400

JOB NUMBER 23011



FICE RENOVATION

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SITE PLAN

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REFER TO GENERAL DEMOLITION NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.

GENERAL DEMOLITION NOTES

3

4

DEMOLITION PLAN KEYED NOTES

- SUPPLY AND RETURN MAIN DUCTS UP TO EXISTING GROUND MOUNTED VAV AIR HANDLER ABOVE. EXISTING VAV AIR HANDLER AND ASSOCIATED CONDENSER SHALL REMAIN TO BE REUSED. VERIFY EQUIPMENT IS FULLY FUNCTIONAL.
- 2 EXISTING FAN COIL UNIT ABOVE STORAGE ROOM AND ASSOCIATED CONDENSER LOCATED ON GRADE ABOVE SHALL REMAIN TO BE REUSED. VERIFY EQUIPMENT IS FULLY FUNCTIONAL.
- REMOVE EXISTING DUCT BOARD AND DIFFUSERS CONNECTED TO EXISTING FAN COIL UNIT. REPLACE WITH NEW METAL DUCT AND NEW DIFFUSERS. REFER TO NEW WORK PLAN.
- 4 EXISTING AIR HANDLERS USED FOR PERIMETER HEATING SHALL REMAIN TO BE REUSED. VERIFY AIR HANDLERS ARE FULLY FUNCTIONAL.
- 5 EXISTING METAL DUCT MAINS SHALL REMAIN TO BE REUSED EXCEPT WHERE SHOWN OTHERWISE. INSPECT DUCTWORK TO VERIFY THAT DUCT HAS LINER INSIDE AND THAT LINER IS FULLY INTACT AND IS NOT OBSTRUCTING AIRFLOW.
- 6 REMOVE ALL EXISTING DUCT BOARD AND DIFFUSERS DOWNSTREAM OF EXISTING VAV BOXES.
- 7 REMOVE ALL DUCT BOARD AND DIFFUSERS CONNECTED TO PERIMETER HEATING AIR HANDLING UNITS. REPLACE WITH NEW METAL DUCT AND NEW DIFFUSERS. REFER TO NEW WORK PLAN.
- $\langle 8
 angle$ remove existing inline exhaust fan and associated ductwork.
- 9 REMOVE EXISTING CABINET EXHAUST FAN AND ASSOCIATED DUCTWORK.
- (10) EXISTING VAV BOXES TO REMAIN TO BE REUSED EXCEPT WHERE NOTED OTHERWISE. ASSOCIATED PNEUMATIC THERMOSTATS SHALL BE LEFT IN PLACE EXCEPT WHEN LOCATED ON A DEMOLISHED WALL, IN WHICH CASE THE THERMOSTAT SHOULD BE REMOVED AND REINSTALLED IN NEW LOCATION AS SHOWN ON NEW WORK PLANS. VERIFY EXISTING VAV BOXES AND THERMOSTATS ARE FULLY FUNCTIONAL.
- SALVAGE EXISTING VAV BOX AND ASSOCIATED PNEUMATIC THERMOSTAT TO BE RELOCATED AS SHOWN ON NEW WORK PLAN. VERIFY EXISTING VAV BOX AND THERMOSTAT ARE FULLY FUNCTIONAL.
- THERMOVE AND SALVAGE EXISTING VAV BOX AND ASSOCIATED PNEUMATIC THERMOSTAT. RELINQUISH TO OWNER FOR FUTURE REUSE OR PARTS REPLACEMENT.
- (13) EXISTING ELECTRIC HEATER TO REMAIN.
- $\overline{\langle 14 \rangle}$ REMOVE EXISTING ELECTRIC HEATER.
- (15) EXISTING AIR COMPRESSOR FOR PNEUMATIC CONTROL SYSTEM SHALL REMAIN. VERIFY AIR COMPRESSOR AND PNEUMATIC CONTROL SYSTEM ARE FULLY FUNCTIONAL.
- (16) REMOVE EXISTING EXHAUST GRILLES MOUNTED IN OVERHANG.



Missouri Certificate of Authority #2003011262

Structural Engineer:
Bob D. Campbell & Co.
Missouri Certificate of Authority
#000442
4338 Belleview Ave.
Kansas City, MO 64111

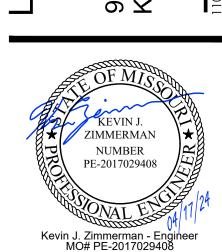
816.531.4144

MEP Engineer:
PKMR Engineers
Missouri Certificate of Authority
#E-2002020886
13300 W. 98th Street
Lenexa, KS 66215
913.492.2400

JOB NUMBER 23011

OAD 38

00 OLD SANTE FE ROA NSAS CITY, MO 64138



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FLOOR PLAN
-MECHANICAL
DEMOLITION

FLOOR PLAN - MECHANICAL DEMOLITION

1/8" = 1'-0"

6 5



6 5

4

GENERAL HVAC NOTES

- 1. REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.
- 2. ROUND BRANCH DUCT RUNOUTS AND FLEXIBLE DUCT SHALL BE THE SAME SIZE AS THE DIFFUSER NECK UNLESS NOTED OTHERWISE.
- 3. MAXIMUM FLEXIBLE DUCT LENGTH SHALL BE 5'-0".
- 4. ALL RUNOUTS TO TERMINAL BOXES SHALL BE ONE SIZE LARGER THAN BOX INLETS UNLESS NOTED OTHERWISE.
- 5. ALL AIR DISTRIBUTION DEVICES SHALL HAVE LOCKABLE VOLUME CONTROL DEVICES.
- 6. ALL 90 DEGREE TURNING ELBOWS SHALL BE SMOOTH ROUND OR SQUARE WITH TURNING VANES.
- 7. DUCT SIZES SHOWN ON PLANS ARE INSIDE FREE AREA.
- 8. PROVIDE ACCESS DOORS IN DUCTS AHEAD OF ALL AUTOMATIC, FIRE, AND SMOKE DAMPERS.
- 9. FOR BALANCING THE OUTSIDE AIRFLOW QUANTITIES, REFER TO HVAC SCHEDULES.

HVAC PLAN KEYED NOTES

1 DUCT ROUTED IN SOFFIT.

2 EXISTING PERIMETER HEAT AIR HANDLER. CONNECT NEW DUCTWORK TO UNIT AND VERIFY IT IS FULLY FUNCTIONAL.

3 EXISTING SPLIT AIR HANDLER ABOVE STORAGE ROOM. CONNECT NEW DUCTWORK TO UNIT AND VERIFY IT IS FULLY FUNCTIONAL.

WSK F

Missouri Certificate of Authority #2003011262

Structural Engineer:
Bob D. Campbell & Co.
Missouri Certificate of Authority
#000442
4338 Belleview Ave.

Kansas City, MO 64111

Lenexa, KS 66215

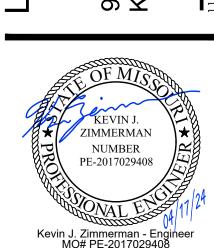
913.492.2400

MEP Engineer:
PKMR Engineers
Missouri Certificate of Authority
#E-2002020886
13300 W. 98th Street

JOB NUMBER 23011

E FE ROAD 10 64138

9000 OLD SANTE FE ROAD KANSAS CITY, MO 64138



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FLOOR PLAN -HVAC

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13300 W 98TH STREET LENEXA, KS 66215
913.492.2400 WWW.PKMRENG.COM
MO State Certificate of Authority #E-2002020886

9 8

VAV-16 VAV-17 200 VAV-18 100 VAV-22 VAV-24 VAV-25 VAV-26 VAV-28 VAV-29 VAV-31 *VAV-33* VAV-34 *VAV-35* VAV-36 500 *300* VAV-40 VAV-44 VAV-45

7

EXISTING VAV BOX SCHEDULE

500

200

REMARKS

1,3

1,2

1,2

1,3

1,2 1,2

1,2

1,3

1,3

1,3

1.3

1,2

1,2

1,2

BOX SIZE

PLAN MARK

VAV-4

VAV-6

VAV-7

VAV-8

VAV-9

VAV-13

VAV-15

- 1. ADJUST AIRFLOW TO MATCH QUANTITY LISTED.
- 2. EXISTING VAV BOX TO REMAIN IN PLACE.
- 3. EXISTING VAV BOX TO BE RELOCATED. INSTALL FLEXIBLE DUCT CONNECTOR AT INLET IN NEW LOCATION. RECONNECT TO EXISTING PNEUMATIC CONTROL SYSTEM AFTER

4. EXISTING VAV BOX TO BE REMOVED. SAVE FOR OWNER TO USE FOR REPLACEMENT

GRILLE, REGISTER & DIFFUSER SCHEDU

PLAN MARK	MANUFACTURER	MODEL NUMBER	MATERIAL	STYLE	DESCRIPTION	MOUNT TYPE	FACE SIZE (IN)	NECK SIZE (IN)	VOLUME DAMPER	(IN. WG.)	MAX NC	FINISH COLOR	NOTES
SUPPL	Y				-								
S1	TITUS	OMNI	STEEL	CEILING DIFFUSER	SQUARE PLAQUE FACE	LAY – IN	24x24	AS INDICATED	NO	0.08	25	WHITE	-
S6	TITUS	OMNI	STEEL	CEILING DIFFUSER	SQUARE PLAQUE FACE	HARD CEILING	20x20	AS INDICATED	NO	0.08	25	WHITE	-
S3	TITUS	300RS	STEEL	SIDEWALL DIFFUSER	DOUBLE DEFLECTION 3/4" SPACING AEROBLADE	FLANGE	DUCT + FRAME	AS INDICATED	YES - O.B.	0.07	30	WHITE	3
S 4	TITUS	300RS	STEEL	SIDEWALL DIFFUSER	DOUBLE DEFLECTION 3/4" SPACING AEROBLADE	DUCT	DUCT + FRAME	AS INDICATED	YES - 0.B.	0.07	30	PAINTABLE	4
S5	TITUS	TBDI-30	STEEL	CEILING SLOT	INSULATED ADJUSTABLE 2-SLOT DIFFUSER	GRID	(2) 3/4" SLOT	PLENUM W/ 8" INLET	NO	0.15	30	WHITE	1,2
RETUR	N												
R1	TITUS	50F	ALUMINIUM	CEILING GRILLE	EGGCRATE RETURN GRILLE	LAY – IN	DUCT + FRAME	AS INDICATED	NO	0.08	25	WHITE	
EXHAU	ST												
E1	TITUS	350RL	STEEL	SQUARE CEILING	35 DEG SINGLE DEFLECTION AEROBLADE 3/4" SPACING	HARD CEILING	AS INDICATED	AS INDICATED	NO	0.08	25	WHITE	3
E2	TITUS	350FL	ALUMINIUM	SQUARE CEILING	35 DEG SINGLE DEFLECTION AEROBLADE 3/4" SPACING	HARD CEILING	AS INDICATED	AS INDICATED	NO	0.08	25	WHITE	3

GENERAL REMARKS:

1. PROVIDE ALL GRD WITH ALL NECESSARY MOUNTING HARDWARE.

5 4

- 2. PROVIDE GRD WITHOUT SCREWHOLES WHEN INSTALLED IN LAY-IN CEILINGS
- 3. VERIFY CEILING CONFIGURATION, COLOR AND SPECIFICS WITH ARCHITECTURAL CEILING PLANS.

- 1. PROVIDE WITH INSULATED PLENUM 2. LENGTH AS INDICATED ON PLANS.
- 3. PROVIDE ROUND NECK ADAPTER WHERE SHOWN WITH ROUND CONNECTION.
- 4. COORDINATE FINISH WITH ARCHITECT. PROVIDE GALVANIZED OR MILL FINISH WHERE DUCTWORK IS NOT TO BE PAINTED. PROVIDE PRIMED PAINTABLE FINISH WHEN DUCTWORK IS TO BE PAINTED.

