AHU-5B, ASHRAE 62.1-2016 CODE REVIEW VENTILATION FOR MULTIPLE-ZONE RECIRCULATING SYSTEMS

System Type Ceiling supply of warm air 15 deg. F or more above space temperature and **Air Distribution Effectiveness, E_Z** 0.8 **Diversity** 1.00 **per Section 6.2.5.3**

ZONE TYPE	ROOM NAME/ NUMBER	OCCUPANCY CLASSIFICATION	A_Z ZONE AREA (FT^2)	IS ACTUAL OCCUPANCY KNOWN	P_Z KNOWN OCCUPANCY	$1000P_Z/A_Z$, OCCUPANCY DENSITY (PERSONS PER 1000 FT^2)	R_P, COMBINED OUTDOOR AIR FLOWRATE (CFM/PERSON)	R_A, OUTDOOR AIR FLOWRATE (CFM/SQFT)	TU NUMBER	TU MAX CFM TO ZONE	TU MIN CFM TO ZONE	TU % MIN	MAXIMUM SUPPLY TO ZONE (CFM)	V_{PZ}, MINIMUM SUPPLY TO ZONE (CFM)	R_PP_Z, OCCUPANT OUTDOOR AIR (CFM)	R_AA_Z, AREA OUTDOOR AIR (CFM)	$V_{OZ}=(R_PP_Z+R_AA_Z)/E_Z$, ZONE OUTDOOR AIR (CFM)	$Z_{P(D)}=V_{OZ}/(V_{PZ})$, ZONE OUTDOOR AIR FRACTION	$E_{VZ}=1+X_S-Z_D$, ZONE VENTILATION EFFICIENCY	REMARKS
Office_Buildings	VACANT SPACE SM	Office	379.3	No	N/A	5	17	N/A	509B	1,865.0	652.8	35%	1,865	653	32	0.0	40.3	0.173	0.984	
	VACANT SPACE LG	Office	2145.1	No	N/A	5	17	N/A	510B	955.0	334.3	35%	2,875	1,006	182	0.0	227.9			
									511B	960.0	336.0	35%								
									512B	960.0	336.0	35%								
	514 OFFICE	Office	125.4	No	N/A	5	17	N/A	505B	55.0	19.3	35%	55	19	11	0.0	13.3			
	515 OFFICE	Office	125.4	No	N/A	5	17	N/A	505B	55.0	19.3	35%	55	19	11	0.0	13.3			
	516 OFFICE	Office	125.4	No	N/A	5	17	N/A	505B	55.0	19.3	35%	55	19	11	0.0	13.3			
	517 OFFICE	Office	175.3	No	N/A	5	17	N/A	503B	455.0	159.3	35%	455	159	15	0.0	18.6			
	518 OPEN CUBICLES	Office	488.1	No	N/A	5	17	N/A	502B	420.0	147.0	35%	835	292	41	0.0	51.9			
									513B	415.0	145.3	35%								
	519 OFFICE	Office	223.1	No	N/A	5	17	N/A	501B	425.0	148.8	35%	425	149	19	0.0	23.7			
	508 WORK CENTER	Office	173.7	No	N/A	5	17	N/A	504B	340.0	170.0	50%	340	170	15	0.0	18.5			
	507 RECEPTION	Office	178.8	No	N/A	5	17	N/A	504B	120.0	60.0	50%	120	60	15	0.0	19.0			
General	502 CORR	corridors	184.8	Yes	0	N/A	0	0.06	506B	50.0	17.5	35%	50	18	0	11.1	13.9	0.708	0.449	
	503 CORR	corridors	101.3	Yes	0	N/A	0	0.06	505B	30.0	10.5	35%	30	11	0	6.1	7.6			
	504 CORR	corridors	220.9	Yes	0	N/A	0	0.06	505B	60.0	21.0	35%	60	21	0	13.3	16.6			
	506 CORR	corridors	191.3	Yes	0	N/A	0	0.06	504B	50.0	25.0	50%	50	25	0	11.5	14.4			
General	512 HUDDLE	Conference/meeting	165.6	No	N/A	50	6	N/A	507B	860.0	301.0	35%	860	301	50	0.0	62.1	0.218	0.939	
General	512B HUDDLE	Conference/meeting	194.0	No	N/A	50	6	N/A	508B	910.0	318.5	35%	910	319	58	0.0	72.8			
Office_Buildings	501 LOBBY	Main entry lobbies	229.0	No	N/A	10	11	N/A	506B	465.0	162.8	35%	465	163	25	0.0	31.5	0.194	0.964	
Office_Buildings	510 HD FILES	Occupiable storage rooms for dry materials	100.0	No	N/A	2	35	N/A	504B	50.0	25.0	50%	50	25	7	0.0	8.8	0.374	0.783	
	511 FILES	Occupiable storage rooms for dry materials	135.4	No	N/A	2	35	N/A	504B	60.0	30.0	50%	60	30	9	0.0	11.8			

Table 6.2.5.2 Calculations: Max $Z_{P(D)}$= N/A; E_V= N/A

Appendix A Calculations: $X_S=V_{OU}/V_{PS}$= 0.157; $E_V=Min\{E_{VZ}\}$ 0.45

Use Appendix A to calculate Ventilation Efficiency, $E_{V(z)}$: Uncorrected Outside Air Total, V_{OU}= 543; Supply Air Total at Minimum, $V_{PS}=SUM\{V_{PZ}\}$= 3,458; Corrected Outside Air Total Requirement, $V_{OT}=V_{OU}/E_{V(z)}$= 1,209; Provided Outside Air= 1,470

