2601 NE MCBAINE DRIVE LEE'S SUMMIT, MO 64064

LOT 10 LAKEWOOD BUSINESS PARK LOT 10 I-470 BUSINESS & TECHNOLOGY CENTER



GENERAL NOTES	C
 CONTRACTOR SHALL VISIT THE SITE, FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND OWNER REVIEW AND UNDERSTAND THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND CONDITIONS PRIOR TO BEGINNING ANY WORK AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCY. DO NOT SCALE DRAWINGS, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CORRECTIONS AND REPAIRS REQUIRED DUE TO THEIR FAILURE TO DO SO. GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL SUB-CONTRACTORS RECEIVE ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS. 	1. ALL WORK THE AUTH AGENCIES DISCREPA THE DRAW ARCHITEC WORK, OR
2. SOLELY AS A CONVENIENCE TO THE OWNER AND CONTRACTOR, THE ARCHITECT MAY INCLUDE DOCUMENTS PREPARED BY CERTAIN CONSULTANTS (OR INCORPORATE THE RECOMMENDATIONS OF SAID CONSULTANTS INTO DOCUMENTS PREPARED BY THE ARCHITECT) WITHIN THE SET OF DOCUMENTS ISSUED BY THE ARCHITECT. IT IS EXPRESSLY UNDERSTOOD, THAT BY SUCH ISSUANCE, THE ARCHITECT ASSUMES NO LIABILITY FOR THE SERVICES OF SAID CONSULTANTS.	2. THE CONT THE FIELD ANY COND REQUIRING 3. MINOR DE PROPER C
3. ALL WORK AND MATERIALS SHALL CONFORM TO THE APPLICABLE CODES LISTED IN THE PROJECT CODE SUMMARY.	THEY WER 4. REFERENC
 UNLESS OTHERWISE INDICATED ON THESE DRAWINGS AND SPECIFICATIONS AS BEING N.I.C. OR EXISTING, ALL ITEMS, MATERIALS, ETC. AND INSTALLATIONS OF THE SAME ARE A PART OF THE CONTRACT DEFINED BY THESE DRAWINGS AND SPECIFICATIONS AND THEIR INTENT. CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE 	APPLICATI 5. THE CONT CONDITION CONTRAC
5. CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS AND COMPLY WITH SAFETY REGULATIONS AND RESTRICTIONS AS REQUIRED FOR WORKERS AND PEDESTRIAN PROTECTION DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. PROVIDE PROTECTION AS REQUIRED TO PREVENT ANY DAMAGE TO EXISTING CONSTRUCTION WITHIN AND ADJACENT TO JOB SITE. WHERE DAMAGE OCCURS, THE CONTRACTOR SHALL REPAIR OR REPLACE DAMAGED AREA AND/OR MATERIAL AS REQUIRED TO THE OWNER'S APPROVAL AT NO ADDITIONAL COST. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND MAY NOT BE LIMITED TO NORMAL WORKING HOURS. PROVIDE SECURITY FENCE AND GATES AS NECESSARY AROUND THE AREA WITHIN THE SCOPE OF WORK.	ALL STRUC RESPONSI EXECUTIO 6. NOTES AP SHEETS AF APPLIED T 7. DETAILS N
 IF THERE ARE TRENCHES OR EXCAVATION 5'-0" OR MORE IN DEPTH INTO WHICH A PERSON IS REQUIRED TO DESCEND, CONTRACTOR SHALL OBTAIN NECESSARY PERMIT FROM THE APPROPRIATE LOCAL GOVERNING AGENCY. 	SPECIFIC I CONSULT 8. THE CONT DIMENSIOI
 PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, UTILITIES, OTHER SERVICES AND RELATED TASKS NECESSARY FOR PROPER EXECUTION OF THE CONSTRUCTION REQUIRED BY CONTRACT DOCUMENTS. 	9. THE CONT REQUIRED OTHER WC
 ANY REVISION OR ADDITIONAL WORK REQUIRED BY FIELD CONDITIONS OR LOCAL GOVERNING AUTHORITIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING. 	10. GUTTER A
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL PERMITS, LICENSES, INSPECTIONS AND TESTING INDICATED ON THE PLANS AND BY SPECIFICATIONS OR REQUIRED BY THE SOILS REPORT AND/OR REQUIRED BY ANY GOVERNMENT AGENCY. 	
10. CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL UTILITY LINES AND STUBS TO THE BUILDING(S) AS MAY BE INDICATED ON THE PLANS.	INST
11. NO ADDITIONAL ROOF OPENING OR ROOF MOUNTED EQUIPMENT IS ALLOWED BEYOND THAT WHICH IS SHOWN ON THESE PLANS WITHOUT WRITTEN CONSENT OF THE ARCHITECT AND STRUCTURAL ENGINEER.	1. THE INTEN NECESSAF THE CONT
12. NO STRUCTURAL MEMBER SHALL BE CUT FOR PIPES, HVAC DUCTS, ETC., UNLESS SPECIFICALLY DETAILED AND/OR APPROVED BY THE ARCHITECT AND STRUCTURAL ENGINEER.	REQUIRED AND SPEC TO PRODU
13. ALL SHOP WELDING TO BE DONE IN A CERTIFIED LICENSED SHOP. ALL FIELD WELDING SHALL BE DONE ONLY BY CERTIFIED WELDERS UNDER CONTINUOUS INSPECTION WITH CERTIFICATE ISSUED AS REQUIRED BY BUILDING OFFICIAL.	2. ORGANIZA ARRANGEI DIVIDING T
14. WHERE LARGER STUDS OR FURRING IS REQUIRED TO COVER DUCTS, PIPING, CONDUIT, ETC., THE LARGER SIZE STUD OR FURRING SHALL EXTEND THE FULL LENGTH OF THE SURFACE WHERE THE FURRING OCCURS.	OF WORK 3. UNLESS O HAVE WEL
15. NO HAZARDOUS MATERIALS WILL BE STORED AND/OR USED WITHIN THE BUILDING WHICH EXCEED THE QUANTITIES ALLOWED BY CODE.	USED IN TH MEANINGS
 16. INSTALLATION OF ANY BUILDING INSULATION WHICH CONTAINS OR UTILIZES AN OZONE DEPLETING COMPOUND IS PROHIBITED. 17. NO BUILDING OR PORTION OF A BUILDING SHALL BE OCCUPIED OR USED FOR STORAGE PRIOR TO THE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY. 	4. GENERAL COORDINA SPECIFICA WITH SPEC
TO THE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY. 18. THE BUILDING AND FACILITIES MUST BE ACCESSIBLE TO AND FUNCTIONAL FOR THE PHYSICALLY DISABLED IN ACCORDANCE WITH AMERICANS WITH DISABILITIES ACT (ADA) AND ALL OTHER STATE/FEDERAL GOVERNING AGENCIES.	ARCHITEC 5. GENERAL SUBCONTF ARE PLACE FINISH CO

- ERE INDICATED IN THE DRAWINGS.
- TION OF ANY DRAWING.
- ION OF THE WORK.

- IONS REQUIRED FOR OTHER TRADES.
- VORK THAT MAY BE REQUIRED TO COMPLETE THE JOB.
- AND DOWNSPOUT SIZING PER OWNER'S CONTRACTOR.

FRUCTION TO CONTRACTOR

- DUCE THE INDICATED RESULTS.
- K TO BE PERFORMED BY ANY TRADE.
- ECT FOR OWNER REVIEW AND APPROVAL.
- FINISH COLOR.

CONSTRUCTION NOTES

AVING JURISDICTION AND THE RULES AND REGULATIONS OF AL

DITION OR DISCREPANCY BETWEEN DRAWINGS AND FIELD CONDITIONS

ETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR CONSTRUCTION OF ANY PART OF THE WORK SHALL BE INCLUDED AS IF

NCING OF DRAWINGS IS FOR CONVENIENCE ONLY AND DOES NOT LIMIT

ITRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL IONS AND MATERIALS WITHIN THE PROPOSED CONSTRUCTION AREAS. THE CTOR SHALL DESIGN AND INSTALL ADEQUATE SHORING AND BRACING FOR UCTURAL OR REMOVAL TASKS. THE CONTRACTOR SHALL HAVE SOLE SIBILITY FOR ANY DAMAGE OR INJURIES CAUSED BY OR DURING THE

APPEAR ON VARIOUS SHEETS FOR VARIOUS SYSTEMS AND MATERIALS. ARE TO BE OWNER REVIEWED AND NOTES ON ANY ONE SHEET ARE TO BE) TO RELATED SYSTEMS AND MATERIALS DEPICTED ON OTHER DRAWINGS.

NOT SHOWN ARE SIMILAR IN CHARACTER TO THOSE THAT ARE. WHERE DIMENSIONS, DETAILS, OR DESIGN INTENT CANNOT BE DETERMINED, THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

ITRACTOR SHALL LAY OUT HIS OWN WORK, AND SHALL PROVIDE ALL

NTRACTOR SHALL DO ALL CUTTING, PATCHING AND REPAIRING AS ED TO PERFORM ALL OF THE WORK INDICATED ON THE DRAWINGS, AND ALL

ENT OF THE SET OF CONTRACT DOCUMENTS IS TO INCLUDE ALL ITEMS SARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK BY ITRACTOR AS BINDING PERFORMANCE. THE CONTRACTOR SHALL BE ED ONLY TO THE EXTENT CONSISTENT WITH THE CONTRACT DOCUMENTS ECIFICATIONS REASONABLY INFERABLE FROM THEM AS BEING NECESSARY

ZATION OF THE SPECIFICATIONS INTO DIVISIONS, SECTIONS AND ARTICLES, EMENT OF DRAWINGS SHALL NOT CONTROL THE CONTRACTOR, IN G THE WORK AMONG SUBCONTRACTORS OR IN ESTABLISHING THE EXTENT

OTHERWISE STATED IN THE CONTRACT DOCUMENTS, WORDS WHICH ELL-KNOWN TECHNICAL OR CONSTRUCTION INDUSTRY MEANINGS ARE THE CONTRACT DOCUMENTS IN ACCORDANCE WITH SUCH RECOGNIZED

. CONTRACTOR AND ELECTRICAL SUBCONTRACTOR TO FULLY NATE ALL ELECTRICAL DEVICE BODIES AND COVER PLATES PER THE CATIONS. DEVICE BODIES AND COVER PLATES ARE COLOR COORDINATED PECIALTY FINISHES. PROVIDE DEVICE BODY AND COVER PLATES TO THE

CONTRACTOR TO FULLY COORDINATE WITH MECHANICAL/PLUMBING ITRACTORS. ALL FIXTURE/DEVICE COLORS WHERE FIXTURE/DEVICE UNITS ACED WITHIN WALLS AND CEILING ASSEMBLIES VS ADJACENT MATERIAL

E-201

E-202

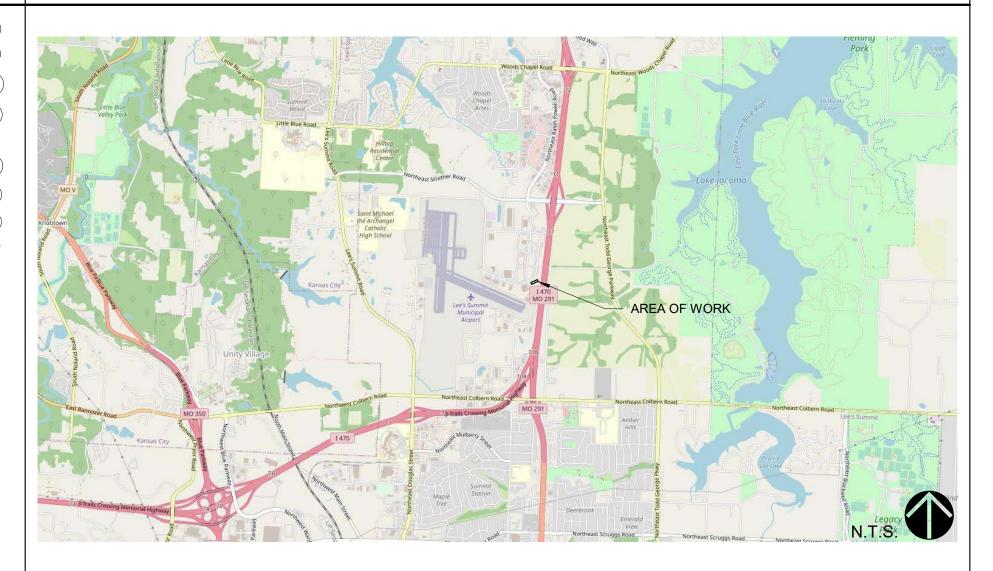
E-301

SHEET NAME # <u>1</u><u>2</u>. GENERAL G-100-FDP COVER SHEET - FINAL DEV. PLAN G-100-BP COVER SHEET - BUILDING PERMIT | X | X | X CIVIL C-001 COVER SHEET | X | X | X C-101 DEMOLITION PLAN | X | X | X C-121 **EROSION CONTROL PLAN PHASE 1** XXX **EROSION CONTROL PLAN PHASE 2** C-122 | X | X | X C-123 **EROSION CONTROL PLAN PHASE 3** | X | X | X C-131 EROSION CONTROL DETAILS XXXX C-132 EROSION CONTROL DETAILS XXXX C-201 DIMENSION PLAN C-202 ADA RAMP DETAILS C-301 GRADING PLAN XXXX C-302 ADA RAMP GRADING DETAILS C-401 UTILITY PLAN C-411 STORM PROFILES XXXX C-421 DRAINAGE AREA MAP XXXX C-501 DETAILS LANDSCAF L-100 X X X LANDSCAPE PLAN ARCHITECTURAL A-001 LIFE SAFETY AND CODE SHEET XXXX A-002 ROOF DRAINAGE PLAN OVERALL MAIN LEVEL FLOOR PLAN A-100 MAIN LEVEL FLOOR PLAN - AREA A A-110 A-111 MAIN LEVEL FLOOR PLAN - AREA B A-130 ENLARGED PLANS A-200 ROOF PLAN A-301 EXTERIOR ELEVATIONS A-400 WALL SECTIONS & DETAILS A-401 PERSPECTIVES STRUCTURAL S001 STRUCTURAL GENERAL NOTES S100 FOUNDATION PLAN S101 FOUNDATION PLAN MECHANICAL/PLUMBING MP001 MECHANICAL AND PLUMBING SPECIFICATIONS AND SYMBOLS X X X MP002 MECHANICAL AND PLUMBING SCHEDULES AND DETAILS XXXX MECHANICAL M-101 MECHANICAL PLAN WEST M-102 MECHANICAL PLAN EAST PLUMBING P-101 X X X PLUMBING PLAN WEST P-102 PLUMBING PLAN EAST ELECTRICAL E-001 ELECTRICAL SPECIFICATIONS AND SYMBOLS XXXX E-002 PHOTOMETRIC PLAN E-003 PHOTOMETRIC PLAN **ELECTRICAL PLAN - WEST** E-101 E-102 ELECTRICAL PLAN - EAST

ELECTRICAL EQUIPMENT POWER PLAN - WEST

ELECTRICAL EQUIPMENT POWER PLAN - EAST

ELECTRICAL SCHEDULES AND DIAGRAMS



<u>OWNER</u>

DAVID WARD WARD DEVELOPMENT 1120 EAGLE RIDGE BLVD GRAIN VALLEY, MO 64029 PHONE: 816-229-8115 EMAIL: DAVID@SAFETYMINISTORAGE.COM

STRUCTURAL ENGINEER



STAND SEI 8234 ROBINSON ST. OVERLAND PARK, KS 66204 NAME: PAUL SPEARS, STRUCT. ENGINEER PHONE: (913) 214-2169 EMAIL:

MECHANICAL / ELECTRICAL / PLUMBING ENGINEER

JSC	
ENGINEERS	

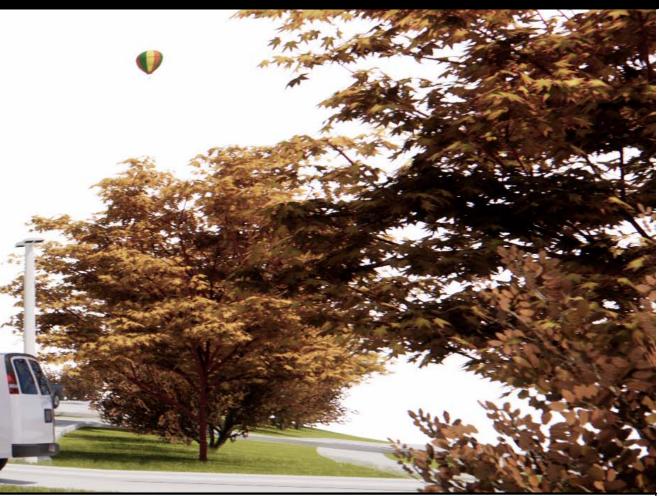
XXXX

XXXX

JSC ENGINEERS 1901 NW BLUE PKWY, 3RD FLOOR UNITY VILLAGE, MO 64065 NAME: JUSTIN SMOTHERS, MEP ENGINEER PHONE: (816) 272-5289 EMAIL: JSMOTHERS@JSCENGINEERS.COM

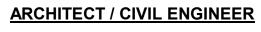
SHEET INDEX





VICINITY MAP

PROJECT DIRECTORY





ARCHITECTURE/ENGINEERING/SURVEYING

3200 S. State Route 291, Bldg. 1, Independence, MO 64057 816.373.4800 | powellcwm.com NAME: NICK CURTIS, ARCHITECT PHONE: 816.373.4800 EMAIL:

NAME: PHONE: EMAIL:

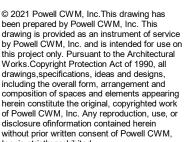
NCURTIS@POWELLCWM.COM

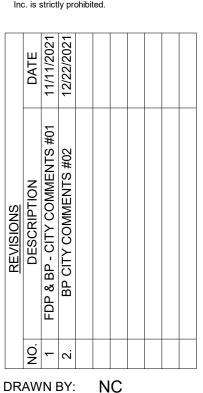
TOBY WILLIAMS, CIVIL ENGINEER 816.373.4800 TWILLIAMS@POWELLCWM.COM



 \bigcirc







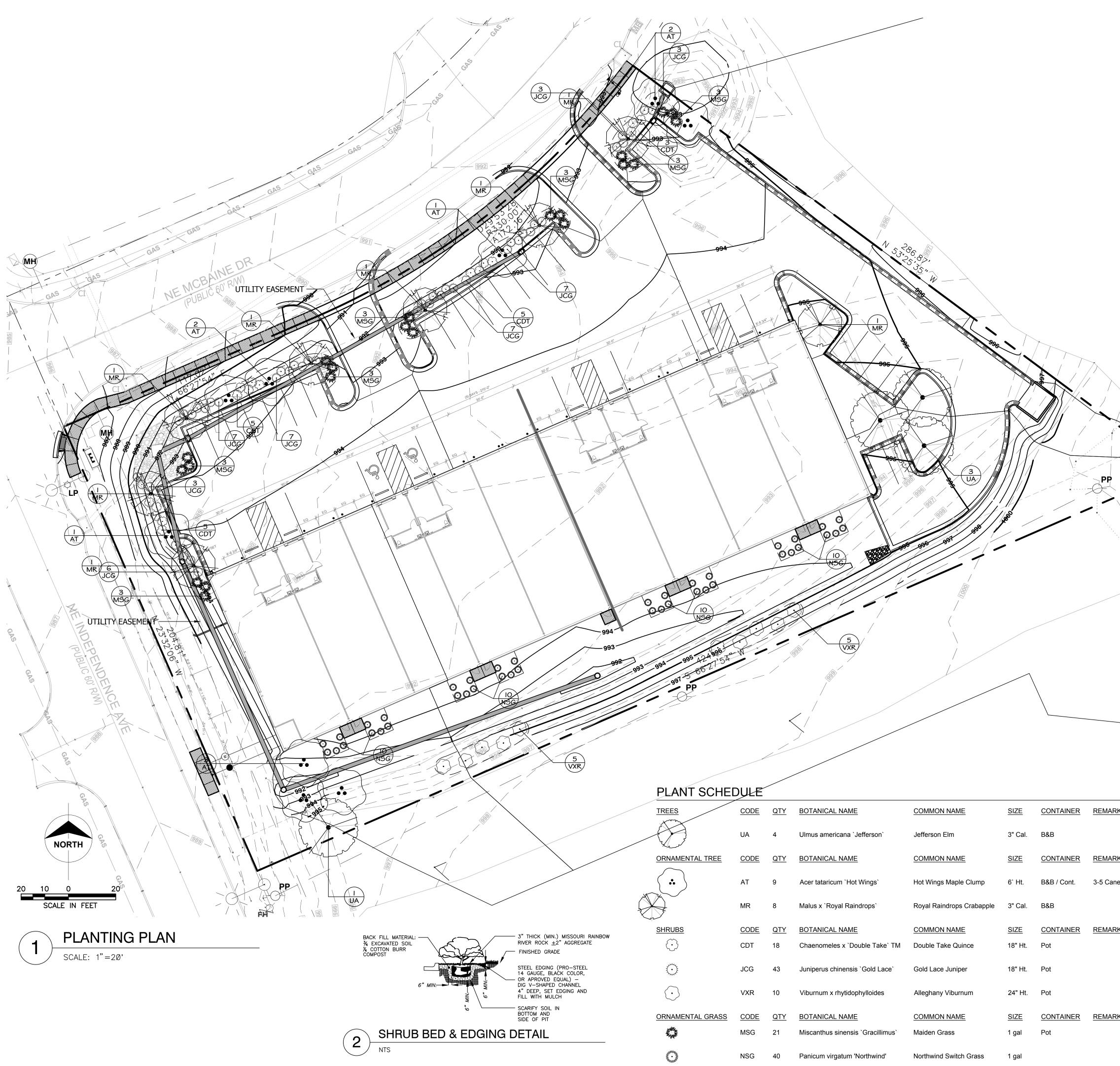
BUILDING PERMIT COVER SHEET -**BUILDING PERMIT** G-100-BP

CHECKED BY: NC

ISSUED FOR:

PROJECT #: 21-1902

ISSUE DATE: 2021.09.24



	TREES	CODE	<u>QTY</u>	BOTANICAL NAME	COMMON NAME	<u>SIZE</u>	CONTAINER	REMARKS
		UA	4	Ulmus americana `Jefferson`	Jefferson Elm	3" Cal.	B&B	
	ORNAMENTAL TREE	CODE	<u>QTY</u>	BOTANICAL NAME	COMMON NAME	<u>SIZE</u>	CONTAINER	REMARKS
		AT	9	Acer tataricum `Hot Wings`	Hot Wings Maple Clump	6` Ht.	B&B / Cont.	3-5 Cane - 3" Cal. Cumulative
		MR	8	Malus x `Royal Raindrops`	Royal Raindrops Crabapple	3" Cal.	B&B	
IICK (MIN.) MISSOURI RAINBOW	SHRUBS	CODE	<u>QTY</u>	BOTANICAL NAME	COMMON NAME	<u>SIZE</u>	CONTAINER	REMARKS
ROCK ± 2 " AGGREGATE HED GRADE	$\langle \cdot \rangle$	CDT	18	Chaenomeles x `Double Take` TM	Double Take Quince	18" Ht.	Pot	
. EDGING (PRO–STEEL AUGE, BLACK COLOR, PROVED EQUAL) –	zuru Zuru Zuru Zuru Zuru Zuru Zuru Zuru	JCG	43	Juniperus chinensis `Gold Lace`	Gold Lace Juniper	18" Ht.	Pot	
'-SHAPED CHAŃNEL EEP, SET EDGING AND WITH MULCH	$\overline{\mathbf{\cdot}}$	VXR	10	Viburnum x rhytidophylloides	Alleghany Viburnum	24" Ht.	Pot	
FY SOIL IN DM AND OF PIT	ORNAMENTAL GRASS	CODE	<u>QTY</u>	BOTANICAL NAME	COMMON NAME	<u>SIZE</u>	CONTAINER	REMARKS
AIL	ANNE SANNE	MSG	21	Miscanthus sinensis `Gracillimus`	Maiden Grass	1 gal	Pot	
		NSG	40	Panicum virgatum 'Northwind'	Northwind Switch Grass	1 gal		

LANDSCAPE PLAN NOTES:

1. Existing underground (u/g), overhead (o.h.) utilities and drainage structures have been plotted from available information and therefore, their locations must be considered approximate only. It is the responsibility of the individual contractors to verify existence and location of all utilities before starting any work.

2. Prior to commencement of work, the contractor shall give 48 hours advance notice to all those companies/utilities which have facilities in the near vicinity of the construction to be performed.

3. Contractor shall verify all landscape material quantities and shall report any discrepancies immediately to the Landscape Architect. 4. No substitutions for variety or cultivar shall be accepted without first obtaining written approval from Landscape Architect.

5. All plant material shall be of excellent quality, free of disease and infestation, and true to type, variety, size specified, and form per the American Standard for Nursery Stock (ANSI Z60.1 current version), published by the American Nurserymen's Association. 6. All shrub beds in lawn areas shall be edged as shown in the planting details.

7. All planting areas, as well as a minimum width of 18" from building foundation, shall receive 3" minimum depth of 2" Kansas River Rock as detailed, unless otherwise noted. In landscape beds, rock mulch shall be a consistent 3" depth throughout. Rock mulch shall be placed on top of woven weed fabric (DeWitt Pro-5, or equal), which shall be secured in place with sod pins.

8. Trees planted in turf areas shall have a 3" ring of shredded hardwood mulch formed into a saucer in a minimum ring twice the diameter of the rootball from the trunk.

9. Contractor shall thoroughly water in each plant immediately following installation.

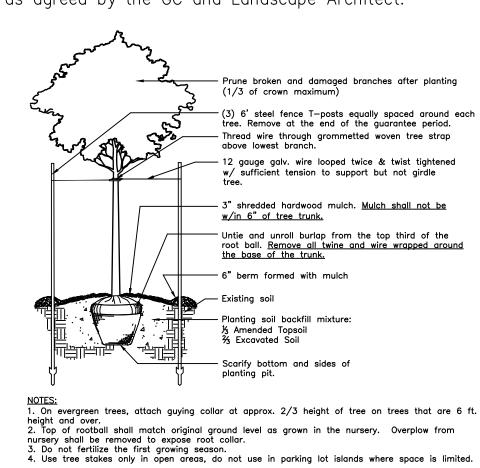
10. No plantings shall be placed closer than 4' from the back of curb to allow for vehicle bumper overhang.

11. Contractor shall be responsible for calculating all areas of sod and seed and the amounts of each needed for optimum coverage.

12. Contractor shall install sod in all turf areas. Sod shall be turf-type tall Fescue consisting of 90% fescue blend and 10% bluegrass in all areas disturbed during construction not otherwise designated as another material. Sod placed in areas greater than 4:1 slope shall fastened to the slope with sod staples.

13. Proposed trees shall not be placed over existing or proposed utility service lines. It is the contractor's responsibility to understand utility locations and have them marked during tree planting operations. If utility is damaged during planting, contractor is responsible for notifying the general contractor and owner of utility and paying for repair of the damaged utility.

14. A fully automated irrigation system will be supplied for this project by the Contractor. Design shall be provided and approved by the landscape architect prior to ordering materials or installing any aspect of the irrigation system. General contractor shall supply tap location and water pressure to irrigation designer. Tap for irrigation shall be after the main building tap and shall be thru a deduct meter configuration. Irrigation system shall consist of tap, blackflow, smart controller, heads, pipe, valves, wire, flow sensing, weather station, and any other feature to give the most efficient and comprehensive system as deemed necessary by the irrigation designer and landscape architect. System shall cover all areas designated as turf or landscape beds. Turf, trees and shrubs shall all be on separate zones so that they can be watered at different rates. Submit all irrigation plans to the landscape architect for approval. Controller shall be mounted inside a stainless steel, lockable cabinet on exterior of building nearest the mechanical room access door or other utility panels, as agreed by the GC and Landscape Architect.



3





Chad D. Weinand, PLA, ASLA Landscape Architecture

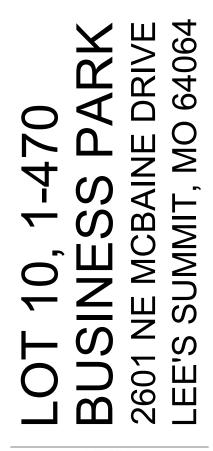
15173 W. 157th Terrace, Olathe, Kansas 66062 913.484.3738 - cweinand74@gmail.com Copyright 2021



Certificates of Authority Architecture: MO 310 / KS 73 Engineering: MO 4 / KS 241 Land Surveying: MO 123 / KS 36

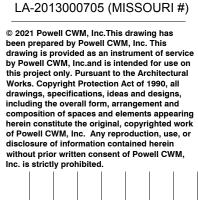
CLIENT

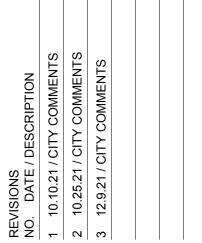
WARD DEVELOPMENT DAVID WARD 1120 NW EAGLE RIDGE BLVD. GRAIN VALLEY, MO 64029 (816) 229-8115





CHAD D. WEINAND, PLA

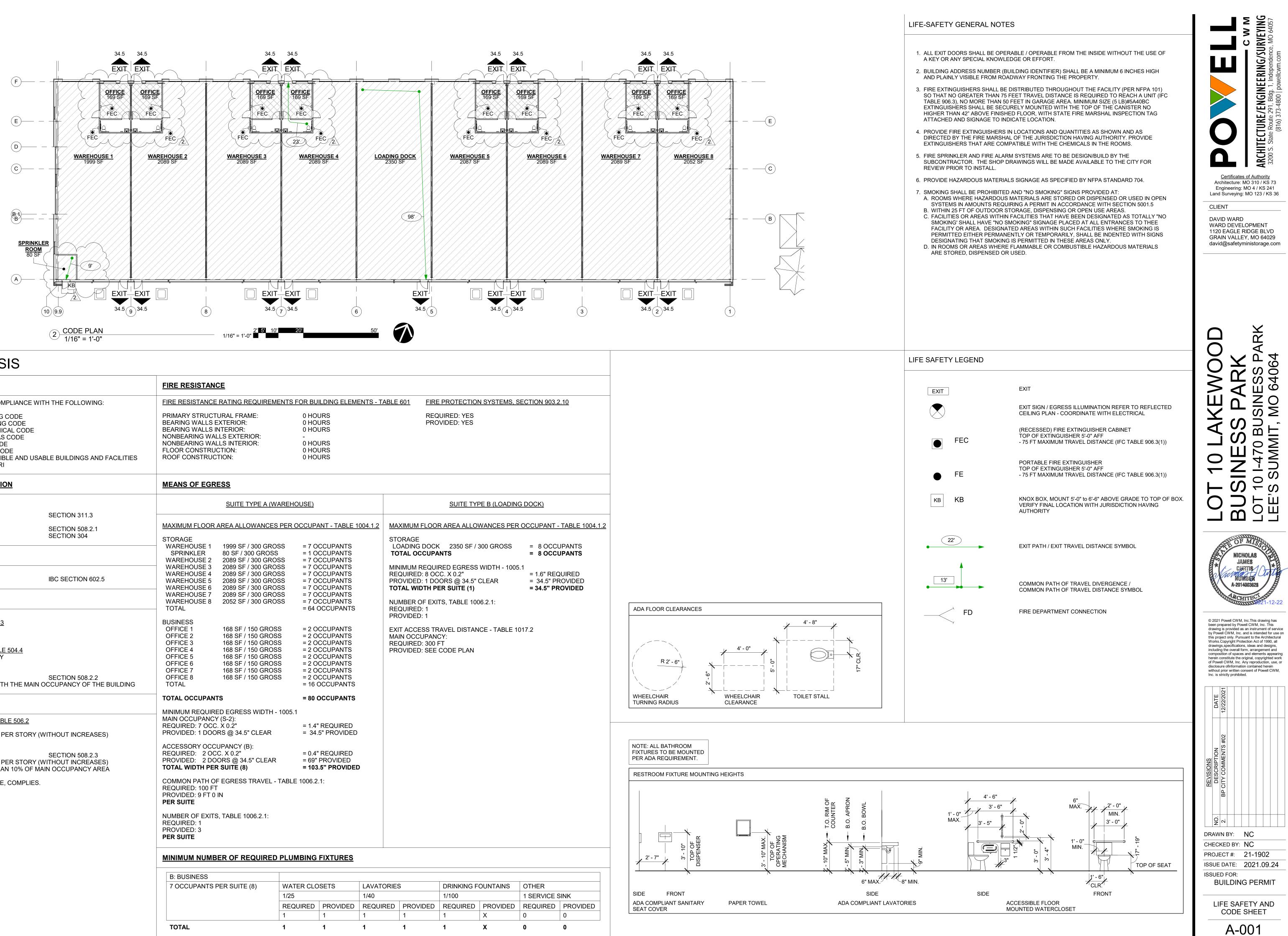




DRAWN BY:	CDW			
CHECKED BY:	CDW			
PROJECT #:	21-1902			
ISSUE DATE:	8/23/2021			
ISSUED FOR:				
CONSTRUCTION				

LANDSCAPE PLAN

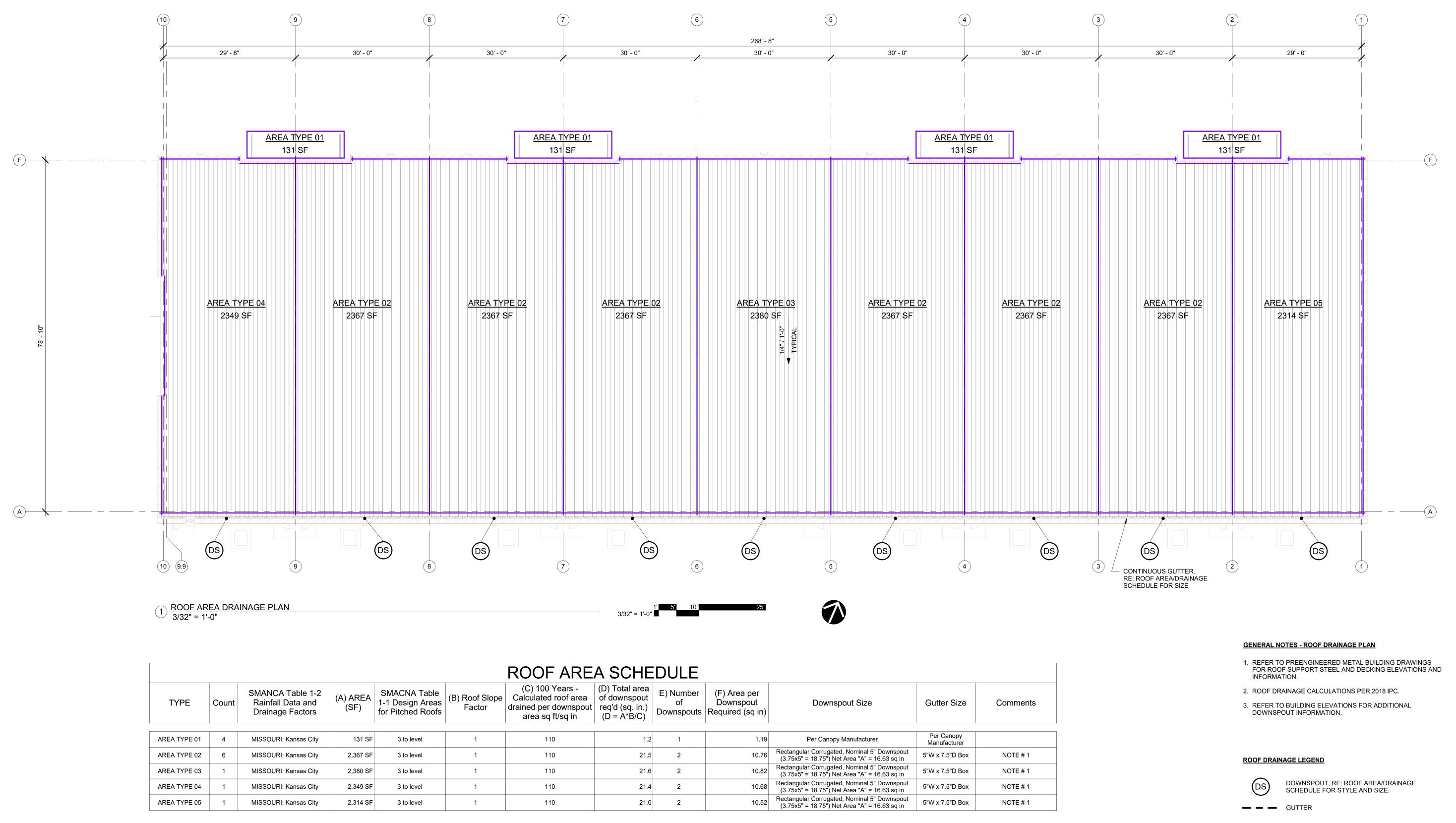
L-100



CODE ANALYSIS

APPLICABLE CODES	FIRE RESISTANCE	
THE BUILDING SHALL BE IN COMPLIANCE WITH THE FOLLOWING:	FIRE RESISTANCE RATING REQUIREMENTS	FOR BUILDING ELEMEN
2018 INTERNATIONAL BUILDING CODE 2018 INTERNATIONAL PLUMBING CODE 2018 INTERNATIONAL MECHANICAL CODE 2018 INTERNATIONAL FUEL GAS CODE 2018 INTERNATIONAL FIRE CODE 2017 NATIONAL ELECTRICAL CODE ICC/ANSI A117.1-2009, ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES LEE'S SUMMIT, MISSOURI	PRIMARY STRUCTURAL FRAME: BEARING WALLS EXTERIOR: BEARING WALLS INTERIOR: NONBEARING WALLS EXTERIOR: NONBEARING WALLS INTERIOR: FLOOR CONSTRUCTION: ROOF CONSTRUCTION:	0 HOURS 0 HOURS 0 HOURS - 0 HOURS 0 HOURS 0 HOURS
OCCUPANCY CLASSIFICATION	MEANS OF EGRESS	
MAIN OCCUPANCY (S-2): S-2: STORAGE (LOW-HAZARD STORAGE)SECTION 311.3ACCESSORY OCCUPANCY (B): B: BUSINESSSECTION 508.2.1 SECTION 304TYPE OF CONSTRUCTION	SUITE TYPE A (WAREH) MAXIMUM FLOOR AREA ALLOWANCES PER (STORAGE WAREHOUSE 1 1999 SF / 300 GROSS SPRINKLER 80 SF / 300 GROSS	
TYPE OF CONSTRUCTION V-B IBC SECTION 602.5	WAREHOUSE 2 2089 SF / 300 GROSS WAREHOUSE 3 2089 SF / 300 GROSS WAREHOUSE 4 2089 SF / 300 GROSS WAREHOUSE 5 2089 SF / 300 GROSS WAREHOUSE 6 2089 SF / 300 GROSS	= 7 OCCUPANTS = 7 OCCUPANTS = 7 OCCUPANTS = 7 OCCUPANTS = 7 OCCUPANTS
ALLOWABLE HEIGHTS	WAREHOUSE 7 2089 SF / 300 GROSS WAREHOUSE 8 2052 SF / 300 GROSS TOTAL	= 7 OCCUPANTS = 7 OCCUPANTS = 64 OCCUPANTS
MAIN OCCUPANCY (S-2): <u>BUILDING HEIGHT - TABLE 504.3</u> ALLOWABLE HEIGHT = 60 FT ACTUAL HEIGHT = 22 FT 2 IN <u>BUILDING # OF STORIES - TABLE 504.4</u> ALLOWABLE HEIGHT = 3 STORY ACTUAL HEIGHT = 1 STORY ACCESSORY OCCUPANCY (B): SECTION 508.2.2 SHALL BE IN ACCORDANCE WITH THE MAIN OCCUPANCY OF THE BUILDING	BUSINESS OFFICE 1 168 SF / 150 GROSS OFFICE 2 168 SF / 150 GROSS OFFICE 3 168 SF / 150 GROSS OFFICE 4 168 SF / 150 GROSS OFFICE 5 168 SF / 150 GROSS OFFICE 6 168 SF / 150 GROSS OFFICE 7 168 SF / 150 GROSS OFFICE 8 168 SF / 150 GROSS	= 2 OCCUPANTS = 16 OCCUPANTS
ALLOWABLE AREAS	TOTAL OCCUPANTS	= 80 OCCUPANTS
ALLOWABLE FLOOR AREA - TABLE 506.2 MAIN OCCUPANCY (S-2): ALLOWABLE AREA = 54,000 SF PER STORY (WITHOUT INCREASES) ACTUAL AREA = 22,677 SF ACCESSORY OCCUPANCY (B): SECTION 508.2.3 ALLOWABLE AREA = 36,000 SF PER STORY (WITHOUT INCREASES)	 MINIMUM REQUIRED EGRESS WIDTH - 1005." MAIN OCCUPANCY (S-2): REQUIRED: 7 OCC. X 0.2" PROVIDED: 1 DOORS @ 34.5" CLEAR ACCESSORY OCCUPANCY (B): REQUIRED: 2 OCC. X 0.2" PROVIDED: 2 DOORS @ 34.5" CLEAR TOTAL WIDTH PER SUITE (8) 	1 = 1.4" REQUIRED = 34.5" PROVIDED = 0.4" REQUIRED = 69" PROVIDED = 103.5" PROVIDED
SHALL NOT OCCUPY MORE THAN 10% OF MAIN OCCUPANCY AREA ACTUAL AREA = 1,344 SF 22,677 x .10 = 2,677 THEREFORE, COMPLIES.	COMMON PATH OF EGRESS TRAVEL - TABLE REQUIRED: 100 FT PROVIDED: 9 FT 0 IN PER SUITE NUMBER OF EXITS, TABLE 1006.2.1: REQUIRED: 1 PROVIDED: 3 PER SUITE	
	MINIMUM NUMBER OF REQUIRED PLUI	MBING FIXTURES
	B: BUSINESS	
	1/25	
		QUIRED PROVIDED F
		<u> </u>