EXHAUST FAN SCHEDULE

PLAN MARK	MANUFACTURER	MODEL	TYPE	SERVICE				FAN DATA				ELECTRICAL	CONTROL	REMARKS
MARK	WANDI ACTORER	NUMBER	IIFL	SLITTICE	CFM	E.S.P. (IN)	BHP	HP	DRIVE	SONES	RPM	LLLCTRICAL	CONTROL	INLIVIATING
EF-1	COOK	100 SQN-D	INLINE EXHAUST FAN	PUBLIC BATHROOMS	600	0.500	0.129	1/6	DIRECT	7	1,587	120V / 1PH	TIMECLOCK	1,2
EF-2	COOK	GC-146	CEILING CABINET	PRIVATE BATHROOM	90	0.250		36W	DIRECT	1.3	900	120V / 1PH	SWITCH	3
EF-3	COOK	GC-186	CEILING CABINET	IT ROOM	216	0.250		92W	DIRECT	5.5	1,100	120V / 1PH	THERMOSTAT	4

- 1. PROVID WITH SOLID STATE SPEED CONTROL MOUNTED AT FAN.
- 2. PROVIDE WITH TIMECLOCK. SET FAN TO RUN DURING BUILDING OCCUPIED HOURS. 3. FAN SHALL TURN ON WITH BATHROOM LIGHTS.
- 4. FAN SHALL BE CONTROLLED BY WALL MOUNTED THERMOSTAT.

DUATMADIA		
DUCTWORK		SCHEINI
	11400L	JUILDUL

	DUC	CT	INSULATION					
PURPOSE	DUTY	LOCATION	STYLE	MATERIAL	APPLICATION	THICKNESS	NOTES	
	MEDIUM PRESSURE/VELOCITY	CONCEALED	RECTANGULAR	FIBERGLASS	LINED	1"		
	MEDIOM FRESSORE/ VELOCITI	EXPOSED	ROUND	PRE-FORMED FIBERGLASS W/ASJ-PT	WRAPPED	2"	3	
SUPPLY	SUPPLY LOW PRESSURE/VELOCITY	CONCEALED	RECTANGULAR	FIBERGLASS	LINED	1/2"		
		CONCEALED	ROUND	MINERAL FIBER	WRAPPED	1-1/2"		
		EXPOSED	ROUND	FIBERGLASS	LINED	1"	3	
RETURN	LOW PRESSURE/VELOCITY	CONCEALED	RECTANGULAR	FIBERGLASS	LINED	1/2"		
KETOKN	EOW FRESSORE/ VEECCHT	CONCEALED	ROUND	MINERAL FIBER	WRAPPED	1-1/2"		
EXHAUST	LOW PRESSURE/VELOCITY	CONCEALED	RECTANGULAR	FIBERGLASS	LINED	1/2"		
ENTAUSI	LOW FINESSORE/ VELOCITY	CONCEALED	ROUND	MINERAL FIBER	WRAPPED	1-1/2"		

- 1. PROVIDE LINER ONLY WITHIN 10' OF FAN FOR ACCOUSTICS.
- 2. THICKNESS SHALL ENCAPSULATE DUCT CONSTRUCTION.
- 3. CONTRACTOR OPTION TO USE ROUND DUCT LINER OR PROVIDE PERFORATED LINER DOUBLE WALL DUCT (SOLID LINER FOR OUTSIDE AIR DUCTS).
- 4. IN ADDITION TO OTHER SCHEDULED INSULATION.
- 5. INSTALL FROM UNIT DISCHARGE TO FIRST DUCT ELBOW, THEN 10' FURTHER. NOT REQUIRED INSIDE CHASES OR MECHANICAL ROOMS, BUT SHALL BE INSTALLED ON REMAINING DUCTWORK WHEN 10' DIMENSION FALLS OUTSIDE ROOM.
- 6. PROVIDE ALUMINUM JACKETING OVER EXTERIOR DUCTWORK INSULATION.

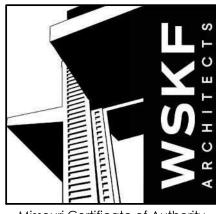
GENERAL REMARKS (APPLICABLE TO ALL TYPES):

- 1) ALL DUCTWORK, INSULATION AND MATERIALS IN PLENUMS MUST MEET ASTM E84 FLAME/SMOKE RATING OF 25/50.
- 2) ALL INSULATION THICKNESSES SHALL MEET ASHRAE 90.1 2016 REQUIREMENTS AT A MINIMUM.

3) REFER TO SPECIFICATIONS FOR MORE DETAILED INFORMATION FOR INSULATION PRODUCTS AND SYSTEMS.

	ELECTRIC HEATER SCHEDULE												
I '- ' I MANUFACIURER I '''	DDEL TYPE	CFM	KW	VOLTAGE	REMARKS								
EH-1 MARLEY EFF	F4004 CEILING HEATER	150	3.0	208V / 1PH	1								
EH-2 MARLEY EFF	F4004 CEILING HEATER	150	3.0	208V / 1PH	1								

<u>REMARKS:</u> 1. PROVIDE WITH INTEGRAL THERMOSTAT AND DISCONNECT.



Missouri Certificate of Authority #2003011262

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Structural Engineer:

816.531.4144

MEP Engineer: PKMR Engineers Missouri Certificate of Authority #E-2002020886 13300 W. 98th Street Lenexa, KS 66215 913.492.2400

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Dalyn Novak - Architect MO # 2011006178

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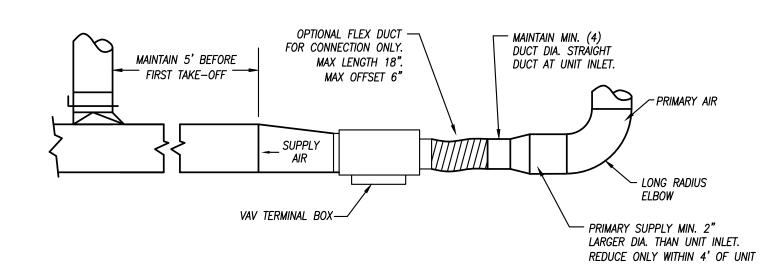
MECHANICAL SCHEDULES

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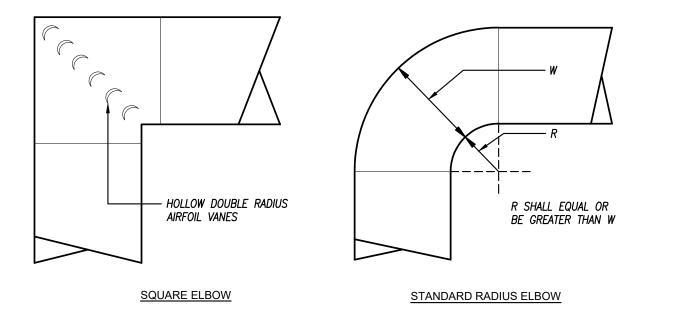
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LINEAR SLOT SUPPLY AIR DIFFUSER DETAIL
NOT TO SCALE



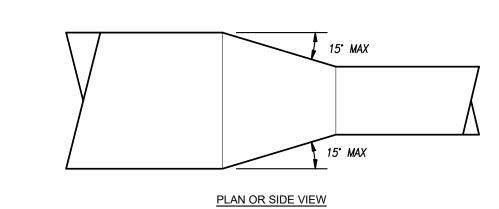
VAV TERMINAL BOX DETAIL

NOT TO SCALE



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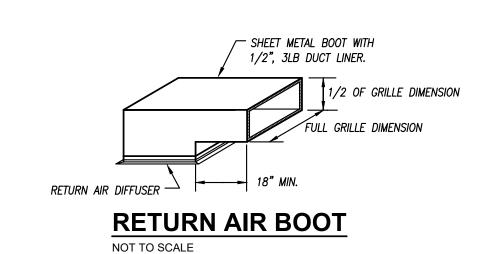
SQUARE ELBOW NOTES:
1. FOR DUCT WIDTH LESS THAN 18" USE MINIMUM 26 GA VANES AT 2-1/8"
O.C. FOR DUCT 18" AND WIDER, USE MINIMUM 24 GA VANES AT 3-1/4" O.C.

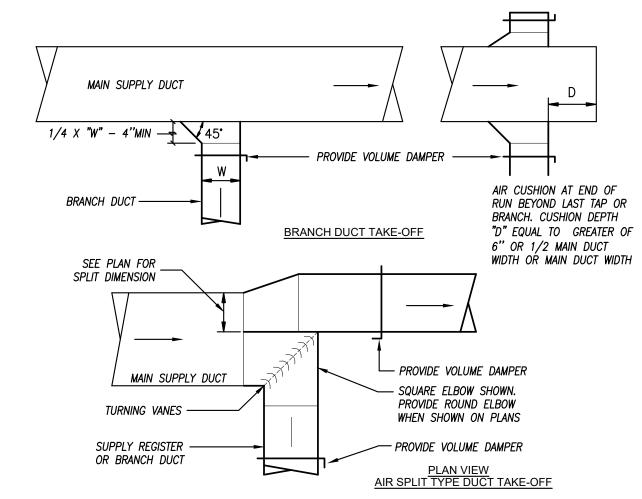
RADIUS ELBOW NOTES:

1. THE INTERIOR SURFACE OF ALL RADIUM ELBOWS SHALL BE MADE ROUND

2. RADIUS ELBOWS SHOWN ON PLANS MAY BE MADE SHORT RADIUS ELBOWS
ONLY WHERE SPACE DOES NOT ALL FOR STANDARD. ALL SHORT SHORT RADIUS
ELBOWS SHALL HAVE VANES. VANES SHALL CONSTRUCTED, SUPPORTED AND
FASTENED AS RECOMMENDED BY SMACNA

TYPICAL DUCT ELBOWS AND TRANSITION NOT TO SCALE

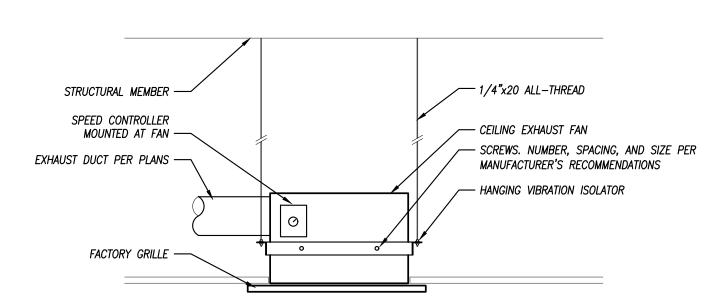




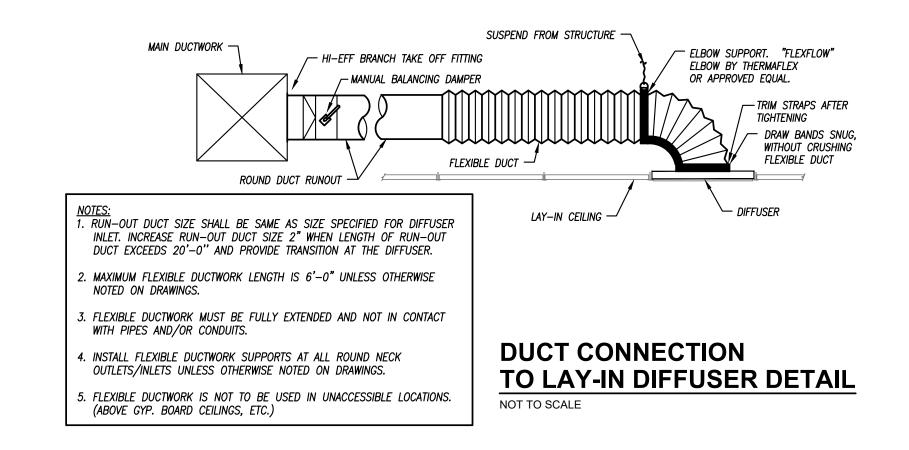
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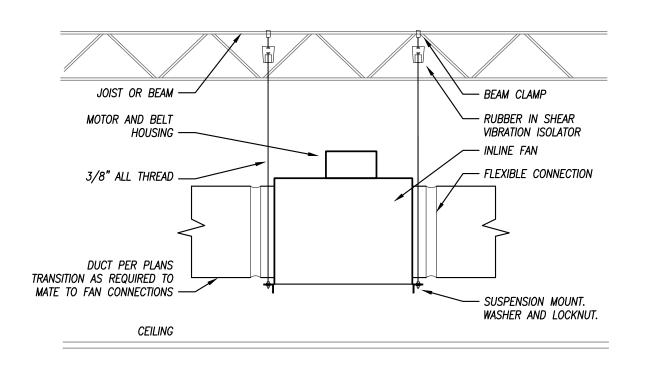
DUCTWORK TAKEOFFS

NOT TO SCALE



CABINET EXHAUST FAN MOUNTING DETAIL





INLINE FAN MOUNTING DETAIL
NOT TO SCALE

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Bob D. Campbell & Co.