FCU-501, ASHRAE 62.1-2016 CODE REVIEW VENTILATION FOR MULTIPLE-ZONE RECIRCULATING SYSTEMS

System Type Ceiling supply of warm air 15 deg. F or more above space **Air Distribution Effectiveness, E_Z** 0.8 **Diversity** 1.00 **per Section 6.2.5.3**

ZONE TYPE	ROOM NAME/ NUMBER	OCCUPANCY CLASSIFICATION	A_Z ZONE AREA (FT^2)	IS ACTUAL OCCUPANCY KNOWN	P_Z KNOWN OCCUPANCY	$1000P_Z/A_Z$, OCCUPANCY DENSITY (PERSONS PER 1000 FT^2)	R_P, COMBINED OUTDOOR AIR FLOWRATE (CFM/PERSON)	R_A, OUTDOOR AIR FLOWRATE (CFM/SQFT)	TU NUMBER	TU MAX CFM TO ZONE	TU MIN CFM TO ZONE	TU % MIN	MAXIMUM SUPPLY TO ZONE (CFM)	V_{PZ}, MINIMUM SUPPLY TO ZONE (CFM)	R_PP_Z, OCCUPANT OUTDOOR AIR (CFM)	R_AA_Z, AREA OUTDOOR AIR (CFM)	$V_{OZ}=(R_PP_Z+R_AA_Z)/E_Z$, ZONE OUTDOOR AIR (CFM)	$Z_{P(D)}=V_{OZ}/(V_{PZ})$, ZONE OUTDOOR AIR FRACTION	$E_{VZ}=1+X_S-Z_D$, ZONE VENTILATION EFFICIENCY	REMARKS
Office_Buildings	523 Elect	Electrical and Telecom rooms	#N/A	No	N/A	0	0	N/A	FCU-501		0	35%	0	0		0	0	--	N/A	Exhaust requirement only per Section 6.2.8 & Table 6-4

Table 6.2.5.2 Calculations: Max $Z_{P(D)}$= N/A; E_V= N/A

Appendix A Calculations: $X_S=V_{OU}/V_{PS}$= #DIV/0!; $E_V=Min\{E_{VZ}\}$ 0.00

Use Appendix A to calculate Ventilation Efficiency, $E_{V(z)}$: Uncorrected Outside Air Total, V_{OU}= 0; Supply Air Total at Minimum, $V_{PS}=SUM\{V_{PZ}\}$= 0; Corrected Outside Air Total Requirement, $V_{OT}=V_{OU}/E_{V(z)}$= 0; Provided Outside Air= 0

	FIXTURE	WCs	URINALS	SHOWER	KITCHEN	JANITOR	LOCKER ROOMS
	CFM/FIXTURE	70	50	50	100		
	CFM/SF					1	0.25

	AREA	SUPPLY AIR (CFM)	WC (#)	URINAL (#)	SHOWER (#)	KITCHEN (#)	JANITOR CLOSSET (Y/N)	LOCKER ROOM (Y/N)	REQUIRED EA	AIR BALANCE	SCHEDULED EA	SCHEDULED AIR BALANCE	AC/H
554 LACTATION	52.5	55						1	13	42	65	-10	7.4
557 WOMENS	168.8	120	3						210	-90	335	-215	11.9
558 MENS	177.9	125	2	2					240	-115	355	-230	12.0
559 TOILET	88.0	65	1						70	-5	175	-110	11.9
555 JANITOR	18.9	0					1		19	-19	40	-40	12.7
552 BREAK	232.5	1035					1		N/A	N/A	1050	-15	27.1

TOTAL OA	2,820	
TOTAL EA	2020	-620
NET AIR BALANCE	800	

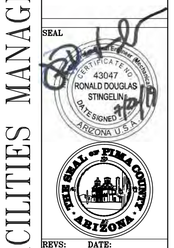
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ADMIN WEST FIFTH FLOOR TI
MECHANICAL CALCULATIONS

ADMINISTRATION WEST BUILDING
150 WEST CONGRESS
TUCSON, AZ

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DRWN BY: AG
CKD BY: JMZ
DATE: 2019/07/22
SCALE: NTS
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33 OF 48
W.O. NUMBER
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PLUMBING ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	NTS	NOT TO SCALE
BFP	BACKFLOW PREVENTER	OC	ON CENTER
CD	CONDENSATE DRAIN	OD	OUTSIDE DIAMETER
CL	CENTERLINE	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
CO	CLEAN OUT	OFOI	OWNER FURNISHED OWNER INSTALLED
D	DRAIN	PG	PRESSURE GAUGE
(E)	EXISTING	POC	POINT OF CONNECTION
FCO	FLOOR CLEAN OUT	RWL	ROOF WATER LEADER
FD	FLOOR DRAIN	SOV	SHUT OFF VALVE
GCO	GRADE CLEAN OUT	SS	STAINLESS STEEL
HB	HOSE BIBB	TEMP	TEMPERATURE
IW	INDIRECT WASTE	TYP	TYPICAL
MAV	MANUAL AIR VENT	VTR	VENT THROUGH ROOF
(N)	NEW	WCO	WALL CLEAN OUT
N/A	NOT APPLICABLE		
NIC	NOT IN CONTRACT		
NOM	NOMINAL		
NPS	NOMINAL PIPE SIZE		