TOTAL



TYPECountSMANCA Table 1-2 Rainfall Data and Drainage Factors(A) AREA (SF)SMACNA Table 1-1 Design Areas for Pitched Roofs(B) Roof Slope Factor(C) 100 Years - Calculated roof area drained per downspout area sq ff/sq in(D) Total area of downspout req'd (sq. in.)E) Number of Downspout Required (sq in)(F) Area per Downspout Required (sq in)	ize Gutter Size	Comments
area sq ft/sq in $(D = A*B/C)$ Downspouls (Kequired (sq in)		
AREA TYPE 01 4 MISSOURI: Kansas City 131 SF 3 to level 1 110 1.2 1 1.19 Per Canopy Manufa	cturer Per Canopy Manufacturer	
AREA TYPE 02 6 MISSOURI: Kansas City 2,367 SF 3 to level 1 110 21.5 2 10.76 Rectangular Corrugated, Nomin (3.75x5" = 18.75") Net Area	nal 5" Downspout A" = 16.63 sq in 5"W x 7.5"D Box	NOTE # 1
AREA TYPE 03 1 MISSOURI: Kansas City 2,380 SF 3 to level 1 110 21.6 2 Rectangular Corrugated, Nomin (3.75x5" = 18.75") Net Area "//		NOTE # 1
AREA TYPE 04 1 MISSOURI: Kansas City 2,349 SF 3 to level 1 110 21.4 2 Rectangular Corrugated, Nomin (3.75x5" = 18.75") Net Area "//		NOTE # 1
AREA TYPE 05 1 MISSOURI: Kansas City 2,314 SF 3 to level 1 110 21.0 2 Rectangular Corrugated, Nomin (3.75x5" = 18.75") Net Area "//		NOTE # 1

NOTES - ROOF AREA SCHEDULE <u>/</u>1

1. BOX GUTTER PROFILE INDICATED BUT ALTERNATE PROFILE MAY BE PROVIDED BY PEMB MFR SO LONG AS THE GUTTER PROFILE: A. PROVIDES EQUAL OR GREATER THAN REQUIRED FLOW

RATES B. IS AT LEAST AS WIDE AS DOWNSPOUT PROFILE DEPTH C. IS COORDINATED WITH PARAPET CAVITY DEPTH, SEE

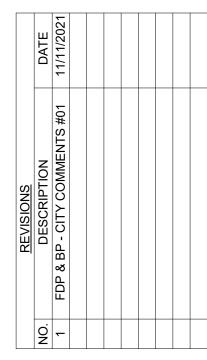
DETAIL: 8 / **A-400**

1/4" / 1'-0"

SURFACE SLOPE ARROW

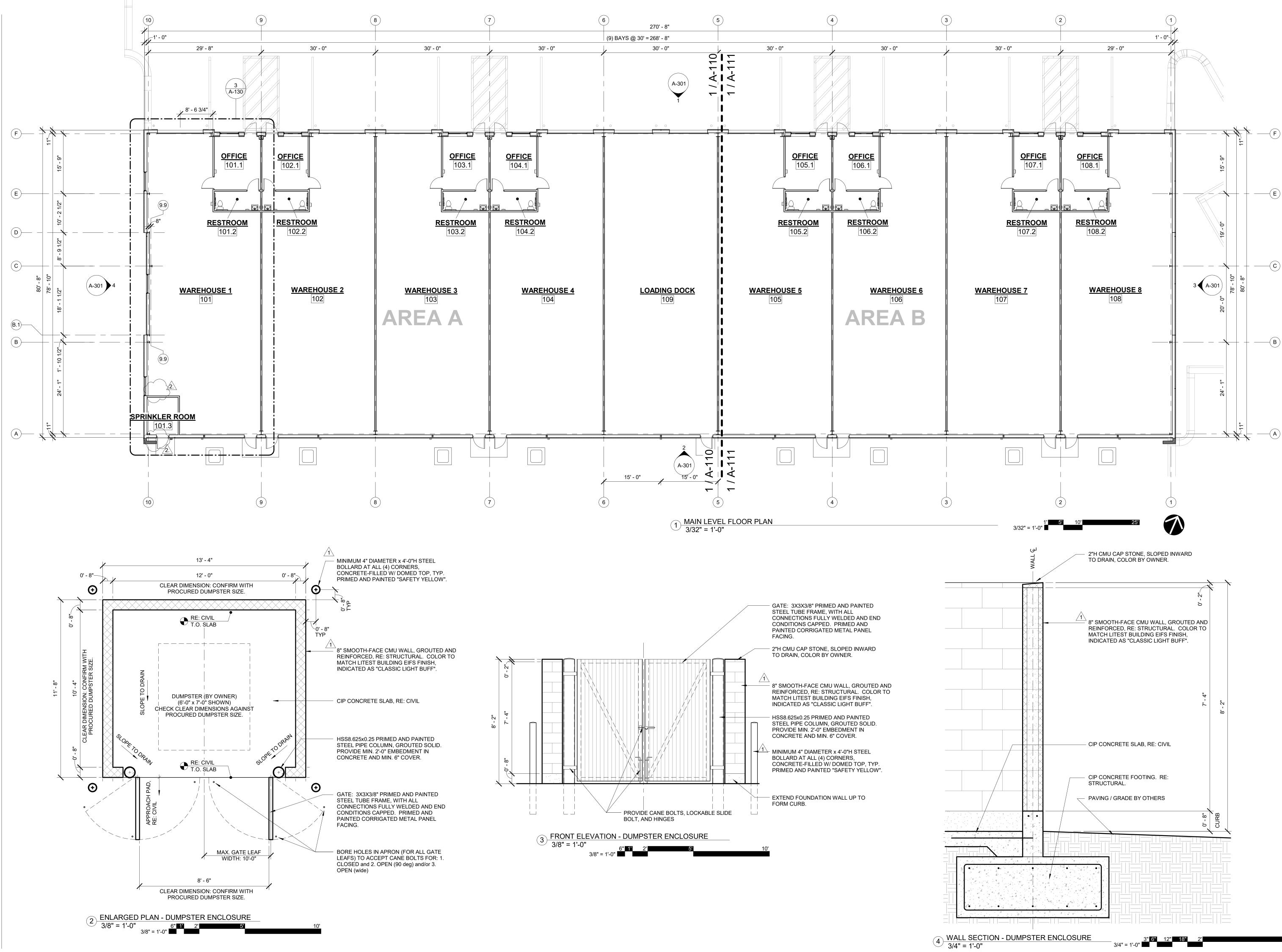
AREA BOUNDARY

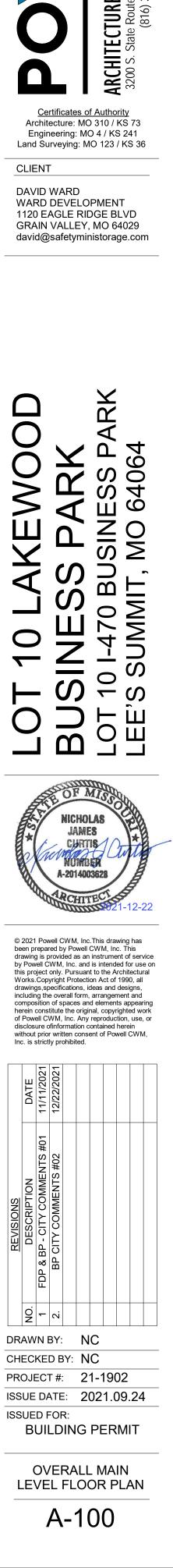




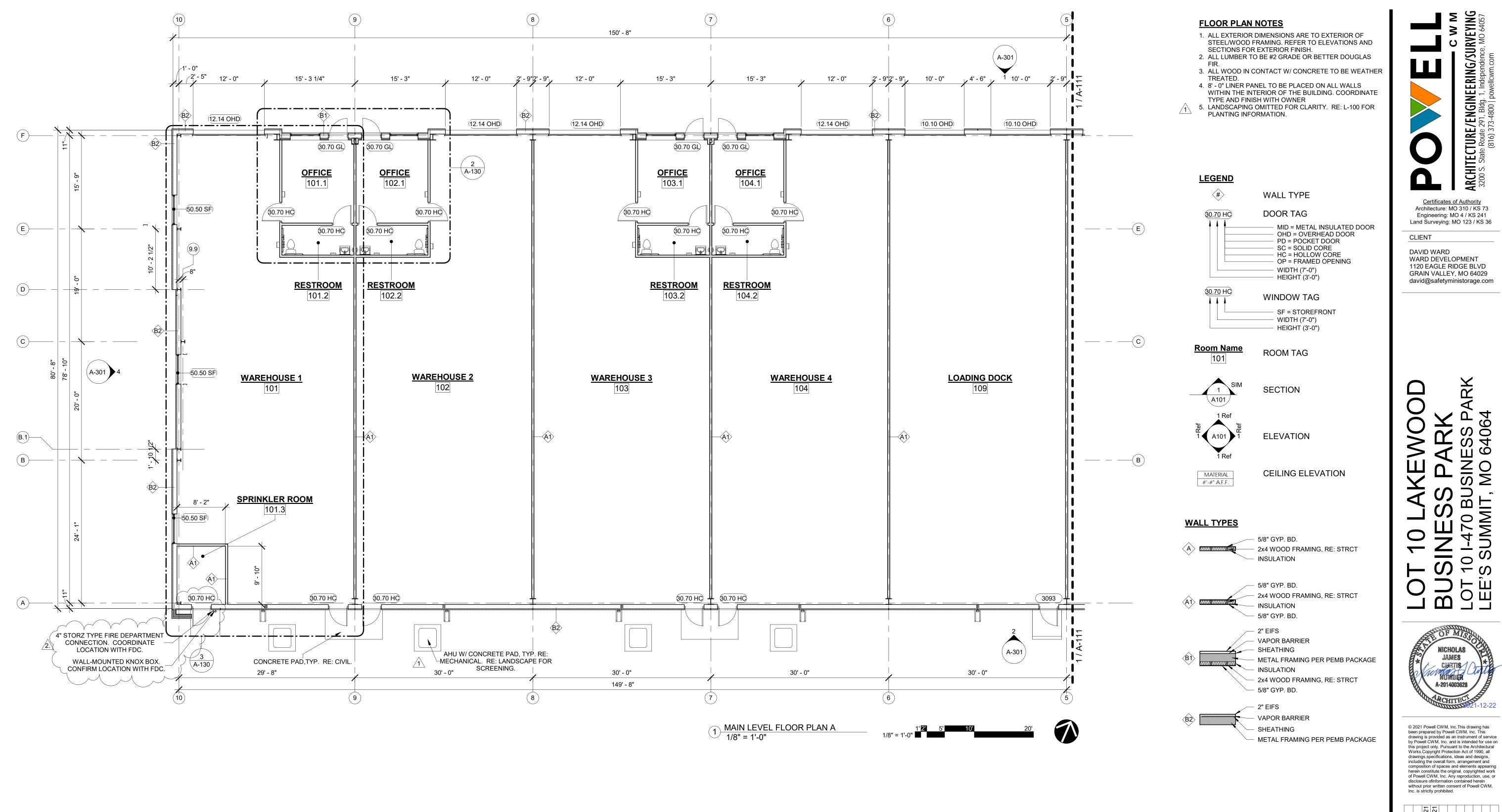
DRAWN BY: NC CHECKED BY: NC PROJECT #: 21-1902 ISSUE DATE: 2021.09.24 ISSUED FOR: BUILDING PERMIT

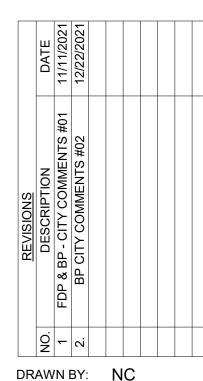
> ROOF DRAINAGE PLAN A-002





ARCHITECTURE/ENGINEERING/SURVEYING 3200 S. State Route 291, Bldg. 1, Independence, MO 64057 ≥ C



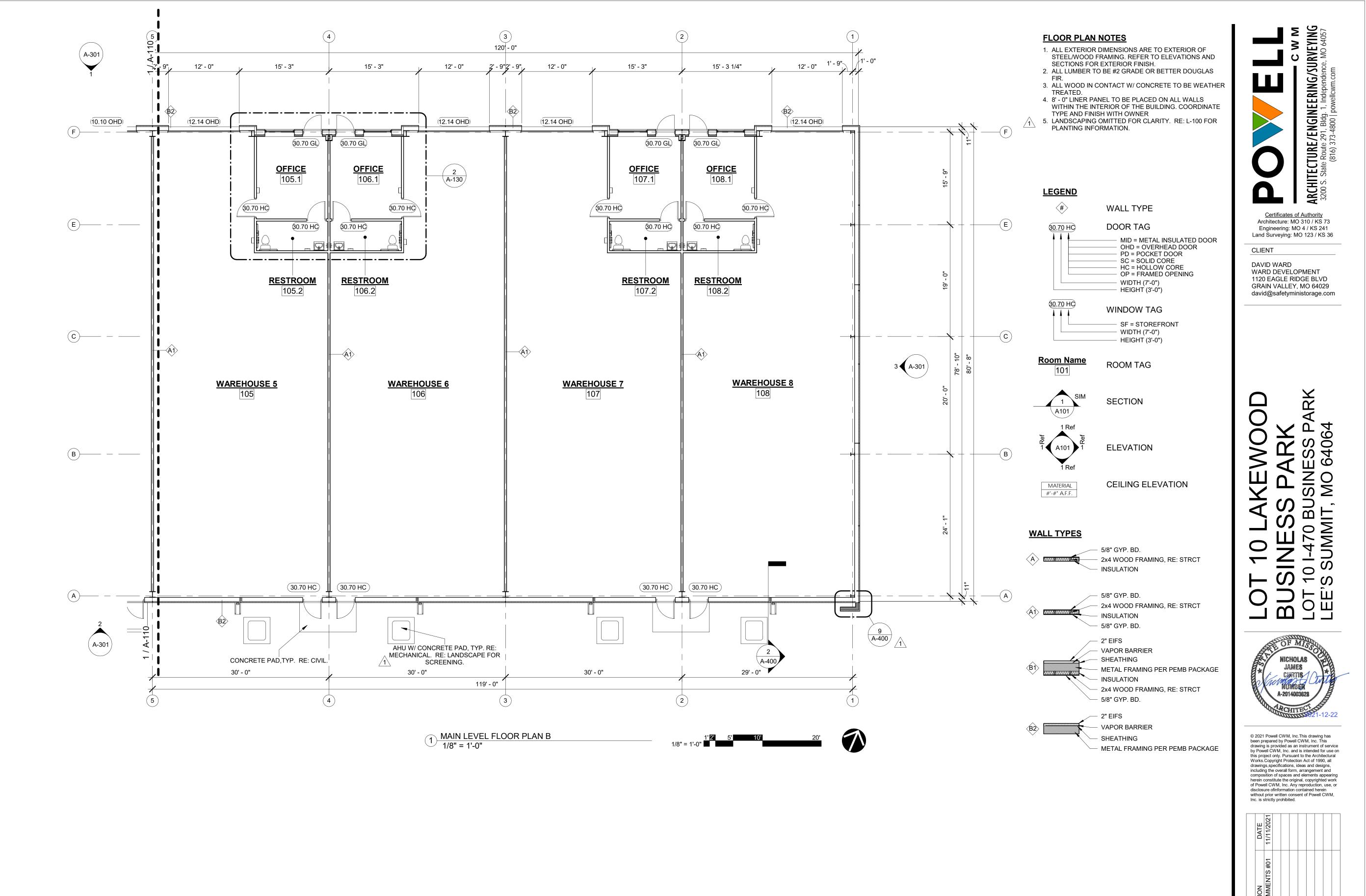


 $\bigcirc 2 \leftarrow \land i$ $\land \land i$ DRAWN BY:NCCHECKED BY:NCPROJECT #:21-1902ISSUE DATE:2021.09.24ISSUED FOR:

BUILDING PERMIT

MAIN LEVEL FLOOR PLAN - AREA A

A-110



BUILDING PERMIT MAIN LEVEL FLOOR

PLAN - AREA B A-111

REVISIONS DESCRIPT

FDP & I

Ñ L

ISSUED FOR:

DRAWN BY: NC CHECKED BY: NC

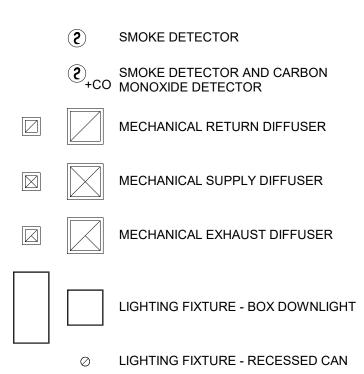
PROJECT #: 21-1902

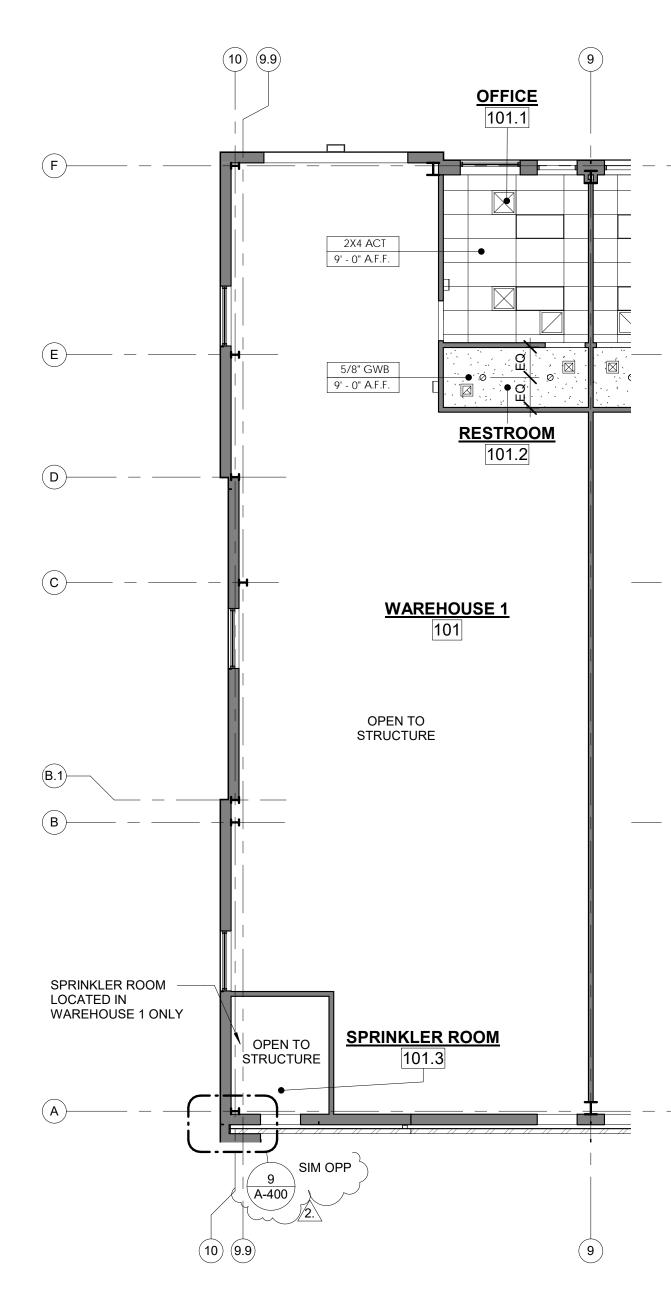
ISSUE DATE: 2021.09.24

GENERAL NOTES - CEILING PLAN

- 1. REFER TO MEP DRAWINGS FOR ALL ADDITIONAL CEILING MOUNTED DEVICES NOT SHOWN ON THIS DRAWING INCLUDING, BUT NOT LIMITED TO, LIGHTING, MECHANICAL REGISTERS, SMOKE DETECTORS, MOTION DETECTORS, EXIT SIGNAGE, HEAT DETECTORS, CAMERAS, COMMUNICATION EQUIPMENT,
- FIRE SPRINKLER HEADS, ETC. 2. ALL EXPOSED STRUCTURAL STEEL SHALL BE PAINTED TO MATCH THE ADJACENT WALL COLOR. THIS INCLUDES, BUT IS NOT LIMITED TO STEEL BEAMS, LADDERS, GUARD RAILS, MISC. BRACING, ETC. SEE PEMB PACKAGE.
- 3. CEILING R-VALUES SHALL MAINTAIN R-38. EXTERIOR WALL INSULATION SHALL MAINTAIN R-13 OR BETTER. WALL R-VALUES SHALL BE OF CONSTRUCTION TO EQUAL R-19 TOTAL.

LEGEND - CEILING PLAN

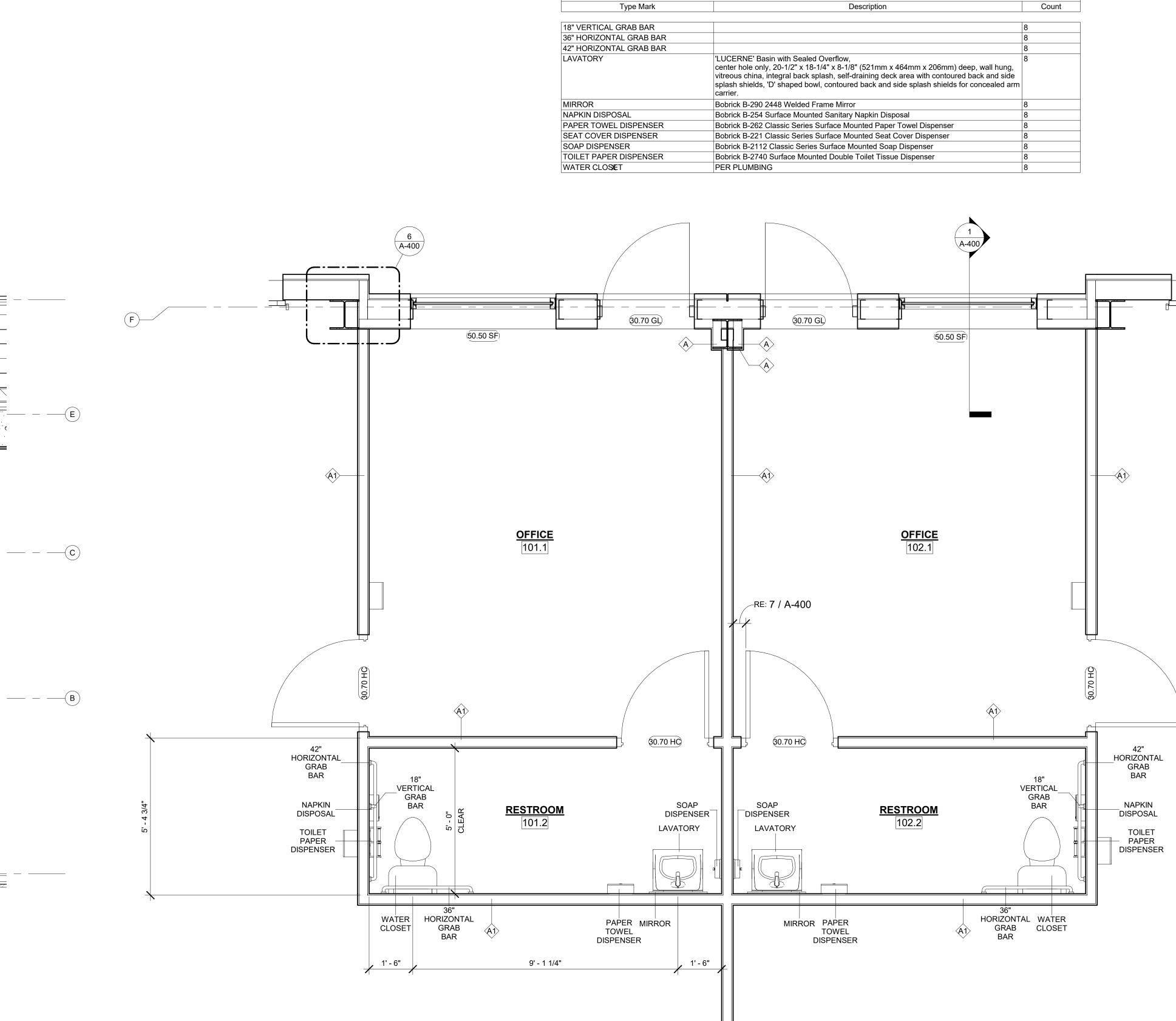




3 ENTRY LEVEL RCP 1/8" = 1'-0"

Type Mark	
18" VERTICAL GRAB BAR	
36" HORIZONTAL GRAB BAR	
42" HORIZONTAL GRAB BAR	
LAVATORY	'LUCERI center ho vitreous splash sl carrier.
MIRROR	Bobrick I
NAPKIN DISPOSAL	Bobrick I
PAPER TOWEL DISPENSER	Bobrick I
SEAT COVER DISPENSER	Bobrick I
SOAP DISPENSER	Bobrick I
TOILET PAPER DISPENSER	Bobrick I
WATER CLOSET	PER PLI

RESTROOM ACCESSORY SCHEDULE

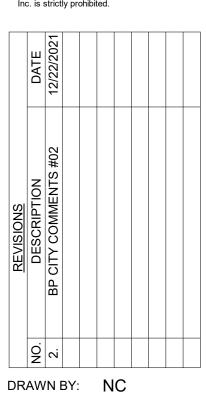


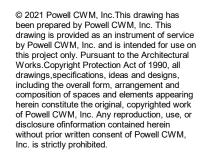
1/2" = 1'-0"





CHECKED BY:	NC
PROJECT #:	21-1902
ISSUE DATE:	2021.09.24
ISSUED FOR:	
BUILDIN	G PERMIT







Ó Õ 4 Q Ш Ч 0 M < UMMIT ന 0 \bigcirc 0 **γ** E C B C C

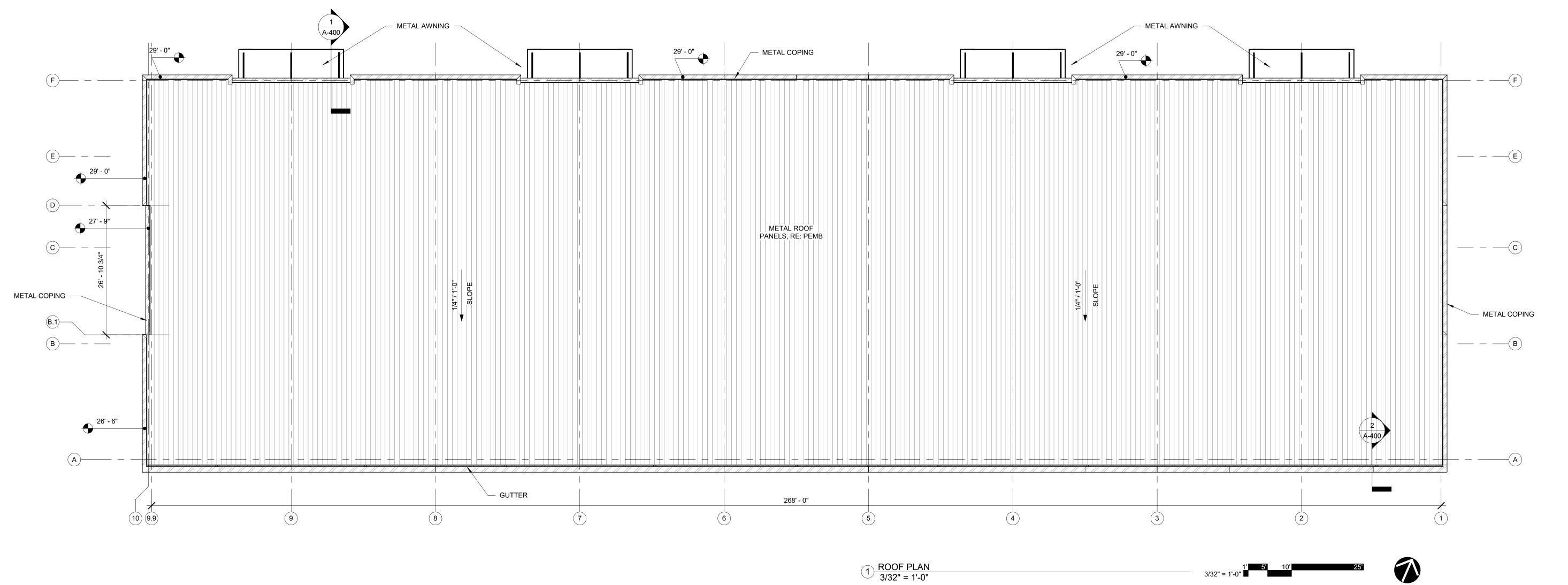
M



CLIENT

DAVID WARD

WARD DEVELOPMENT 1120 EAGLE RIDGE BLVD GRAIN VALLEY, MO 64029 david@safetyministorage.com

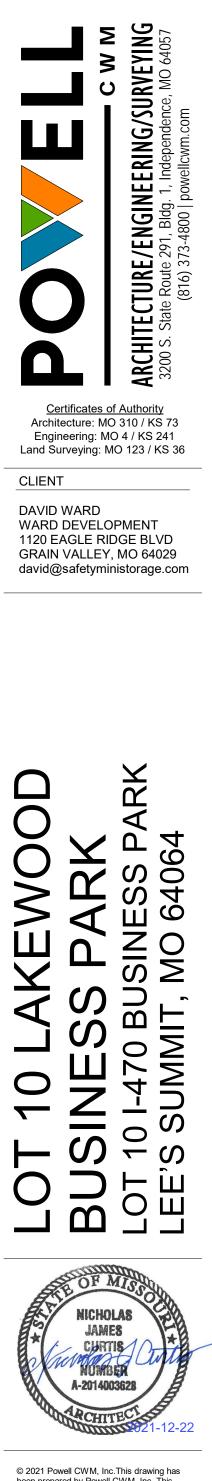


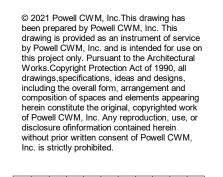
1 ROOF PLAN 3/32" = 1'-0"

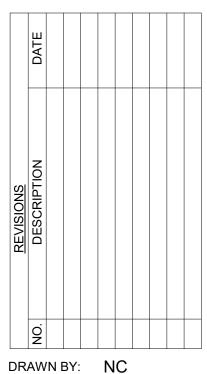
ROOF GENERAL NOTES

3/32" = 1'-0"

1. DIMENSIONS ARE FROM PEMB PACKAGE AND ARE SHOWN FOR REFERENCE ONLY. PEMB DRAWINGS WILL OVER-RIDE INFO SHOWN IN ARCH PLANS.

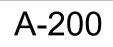


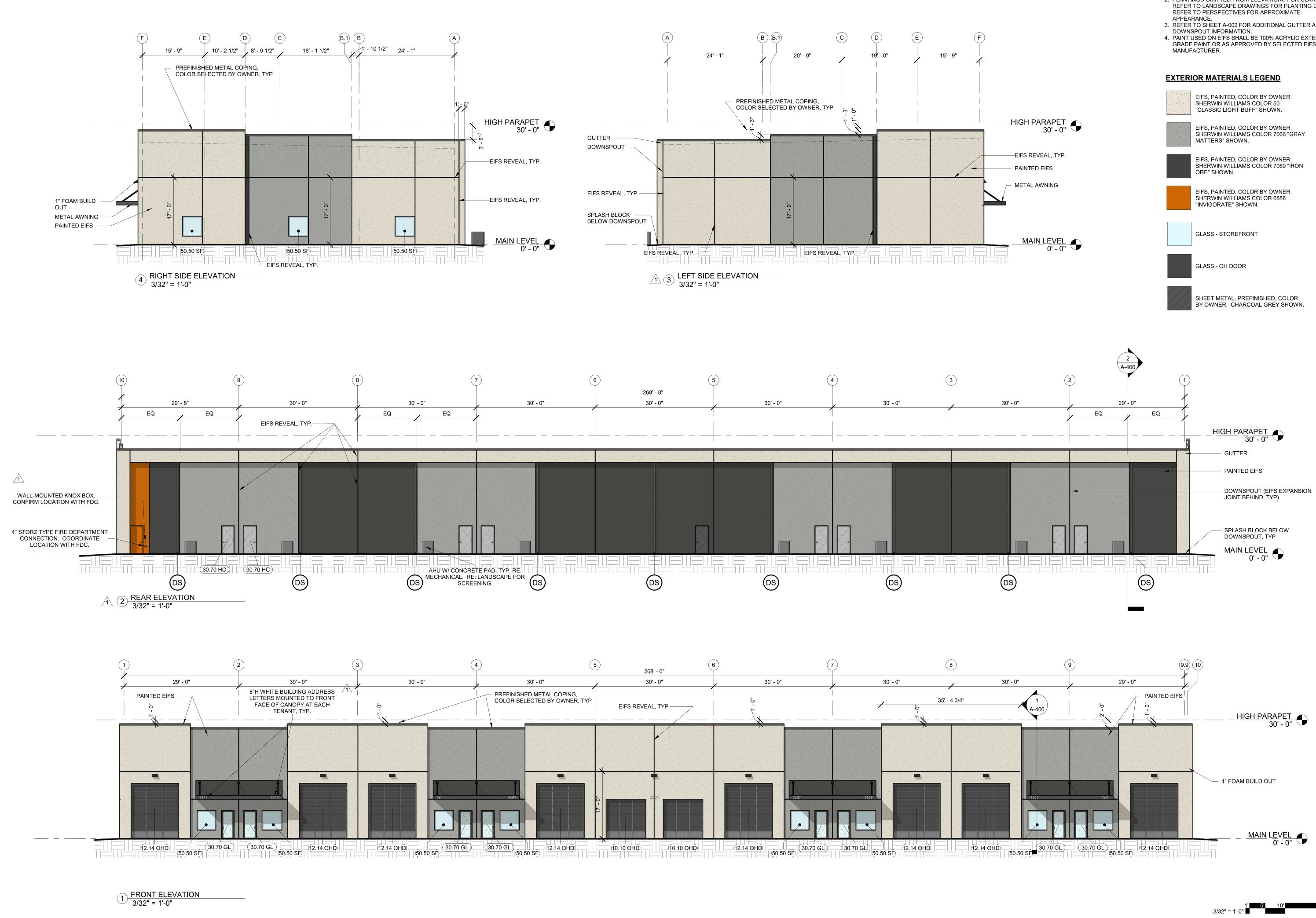


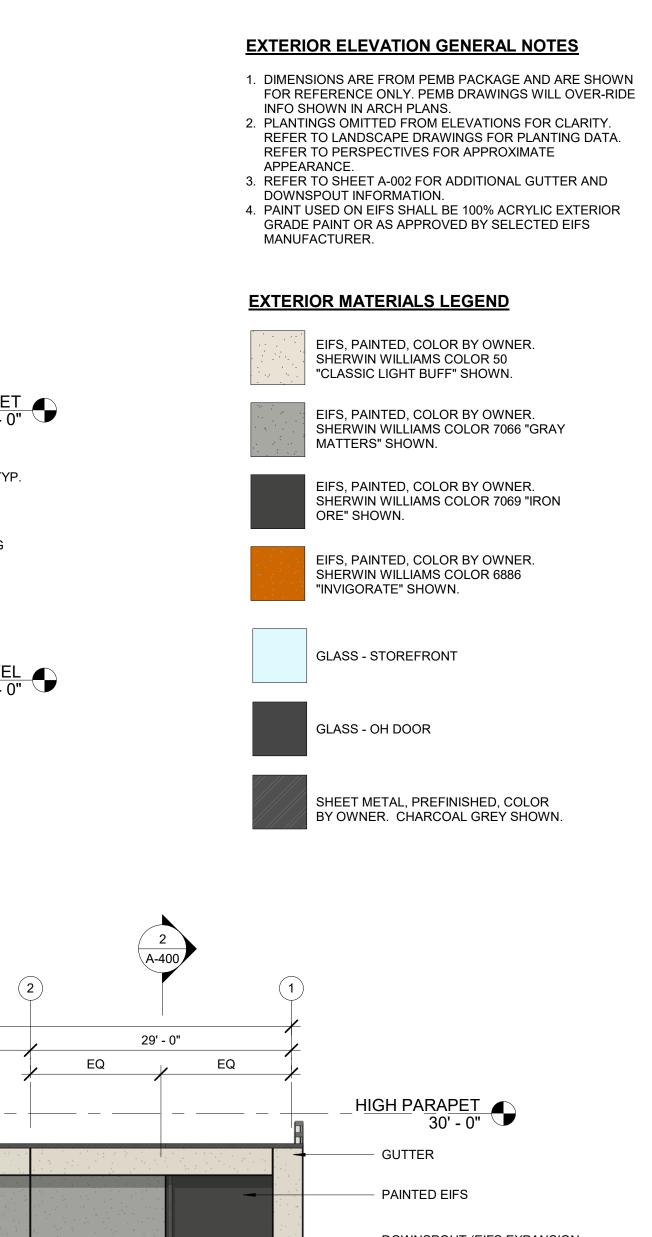


CHECKED BY: NC PROJECT #: 21-1902 ISSUE DATE: 2021.09.24 ISSUED FOR: **BUILDING PERMIT**

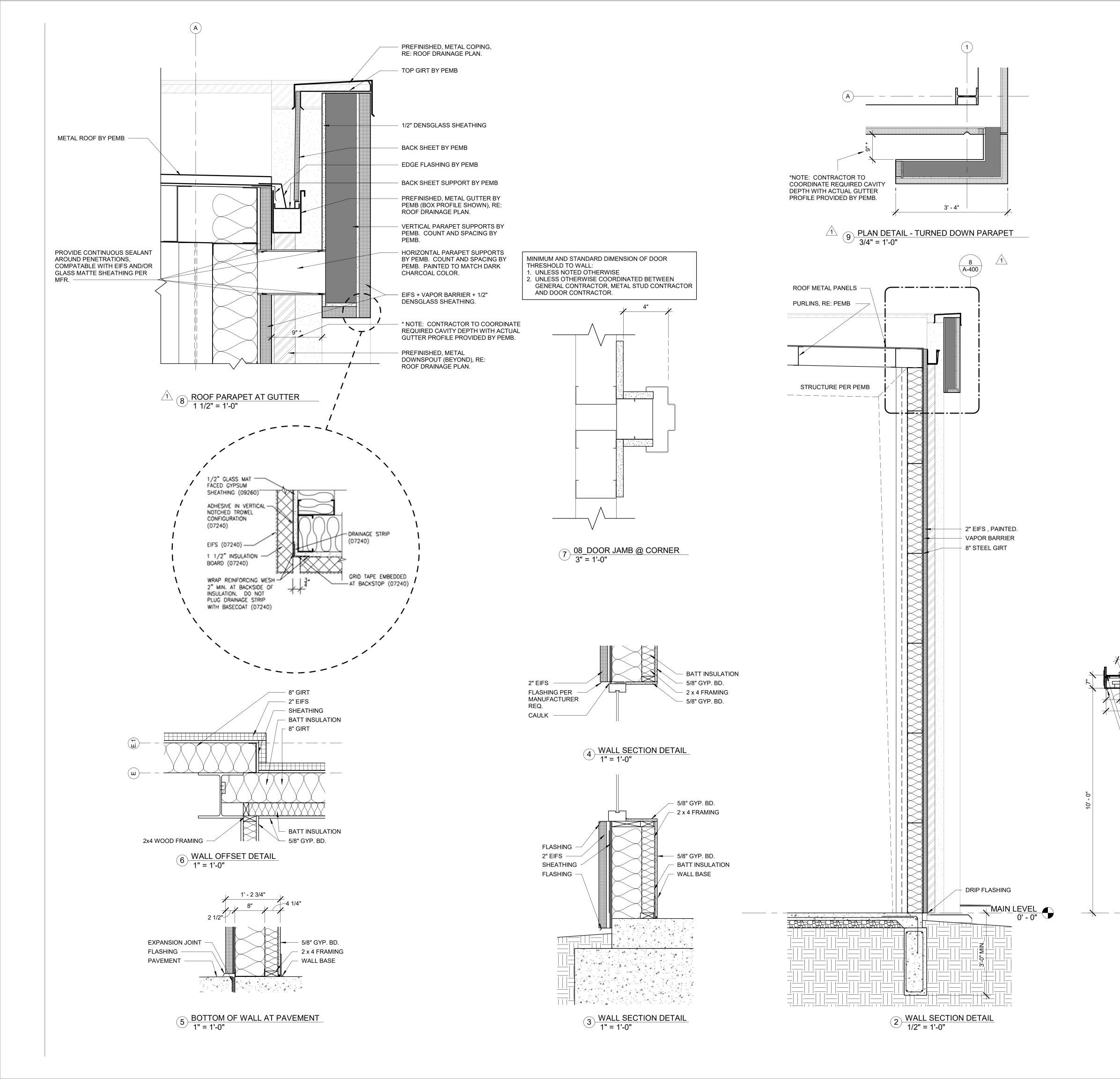
ROOF PLAN

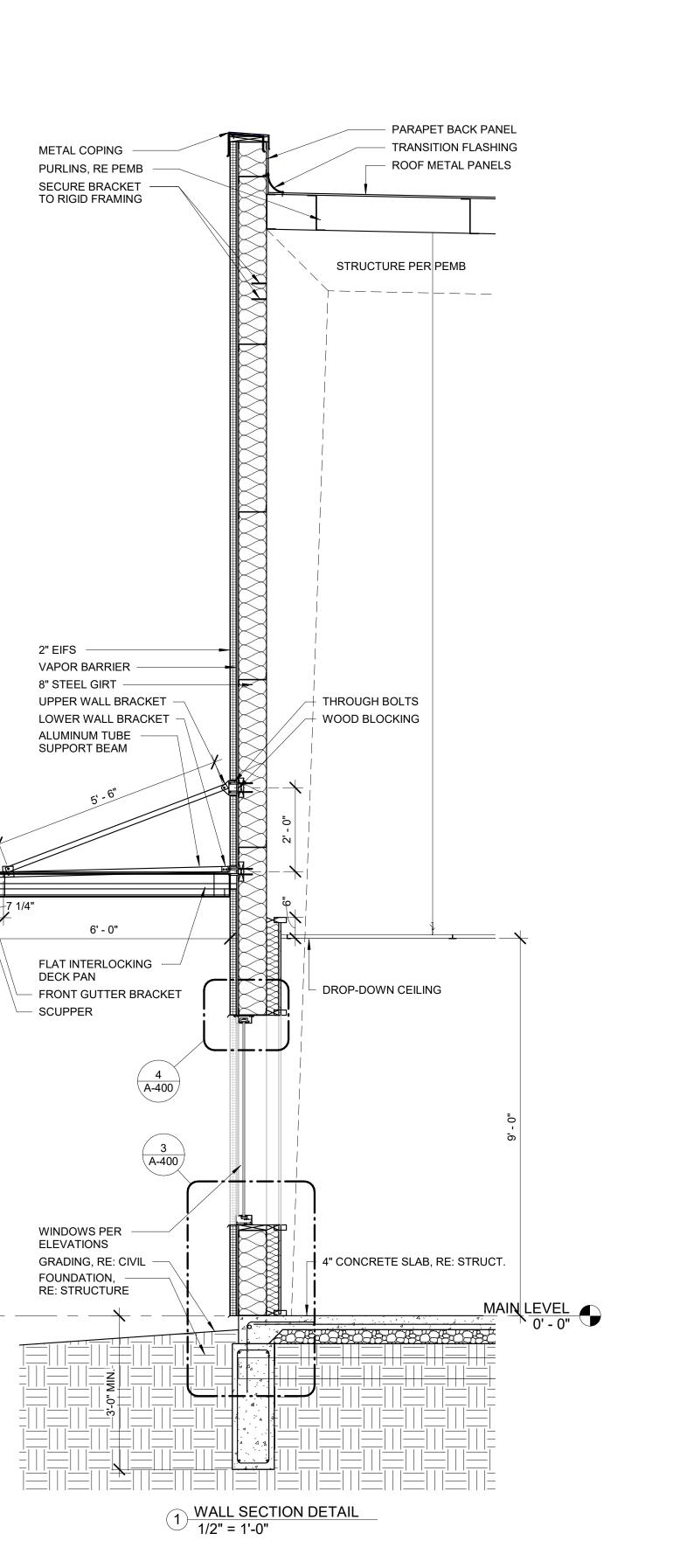


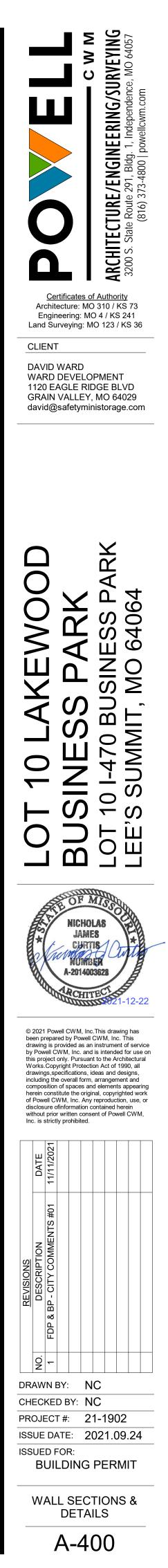














<u>SOUTHWEST</u>

20



<u>NORTHEAST DUSK</u>



<u>SOUTHEAST</u>

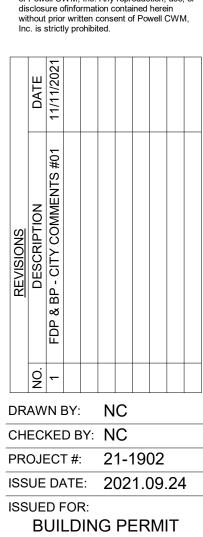




<u>NORTHWEST</u>

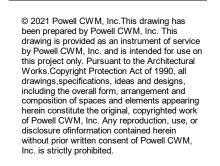


<u>NORTHEAST</u>



PERSPECTIVES

⚠ **A-401**





406 Ò OM UMMIT \frown S 0 C В С Д



ARCHITECTURE/ENGINEERING/SURVEYING 3200 S. State Route 291, Bldg. 1, Independence, MO 64057 <u>Certificates of Authority</u> Architecture: MO 310 / KS 73 Engineering: MO 4 / KS 241 Land Surveying: MO 123 / KS 36 CLIENT DAVID WARD WARD DEVELOPMENT 1120 EAGLE RIDGE BLVD GRAIN VALLEY, MO 64029 david@safetyministorage.com