4338 Belleview Ave.

Kansas City, MO 64111

#000442

816.531.4144

MEP Engineer:

PKMR Engineers

#E-2002020886 13300 W. 98th Street

Lenexa, KS 66215 913.492.2400

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Missouri Certificate of Authority

JOB NUMBER 23011

E ROA 64138

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NUMBER PE-2017029408

Dalyn Novak - Architect MO # 2011006178

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ISSUE DATE

No Description



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GENERAL DEMOLITION NOTES

REFER TO GENERAL DEMOLITION NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.

DEMOLITION PLAN KEYED NOTES

- 1 REMOVE PIPING AS SHOWN. REFER TO NEW WORK PLAN FOR NEW PIPE ROUTING AND SIZES.
- 2 REMOVE EXISTING PLUMING FIXTURE. REMOVE ASSOCIATED DOMESTIC WATER AND VENT PIPING BACK TO MAINS AND CAP. REMOVE ASSOCIATED SANITARY PIPE TO BELOW GRADE AND CAP.
- 3 SAW CUT FLOOR TO REMOVE EXISTING 2" SANITARY PIPE AS SHOWN TO BE REPLACED WITH 4" SANITARY PIPE. REFER TO NEW WORK PLANS.
- $\langle 4 \rangle$ Existing domestic cold water line to yard hydrant.
- 5 SAW CUT FLOOR TO INSTALL NEW SANITARY PIPING BELOW SLAB.

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816.531.4144

MEP Engineer: PKMR Engineers Missouri Certificate of Authority #E-2002020886 13300 W. 98th Street Lenexa, KS 66215 913.492.2400

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FLOOR PLAN - PLUMBING **DEMOLITION**

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FLOOR PLAN - PLUMBING DEMOLITION

1/8" = 1'-0"

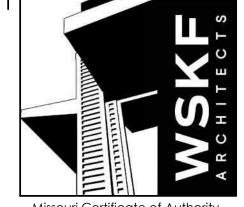


GENERAL PLUMBING NOTES

- REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.
- 2. SAW CUT FLOOR FOR THE INSTALLATION OF NEW SANITARY PIPING. REFER TO PLUMBING PLANS SHOWING NEW WORK.
- 3. REFER TO PLUMBING FIXTURE / DRAIN SCHEDULES FOR PIPING SIZES FOR INDIVIDUAL CONNECTIONS TO FIXTURES AND RISERS NOT SHOWN ON PLANS.
- 4. NO SANITARY OR VENT PIPING BELOW GRADE SHALL BE LESS THAN 2".
- 5. NO DOMESTIC WATER PIPING SHALL BE SMALLER THAN 3/4" UNLESS NOTED OTHERWISE.
- 6. ALL VENT PIPING SHOWN IS DIAGRAMMATIC. USE APPROPRIATE FITTINGS FOR VENT PIPING BELOW FLOOD RIM OF FIXTURE.
- 7. NOT ALL INTERIOR CLEANOUTS ARE SHOWN FOR DRAWING CLARITY.
 CONTRACTOR SHALL INSTALL ALL CODE—REQUIRED CLEANOUTS (RE: GENERAL
 NOTES ON COVER SHEET). COORDINATE EXACT LOCATIONS OF CLEANOUTS
- 8. ALL FLOOR DRAIN TRAPS SHALL BE PROTECTED BY TRAP SEALS LISTED FOR PROPOSED USE.

PLUMBING PLAN KEYED NOTES

- 1) ROUTE DOMESTIC HOT WATER PIPE DOWN IN WALL TO WITHIN 6" OF LAVATORY DOMESTIC HOT WATER CONNECTIONS, THEN BACK UP.
- 2 DOMESTIC COLD WATER PIPE DOWN TO SERVE FUTURE COFFEE MAKER. VERIFY LOCATION WITH ARCHITECT.
- 3) 2" DOMESTIC COLD WATER PIPE DOWN TO SERVE WATER CLOSETS.
- 4) 3/4" DOMESTIC COLD WATER, 2" SANITARY, AND 2" VENT PIPE SERVING SINK AND WATER COOLER. 1/2" DHW PIPE SERVING SINK. 5) 1-1/2" DOMESTIC COLD WATER PIPE DOWN TO SERVE WATER CLOSET AND LAVATORY.



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816.531.4144

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FLOOR PLAN -PLUMBING

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PIPING					FIELD TEST	ALLOWABLE IN	INSULA	ATION
SYSTEM	SIZE	TYPE/SCHED	MATERIAL	ACCEPTABLE FITTINGS	PRESSURE/TIME	PLENUMS	TYPE	THICKNESS
DOMESTIC COLD WATER	1/2"-2-1/2"	L	COPPER	SOLDER, PRO-PRESS	130 PSI - 1/2HR	YES	FIBERGLASS W/ ASJ	1/2"
DOMESTIC HOT WATER & HW RETURN	1/2"-1-1/4"	_	COPPER	SOLDER, PRO-PRESS	130 PSI - 1/2HR	YES	FIBERGLASS W/ ASJ	1"
DOMESTIC HOT WATER & HW RETURN	-1/2"-2-1/2	_	COPPER	SOLDER, PRO-PRESS	130 PSI - 1/2HR	YES	FIBERGLASS W/ ASJ	1-1/2"
DOM. HOT & COLD BELOW GRADE	1/2"-1-1/4"	K	COPPER	CONTINUOUS TUBING, BRAZED	130 PSI - 1/2HR	YES	ELASTOMERIC	1" (HOT ONLY)
SOIL & WASTE ABOVE GRADE	1-1/2"-6"	NO HUB / SERVICE WT.	CAST IRON	NO HUB	10 FT - 1/2HR	YES		
SOIL & WASTE ABOVE GRADE	2"-8"	SCH. 40	PVC	SOLVENT JOINED	10 FT - 1/2HR	NO		
SOIL & WASTE BELOW GRADE	2"-8"	SCH. 40	PVC	SOLVENT JOINED	10 FT - 1/2HR	NO		
DRINKING FOUNT. DRAIN	ALL					YES	ELASTOMERIC	1/2"

- 1. ALL PIPING AND MATERIALS IN PLENUMS MUST MEET ASTM E84 FLAME/SMOKE RATING OF 25/50.
- 2. ALL INSULATION THICKNESSES SHALL MEET ADOPTED IECC AND ASHRAE 90.1 2016 REQUIREMENTS AT A MINIMUM.
- 3. REFER TO SPECIFICATIONS FOR MORE DETAILED INFORMATION.
- 4. WELDED PIPING IS REQUIRED FOR GAS PIPING WHEN: A) PIPING IS AT OR OVER 2PSI; B) WHEN PIPING OF ANY PRESSURE IS ROUTED THROUGH CONCEALED SPACES.
 5. BELOW GRADE SANITARY EXTERIOR TO THE BUILDING IN JCWW DISTRICT SHALL MEET JCWW STANDARDS FOR MATERIALS, INSTALLATIONS AND JOINING/COUPLING. COORD INSPECTION WITH JCWW PRIOR TO COVERING.

PLU	JMBING FIX	TURE SCHEDULE	

				FITTINGS AND TRIM		PLUM	IBING FIXT	URE PIPE S	SIZES
MARK	FIXTURE MODEL	FIXTURE DESCRIPTION	FITTINGS MODEL	FITTINGS AND DESCRIPTION	REMARKS	WASTE	VENT	DCW	DHW
L-1	AMERICAN STANDARD 0475.028 "AQUALYN"	ADA—COMPLIANT, COUNTER TOP—MOUNTED LAVATORY. 16" OVAL, WHITE VITREOUS CHINA, SELF—RIMMING BASIN WITH FAUCET HOLES ON 4" CENTERS. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT.	TOTO TEL105	AUTOMATIC FAUCET, HANDS FREE OPERATION. 0.5 GPM ECOPOWER SELF GENERATING POWER SYSTEM. PROVIDE WITH COVER PLATE FOR SEAMLESS INSTALATION. PROVIDE THERMOSTATIC MIXER INSTALLED BELOW SINK.	1,2,7	2"	2"	1/2"	1/2"
L-2	AMERICAN STANDARD 0355.012	WALL—HUNG LAVATORY. 20"x18" WHITE VITREOUS CHINA BOWL WITH 4" BACK FOR USE WITH CONCEALED ARM HANGER. FAUCET HOLES COORDINATED WITH FAUCET AND TRIM. PROVIDE CONCEALED ARM CARRIER.	TOTO TEL105	AUTOMATIC FAUCET, HANDS FREE OPERATION. 0.5 GPM ECOPOWER SELF GENERATING POWER SYSTEM. PROVIDE WITH COVER PLATE FOR SEAMLESS INSTALATION. PROVIDE THERMOSTATIC MIXER INSTALLED BELOW SINK.	1,2,3,4,5	2"	1-1/2"	1/2"	1/2"
S-1	ELKAY LRAD221965	22"x19-1/2x6-1/2"" SINGLE COMPARTMENT STAINLESS STEEL SINK. SELF-RIMMING WITH 1-3/4 IN. RADIUS COVED CORNERS. SEAMLESS #18 GAUGE, TYPE 304 STAINLESS STEEL WITH SATIN FINISH. FULLY UNDERCOATED. FAUCET HOLES COORDINATED WITH FAUCET AND TRIM. MINIMUM 27" CABINET SIZE REQUIRED	CHICAGO 895—317E35ABCP	DECK-MOUNTED FAUCET WITH 3-1/2" RIGID/SWINGING GOOSENECK FAUCET, 4" METAL LEVER HANDLES, 1.5 GPM AERATOR OUTLET AND QUATURN OPERATING CARTRIDGE. POLISHED CHROME FINISH. PROVIDE BASKET STRAINER.	2,3,5,8	2"	2"	1/2"	1/2"
EWC-1	HALSEY—TAYLOR HTHB—HAC8BLSS—WF	ADA—COMPLIANT, DUAL—HEIGHT, BARRIER—FREE, ELECTRIC WATER COOLER. PROVIDES 8.0 GPM OF 50°F WATER AT 90°F AMBIENT. ADA—COMPLIANT FRONT AND SIDE PUSHBARS. LEAD FREE. INTEGRAL FILTER. MOUNT WITH MIN. 27" KNEE CLEARANCE AND SPOUT AT NO MORE THAN 36" A.F.F.	HALSEY—TAYLOR HTHB—HACDBLWF	BOTTLE FILLER SHALL INCLUDE ELECTRONIC SENSOR FOR NO—TOUCH ACTIVATION WITH AUTOMATIC 20—SECOND SHUT—OFF. SHALL PROVIDE 1.1 GPM LAMINAR FLOW. ANTI—MICROBIAL PROTECTED PLASTIC COMPONENTS.	4	2"	2"	1/2"	
WC-1	AMERICAN STANDARD MADERA 3043.001 CHURCH 9500C	ADA—COMPLIANT, 1.28 GALLON, FLOOR—MOUNTED FLUSH VALVE WATER CLOSET. TOP SPUD AND FLAT BOLT COVERS. WHITE VITREOUS CHINA ELONGATED BOWL. 16—1/2" HIGH. WHITE, SOLID PLASTIC, OPEN—FRONT SEAT FOR ELONGATED BOWL. INTEGRAL BUMPERS. EXTERNALCHECK HINGES WITH STAINLESS STEEL POSTS.	TOTO TET1LN32	EXPOSED WATER CLOSET FLUSH VALVE. CHROME—PLATED, HANDS FREE OPERATION. ECOPOWER SELF GENERATING POWER SYSTEM. 1" I.P.S. SCREWDRIVER BACK—CHECK ANGLE STOP WITH PROTECTIVE CAP. ADJUSTABLE TAILPIECE. 1.28 GPF, VACUUM BREAKER FLUSH CONNECTION AND SPUD COUPLING FOR 1—1/2" TOP SPUD. PROVIDE WALL AND SPUD FLANGES. COORDINATE ROUGH IN HEIGHT WITH MANUFACTURER'S RECOMMENDATION.	6	4"	2"	1-1/4"	
WC-2	AMERICAN STANDARD MADERA 2234.001 CHURCH 9500C	1.28 GALLON, FLOOR—MOUNTED FLUSH VALVE WATER CLOSET. TOP SPUD AND FLAT BOLT COVERS. WHITE VITREOUS CHINA ELONGATED BOWL. 15" HIGH. WHITE, SOLID PLASTIC, OPEN—FRONT SEAT FOR ELONGATED BOWL. INTEGRAL BUMPERS. EXTERNALCHECK HINGES WITH STAINLESS STEEL POSTS.	TOTO TET1LN32	EXPOSED WATER CLOSET FLUSH VALVE. CHROME—PLATED, HANDS FREE OPERATION. ECOPOWER SELF GENERATING POWER SYSTEM. 1" I.P.S. SCREWDRIVER BACK—CHECK ANGLE STOP WITH PROTECTIVE CAP. ADJUSTABLE TAILPIECE. 1.28 GPF, VACUUM BREAKER FLUSH CONNECTION AND SPUD COUPLING FOR 1—1/2" TOP SPUD. PROVIDE WALL AND SPUD FLANGES. COORDINATE ROUGH IN HEIGHT WITH MANUFACTURER'S RECOMMENDATION.	6	4"	2"	1-1/4"	
BB-1	GUY GREY BIM875	ICE MAKER BACK BOX. PROVIDE WITH STOP VALVE.						1/2"	