PLUMBING SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
	DCW	DOMESTIC COLD WATER
	DHW	DOMESTIC HOT WATER
	DHWR	DOMESTIC HOT WATER RETURN
	WP	SANITARY WASTE PIPE
	VP	SANITARY VENT PIPE
		PIPE ELBOW UP
		PIPE ELBOW DOWN
		BACKFLOW PREVENTER (DOUBLE CHECK)
	SOV	BALL VALVE (SHUT OFF VALVE)
	MBV	MANUAL BALANCE VALVE

GENERAL SYMBOLS LEGEND

POC — POINT OF CONNECTION (NEW TO EXISTING)

DEMOLITION (TO BE REMOVED)

1 / 101 — SECTION NUMBER SHOWN ON SHEET NUMBER

DIMENSION LINE

1 / P301 — DETAIL NUMBER SHOWN ON SHEET NUMBER

GENERAL NOTES

A. A MINIMUM OF 7 DAYS NOTICE SHALL BE GIVEN TO PIMA COUNTY FACILITIES MANAGEMENT DEPARTMENT (PCFM) IN WRITING PRIOR TO UTILITY SERVICE SHUTDOWNS. AT A MINIMUM, THE NOTICE SHALL INDICATE THE AFFECTED UTILITY, ANTICIPATED DURATION OF OUTAGE, WORK TO BE PERFORMED, AND DATE/TIME OF COMMENCEMENT AND COMPLETION. OUTAGES SHALL BE SCHEDULED AFTER HOURS, WEEKENDS AND/OR HOLIDAYS UNLESS OTHERWISE ARRANGED WITH PCFM. APPROVAL FROM PCFM SHALL BE OBTAINED (IN WRITING) PRIOR TO START OF WORK.

B. ALL WORK THAT WILL IMPACT ADDITIONAL FLOORS SHALL BE COORDINATED WITH PIMA COUNTY FACILITIES MANAGEMENT DEPARTMENT (IN WRITING), 7 DAYS PRIOR TO SCHEDULED WORK. WORK SHALL BE SCHEDULED AFTER HOURS, WEEKENDS AND/OR HOLIDAYS UNLESS OTHERWISE ARRANGED WITH PCFM. APPROVAL FROM PCFM SHALL BE OBTAINED (IN WRITING) PRIOR TO START OF WORK.

C. ALL DRAWINGS ARE DIAGRAMMATIC AND INDICATIVE OF THE INFORMATION AVAILABLE AT THE TIME OF DESIGN WHICH MAY NOT PRECISELY REFLECT FIELD CONDITIONS. FIELD VERIFY EXISTING CONDITIONS PRIOR TO BIDDING/CONSTRUCTING THE PROJECT. ANY CONFLICTS DISCOVERED BY THE CONTRACTOR WHICH MAY AFFECT THE SCOPE OF WORK SHALL BE REPORTED TO THE ARCHITECT & ENGINEER PRIOR TO BIDDING.