C

ш

Abbreviation	Abbreviation Name
+/- ADDNL	PLUS OR MINUS ADDITIONAL
ADJ	ADJACENT
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF ALT	ABOVE FINISHED FLOOR ALTERNATE
AR	ANCHOR ROD
ARCH B/	ARCHITECT OR ARCHITECTURAL BOTTOM OF
B/W	BETWEEN
BLDG BLKG	BUILDING BLOCKING
BM	BEAM
BOT BRG	BOTTOM BEARING
BWP	BRACED WALL PANEL
CFS CHKD	COLD FORMED STEEL CHECKED
CIP	CAST IN PLACE
CJ CJP	CONTROL JOINT COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLR COL	CLEAR COLUMN
CONC	CONCRETE
CONN CONT	CONNECTION CONTINUOUS
CTR	
db DBA	DIA OF REINF BAR, DIA OF BOLT DEFORMED BAR ANCHOR
DIAG DIR	DIAGONAL DIRECTION
DWL	DOWEL
EA EE	EACH EXTENDED END
EJ ELEV	EXPANSION JOINT
ELEV ENGR	ELEVATION ENGINEER
EOD EOS	EDGE OF DECK EDGE OF SLAB
EQ	EQUAL
EW EXIST	EACH WAY EXISTING
EXT	EXTERIOR
FDN FLG	FOUNDATION FLANGE
FLG	FLOOR
FS FTG	FAR SIDE FOOTING
FV	FIELD VERIFY
GA GALV	GAUGE GALVANIZED
GB	GRADE BEAM
GC HORIZ	GENERAL CONTRACTOR HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS IF	HOLLOW STRUCTURAL SECTION
INT	INTERIOR
JST K	JOIST KIPS (1000 LBS)
LCE	COMPRESSION EMBEDMENT LENGTH
LCS LLH	COMPRESSION LAP SPLICE LENGTH LONG LEG HORIZONTAL
LLV LTE	LONG LEG VERTICAL TENSION EMBEDMENT LENGTH
LTS	TENSION LAP SLICE LENGTH
LW	
MFCR MTL	MANUFACTURER METAL
NIC	
NS NTS	NEAR SIDE NOT TO SCALE
OC OF	ON CENTER
OF OPP	OUTSIDE FACE OPPOSITE
OVS P/C	OVERSIZED
P/C PAF	PRECAST POWDER ACTUATED FASTENER
PAR PEMB	PARALLEL PRE-ENGINEERED METAL BUILDING
PEN	PENETRATION
PERP PL	PERPENDICULAR PLATE
PLF	POUNDS PER LINEAR FOOT
PREFAB PRELIM	PREFABRICATED PRELIMINARY
PSF	POUNDS PER SQUARE FOOT
PSI RC	POUNDS PER SQUARE INCH REINFORCED CONCRETE
RE:	REFER TO
REINF REQD	REINFORCING REQUIRED
RF	RIGID FRAME
SC SDS	SLIP CRITICAL SELF DRILLING SCREW
SIM	SIMILAR
SLV SOG	SHORT LEG VERTICAL SLAB ON GRADE
SQ	SQUARE
SS STD	STAINLESS STEEL STANDARD
STIR	STIRRUPS
STL SW	STEEL SHEAR WALL
SYM	SYMMETRIC
T&B T/	TOP AND BOTTOM TOP OF
TRANS	TRANSVERSE
TYP UNO	TYPICAL UNLESS NOTED OTHERWISE
VERT	VERTICAL
W/ W/O	WITH WITHOUT
WF	WIDE FLANGE
VVF	

STRUCTURAL DESIGN CRITERIA (2018 IBC AND ASCE 7-16):

- 1. BUILDING OCCUPANCY RISK CATEGORY I
- 2. LIVE LOADS [UNIFORM (PSF) / POINT LOADS (KIPS)]: -- ROOF:..... ...20 PSF / 300#

3. ROOF SNOW LOAD:

...20 PSF ..16.9 PSF W/ DRIFT -- SNOW EXPOSURE FACTOR (Ce):.....1.0, EXPOSURE C -- SNOW LOAD IMPORTANCE FACTOR (Is):.....1.0

4. WIND DESIGN DATA:

-- THERMAL FACTOR (Ct):...

-- GROUND SNOW LOAD (Pg):.

-- FLAT ROOF SNOW LOAD (Pf):

- -- BASIC WIND SPEED (3 SEC GUST):. ..115 MPH -- WIND EXPOSURE ...
- -- DIRECTIONALITY FACTOR (Kd) . ..0.85 -- INTERNAL PRESSURE COEFF:. ...0.18

STRUCTURAL GENERAL NOTES:

1. DESIGN AND CONSTRUCTION SHALL CONFORM TO THE "INTERNATIONAL BUILDING CODE, 2018 EDITION". REFER TO THE SPECIAL STRUCTURAL INSPECTION NOTES FOR ADDITIONAL REQUIREMENTS.

2. CONTRACTOR TO VERIFY ALL DIMENSIONS, ELEVATIONS AND EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT IMMEDIATELY.

3. IF DISCREPANCIES EXIST BETWEEN STRUCTURAL PLANS, ARCHITECTURAL PLANS, OTHER PLANS, OR SPECIFICATIONS, THE CONTRACTOR OR SUBCONTRACTOR SHALL PROVIDE A WRITTEN REQUEST FOR CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK

4. THE STRUCTURE AND FOUNDATIONS ARE NOT DESIGNED FOR FUTURE EXPANSION.

5. FOR DEFERRED SUBMITTALS (EXAMPLES: PRE-ENGINEERED CANOPIES, WOOD TRUSSES, PRECAST CONCRETE ELEMENTS, COLD FORMED FRAMING), SHOP DRAWINGS AND CALCULATIONS SEALED BY A STRUCTURAL ENGINEER LICENSED TO PRACTICE IN THE JURISDICTION OF THE PROJECT SHALL BE FURNISHED TO THE ENGINEER OF RECORD FOR REIVEW.

6. TYPICAL DETAILS ARE SHOWN ON SHEETS DESIGNATED "S0XX". THE INCLUDED TYPICAL DETAILS MAY OR MAY NOT BE CUT / REFERENCED ON PLANS OR SECTIONS. BUT ARE TO BE USED AS APPLICABLE

EARTHWORK AND FOUNDATIONS:

1. ALLOWABLE BEARING PRESSURE = 2500 PSF (MUST BE CONFIRMED BY SPECIAL INSPECTION)

2. ALL FOOTINGS SHALL BEAR A MINIMUM DEPTH BELOW GRADE OF 3'-0" ON FIRM NATIVE MATERIALS, COMPACTED OR ENGINEERED FILL CAPABLE OF SUPPORTING AN ALLOWABLE BEARING PRESSURE OF 2,500 PSF. DEEPEN FOOTINGS, AND REMOVE AND REPLACE SOFT SOILS WITH A 3'-0" GRAVEL TRENCH TO PROVIDE THIS MINIMUM DEPTH AND SUITABLE BEARING.

3. UNDERCUT THE PAD TO A DEPTH OF 18-INCHES BELOW BOTTOM OF FLOOR SLAB ELEVATION AND REPLACE WITH LOW-VOLUME-CHANGE MATERIALS PER THE GEOTECHNICAL REPORT.

4. FILL PLACEMENT, COMPACTION, AND SOIL BEARING TESTS SHALL BE PERFORMED BY A GEOTECHNICAL ENGINEER PRIOR TO INSTALLING FOOTINGS TO ENSURE DESIGN ALLOWABLE BEARING VALUES AND SLAB SUBGRADE REQUIREMENTS ARE SATISFIED. IF ACTUAL SITE CONDITIONS DO NOT SATISFY THESE REQUIREMENTS, COORDINATE ADJUSTMENTS WITH ARCHITECT/ENGINEER/ GEOTECHNICAL ENGINEER

5. SURFACE WATER SHALL NOT BE ALLOWED TO STAND ADJACENT TO OR DRAIN TOWARDS THE FOUNDATION AND SLAB SUBGRADES UNDER ANY CIRCUMSTANCES. PAVEMENTS OR GRADED SOILS AT THE PERIMETER OF THE BUILDING, EXCEPT AS REQUIRED AT EXITS OR AS NOTED, SHALL BE SLOPED AWAY AT 5% OR 6" MIN FOR THE FIRST TEN FEET AND AS REQUIRED TO PROVIDE POSITIVE DRAINAGE.

6. FOOTINGS MAY BE POURED TO NEAT LINES OF EXCAVATIONS PROVIDING VERTICAL LINES OF EXCAVATIONS CAN BE MAINTAINED DURING CONCRETE PLACEMENT.

7. FOUNDATION WALL BACKFILL SHALL NOT BE UNBALANCED BY MORE THAN TWO FEET ON EITHER SIDE AT ANY TIME. BASEMENT WALL AND RESTRAINED RETAINING WALL BACKFILL SHALL NOT BE PLACED, UNLESS THE WALL IS ADEQUATELY BRACED. RETAINING WALL AND BASEMENT WALL BACKFILL SHALL BE FREE DRAINING GRANULAR BACKFILL ACCEPTABLE TO THE GEOTECHNICAL ENGINEER.

CONCRETE REINFORCING STEEL:

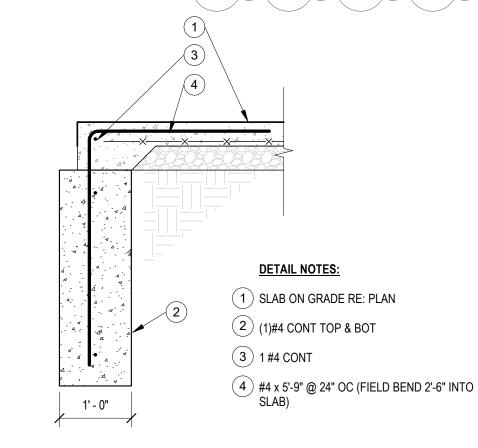
1. SUBMIT SHOP DRAWINGS FOR REBAR. ALL REINFORCING BARS SHALL MEET ASTM A615 GRADE 60.

2. ALL MESH SHALL MEET ASTM A-185: LAP A MINIMUM OF 8" OR ONE FULL MESH, WHICHEVER IS GREATER.

3. CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE ³/₄" CLEAR FOR SLABS, 2" CLEAR FOR FORMED SURFACES AND 3" CLEAR FOR FOOTINGS (TYPICAL UNLESS NOTED).

4. CONTRACTOR SHALL VERIFY THAT ALL REINFORCEMENT, SLAB DOWELS, INSERTS, SLEEVES AND EMBEDDED ITEMS ARE PROPERLY LOCATED AND RIGIDLY SECURED PRIOR TO CONCRETE PLACEMENT, "WET STICKING" DOWELS WILL NOT BE ALLOWED.

5. REINFORCEMENT SHALL BE DETAILED IN ACCORDANCE WITH THE LATEST A.C.I. DETAILING MANUAL BY A QUALIFIED AND EXPERIENCED FIRM AND PERSON. PLACE AND SUPPORT REINFORCEMENT WITH ACCESSORIES: MAXIMUM SPACING - 48" CENTERS (PLASTIC-TIPPED LEGS FOR EXPOSED SURFACES). USE 3" SBP SUPPORTS AT ALL FOOTINGS.





CAST IN PLACE CONCRETE:

REQUIRED MINIMUM CONCRETE COMPRESSIVE STRENGTHS AT 28 DAYS:

a. FOOTING AND GRADEBEAM CONCRETE ... b. SLAB ON GRADE .

2. ALL CONCRETE MIX DESIGNS SHALL HAVE WATER TO CEMENT RATIOS LESS THAN 0.52, WITH A MAXIMUM 60/40 FINE TO COARSE AGGREGATE RATIO. CONCRETE MIX DESIGNS THAT DO NOT CONFORM TO THE ABOVE STANDARD AND/OR CONTAIN WATER REDUCING ADMIXTURES SHALL BE SUBMITTED WITH APPROPRIATE TEST DATA PER A.C.I.. ALL CONCRETE SHALL BE IN CONFORMANCE WITH THE LATEST A.C.I. 301 STANDARDS PUBLICATION.

3. EXTERIOR CONCRETE (FLOOR SLABS, WALLS, ETC) SHALL HAVE 6% (PLUS/MINUS 1%) ENTRAINED AIR.

4. NO ALUMINUM SHALL BE EMBEDDED IN ANY CONCRETE.

5. NO CALCIUM CHLORIDE SHALL BE USED IN CONCRETE

6. THE DESIGN, CONSTRUCTION, AND SAFETY OF ALL FORMWORK IS THE

RESPONSIBILITY OF THE CONTRACTOR 7. ALL CONCRETE IS REINFORCED UNLESS SPECIFICALLY NOTED AS UNREINFORCED. REINFORCE ALL CONCRETE NOT OTHERWISE SHOWN WITH THE SAME REINFORCING AS SIMILAR SECTIONS OR AREAS.

9. WHERE FRESH CONCRETE IS DEPOSITED AGAINST HARDENED CONCRETE (GREATER THAN 8 HRS OLD). CLEAN EXISTING SURFACE OF LAITANCE AND FOREIGN MATERIAL AND DAMPEN THE EXISTING SURFACE. IF REQUIRED, ROUGHEN EXISTING CONCRETE TO 1/4" AMPLITUDE.

10. SLABS ON GRADE SHALL BE 4" THICK MINIMUM ON 4" OF GRANULAR FILL REINFORCED WITH 6x6-W2.1xW2.1. PLACE REINF IN UPPER 1/3 OF SLAB THICKNESS. AT INTERIOR SLABS, A 10 MIL VAPOR BARRIER SHALL BE PLACED BETWEEN THE CONCRETE AND GRANULAR BASE AND CARE SHOULD BE TAKEN DURING CURING TO PREVENT SLAB CURLING. THIS NOTE SHALL BE TYPICAL UNLESS NOTED OTHERWISE

11. SAW CUT JOINTS OR KEYED CONSTRUCTION JOINTS IN SLABS ON GRADE SHALL BE SPACED TO DIVIDE THE SLAB INTO PANELS NOT TO EXCEED 225 SQUARE FEET. THE LONGER DIMENSION OF EACH PANEL SHALL NOT EXCEED THE SHORTER DIMENSIONS BY MORE THAN 40%. JOINTS SHALL BE LOCATED AT COLUMN CENTERLINES WHERE POSSIBLE. SPACING BETWEEN JOINTS SHALL NOT EXCEED 15 FEET. CONTRACTOR SHALL SUBMIT JOINT LAYOUT TO ARCHITECT FOR APPROVAL. REFER TO TYP DETAIL RC-001A.

12. REINFORCEMENT SHALL BE CONTINUOUS AND LAPPED 53 BAR DIAMETERS (2' -6" MIN.) EXCEPT AS NOTED AND PROVIDE CORNER BARS OF SAME SIZE AND SPACING.

13. CONTRACTOR SHALL COORDINATE ALL CURING COMPOUNDS WITH FLOOR FINISH REQUIREMENTS TO ENSURE COMPATIBILITY.

14. FOUNDATION CONTRACTOR TO ENSURE PROPER ANCHOR ROD PROJECTION AND THAT ANCHOR RODS ARE HELD SECURELY IN POSITION PRIOR TO CONCRETE PLACEMENT. INSTALL ANCHOR RODS TO THE STRICT DIMENSIONAL TOLERANCES PER AISC REQUIREMENTS. STRUCTURAL STEEL COLUMN ANCHOR RODS SHALL BE SET WITH A RIGID TEMPLATE.

AGGREGATE REACTIONS WHEN EXPOSED TO SOILS AND/OR AN EXTERIOR ENVIRONMENT.

CONCRETE MASONRY UNITS:

1. ALL MASONRY SHALL BE IN ACCORDNACE WITH ACI 530/TMS 402. INDIVIDUAL CMU'S SHALL BE PER ASTM C90 (4950 PSI). GROUT SHALL BE PER ASTM C476, MORTAR SHALL BE PER ASTM C270.

2. MASONRY MATERIALS SHALL BE AS FOLLOWS: A. fm = 2,000 PSI MINIMUM. ALL UNITS SHALL BE NORMAL-WEIGHT BLOCK. B. GROUT STRENGTH NOT LESS THAN 2,000 PSI. C. MORTAR TYPE S.

3. PROVIDE NOT LESS THAN 9-GAUGE HORIZONTAL LADDER-TYPE REINFORCEENT AT NOT MORE THAN 16" OC VERTICALLY, LAPPED 8" MINIMUM. REBAR POSITIOERS SHALL BE USED FOR ALL VERTICAL BARS SUCH THAT A MINIMUM 3" OF SPACE IS MAINTAINED CLEAR FOR PLACMENT OF GROUT.

4. PLACEMENT OF REINFORCEMENT SHALL OCCUR PRIOR TO PLACEMENT OF GROUT.

SPECIAL INSPECTIONS

OFFICAL.

2. SPECIAL INSPECTORS SHALL BE QUALIFIED AND FURNISH THEIR REPORTS IN A TIMELY MANNER TO THE CONTRACTOR, BUILDING OFFICALS, ARCHITECT, AND/OR ENGINEER

IS NEEDED

4. SPECIAL INSPECTIONS AS REQUIRED BY CODE: BUT NOT LESS THAN ONE SET OF SAMPLES PER DAY'S WORK AND PER MIX. B. EARTHWORK: FOUNDATION BEARING, EXCAVATION, FILL PLACEMENT.

C. STEEL: SECTION 1705.2 AND AISC 360. PERIODIC OBSERVATIONS OF CONNECTIONS, ALL BRACED FRAME CONNECTIONS, WELDERS AND FIELD WELDING.

1. SUBMIT PROPOSED MIXED DEIGNS OF EACH TYPE FOR REVIEW.

4000 PSI ..4000 PSI

8. CONSTRUCTION JOINTS IN GRADE BEAMS, CONTINUOUS FOOTINGS, AND WALLS THAT DO NOT CHANGE DIRECTION SHALL BE SPACED NO GREATER THAN 100'-0".

15. AGGREGATES AND/OR CONCRETE MIXES SHALL BE CERTIFIED TO BE FREE OF AND ELIMINATE DAMAGE OF CONCRETE DUE TO ALKALI-SILICA REACTION OR ALKALI-

1. PROVIDE SPECIAL STRUCTURAL INSPECTIONS AND VERIFICATIONS BY A THIRD PARTY MEETING THE REQUIRMENTS OF CHAPTER 17 OF THE BUILDING CODE AND THE BUILDING

3. SHOULD INSPECTOR IDENTIFY ANY DISCREPANCY, THEY SHAL NOTIFY CONTRACTOR FIRST, AND THEN ARCH/ ENGINEER IMMEDIATELY THEREAFTER IF CORRECTIVE ACTION

A. CONCRETE: SECTION 1705.3 AND TABLE 1705.3 CONCRETE MATERIAL SAMPLING AND TESTING, REBAR OBSERVATIONS. TAKE SET OF (3) CYLINDERS FOR EVERY 50 C.Y.,

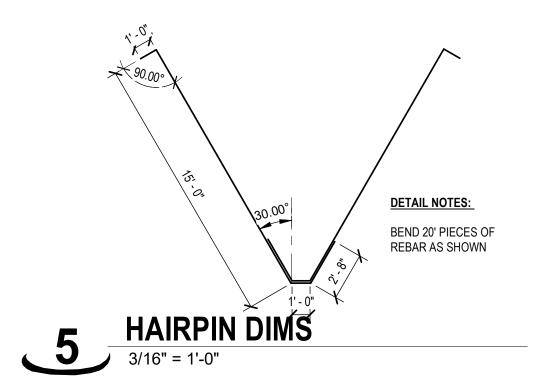
PRE-ENGINEERED METAL BUILDING:

1. THE FRAMING OF THE PRE-ENGINEERED METAL BUILDINGS IS THE RESPONSIBILITY OF THE OTHER PARTIES AND THEIR ENGINEER OF RECORD, AND NOT PART OF THESE STRUCTURAL DOCUMENTS.

2. ALL BASE REACTIONS ARE ASSUMED TO BE PINNED.

3. METAL BUILDING REACTIONS AND FOUNDATIONS HAVE BEEN ESTIMATED ONLY BASED ON STANDARD METAL BUILDING DETAILING PRACTICES. PRELIMINARY METAL BUILDING REACTIONS AND LAYOUT HAS NOT BEEN PROVIDED. FINAL METAL BUILDING DRAWINGS MUST BE PROVIDED FOR VERIFICATION OF ALL FOUNDATION SIZES AND LOCATIONS. OTHERWISE, ALL DRAWINGS ARE CONSIDERED NULL AND VOID.

SPECIAL INSPECTION OF SOILS - TABLE 1704.7							
REQ'D	VERIFICATION & INSPECTION	CONTINUOUS	PERIODIC				
Х	1. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY		Х				
Х	2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH & HAVE REACHED PROPER MATERIAL		Х				
Х	3. PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS		Х				
Х	4. VERIFY USE OF PROPER MATERIALS, DESITIES & LIFT THICKNESSES DURING PLACEMENT & COMPACTION OF CONTROLLED FILL	Х					
Х	5. PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY		Х				



DETAIL NOTES:

1) COL AND BASE PLATE, RE: PLAN & COL SCHEDULE

(2) PROVIDE OVERSIZED HOLES IN BASE PLATE AND 1/4" PL WASHER WITH HEAVY HEX NUTS ON ANCHOR RODS. WELD WASHERS TO BASE PLATE 1" MIN ALL 4 SIDES

(3) 1 1/2" MIN NON-SHRINK NON-METALLIC GROUT

(4) 3" SQ x 1/4" PL WASHER WITH HEAVY HEX NUT. TACK WELD WASHER TO ANCHOR ROD

(5) 3/4"ø ANCHOR ROD. RODS TO EXTEND 1/2" MIN THRU NUTS TOP AND BOT

A. ACCOUNT FOR GROUT THICKNESS WHEN DETERMINING BOTTOM OF BASE PLATE ELEVATION B. ANCHOR RODS SHALL BE F1554 GR. 36 UNO



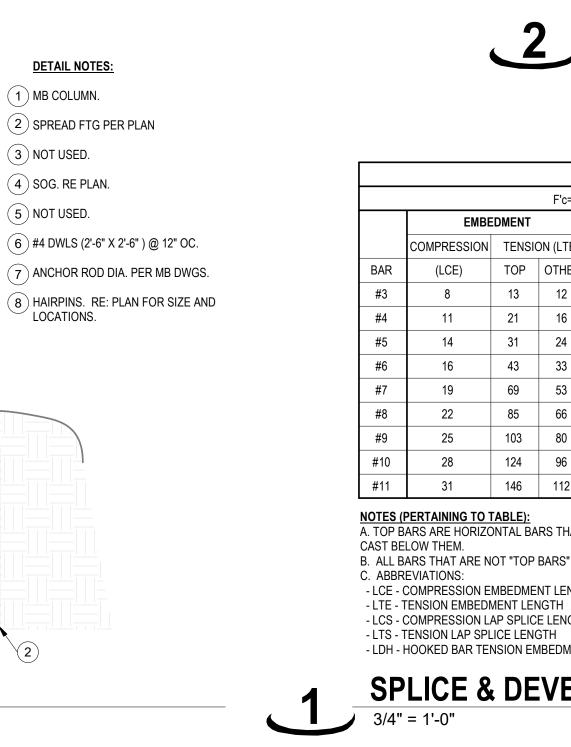
GRID

(2)

7

EXTERIOR FTG

3/4" = 1'-0"



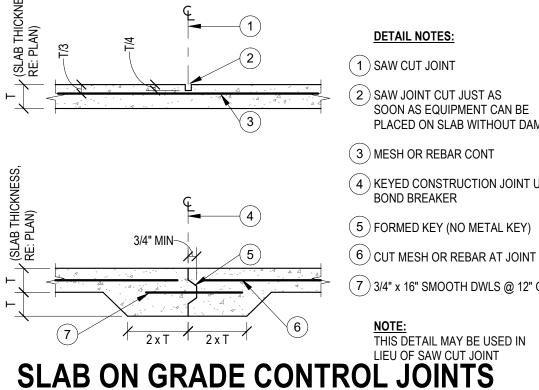
SPECIAL INSPECTION OF CONCRETE CONSTRUCTION - TABLE 1704.4								
REQ'D	VERIFICATION & INSPECTION	CONTINUOUS	PERIODIC					
Х	1. INSPECTION OF REINFORCING STEEL & PLACEMENT		Х					
	2. INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE W/ TABLE 1704.3 ITEM 5B	х						
Х	3. INSPECT BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO & DURING PLACEMENT OF CONCRETE	Х						
Х	4. VERIFYING USE OF REQUIRED MIX DESIGN		Х					
x	5. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUP & AIR CONTENT TESTS, & DETERMINE THE TEMPERATURE OF THE CONCRETE	х						
х	6. INSPECTION OF CONCRETE & SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	Х						
Х	7. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE & TECHNIQUES		х					
	8. INSPECTION OF PRESTRESSED CONCRETE		х					
	9. ERECTION OF PRECAST CONCRETE MEMBERS		Х					
х	10. VERIFICATION OF IN-SITU CONCRETE STRENGTH PRIOR TO REMOVAL OF SHORES & FORMS FROM BEAMS & STRUCTURAL SLABS		х					
х	11. INSPECT FORMWORK FOR SHAPE, LOCATION, & DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED		Х					

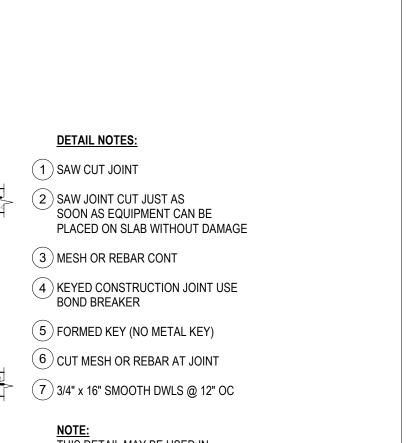


Architecture: MO 310 / KS 73 Engineering: MO 4 / KS 241 Land Surveying: MO 123 / KS 36

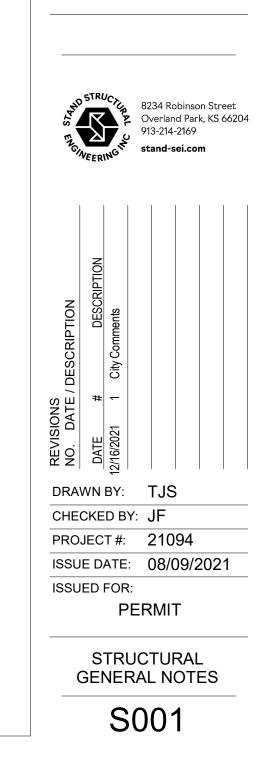
CLIENT

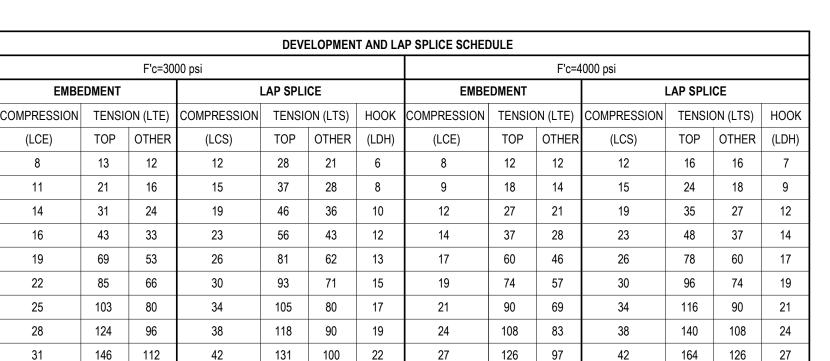
DAVID WARD WARD DEVELOPMENT 1120 EAGLE RIDGE BLVD GRAIN VALLEY, MO 64029 david@safetyministorage.com











NOTES (GENERAL)

MULTIPLIERS:

A. TOP BARS ARE HORIZONTAL BARS THAT HAVE MORE THAN 12" OF FRESH CONCRETE A. STAGGER ALL SPLICES 12 db MIN, BUT NOT LESS THAN 12"

B. ALL BARS THAT ARE NOT "TOP BARS" ARE "OTHER" BARS

- LCE - COMPRESSION EMBEDMENT LENGTH

8

11

14

16

19

22

25

28

31

- LCS - COMPRESSION LAP SPLICE LENGTH

- LDH - HOOKED BAR TENSION EMBEDMENT LENGTH

SPLICE & DEVELOPMENT SCHEDULE

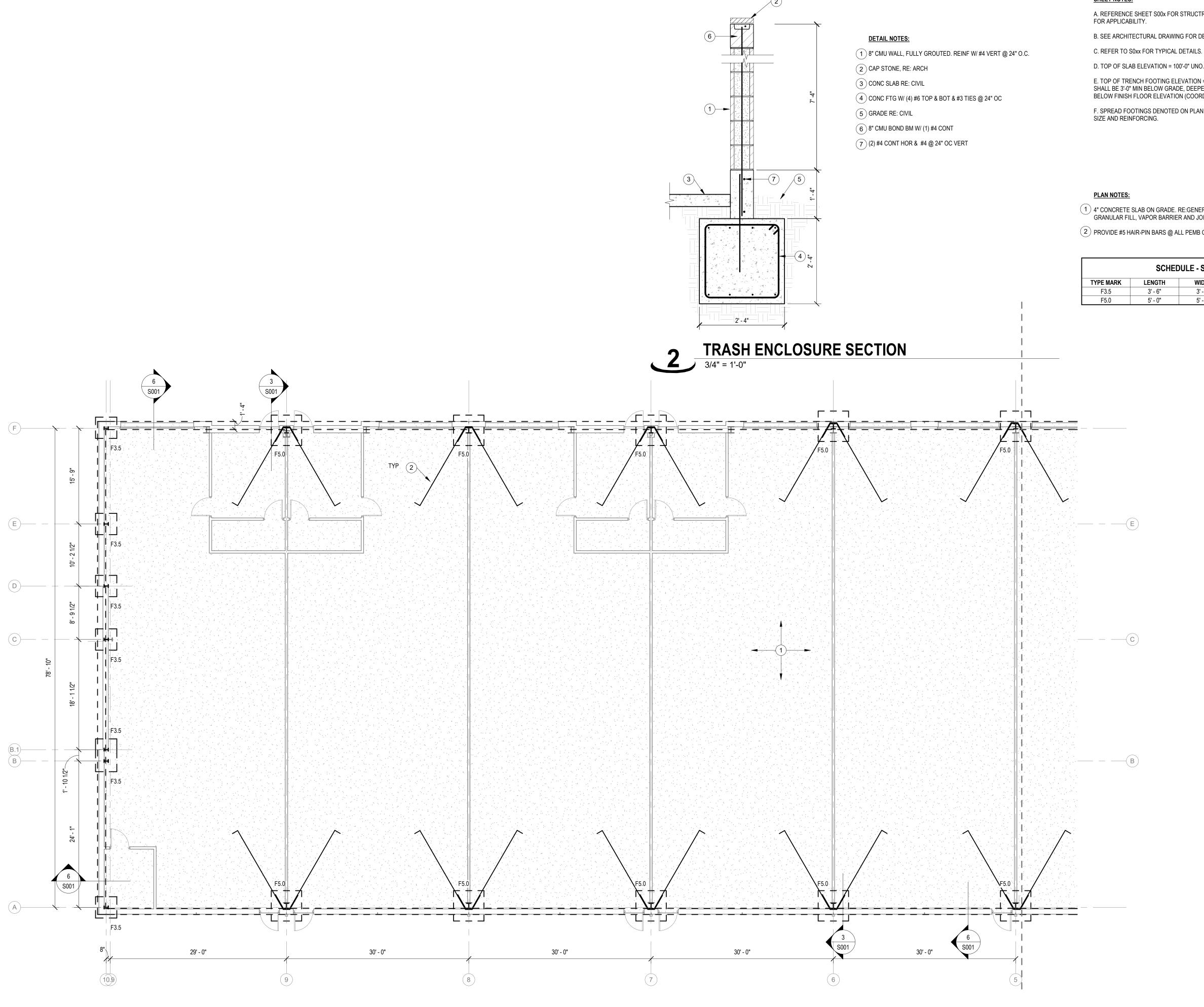
ALL EMBEDMENT AND LAP SPLICE LENGTHS SHALL BE INCREASED AS REQ'D BY THE MULIPLIERS BELOW. APPLY MULTIPLE MULTIPLIERS IF APPLICABLE

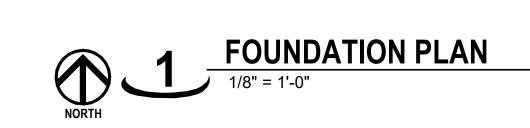
B. ALL DIMENSIONS INDICATED IN TABLE ARE IN INCHES

C. BARS GREATER THAN #11 SHALL BE MECHANICALLY SPLICED

D. ALL SPLICES SHALL BE WIRED IN CONTACT STACKED VERTICAL

1.3 -- IF CONC CONTAINS LIGHT WEIGHT AGGREGATES 1.3 -- IF EPOXY COATED REBAR USED





SHEET NOTES:

A. REFERENCE SHEET S00x FOR STRUCTRURAL GENERAL NOTES. REVIEW NOTES & DETAILS

B. SEE ARCHITECTURAL DRAWING FOR DETAILS & DIMENSIONS NOT SHOWN.

D. TOP OF SLAB ELEVATION = 100'-0" UNO.

E. TOP OF TRENCH FOOTING ELEVATION = 99'-4" UNO. THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE 3'-0" MIN BELOW GRADE, DEEPEN FOOTINGS AS REQUIRED. GRADE IS GENERALLY 6" BELOW FINISH FLOOR ELEVATION (COORDINATE WITH CIVIL).

F. SPREAD FOOTINGS DENOTED ON PLAN BY "Fx.x". REFER TO SCHEDULE ON THIS SHEET FOR SIZE AND REINFORCING.

1 4" CONCRETE SLAB ON GRADE. RE:GENERAL NOTES FOR REINFORCING, GRANULAR FILL, VAPOR BARRIER AND JOINTING REQUIREMENTS

2 PROVIDE #5 HAIR-PIN BARS @ ALL PEMB COLUMNS RE: 5/S001

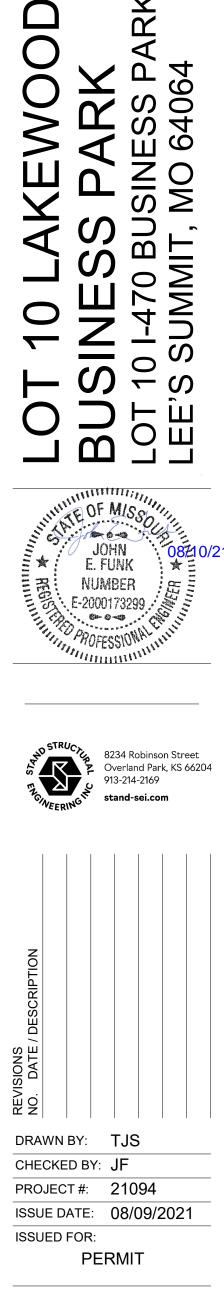
SCHEDULE - SPREAD FOOTING					
TYPE MARK	LENGTH	WIDTH	THICKNESS	REINF	
F3.5	3' - 6"	3' - 6"	3' - 0"	(5) #4 EW TOP & BOT	
F5.0	5' - 0"	5' - 0"	3' - 0"	(8) #4 EW TOP & BOT	



CLIENT

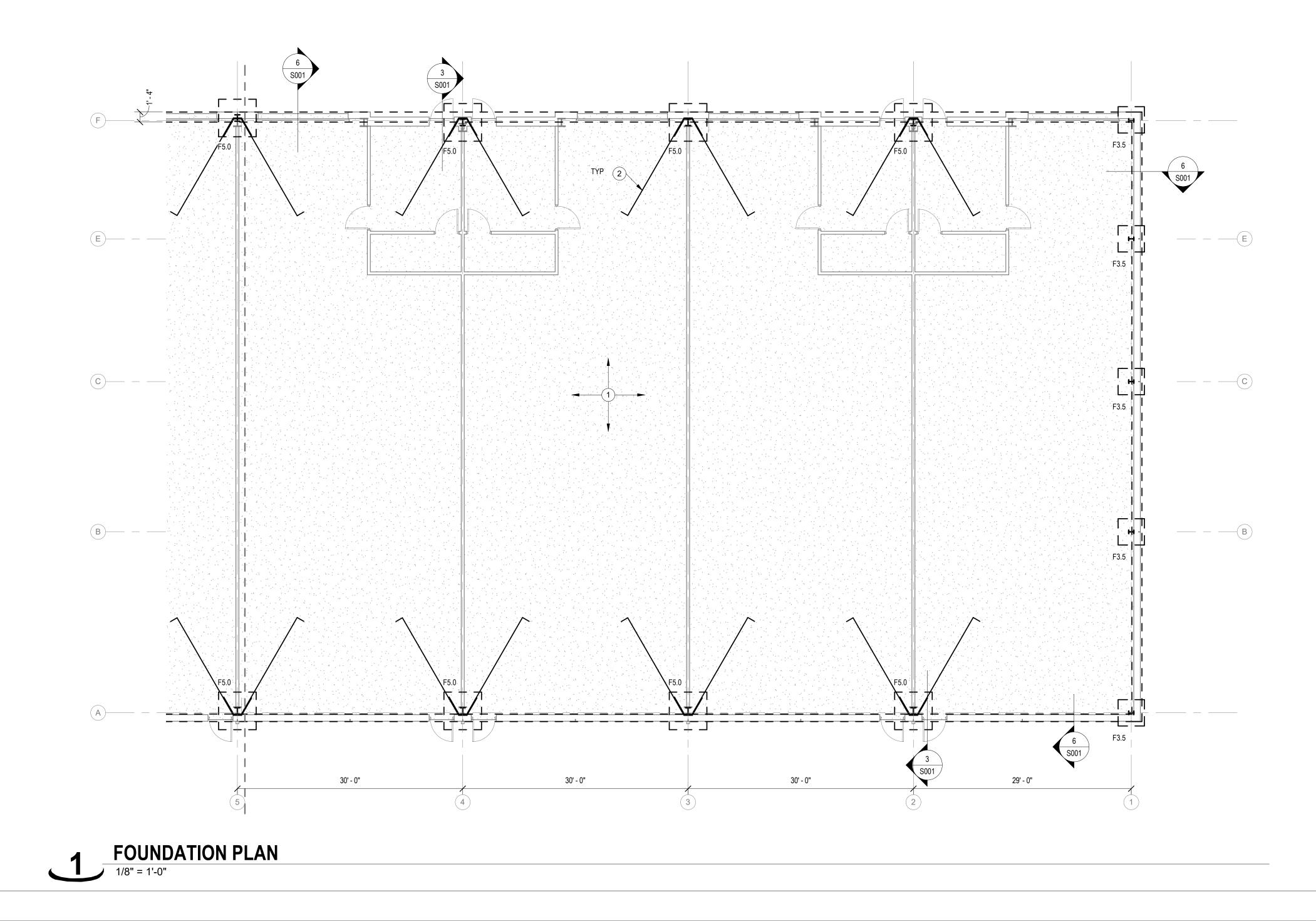
DAVID WARD WARD DEVELOPMENT 1120 EAGLE RIDGE BLVD GRAIN VALLEY, MO 64029 david@safetyministorage.com

N



FOUNDATION PLAN

S100



S101

FOUNDATION PLAN

SHEET NOTES:

A. REFERENCE SHEET S00x FOR STRUCTRURAL GENERAL NOTES. REVIEW NOTES & DETAILS FOR APPLICABILITY.

B. SEE ARCHITECTURAL DRAWING FOR DETAILS & DIMENSIONS NOT SHOWN.

C. REFER TO S0xx FOR TYPICAL DETAILS.

D. TOP OF SLAB ELEVATION = 100'-0" UNO.

E. TOP OF TRENCH FOOTING ELEVATION = 99'-4" UNO. THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE 3'-0" MIN BELOW GRADE, DEEPEN FOOTINGS AS REQUIRED. GRADE IS GENERALLY 6" BELOW FINISH FLOOR ELEVATION (COORDINATE WITH CIVIL).