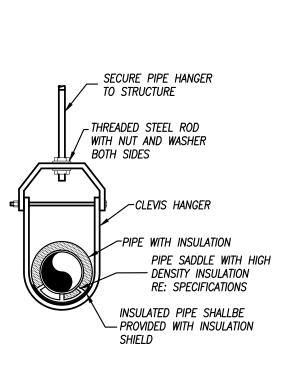
- 1. PROVIDE CHROME-PLATED BRASS TAILPIECE AND GRID DRAIN.
- 2. PROVIDE CHROME—PLATED BRASS P—TRAP.
- 3. PROVIDE LOOSE KEY STOPS AND FLEXIBLE RISERS. 4. PROVIDE CONCEALED ARM TYPE CARRIER WITH SQUARE, TUBULAR STEEL UP—RIGHTS AND BLOCK TYPE BASES.
- 5. INSULATE EXPOSED TAILPIECE, P-TRAP, AND WATER RISERS. REFER TO SPECIFICATIONS FOR INSULATION METHODS.
- 6. PROVIDE FLUSH VALVE HANDLE ON WIDE SIDE OF STALL.
- 7. PROVIDE HANDLE STOPS AND FLEXIBLE RISERS.
- 8. PROVIDE CHROME-PLATED BRASS TAILPIECE AND BASKET STRAINER.

GENERAL NOTES (APPLICABLE TO ALL FIXTURES):

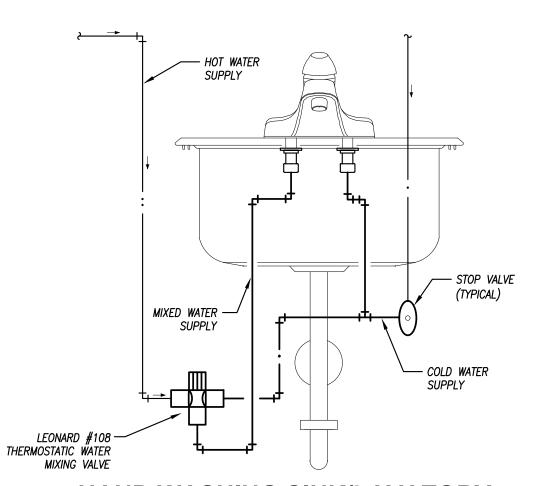
- 1) ALL PUBLIC LAVATORIES AND SINKS SHALL BE PROVIDED WITH ANTI-SCALD ASSE 1070 LISTED VALVE ON HOT WATER SUPPLY.
- 2) FIXTURE CONNECTION SIZES SHOWN IN SCHEDULE ARE CONNECTION SIZE AT FIXTURE ON PLANS.
- 3) COORDINATE FIXTURE REQUIREMENTS SCHEDULED ABOVE WITH OTHER TRADES. VERIFY CABINET SIZES, COUNTERTOP MATERIALS, WALL THICKNESSES, ETC ARE APPROPRIATE FOR SPECIFIED FIXTURES PRIOR TO ORDERING.

FLO	FLOOR DRAIN SCHEDULE										
PLAN MARK	MANUFACTURER MODEL SERVICE TOP/GRATE WASTE NUMBER SIZE SIZE REMARKATION OF THE PROPERTY OF THE										
FD-1	WADE	1100	FLOOR DRAIN	6 " Ø	2"	1					
DEMARKS.					_						

<u>REMARKS:</u> 1. PROVIDE WITH NICKEL BRONZE TOP.

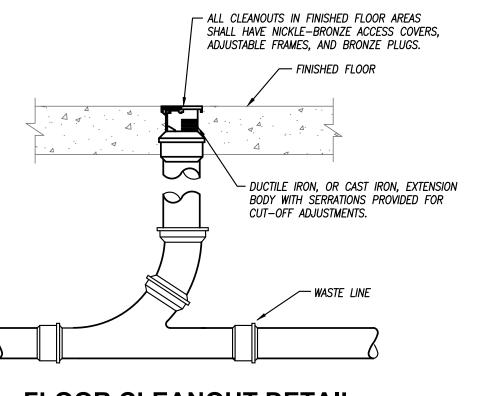


PIPE HANGER DETAIL NOT TO SCALE

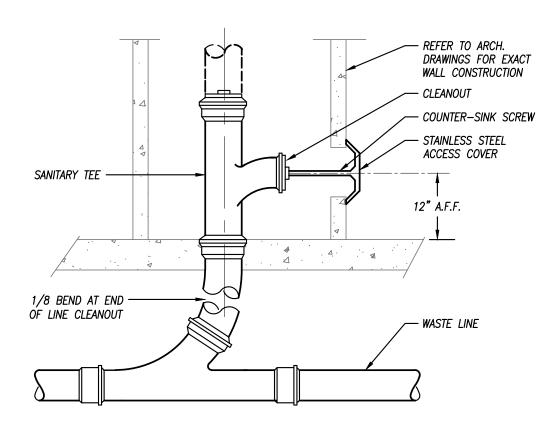


HAND WASHING SINK/LAVATORY **TEMPERED WATER SCHEMATIC**

NOT TO SCALE



FLOOR CLEANOUT DETAIL NOT TO SCALE



WALL CLEANOUT DETAIL NOT TO SCALE

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PLUMBING SCHEDULES & **DETAILS**

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Structural Engineer: Bob D. Campbell & Co. Missouri Certificate of Authority #000442 4338 Belleview Ave.

Kansas City, MO 64111

816.531.4144

913.492.2400

MEP Engineer: PKMR Engineers Missouri Certificate of Authority #E-2002020886 13300 W. 98th Street Lenexa, KS 66215

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NUMBER PE-2017029408 Dalyn Novak - Architect MO # 2011006178 PERMIT SET

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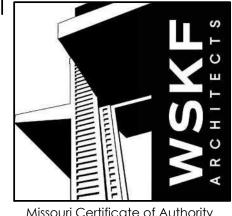
REFER TO GENERAL DEMOLITION NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.

DEMOLITION PLAN KEYED NOTES

- \langle 1 \rangle EXISTING PLUG MOLD TO BE REMOVED.
- DEMOLISH AND REMOVE ALL EXISTING LIGHT FIXTURES LOCATED IN THE BUILDING. MAINTAIN ALL CIRCUITING FOR CONNECTION TO NEW LIGHT FIXTURES. REFER TO NEW WORK PLANS FOR MORE INFORMATION.
- $\langle 3 \rangle$ DEMOLISH AND REMOVE EXISTING DEVICE.
- REMOVE ALL RECEPTACLE CIRCUITING NOT BEING USED BACK TO CIRCUIT BREAKER. REFER TO NEW WORK PLANS FOR MORE INFORMATION.
- 5 REMOVE AND DEMOLISH ELECTRICAL CONNECTION AND ALL WIRING TO MECHANICAL EQUIPMENT BEING DEMOLISHED.
- 6 EXISTING WALL HEATER TO REMAIN. DISCONNECT ELECTRICAL CONNECTION DURING CONSTRUCTION. SEE NEW WORK PLAN FOR MORE INFORMATION.

EXISTING CONDUITS BELOW GRADE:

EXISTING BRANCH CIRCUIT WIRING MAY BE RUN BELOW GRADE. WHERE HOMERUNS BELOW GRADE CAN NOT BE MAINTAINED DUE TO THE DEMOLITION OF THE WALL WHERE THE CONDUIT STUBS UP FROM BELOW GRADE, THE CIRCUIT SHALL BE MAINTAINED WITH A NEW HOMERUN OVERHEAD BACK TO THE ORIGINAL SOURCE. REMOVE EXISTING CONDUCTORS NO LONGER BEING USED.



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Kansas City, MO 64111

816.531.4144

MEP Engineer: PKMR Engineers Missouri Certificate of Authority #E-2002020886 13300 W. 98th Street Lenexa, KS 66215 913.492.2400

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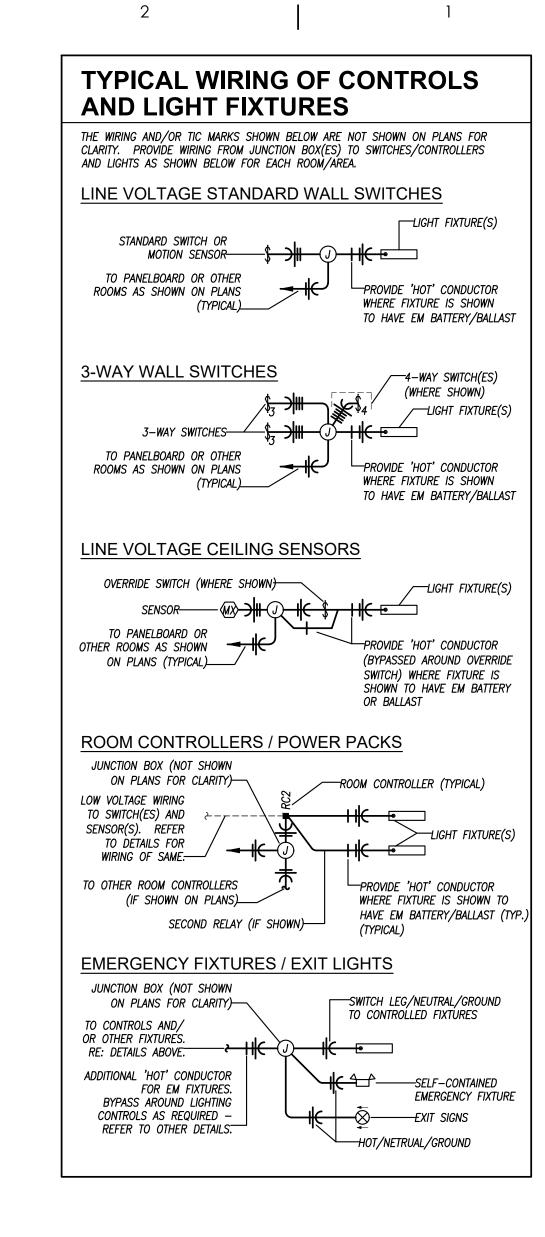
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FLOOR PLAN -ELECTRICAL **DEMOLITION**



10



GENERAL LIGHTING NOTES

- 1. REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL
- 2. LIGHT FIXTURES INDICATED AS EMERGENCY FIXTURES ARE TO FUNCTION AS
- NIGHT LIGHTS UNLESS SPECIFICALLY SHOWN SWITCHED.
- 3. ALL CIRCUITING SHOWN ON THIS PLAN IS DIAGRAMMATIC. 3.1. ALL FIXTURES SHALL BE FED FROM JUNCTION BOXES WITH LIGHT FIXTURE WHIPS (<6'). DAISY—CHAINING OF FIXTURES IS NOT ALLOWED.
- 3.2. SWITCH BOX LOCATIONS SHALL BE WIRED SO THAT A NEUTRAL WIRE IS
- AVAILABLE AT THE SWITCH BOX LOCATION, EITHER IN THE BOX OR AVAILABLE TO BE ADDED VIA RACEWAY OR AN ACCESSIBLE WALL CAVITY.
- 3.3. WALL SWITCHES FOR SEPARATE LOAD TYPES (EM/NORMAL, 120/277V, ETC.) SHALL NOT BE IN A SINGLE BOX. 3.4. REFÉR TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

IECC 2021 NOTES

1 LIGHTING COMPLIANCE WITH IECC 2021 FOR THIS BUILDING ALTERATION IS REQUIRED PER

C503.5. THE INTERIOR LIGHTING LOAD

- TOTAL PROPOSED WATTAGE = 6683

COMPLIES WITH SECTION C405.3.2: - TOTAL ALLOWABLE WATTAGE = 7685

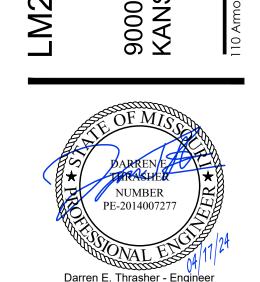
- % PASSING = 13%

REQUIREMENTS OF WORK.