D. PROVIDE SHOP DRAWINGS TO ARCHITECT/ENGINEER PRIOR TO PERFORMING WORK.

PLUMBING FIXTURE SCHEDULE

TAG	FIXTURE COMPONENT	MANUFACTURER	MODEL	FINISH	DESCRIPTION
WC-1	WATER CLOSET	KOHLER	WELLCOMME ULTRA K-96053	WHITE	FLOOR MOUNT, SIPHON JET, 1.1 TO 1.6 GPF, 10" OR 12" ROUGH-IN, 35 PSI STATIC, 25 PSI RESIDUAL
	SEAT	KOHLER	LUSTRA K-4666	WHITE	SOLID PLASTIC, ELONGATED, OPEN FRONT, WITH INTEGRAL BUMPERS
	FLUSH VALVE	SLOAN	WES 111-1.6/1.1	POLISHED CHROME	DUAL FLUSH, MANUAL, GREEN HANDLE
WC-2	WATER CLOSET	KOHLER	HIGHCLIFF K-96057	WHITE	FLOOR MOUNT, ADA, SIPHON JET, 1.1 TO 1.6 GPF, 10" OR 12" ROUGH-IN, 35 PSI STATIC, 25 PSI RESIDUAL
	SEAT	KOHLER	LUSTRA K-4666	WHITE	SOLID PLASTIC, ELONGATED, OPEN FRONT, WITH INTEGRAL BUMPERS
	FLUSH VALVE	SLOAN	WES 111-1.6/1.1	POLISHED CHROME	DUAL FLUSH, MANUAL, GREEN HANDLE
UR-1	URINAL	SLOAN	WES-1000	WHITE	WALL-MOUNTED, WATERLESS, WITH WALL-MOUNTING BRACKET AND ONE REPLACEABLE LIQUID SEALANT CARTRIDGE. RIM HEIGHT 24"
UR-2	URINAL	SLOAN	WES-1000	WHITE	ADA, WALL-MOUNTED, WATERLESS, WITH WALL-MOUNTING BRACKET AND ONE REPLACEABLE LIQUID SEALANT CARTRIDGE. RIM HEIGHT 16.5"
L-1	LAVATORY	KOHLER	PENNINGTON K-2196-1	WHITE	DROP-IN, SINGLE-HOLE, OVAL BASIN
	P-TRAP	MCGUIRE	B8902CNCF	POLISHED CHROME	CHROME PLATED CAST BRASS, 1-1/4" TRAP, TRAP ARM, AND FLANGE
	DRAIN	CHICAGO	327XCP	POLISHED CHROME	1-1/4"GRID STRAINER
	FAUCET TRIM	CHICAGO	E-TRONIC 116.606.AB.1	POLISHED CHROME	DECK MOUNTED SINGLE HOLE SINK FAUCET WITH DUAL BEAM INFRARED SENSOR, BATTERY POWERED, FIXED SPOUT WITH 0.5 GPM AERATOR
	ANGLE VALVES AND SUPPLIES	PROFLO	PFXQ AND PFX146	POLISHED CHROME	1/4 TURN ANGLE STOP WITH WITH 16" BRAIDED RISER AND SCREW FLANGE. PROVIDE PROFLO PFE1 ESCUTCHEONS
	MIXING VALVE	WATTS	LFUSG-B-M2	BRASS	UNDER SINK THERMOSTATIC MIXING VALVE (80F-120F) (.25-2.25 GPM), LEAD FREE, ASSE 10780, 4-PORT H-BODY, WITH INTEGRAL CHECK VALVE AND SCREEN AND ADJUSTMENT NUT. 30 PSI MIN.
L-2	LAVATORY	KOHLER	PENNINGTON K-2196-1	WHITE	ADA, DROP-IN, SINGLE-HOLE, OVAL BASIN
	P-TRAP	MCGUIRE	B8902CNCF	POLISHED CHROME	CHROME PLATED CAST BRASS, 1-1/4" TRAP, TRAP ARM, AND FLANGE. PROVIDE WITH PROFLO 201WH COVERS
	DRAIN	CHICAGO	327XCP	POLISHED CHROME	1-1/4"GRID STRAINER
	FAUCET TRIM	CHICAGO	E-TRONIC 116.606.AB.1	POLISHED CHROME	DECK MOUNTED SINGLE HOLE SINK FAUCET WITH DUAL BEAM INFRARED SENSOR, BATTERY POWERED, FIXED SPOUT WITH 0.5 GPM AERATOR
	ANGLE VALVES AND SUPPLIES	PROFLO	PFXQ AND PFX146	POLISHED CHROME	1/4 TURN ANGLE STOP WITH WITH 16" BRAIDED RISER AND SCREW FLANGE. PROVIDE PROFLO PFE1 ESCUTCHEONS AND PROFLO PF201WH COVERS
	MIXING VALVE	WATTS	LFUSG-B-M2	BRASS	UNDER SINK THERMOSTATIC MIXING VALVE (80F-120F) (.25-2.25 GPM), LEAD FREE, ASSE 10780, 4-PORT H-BODY, WITH INTEGRAL CHECK VALVE AND SCREEN AND ADJUSTMENT NUT. 30 PSI MIN.
L-3	LAVATORY	KOHLER	KINGSTON K-2007	WHITE	ADA, WALL HUNG, SINGLE-HOLE, WITH OVERFLOW. PROVIDE WITH JR SMITH 0710-27 CARRIER.
	P-TRAP	MCGUIRE	B8902CNCF	POLISHED CHROME	CHROME PLATED CAST BRASS, 1-1/4" TRAP, TRAP ARM, AND FLANGE. PROVIDE WITH PROFLO 201WH COVERS
	DRAIN	CHICAGO	327XCP	POLISHED CHROME	1-1/4"GRID STRAINER
	FAUCET TRIM	CHICAGO	E-TRONIC 116.606.AB.1	POLISHED CHROME	DECK MOUNTED SINGLE HOLE SINK FAUCET WITH DUAL BEAM INFRARED SENSOR, BATTERY POWERED, FIXED SPOUT WITH 0.5 GPM AERATOR
	ANGLE VALVES AND SUPPLIES	PROFLO	PFXQ AND PFX146	POLISHED CHROME	1/4 TURN ANGLE STOP WITH WITH 16" BRAIDER RISER AND SCREW FLANGE. PROVIDE PROFLO PFE1 ESCUTCHEONS AND PROFLO PF201WH COVERS
	MIXING VALVE	WATTS	LFUSG-B-M2	BRASS	UNDER SINK THERMOSTATIC MIXING VALVE (80F-120F) (.25-2.25 GPM), LEAD FREE, ASSE 10780, 4-PORT H-BODY, WITH INTEGRAL CHECK VALVE AND SCREEN AND ADJUSTMENT NUT. 30 PSI MIN.
S-1	MOP SINK	PROFLO	PFMB	COMPOSITE	24"X24" WITH MOLDED BASIN DRAIN
	FAUCET TRIM	PROFLO	PF1118	POLISHED CHROME	WALL-MOUNTED WITH VACUUM BREAKER, 3/4 HOSE END, ASSE1001
	HOSE & BRACKET	FIAT	832AA	POLISHED CHROME	RUBBER HOSE AND HOSE BRACKET
	MOP HANGER	FIAT	889CC	POLISHED CHROME	MOP HANGER
S-2	BREAK ROOM	PROFLO	PFSR3322	STAINLESS STEEL	DOUBLE BOWL, SELF-RIMMING, 3-HOLE, 22 GUAGE, 33X22 OVERALL, 8 IN DEEP
	P-TRAP	MCGUIRE	B8902CNCF	POLISHED CHROME	CHROME PLATED CAST BRASS, 1-1/4" TRAP, TRAP ARM, AND FLANGE
	DRAIN	CHICAGO	327XCP	POLISHED CHROME	1-1/4"GRID STRAINER
	FAUCET TRIM	DELTA	100LF-HDF	POLISHED CHROME	SINGLE HANDLE, 1.5 GPM AERATOR
	ANGLE VALVES AND SUPPLIES	PROFLO	PFXQ AND PFX146	POLISHED CHROME	1/4 TURN ANGLE STOP WITH WITH 16" BRAIDER RISER AND SCREW FLANGE. PROVIDE PROFLO PFE1 ESCUTCHEONS
	MIXING VALVE	WATTS	LFUSG-B-M2	BRASS	UNDER SINK THERMOSTATIC MIXING VALVE (80F-120F) (.25-2.25 GPM), LEAD FREE, ASSE 10780, 4-PORT H-BODY, WITH INTEGRAL CHECK VALVE AND SCREEN AND ADJUSTMENT NUT. 30 PSI MIN.
FD-1	FLOOR DRAIN	ZURN	Z415B	POLISHED BRONZE	2", COATED CAST-IRON BODY WITH MEMBRANE CLAMP, SEEPAGE SLOTS AND TYPE B LIGHT DUTY STRAINER. PROVIDE WITH PROSET TRAPGUARD
FS-1	FLOOR SINK	ZURN	Z1901	WHITE	4"" WITH 12"x12"x8" SQAURE SINK BASIN, ENABLED CAST-IRON, ABS ANTI-SPLASH BOTTOM DOME STRAINER. PROVIDE WITH PROSET TRAPGUARD
EWC-1	ELECTRIC WATER COOLER	ELKAY	EZSTL8WSVRSK	STAINLESS STEEL	WALL-MOUNT, BI-LEVEL WITH BOTTLE FILLER STATION, ADA, FILTERED, 8 GPH, STREAM SAVER BUBBLER, PUSHBAR ACTIVATION, LEAD FREE, UL 399, 115V/370 WATTS. PROVIDE WITH ELKAY CARRIER MODEL MLP200 3 AND REPLACMENT FILTERS