F. SPREAD FOOTINGS DENOTED ON PLAN BY "Fx.x". REFER TO SCHEDULE ON THIS SHEET FOR SIZE AND REINFORCING.

PLAN NOTES:

1 4" CONCRETE SLAB ON GRADE. RE:GENERAL NOTES FOR REINFORCING, GRANULAR FILL, VAPOR BARRIER AND JOINTING REQUIREMENTS

2 PROVIDE #5 HAIR-PIN BARS @ ALL PEMB COLUMNS RE: 5/S001

	SCHEDULE - SPREAD FOOTING									
TYPE MARK	LENGTH	WIDTH	THICKNESS	REINF						
F3.5	3' - 6"	3' - 6"	3' - 0"	(5) #4 EW TOP & BOT						
F5.0	5' - 0"	5' - 0"	3' - 0"	(8) #4 EW TOP & BOT						



<u>Certificates of Authority</u> Architecture: MO 310 / KS 73 Engineering: MO 4 / KS 241 Land Surveying: MO 123 / KS 36

CLIENT

DAVID WARD WARD DEVELOPMENT 1120 EAGLE RIDGE BLVD GRAIN VALLEY, MO 64029 david@safetyministorage.com

Ľ



Α.	<u>NERAL PROVISIONS:</u> PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE COMPLETE INSTALLATION OF
В.	THE PLUMBING AND MECHANICAL SYSTEMS OUTLINED. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATIONS OF COMPLIANCE OR
C.	APPROVAL AS REQUIRED BY AUTHORITIES. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND
	REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.
E.	DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, PIPE, DUCT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED
F.	BEFORE FINAL ACCEPTANCE. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS
	NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE
G.	MAINTAINED. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECT FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
Н.	INSPECTION OF THE SITE: THIS CONTRACTOR SHALL THOROUGHLY ACQUAINT HIMSELF WITH THE MEP DRAWINGS, SPECIFICATIONS, DETAIL, AND THE SITE. THIS CONTRACTOR SHALL NOTIFY THE ARCHITECT
١.	OF ANY SPECIAL OR UNUSUAL PROBLEMS, CONFLICTS, OR OBSTRUCTIONS THAT AFFECT HIS BID. FOR THE PURPOSE OF CLEARNESS AND LEGIBILITY, THE MECHANICAL AND PLUMBING DRAWINGS ARE
	ESSENTIALLY DIAGRAMMATIC AND DO NOT SHOW ALL OFFSETS AND FITTINGS REQUIRED FOR INSTALLATION. DO NOT SCALE DRAWINGS. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO
	SCALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DATA AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATION SECTIONS WHERE MECHANICAL WORK
J.	INTERFACES WITH OTHER TRADES. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS OR WITH CODE REQUIREMENTS, THE NOTE OR CODE WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE
К.	JOB OR HIGHER STANDARD SHALL PREVAIL. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND
	APPROVED SUBMITTALS. INSTALL MATERIALS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE FOR EXPOSED WORK. COORDINATE WITH WORK OF OTHER SECTIONS.
	COMPLY WITH APPLICABLE REGULATIONS AND CODE REQUIREMENTS. PROVIDE PROPER CLEARANCES FC SERVICING.
L.	INCLUDE ALL BASIC MATERIALS AND CONSTRUCTION METHODS INCLUDING PIPES, PIPE FITTINGS, AND SPECIALTIES AND SUPPORTING DEVICES, VALVES, PIPE AND VALVE IDENTIFICATION, PUMPS, VIBRATION ISOLATION, ETC.
М.	ISOLATION, ETC. FURNISH ADEQUATE ACCESS PANELS AND DOORS TO ALLOW FOR FUTURE PIPING ALTERATIONS, REPLACEMENT, AND MAINTENANCE OF PIPING. PROPERLY IDENTIFY ALL ACCESS PANELS AND DOORS.
	PERATION AND MAINTENANCE MANUALS:
A.	DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS,
В.	ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION THE OPERATING AND MAINTENANCE MANUALS.
3. M≠	ANUFACTURERS:
	MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS
_	LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN.
В.	THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE ELECTRICAL REQUIREMENTS OF THE EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO HVAC EQUIPMENT
	OTHER THAN THE SPECIFIED EQUIPMENT BEING FURNISHED SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
	DTORS:
	PROVIDE THERMAL OVERLOAD PROTECTION FOR EACH MOTOR PROVIDED BY THIS WORK.
	<u>DIMBING.</u> PROVIDE AN APPROVED WATER HAMMER ARRESTOR FOR EACH PLUMBING FIXTURE SUPPLY AS REQUIRED BY FIXTURE MANUFACTURER.
В. С.	ALL EXPOSED PIPE IN FINISHED AREAS SHALL BE CHROME PLATED BRASS PIPE, NO FERROUS PIPE. PROVIDE CLEANOUTS AT EACH CHANGE IN DIRECTION AND AT 100 FOOT INTERVALS IN STRAIGHT RUN
	PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES AND TRAPS.
	CLEANOUTS:
	CLEANOUTS: 1. UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. 2. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR.
E.	 CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES.
E.	 CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 2–1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL.
E. F.	 CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4476, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTION TO MATCH THE PIPE SYSTEM IN
E. F. G.	 CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4472, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTION TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS.
E. F. G.	 CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4472, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTION TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES.
E. F. G.	 CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4472, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING
Е. F. G. H.	CLEANOUTS: 1. UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. 2. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. GRADE (GCO): JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. 1. INSTALL 2–1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. 2. INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL. 3. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 4. ONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 5. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTION TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. 1. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. 2. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. PING DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND).
Е. F. G. H.	CLEANOUTS: 1. UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. 2. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. GRADE (GCO): JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. 1. INSTALL 2–1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. 2. INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL. 3. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 4. INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. 1. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. 2. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 2. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 3. TYPE L HARD DRAWN COPPER TUBING, ASTM B–88 WITH WROUGHT BRONZE SOLDERED FITTINGS 3. GATE VALVE: CRANE #428 OR EQUAL.
Е. F. G. H. <u>6. PI</u> F А.	CLEANOUTS: 1. UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. 2. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. GRADE (GCO): JR SMITH #4472, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. 1. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. 2. INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL. 3. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 4. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 5. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 6. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTION TO MATCH THE PIPE SYSTEM IN 7. WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING 7. CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. 7. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING 7. SLOPES. 1. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. 2. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 5. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 7. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 7. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 7. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 7. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 7. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 7. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 7. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 7. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 7. JONNESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). 7. TYPE L HARD DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS 7. GATE VALVE: CRANE #428 OR EQUAL. 7. BALL VALVE: CRANE #932 OR EQUAL. 7. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING, 1"-3" (UNDERGROUND).
Е. F. G. H. <u>6. Plf</u> А. В.	 CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4472, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONNECTIC UNIONS WITH APPROPRIATE END CONNECTION TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. PING DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). TYPE L HARD DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS GATE VALVE: CRANE #428 OR EQUAL. BALL VALVE: CRANE #428 OR EQUAL. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING, 1"-3" (UNDERGROUND). TYPE K HARD OR SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS.
Е. F. G. H. <u>6. Plf</u> А. В.	 CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTION TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. PING DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). 1. TYPE L HARD DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS 2. GATE VALVE: CRANE #428 OR EQUAL. 3. BALL VALVE: CRANE #428 OR EQUAL. 3. BALL VALVE: CRANE #4932 OR EQUAL. 3. BALL VALVE: CRANE #428 OR EQUAL. 3. BALL VALVE: CRANE #428 OR EQUAL. 3. BALL VALVE: CRANE #32 OR EQUAL. 4. TYPE K HARD OR SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERIN FITTINGS. SANITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). 1. POLYVINYL CHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT.
Е. F. G. H. <u>6. Plf</u> А. В.	 CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTION TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. PING DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). 1. TYPE L HARD DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS 2. GATE VALVE: CRANE #428 OR EQUAL. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING, 1"-3" (UNDERGROUND). 1. TYPE K HARD OR SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS. SANITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). 1. POLYVINYL CHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT. 2. SWER LINES SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN
Е. F. G. H. <u>6. Plf</u> А. В.	 CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4472, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. INSTALLE (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. PING DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). 1. TYPE L HARD DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS 2. GATE VALVE: CRANE #428 OR EQUAL. BALL VALVE: CRANE #428 OR EQUAL. 3. BALL VALVE: CRANE #428 OR EQUAL. 3. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING, 1"-3" (UNDERGROUND). 1. TYPE K HARD OR SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS. SANITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). 1. POLYINYL CHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT. 2. SEWER LINES SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINER. THE EXACT LOCATIONS SHALL BE DTERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENSURE DRAINAGE. 3. VENT STAC
Е. F. G. H. <u>6. Plf</u> А. В.	 CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTION TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. PING DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). TYPE L HARD DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS SANLT VALVE: CRANE #428 OR EQUAL. BALL VALVE: CRANE #428 OR EQUAL. BALL VALVE: CRANE #932 OR EQUAL. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING, 1"-3" (UNDERGROUND). TYPE K HARD OR SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERIN FITTINGS. SANITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). POLYVINYL CHLORDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT. SEWER LINES SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENSURE DRAINAGE.
Е. F. G. H. <u>6. Plf</u> А. В.	 CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 3" AND LARGER PIPE AT 1/4" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT TALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT TALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT TALL. MHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. PING DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). 1. TYPE L HARD DRAWN COPPER TUBING, ASTM B–88 WITH WROUGHT BRONZE SOLDERED FITTINGS CATE VALVE: CRANE #428 OR EQUAL. 3. BALL VALVE: CRANE #428 OR EQUAL. 3. BALL VALVE: CRANE #932 OR EQUAL. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING, 1"-3" (UNDERGROUND). 1. TYPE K HARD OR SOFT DRAWN COPPER TUBING, ASTM B–88 WITH WROUGHT BRONZE SOLDERIN FITTINGS. SANITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). 1. POLYNHYL CHLORIDE (PVC) DWY PIPE, SCHEDULE 40, SOLVENT JOINT. 2. SEWER LINES SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENSURE DRAINAGE. 3. VENT STACKS SHALL BE LETERMINED BY THE CONTRACTOR IN SUCH A MANNER
Е. F. G. H. <u>6. РІ</u> А. В. С.	 CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTION TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. PING DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). 1. TYPE L HARD DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS G GATE VALVE: CRANE #4932 OR EQUAL. 3. BALL VALVE: GRANE #932 OR EQUAL. OMESTIC COLD, HOT, AND HOT WATER RECIRCULATING, 1"-3" (UNDERGROUND). 1. TYPE K HARD OR SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERIN FITTINGS. SANITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). 1. POLYVINYL CHLORDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT. 2. SEWER LINES SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENSURE DRAINAGE. 3. VENT STACKS SHALL BE EXTENDED FULL SIZE THROUGH THE ROOF SHALL NOT BE LESS THAN 3". PVC PIPING SHALL NOT BE USED FOR VENT PIPING THROUGH THE ROOF. WHERE A
Е. F. G. H. <u>6. РІГ</u> А. В. С. D.	CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WINTINSHED FLOOR (FCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. CRADE (GCO): JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/4" PER FOOT FALL. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTION TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 1% SLOPE. PINC DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). TYPE L HARD DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS GATE VALVE: CRANE #322 OR EQUAL. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). TYPE L HARD DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS GATE VALVE: CRANE #322 OR EQUAL. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING, 1"-3" (UNDERGROUND). TYPE K HARD OR SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERIN FITTINGS. SANITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). TYPE K HARD OR SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERIN FITTINGS. SANITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). SANITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING ANANNER AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIEN
Е. F. G. H. <u>6. РІГ</u> А. В. С. D.	 CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/4" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/4" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/4" PER FOOT FALL. INSTALL 2-1/2" AND SMALLER PIPE AT A BPROPRIATE END CONNECTION TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTION TO MATCH THE FOLLOWING SLOPES. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. PING DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). TYPE L HARD DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS CATE VALVE: CRANE #428 OR EQUAL. BALL VALVE: CRANE #428 OR EQUAL. BALL VALVE: CRANE #428 OR EQUAL. CONTS ON SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERIN FITTINGS. CATIONS SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE EXTENDED FULL SIZE THROUGH THE ROOF ANALER. AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENTRACTOR IN SUCH A MAINNER AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENTRACTOR IN SUCH A MAINNER AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENTRACTOR IN SUCH A MAINNER AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENTRACTOR IN SUCH A MAINNER AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENTRACE.
Е. F. G. H. <u>6. РІГ</u> А. В. С. D.	CLEANOUTS: 1. UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. 2. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. GRADE (GCO): JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. 1. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. 2. INSTALL 2-1/2" AND SMALLE PIPE AT 1/8" PER FOOT FALL. 3. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 3. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 4. INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. 1. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. 2. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 2% SLOPE. 2. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. PINC DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). 1. TYPE L HARD DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS 3. GATE VALVE: CRANE #932 OR EQUAL. 3. BALL VALVE: CRANE #932 OR EQUAL. 3. DALL VALVE: CRANE #932 OR EQUAL. 3. DALL VALVE: CRANE #932 OR EQUAL. 4. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING, 1"-3" (UNDERGROUND). 1. TYPE L HARD OR SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERIN FITTINGS. 5. SANTARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). 1. POLYNNYL CHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT. 2. SEVER LINES SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENSURE DRAINAGE. 3. VENT STACKS SHALL BE COTEREMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENSURE DRAINAGE. 3. VENT STACKS SHALL BE EXTENDED FULL S
Е. F. G. H. <u>6. РІГ</u> А. В. С. D.	CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WALL (WCO): JR SMITH #472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #472, OR EQUAL, 24" ABOVE THE FLOOR. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/4" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/4" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. MHICH INSTALLED (SCREWED, SOLDERED, OR FLANCED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 1% SLOPE. PINC DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. PINC DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. PINC DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. PINC DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING, 1"-3" (UNDERGROUND). INSTALL 4" AND SNOT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS SANITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). POLYMYL CHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT. SANITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). VENT STACKS SHALL BE EVETNEDED FULL SIZE THROUGH THE ROOF AND FLASHED WITH 4 POUN LEAD SHEETS TURNED DOWN INTO THE STACK AT LEAST 2" AND EXTENDED 12" IN ALL DRECTIONS SHALL BE EVETNEDED FULL SIZE THROUGH THE ROOF SHALL NOT BE LESS THAN 3". PVC PIPING SHALL NOT BE USED FOR VENT PIPING THROUGH THE ROOF. WHERE APPLICATIONS SHALL BE EVETNEDED FULL SIZE THROUGH THE ROOF SHALL NOT BE LESS THAN 3". PVC PIPING SHALL NOT BE USED FOR VENT PIPING THROUGH THE ROOF. WHERE APPLICABLE FOR COONT HISTIC VANDE FOR VENT PIPING THROUGH THE PROOF. WHERE A
Е. F. G. H. <u>6. РІ</u> А. В. С. С. Е.	CLEANOUTS: UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. WALL (WCO): JR SMITH #472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (GCO): JR SMITH #472, OR EQUAL, 24" ABOVE THE FLOOR. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. INSTALL 3" AND LARGER PIPE AT 1/4" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTION TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANCED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 1% SLOPE. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. PING DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. PING DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). INSTALL 4" AND DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS C GATE VALVE: CRANE #428 OR EQUAL. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING, 1"-3" (UNDERGROUND). I. TYPE L HARD OR SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERIN FITTINGS. SANITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). I. POLYMYL CHLORIGE (PVC) DWY PIPE, SCHEDLE 40, SUCKENT JOINT. 2. SEWER LINES SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE ENTENDED FULL SIZE THROUGH THE ROOF AND FLASHED WITH 4 POUN LEAD SHETS TURKED SANLL BE FORE GOING THOUG
Е. F. G. H. <u>6. РІ</u> А. В. С. С. Е.	CLEANOUTS: 1. UNFINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. 2. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. GRADE (GCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. GRADE (GCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. 5. INSTALL 3" AND LARGER PIPE AT 1/4" PER FOOT FALL. 3. INSTALL 3" AND LARGER PIPE AT 1/4" PER FOOT FALL. 4. INSTALL 3" AND LARGER PIPE AT 1/4" PER FOOT FALL. 5. CONDENATE DRAIN SHALL BE INSTALLED AT 1/4" PER FOOT FALL. 5. CONDENATE DRAIN SHALL BE INSTALLED AT 1/4" PER FOOT FALL. 7. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 1/4" PER FOOT FALL. 6. CONNECTIONS TO HOT WATER HEATENS AND EXPANSION JOINTS. 6. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 1% SLOPE. 7. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 1% SLOPE. 7. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 7. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 7. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 7. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 7. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 7. INSTALL 6" AND HOT WATER RECIRCULATING (ABOVEGROUND). 7. TYPE L HARD DRAWN COPPER TUBING, ASTM B–88 WITH WROUGHT BRONZE SOLDERED FITTINGS 7. GATE VALVE: CARNE #2420 GR EQUAL. 7. BALL VALVE: CARNE #2420 GR EQUAL. 7. BALL VALVE: CARNE #2420 GR EQUAL. 7. DOLYVINYL CHLORIDE (PVC) DWY PIPE, SCHEDULE 40, SOLVENT JOINT. 7. SEVER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). 7. POLYVINYL CHLORIDE (PVC) DWY PIPE, SCHEDULE 40, SOLVENT JOINT. 7. SEWER LINES SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENSURE DRAINAGE. 7. VENT FING SHALL DE EXTERDIDED THE STACK AT LEAST 2" AND EXTENDED 12" IN ALL 7. DIRECTIONS SHALL BE DETERMINED THE STACK AT LEAST 2" AND EXTENDED 12" IN ALL 7. DIRECTIONS SHALL BE DETERMINED THE STACK AT LEAST 2" AND EXTENDED 12" IN ALL 7. DIRECTIONS SHALL BE DETERMINED THE STACK AT LEAST 2" AND EXTENDED 12" IN ALL
Е. F. G. H. <u>6. РІ</u> А. В. С. С. Е.	CLEANOUTS: 1. UNINISHED FLOOR (FCO): JR SMITH #4240, OR EQUAL. 2. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. GRADE (GCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. INSTALL 2-1/2" AND SWALLER PIPE AT 1/4" PER FOOT FALL. 2. INSTALL 2-1/2" AND SWALLER PIPE AT 1/4" PER FOOT FALL. 3. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/6" PER FOOT FALL. 3. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/6" PER FOOT FALL. 4. INSTALL D: SOCREWED, SOLDERED, OR FLANGED, PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. 4. LISEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. 5. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. 5. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. 5. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. 5. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 1% SLOPE. 5. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 1% SLOPE. 5. INSTALL 4" AND MALLER PIPE AT A MINIMUM OF 1% SLOPE. 5. INSTALL 4" AND HOT WATER RECIRCULATING (ABOVECROUND). 1. TYPE L HARD DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS 5. GATE VALVE: CRANE #428 OR EQUAL. 5. BALL VALVE: CRANE #432 OR EQUAL. 5. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING, 1"-3" (UNDERGROUND). 1. TYPE K HARD OR SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERIN FITTINGS. 5. SANITARY SEVER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). 1. POLYMYL CHLORDER (PVC) DWY PIPE, SCHEDULE 40, SOLVENT JOINT. 2. SEWER LINES SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWNGS. THE EXACT 1. LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROVER CLEARANCES AND SUFFICIENT SLOPE OF ENSURE DRAINAGE. 3. VENT STACKS SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROVER CLEARANCES AND SUFFICIENT SLOPE OF ENSURE DRAINAGE. 3. VENT STACKS SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROVERE CLEARANCES AND SUFFICIENT SLOPE OF ENSURE
Е. F. G. H. <u>6. РІ</u> А. В. С. С. Е.	 CLEANOUTS: UNFINISHED FLOOR (FC0): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (CC0): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. GRADE (CC0): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. INSTALL 50 (SCREWED, SOLDERED, OR FLANGED), PROYDE DIELECTRIC UNIONS ON ALL PIPING CONTECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. LLISSWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 2% SLOPE. PING DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). TYPE L HARD DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS. GATE VALVE: CRANE #428 OR EQUAL. DAULES VALVE: CRANE #428 OR EQUAL. DAULYE: CRANE #428 OR EQUAL. DAULYE: CRANE #428 OR EQUAL. POLYWIN CHLORDE (PVC) DWY PIPE, SCHEDULE 40, SOLVENT JOINT. PLY VINYU CHLORDE (PVC) DWY PIPE, SCHEDULE 40, SOLVENT JOINT. SANTARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). PLYPE K HARD OR SOLT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERIN HERTINGS. SANTARY SEWER AND VENTS (UNDERGROUND, INTERIOR THE ROOF AND FLASHED WITH 4 POUN LEAD SHALL BE ELTERMED FULL 40, SOLVENT JOINT. SANTARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDIN
E. F. G. H. <u>6. PII</u> A. B. C. E. F.	CLEANOUTS: 1. UNFINISHED FLOOR (FC0): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 2. WAL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. ORADE (CCC): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. ORADE (CCC): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. ORADE (CCC): JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. 4. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. 3. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 3. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 4. INSTALL 2-1/2" AND SMALLER PIPE AT 1/8" PER FOOT FALL. 3. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 4. INSTALL 20' ADD ARGER PIPE AT A MINIMUM OF TALL. 4. INSTALL DE (SCREWED, SOLDERED, OR FLANCED), PROVDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. 4. LISSWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. 1. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 72 SLOPE. 2. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 72 SLOPE. 2. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 72 SLOPE. 2. INSTALL 4" AND MANN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS 3. GATE VALVE: CRANE #428 OR EQUAL. 3. BALL VALVE: CRANE #428 OR EQUAL. 4. SHALL VALVE: CRANE #428 OR EQUAL. 5. MITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). 1. TYPE K HARD OR SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERIN FITTINGS. 5. MITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). 1. POLYWIN, CHLORIE DE EDTERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENSURE DRAINAGE. THE XACT LICOATIONS SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AST TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENSURE DRAINAGE. HEACT STARANCES AND USHFICIENT SLOPE TO ENSURE DRAINAGE. HEACT HEACON SHALL BE EDTE
E. F. G. H. <u>6. PII</u> A. B. C. E. F.	CLEANOUTS: 1. UNFINSHED FLOOR (FC0):JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 2. WALL (WC0):JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. ORADE (GC0):JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. ORADE (GC0):JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. ALL SEWER PHING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. 1. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. 3. CONDENSATE DRAIN SHALL BE INSTALED AT 1/4" PER FOOT FALL. 3. CONDENSATE DRAIN SHALL BE INSTALED AT 1/4" PER FOOT FALL. 3. CONDENSATE DRAIN SHALL BE INSTALED AT 1/4" PER FOOT FALL. 3. CONDENSATE DRAIN SHALL BE INSTALED AT 1/4" PER FOOT FALL. 3. CONDENSATE DRAIN SHALL BE INSTALED AT 1/4" PER FOOT FALL. 3. DONESTIC COND. HOT WATER HEATERS AND EXPANSION JOINTS. 4.L SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. 1. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 1% SLOPE. 2. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 1% SLOPE. 2. INSTALL 4" AND MALLER PIPE AT A MINIMUM OF 1% SLOPE. 3. BALL VALVE: GRANE #428 OR EQUAL. 3. DOMESTIC COLD, HOT, AND HOT WATER RECORCULATING, 1"-3" (UNDERGROUND). 1. TYPE L HARD DR SOFT DRAWL COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS 3. SANTARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). 1. TYPE VIENES SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT 1. LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROPER LLEWES SHALL BE EXTERNED TO REVER LASS SHOWN ON THE DRAWNGS. THE EXACT 1. UCCATIONS SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROPER LLEWES SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROPER LLEWES SHALL BE EXTERNED FOR WENTS THROUGH THE ROOF AND FLASHING WHERE 3. WENT STACKS SHALL BE EXTENDED FULL SIZE THROUGH THE ROOF AND FLASHED WITH ALL DRECTIONS
E. F. G. H. <u>6. PII</u> A. B. C. E. F.	CLEANOUTS: 1. UNFINISHED FLOOR (FCO):JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 2. WALL (WCO):JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. GRADE (GCO):JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. GRADE (GCO):JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 3. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. 3. ONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 3. ONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 3. ONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 3. ONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 3. ONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 3. ONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 3. ONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. 3. INSTALL 50 (SCREWED, SOLDERED, OR FLANCED). PROVED ELECTRIC UNIONS ON ALL PIPING 3. COATED SCHEMENT, DIE SULLAND, OR FLANCED). PROVED ELECTRIC UNIONS ON ALL PIPING 3. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 1% SLOPE. 3. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 3. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 3. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 3. INSTALL 4" AND SMALLER PIPE TUBING, ASTM B-B8 WITH WROUGHT BRONZE SOLDERED FITTINGS 3. GATE VALVE: CRANE #428 OR EQUAL. 3. BALL VALVE: CRANE #428 OR EQUAL. 3. BALL VALVE: CRANE #428 OR EQUAL. 3. DALVEV: CRANE #428 OR EQUAL. 3. DALVEV: CRANE #428 OR EQUAL. 3. DALVEV: CRANE #428 OR EQUAL. 3. SANITARY SEWER AND VENTS (UNDERGROUND). INTERIOR TO BUILDING). 1. TYPE K HARD DR SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERIN TITTINGS. 3. SANITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). 1. POLVINIYL CHLORIDE (PVC) DW PIPE, SCHEDULE 40, SOLVENT JOINT. 3. SANITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). 1. POLVINIYL CHLORIDE (PVC) DW PIPE, SCHEDULE 40, SOLVENT JOINT. 3. SANITARY SEWER AND VENTS (UNDERGROUND INTERIOR TO BUILDING). 1. POLVINIYL CHLORIDE (PVC) DW IPE, SCHEDULE 40, SOLVENT JOINT. 3. SANITARY SEWER AND VENTS

MECHANICAL AND PLUMBING SPECIFICATIONS

- 3. ROOF: PROSET OR EQUAL, MANUFACTURED PVC SCHEDULE 40 PIPE SLEEVE WITH WATERPROOF SEAL. COORDINATE WITH ROOFING CONTRACTOR AND FLASH AS REQUIRED TO MAINTAIN ROOF WARRANTY.
- 4. PLUMBING VENTS: FLASH ROOF VENT INTO ROOFING SYSTEM AS REQUIRED BY THE ROOFING CONTRACTOR TO MAINTAIN THE EXISTING ROOF WARRANTY. ALL PLUMBING VENT TERMINALS SHALL TERMINATE A MINIMUM OF 12" ABOVE ROOF OR EQUAL TO HEIGHT OF PARAPET, WHICHEVER IS GREATER.
- I. PROVIDE CHROME PLATED ESCUTCHEONS ON ALL PIPE ENTERING FINISHED AREAS.

7. INSULATION:

- A. ALL INSULATIONS AND ACCESSORIES SHALL HAVE A FIRE HAZARD CLASSIFICATION WITH A FLAME SPREAD RATING OF NOT OVER 25, A FUEL CONTRIBUTION RATING OF NOT OVER 50, AND A SMOKE DEVELOPMENT RATING OF NOT OVER 50, IN ACCORDANCE WITH NFPA.
- B. PIPE INSULATION (ABOVE GRADE):
 1. THE PIPE INSULATION USED SHALL HAVE A THERMAL CONDUCTIVITY OF 0.27 BTU PER IN/HR*SQ-FT**F OR LESS.
- FIBERGLASS INSULATION WITH FACTORY APPLIED VAPOR BARRIER, ASJ JACKET, FACTORY APPLIED PRESSURE SEALING LONGITUDE LAP JOINT, NO STAPLES, ZESTON PREMOLDED PVC FITTING COVERS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 3. FLEXIBLE CLOSED CELL ELASTOMERIC THERMAL INSULATION, UNSLIT OR PRESLIT WITH PRESSURE SENSITIVE ADHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING, EQUAL TO ARMSTRONG AP ARMAFLEX OR ARMAFLEX 2000.
- 4. FOR NON CIRCULATING SYSTEMS THE FIRST 8 FEET OF INLET AND OUTLET PIPING BETWEEN THE TANK AND HEAT TRAP (INCLUDING THE HEAT TRAP) MUST BE INSULATED.

1/2"

- INSULATION SCHEDULE: a. DOMESTIC COLD WATER:
- b. DOMESTIC COLD WATER:c. REFRIGERANT SUCTION:
- 1-1/2" FOR PIPING UP TO 1-1/2"ø, 2" FOR PIPING 1-1/2"ø AND LARGER.

C. DUCTWORK INSULATION:

- DUCT COVERING: 3/4 LB/CF, FIBERGLASS BLANKET WITH FACTORY APPLIED VAPOR BARRIER AND FACING. THICKNESS AS SCHEDULED, INSTALLATION IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. DUCT COVERING SHALL BE MINIMUM R-6.
 a. SUPPLY AIR DUCT: 2"
 - b. RETURN AIR DUCT:
- 8. TESTING, BALANCING AND CLEANING:
- A. ALL PIPING SHALL BE TESTED FOR LEAKS BEFORE BEING CONCEALED IN WALL CONSTRUCTION OR
- COVERED WITH INSULATION. B SEWER AND VENT PIPING SHALL BE HYDROSTATICALLY TESTE
- B. SEWER AND VENT PIPING SHALL BE HYDROSTATICALLY TESTED WITH NO LESS THAN 10 FEET OF HEAD FOR A PERIOD OF NOT LESS THAN 15 MINUTES, PER THE LOCAL PLUMBING CODE, WITH NO LEAKS.
- C. DOMESTIC WATER PIPING SHALL BE HYDROSTATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 60 PSI, FOR A PERIOD OF NOT LESS
- THAN 2 HOURS, WITH NO LEAKS. D. BEFORE DOMESTIC WATER PIPING IS PLACED IN SERVICE, ALL DOMESTIC WATER DISTRIBUTION SYSTEMS, INCLUDING THOSE FOR COLD WATER AND HOT WATER SYSTEMS, SHALL BE FLUSHED, STERILIZED AND CHLORINATED IN ACCORDANCE WITH THE HEALTH DEPARTMENT REGULATIONS. THE SYSTEMS SHALL BE THOROUGHLY FLUSHED OF ALL DIRT AND FOREIGN MATTER, THEN FILLED WITH WATER TREATED WITH 50 PPM OF CHLORINE. DURING THE FILLING PROCESS, VALVES AND FAUCETS SHALL BE OPENED SEVERAL TIMES TO ASSURE TREATMENT OF THE ENTIRE SYSTEM. THE TREATED WATER SHALL BE LEFT IN THE SYSTEM FOR 24 HOURS AFTER WHICH TIME THE SYSTEM SHALL BE FLUSHED; IF THE RESIDUAL CHLORINE IS NOT LESS THAN 10 PPM, THE FLUSHING SHALL BE REPEATED. AFTER STERILIZATION SAMPLES OF WATER FROM THE SYSTEM SHALL BE APPROVED BY THE BOARD OF HEALTH.
- E. NATURAL GAS SYSTEMS SHALL BE TESTED WITH COMPRESSED AIR AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 50 PSIG FOR A PERIOD OF 2 HOURS WITH NO LEAKS.
- F. THE INSPECTION AUTHORITY HAVING JURISDICTION SHALL BE NOTIFIED AT LEAST 24 HOURS PRIOR TO PERFORMANCE OF ALL TESTS SO THAT THEY TESTS MAY BE WITNESSED IF DEEMED NECESSARY.G. DUCTWORK AND PIPING SHALL BE BALANCED BY QUALIFIED BALANCING PERSONNEL WHO HAVE
- PREVIOUS EXPERIENCE WITH BALANCING PROCEDURES AND ARE FAMILIAR WITH TESTING AND BALANCING PROCEDURES OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).
- BALANCING SHALL INCLUDE THE BALANCING OF THE EQUIPMENT AND AIR DISTRIBUTION SYSTEMS TO PROVIDE DESIGN QUANTITIES INDICATED AND VERIFICATION PERFORMANCE OF ALL EQUIPMENT AND AUTOMATIC CONTROLS.
- 2. WITH IN 30 DAYS OF THE COMPLETION OF THE TESTING AND BALANCING WORK, SUBMIT THE TEST AND BALANCING REPORT BEARING THE SIGNATURE OF THE TEST AND BALANCE ENGINEER. THE REPORTS SHALL BE CERTIFIED PROOF THAT THE SYSTEMS HAVE BEEN TESTED, ADJUSTED, AND BALANCED IN ACCORDANCE WITH THE REFERENCED STANDARDS; ARE AN ACCURATE REPRESENTATION OF HOW THE SYSTEMS HAVE BEEN INSTALLED AND ARE OPERATING. REPORTS SHALL BE BOUND IN A VINYL BINDER AND THE BINDER LABELLED OR MAY BE AN ELECTRONIC PDF SUBMITTAL.

9. DUCTWORK:

- A. ALL DUCTWORK UNLESS OTHERWISE INDICATED SHALL BE FABRICATED FROM GALVANIZED SHEET STEEL COMPLYING WITH ASTM A 527, LOCKFORMING QUALITY, WITH G60 ZINC COATING IN ACCORDANCE WITH ASTM A 525, AND MILL PHOSPHATIZED FOR EXPOSED LOCATIONS.
- B. DUCTWORK METAL GAUGES, REINFORCING, ETC SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS," LATEST EDITION FOR A 2" WATER GAUGE STATIC PRESSURE.
- C. ALL FITTINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION
- STANDARDS," LATEST EDITION.
- D. RECTANGULAR DUCT:
 1. ELBOWS, UNLESS INDICATED OTHERWISE, SHALL BE CONSTRUCTED WITH CENTERLINE RADIUS OF NOT LESS THAN 1.5 DUCT WIDTH OR SQUARE ELBOWS WITH DOUBLE WALL STREAMLINE ELBOWS.
 2. TAKE-OFF FITTINGS: BRANCH DUCT TAKE-OFF FITTINGS FOR SUPPLY AND EXHAUST
- DIFFUSER/REGISTERS SHALL INCLUDE AN INTEGRAL MANUAL VOLUME DAMPER WITH LOCKING QUADRANT, DAMPER NOT REQUIRED ON RETURN AIR. FOR RECTANGULAR TO ROUND TAKE-OFFS, UTILIZE A "BUCKLEY" MODEL 3300 & 3300D OR EQUAL.
- 3. RETURN AIR ACOUSTIC ELBOWS AND SOUND BOOTS SHALL BE A SQUARE ELBOW WITH NO TURNING VANES.
- 4. SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE A MINIMUM 1 TO 3. E. ROUND AND OVAL SPIRAL SEAM DUCT:
- 1. PROVIDE RADIUS TYPE FITTINGS FABRICATED OF MULTIPLE SECTIONS WITH MAXIMUM 15 DEGREE CHANGE OF DIRECTION PER SECTION. UNLESS SPECIFICALLY DETAILED OTHERWISE, USE 45 DEGREE LATERALS FOR BRANCH TAKEOFF CONNECTIONS. WHERE 90 DEGREE BRANCHES ARE INDICATED PROVIDE CONICAL TYPE TEES.
- SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE MINIMUM 1 TO 3.
 ROUND LONGITUDINAL SEAM DUCT: USE FOR RIGID METAL DUCT ON LEAVING SIDE OF DUCT IN CONCEALED LOCATIONS FOR EXTENSION TO FLEX FOR DIFFUSERS.
- F. SEAL ALL CONCEALED DUCTWORK JOINTS WITH NON-HARDENING, NON-MIGRATING MASTIC SEALANT, AS RECOMMENDED FOR SEALING SEAMS AND JOINTS IN DUCTWORK. OIL BASED CAULKING AND GLAZING COMPOUNDS SHALL NOT BE ACCEPTABLE. DUCTS SHALL BE SEALED TO THE CLASS LEVEL LISTED BELOW:

BELOW:			
(1) UNCONDITIONED SPACES:	CLASS B	CLASS C	CLASS B
(2) CONDITIONED SPACES (PLENUM):	CLASS C	CLASS B	CLASS C
<u>Sl</u>	JPPLY 2"WC OR LESS	<u>EXHAUST</u>	<u>RETURN</u>

- G. DUCT SIZES SHOWN ON THE DRAWINGS ARE SHEET METAL SIZES. INCREASE SHEET METAL SIZES
- ACCORDINGLY TO ACCOUNT FOR THICKNESS OF DUCT LINER. H. WHETHER SHOWN ON PLANS OR NOT, PROVIDE MANUAL VOLUME DAMPERS IN EACH RUNOUT TO EACH SUPPLY DIFFUSER OR REGISTER. PROVIDE ACCESS PANELS TO DAMPERS LOCATED ABOVE HARD CEILINGS.
- I. PROVIDE AUXILIARY STEEL AS REQUIRED TO ADEQUATELY SUPPORT DUCTWORK.
 J. WHERE DUCTS PASS THROUGH FIRE-RATED FLOORS, WALLS, OR PARTITIONS, PROVIDE FIRESTOPPING BETWEEN DUCT AND WALL.
- K. WHERE DUCTS PASS THROUGH INTERIOR PARTITIONS OR EXTERIOR WALLS, AND ARE EXPOSED TO VIEW, CONCEAL SPACE BETWEEN OPENING AND DUCT OR DUCT INSULATION WITH SHEET METAL FLANGES OF SAME GAUGE AS DUCT. OVERLAP OPENING ON 4 SIDES BY AT LEAST 1-1/2". FASTEN TO DUCT AND WALL.

10. FLEXIBLE DUCT:

- A. ATCO #086 (R-6), OR EQUAL.
- B. FACTORY APPLIED INSULATION AND VAPOR BARRIER, 1-1/2" THICK. C. MAXIMUM LENGTH OF 6'-0".

11. FLUES AND ACCESSORIES:

A. FLUE FOR GAS FIRED FURNACE SHALL BE AS RECOMMENDED BY THE GAS APPLIANCE MANUFACTURER.
 FLUES SHALL BE SCHEDULE 40 PVC OR CPVC PER THE MANUFACTURE'S INSTALLATION REQUIREMENTS.
 B. PROVIDE MANUFACTURERS STANDARD ACCESSORY ITEMS INCLUDING BIRD PROOF TOP, STORM COLLAR,

ROOF THIMBLE, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION. ROOF THIMBLES THROUGH THE BUILDING ROOF SHALL BE SUITABLE FOR USE WITH THE ROOF PROVIDED.C. FLUES FOR HEATERS SHALL BE DOUBLE WALL TYPE B EQUAL TO METALBESTOS. PROVIDE MANUFACTURER'S STANDARD FITTING AND ACCESSORIES (ROOF THIMBLE, STORM COLLAR, COUNTER FLASHING, ETC.) AS REQUIRED FOR A COMPLETE INSTALLATION.

12. EXHAUST FANS:

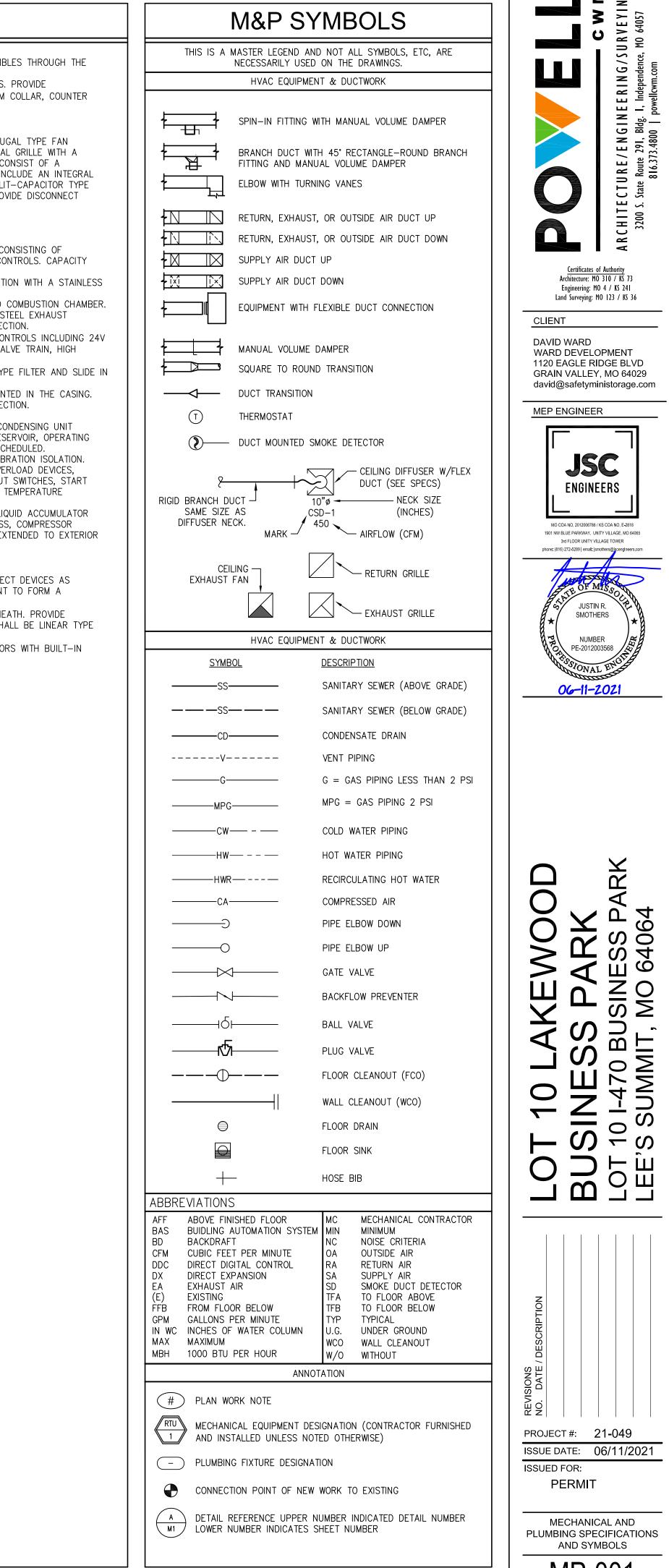
A. CENTRIFUGAL CEILING EXHAUSTERS SHALL BE ELECTRICALLY POWERED CENTRIFUGAL TYPE FAN SUITABLE FOR MOUNTING IN THE CEILING WITH A PERFORATED OFF-WHITE METAL GRILLE WITH A THUMBSCREW ATTACHMENT FOR EASY ACCESS TO FAN HOUSING. UNIT SHALL CONSIST OF A GALVANIZED STEEL HOUSING LINED WITH ACOUSTICAL INSULATION AND SHALL INCLUDE AN INTEGRAL BACKDRAFT DAMPER ON FAN DISCHARGE. MOTOR SHALL BE A PERMANENT SPLIT-CAPACITOR TYPE MOTOR, PERMANENTLY LUBRICATED WITH THERMAL OVERLOAD PROTECTION. PROVIDE DISCONNECT SWITCH OR OTHER MEANS OF DISCONNECT AT MOTOR IN FAN HOUSING.