- (1) CONNECT TO LIGHTING CIRCUIT DESIGNATED. CONTRACTOR MAY RE-USE EXISTING HOMERUN WHERE POSSIBLE AND IN GOOD CONDITION.
- 2) EXTEND TO PLUG LOAD CONTROLLER IN THE SPACE. REFER TO SHEET E2.01 FOR MORE INFORMATION.
- 4) ROUTE CIRCUIT THROUGH TIME CLOCK LOCATED IN MECHANICAL ROOM 134,
- THEN HOMERUN.
- 5) PROVIDE AND LOCATE REMOTE EMERGENCY LIGHTING TEST SWITCH FOR RESTROOM EMERGENCY LIGHTING IN IT ROOM.

LIGHTING PLAN KEYED NOTES

- (3) PROVIDE ASTRONOMICAL TIME CLOCK FOR CONTROL OF EXTERIOR FIXTURES. COORDINATE EXACT LOCATION WITH ARCHITECT.



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4338 Belleview Ave. Kansas City, MO 64111

#000442

816.531.4144

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Bob D. Campbell & Co.

Dalyn Novak - Architect MO # 2011006178									
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FLOOR PLAN -LIGHTING



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GENERAL POWER NOTES

- 3. REFER TO THE SPECIFICATIONS FOR ADDITIONAL LOCATIONS/REQUIREMENTS FOR RECEPTACLES, INCLUDING GFCI, WEATHER—RESISTANT, HOSPITAL—GRADE,

POWER PLAN KEYED NOTES

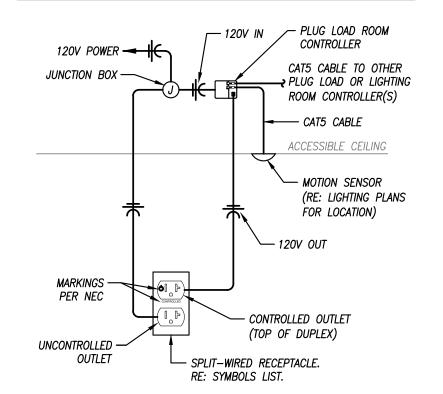
- 2 PROVIDE "CONTROLLED" RECEPTACLE. TOP HALF TO BE SWITCHED AND CONTROLLED BY PLC IN THE SPACE. BOTTOM HALF TO BE TYPICAL "HOT", CONNECTED TO EXISTING CIRCUIT IN THE SPACE.
- 3 ONE (1) UNSWITCHED "HOT" CONDUCTOR FOR NORMAL POWER CONNECTION. ONE (1) "HOT CONDUCTOR FROM PLC TO RECEPTACLE FOR SWITCHED
- 4 FLOORBOX TO BE HUBBELL SCRUBSHIELD ETERNAL CFB4 SERIES (OR SIMILAR). TWO SECTIONS DUPLEX, ONE (1) SECTION HDMI PORT AND ONE (1) SEĆTION (2) DATA PORTS.
- INSTALLED. REFER TO SHEET E3.01 FOR CONDUIT RUN(S).
- TELEVISION ON WALL. PROVIDE COVER WITH GROMMETED OPENING ON BOX. REFER TO THE DETAIL ON SHEET E5.01 FOR MORE INFORMATION. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT PRIOR
- 7 CONCEAL CIRCUITING TO DEVICE IN CABINETRY. WHERE REQUIRED, ROUTE BELOW SLAB IN MINIMUM OF 1" CONDUIT OVER TO WALL AND ABOVE TO
- GARAGE DOOR PROVIDER.

- BREAKER. CONFIRM CIRCUIT BREAKER IS STILL AVAILABLE. RECIRCUIT IF

PLUG LOAD CONTROLS

PLC PLUG LOAD CONTROLLER: DIGITAL ON/OFF PLUG LOAD CONTROLLER. 120V INPUT, CLASS 2 OUTPUT AT 24VDC, 150mA (FOR USE WITH ON/OFF LIGHTING ROOM CONTROLLERS). (WATTSTOPPER LMPL-101 SERIES, OR EQUAL)

PLUG LOAD CONTROLLER/



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- 1. REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.
- 2. COORDINATE EXACT NEMA CONFIGURATIONS OF RECEPTACLES SERVING EQUIPMENT WITH EXACT EQUIPMENT BEING FURNISHED.
- AND TAMPER-RESISTANT RECEPTACLES.
- 4. EXACT MECHANICAL EQUIPMENT LOCATIONS MAY NOT BE SHOWN FOR CLARITY. COORDINATE EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT, DUCT DETECTORS, ETC. WITH MECHANICAL DRAWINGS AND CONTRACTOR.

- 1 PLUG LOAD CONTROLLER TO POWER TOP HALF OF RECEPTACLE WHEN MOTION SENSOR IN SPACE IS "TURNED ON". REFER TO THE DETAIL ON THIS SHEET FOR MORE INFORMATION.

- 5 SAW CUT AREA FOR FLOORBOX AND CONDUIT INSTALLATION. PATCH WHEN
- 6 PROVIDE RECESSED MULTI-SERVICE WALL BOX FOR DATA/POWER FOR
- 8 PUSHBUTTON CONTROL FOR OVERHEAD GARAGE DOOR. COORDINATE EXACT LOCATION WITH ARCHITECT. COORDINATE ALL CONDUIT AND WIRING WITH
- 9 POWER CONNECTION FOR OVERHEAD GARAGE DOOR. COORDINATE LOCATION WITH GARAGE DOOR PROVIDER.
- 10 CIRCUIT EXHAUST FAN TO LIGHTING CIRCUIT SERVING THE SPACE.
- 11 JUNCTION BOX FOR ACCESS CONTROL SYSTEM.
- 12 MOUNT DISCONNECT ABOVE CEILING NEAR MECHANICAL EQUIPMENT.
- ROUTE CIRCUIT THROUGH TIMECLOCK, THEN HOMERUN. COORDINATE WITH MECHANICAL.
- 14 TIMECLOCK FOR CONTROL OF EXHAUST FAN EF-1. COORDINATE WITH MECHANICAL.
- 15 CONTRACTOR TO RECONNECT EXISTING WALL HEATER TO PREVIOUS CIRCUIT NEEDED. COORDINATE WITH MECHANICAL.

PLC2 PLUG LOAD CONTROLLER: DIGITAL ON/OFF PLUG LOAD CONTROLLER. 120V INPUT, CLASS 2 OUTPUT AT 24VDC, 250mA (FOR USE WITH ON/OFF/DIMMING LIGHTING ROOM CONTROLLERS). (WATTSTOPPER LMPL—201 SERIES, OR EQUAL)

RECEPTACLE WIRING DIAGRAM

E ROA 64138

Missouri Certificate of Authority

#2003011262

Missouri Certificate of Authority

Missouri Certificate of Authority

JOB NUMBER 23011

Structural Engineer: Bob D. Campbell & Co.

4338 Belleview Ave.

Kansas City, MO 64111

#000442

816.531.4144

MEP Engineer: PKMR Engineers

#E-2002020886 13300 W. 98th Street

Lenexa, KS 66215

913.492.2400

Dalyn Novak - Architect MO # 2011006178

ISSUE DATE No Description

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FLOOR PLAN -POWER



6 5

4

9 | 8 | 7 | 6 | 5 | 4



REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.

EXACT MECHANICAL EQUIPMENT LOCATIONS MAY NOT BE SHOWN FOR CLARITY. COORDINATE EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT, DUCT DETECTORS, ETC. WITH MECHANICAL DRAWINGS AND CONTRACTOR.

Missouri Certificate of Authority #2003011262

816.531.4144

Structural Engineer: Bob D. Campbell & Co. Missouri Certificate of Authority #000442 4338 Belleview Ave. Kansas City, MO 64111

MEP Engineer: PKMR Engineers Missouri Certificate of Authority #E-2002020886 13300 W. 98th Street Lenexa, KS 66215 913.492.2400

SPECIAL SYSTEMS KEYED NOTES

1 1-1/4" CONDUIT FOR DATA CABLING AND HDMI CABLE. ROUTE CONDUIT FROM FLOORBOX, OVER TO WALL WITH MONITOR AND UP THE WALL TO MONITOR LOCATION.

2 PROVIDE RECESSED MULTI-SERVICE WALL BOX FOR DATA/POWER FOR TELEVISION ON WALL AS SHOWN ON THE POWER PLAN AND DETAILED ON SHEET E5.01. PROVIDE COVER WITH GROMMETED OPENING ON BOX.

3 ONE (1) 1" CONDUIT WITH PULLSTRING. CONCEAL IN CABINETRY FROM DEVICE OVER TO WALL AND ABOVE TO ACCESSIBLE CEILING LOCATION. 4 1" CONDUIT FOR DATA CONNECTION. ROUTE CONDUIT UP FROM WALL BOX TO ABOVE CEILING.

5 PROVIDE JUNCTION BOX FOR HDMI CONNECTION AND ROUTING. 1-1/4" CONDUIT FROM JBOX ROUTED TO TELEVISION WALL BOX LOCATION.

JOB NUMBER 23011



Dalyn Novak - Architect MO # 2011006178

PERMIT SET

ISSUE DATE

No Description

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LENEXA, KS 66215 WWW.PKMRENG.COM **FLOOR PLAN** -SPECIAL SYSTEMS

FLOOR PLAN - SPECIAL SYSTEMS

1/8" = 1'-0"

PANELBOARD SIZING LOAD										
LOAD DESCRIPTION	CONNECTED	DEMAND	CODE MIN. (VA)							
LIGHTS	540	1.25	675							
RECEPTACLES	40,600	10KVA + 50% REST	25,300							
MOTORS	8,528	1.25 x LARGEST + SUM OF REST	9,278							
AIR CONDITIONING	63,750	1.00	63,750							
SPACE HEATING	13,500	0.00	0							
HEAT PUMP	0	1.00	0							
CONTINUOUS	1,000	1.25	1,250							
NON-CONTINUOUS	500	1.00	500							
EXISTING UNKNOWN LOAD	3,500	1.00	3,500							
		SIZING LOAD:	104,253							
		SIZING LOAD (AMPS):	289							

_													
	CONN	CONNECTED PHASE LOADS											
	PHASE	VA	AMPS										
	Α	51,160	426.0										
	В	52,958	441.0										
	С	48,701	405.5										
	TOTALS	152,818	424.2										
	REMARKS:												

7

6

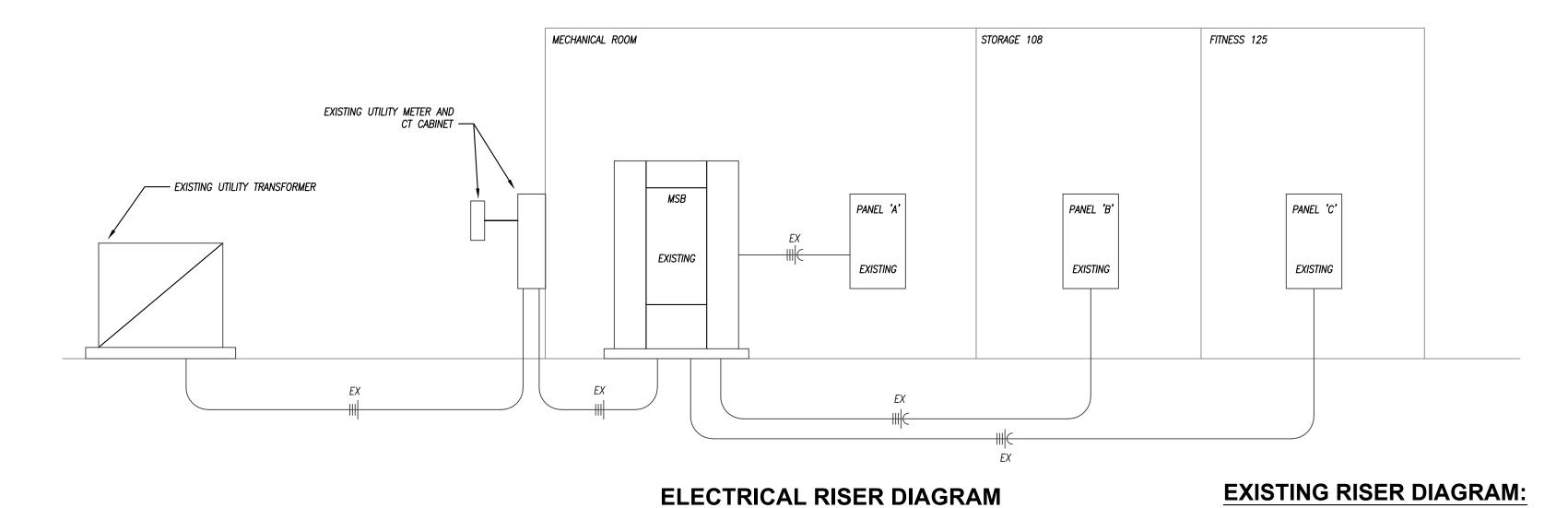
1. EXISTING SQUARE D SWITCHBOARD.