FIXTURE UNIT SCHEDULE

		CONNECTIONS					SUPPLY		WASTE		
FIXTURE	DESCRIPTION	W	V	CW	HW	QTY	F.U.	TOTAL	F.U.	TOTAL	REMARKS
L-1	LAVATORY	2"	1-1/2"	1/2"	1/2"	4	2	8	1	4	
L-2	LAVATORY ADA	2"	1-1/2"	1/2"	1/2"	2	2	4	1	2	
L-3	LAVATORY ADA	2"	1-1/2"	1/2"	1/2"	2	2	4	1	2	
WC-1	WATERCLOSET - FVALVE	4"	2"	1-1/2"	---	3	10	30	6	18	
WC-2	WATERCLOSET - FVALVE ADA	4"	2"	1-1/2"	---	3	10	30	6	18	
U-1	WATERLESS URINAL	2"	1-1/2"	---	---	1	0	0	2	2	
U-2	WATERLESS URINAL ADA	2"	1-1/2"	---	---	1	0	0	2	2	
S-1	MOP BASIN/JANITOR'S SINK	3"	2"	1/2"	1/2"	1	4	4	3	3	
S-2	KITCHEN SINK	2"	1-1/2"	1/2"	1/2"	1	2	2	2	2	
EWC	ELECTRIC WATER COOLER	2"	1-1/2"	1/2"	---	1	2	2	1	1	
FD	FLOOR DRAIN	2"	1-1/2"	---	---	2	---	---	2	4	
FS	FLOOR SINK	2"	1-1/2"	---	---	2	---	---	2	4	
						SUBTOTAL		84		62	
						TOTAL FIXTURE UNITS (WATER)		84			
						TOTAL FIXTURE UNITS (WASTE)				62	

SUPPLY EQUIVALENT GPM 63

PRESSURE AND PIPE SIZING RATIONALE

A DOMESTIC WATER PRESSURE BOOSTER PUMP IS LOCATED ON FLOOR 3. PIPING IS CONSERVATIVELY SIZED FOR NO MORE THAN 2.5 FT/100 FT FRICTION LOSS AND NO MORE THAN 5FT/S VELOCITY.