13. FURNACE AND CONDENSING UNIT: A. CONDENSING FURNACES:

- 1. GAS FIRED FURNACE SHALL BE FACTORY ASSEMBLED, PRE-WIRED UNIT CONSISTING OF SHEETMETAL CASING, SUPPLY FAN, GAS FIRED HEAT EXCHANGER, AND CONTROLS. CAPACITY SHALL BE AS SCHEDULED.
- 2. THE PRIMARY HEAT EXCHANGER SHALL BE ALUMINIZED STEEL CONSTRUCTION WITH A STAINLESS STEEL SECONDARY HEAT EXCHANGER.
- 3. THE FURNACE SHALL BE OF THE CONDENSING TYPE, UTILIZING A SEALED COMBUSTION CHAMBER. UNIT SHALL INCLUDE FINNED CAST IRON HEAT EXCHANGER, ALUMINIZED STEEL EXHAUST DECOUPLER SECTION AND FINNED STAINLESS STEEL TUBE CONDENSER SECTION.
- 4. THE UNIT SHALL BE EQUIPPED WITH THE MANUFACTURER'S STANDARD CONTROLS INCLUDING 24V CONTROL TRANSFORMER, AUTOMATIC SPARK IGNITION, AUTOMATIC GAS VALVE TRAIN, HIGH TEMPERATURE LIMIT SWITCH AND EAN THEO DELAY DELAY.
- TEMPERATURE LIMIT SWITCH, AND FAN TIMED DELAY RELAY.
 5. RETURN AIR INLET ON UNIT SHALL BE PROVIDED WITH 1" THROWAWAY TYPE FILTER AND SLIDE IN EDAME. MOUNTED ON THE HUNT.
- FRAME, MOUNTED ON THE UNIT.
 FAN SHALL BE A DIRECT DRIVE MULTI-SPEED BLOWER, RESILIENTLY MOUNTED IN THE CASING. MOTOR SHALL BE PROVIDED WITH AUTOMATIC THERMAL OVERLOAD PROTECTION.
- FURNACE SHALL BE AGA APPROVED.
 B. CONDENSING UNIT SHALL BE FACTORY ASSEMBLED AND TESTED AIR-COOLED CONDENSING UNIT CONSISTING OF COMPRESSOR, CONDENSER COIL, FAN, MOTOR, REFRIGERANT RESERVOIR, OPERATING CONTROLS, ETC. CAPACITY AND ELECTRICAL CHARACTERISTICS SHALL BE AS SCHEDULED.
- . COMPRESSOR: HERMETICALLY SEALED WITH BUILT-IN OVERLOADS AND VIBRATION ISOLATION. COMPRESSOR MOTOR SHALL HAVE THERMAL AND CURRENT SENSITIVE OVERLOAD DEVICES, INTERNAL HIGH PRESSURE PROTECTION, HIGH AND LOW PRESSURE CUTOUT SWITCHES, START
- CAPACITOR AND RELAY, 2-POLE CONTACTOR, CRANKCASE HEATER, AND TEMPERATURE ACTUATED SWITCH AND TIMER TO PREVENT COMPRESSOR RAPID CYCLE.
- COIL SHALL BE COPPER TUBING WITH ALUMINUM FINS: COMPLETE WITH LIQUID ACCUMULATOR AND LIQUID SUBCOOLER. UNIT SHALL INCLUDE FILTER DRYER, SIGHT GLASS, COMPRESSOR SERVICE VALVE, LIQUID LINE SERVICE VALVE, AND REFRIGERANT PIPING EXTENDED TO EXTERIOR OF CASING.

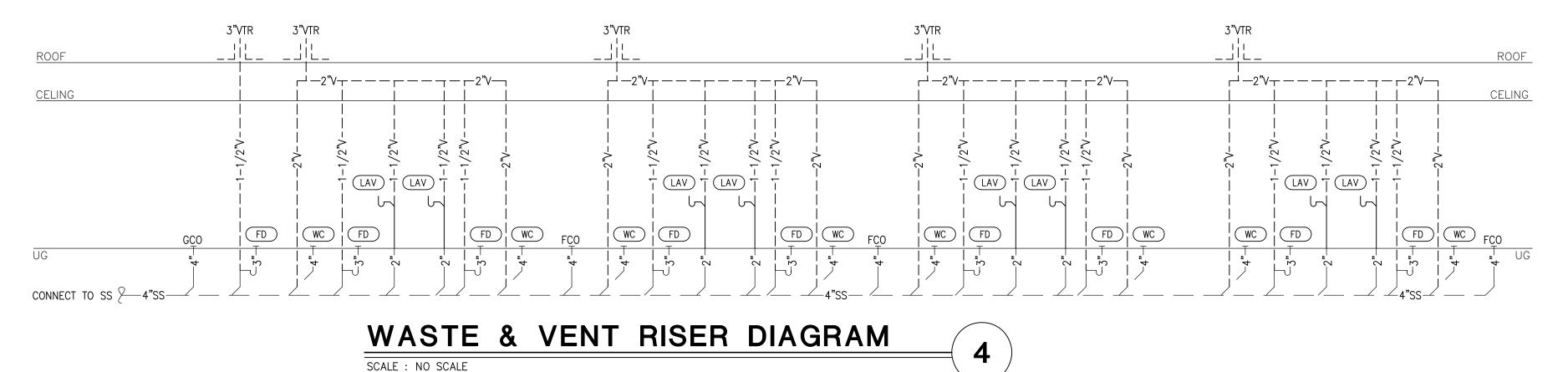
14. ELECTRIC WALL HEATERS

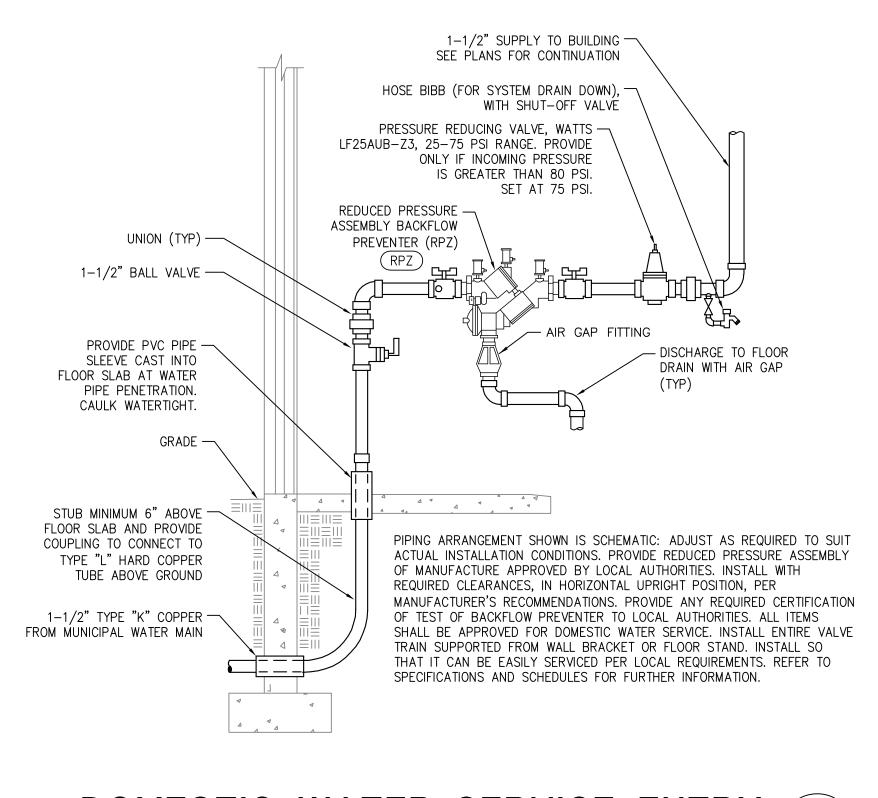
- A. UNIT SHALL INCLUDE ELECTRIC HEATING ELEMENTS WITH SAFETY AND DISCONNECT DEVICES AS REQUIRED BY NEC, INCLUDING RELAYS, CONTROLLERS AND REQUIRED EQUIPMENT TO FORM A COMPLETE AND FUNCTIONAL HEATER.
- B. ELEMENTS SHALL BE HEAVY DUTY ALUMINUM-FINNED, COPPER CLAD STEEL SHEATH. PROVIDE AUTOMATIC RESET THERMAL OVER-HEAT PROTECTION. THERMAL PROTECTOR SHALL BE LINEAR TYPE TO SENSE TEMPERATURES THE ENTIRE LENGTH OF HEATING ELEMENT.
- C. FANS SHALL BE DIRECT DRIVE USING PERMANENT SPLIT CAPACITOR TYPE MOTORS WITH BUILT-IN AUTOMATIC RESET MOTOR OVERLOAD PROTECTION.



MP-00

	PLUMBING F
	FLOOR DRAIN: SOUIX CHIE
FD	CLAMPING COLLAR, ADJU
FU	PROVIDE WITH PROSET SY
	DRAIN MODEL AND SIZE P
	WALL-MOUNT LAVATORY
	ELLIPTICAL BOWL, MOUNT
LAV	LEVER LAVATORY FAUCET
	WITH CHROME PLATED ST
	ESCUTCHEONS. INSULATE
	FLOOR-MOUNTED ADA W
	ACCESSIBLE, VIREOUS CHI
WC	W/ 17.125" SEAT HEIGHT, V
WC	CONTAINING FLUSHOMET
	BACKFLOW PREVENTER, V
	FLEXIBLE RISER TUBE, BOL
WH	10 GAL WATER HEATER: AG
VVII	SINGLE ELEMENT, 120V, 16
	REDUCED PRESSURE ZONE
RPZ	MEETING ASSE 1013, LEAD
	COCKS, QUARTER TURN B





DOMESTIC WATER SERVICE ENTRY SCALE : NO SCALE

FIXTURE SCHEDULE

IEF 842-4PNR, ROUND FLOOR DRAIN, PVC BODY AND USTABLE 6-1/2" ROUND NICKEL BRONZE STRAINER. SYSTEMS "TRAP GUARD" INSERT FOR ACTUAL FLOOR PROVIDED.

Y: KOHLER K-1997-1-0, SINGLE-HOLE, 14.375"X12.3125' NT AT ADA HEIGHT, VITREOUS CHINA, WITH SINGLE Γ (KOHLER K-10215-4). PROVIDE FLEXIBLE SS RISERS

STOP VALVES, P-TRAP WITH CLEANOUT AND E WITH "HANDI-LAV-GLUARD" MODEL 102, OR EQUAL. WATER CLOSET: KOHLER K-3519-TR, HANDICAP

HINA, 1.28 GPF, ELONGATED BOWL, FLOOR MOUNTED , WHITE, VITREOUS CHINA TANK AND COVER

ETER/TANK WITH BUILT-IN PRESSURE REGULATOR AND WHITE OPEN-FRONT SEAT, CHROME STOPS, C.P. DLT CAPS, AND ESCUTCHEON.

AO SMITH EJC-10, 8 GPH RECOVERY AT 90 DEG F RISE, 1650W

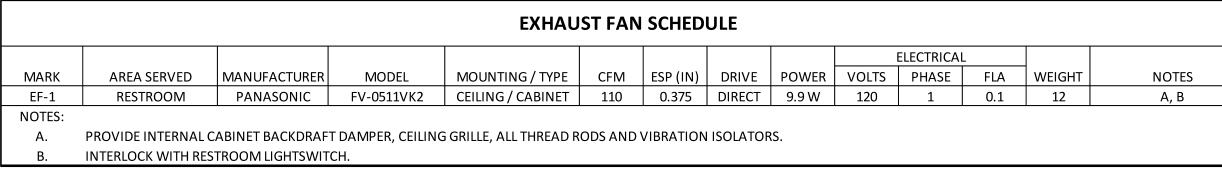
IE BACKFLOW PREVENTER: WATTS LF009, 1-1/2", AD FREE CAST BRONZE BODY, QUARTER TURN TESTING

BALL VALVES, AND AIR GAP FITTING.

	GAS FURNACE SCHEDULE																		
		GENERAL D	ATA				HI	EATING			FAN	DATA				EL	ECTRICAL	-	
TAG	BASIS OF DESIGN MFR/MODEL	FLOW DIRECTION	WEIGHT (LBS)	DIMENSIONS (WxDxH)	OUTSIDE AIR (CFM)	INPUT (BTUH)		AFUE	VENT	TYPE	ΗР	CFM	ESP (IN WG)	VOLT	PHASE	HZ	MOCP	MCA	NOTES
F-1	LENNOX / EL296UH070XV36B	HORIZONTAL	136	29.25x33x17.5	0	66,000	62,000	96	CONCENTRIC	VARIABLE	1/2	840	0.5	120	1	60	15	7.7	A,B,C,D,E

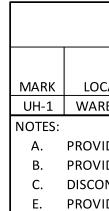
NOTES: A. EXTERNAL STATIC PRESSURE LISTED REPRESENTS STATIC PRESSURE REQUIRED FOR DUCTWORK AND DIFFUSERS OUTSIDE THE HVAC UNIT COMPLETELY INDEPENDENT OF ANY PRESSURE DROP THROUGH THE HVAC EQUIPMENT INCLUDING FILTER AND COIL. B. PROVIDE UNIT WITH 7-DAY PROGRAMMABLE HEAT/COOL/AUTO CHANGEOVER MULTISTAGE THERMOSTAT W/HUMIDITY SENSOR. C. PROVIDE MANUFACTURER'S CONCENTRIC VENT KIT. SIZE AND INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS WHILE ADHERING TO LENGTH AND FITTING LIMITATIONS. D. PROVIDE END RETURN FILTER KIT.

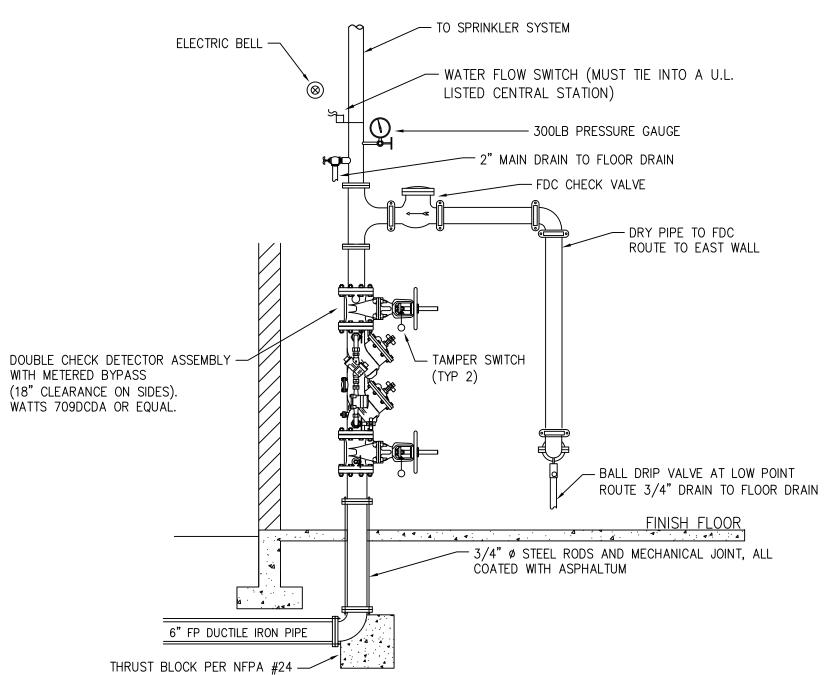
E. ADJUST FACTORY DEFAULT SETTINGS TO LIMIT BLOWER SPEED TO 840 CFM.



			СО	DNDENSING UN	IT SCHEDU	JLE								
	GENERAL DATA						ELECTRICAL					COOLING COIL & MISC.		
TAG	BASIS OF DESIGN MFR/MODEL	LOCATION	WEIGHT (LBS)	DIMENSIONS (WxDxH) (IN.)	NOMINAL CAP. (MBH)	VOLT	PHASE	ΗZ	МОСР	МСА	REFR.	EVAP COIL MODEL #	NOTES	
CU-1	LENNOX / XC20-024-230	GROUND	243	35.5x39.5x39	24	208	1	60	30	19.1	R410A	CH35-30B-2F	A,B,C	
NOTES:														

A. PROVIDE TIME DELAY ON COMPRESSOR RE-START KIT, CRANKCASE HEATER, AND COMPRESSOR LOCK-OUT WITH AMBIENT BELOW 35F. B. MECHANICAL CONTRACTOR SHALL COORDINATE ALL UNIT MOCP'S OF ACTUAL INSTALLED EQUIPMENT WITH ELECTRICAL CONTRACTOR. C. PROVIDE MIN. 4" TALL PRE-MANUFACTURED POLYOLEFIN PAD.





NOTES:

3

- 1) SEE NFPA 13 FOR CONNECTIONS PASSING THROUGH OR UNDER FOUNDATION WALLS.
- 2) ADEQUATE CLEARANCE SHALL BE PROVIDED AROUND FIRE RISER. DIMENSIONS FROM FACE-OF-PIPE SHALL MEASURE A MINIMUM OF 12" OFF THE BACK WALL, 18" ON EACH SIDE, AND 36" CLEAR IN FRONT. ALL VALVES NO MORE THAN 7'-0" AFF. 3) TAMPER SWITCH OR CHAIN & LOCK REQUIRED FOR CONTROL VALVES.
- 4) MONITORING SYSTEM: PROVIDE A SYSTEM FOR DETECTION OF FLOW AND SUPERVISION OF VALVES, CAPABLE WITH COMMUNICATING WITH OWNER'S MONITORING COMPANY. PROVIDE ALL WIRING. ROUTE COMMUNICATION CABLE TO TELEPHONE EQUIPMENT FOR CONNECTIONS BY OWNER.
- 5) DRAWING IS SCHEMATIC. ORIENT VALVE SO THAT 36" CLEAR IS IN FRONT OF HANDWHEEL. 6) HORIZONTAL INSTALLATION ALSO ALLOWED.



140°F HW

THERM-X-TROL, MODEL ST-5

MOUNT ON SUSPENDED PLATFORM

SCALE : NO SCALE

GAS UNIT HEATER SCHEDULE											
				FEE		WEIGHT	ELECTRICAL				
MFR.	MODEL				CEM		VOLTS	РН	FLA	NOTES	
LENNOX	LF25-125A	125	103.75	83.5	1950	167.00	115	1	5	A-E	
	MFR. LENNOX	MFR. MODEL	MFR. MODEL (MBH)	MFR. MODEL (MBH) (MBH)	MFR. MODEL (MBH) (MBH) (%)	MFR. MODEL (MBH) (MBH) (%) CFM	MFR. MODEL (MBH) (MBH) (%) CFM (LBS)	MFR. MODEL (MBH) (MBH) (%) CFM (LBS) VOLTS	MFR. MODEL (MBH) (MBH) (%) CFM (LBS) VOLTS PH	MFR. MODEL (MBH) (MBH) (%) CFM (LBS) VOLTS PH FLA	

A. PROVIDE WALL MOUNTED THERMOSTAT.

B. PROVIDE 4" TYPE 'B' VENT.

C. DISCONNECT BY ELECTRICAL.

PROVIDE NECESSARY MOUTING BRACKET AND ACCESSORIES FOR VERTICAL MOUNTING.

DIFFUSER, REGISTER AND GRILLE SCHEDULE

			-				
MARK	MANUFACTURER	MODEL	FACE TYPE	MOUNTING TYPE	FACE SIZE (IN.)	MAX NC	NOTES
SUPPLY							
CSD-1	TITUS	OMNI	PLAQUE FACE	LAY-IN	24x24	25	A,B,C
CSD-2	TITUS	TDC	LOUVERED	SURFACE	12.5x12.5	25	A,B,C
RETURN							
CRG-1	TITUS	50F	EGGCRATE	LAY-IN	24x24	25	A,B,C,D
NOTES:							

A. NECK SIZE SHOWN ON DRAWINGS.

BAKED ENAMEL FINISH, WHITE В.

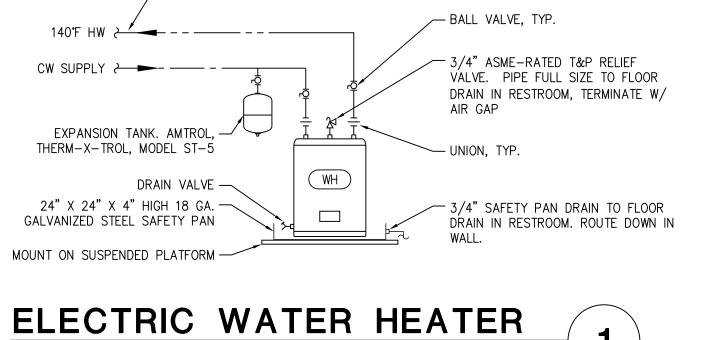
FRAME TYPE TO MATCH CEILING CONSTRUCTION, COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLAN. PAINT THE INSIDE OF CANS FLAT BLACK.

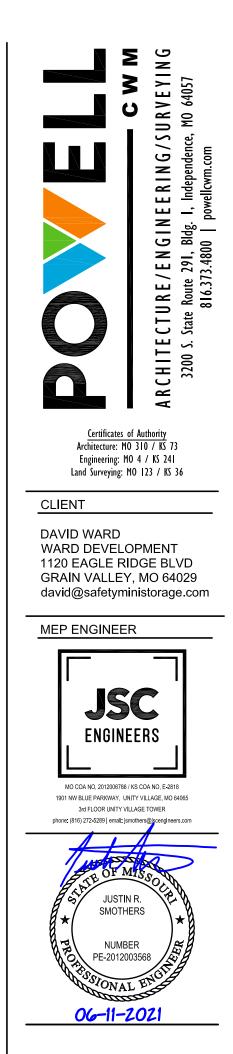
FIXTURE BRANCH CONNECTION SCHEDULE

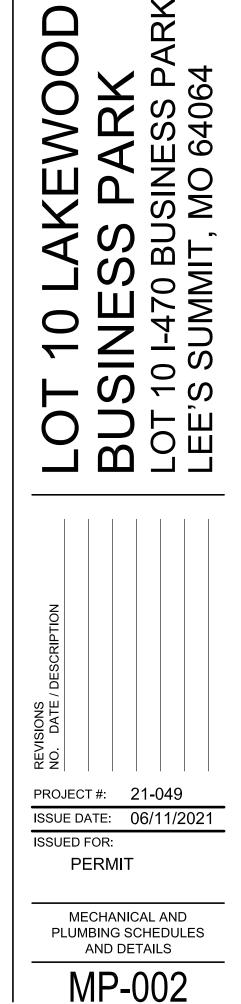
FIXTURE	COLD WATER	HOT WATER	WASTE	VENT
FLOOR DRAIN	-	-	3"	1 1/2"
LAVATORY / SINK	1/2"	1/2"	1 1/2"	1 1/2"
WATER CLOSET (FLUSH TANK)	1/2"	-	4"	2"
NOTE:	PIPE SIZES SHOW	N ARE MINIMUM	1. 2" MIN. UNDERG	ROUND.

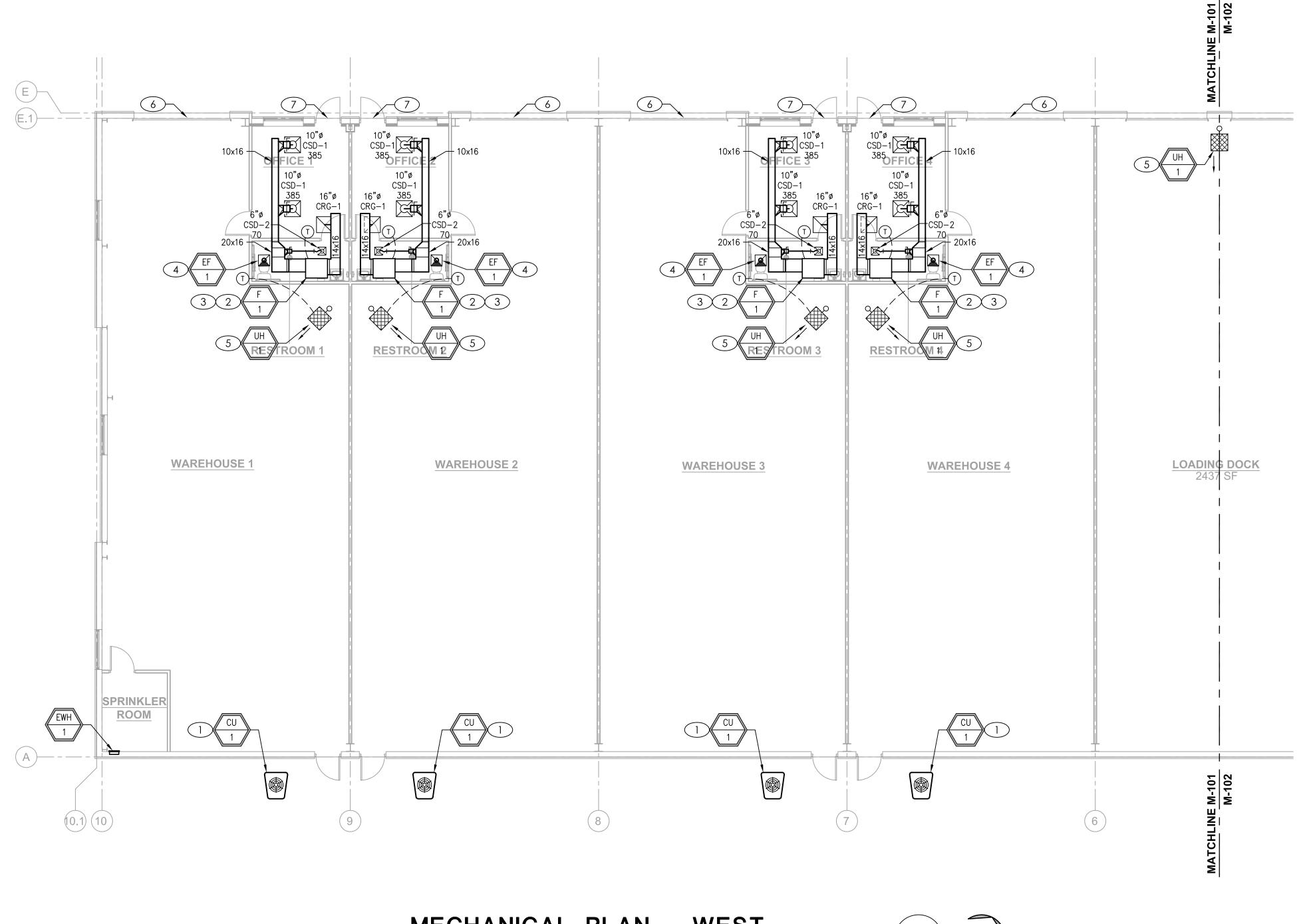
ELECTRIC UNIT HEATER SCHEDULE										
MARK	MANUFACTURER	MODEL	WEIGHT (LBS)	KW	VOLTAGE/PH	REMARKS				
EWH-1	QMARK	LFK204F	22	3	208/1	1,2				
REMARKS:										
1. PROVIDE SURFACE MOUNT FRAME.										
2. PROVIDE \	WITH INTEGRAL THE	RMOSTAT AN	ID DISCONN	ECT.						

— 1/2" TO LAVATORY









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

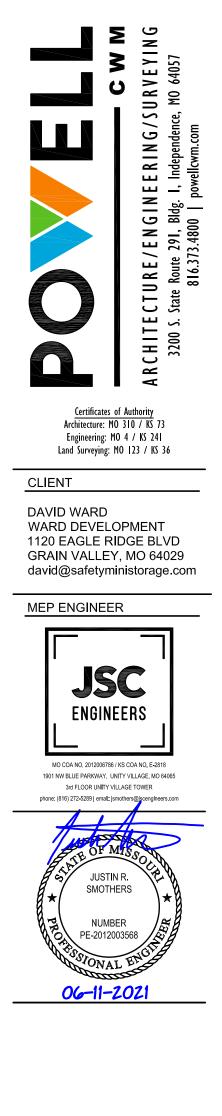
MECHANICAL PLAN - WEST

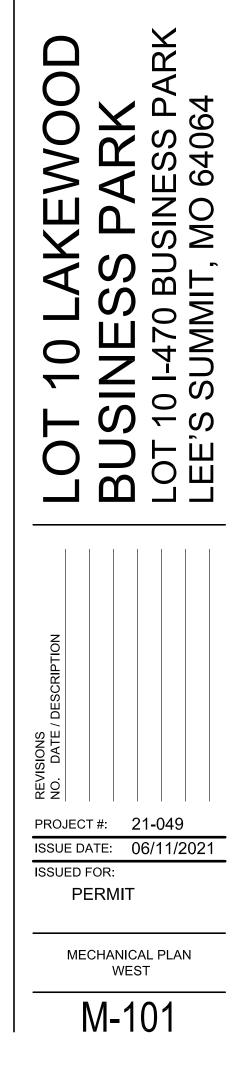


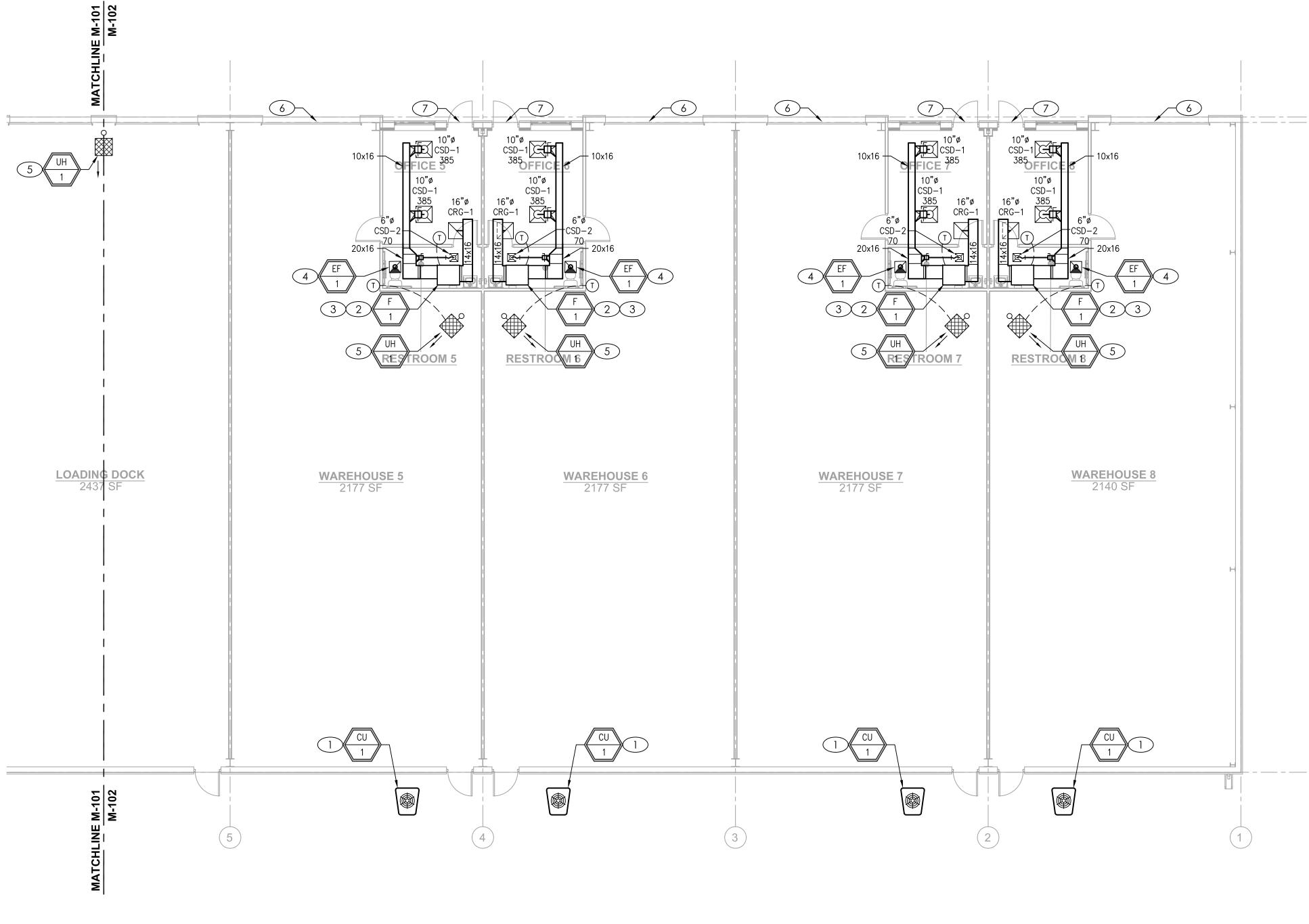
GENERAL NOTES

- A. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF WORK. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- B. COORDINATE INSTALLATION OF MECHANICAL SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION AND AVOID CONFLICTS. INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE INSTALLATION OF DUCTWORK AND PIPING TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC. VERIFY DUCT SPACE AVAILABLE ABOVE ALL CEILINGS PRIOR TO ANY FABRICATION OF INSTALLATION.
- C. NEW MECHANICAL EQUIPMENT, DUCTWORK AND PIPING ARE SHOWN AT APPROXIMATE LOCATIONS. FIELD MEASURE FINAL DUCTWORK AND PIPING LOCATIONS PRIOR TO FABRICATION AND MAKE ADJUSTMENTS AS REQUIRED TO FIT THE DUCTWORK AND PIPING WITHIN THE AVAILABLE SPACE. VERIFY THAT FINAL EQUIPMENT LOCATIONS MEET MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AROUND EQUIPMENT.
- D. INSTALL DUCTWORK AND PIPING PARALLEL TO BUILDING COLUMN LINES UNLESS OTHERWISE SHOWN OR NOTED.
- E. OVERHEAD HANGERS AND SUPPORTS FOR EQUIPMENT, DUCTWORK AND PIPING SHALL BE FASTENED TO BUILDING JOISTS OR BEAMS. DO NOT ATTACH HANGERS AND SUPPORTS TO THE ABOVE ROOF.
- F. ALL ROOF AND WALL PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PROVIDE ALL REQUIRED SLEEVES, FLASHINGS, CURBS, REINFORCED ANGLES, SUPPORTING FRAMES, ETC. UNLESS THEY ARE SPECIFICALLY CALLED OUT TO BE FURNISHED BY OTHERS.

- 1. CONDENSING UNIT LEVEL AT GRADE ON PREMANUFACTURED PAD. INSTALL PER MANUFACTURER'S INSTRUCTIONS MAINTAINING RECOMMENDED SERVICE CLEARANCES. ROUTE REFRIGERANT LINES THOUGH WALL 18" AFG. WEATHER SEAL REFRIGERANT LINE PENETRATIONS OF BUILDING. PROVIDE ALL RECOMMENDED VALVES, FILTERS, FITTINGS, ETC. AND MAKE ALL NECESSARY CONNECTIONS TO COOLING COIL.
- 2. MOUNT HORIZONTAL FURNACE AND COIL ABOVE RESTROOM CEILING. TRANSITION DUCTWORK TO UNIT AS REQUIRED. AT RETURN PROVIDE MANUFACTURER'S END RETURN FILTER KIT AND FILTER. ROUTE CONDENSATE DRAINS FROM FURNACE AND COIL TO FLOOR DRAIN BELOW.
- 3. PROVIDE CONCENTRIC VENT FOR FURNACE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS. ADHERE TO SIZE AND LENGTH LIMITATIONS. LOCATE VENT A MINIMUM OF 5'-0" FROM OUTSIDE AIR INTAKE. ROUTE TO ROOF OR WALL. COORDINATE LOCATION WITH GC PRIOR TO INSTALLATION.
- 4. CEILING MOUNT EXHAUST FAN. ROUTE 6"Ø EXHAUST DUCT UP THROUGH ROOF TO ROOF CAP. LOCATE A MINIMUM OF 10'-0" FROM ANY OUTSIDE AIR INTAKE. SEAL ROOF PENETRATION WEATHER TIGHT.
- 5. HANG UNIT HEATER 14' AFF FROM OVERHEAD STRUCTURAL STEEL. PROVIDE TYPE 'B' VENT THROUGH ROOF. INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
- 6. VENTILATION AIR FOR WAREHOUSE IS BY OPERABLE WAREHOUSE DOOR. 12'X14' DOOR PROVIDES 168 SQFT OF OPEN AREA. BY THE 4% RULE PER IMC SECTION 402, MIN REQUIRED VENTILATION AREA IS 0.04*2431 SQFT =97.24 SQFT.
- 7. VENTILATION AIR FOR OFFICE IS BY OPERABLE DOOR. 3'X7' DOOR PROVIDES 21 SQFT OF OPEN AREA. BY THE 4% RULE PER IMC SECTION 402, MIN REQUIRED VENTILATION AREA IS 0.04*171 SQFT=6.8 SQFT.







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

MECHANICAL PLAN - EAST

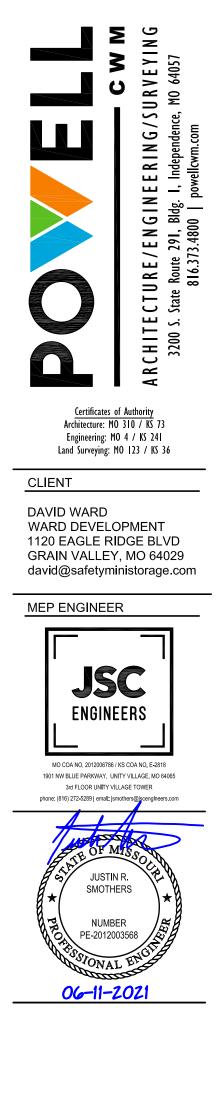


GENERAL NOTES

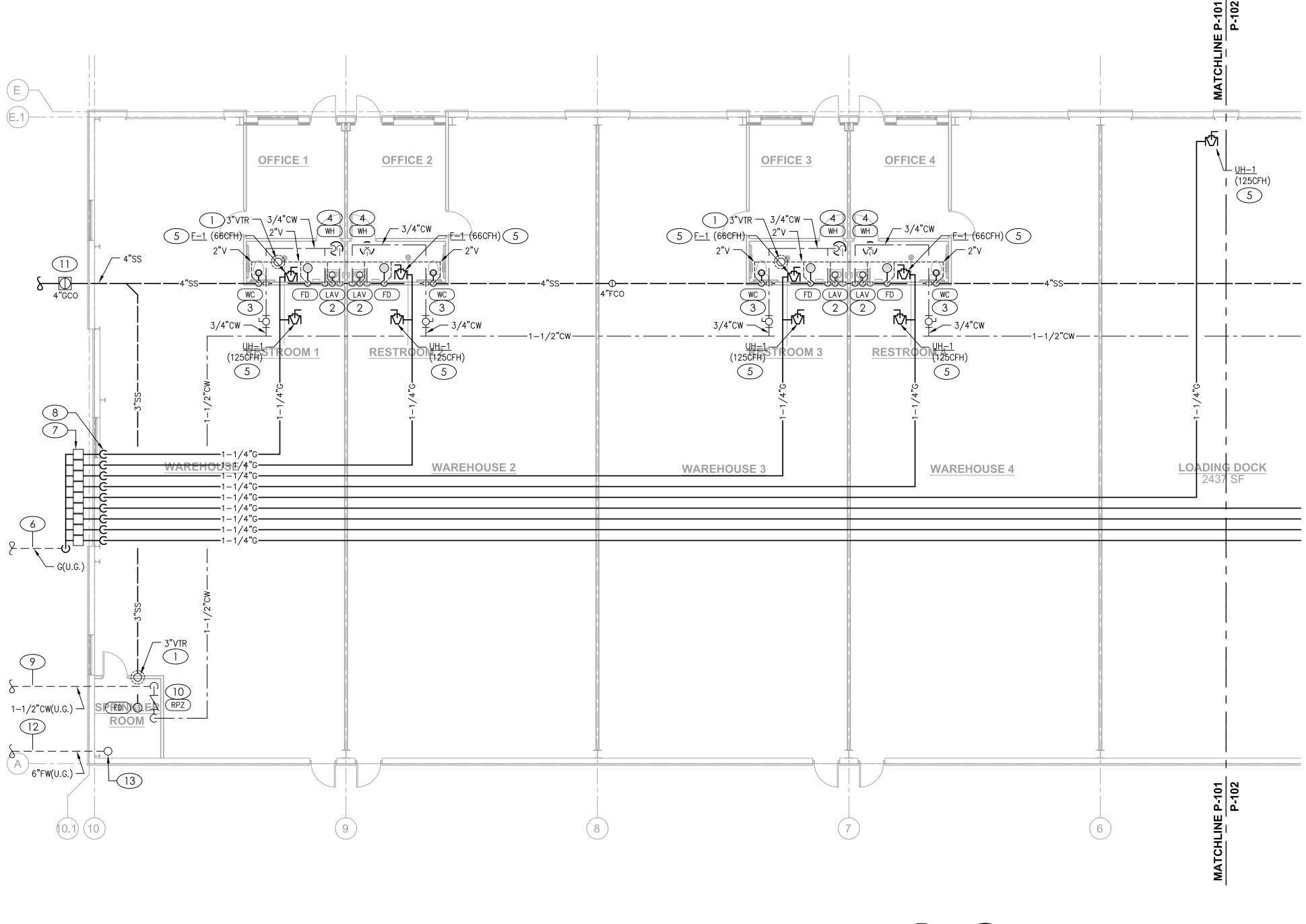
- A. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF WORK. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- B. COORDINATE INSTALLATION OF MECHANICAL SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION AND AVOID CONFLICTS. INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE INSTALLATION OF DUCTWORK AND PIPING TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC. VERIFY DUCT SPACE AVAILABLE ABOVE ALL CEILINGS PRIOR TO ANY FABRICATION OF INSTALLATION.
- C. NEW MECHANICAL EQUIPMENT, DUCTWORK AND PIPING ARE SHOWN AT APPROXIMATE LOCATIONS. FIELD MEASURE FINAL DUCTWORK AND PIPING LOCATIONS PRIOR TO FABRICATION AND MAKE ADJUSTMENTS AS REQUIRED TO FIT THE DUCTWORK AND PIPING WITHIN THE AVAILABLE SPACE. VERIFY THAT FINAL EQUIPMENT LOCATIONS MEET MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AROUND EQUIPMENT.
- D. INSTALL DUCTWORK AND PIPING PARALLEL TO BUILDING COLUMN LINES UNLESS OTHERWISE SHOWN OR NOTED.
- E. OVERHEAD HANGERS AND SUPPORTS FOR EQUIPMENT, DUCTWORK AND PIPING SHALL BE FASTENED TO BUILDING JOISTS OR BEAMS. DO NOT ATTACH HANGERS AND SUPPORTS TO THE ABOVE ROOF.
- F. ALL ROOF AND WALL PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PROVIDE ALL REQUIRED SLEEVES, FLASHINGS, CURBS, REINFORCED ANGLES, SUPPORTING FRAMES, ETC. UNLESS THEY ARE SPECIFICALLY CALLED OUT TO BE FURNISHED BY OTHERS.