	EXISTING PAN	IEL	BOA	ARD	SC	HE	Dl	JL	.E						
	PANEL DESIGNATION:	Λ							М	AIN LUG	AMPS:	225			1
	FANEL DESIGNATION.	<u> </u>						#	l N	//AIN BR	EAKER:	150			
	MOUNTING: SURFACE							5				208/12	0		
	LOCATION: MECH ROOM 134] [CIRCUIT		PHASE/WIRE: 30, 4W]
	DESCRIPTION		PHASE		_	/B	ļ '	ی		/B		PHASE		DESCRIPTION	
		Α	В	С	TRIP	POLE			POLE	TRIP	Α	В	С		<u> </u>
1	LTS: MECH, TOOL, CONF, FIT	_			20	1	1	2	1	20	_			LTS: RR, MULTI, LOUNGE, BREAK	1
1	OVERHEAD DOOR		1000		20	1	3	4	1	20		720		RECEPT: BREAK 136	1
1	OVERHEAD DOOR			1000	20	1	5	6	1	20			540	RECEPT: LOUNGE 138	1 1
1	OVERHEAD DOOR	1000			20	1	7	8	1	20	1000			REFRIGERATOR	1 G
1	OVERHEAD DOOR		1000		20	1	9	10	1	20		1000		COFFEE MAKER	1 G
4	EH-1			1500	20	2	11	12	1	20			540	RECEPT: LOUNGE COUNTER	1 G
	LII-1	1500			20		13	14	1	20	1000			MICROWAVE	1 G
1	UNDERCOUNTER REFRIGERATOR		1000		20	1	15	16	1	20		180		RECEPT: IT 132	1
1	RECEPT: WELLNESS 130			720	20	1	17	18	1	20			180	RECEPT: IT 132	1
G 1	WATER COOLER	800			20	1	19	20	1	20	180			RECEPT: IT 132	1
4	LTS: PARKING LOT		213		20	2	21	22	1	20		900		RECEPT: TOOL CRIB 133	
	ETS. PARKING EOT			213	20		23	24	1	20			720	RECEPT: TOOL CRIB 133	1
	SPARE	_			30	2	25	26	1	20	720			RECEPT: MECH ROOM 134 / EXT.	1
	STAIL				50		27	28	1	20		115		LTS: EXTERIOR	1
4	EF-1			528	20	1	29	30	1	20			1000	EXISTING	EX
4	RECEPT: RESTROOMS	360			20	1	31	32	1	20	1000			EXISTING	EX
	SPARE				30	2	33	34	1	20		1000		EXISTING	EX
	SPANE			_	50		35	36	2	50			3000	WATER HEATER	EX
EX	EXISTING	1500			20	1	37	38		30	3000			WAIEN HEATEN]
EX	EXISTING		2200		20	2	39	_	2	50		3000		WATER HEATER	EX
	LAISTING			2200	20		41	42		30			3000	WAILK HEATEK]
	TOTALS	5160	5413	6161							6900	6915	8980	TOTALS	

	PANELBOARD	SIZING LUAD	
LOAD DESCRIPTION	CONNECTED	DEMAND	CODE MIN. (VA)
LIGHTS	540	1.25	675
RECEPTACLES	10,560	10KVA + 50% REST	10,280
MOTORS	4,528	1.25 x LARGEST + SUM OF REST	4,778
AIR CONDITIONING	0	0.00	0
SPACE HEATING	3,000	1.00	3,000
HEAT PUMP	0	1.00	0
CONTINUOUS	0	1.25	0
NON-CONTINUOUS	0	1.00	0
		SIZING LOAD:	18,733
		SIZING LOAD (AMPS):	52

CONNECTED PHASE LOADS								
PHASE	VA	AMPS						
А	12,060	100.4						
В	12,328	102.7						
С	15,141	126.1						
TOTALS	39,528	109.7						
	,							

<u>REMARKS:</u> 1. EXISTING SQUARE D PANELBOARD



NOT TO SCALE

4

PANELBOARD BREAKER KEYED NOTES

- G FURNISH GFCI-PROTECTED BREAKER.
- FA BREAKER SHALL BE PAINTED OR FURNISHED RED AND PROVIDED WITH A LOCK-ON DEVICE.
- FURNISH LSI ADJUSTABLE ELECTRONIC TRIP BREAKER. EXACT BREAKER TYPE AND TRIP UNIT SETTINGS TO BE PER COORDINATION STUDY.
- N PROVIDE NEW BREAKER IN EXISTING SPACE.
- EX EXISTING CIRCUIT BREAKER.
- 1 CONNECT NEW CIRCUIT TO EXISTING BREAKER MADE AVAILABLE BY DEMOLITION.
- 2 CONNECT NEW CIRCUIT TO EXISTING SPARE BREAKER.
- 3 CIRCUIT PREVIOUSLY SERVED SAME ROOM/AREA PRIOR TO DEMOLITION. RE-LABEL SAME WITH NEW INFORMATION
- 4 PROVIDE NEW CIRCUIT BREAKER TO REPLACE EXISTING BREAKER MADE AVAILABLE BY DEMOLITION.

EXISTING PANELBOARD WORK

- 1. ALL BREAKERS IN EXISTING PANELBOARDS ARE EXISTING TO REMAIN UNLESS INDICATED OTHERWISE
- ON THE PANELBOARD SCHEDULES. 2. EXISTING BREAKERS, CIRCUITS, AND LOADS ARE SHOWN LIGHT. NEW LOADS, BREAKERS, AND
- CIRCUITS ARE SHOWN DARK.
- 3. EXISTING LOAD VALUES ARE ASSUMED AND/OR BASED OFF EXISTING DRAWINGS. 4. AVAILABILITY OF CIRCUITS IN EXISTING PANELBOARDS IS BASED ON FIELD OBSERVATION AND EXISTING CIRCUIT DIRECTORIES. CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS AND PROVIDE WORK ACCORDING TO INTENTION OF CONTRACT DOCUMENTS. ACTUAL CIRCUITS AVAILABLE DUE TO DEMOLITION, CIRCUITS THAT ARE REQUIRED TO REMAIN, AND PANELBOARD AVAILABILITY MAY BE DIFFERENT THAN INDICATED.
- 5. FAULT CURRENT RATINGS AND/OR TYPES OF NEW BREAKERS IN EXISTING PANELBOARDS SHALL MATCH THE TYPE AND AIC RATING OF THE EXISTING BREAKERS IN ORDER TO MAINTAIN THE FAULT CURRENT RATING OF THE PANELBOARD.
- 6. PROVIDE NEW TYPED CIRCUIT DIRECTORIES FOR ALL PANELBOARDS WITH UPDATED CIRCUIT INFORMATION AS SHOWN AND/OR FIELD-VERIFIED.

PANEL DESIGNATION:		*				S AMPS: EAKER:							
MOUNTING:	RECESSI	ED				1		ıv			208/12	0	
LOCATION:	STORAGE	E 108				Tilogic	7			E/WIRE:			
DECODIDETION.		PHASE		С	/B	=	5	C	/B		PHASE		DECODIFICAL
DESCRIPTION	Α	В	С	TRIP	POLE		İ	POLE	TRIP	Α	В	С	DESCRIPTION
LTS: CORRIDOR	-			20	1	1	2	1	20	-			SPARE
LTS: OFFICES, LOBBY, CONF.		-		20	1	3	4	2	20		1500		EH-2
LTS: OFFICES, WAR RM, ACCOUNT			-	20	1	5	6	2	20			1500	En-2
RECEPT: MULTI-PURPOSE 139	1080			20	1	7	8	1	20	900			RECEPT: CORRIDOR/VEST/EXT.
RECEPT: MULTI-PURPOSE 139		1080		20	1	9	10	1	20		720		RECEPT: OFFICE 113
RECEPT: CONFERENCE 137			900	20	1	11	12	1	20			720	RECEPT: OFFICE 114
POWERED DOORS	500			20	1	13	14	1	20	720			RECEPT: OFFICE 116
RECEPT: LOBBY/VESTIBULE		720		20	1	15	16	1	20		540		RECEPT: OFFICE 117
RECEPT: LOBBY DESK			180	20	1	17	18	1	20			540	RECEPT: OFFICE 118
RECEPT: WORK ROOM 102	360			20	1	19	20	1	20	720			RECEPT: OFFICE 119
COPIER		1000		20	1	21	22	1	20		540		RECEPT: OFFICE 120
RECEPT: OFFICE 103			900	20	1	23	24	1	20			1080	RECEPT: WAR ROOM
RECEPT: OFFICE 103	540			20	1	25	26	1	20	1080			RECEPT: WORK AREA
RECEPT: MARKETING 105		720		20	1	27	28	1	20		1000		COPIER
RECEPT: OFFICE 107			720	20	1	29	30	1	20			_	SPARE
RECEPT: OFFICE 109	720			20	1	31	32	1	20	-			SPARE
RECEPT: OFFICE 110		900		20	1	33	34	1	20		-		SPARE
RECEPT: STORAGE 108			180	20	1	35	36	1	20			_	SPARE
SPACE	-			-	1	37	38	1	-	-			SPACE
SPACE		Ī		_	1	39	40	1	Ι		-		SPACE
SPACE			_	_	1	41	42	1	_			_	SPACE

P	ANELBOARD	SIZING LOAD	
LOAD DESCRIPTION	CONNECTED	DEMAND	CODE MIN. (VA)
LIGHTS	0	1.25	0
RECEPTACLES	18,560	10KVA + 50% REST	14,280
MOTORS	0	1.25 x LARGEST + SUM OF REST	0
AIR CONDITIONING	0	0.00	0
SPACE HEATING	3,000	1.00	3,000
HEAT PUMP	0	1.00	0
CONTINUOUS	0	1.25	0
NON-CONTINUOUS	500	1.00	500
		SIZING LOAD:	17,780
		SIZING LOAD (AMPS):	49