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ADMIN WEST FIFTH FLOOR TI
PLUMBING SYMBOLS AND SCHEDULES

ADMINISTRATION WEST BUILDING
150 WEST CONGRESS
TUCSON, AZ

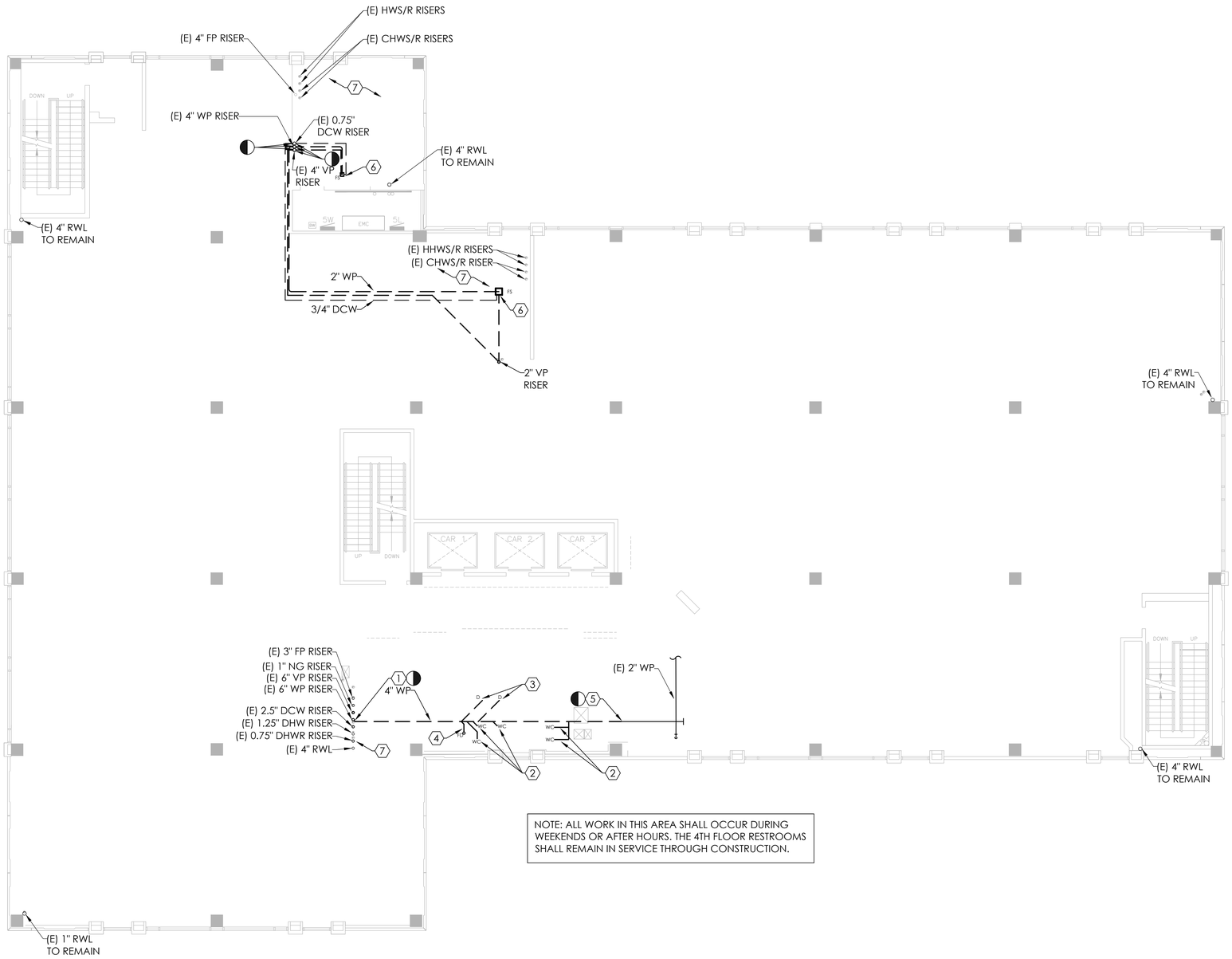
SEAL

CERTIFICATE NO. 43047 RONALD DOUGLAS STINGELIN DATE SIGNED 7/24/19 ARIZONA U.S.A.

REVS: DATE:
0

DRWN BY: RDS
CKD BY: JMZ
DATE: 2019/07/22
SCALE: NTS
SHEET NO:

P1.0
34 OF 48
W.O. NUMBER
19*10427



NOTE: ALL WORK IN THIS AREA SHALL OCCUR DURING WEEKENDS OR AFTER HOURS. THE 4TH FLOOR RESTROOMS SHALL REMAIN IN SERVICE THROUGH CONSTRUCTION.

1 PLUMBING DEMOLITION FLOOR PLAN

1/8" = 1'-0"

KEYNOTES

1. REMOVE EXISTING WP AND ASSOCIATED BELOW FLOOR VENTING MAIN BACK TO RISER.
2. REMOVE EXISTING WP AND ASSOCIATED BELOW FLOOR VENTING/DCW FORMERLY SERVING WATER CLOSET.
3. REMOVE EXISTING WP AND ASSOCIATED BELOW FLOOR VENTING/DCW FORMERLY SERVING SHOWER DRAIN.
4. REMOVE EXISTING WP, ASSOCIATED BELOW FLOOR VENTING/DCW, AND FLOOR DRAIN.
5. CAP AND SEAL (E) 4" WP CONTINUING TO THE EAST.
6. REMOVE EXISTING WP, ASSOCIATED BELOW FLOOR VENT/DCW, AND FLOOR SINK.
7. EXISTING RISER PIPING AND CONDUIT TO REMAIN IN THIS AREA UNLESS OTHERWISE NOTED.