KEYED PLAN NOTES

- 1. CONDENSING UNIT LEVEL AT GRADE ON PREMANUFACTURED PAD. INSTALL PER MANUFACTURER'S INSTRUCTIONS MAINTAINING RECOMMENDED SERVICE CLEARANCES. ROUTE REFRIGERANT LINES THOUGH WALL 18" AFG. WEATHER SEAL REFRIGERANT LINE PENETRATIONS OF BUILDING. PROVIDE ALL RECOMMENDED VALVES, FILTERS, FITTINGS, ETC. AND MAKE ALL NECESSARY CONNECTIONS TO COOLING COIL.
- 2. MOUNT HORIZONTAL FURNACE AND COIL ABOVE RESTROOM CEILING. TRANSITION DUCTWORK TO UNIT AS REQUIRED. AT RETURN PROVIDE MANUFACTURER'S END RETURN FILTER KIT AND FILTER. ROUTE CONDENSATE DRAINS FROM FURNACE AND COIL TO FLOOR DRAIN BELOW.
- 3. PROVIDE CONCENTRIC VENT FOR FURNACE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS. ADHERE TO SIZE AND LENGTH LIMITATIONS. LOCATE VENT A MINIMUM OF 5'-0" FROM OUTSIDE AIR INTAKE. ROUTE TO ROOF OR WALL. COORDINATE LOCATION WITH GC PRIOR TO INSTALLATION.
- 4. CEILING MOUNT EXHAUST FAN. ROUTE 6"Ø EXHAUST DUCT UP THROUGH ROOF TO ROOF CAP. LOCATE A MINIMUM OF 10'-0" FROM ANY OUTSIDE AIR INTAKE. SEAL ROOF PENETRATION WEATHER TIGHT.
- 5. HANG UNIT HEATER 14' AFF FROM OVERHEAD STRUCTURAL STEEL. PROVIDE TYPE 'B' VENT THROUGH ROOF. INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
- 6. VENTILATION AIR FOR WAREHOUSE IS BY OPERABLE WAREHOUSE DOOR. 12'X14' DOOR PROVIDES 168 SQFT OF OPEN AREA. BY THE 4% RULE PER IMC SECTION 402, MIN REQUIRED VENTILATION AREA IS 0.04*2431 SQFT =97.24 SQFT.
- 7. VENTILATION AIR FOR OFFICE IS BY OPERABLE DOOR. 3'X7' DOOR PROVIDES 21 SQFT OF OPEN AREA. BY THE 4% RULE PER IMC SECTION 402, MIN REQUIRED VENTILATION AREA IS 0.04*171 SQFT=6.8 SQFT.

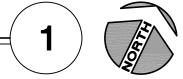


		BUUNINEUU LARK	LOT 10 I-470 BUSINESS PARK	LEE'S SUMMIT, MO 64064			
REVISIONS NO. DATE / DESCRIPTION							
	IECT #: E DATE		1-049 5/11/2				
ISSUI	ISSUED FOR: PERMIT						
MECHANICAL PLAN EAST							
	M						



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

PLUMBING PLAN - WEST



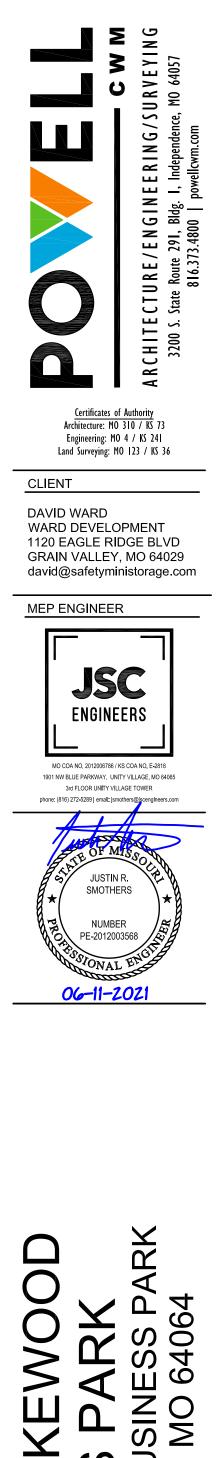
GENERAL NOTES

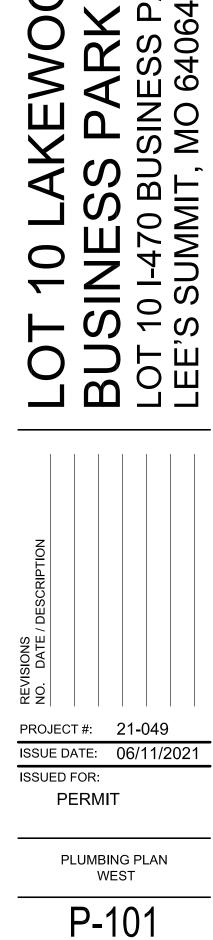
- A. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF WORK. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- B. PROVIDE THE ARCHITECT AND OWNER WITH A COPY OF THE INSPECTION REPORTS AND APPROVAL CERTIFICATES FROM LOCAL AND STATE INSPECTIONS.
- C. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF PLUMBING FIXTURES.
- D. EXACT LOCATION AND ELEVATIONS OF ALL EXISTING UTILITIES SHALL BE VERIFIED PRIOR TO ANY INSTALLATION OR CONNECTIONS THEREOF.
- E. COORDINATE PIPE ROUTING AWAY FROM ELECTRICAL PANELS. DO NOT INSTALL PIPING OVER ELECTRICAL PANELS.
- F. COORDINATE THE ROOF PENETRATIONS WITH OTHER TRADES. MAINTAIN 10' MINIMUM CLEARANCE FROM ALL AIR INTAKES. MAINTAIN 3' FROM ALL OTHER EQUIPMENT.
- G. PROVIDE SHIELDED ADAPTOR COUPLINGS FOR CONNECTIONS OF PVC DWV TO CAST IRON SANITARY, WASTE AND VENT PIPE.
- H. REFER TO PLUMBING FIXTURE SCHEDULE FOR MINIMUM BRANCH WASTE AND VENT PIPE SIZING.

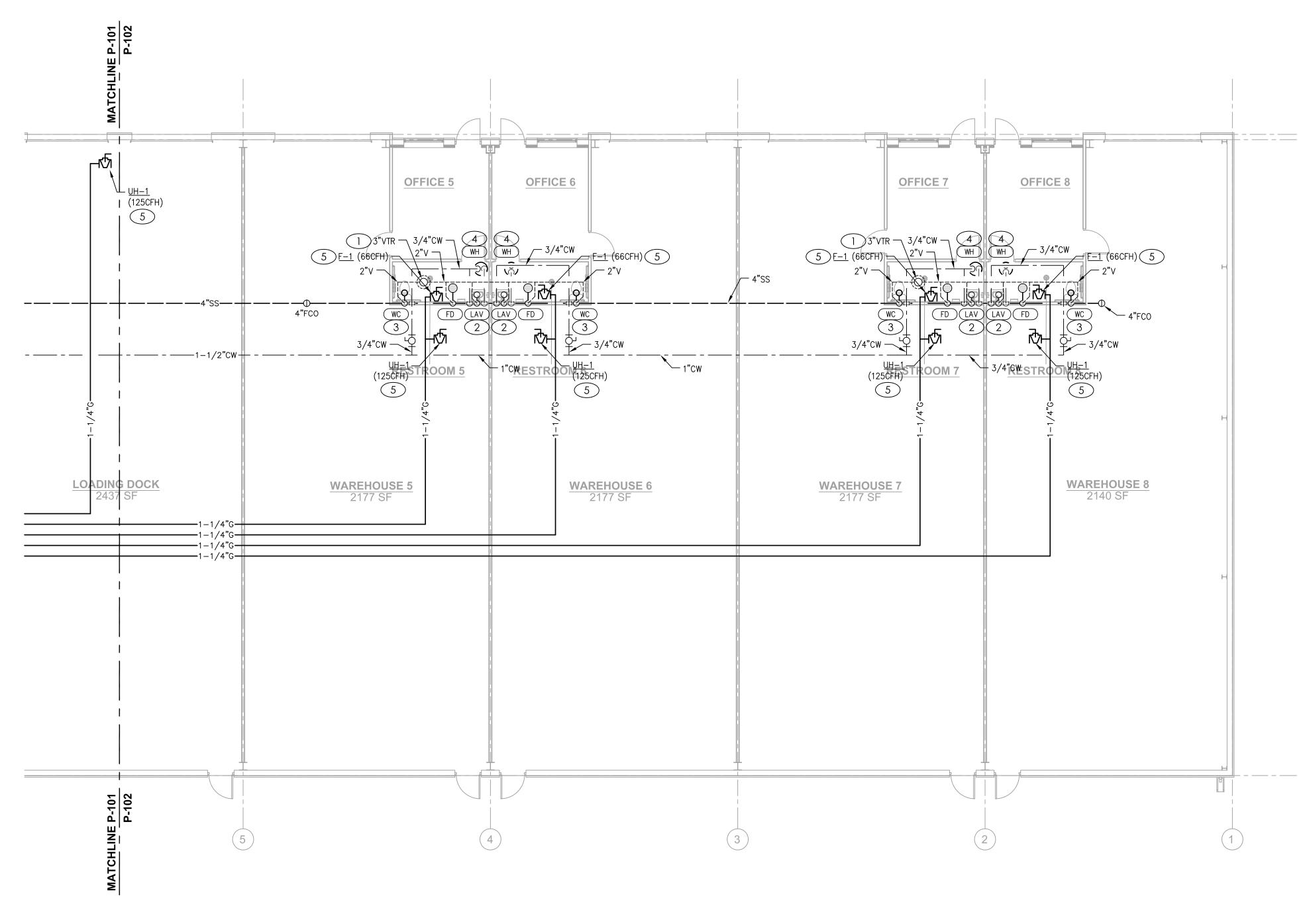
KEYED PLAN NOTES

(NOT ALL NOTES NECESSARILY USED ON THIS SHEET)

- 1. NEW VENT THROUGH ROOF (VTR). LOCATE VTR A MINIMUM OF 3'-0" FROM EDGE OF ROOF AND MINIMUM 10'-0" FROM ANY OUTSIDE AIR INTAKE. SEAL PENETRATION WEATHER TIGHT. COORDINATE WITH MECHANICAL CONTRACTOR.
- 2. PROVIDE 1-1/2"V, 2"SS, 1/2"CW AND 1/"HW IN WALL TO LAV. PROVIDE THERMOSTATIC MIXING VALVE FOR FIXTURE EQUAL TO LEONARD MODEL 170. SET HW SUPPLY WATER TEMPERATURE TO 110°F.
- 3. PROVIDE 2"V, 4"SS, AND 1/2"CW IN WALL TO WATER CLOSET.
- 4. INSTALL WATER HEATER ABOVE CEILING. ROUTE 1/2"CW TO WATER HEATER THEN 1/2"HW FROM WH TO LAVATORY. ROUTE 3/4" T&P RELIEF FROM WATER HEATER TO FLOOR DRAIN WITH AIR GAP. COORDINATE LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
- 5. PROVIDE SHUT-OFF VALVE AND DIRT LEG PRIOR TO EQUIPMENT CONNECTION. COORDINATE EXACT EQUIPMENT LOCATION WITH MECHANICAL CONTRACTOR.
- 6. GAS PIPING TO UTILITY MAIN. TOTAL ESTIMATED GAS LOAD FOR BUILDING IS 1,653 CFH. REFER TO CIVIL PLANS FOR CONTINUATION. CONTRACTOR TO COORDINATE WITH GAS UTILITY FOR INSTALLATION.
- 7. COORDINATE WITH GAS COMPANY FOR INSTALLATION OF METER BANK WITH 9 TENANT METERS. DEMAND FOR EACH METER IS 191 CFH @ 12"W.C.
- 8. ROUTE GAS PIPING THROUGH EXTERIOR WALL THEN UP ON INTERIOR OF WALL. ROUTE TIGHT TO WALL. CONTINUE ROUTING AS SHOWN AT BOTTOM OF JOIST ELEVATION. SEAL WALL PENETRATION WEATHERTIGHT.
- 9. 1-1/2" DOMESTIC COLD WATER TO UTILITY SERVICE. CONTRACTOR SHALL WORK WITH THE WATER COMPANY AND FOR THE INSTALLATION OF A NEW WATER MAIN ENTRANCE, INCLUDING TAP, METER, METER PIT, PIPING, ETC. FOR A COMPLETE INSTALLATION. SEE CIVIL PLANS FOR CONTINUATION. MAINTAIN MINIMUM 48" BURY FOR FREEZE PROTECTION.
- 10. 1-1/2" SHUT-OFF VALVE AND 1-1/2" RPZ BACKFLOW PREVENTER APPROVED FOR DOMESTIC WATER SERVICE. PROVIDE PRESSURE REDUCING VALVE IF SERVICE PRESSURE AT DOMESTIC WATER ENTRY EXCEEDS 75 P.S.I. DOWNSTREAM OF REDUCED PRESSURE BACKFLOW PREVENTER. SEE INSTALLATION DETAIL.
- 11. 4" SANITARY TO UTILITY SERVICE. REFER TO CIVIL PLANS FOR CONTINUATION. PROVIDE 4"GCO AT EXTERIOR OF BUILDING.
- 12. 6" FIRE SERVICE TO MAIN. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
- 13. FIRE RISER. SEE DETAIL ON MPOO1 FOR GENERAL REQUIREMENTS. COORDINATE WITH FIRE SPRINKLER CONTRACTOR FOR INSTALLATION, SIZING, AND ROUTING OF FIRE DEPARTMENT CONNECTION.







PLUMBING PLAN - EAST SCALE : 1/8" = 1'-0"



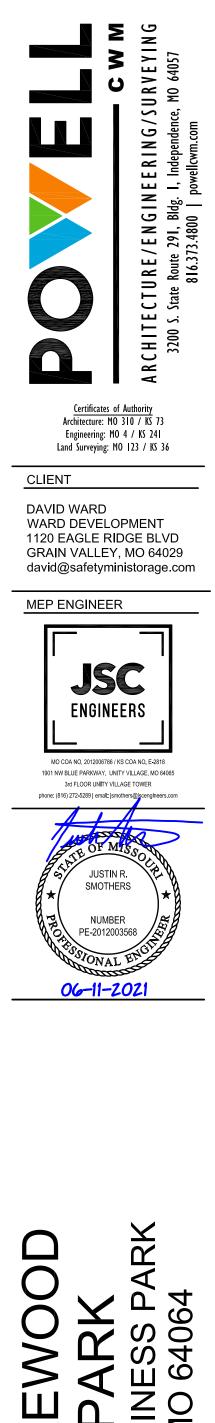
GENERAL NOTES

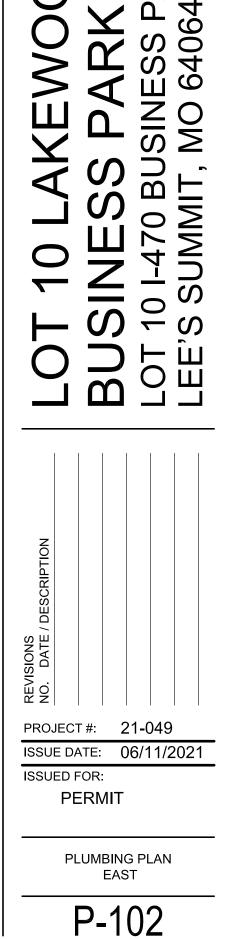
- A. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF WORK. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- B. PROVIDE THE ARCHITECT AND OWNER WITH A COPY OF THE INSPECTION REPORTS AND APPROVAL CERTIFICATES FROM LOCAL AND STATE INSPECTIONS.
- C. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF PLUMBING FIXTURES.
- D. EXACT LOCATION AND ELEVATIONS OF ALL EXISTING UTILITIES SHALL BE VERIFIED PRIOR TO ANY INSTALLATION OR CONNECTIONS THEREOF.
- E. COORDINATE PIPE ROUTING AWAY FROM ELECTRICAL PANELS. DO NOT INSTALL PIPING OVER ELECTRICAL PANELS.
- F. COORDINATE THE ROOF PENETRATIONS WITH OTHER TRADES. MAINTAIN 10' MINIMUM CLEARANCE FROM ALL AIR INTAKES. MAINTAIN 3' FROM ALL OTHER EQUIPMENT.
- G. PROVIDE SHIELDED ADAPTOR COUPLINGS FOR CONNECTIONS OF PVC DWV TO CAST IRON SANITARY, WASTE AND VENT PIPE.
- H. REFER TO PLUMBING FIXTURE SCHEDULE FOR MINIMUM BRANCH WASTE AND VENT PIPE SIZING.

KEYED PLAN NOTES

(NOT ALL NOTES NECESSARILY USED ON THIS SHEET)

- 1. NEW VENT THROUGH ROOF (VTR). LOCATE VTR A MINIMUM OF 3'-0" FROM EDGE OF ROOF AND MINIMUM 10'-0" FROM ANY OUTSIDE AIR INTAKE. SEAL PENETRATION WEATHER TIGHT. COORDINATE WITH MECHANICAL CONTRACTOR.
- 2. PROVIDE 1-1/2"V, 2"SS, 1/2"CW AND 1/"HW IN WALL TO LAV. PROVIDE THERMOSTATIC MIXING VALVE FOR FIXTURE EQUAL TO LEONARD MODEL 170. SET HW SUPPLY WATER TEMPERATURE TO 110°F.
- 3. PROVIDE 2"V, 4"SS, AND 1/2"CW IN WALL TO WATER CLOSET.
- 4. INSTALL WATER HEATER ABOVE CEILING. ROUTE 1/2"CW TO WATER HEATER THEN 1/2"HW FROM WH TO LAVATORY. ROUTE 3/4" T&P RELIEF FROM WATER HEATER TO FLOOR DRAIN WITH AIR GAP. COORDINATE LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
- 5. PROVIDE SHUT-OFF VALVE AND DIRT LEG PRIOR TO EQUIPMENT CONNECTION. COORDINATE EXACT EQUIPMENT LOCATION WITH MECHANICAL CONTRACTOR.
- 6. GAS PIPING TO UTILITY MAIN. TOTAL ESTIMATED GAS LOAD FOR BUILDING IS 1,653 CFH. REFER TO CIVIL PLANS FOR CONTINUATION. CONTRACTOR TO COORDINATE WITH GAS UTILITY FOR INSTALLATION.
- 7. COORDINATE WITH GAS COMPANY FOR INSTALLATION OF METER BANK WITH 9 TENANT METERS. DEMAND FOR EACH METER IS 191 CFH @ 12"W.C.
- 8. ROUTE GAS PIPING THROUGH EXTERIOR WALL THEN UP ON INTERIOR OF WALL. ROUTE TIGHT TO WALL. CONTINUE ROUTING AS SHOWN AT BOTTOM OF JOIST ELEVATION. SEAL WALL PENETRATION WEATHERTIGHT.
- 9. 1-1/2" DOMESTIC COLD WATER TO UTILITY SERVICE. CONTRACTOR SHALL WORK WITH THE WATER COMPANY AND FOR THE INSTALLATION OF A NEW WATER MAIN ENTRANCE, INCLUDING TAP, METER, METER PIT, PIPING, ETC. FOR A COMPLETE INSTALLATION. SEE CIVIL PLANS FOR CONTINUATION. MAINTAIN MINIMUM 48" BURY FOR FREEZE PROTECTION.
- 10. 1-1/2" SHUT-OFF VALVE AND 1-1/2" RPZ BACKFLOW PREVENTER APPROVED FOR DOMESTIC WATER SERVICE. PROVIDE PRESSURE REDUCING VALVE IF SERVICE PRESSURE AT DOMESTIC WATER ENTRY EXCEEDS 75 P.S.I. DOWNSTREAM OF REDUCED PRESSURE BACKFLOW PREVENTER. SEE INSTALLATION DETAIL.
- 11. 4" SANITARY TO UTILITY SERVICE. REFER TO CIVIL PLANS FOR CONTINUATION. PROVIDE 4"GCO AT EXTERIOR OF BUILDING.
- 12. 6" FIRE SERVICE TO MAIN. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
- 13. FIRE RISER. SEE DETAIL ON MPOO1 FOR GENERAL REQUIREMENTS. COORDINATE WITH FIRE SPRINKLER CONTRACTOR FOR INSTALLATION, SIZING, AND ROUTING OF FIRE DEPARTMENT CONNECTION.





ELECTRICAL SPECIFICATIONS

		ELECTRIC
PART I – GENERAL A. CONDITIONS		2. THE CONTRACTOR SHALL SUBMIT S FOLLOWING ITEMS: A. LIGHTING FIXTURE CUTS AND PI
 FURNISH AND INSTALL A COMPLETELY WIRED AND OPERATION DRAWINGS AND SPECIFIED HEREIN, INCLUDING BUT NOT LIM A. LIGHTING FIXTURES AS INDICATED AND SPECIFIED ON TH B. ELECTRICAL PANELS, SERVICE, CONDUIT, WIRING, ETC., F C. TELEPHONE, TELEVISION, AND FIRE ALARM. OUTLETS AND 	ITED TO, THESE MAJOR ITEMS. E PLANS. OR ALL OUTLETS AND EQUIPMENT.	 B. OUTLINE DRAWINGS AND DATA PANELS. C. OUTLINE DRAWINGS OF ALL SWI D. WIRING DEVICES AND COVERPLA E. ALL CIRCUIT BREAKERS INSTALI
2. OBTAIN AND REVIEW ALL OTHER DRAWINGS INCLUDING REFL ELEVATIONS, FURNITURE PLANS AND ALL MILL WORK DRAW ELECTRICAL DEVICES AND EQUIPMENT PRIOR TO ROUGH-IN.	ECTED CEILING PLAN, INTERIOR AND EXTERIOR INGS. COORDINATE INSTALLATION OF ALL	3. SUBMIT ITEMS AT ONE TIME IN A PARTIAL SUBMITTALS WILL NOT BE C. SYSTEM GROUNDING
OBTAIN SUBMITTAL AND SHOP DRAWINGS FROM OTHER TRA		1. GROUNDING SHALL COMPLY WITH F METALLIC PARTS OF ELECTRICAL E GROUNDING CONDUCTOR OF NONM
INSTALLATION SHALL COMPLY WITH ALL CURRENT APPLICAE JURISDICTION.	BLE CODES AND GOVERNING AGENCIES HAVING	2. GROUNDING CONDUCTOR (NEUTRAL GROUNDING CONDUCTOR AT A SIN
FIRE ALARM SYSTEM, IF REQUIRED PER IBC, SHALL BE DES CONTRACTOR. DESIGN SHALL BE IN ACCORDANCE WITH NFF SUBMIT STAMPED DRAWINGS TO AHJ FOR REVIEW AND APP RESPONSIBLE FOR TESTING AND VERIFYING THAT THE AUDII MINIMUM OF 15 DBA ABOVE AMBIENT NOISE LEVELS. ADD H	A 72. FIRE ALARM CONTRACTOR SHALL ROVAL. FIRE ALARM CONTRACTOR IS BILITY OF THE FIRE ALARM SYSTEM MEETS A	ACCORDING TO THE APPLICABLE F CONDUCTOR (NEUTRAL) TO THE G ENCLOSURE FOR THE SYSTEM'S O' PLANS OR SPECIFICATIONS. 3. A GROUND BUS SEPARATE FROM AND PANELBOARDS. PROPER TOR
LEVELS. PROVIDE FIRE STOP ON ALL PIPING THAT PENETRATES RAT WALL RATING. REFER TO ARCHITECTURAL DRAWINGS FOR LO CONTRACTOR SHALL PROVIDE FIRE RATED ENCLOSURES AR THAT ARE LOCATED IN FIRE RATED WALLS AND SHALL FIRE	OCATION OF FIRE RATED WALLS. THIS OUND ALL ROUGH—IN BOXES, PANELS, ETC.	 RECOMMENDATIONS, PRIOR TO ENE 4. GROUND BUSES AND NEUTRAL BU THOSE PROVIDED IN ANY EQUIPME AS SPECIFIED ABOVE FOR THE SE 5. WHEN INDICATED ON THE DRAWING THE GROUND BUS IN THE DISTRIBUTE
RELATED WORK BY OTHERS THE ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT, THE ENTRANCE FROM THE MAIN SERVICE TO UTILITY POINT OF THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF TH	ELECTRICAL SERVICE. ELECTRICAL	WHERE THEY ARE PROVIDED. WHI SHALL BE CONNECTED TO EQUIPM REMOVAL OF THE RECEPTACLE, EC BUSING SHALL NOT AFFECT THE C
SERVING UTILITY COMPANY. THE ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT, THE AND CATV SERVICE FROM THE TELEPHONE TERMINAL BOAR CATV COMPANY POINT OF SERVICE COORDINATE WITH LOCA	RENCH, AND BACKFILL FOR PRIMARY PHONE D OR CABINET TO THE PHONE COMPANY AND	 RACEWAYS MAY NOT BE USED AS CONDUIT SHALL HAVE SEPARATE INSURE A CONTINUOUS GROUNDING IN INACCESSIBLE LOCATIONS, MAK IN ACCESSIBLE LOCATIONS, CONNE SOLDERLESS BRONZE CROUNDING
CODES, REGULATIONS, AND STANDARDS THE INSTALLATION SHALL COMPLY WITH APPLICABLE LOCAL THE REGULATIONS OF THE LATEST EDITION OF THE NATION REQUIREMENTS OF THE POWER, TELEPHONE, AND CATV CON INSTALLATION. THE LATEST EDITIONS OF THE FOLLOWING INDUSTRY STAND MINIMUM REQUIREMENTS: A. THE NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIAT B. THE NATIONAL ELECTRICAL CODE, INCLUDING LOCAL AME C. UNDERWRITER LABORATORIES INCORPORATED STANDARDS D. AMERICAN NATIONAL STANDARDS INSTITUTE.	AL ELECTRIC CODE AND WITH THE MPANIES FURNISHING SERVICES TO THIS ARDS, SPECIFICATIONS, AND CODES ARE TON STANDARDS. ENDMENTS.	SOLDERLESS BRONZE GROUNDING D. WIRE 1. CONDUCTOR SIZES SHOWN ON THI SPECIFIED, ALL WIRE SHALL BE T AWG, TYPE THHN/THWN INSULATIO BRANCH CIRCUIT WIRING SHALL BI 2. ALUMINUM CONDUCTORS MAY BE SHALL BE ALUMINUM ALLOW AA 3. THE WIRES SHALL BE MARKED WI REQUIRED BY LOCAL ORDINANCES 120V-WHITE, AND LIVE WIRES 208
E. INTERNATIONAL BUILDING CODE. INSPECTION OF SITE PRIOR TO SUBMITTING A BID FOR ELECTRICAL WORK, THE O PROPOSED CONSTRUCTION AND SHALL THOROUGHLY ACQUA WORKING CONDITIONS TO BE ENCOUNTERED, ETC. ALLOWAN WITH THIS CONDITION AFTER BIDDING. ELECTRICAL INSTALLATION SHALL MEET THE EXISTING COND	AINT HIMSELF WITH EXISTING UTILITIES, AND NCE WILL NOT BE MADE FOR NONCOMPLIANCE	 AND BLUE (PHASE C). CIRCUIT S 4. ALL CONDUCTORS SHALL BE RATE 5. SPLICES IN EXTERIOR PULL BOXES SPLICE KIT OR APPROVED EQUAL. APPROVED EQUAL. 6. PROVIDE SOLID CONDUCTOR FOR 7. NO WIRE SHALL BE INSTALLED IN MINERALAC NO. 100 OR EQUIVALE
STORAGE AND HANDLING OF MATERIAL DELIVER MATERIALS AND EQUIPMENT TO THE PROJECT IN T LABELED CONTAINERS. PROTECT AGAINST MOISTURE, TAMP OR STORAGE. CONTRACTOR SHALL PROTECT AND BE RESF MATERIALS UNTIL FINAL ACCEPTANCE BY THE OWNER, AND OWNER, ANY DAMAGE OR LOSS THAT MAY OCCUR DURING ARRANGE FOR TIMELY DELIVERY OF MATERIALS AND EQUIPM THE LENGTH OF TIME BETWEEN DELIVERY AND INSTALLATIO COVER AND PROTECT ANY MATERIAL WHICH MAY BE AFFEC STORED AT THE PROJECT SITE. ANY MATERIAL FOUND DEI WITH THE CONTRACT DOCUMENTS MAY BE REJECTED BY TH	PERING, OR DAMAGE FROM IMPROPER HANDLING PONSIBLE FOR ANY DAMAGE TO WORK OR SHALL MAKE GOOD WITHOUT COST TO THE THIS PERIOD. MENT TO THE JOB SITE IN ORDER TO MINIMIZE N. CTED BY THE WEATHER WHILE IN TRANSIT OR FECTIVE OR NOT INSTALLED IN ACCORDANCE	CONDUCTORS IN THE CONDUIT SY 8. MC CABLE WITH COPPER CONDUC <u>E. CONDUIT</u> 1. ALL WIRING SHALL BE INSTALLED SECTIONS. RGS, WITH A 20 MIL BE USED IN INDOOR LOCATIONS N LOCATIONS NOT IN CONTACT WITH DAMAGE. PVC MAY BE USED IN CONDUIT SHALL BE USED FOR INI 72". LIQUID-TIGHT FLEXIBLE STE EQUIPMENT NOT TO EXCEED 48".
<u>CLEANUP</u> KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE EMPLOYEES OR WORK UNDER THIS DIVISION OF THE SPECIF REMOVE ALL SURPLUS MATERIALS, TOOLS, ETC., AND LEAV	ICATIONS. AT THE COMPLETION OF THE WORK	2. WHERE CONDUIT ENTERS OUTLET COMPRESSION CONNECTORS, OR I OR INSULATED THROAT CONNECTO EXPOSED CONDUIT PARALLEL TO T & B OR APPLETON, OR EQUAL
EXCAVATION, CUTTING, AND FITTING PERFORM ALL EXCAVATION AND BACK FILLING REQUIRED FO THE SPECIFICATIONS. USE EXCAVATED MATERIALS FOR BA DEEMED NECESSARY. PERFORM THE EXCAVATION, CUTTING, FITTING, REPAIRING, A THE INSTALLATION OF THE EQUIPMENT OF THIS SECTION. OTHER TRADES OR OF ANY STRUCTURAL MEMBERS SHALL	CKFILL UNLESS OFF SITE MATERIALS ARE AND FINISHING OF THE WORK NECESSARY FOR HOWEVER, NO CUTTING OF THE WORK OF	 COVER METALLIC CONDUIT IN CON LAPPED TO PROVIDE 20 MIL. THIC NOT UNDER BUILDINGS AND FEED COMPOUND TO BE WATERTIGHT. SCHEDULE 40 PVC CONDUIT SHAL APPROVED AND CEMENTED JOINTS 22° SHALL BE WRAPPED RIGID GA
ARCHITECT. DRAWINGS THE DRAWINGS INDICATE THE GENERAL ARRANGEMENT AND PRESENTED ON THESE DRAWINGS ARE AS ACCURATE AS P VERIFICATION OF ALL DIMENSIONS, LOCATIONS, LEVELS, ETC REVIEW ALL ARCHITECTURAL, STRUCTURAL, AND MECHANIC/ THE REQUIREMENTS OF CONDITIONS SHOWN. THE ARCHITEC OVER ALL OTHER DRAWINGS. DISCREPANCIES BETWEEN DIF SPECIFICATIONS, OR REGULATIONS AND CODES GOVERNING ATTENTION OF THE ENGINEER IN WRITING BEFORE THE DATH NOT REPORTED, THE CONTRACTOR SHALL BID THE GREATEF APPROPRIATE ADJUSTMENTS WILL BE MADE AFTER CONTRA RESPONSIBLE TO FIELD MEASURE AND CONFIRM MOUNTING EQUIPMENT WITH RESPECT TO COUNTERS, RADIATION, ETC. ELECTRICAL DRAWINGS, USE ACTUAL BUILDING DIMENSIONS. COOPERATE WITH THE OTHER TRADES SO THAT THE INSTAIL EQUIPMENT WILL BE PROPERLY COORDINATED. CONDUIT, LI LOCATIONS SHALL BE VERIFIED WITH OTHER TRADES TO AV	LOCATIONS OF THE ELECTRICAL WORK DATA LANNING CAN DETERMINE, BUT FIELD 2., TO SUIT FIELD CONDITIONS IS REQUIRED. AL DRAWINGS AND ADJUST ALL WORK TO MEET CTURAL DRAWINGS SHALL TAKE PRECEDENCE FERENT PLANS, OR BETWEEN DRAWINGS AND THE INSTALLATION SHALL BE BROUGHT TO THE E OF BID OPENING. IF DISCREPANCIES ARE R QUANTITY OR BETTER QUALITY, AND CT AWARD. CONTRACTOR SHALL BE HEIGHTS AND LOCATION OF ELECTRICAL DO NOT SCALE DISTANCES OFF THE	 FITTINGS AND CONDUIT BODIES SH FITTINGS AND CONDUIT BODIES SH CONDUIT SIZES SHALL BE AS REG ALL EMPTY CONDUIT SYSTEMS SH INSTALLATION OF FUTURE WIRE. WIRING, CONDUITS, AND OUTLETS CERTAIN MOTOR AND LIGHTING FE INDICATED ON THE DRAWINGS. CONDUIT PENETRATION THROUGH FLASHING SLEEVE. INSTALLATION CONDUITS SHALL BE ROUTED PAR CONDUITS SHALL BE ROUTED PAR ALL JUNCTION AND OUTLET BOXES ALL JUNCTION AND OUTLET BOXES BOXES INSTALLED IN POURED CEM WATERTIGHT GASKETED COVERS. COVERING, COVERS SHALL BE OF BOXES INSTALLED FOR THE ALARN APPROPRIATE COVER PLATES. BOXES FOR TELEPHONE, COMPUTE MINIMUM 2-1/8" DEEP.
LOCATIONS SHALL BE VERIFIED WITH OTHER TRADES TO AV STEEL, BEAMS, OR OTHER OBSTRUCTIONS. CAREFULLY VERIFY THE LOCATIONS OF THE OUTLET BOXI BEEN DISTURBED DURING THE INSTALLATION OF MATERIALS COORDINATE THE LOCATION OF THE TRENCHES AND CONDU SERVICES WITH THE GENERAL CONTRACTOR. COORDINATE HVAC AND PLUMBING EQUIPMENT CONNECTION CONTRACTORS. RECORD DRAWINGS THE ELECTRICAL CONTRACTOR SHALL MAINTAIN A SET OF I EXCLUSIVE PURPOSE OF MAINTAINING A RECORD OF ALL W FROM THE WORK INDICATED ON THE DRAWINGS. AT THE COMPLETION OF THE PROJECT, ONE SET OF REPRO CONDITIONS, SHALL BE DELIVERED TO THE OWNER FOR ACC	ES AND DETERMINE THAT THEY HAVE NOT OF OTHER TRADES. ITS FOR ELECTRICAL AND TELEPHONE UTILITY REQUIREMENTS WITH HVAC AND PLUMBING DRAWINGS AT THE JOB SITE FOR THE ORK INSTALLED AND TO SHOW ANY DEVIATIONS	 <u>G WIRING DEVICES (COMMERCIAL)</u> 1. WALL SWITCHES SHALL BE SPECIFIC 2. RECEPTACLES SHALL BE SPECIFIC GROUNDED TYPE. SPECIAL APPLIC GROUND DOWN. 3. DEVICE PLATES SHALL BE EQUAL WHITE, UNLESS OTHERWISE NOTED 4. RECEPTACLES IN OUTDOOR AND V COVER/ENCLOSURE CLEARLY MAR EQUAL TO TAYMAC SPECIFICATION H. SERVICE ENTRANCE SECTION 1. THE SERVICE ENTRANCE EQUIPMENT
ART II – PRODUCTS AND EXECUTION A. MATERIALS ALL MATERIALS SHALL BE NEW AND OF QUALITY AS SPECI MUST CARRY THE UNDERWRITER'S LABORATORIES APPROVA		CARRY THE U.L. LABEL AND SHAL 2. SERVICE ENTRANCE EQUIPMENT SH HORIZONTALLY TAPERED BUSSING <u>I. DISTRIBUTION PANELS</u> 1. DISTRIBUTION PANELS SHALL BE F TAPERED BUSSING SHALL NOT BE

UBMIT SEVEN (7) IDENTICAL BOUND SETS OF SHOP DRAWINGS ON THE

AND PERFORMANCE DATA. DATA SHEETS OF EACH PANELBOARD, LOAD CENTERS, AND DISTRIBUTION ALL SWITCH GEAR COMPONENTS.

VERPLATES. INSTALLED IN PANELBOARDS, LOAD CENTERS, AND DISTRIBUTION PANELS. IN A NEAT AND ORDERLY MANNER WITHIN 15 DAYS OF AWARD OF CONTRACT. NOT BE ACCEPTABLE.

WITH REQUIREMENTS OF ARTICLE 250. ALL EXPOSED NONCURRENT CARRYING RICAL EQUIPMENT, METALLIC RACEWAY SYSTEMS, METALLIC CABLE ARMOR, NONMETALLIC SHEATHED CABLES, GROUNDING CONDUCTOR IN NONMETALLIC CONDUCTORS OF THE WIRING SYSTEM SHALL BE GROUNDED. EUTRAL) OF THE WIRING SYSTEM SHALL BE CONNECTED TO THE SYSTEM

A SINGLE PLACE IN EACH SYSTEM BY REMOVABLE BONDING JUMPERS, SIZED ABLE PROVISIONS OF THE NATIONAL ELECTRICAL CODE. THE GROUNDED THE GROUNDING CONDUCTOR CONNECTION SHALL BE LOCATED IN THE EM'S OVERCURRENT PROTECTION OR WHERE OTHERWISE INDICATED ON THE

FROM THE NEUTRAL BUS SHALL BE PROVIDED IN ALL DISTRIBUTION PANELS PER TORQUE ON GROUND BUS SHALL BE VERIFIED, PER MANUFACTURER'S TO ENERGIZING EQUIPMENT.

RAL BUSES IN ALL DISTRIBUTION PANELS, LOAD CENTERS, PANELBOARDS, AND QUIPMENT SHALL BE ISOLATED EXCEPT WHERE REQUIRED TO BE CONNECTED HE SERVICE ENTRANCE

AWINGS, EQUIPMENT GROUNDING CONDUCTORS SHALL BE EXTENDED FROM ISTRIBUTION EQUIPMENT TO THE RECEPTACLE, FIXTURE OR DEVICE LUGS WHERE LUGS ARE NOT PROVIDED, EQUIPMENT GROUNDING CONDUCTORS EQUIPMENT ENCLOSURES. THE CONNECTIONS SHALL BE ARRANGED SUCH THAT CLE, EQUIPMENT GROUND CONDUCTORS, OR GROUND JUMPERS FROM GROUND THE GROUND SYSTEM.

SED AS A GROUNDING CONDUCTOR FOR POWER AND LIGHTING CIRCUITS. ALL ARATE CODE SIZED GREEN GROUND WIRE INSTALLED IN THE CONDUIT TO UNDING PATH.

, MAKE CONNECTIONS BY EXOTHERMIC WELD PROCESS. CONNECTIONS SHALL BE MADE WITH BOLTED THROUGH, APPROVED NDING DEVICES.

ON THE DRAWINGS ARE BASED ON COPPER WIRE. UNLESS OTHERWISE BE TYPE XHHW OR SE FOR FEEDERS OR BRANCH CIRCUITS LARGER THAN 4 SULATION FOR FEEDERS AND BRANCH CIRCUITS 4 AWG AND SMALLER. ALL

HALL BE COPPER. AY BE UTILIZED FOR SERVICE ENTRANCE AND PANEL FEEDERS. CONDUCTORS AA-8000 SERIES.

ED WITH COLOR TO SIMPLIFY CIRCUIT IDENTIFICATION. UNLESS OTHERWISE ANCES GROUND WIRES SHALL BE GREEN, NEUTRAL WIRES SHALL BE ES 208Y/120V AND 120/240 SHALL BE BLACK (PHASE A), RED (PHASE B), CUIT SHALL BE LABELED IN EACH J-BOX. RATED 600 VOLT.