CONNECTED PHASE LOADS						
PHASE	VA	AMPS				
Α	6,620	55.1				
В	8,720	72.6				
С	6,720	56.0				
TOTALS	22,060	61.2				

1. EXISTING SQUARE D PANELBOARD

PANEL DESIGNATION: C									AIN LUG IAIN BRI					
MOUNTING: RECESSED							#	IV	—		208/12)		
LOCATION: FITNESS 125						2	(()			E/WIRE:		9		
PHASE		PHASE C/B		=	CIRCUIT		/B PHASE							
DESCRIPTION	A	В	С	TRIP	POLE	1		POLE	OLE TRIP		A B C		DESCRIPTION	
RECEPT: PROJECT ENG. 142	540			20	1	1	2	1	20	540			RECEPT: FITNESS GEN	
RECEPT: PROJECT ENG. 142		540		20	1	3	4	1	20		1000		FITNESS EQUIPMENT	
RECEPT: ACCOUNTING 124			1080	20	1	5	6	1	20			1000	FITNESS EQUIPMENT	
SUPER 127 COPIER	1000			20	1	7	8	1	20	1000			FITNESS EQUIPMENT	
RECEPT: SUPER 127		720		20	1	9	10	1	20		1000		FITNESS EQUIPMENT	
RECEPT: SUPER 127			540	20	1	11	12	1	20			720	RECEPT: FITNESS/STORAGE	
RECEPT: CONFERENCE 128	900			20	1	13	14	1	20	-			SPARE	
RECEPT: MEDIA 129		900		20	1	15	16	1	20		-		SPARE	
SPARE			_	20	1	17	18	1	20			-	SPARE	
SPARE	_			20	1	19	20	1	20	-			SPARE	
SPARE		-		20	1	21	22	1	20		-		SPARE	
SPARE			=	20	1	23	24	1	20			=	SPARE	
SPARE	_			20	1	25	26	1	20	1			SPARE	
SPARE		_		20	1	27	28	1	20		=		SPARE	
SPARE			Ī	20	1	29	30	1	20			ı	SPARE	
SPARE	-			20	1	31	32	1	20	I			SPARE	
SPARE		-		20	1	33	34	1	20		=		SPARE	
SPARE			-	20	1	35	36	1	20			-	SPARE	
SPARE	=			20	1	37	38	1	20	İ			SPARE	
SPARE		_		20	1	39	40	1	20		_		SPARE	
SPARE			_	20	1	41	42	1	20			-	SPARE	

	PANELBOARD	SIZING LOAD	
LOAD DESCRIPTION	CONNECTED	DEMAND	CODE MIN. (VA)
LIGHTS	0	1.25	0
RECEPTACLES	11,480	10KVA + 50% REST	10,740
MOTORS	0	1.25 x LARGEST + SUM OF REST	0
AIR CONDITIONING	0	1.00	0
SPACE HEATING	0	0.00	0
HEAT PUMP	0	1.00	0
CONTINUOUS	0	1.25	0
NON-CONTINUOUS	0	1.00	0
		SIZING LOAD:	10,740
		SIZING LOAD (AMPS):	30

CONNI	CONNECTED PHASE LOADS								
PHASE	VA	AMPS							
А	3,980	33.1							
В	4,160	34.6							
С	3,340	27.8							
TOTALS	11,480	31.9							

RISER DIAGRAM IS BASED ON FIELD OBSERVATIONS AND EXISTING DRAWINGS. CONTRACTOR TO VERIFY EXISTING CONDITIONS AND DISTRIBUTION PRIOR TO BEGINNING WORK.

> <u>REMARKS:</u> 1. EXISTING SQUARE D PANELBOARD

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RISER DIAGRAM & SCHEDULES

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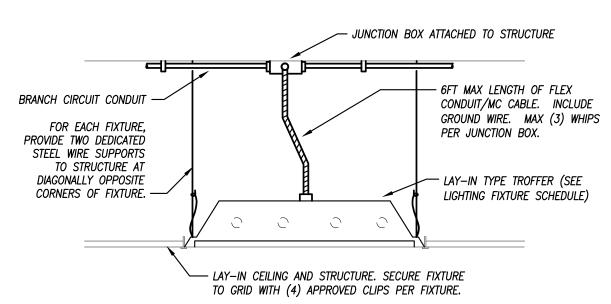
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JOB NUMBER 23011

Dalyn Novak - Architect MO # 2011006178 PERMIT SET

ISSUE DATE No Description

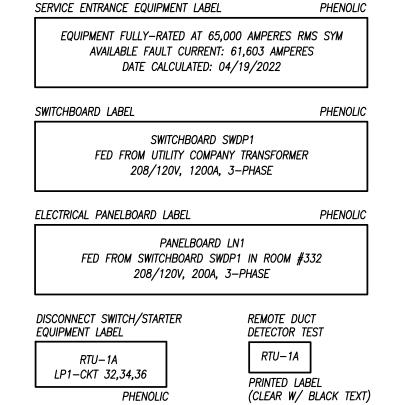


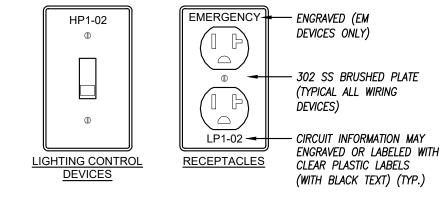
TYPICAL TROFFER SUPPORT AND WIRING NOT TO SCALE

TELE/DATA OUTLET DETAIL

NOT TO SCALE

SHEETROCK -





GENERAL LABELING NOTES: 1. REFER TO PLANS/SPECS FOR ADDITIONAL REQUIREMENTS, INCLUDING: A) DEVICE AND LABEL COLORS. B) LABELING REQUIREMENTS FOR OTHER ITEMS NOT SHOWN HERE. 2. CIRCUIT NUMBERS/INFORMATION SHOWN ON THIS DETAIL ARE FOR EXAMPLE ONLY. REFER TO FLOOR PLANS / PANELBOARD SCHEDULES FOR EXACT INFORMATION TO BE ON LABELS.

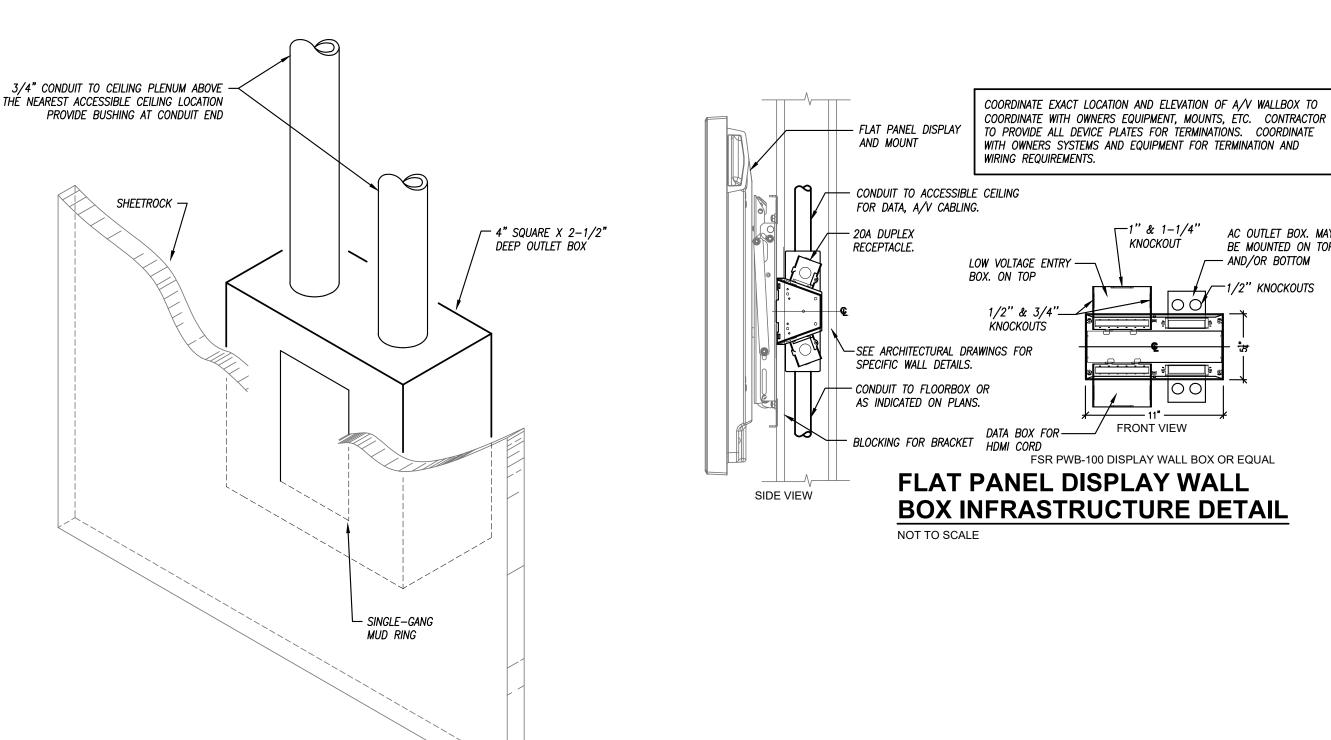
LABELING DETAIL NOT TO SCALE

AC OUTLET BOX. MAY

- AND/OR BOTTOM

-1/2" KNOCKOUTS

BE MOUNTED ON TOP



FIXTURE MANUFACTURI		CATALOG	DESCRIPTION	LED MODULE / DRIVER								
TYPE	MANUFACTURER	NUMBER	DESCRIPTION		WATTS	LUMENS	CRI	ССТ	DIMMING	VOLTAGE	REMARK	
Α	WILLIAMS	AT1 SERIES	2'x4' RECESSED "FLOATING LENS" ARCHITECTURAL LED TROFFER. MATTE WHITE PAINT HOUSING WITH DIFFUSE MATTE ACRYLIC CENTER LENS. GRID MOUNTING.	L40	34.2	4035	80	3500K	0-10V	120	1,2	
A1	WILLIAMS	AT1 SERIES	SAME AS FIXTURE 'A' BUT 2x2 AND DIFFERENT LUMEN MODULE.		29.5	3028	80	3500K	0-10V	120	1	
В	WILLIAMS	6DR SERIES	6" ROUND RECESSED DOWNLIGHT. DIE—FORMED STEEL PAN WITH FINNED, EXTRUDED ALUMINUM PASSIVE HEAT SINK. FLUSH, SELF—FLANGED, SEMI—SPECULAR LOW IRIDESCENT FINISH ALUMINUM REFLECTOR WITH MEDIUM BEAM ANGLE/DISTRIBUTION AND OPTIONAL 'TD' LENS OVER DIODES.		13.8	1385	80	3500K	0-10V	120	1,2	
B1	WILLIAMS	6DR SERIES	SAME AS FIXTURE 'B' BUT DIFFERENT LUMEN MODULE.		19.1	1837	80	3500K	0-10V	120	1	
B2	WILLIAMS	6DR SERIES	6" ROUND RECESSED DOWNLIGHT. DIE—FORMED STEEL PAN WITH FINNED, EXTRUDED ALUMINUM PASSIVE HEAT SINK. SEMI—SPECULAR LOW IRIDESCENT FINISH ALUMINUM REFLECTOR WITH WIDE BEAM ANGLE/DISTRIBUTION AND FLUSH LENS. UL—LISTED WET LOCATION UNDER COVERED CEILING.		13.8	1385	70	3000K	NO	120	1,2	
С	BEGA	STUDIO LINE	DECORATIVE SHIELDED SUSPENDED PENDANT FIXTURE. WHITE EXTERIOR HOUSING WITH MATTE ALUMINUM INTERIOR. COORDINATE SUSPENSION LENGTH WITH ARCHITECT.		12	1008	80	3500K	0-10V	120	1	
D	LUMINART	RIGHELLO	DECORATIVE PENDANT LIKE LINEAR FIXTURE WITH DOWNLIGHT FLOOD . DARK GREY WOOL FINISH. COORDINATE SUSPENSION LENGTH WITH ARCHITECT.		48	7600	80	3500K	0-10V	120	1	
D1	LUMINART	RIGHELLO	SAME AS FIXTURE 'D' BUT WITH TURQUOISE FINISH.		48	7600	80	3500K	0-10V	120	1	
F	WILLIAMS	SERIES 75S	4'-0" LONG COMMERCIAL-GRADE STRIP FIXTURE WITH SQUARE LENS. CHAIN MOUNT FROM CEILING AT 8-6" A.F.F. WHITE FINISH.		42	6500	80	3500K	NO	120	1,2	
F1	WILLIAMS	SERIES 75S	4'-0" LONG COMMERCIAL-GRADE STRIP FIXTURE WITH SQUARE LENS. SURFACE MOUNT. WHITE FINISH.		42	6500	80	3500K	NO	120	1	
G	WILLIAMS	LLM SERIES	2-5/8" WIDE LINEAR PENDANT-MOUNTED FIXTURE - REFER TO PLANS FOR FIXTURE LENGTH. SQUARE ACRYLIC LENS. AIRCRAFT CABLE SUSPENSION - COORDINATE EXACT LENGTH WITH ARCHITECT. BLACK FINISH .		6.7	1010	80	3500K	0-10V	120	1,2,3	
G1	WILLIAMS	LLM SERIES	SAME AS FIXTURE 'G' BUT SURFACE MOUNTED.		6.7	1010	80	3500K	0-10V	120	1,2,3	
S1	MCGRAW-EDISON	GALLEON LED GLEON SERIES	POLE-MOUNTED AREA LIGHT. LOW-PROFILE, ONE-PIECE DIE-CAST ALUMINUM HOUSING. LIGHT SQUARE LED ARRAYS — REFER TO LAMP DESCRIPTION FOR QUANTITY. IES TYPE III DISTRIBUTION . DIE CAST ALUMINUM MOUNTING ARM. PROVIDE WITH 25' HIGH, SQUARE STRAIGHT STEEL POLE. FURNISH WITH PHOTOCELL OPTION. POWDER COAT FINISH DARK BRONZE — COORDINATE EXACT COLOR WITH ARCHITECT AND OWNER.	SA3B	124	17,450	70	3000K	NO	208	1	
S2	MCGRAW-EDISON	GALLEON LED GLEON SERIES	SAME AS FIXTURE 'S' BUT LUMEN MODULE AND IES TYPE IV DISTRIBUTION.		124	17324	70	3000K	NO	208	1	
Х	DUAL-LITE	LE SERIES	RECESSED EDGE—LIT EXIT SIGN. FURNISH WITH ALL NECESSARY ROUGH—IN AND MOUNTING HARDWARE. EXTRUDED ALUMINUM HOUSING WITH SATIN ALUMINUM FINISH. WATER—CLEAR, MOLDED ACRYLIC EXIT PLAQUE. RED LETTERS WITH CLEAR BACKGROUND. CEILING OR WALL MOUNTED WITH PRINTED CHEVRON DIRECTIONAL ARROWS AS INTICATED ON PLANS.	HIGH-O TOTA CONSI	LVE (12) UTPUT LEDS. L POWER JMPTION = ' WATTS.	-	_	-	-	120	1	