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ADMIN WEST FIFTH FLOOR TI
PLUMBING DEMOLITION PLAN

ADMINISTRATION WEST BUILDING
150 WEST CONGRESS
TUCSON, AZ

SEAL

43047
RONALD DOUGLAS STINGELIN
DATE SIGNED 10-19
REGISTERED PROFESSIONAL ENGINEER
ARIZONA, U.S.A.

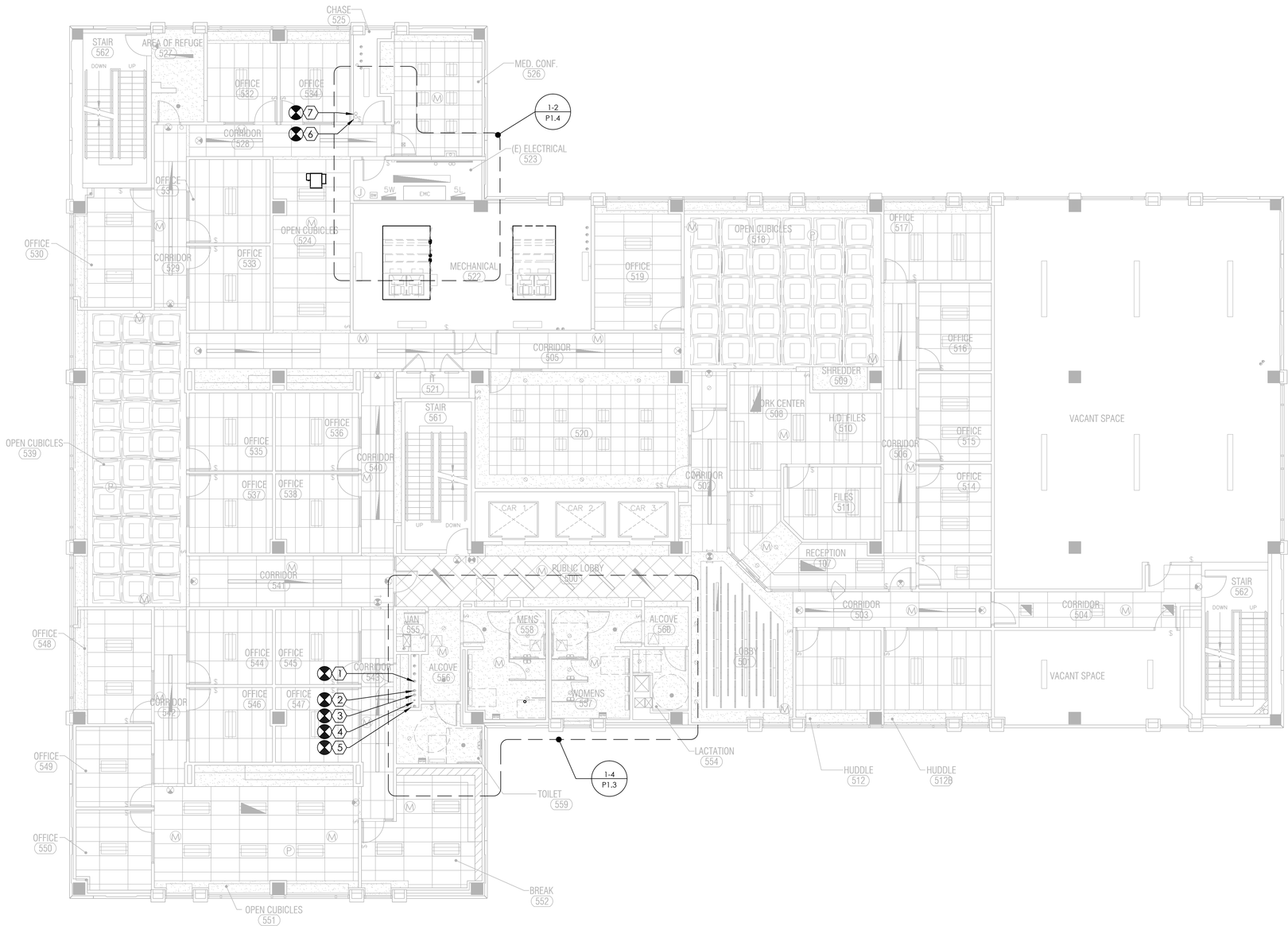
THE SEAL OF PIMA COUNTY ARIZONA

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DRWN BY: RDS
CKD BY: JMZ
DATE: 2019/07/22
SCALE: 1/8"=1'-0"
SHEET NO:

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W.O. NUMBER
19*10427



1 **PLUMBING FLOOR PLAN**
1/8" = 1'-0"

KEYNOTES

1. (E) 6" VENT RISER
2. (E) 6" WASTE RISER
3. (E) 2.5" DOMESTIC COLD WATER RISER
4. (E) 1.25" DOMESTIC HOT WATER RISER
5. (E) 0.75 DOMESTIC HOT WATER RETURN RISER
6. (E) 4" VENT RISER
7. (E) 4" WASTE RISER

PIMA COUNTY FACILITIES MANAGEMENT, 150 WEST CONGRESS, TUCSON ARIZONA 85701 (520)740-3085

ADMIN WEST FIFTH FLOOR TI
PLUMBING NEW WORK

ADMINISTRATION WEST BUILDING
150 WEST CONGRESS
TUCSON, AZ

SEAL

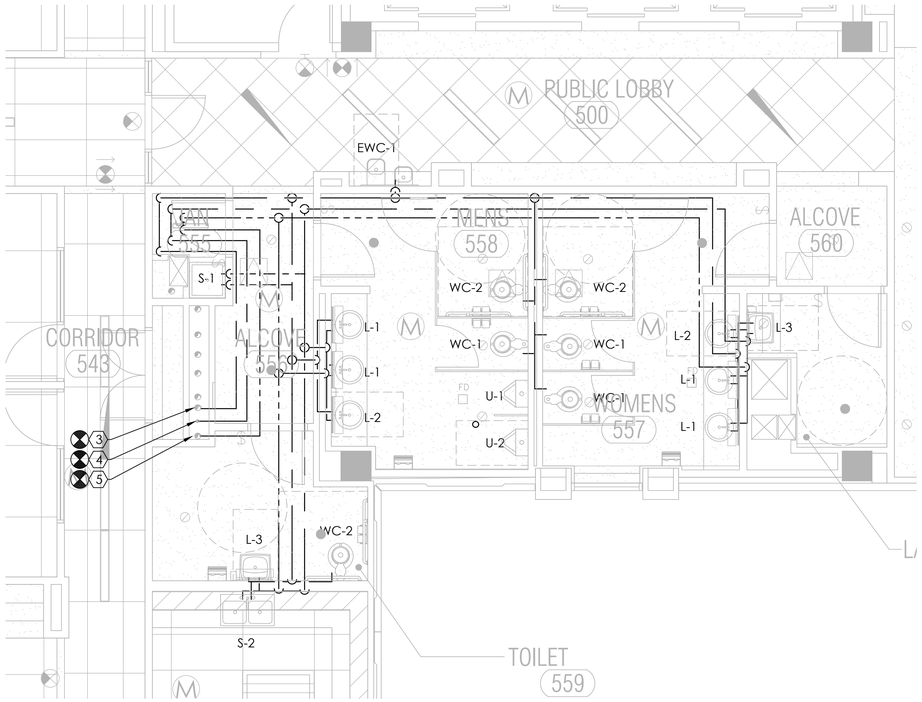
43047
RONALD DOUGLAS STINGELIN
DATE SIGNED 7/22/19
ARIZONA U.S.A.