BOXES AND MANHOLES SHALL BE WEATHERPROOF USING "SCOTCHCAST" EQUAL. SEAL ENDS OF CONDUITS AND DUCTS WITH "DUCTSEAL" OR

R FOR 12 AWG AND SMALLER. LED IN THE CONDUIT SYSTEM UNTIL THE CONDUIT SYSTEM IS COMPLETE. USE UIVALENT AS A LUBRICANT TO FACILITATE THE INSTALLATION OF THE UIT SYSTEM.

ONDUCTORS AND GROUND WIRE MAY BE USED WHERE PERMITTED.

ALLED IN LISTED METALLIC CONDUIT EXCEPT AS PERMITTED IN OTHER MIL PVC COATING WILL BE USED WHEN IN CONTACT WITH EARTH. IMC MAY IONS NOT IN CONTACT WITH THE EARTH. EMT MAY BE USED IN INDOOR WITH EARTH, NOT IN CONCRETE SLABS OR WALLS AND NOT SUBJECT TO ED IN OR BELOW CONCRETE AND DIRECT BURIED IN EARTH. FLEXIBLE STEEL OR INDOOR FINAL CONNECTIONS TO EQUIPMENT IN LENGTHS NOT TO EXCEED STEEL CONDUIT SHALL BE FOR OUTDOOR FINAL CONNECTIONS TO

JTLET BOXES, FIXTURES OR CABINETS, FIRMLY FASTEN WITH STEEL SET SCREW, OR DOUBLE LOCKNUTS FOR GRC. ALL CONNECTIONS SHALL HAVE BUSHINGS NECTORS. FIRMLY FASTEN CONDUIT TO THE BUILDING CONSTRUCTION. RUN TO THE BUILDING LINES, SUPPORTED BY APPROPRIATE HANGERS (UNISTRUT,

N CONTACT WITH EARTH WITH POLYETHYLENE TAPED SPIRAL WRAPPED, 1/2 THICKNESS. TAPE SHALL BE SCOTCH NO. 50 TAPE. CONDUIT AND DUCTS FEEDER DUCTS SHALL BE INSTALLED PER N.E.C. 300-5. MAKE JOINTS WITH

SHALL BE PERMITTED UNDERGROUND WITH PROPER FITTINGS, ALL UL JOINTS. PENETRATIONS THROUGH FLOOR SLABS AND BENDS GREATER THAN GID GALVANIZED STEEL ELBOWS.

DIES SHALL BE STEEL. DIECAST FITTINGS ARE NOT ACCEPTABLE. S REQUIRED BY CODE AND AS INDICATED OR SPECIFIED. MS SHALL HAVE A 200 LB. TEST NYLON PULL STRING TO FACILITATE

TLETS SHALL BE CONCEALED WITH THE BUILDING STRUCTURE, EXCEPT THAT NG FEEDER CONDUITS MAY BE RUN EXPOSED IN CERTAIN AREAS AS

ROUGH ROOF SHALL HAVE ROOF FLASHING WITH CAULK TYPE COUNTER

LATION SHALL BE WATERTIGHT. ED PARALLEL AND PERPENDICULAR TO THE STRUCTURE.

BOXES CONCEALED IN WALLS SHALL BE STEEL D CEMENT FLOORS SHALL BE FLUSH TYPE CAST IRON OR STEEL WITH ERS. WHERE BOXES ARE INSTALLED IN FLOORS WITH TILE OR CARPET FLOOR BE OF THE RECESSED TYPE TO ACCOMMODATE THE FLOOR COVERING. ALARM, COMPUTER, AND SECURITY SYSTEM SHALL BE PROVIDED WITH

OMPUTER, T.V., FIRE ALARM, SECURITY, AND SIMILAR SYSTEMS SHALL BE

SPECIFICATION GRADE AC SILENT TYPE SWITCHES, 20A 120/277 VOLT. PECIFICATION GRADE, DUPLEX TYPE. NEMA5-20R, 20 AMPERE, 120VOLT APPLICATION RECEPTACLES SHALL BE INDICATED ON PLANS. MOUNT WITH THE

EQUAL TO SIERRA SMOOTH-LINE PLASTIC WALL PLATES. COLOR SHALL BE

AND WET LOCATIONS SHALL BE INSTALLED WITH A HINGED OUTLET MARKED AND U.L. LISTED SUITABLE FOR WET LOCATIONS WHILE IN USE, CATION GRADE.

UIPMENT SHALL BE AS INDICATED ON THE DRAWINGS. EQUIPMENT SHALL SHALL CONFORM TO THE POWER COMPANY REGULATIONS. ENT SHALL BE PROVIDED WITH A FULLY RATED COPPER OR ALUMINUM BUS. JSSING SHALL NOT BE ALLOWED.

BE PROVIDED WITH FULLY RATED COPPER OR ALUMINUM BUS. HORIZONTAL NOT BE ALLOWED

- ACCEPTABLE MANUFACTURERS CUTLER HAMMER, SEIMENS, SQUARE D OR GENERAL ELECTRIC FACTORY ASSEMBLED DEAD FRONT, METAL ENCLOSED, AND SELF-SUPPORTING SWITCH BOARD ASSEMBLY CONFORMING T NEMA PB 2 AND UL 891, AND COMPLETE FROM INCOMING LINE TERMINALS TO LOAD SIDE TERMINATIONS.
- 4. LINE AND LOAD TERMINATIONS: ACCESSIBLE FROM FRONT ONLY OF THE SWITCH BOARD. SUITABLE FOR CONDUCTOR MATERIALS AND NUMBER OF CONDUCTORS USED.
- BUS CONNECTIONS: BOLTED. ACCESSIBLE FROM FRONT FOR MAINTENANCE. PROVIDE BELLEVILLE WASHERS FOR PROPERLY TORQUE ALL CONNECTIONS PROVIDE FULLY-RATED NEUTRAL BUS AND FULLY RATED GROUND BUS MATCHING MATERIAL USED FOR
- 6. MAIN BUS. FUTURE PROVISIONS: FULLY EQUIP SPACES FOR FUTURE DEVICES WITH BUSSING AND BUS CONNECTIONS
- SUITABLY INSULATED AND BRACED FOR SHORT CIRCUIT CURRENTS. CONTINUOUS CURRENT RATING AS INDICATED ON DRAWINGS. 8. ALL CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE.

. PANEL BOARDS

- CIRCUIT BREAKER TYPE AS INDICATED ON DRAWINGS. UNLESS INDICATED OTHERWISE, ALL PANELS SHALL HAVE PANEL HAVE PANEL BOARD TYPE CONSTRUCTION WITH BOLT-ON CIRCUIT BREAKERS FOR 30 PANELS
- MANUFACTURERS SHALL BE GENERAL ELECTRIC, SQUARE D, SEIMENS, CUTLER-HAMMER WITH VOLTAGE, SIZES, AND RATINGS AS INDICATED ON DRAWINGS. THE CIRCUIT BREAKERS SHALL BE OPERABLE IN ANY POSITION AND BE REMOVABLE FROM THE FRONT OF THE PANEL BOARD WITHOUT DISTURBING THE ADJACENT UNITS. BRANCH BREAKERS SHALL BE OF SUCH DESIGN THAT COMBINATION OF SINGLE-POLE, DOUBLE-POLE, AND THREE-POLE BREAKERS CAN BE ASSEMBLED ON THE SAME PANEL. EACH BRANCH CIRCUIT SHALL BE CLEARLY NUMBERED. BRANCH AND MAN TERMINALS SHALL BE SOLDERLESS TYPE. HANDLE TIES TO FORM MULTI-POLE BREAKERS NOT ACCEPTABLE.

K. LOAD CENTER

- CIRCUIT BREAKER TYPE AS INDICATED ON DRAWINGS. MANUFACTURERS SHALL BE GENERAL ELECTRIC, SQUARE D, SIEMENS, CUTLER-HAMMER/EATON WITH VOLTAGE, SIZES, AND RATINGS AS INDICATED ON DRAWINGS.
- THE CIRCUIT BREAKERS SHALL BE OPERABLE IN ANY POSITION AND BE REMOVABLE FROM THE FRONT OF THE PANEL BOARD WITHOUT DISTURBING THE ADJACENT UNITS. BRANCH BREAKERS SHALL BE OF SUCH DESIGN THAT COMBINATION OF SINGLE-POLE AND DOUBLE-POLE BREAKERS CAN BE ASSEMBLED ON THE SAME PANEL. EACH BRANCH CIRCUIT SHALL BE CLEARLY NUMBERED. BRANCH AND MAIN TERMINALS SHALL BE OF THE SOLDERLESS TYPE. HANDLE TIES TO FORM MULTI-POLE BREAKERS NOT ACCEPTABLE
- A. CIRCUIT BREAKERS SHALL BE PLUG-IN TYPE WIRE TERMINATION FOR PANEL BOARDS AND CIRCUIT BREAKERS SHALL BE LISTED AS SUITABLE FOR 75 - 3. DEGREES C.
- PROVIDE A TYPEWRITTEN CIRCUIT INDEX BEHIND CLEAR PLASTIC COVER ON INSIDE OF DOOR. INFORMATION SHALL INCLUDE ROOM AND TYPE LOAD SERVED. ALL CIRCUIT BREAKERS SHALL BE
- IDENTIFIED, INCLUDING SPARES. INDEX CARD FRAME SHALL BE METAL, SECURED TO DOOR. 5. PANEL BOARDS/LOAD CENTERS TO BE PROVIDED WITH COPPER BUSSIING ONLY.
- <u>. LIGHTING FIXTUR</u>ES
- PROVIDE ALL LIGHTING FIXTURES, WIRED AND CONNECTED. THE DRAWINGS INDICATE THE FIXTURES FOR EACH LOCATION. PROVIDE LAMPS FOR ALL FIXTURES. THE LAMPS SHALL BE BY THE SAME MANUFACTURER. VERIFY CEILING CONSTRUCTION BEFORE ORDERING RECESSED UNITS. PROVIDE PLASTER FRAMES AND HANGERS AS REQUIRED. CEILING CONSTRUCTION, ARCHITECTURAL ACCESSORIES, VOLTAGE, AND BALLASTS TO MEET THE EXISTING CEILING CONDITION.

M. LIGHTING CONTROL

- FURNISH AND INSTALL TIME SWITCHES, PHOTOCELLS, CONTRACTORS AND FULL LIGHTING CONTROL
- SYSTEMS AS REQUIRED FOR LIGHTING CONTROLS INDICATED ON THE DRAWINGS. TIME SWITCHES SHALL BE EQUAL TO PARAGON, GENERAL ELECTRIC, TORK, OR INTERMATIC AND SHALL HAVE SIZE AND NUMBER OF POLES AS REQUIRED.
- PHOTOCELLS SHALL BE EQUAL TO TORK OR INTERMATIC WITH VOLTAGE AS INDICATED. N. TELEPHONE AND CABLE TELEVISION SYSTEMS
- TELEPHONE WALL OUTLETS SHALL CONSIST OF STANDARD BOXES MOUNTED 18" ABOVE THE FLOOR UNLESS OTHERWISE INDICATED. PROVIDE A TERMINAL MOUNTING BOARD FOR THE INCOMING SERVICE CABLE
- CABLE TELEVISION OUTLETS SHALL CONSIST OF STANDARD BOXES MOUNTED 18" ABOVE THE FLOOR 2. UNLESS OTHERWISE INDICATED. PROVIDE A TERMINAL MOUNTING BOARD FOR THE INCOMING SERVICE CABLE.

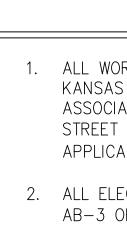
<u>O. GUARANTEI</u>

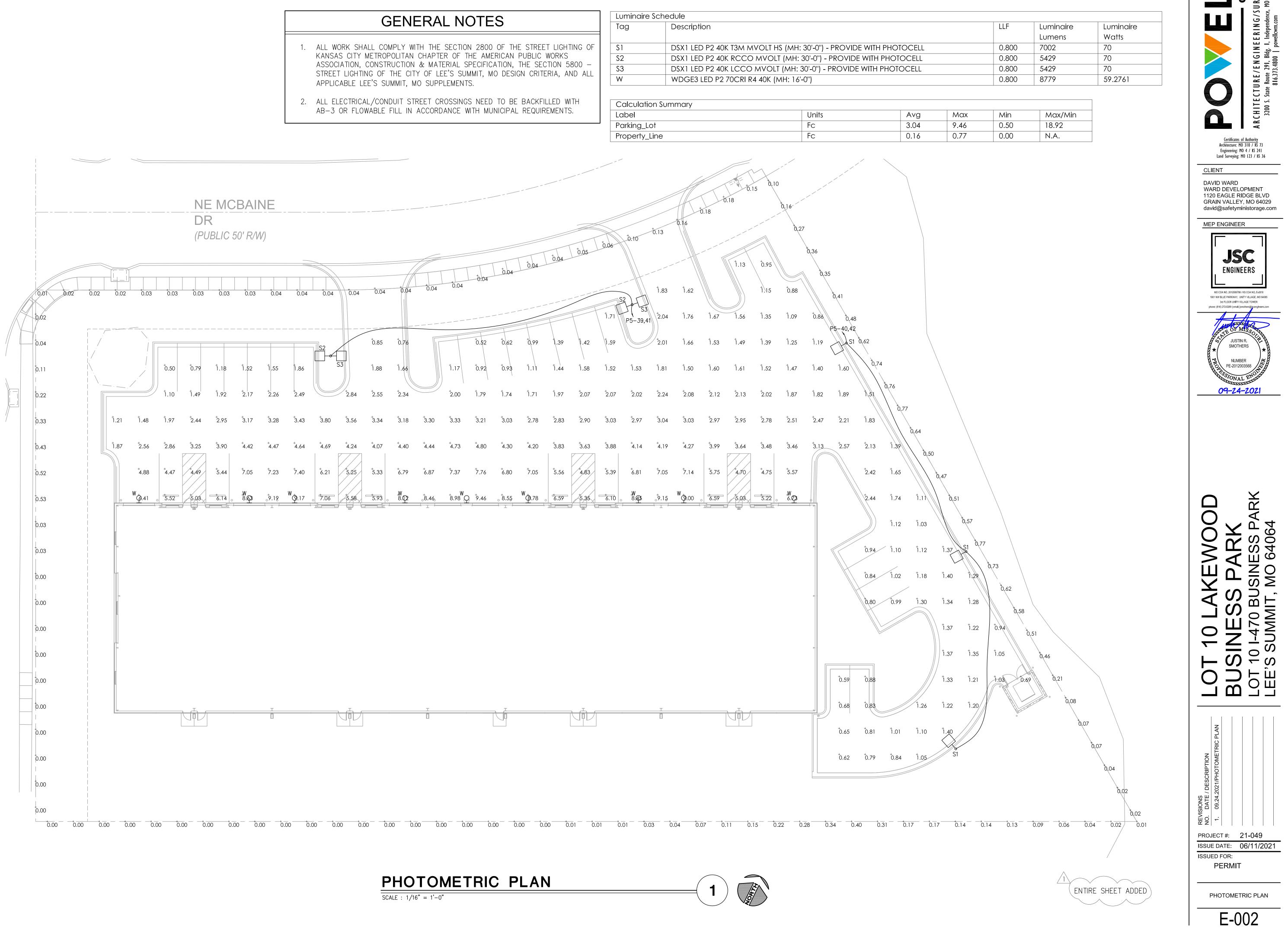
GUARANTEE ALL MATERIAL FURNISHED AND ALL WORKMANSHIP PERFORMED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF WORK. ANY DEFECTS DEVELOPING WITHIN THIS PERIOD, TRACEABLE TO MATERIAL FURNISHED AS A PART OF THIS SECTION OR WORKMANSHIP PERFORMED HEREUNDER, SHALL BE MADE GOOD AT NO EXPENSE TO THE OWNER.

	SYMBOLS LEGEND	E R I N G / S U R V E Y I N G hellowm.com
	NOTE: THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS, ETC, ARE NECESSARILY USED ON THE DRAWINGS.	E E R I N G / S U I, Independence, M owellcwm.com
	FLUORESCENT OR LED FIXTURE (SEE SCHEDULE)	GINEERING/ Bldg. 1, Independend
	FIXTURE WITH EMERGENCY BATTERY BALLAST UNIT SITE POLE MOUNT LIGHT FIXTURE WALL MOUNTED FIXTURE-WITH EMERGENCY BATTERY BALLAST UNIT DOWNLIGHT FIXTURE WALL MOUNTED FIXTURE PENDANT MOUNTED FIXTURE WALL WASHER SINGLE FACE EXIT SIGN – UNIVERSAL MOUNTED SINGLE FACE EXIT SIGN W/ DIRECTIONAL ARROWS – UNIVERSAL MTD DOUBLE FACE EXIT SIGN W/ DIRECTIONAL ARROWS – UNIVERSAL MTD DUAL HEADED EMERGENCY UNIT COMBO DUAL HEADED EMERGENCY AND EXIT SIGN UNIT LETTER INDICATES LIGHT FIXTURE AS INDICATED ON FIXTURE SCHED	Image: Second
S Sobc S2 S3 S4 S3D S3D×y Ss SM OS	SINGLE POLE SWITCH @ +48" UNLESS NOTED SWITCH BANK @ +48" UNLESS NOTED. LOWER CASE LETTER INDICATES FIXTURE CONTROLLED. 2 POLE SWITCH @ +48" UNLESS NOTED 3-WAY SWITCH @ +48" UNLESS NOTED 4-WAY SWITCH @ +48" UNLESS NOTED DIMMER SWITCH - SIZE AS REQUIRED @ +48" UNLESS NOTED 3-WAY DIMMER SWITCH - SIZE AS REQUIRED @ +48" UNLESS NOTED 3-WAY DIMMER SWITCH - SIZE AS REQUIRED @ +48" UNLESS NOTED 3-WAY DIMMER SWITCH BANK @ +48" UNLESS NOTED. LOWER CASE LETTER INDICATES FIXTURE CONTROLLED. SWITCH SENSOR @ +48" UNLESS NOTED MANUAL MOTOR STARTER OCCUPANCY SENSOR	MEP ENGINEER USUAL USUAL USUAL MCCOA NO, 2012006786 / KS COA NO, E-2818 1901 NW BLUE PARKWAY, UNITY VILLAGE, MO 64065 3rd FLOOR UNITY VILLAGE TOWER phone: (816) 272-5289] email: jsmothers@jcoengineers.com
Sos	WALL SWITCH WITH OCCUPANCY SENSOR. TWO BUTTON DIGITAL LOW VOLTAGE WALL SWITCH. PROVIDES ON/OFF/0-10V DIMMING. SWITCH @ +48" UNLESS NOTED.	SMOTHERS NUMBER PE-2012003568
SD 문 옐 역 도 王	TWO BUTTON DIGITAL LOW VOLTAGE WALL SWITCH. PROVIDES ON/OFF/0-10V DIMMING. SWITCH @ +48" UNLESS NOTED. DUCT DETECTOR REMOTE TEST STATION - MOUNT AT 60" AFF LIGHTING CONTROLS POWER PACK LIGHTING CONTROLS PHOTOCELL FIRE SUPPRESSION FLOW SWITCH FIRE SUPPRESSION TAMPER SWITCH SPRINKLER ALARM NOTIFICATION HORN	09-24-2021
	CAMERA SPEAKER TELEPHONE OUTLET© +18" UNLESS NOTED DATA OUTLET © +18" UNLESS NOTED COMBINATION TELEPHONE/DATA OUTLET © +18" UNLESS NOTED TELEVISION OUTLET © +18" UNLESS NOTED DUCT DETECTOR HEAT DETECTOR HEAT DETECTOR 120 VOLT SMOKE DETECTOR WITH SOUNDER BASE AND BATTERY BACKUP AUXILIARY SYSTEM TERMINAL CABINET SWITCHBOARD, MOTOR CONTROL CENTER OR DISTRIBUTION BOARD 120/208V., 3 PHASE, 4 WIRE PANELBOARD, UNO CARD READER. PROVIDE 2–GANG OUTLET BOX WITH SINGLE GANG RING AND 3/4" CONDUIT STUBBED UP IN WALL TO ABOVE ACCESSIBLE CEILING WITH BUSHING ON END OF CONDUIT © 48" UNLESS NOTED OTHERWISE.	AKEWOOD S PARK BUSINESS PARK T, MO 64064
	GENERATOR TRANSFORMER MOTOR OUTLET DISCONNECT SWITCH – SIZE AND TYPE NOTED COMBINATION FUSED STARTER DISCONNECT SWITCH FUSE SIZE AS INDICATED, STARTER SIZE '1'	T 10 L/ SINES 'S SUMMI
	MECHANICAL EQUIP. CONNECTION, SEE SCHED. ON MECH. PLAN JUNCTION BOX CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING CONDUIT RUN BELOW FLOOR OR GRADE	
↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	SPECIAL HEAVY DUTY RECEPTACLE – SIZE AS NOTED. @ +18" UNLESS NOTED 1/2 SWITCHED RECEPTACLE @ +18" UNLESS NOTED FIRE RATED POKE THRU WITH TYPE INDICATED FLUSH FLOOR BOX WITH TYPE INDICATED SINGLE RECEPTACLE @ +18" UNLESS NOTED DUPLEX RECEPTACLE @ +18" UNLESS NOTED GFI DUPLEX RECEPTACLE @ +18" UNLESS NOTED GFI DUPLEX RECEPTACLE FULL SWITCHED RECEPTACLE DUPLEX RECEPTACLE INSTALLED ABOVE COUNTERTOP DUPLEX RECEPTACLE WITH WEATHERPROOF COVERPLATE @ 18" UNLESS NOTED	REVISIONS NO. DATE / DESCRIPTION 1. 09.24.2021/PHOTOMETRIC PLAN BLOJECT #: 51-046
P1–3,5,7	HOMERUN TO PANELBOARD, INFORMATION AT ARROWS ARE CIRCUIT NUMBERS AND PANELBOARD FOR TERMINATION. REFER TO ASSOCIATED NOTE FOR BRANCH CIRCUIT CONDUCTOR SIZES. INDICATES 1/2" CONDUIT CONCEALED IN CEILING OR WALL WITH (3) CONDUCTORS. (1) PHASE,	ISSUE DATE: 06/11/2021 ISSUED FOR: PERMIT
	(1) NEUTRAL AND (1) GROUND WIRE. ALL ARE #12 AWG UNLESS NOTED OTHERWISE. WHIP COUNT INDICATES NUMBER OF HOT CONDUCTORS	ELECTRICAL SPECIFICATIONS AND SYMBOLS



ELECTRICAL SPECIFICATIONS AND SYMBOLS E-001



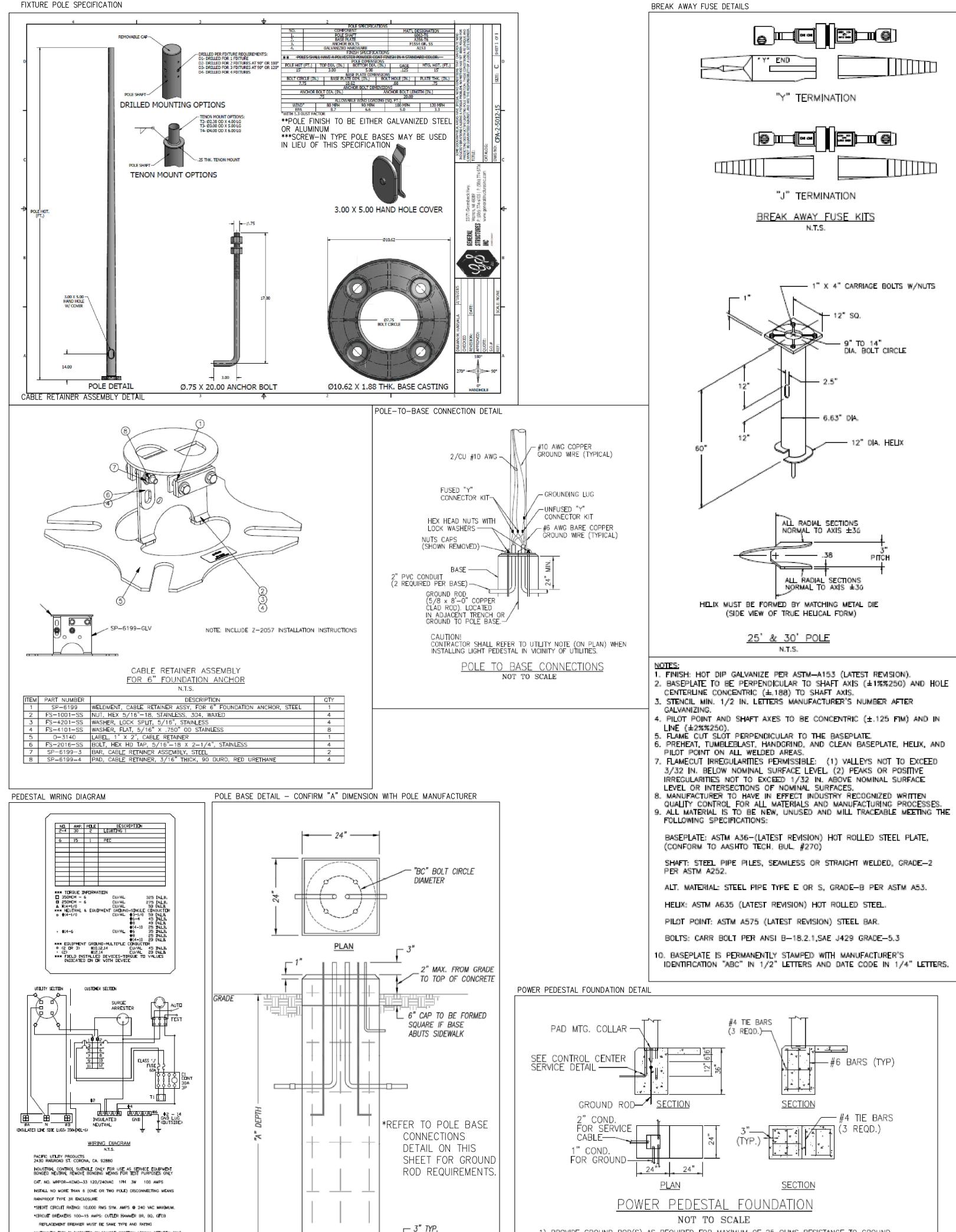


S1 DSX1 LED P2 40K T3M MVOLT HS (MH: 30'-0'')) - PROVIDE
S2 DSX1 LED P2 40K RCCO MVOLT (MH: 30'-0'')	- PROVIDE
S3 DSX1 LED P2 40K LCCO MVOLT (MH: 30'-0'')	- PROVIDE
W WDGE3 LED P2 70CRI R4 40K (MH: 16'-0'')	

Label	Units
Parking_Lot	Fc
Property_Line	Fc







"WETER SOCKET : MS24; 200 AMPS WATT-HOUR WETER NOT INCLUDED IN SHORT CIRCUIT RATING.

"AUTOMATIC TRIP IS INDICATED BY HANDLE POSITION MOWAY BETWEEN (ON) AND (OFF). TO RESTORE POWER MOVE HANDLE TO (OFF). THEN ON.

"THE MAXIMUM SIZE CIRCUIT BREAKER TO BE INSTALLED ON THE LOAD CENTER IS SO AMPS WHEN COPPER WIRE IS USED AND 40 AMPS WHEN ALUMINUM WIRE IS USED

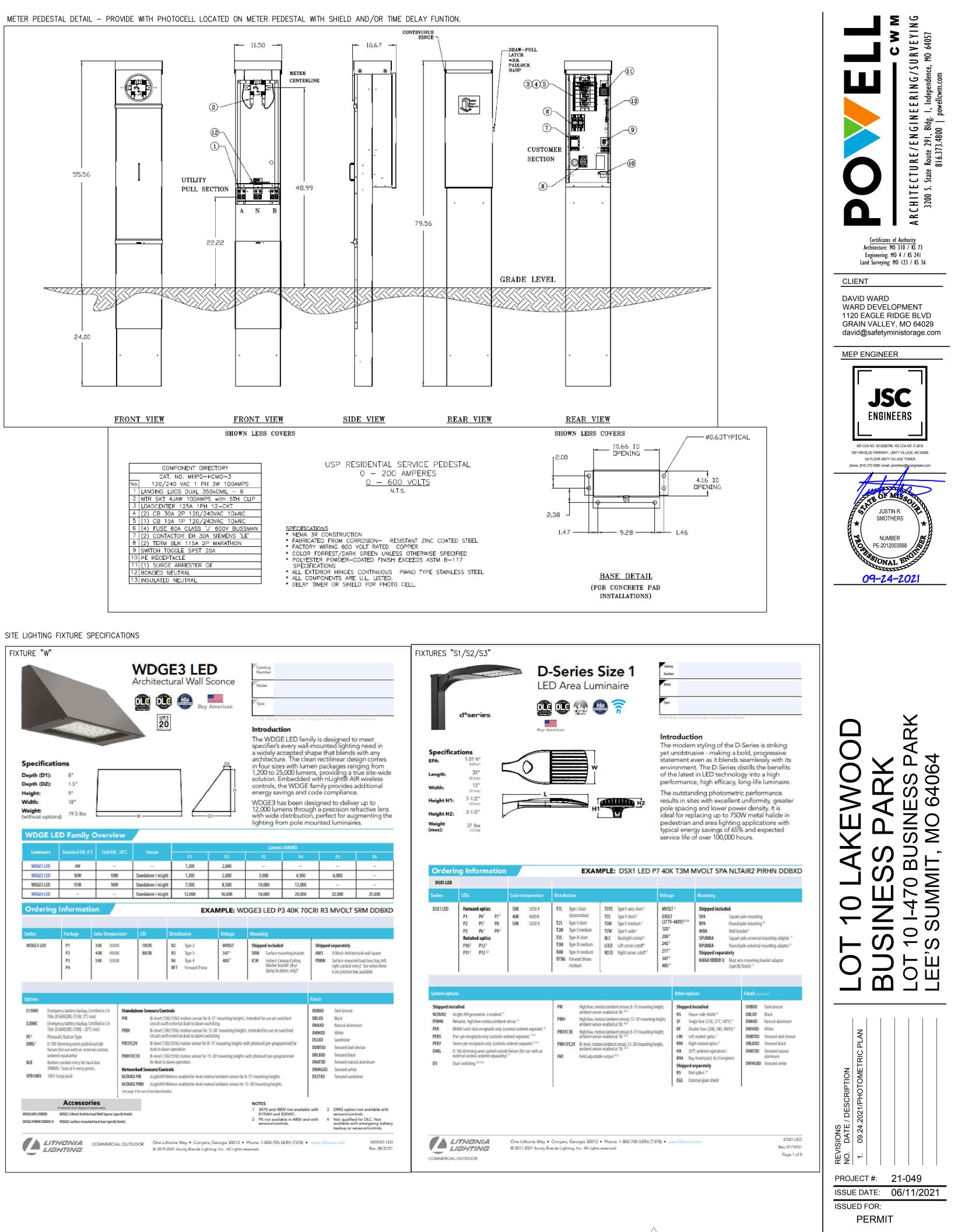
WOISTURE KIT AWAILABLE-CONTACT FACTORY, CALNO, MSK-1

*SHIPPING TENDS TO LOOSEN ELECTRICAL CONNECTIONS-TIGHTEN ALL CONNECTIONS BEFORE ENERGIZING UNIT.

AT-GRADE POLE BASE ELEVATION

1) PROVIDE GROUND ROD(S) AS REQUIRED FOR MAXIMUM OF 25 OHMS RESISTANCE TO GROUND. EXOTHERMIC WELD ONE END OF NO. 6 AWG GROUND CONDUCTOR TO THE GROUND ROD(S) AND BRUSH ON 2 COATS OF AN INSULATING VARNISH TO THE WELDED AREAS.

2) CONCRETE SLAB TO PROVIDE SEMI-DRY WORKING AREA IN FRONT OF CONTROLLER CABINET. SECONDARY POWER SERVICE (DIRECT BURY) THRU CONTRACTOR INSTALLED 2" CONDUIT AND ELBOW.

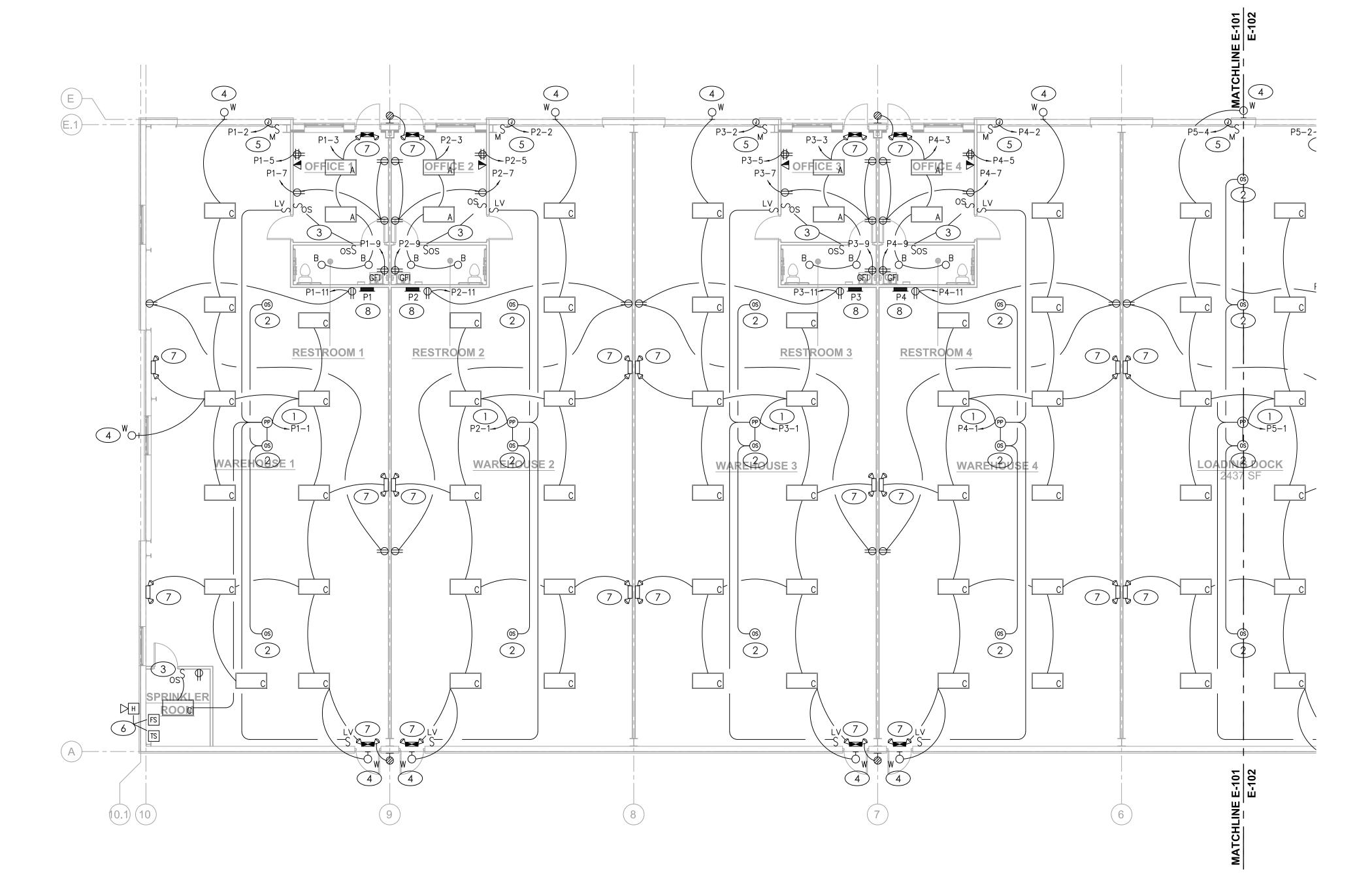


DMG ^a BCE	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately) Bottom conduit entry for back box (PBBV). Total of 4 entry points.	PIRTFC3V PIRHTFC3V Networked S	Bi-level (100/35%) motion sensor for 8-15' mounting heights with photocell pre-progra dusk to dawn operation. Bi-level (100/35%) motion sensor for 15-30' mounting heights with photocell pre-progr for dusk to dawn operation. ensers/Comtrols		DSSAD DDBTXD DBLBXD DNATXD DWHGXD	Sandstone Textured dark bronze Textured black Textured natural aluminum Textured white
SPD10KV	10kV Surge pack	NLTAIR2 PIR	nLightAIR Wireless enabled bi-level motion/ambient sensor for 8-15' mounting heights. nLightAIR Wireless enabled bi-level motion/ambient sensor for 15-30' mounting heights.		DSSTXD	Textured sandstone
		See page 4 for out	of box functionality			
	Accessories Ordered and shipped separatelys		NOTES 1 347V and 480	OV not available	e with 3	DMG option not available w
NDGEAWS DDEX			E15WH and B	E20WC. ble in 480V and	duints of	sensors/controls. Not qualified for DLC. Not
WDGE3P88W DDI	BXD U WDGEI surface-mounted back box (specify)	finish)	sensors/cont		a with 4	available with emergency ba backup or sensors/controls
	COMMERCIA		One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-9	SERV (7378) •	www.lithon	ia.com WDGE3 Bac 09/3

PHOTOMETRIC	PLAN

E-003

ENTIRE SHEET ADDED



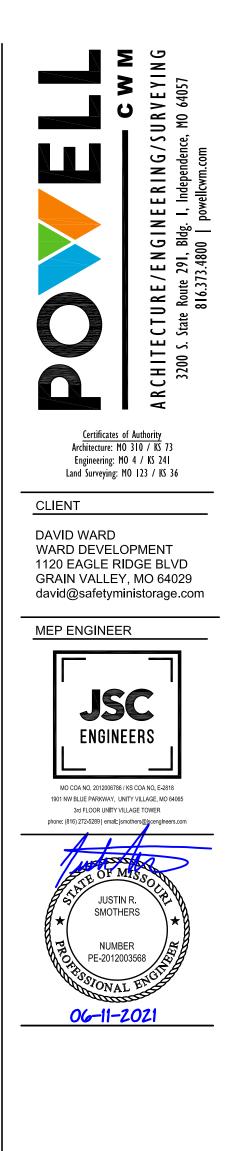
SCALE : 1/8" = 1'-0"

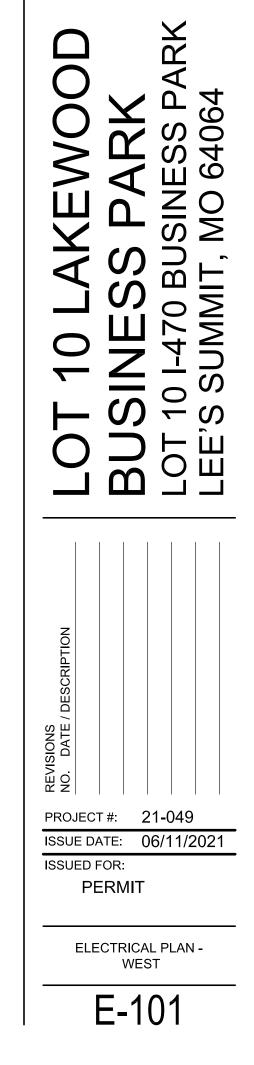
LIGHTING AND POWER PLAN - WEST THE STREET

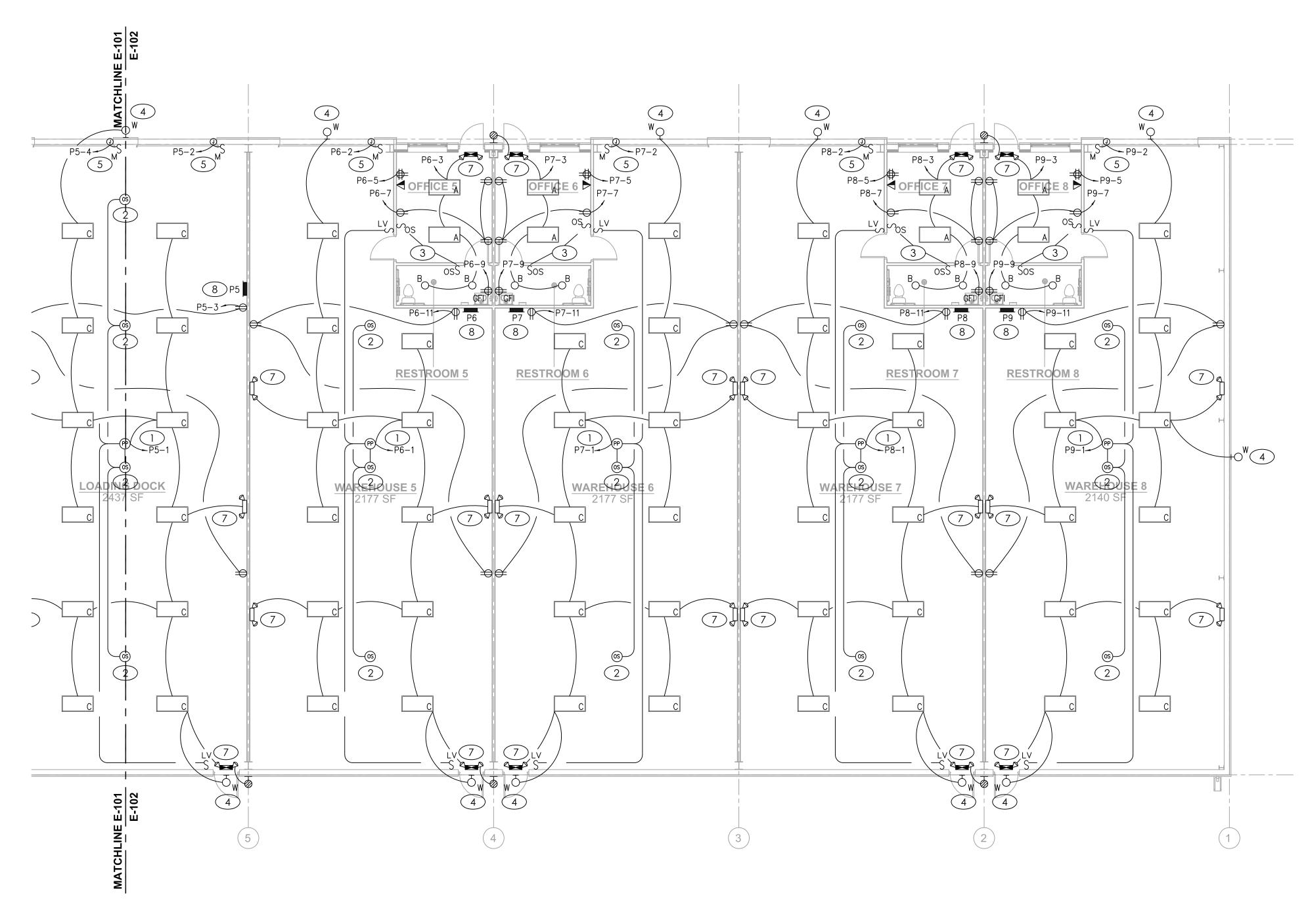
GENERAL NOTES

- A. DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. REFER TO ARCHITECTURAL PLANS OR FIELD MEASUREMENTS FOR DIMENSIONS.
- B. ALL WORK SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND ALL LOCAL BUILDING CODES AND AMENDMENTS.
- C. ALL ROOF AND WALL PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PROVIDE ALL REQUIRED SLEEVES, FLASHINGS, CURBS, REINFORCED ANGLES, SUPPORTING FRAMES, ETC. UNLESS THEY ARE SPECIFICALLY CALLED OUT TO BE FURNISHED BY OTHERS.
- D. COORDINATE ALL WORK WITH OTHER TRADES AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACE AVAILABLE, AND WITHOUT INTERFERENCES.
- E. THIS CONTRACTOR SHALL PERFORM ALL WORK INDICATED AND/OR AS REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF THE ELECTRICAL SYSTEMS.
- F. ALL WIRING SHALL BE IN APPROVED RACEWAY.
- G. WIRE SIZE SHALL BE MINIMUM #12 AWG, THWN SOLID COPPER UNLESS OTHERWISE NOTED. PROVIDE GROUND WIRE WHERE REQUIRED BY CODE. INCREASE WIRE SIZE TO COMPENSATE FOR VOLTAGE DROP WHERE TOTAL LENGTH OF ANY BRANCH EXCEEDS 100 FEET.
- H. MAXIMUM NUMBER OF UNGROUNDED WIRES IN ANY CONDUIT SHALL BE THREE. ADDITIONAL WIRES ARE ACCEPTABLE IF WIRE SIZE IS INCREASED TO ALLOW FOR DERATING PER CODE. PROVIDE ADDITIONAL WIRES FOR SWITCHING AS REQUIRED.
- I. REFER TO LIGHTING FIXTURE SCHEDULE ON E201 FOR LIGHT FIXTURE TYPES AND REQUIREMENTS.
- J. CONNECT ALL EXIT SIGNS AND EMERGENCY LIGHTING UNITS TO THE INDICATED CIRCUIT WITH A SEPARATE AND UN-SWITCHED CONDUCTOR BYPASSING ALL CONTROLS AND CONTACTORS. REFER TO MANUFACTURER'S WRITTEN INSTRUCTIONS FOR PROPER INSTALLATION AND TESTING.
- K. THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED HVAC EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE EXACT LOCATIONS AND ELECTRICAL REQUIREMENTS OF ALL HVAC EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO HVAC EQUIPMENT SUBSTITUTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- L. FIRE ALARM, AUDIO/VIDEO AND SURVEILLANCE SYSTEMS BY OTHERS.
- M. PROVIDE ALL ADDITIONAL EXTRA CONDUCTORS NEEDED FOR UNSWITCHED AND SWITCH LEGS AND TRAVELERS BETWEEN SWITCHES.
- N. REFER TO NATIONAL ACCOUNT LIGHTING FIXTURE SCHEDULE ON SHEET E203 FOR LIGHTING FIXTURE INFORMATION.