1. FURNISH WITH AND INSTALL ALL NECESSARY HARDWARE AND MOUNTING BRACKETS.

4

2. WHERE FIXTURE IS LABELED "EM", PROVIDE WITH IOTA ILB-CP10 (10W CONSTANT POWER EMERGENCY BATTERY PACK) OR APPROVED EQUAL.

3. LUMENS AND WATTAGE VALUES LISTED ARE PER FOOT.

GENERAL NOTES (APPLICABLE TO ALL FIXTURES):

1) EQUALS ARE ACCEPTABLE ON ALL LIGHT FIXTURES UNLESS SPECIFICALLY NOTED OTHERWISE. REFER TO SPECIFICATIONS FOR APPROVED EQUAL FIXTURE MANUFACTURERS.

2) ALL DRIVERS ARE INTEGRAL TO FIXTURE UNLESS NOTED OTHERWISE. REFER TO SPECIFICATIONS FOR ADDITIONAL FIXTURE/DRIVER/BALLAST REQUIREMENTS.

3) ALL FIXTURES WITH PAINTED METAL PARTS SHALL BE PAINTED AFTER FABRICATION.

4) LUMENS LISTED FOR LED FIXTURES ARE GENERALLY DELIVERED LUMENS UNLESS NOTED OTHERWISE.

5) ALL EXTERIOR LED FIXTURES ARE FULL CUTOFF UNLESS NOTED OTHERWISE.

CEILING-MOUNTED HORN -OR HORN/STROBE CEILING-MOUNTED DETECTOR -**₩** HORN DO NOT PLACE -DETECTOR IN STROBE THIS AREA WALL-MOUNTED DETECTOR ---------- WALL-MOUNTED OPERABLE DEVICES ₽ULL STATION **6** 6 COUNTER BACKSPLASH - ABOVE COUNTER DEVICES. SEE NOTES. COORDINATE WITH ARCH. ELEVATIONS AND CABINETRY SHOP DRAWINGS. u power/communications devices and $\,$ catv outlet devices and $-\!$ MOUNTING BRACKETS SYSTEMS FURNITURE OUTLETS

<u>GENERAL NOTES:</u>
1. MOUNTING HEIGHTS SHOWN IN THIS DETAIL ARE TYPICAL UNLESS OTHERWISE NOTED ON THE PLANS. 2. SEE ARCHITECTURAL ELEVATIONS FOR SPECIAL CONDITIONS. NOTIFY ARCHITECT IMMEDIATELY OF ANY 3. ALL INSTALLATIONS SHALL COMPLY WITH ADA.

FINISH FLOOR

VISUAL FIRE ALARM NOTIFICATION DEVICES (STROBE)
LOCATE DEVICE SO THE BOTTOM OF THE DEVICE IS BETWEEN 80" AND 96" A.F.F. (NFPA) OR 6" BELOW CEILING, WHICHEVER IS LOWER (ADA 2010). AUDIBLE FIRE ALARM NOTIFICATION DEVICES (HORN)
LOCATE DEVICE SO THAT THE TOP OF UNIT IS NOT MORE

THAN 90" A.F.F. AND NOT LESS THAN 6" BELOW CEILING

FIRE ALARM ACTIVATION DEVICES (PULL STATION)
LOCATE FRONT—APPROACH DEVICES SO THAT THE HIGHEST OPERABLE PORTION OF THE DEVICE IS NOT MORE THAN 48" A.F.F (ADA 2010) AND NOT LESS THAN 42" A.F.F.

POWER/COMMUNICATION DEVICES:
OUTLETS SHALL BE LOCATED AT 16" A.F.F. TO THE BOTTOM OF THE BOX. ABOVE COUNTER DEVICES SHALL BE LOCATED AT 2" ABOVE THE BACKSPLASH OF THE COUNTER TO THE BOTTOM OF THE DEVICES. VERIFY WITH ARCHITECTURAL DETAILS.

<u>WALL-MOUNTED OPERABLE DEVICES:</u> OPERABLE DEVICES SHALL BE LOCATED AT 48" A.F.F. TO THE TOP OF THE OPERABLE PORTION OF THE DEVICE. WALL-MOUNTED OPERABLE DEVICES INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING: LIGHT SWITCHES, DIMMERS, CONTROLS, ETC. PUSH BUTTONS

NURSE/PATIENT CALL DEVICES (INLUDING THOSE FOR OTHER CONTROL OR "CALL" DEVICES

WALL SWITCH VACANCY SENSOR: PASSIVE INFRARED, 120/277V, WALL M SWITCH DECORA STYLE SENSOR. (WATTSTOPPER PW−101, OR EQUAL)

WALL SWITCH MOTION SENSOR (DUAL TECHNOLOGY): PASSIVE INFRARED M2 AND ULTRASONIC, 120/277V, DECORA STYLE SENSOR. (WATTSTOPPER DSW-100, OR EQUAL)

WALL SWITCH MOTION SENSOR (MULTI-WAY DUAL TECHNOLOGY): PASSIVE INFRARED AND ULTRASONIC, 120/277V, MULTI-WAY DECORA STYLE SENSOR.

MR RELAY, 120V, DECORA STYLE SENSOR. (WATTSTOPPER PW—201, OR EQUAL)

 $^{\phi}$ M2D INFRARED AND ULTRASONIC, 0 $\stackrel{-}{-}$ 10V DIMMING, 120V/277V, DECORA STYLE SENSOR. (WATTSTOPPER DW-311, OR EQUAL)

DECORA STYLE SENSOR. (WATTSTOPPER LMPW-101, OR EQUAL) \$\frac{DIGITAL WALL SWITCH MOTION SENSOR (DUAL TECHNOLOGY):}{INFRARED AND ULTRASONIC, DIGITAL, DECORA STYLE SENSOR.} PASSIVE

\$\frac{\Digital \text{ Wall \ SWITCH \ MOTION \ SENSOR \ (DUAL \ RELAY): \ PASSIVE \ INFRARED, \\
MDR \ DUAL \ RELAY, \ DIGITAL, \ DECORA \ STYLE \ SENSOR \ WITH \ 2 \ BUTTONS.

(WATTSTOPPER LMPW-102, OR EQUAL) DECORA STYLE FACEPLATE, ONE BUTTON, LCD TIMER, ADJUSTABLE FROM

5-MIN TO 12 HOURS. (WATTSTOPPER TS-400, OR EQUAL)

(WATTSTOPPER LMSW SERIES, OR EQUAL)

ROOM CONTROLLER LOW VOLTAGE DIMMING SWITCHES: PUSHBUTTON SWITCHES WITH LED INDICATING LIGHTS. SINGLE GANG IN DECORA STYLE

<u>DIGITAL CEILING—MOUNTED MOTION SENSOR:</u> DUAL TECHNOLOGY (PASSIVE INFRARED AND ULTRASONIC), DIGITAL, CEILING SENSOR. (WATTSTOPPER LMDC-100, OR EQUAL)

INPUT. # INDICATES NUMBER OF RELAYS (STD 1-2, UNITS SHALL BE GANGED FOR MORE THAN 2 RELAYS/ZONES) (WATTSTOPPER LMRC-100

RCD# ROOM CONTROLLER: DIGITAL ON/OFF 0-10V DIMMING ROOM CONTROLLER. 120/277V INPUT. # INDICATES NUMBER OF RELAYS (STD 1-3, UNITS SHALL BE GANGED FOR MORE THAN 3 RELAYS/ZONES) (WATTSTOPPER LMRC-200 SERIES OR EQUAL)

ASTRONOMICAL TIME CLOCK: DIGITAL ON/OFF CONTROLLER.
PROGRAMMABLE FOR ASTRONOMICAL AND SCHEDULED CONTROL. 120V INPUT. (WATTSTOPPER RT-200 OR EQUAL)

<u>DLM OR LOW VOLTAGE CABLING:</u> DIGITAL SYSTEMS SHALL UTILIZE PLENUM RATED CATS WIRING OR CABLING PROVIDE BY MANUFACTURER SPECIFICALLY FOR CONTROL SYSTEM. LOW VOLTAGE SYSTEMS SHALL UTILIZE CABLING PER MANUFACTURERS REQUIREMENTS. CABLING MAY NOT BE INDICATED WHERE ROOM SYSTEM ARCHITECTURE IS SIMPLE FOR CLARITY.

MOUNTING HEIGHTS FOR WALL-MOUNTED DEVICES



(WATTSTOPPER DW-103, OR EQUAL)

WALL SWITCH MOTION SENSOR (DUAL TECH) WITH 0-10V DIMMING: PASSIVE

<u>DIGITAL WALL SWITCH SENSOR:</u> DIGITAL PASSIVE INFRARED, WALL SWITCH

(WATTSTOPPER LMDW-101, OR EQUAL)

DIGITAL TIME SWITCH: DIGITAL TIMER SWITCH. SINGLE GANG, ONE POLE,

ROOM CONTROLLER LOW VOLTAGE SWITCHES: PUSHBUTTON SWITCHES WITH LED PILOT LIGHT. SINGLE GANG IN DECORA STYLE FACEPLATE WITH UP TO EIGHT (8) CONTROLS. # REFERS TO QUANTITY OF SWITCHES ON FACE.

FACEPLATE. (WATTSTOPPER LMDM-101)

RC# ROOM CONTROLLER: DIGITAL ON/OFF ROOM CONTROLLER. 120/277V

SERIES, OR EQUAL)

NOT TO SCALE



Missouri Certificate of Authority #2003011262

Bob D. Campbell & Co. Missouri Certificate of Authority #000442 4338 Belleview Ave. Kansas City, MO 64111 816.531.4144

Structural Engineer:

MEP Engineer: PKMR Engineers Missouri Certificate of Authority #E-2002020886 13300 W. 98th Street Lenexa, KS 66215 913.492.2400

JOB NUMBER 23011

Е 64 TE F MO

NUMBER PE-2014007277 Darren E. Thrasher - Engine MO# PE-2014007277

Dalyn Novak - Architect MO # 2011006178

PERMIT SET ISSUE DATE No Description

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ELECTRICAL SCHEDULES & **DETAILS**