- 1. LIGHTING CONTROLS POWER PACK. SENSORWORX SWX-900 SERIES OR PRE-BID APPROVED EQUAL. PROVIDE AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND NEC REQUIREMENTS.
- 2. LIGHTING CONTROLS CEILING MOUNTED OCCUPANCY SENSOR. SENSORWORX SWX-200 SERIES OR PRE-BID APPROVED EQUAL. PROVIDE AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND NEC REQUIREMENTS.
- 3. OCCUPANCY SENSING WALL SWITCH. SENSORWORX SWX-100 SERIES OR PRE-BID APPROVED EQUAL. PROVIDE AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND NEC REQUIREMENTS.
- PHOTOCELL PROVIDED WITH FIXTURE TO CONTROL ONLY THE ASSOCIATED FIXTURE.
- 5. MAKE CONNECTION TO POWER AND CONTROLS FOR OVERHEAD COILING DOOR PER MANUFACTURER'S RECOMMENDATIONS AND NEC REQUIREMENTS.
- 6. COORDINATE CONNECTION TO SPRINKLER SYSTEM WATERFLOW AND TAMPER SWITCHES AND NOTIFICATION HORN WITH SPRINKLER SYSTEM INSTALLER PRIOR TO CONSTRUCTION. MAKE CONNECTION PER MANUFACTURER'S RECOMMENDATIONS AND NFPA REQUIREMENTS.
- 7. CONNECT EMERGENCY/EXIT LIGHT VIA UNSWITCHED HOT CONDUCTOR.
- 8. NEW 225A FRAME/200A MCB, 208Y/120V, 3¢, 4W, 42-POLE PANELBOARD. REFER TO SINGLE LINE DIAGRAM AND PANELBOARD SCHEDULES ON SHEET E-201 FOR MORE INFORMATION.







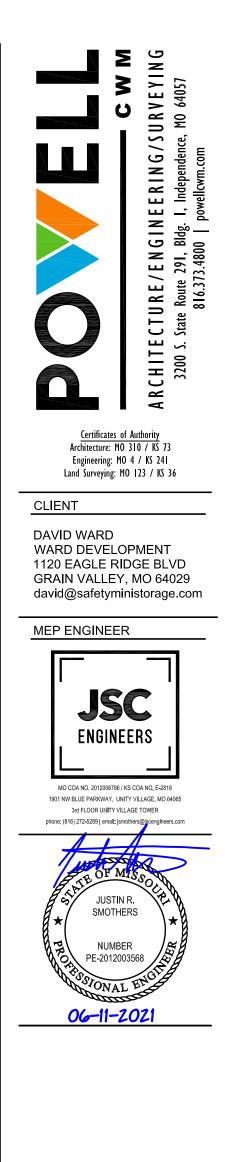
SCALE : 1/8" = 1'-0"

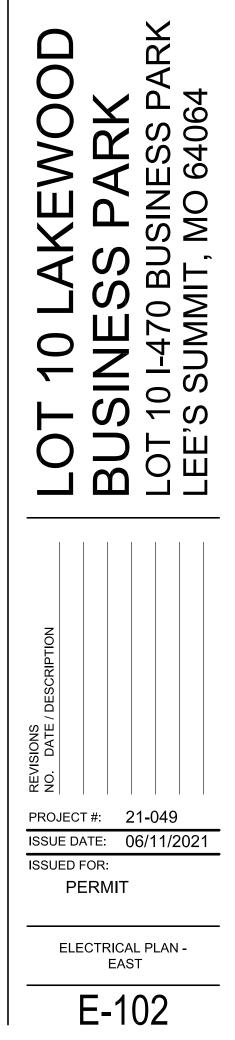
LIGHTING AND POWER PLAN - EAST THE A

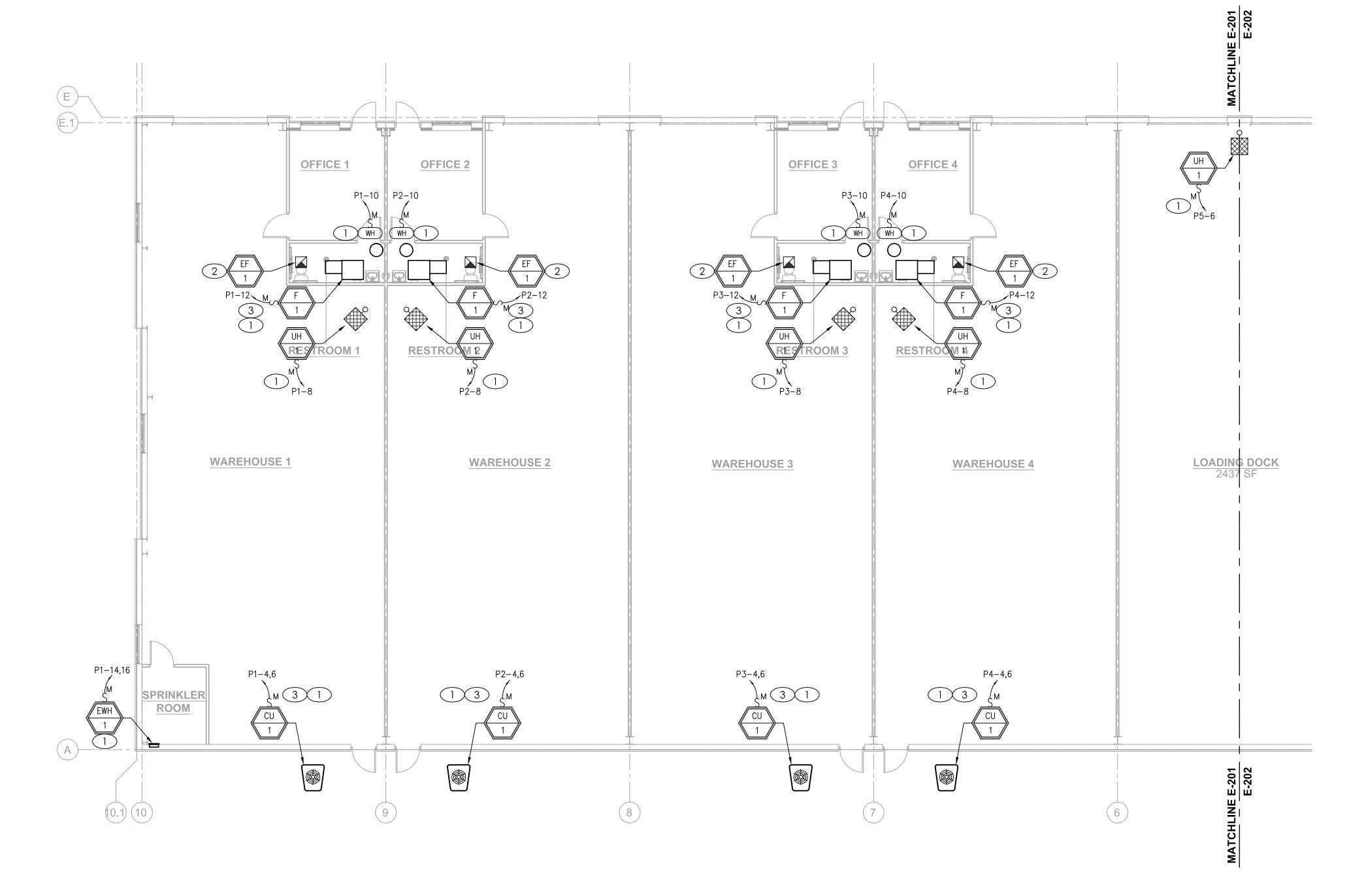
GENERAL NOTES

- A. DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. REFER TO ARCHITECTURAL PLANS OR FIELD MEASUREMENTS FOR DIMENSIONS.
- B. ALL WORK SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND ALL LOCAL BUILDING CODES AND AMENDMENTS.
- C. ALL ROOF AND WALL PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PROVIDE ALL REQUIRED SLEEVES, FLASHINGS, CURBS, REINFORCED ANGLES, SUPPORTING FRAMES, ETC. UNLESS THEY ARE SPECIFICALLY CALLED OUT TO BE FURNISHED BY OTHERS.
- D. COORDINATE ALL WORK WITH OTHER TRADES AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACE AVAILABLE, AND WITHOUT INTERFERENCES.
- E. THIS CONTRACTOR SHALL PERFORM ALL WORK INDICATED AND/OR AS REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF THE ELECTRICAL SYSTEMS.
- F. ALL WIRING SHALL BE IN APPROVED RACEWAY.
- G. WIRE SIZE SHALL BE MINIMUM #12 AWG, THWN SOLID COPPER UNLESS OTHERWISE NOTED. PROVIDE GROUND WIRE WHERE REQUIRED BY CODE. INCREASE WIRE SIZE TO COMPENSATE FOR VOLTAGE DROP WHERE TOTAL LENGTH OF ANY BRANCH EXCEEDS 100 FEET.
- H. MAXIMUM NUMBER OF UNGROUNDED WIRES IN ANY CONDUIT SHALL BE THREE. ADDITIONAL WIRES ARE ACCEPTABLE IF WIRE SIZE IS INCREASED TO ALLOW FOR DERATING PER CODE. PROVIDE ADDITIONAL WIRES FOR SWITCHING AS REQUIRED.
- I. REFER TO LIGHTING FIXTURE SCHEDULE ON E201 FOR LIGHT FIXTURE TYPES AND REQUIREMENTS.
- J. CONNECT ALL EXIT SIGNS AND EMERGENCY LIGHTING UNITS TO THE INDICATED CIRCUIT WITH A SEPARATE AND UN-SWITCHED CONDUCTOR BYPASSING ALL CONTROLS AND CONTACTORS. REFER TO MANUFACTURER'S WRITTEN INSTRUCTIONS FOR PROPER INSTALLATION AND TESTING.
- K. THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED HVAC EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE EXACT LOCATIONS AND ELECTRICAL REQUIREMENTS OF ALL HVAC EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO HVAC EQUIPMENT SUBSTITUTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- L. FIRE ALARM, AUDIO/VIDEO AND SURVEILLANCE SYSTEMS BY OTHERS.
- M. PROVIDE ALL ADDITIONAL EXTRA CONDUCTORS NEEDED FOR UNSWITCHED AND SWITCH LEGS AND TRAVELERS BETWEEN SWITCHES.
- N. REFER TO NATIONAL ACCOUNT LIGHTING FIXTURE SCHEDULE ON SHEET E203 FOR LIGHTING FIXTURE INFORMATION.

- 1. LIGHTING CONTROLS POWER PACK. SENSORWORX SWX-900 SERIES OR PRE-BID APPROVED EQUAL. PROVIDE AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND NEC REQUIREMENTS.
- 2. LIGHTING CONTROLS CEILING MOUNTED OCCUPANCY SENSOR. SENSORWORX SWX-200 SERIES OR PRE-BID APPROVED EQUAL. PROVIDE AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND NEC REQUIREMENTS.
- 3. OCCUPANCY SENSING WALL SWITCH. SENSORWORX SWX-100 SERIES OR PRE-BID APPROVED EQUAL. PROVIDE AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND NEC REQUIREMENTS.
- PHOTOCELL PROVIDED WITH FIXTURE TO CONTROL ONLY THE ASSOCIATED FIXTURE.
- 5. MAKE CONNECTION TO POWER AND CONTROLS FOR OVERHEAD COILING DOOR PER MANUFACTURER'S RECOMMENDATIONS AND NEC REQUIREMENTS.
- 6. NOT USED ON THIS SHEET.
- 7. CONNECT EMERGENCY/EXIT LIGHT VIA UNSWITCHED HOT CONDUCTOR.
- 8. NEW 225A FRAME/200A MCB, 208Y/120V, 34, 4W, 42-POLE PANELBOARD. REFER TO SINGLE LINE DIAGRAM AND PANELBOARD SCHEDULES ON SHEET E-201 FOR MORE INFORMATION.

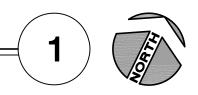






SCALE : 1/8" = 1'-0"

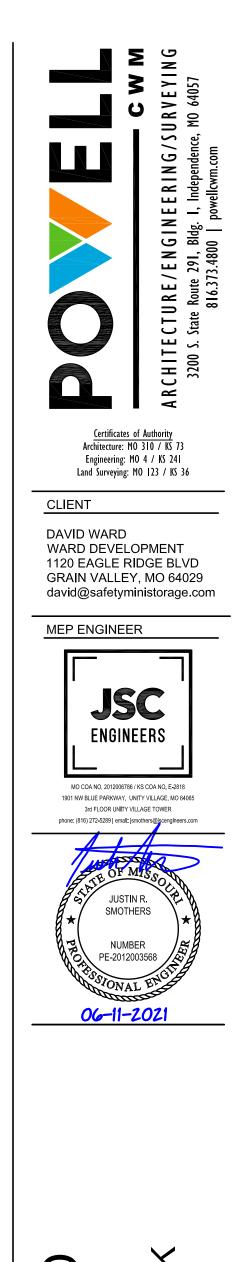
EQUIPMENT POWER PLAN - WEST



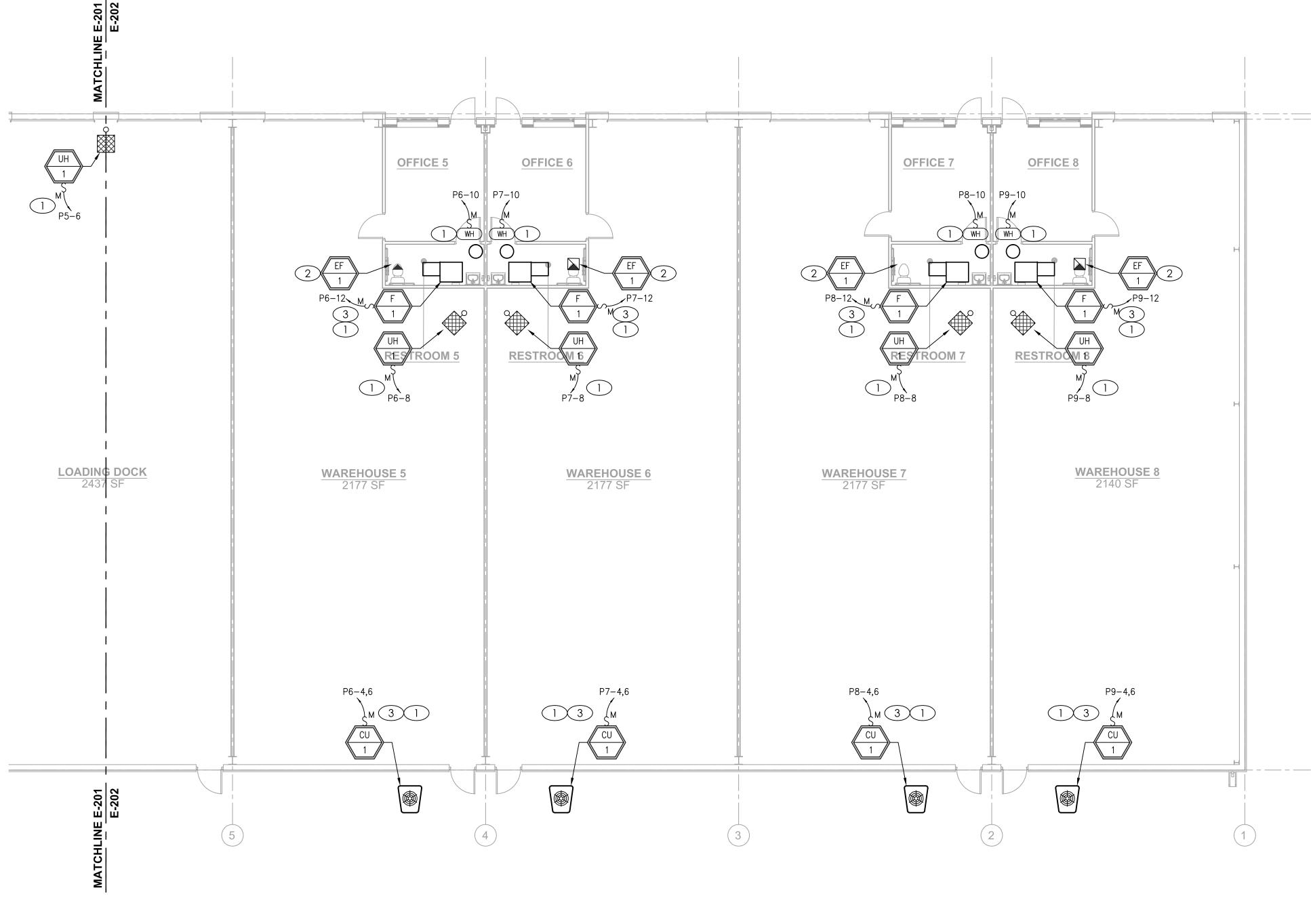
GENERAL NOTES

- A. DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. REFER TO ARCHITECTURAL PLANS OR FIELD MEASUREMENTS FOR DIMENSIONS.
- B. ALL WORK SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND ALL LOCAL BUILDING CODES AND AMENDMENTS.
- C. ALL ROOF AND WALL PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PROVIDE ALL REQUIRED SLEEVES, FLASHINGS, CURBS, REINFORCED ANGLES, SUPPORTING FRAMES, ETC. UNLESS THEY ARE SPECIFICALLY CALLED OUT TO BE FURNISHED BY OTHERS.
- D. COORDINATE ALL WORK WITH OTHER TRADES AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACE AVAILABLE, AND WITHOUT INTERFERENCES.
- E. THIS CONTRACTOR SHALL PERFORM ALL WORK INDICATED AND/OR AS REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF THE ELECTRICAL SYSTEMS.
- F. ALL WIRING SHALL BE IN APPROVED RACEWAY.
- G. WIRE SIZE SHALL BE MINIMUM #12 AWG, THWN SOLID COPPER UNLESS OTHERWISE NOTED. PROVIDE GROUND WIRE WHERE REQUIRED BY CODE. INCREASE WIRE SIZE TO COMPENSATE FOR VOLTAGE DROP WHERE TOTAL LENGTH OF ANY BRANCH EXCEEDS 100 FEET.
- H. MAXIMUM NUMBER OF UNGROUNDED WIRES IN ANY CONDUIT SHALL BE THREE. ADDITIONAL WIRES ARE ACCEPTABLE IF WIRE SIZE IS INCREASED TO ALLOW FOR DERATING PER CODE. PROVIDE ADDITIONAL WIRES FOR SWITCHING AS REQUIRED.
- I. REFER TO LIGHTING FIXTURE SCHEDULE ON E201 FOR LIGHT FIXTURE TYPES AND REQUIREMENTS.
- J. CONNECT ALL EXIT SIGNS AND EMERGENCY LIGHTING UNITS TO THE INDICATED CIRCUIT WITH A SEPARATE AND UN-SWITCHED CONDUCTOR BYPASSING ALL CONTROLS AND CONTACTORS. REFER TO MANUFACTURER'S WRITTEN INSTRUCTIONS FOR PROPER INSTALLATION AND TESTING.
- K. THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED HVAC EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE EXACT LOCATIONS AND ELECTRICAL REQUIREMENTS OF ALL HVAC EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO HVAC EQUIPMENT SUBSTITUTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- L. FIRE ALARM, AUDIO/VIDEO AND SURVEILLANCE SYSTEMS BY OTHERS.
- M. PROVIDE ALL ADDITIONAL EXTRA CONDUCTORS NEEDED FOR UNSWITCHED AND SWITCH LEGS AND TRAVELERS BETWEEN SWITCHES.
- N. REFER TO NATIONAL ACCOUNT LIGHTING FIXTURE SCHEDULE ON SHEET E203 FOR LIGHTING FIXTURE INFORMATION.

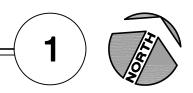
- 1. MAKE CONNECTION TO DIV 22/23 EQUIPMENT PER MANUFACTURER'S RECOMMENDATION AND NEC REQUIREMENTS. COORDINATE WORK WITH DIVISION 22/23 CONTRACTOR PRIOR TO CONSTRUCTION.
- 2. WIRE SO THAT ON/OFF OPERATION OF EXHAUST FAN COORDINATES WITH LIGHTING IN ROOM.
- 3. MAKE CONNECTION FROM INDOOR TO OUTDOOR UNIT PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE WORK WITH DIVISION 23 CONTRACTOR.







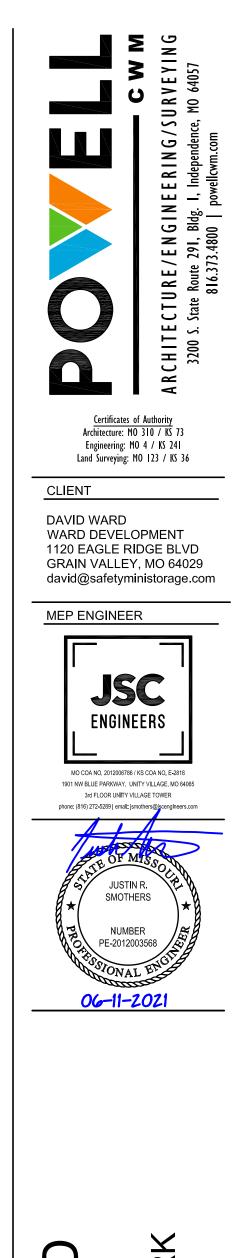
POWER PLAN - EAST SCALE : 1/8" = 1'-0"



GENERAL NOTES

- A. DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. REFER TO ARCHITECTURAL PLANS OR FIELD MEASUREMENTS FOR DIMENSIONS.
- B. ALL WORK SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND ALL LOCAL BUILDING CODES AND AMENDMENTS.
- C. ALL ROOF AND WALL PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PROVIDE ALL REQUIRED SLEEVES, FLASHINGS, CURBS, REINFORCED ANGLES, SUPPORTING FRAMES, ETC. UNLESS THEY ARE SPECIFICALLY CALLED OUT TO BE FURNISHED BY OTHERS.
- D. COORDINATE ALL WORK WITH OTHER TRADES AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACE AVAILABLE, AND WITHOUT INTERFERENCES.
- E. THIS CONTRACTOR SHALL PERFORM ALL WORK INDICATED AND/OR AS REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF THE ELECTRICAL SYSTEMS.
- F. ALL WIRING SHALL BE IN APPROVED RACEWAY.
- G. WIRE SIZE SHALL BE MINIMUM #12 AWG, THWN SOLID COPPER UNLESS OTHERWISE NOTED. PROVIDE GROUND WIRE WHERE REQUIRED BY CODE. INCREASE WIRE SIZE TO COMPENSATE FOR VOLTAGE DROP WHERE TOTAL LENGTH OF ANY BRANCH EXCEEDS 100 FEET.
- H. MAXIMUM NUMBER OF UNGROUNDED WIRES IN ANY CONDUIT SHALL BE THREE. ADDITIONAL WIRES ARE ACCEPTABLE IF WIRE SIZE IS INCREASED TO ALLOW FOR DERATING PER CODE. PROVIDE ADDITIONAL WIRES FOR SWITCHING AS REQUIRED.
- I. REFER TO LIGHTING FIXTURE SCHEDULE ON E201 FOR LIGHT FIXTURE TYPES AND REQUIREMENTS.
- J. CONNECT ALL EXIT SIGNS AND EMERGENCY LIGHTING UNITS TO THE INDICATED CIRCUIT WITH A SEPARATE AND UN-SWITCHED CONDUCTOR BYPASSING ALL CONTROLS AND CONTACTORS. REFER TO MANUFACTURER'S WRITTEN INSTRUCTIONS FOR PROPER INSTALLATION AND TESTING.
- K. THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED HVAC EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE EXACT LOCATIONS AND ELECTRICAL REQUIREMENTS OF ALL HVAC EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO HVAC EQUIPMENT SUBSTITUTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- L. FIRE ALARM, AUDIO/VIDEO AND SURVEILLANCE SYSTEMS BY OTHERS.
- M. PROVIDE ALL ADDITIONAL EXTRA CONDUCTORS NEEDED FOR UNSWITCHED AND SWITCH LEGS AND TRAVELERS BETWEEN SWITCHES.
- N. REFER TO NATIONAL ACCOUNT LIGHTING FIXTURE SCHEDULE ON SHEET E203 FOR LIGHTING FIXTURE INFORMATION.

- 1. MAKE CONNECTION TO DIV 22/23 EQUIPMENT PER MANUFACTURER'S RECOMMENDATION AND NEC REQUIREMENTS. COORDINATE WORK WITH DIVISION 22/23 CONTRACTOR PRIOR TO CONSTRUCTION.
- 2. WIRE SO THAT ON/OFF OPERATION OF EXHAUST FAN COORDINATES WITH LIGHTING IN ROOM.
- 3. MAKE CONNECTION FROM INDOOR TO OUTDOOR UNIT PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE WORK WITH DIVISION 23 CONTRACTOR.



LOT 10 LAKEWOOI	BUSINESS PARK	LOT 10 I-470 BUSINESS PAR	LEE'S SUMMIT, MO 64064
REVISIONS NO. DATE / DESCRIPTION			
PROJECT ISSUE DA ISSUED F PE	ATE: 0	1-049 6/11/2	
POW	rical e /er pla	N - EAS	

PANELBOARD: P5 (NEW) BUS AMPS: 225A MAIN SIZE/TYPE: 200A MCB						FED FROM: SERVICE ENTRANCE AIC RATING: 42000 FULLY RATED SERVES: TENANT SPACE MOUNTING: SURFACE								LINE-SIDE LUGS: MECHANICAL EQUIPMENT GROUND BUS			
- L.		ΓS/PHASE: 208Υ/120V, ΓΙΟ <mark>Ν: 1</mark>	3PH, 4VV								HOUS	SE					
(CKT	DESCRIPTIC	N	VOL	TAMPS/P	HASE	WRE	BKR	Р	Ρ	BKR	WRE	VOLT	AMPS/PH	ASE	DESCRIPTION	С
	NO.			A	В	С	NO.	AMP			AMP	NO.	Α	В	С		N
F	1	LTG - WAREHOUSE		880			12	20	1	1	20	12	1,000			PWR - GARAGE DOOR 1	
	3	RCPT - WAREHOUSE	GEN		720		12	20	1	1	20	12		1,000		PWR - GARAGE DOOR 2	4
	5	SPARE						20	1	1	20	12			600	PWR - UH-1	
	7	SPARE						20	1	1	20					SPARE	8
		SPARE						20	1	1	20					SPARE	1
		SPARE						20	1	1	20					SPARE	1
		SPARE						20	1	1	20					SPARE	1
		SPARE						20	1	1	20					SPARE	1
Γ		SPARE						20	1	1	20					SPARE	1
Γ		SPARE						20	1	1	20					SPARE	2
	21	PROVISIONAL SPACE							1	1						PROVISIONAL SPACE	2
		PROVISIONAL SPACE							1	1						PROVISIONAL SPACE	2
Γ	25	PROVISIONAL SPACE							1	1						PROVISIONAL SPACE	2
	27	PROVISIONAL SPACE							1	1						PROVISIONAL SPACE	2
	29	PROVISIONAL SPACE							1	1						PROVISIONAL SPACE	3
		PROVISIONAL SPACE							1	1						PROVISIONAL SPACE	3
F		PROVISIONAL SPACE							1	1						PROVISIONAL SPACE	3
Γ		PROVISIONAL SPACE							1	1						PROVISIONAL SPACE	3
F	37	PROVISIONAL SPACE							1	1	\sim			\frown	\frown	PROVISIONAL SPACE	3
F	39 41	LTG - SITE 1			140	140	10	20	1	1	20	10		105	105	LTG - SITE 2	4
	$\overline{\ }$	SUBTOTAL		880	860	140		\sim	\geq		\wedge	\sim	1,000	1,105	705	SUBTOTAL	
TOTAL PHASE A - VA 1,880 LOAD CONN.				CONN.	VA	DF		LO			C	onn. Va	DF				
AMPS 16 COOLING				0		RE	FRIG				1.00						
		TOTAL PHASE B - VA	1,965	HEATING		600)	1.00			SN/DIS				1.25	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
		AMPS	16	LIGHTIN	G	1,370)	1.25	1		CHEN				1.00	~	
		TOTAL PHASE C - VA	845	RECEPT	ACLES	720)	1.0/.5	5	EX	ISTIN	G			1.00	1	
		AMPS	7	MOTORS	3	2,000)	1.00			g Mo				1.25	TOTAL DEMAND	
		TOTAL PNLBD - VA	4,690	SUPP HI				1.00				NDW			1.25	5,033 V	/A
Г		AMPS	13	MISC EC				1.00	-	II T	G TRA	CK			1.00	14.	Δ

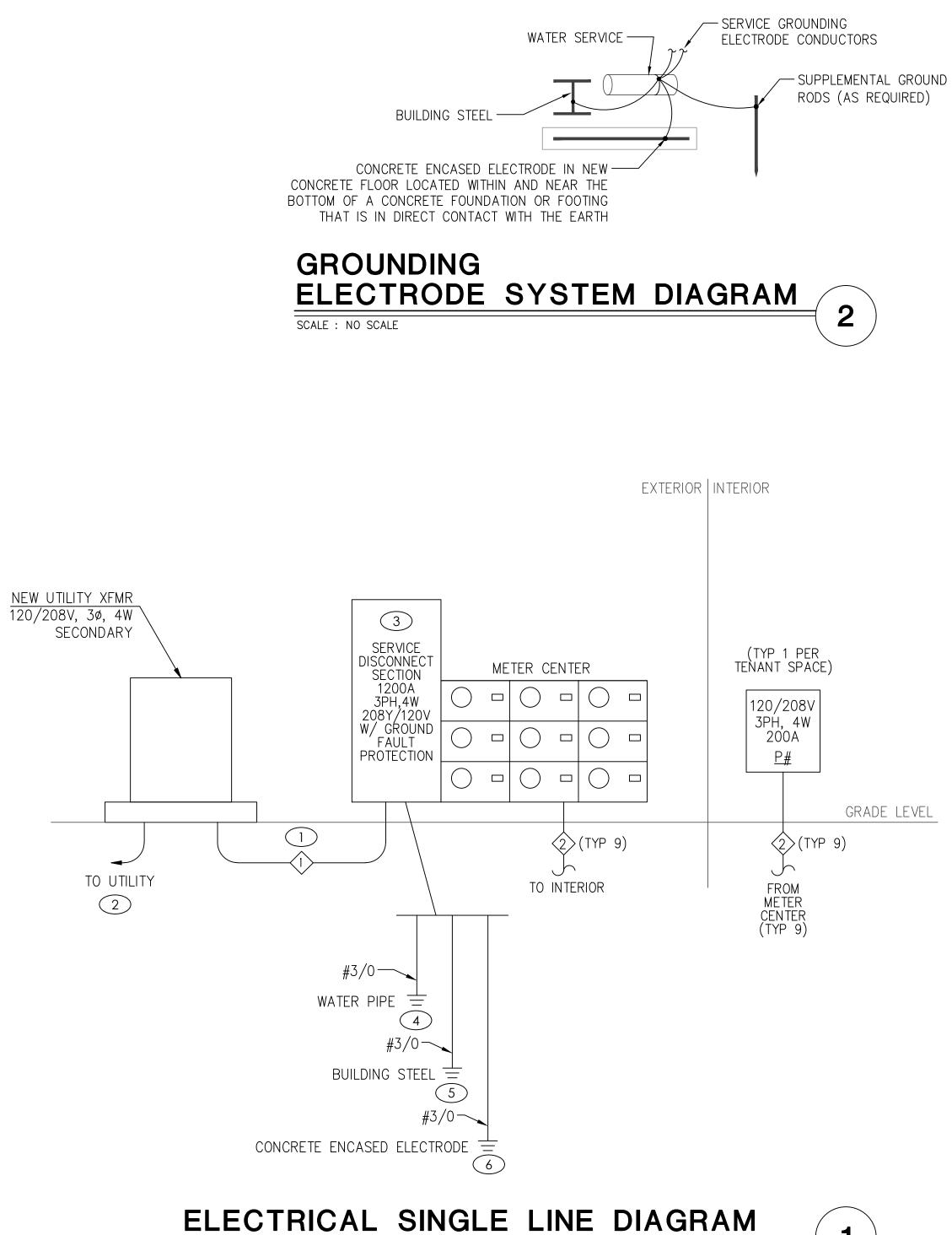
BUS MAIN /OL ⁻	NELBOARD: P1,2,3 AMPS: 225A SIZE/TYPE: 200A MCB S/PHASE: 208Y/120V, 3PH, 4\ FION: 1) (NEV	V)	AIC R SER\ MOUI	ROM: ATINC /ES: T NTINC	9: EN/ 6: SI		SPAC ACE	lly ra E	ICE ENTI TED	RANCE		LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND	
скт	DESCRIPTION	VOL	TAMPS/P	HASE	WRE	BKR	Р	Р	BKR	WRE	VOL	TAMPS/PH	HASE	DESCRIPTION	CK
NO.		A	В	С	NO.	AMP			AMP	NO.	Α	B	С		NO
1	LTG - WAREHOUSE	851			12	20	1	1	20	12	1,000			PWR - GARAGE DOOR	2
	LTG - OFFICE/RR		76		12	20	1	1	30	10		1,987			4
5	RCPT - OFFICE QUAD			360	12	20	1	1	-30	10			1,987	PWR - CU-1	6
7	RCPT - OFFICE GEN	540			12	20	1	1	20	12	600			PWR - UH-1	8
9	RCPT - RR GFI		180		12	20	1	1	20	12		1,650		PWR - WH	10
11	RCPT - WAREHOUSE GEN			720	12	20	1	1	15	12			924	PWR - F-1	12
13	SPARE					20	1	1	30	10	1,500			PWR - EWH-1 (PNLBD 1 ONLY)	14
15	SPARE					20	1	1	30	10		1,500		PVR - EVH-1 (PINEBD 1 OINET)	16
17	SPARE					20	1	1	20					SPARE	18
19	SPARE					20	1	1	20					SPARE	20
21	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	22
23	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	24
25	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	26
27	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	28
29	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	3
31	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	3
33	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	3
35	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	3
37	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	3
39	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	4
41	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	4
	SUBTOTAL	1,391	256	1,080							3,100	5,137	2,911	SUBTOTAL	
	TOTAL PHASE A - VA 4,491	LOAD		CONN. \	/A	DF		LO	AD		C	ONN. VA	DF		
	AMPS 37	COOLIN	G	2,772		0		RE	FRIG				1.00		
	TOTAL PHASE B - VA 5,393	HEATIN	G	5,250		1.00	1	SIC	GN/DIS	SP			1.25	1	
	AMPS 45	LIGHTIN	IG	927		1.25		KIT		V			1.00	1	
			1,800					ISTIN	G			1.00	1		
	AMPS 33	MOTOR	S	1,924		1.00	1	LR	G MO	TOR			1.25	TOTAL DEMAND	1
	TOTAL PNLBD - VA 13,87	5 SUPP H	EAT	Í		1.00	°	SH	NWO	NDW			1.25	11,335 VA	1
	AMPS 39	MISC E	QUIP	1,202		1.00	Ŷ	LT	G TRA	CK			1.00	31 A	1

SCHEDULE IS TYPICAL FOR PANELBOARDS "P#" LISTED

ELECTRICAL PANEL SCHEDULES

SCALE : NO SCALE

		ELECTR		Shting sc	HEDULE (OR EQUAL. VERIF	Y ALL SELECTIONS AND FINISHES WITH OWNER AND ARCHITECT PRIOR TO ORDERING).	
FIXTURE TYPE		MANUFACTURER	VOLT AMPS	MOUNTING	LAMP TYPE	REMARKS	VOLT
	NAME	SERIES					
A	LITHONIA	EPANL	31	RECESSED/GRID	INCLUDED 4000K LED	LED 2'X4' FLAT PANEL - 4000LM OUTPUT HIGH EFFICIENCY	MVOLT
В	LITHONIA	WF6	14	RECESSED	INCLUDED 2700K LED	WAFER-STYLE 6" LED DOWNLIGHT	MVOLT
С	LITHONIA	CPHB 12LM MVOLT 40K	88	SUSPENDED	INCLUDED 4000K LED	COMPACT HIGH-BAY LED WAREHOUSE FIXTURE - 12000 LUMEN OUTPUT	MVOLT
W	LITHONIA	WDGE3	59	WALL	INCLUDED 4000K LED	EXTERIOR WALL PACK - P2 PACKAGE - PROVIDE WITH 'PE' PHOTOCELL OPTION	MVOLT
9 <u></u> 9	LITHONIA	ELM2L-SDRT	5	SURFACE	INCLUDED LED	EMERGENCY EGRESS LIGHTING UNIT WITH 90 MIN. BATTERY PACK	120
	LITHONIA	LHQM-LED-R-SD	5	SURFACE	INCLUDED LED	EMERGENCY EXIT EGRESS COMBO LIGHTING UNIT WITH RED FACE EXIT SIGN AND 90 MIN. BATTERY PACK	120
ØH	LITHONIA	ELA-B-T-QWP-L0309-SD	5	SURFACE	INCLUDED LED	OUTDOOR EMERGENCY REMOTE EGRESS LIGHTING UNIT	120



SCALE : NO SCALE

3

	FEEDER SCHEDULE
FEEDER NUMBER	CONDUIT AND CONDUCTOR SIZES
$\langle 1 \rangle$	(4) 4" EA W/ 4 #500KCM AL
$\langle 2 \rangle$	(1) 2" W/ 4 #3/0 CU & #6 CU GND
VOLTAGE FEEDERS	GIGN PROFESSIONAL HAS PERFORMED ALL THE REQUIRED DROP CALCULATIONS FOR ALL BRANCH CIRCUITS AND PER THE NATIONAL ELECTRICAL CODE, ARTICLE (1) FPN NO. 4.
THE DES	GIN PROFESSIONAL HAS PERFORMED ALL THE REQUIRED

THE DESIGN PROFESSIONAL HAS PERFORMED ALL THE REQUIRED SHORT CIRCUIT CALCULATIONS AND THE AIC RATING INDICATED FOR EACH DEVICE IS ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.

GRADE LEVEL

KEYED SLD NOTES

- 1. PROVIDE NEW CONDUCTORS TO UTILITY SOURCE. VERIFY EXACT LOCATION AND REQUIREMENTS WITH UTILITY PRIOR TO ROUGH-IN.
- 2. CONTRACTOR TO PROVIDE AND INSTALL TWO 4" PVC CONDUITS FOR SERVICE PRIMARY TO LOCATION DETERMINED BY UTILITY.
- 3. NEW DISCONNECT WITH GROUND FAULT PROTECTION PER UTILITY REQUIREMENTS.
- 4. PROVIDE NEW GROUND PER NEC 250.52(A)(1).
- 5. PROVIDE NEW GROUND PER NEC 250.52(A)(2).
- 6. PROVIDE NEW GROUND PER NEC 250.52(A)(3).