REVS: DATE:
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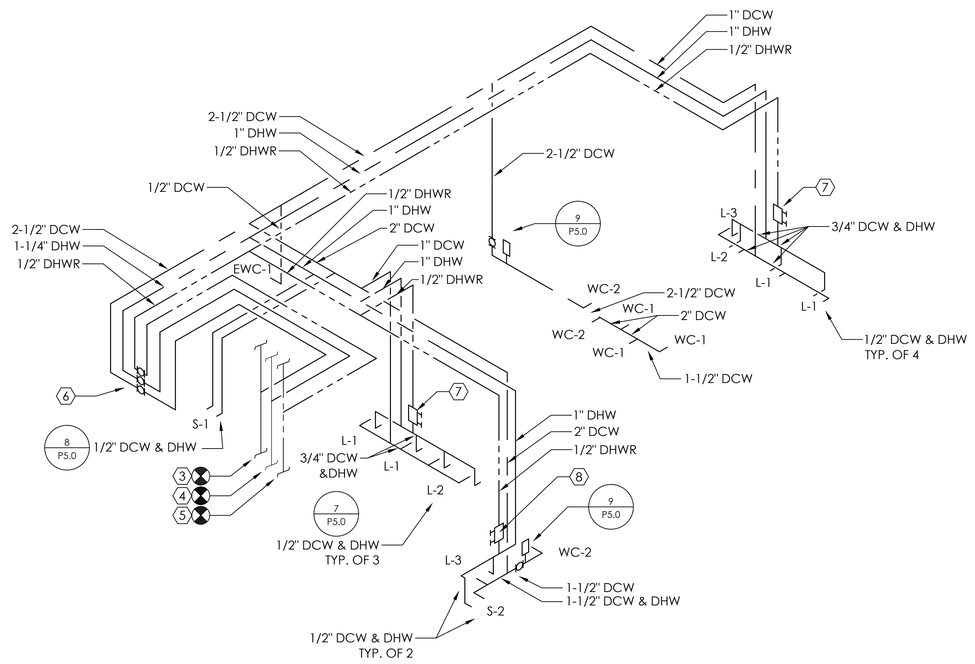
P1.2
36 OF 48
W.O. NUMBER
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1 ENLARGED PLUMBING PART PLAN - WATER

1/4" = 1'-0"



2 PLUMBING WATER RISER

NTS

GENERAL NOTES

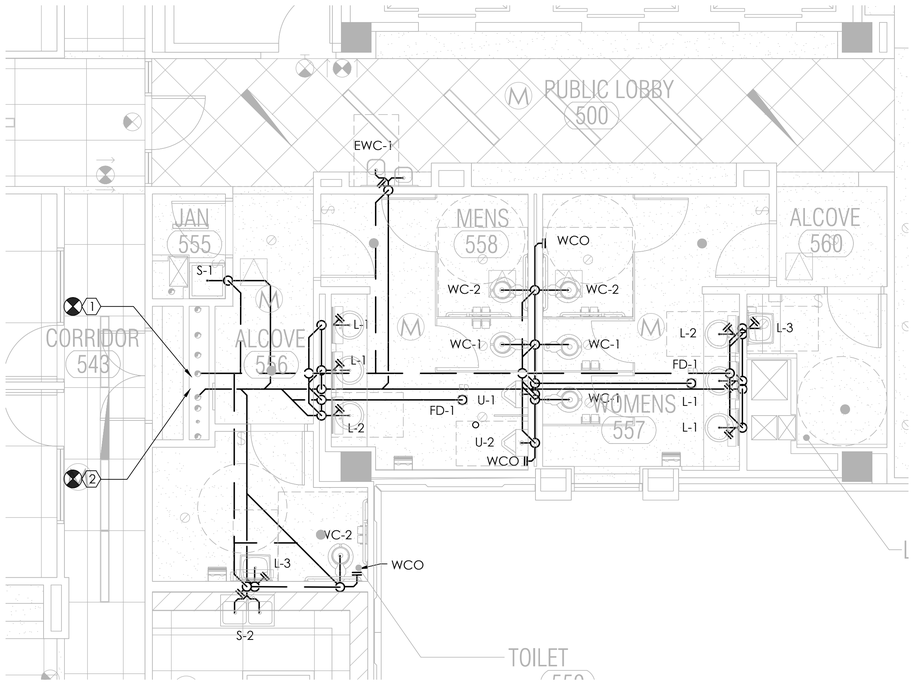
A. REFER TO PLUMBING FIXTURE SCHEDULE FOR INDIVIDUAL PLUMBING FIXTURE WATER, WASTE, AND VENT PIPING CONNECTION SIZES

B. NOTE: ALL WASTE PIPING IS ABOVE 4TH FLOOR CEILING

C. PROVIDE CLEANOUTS FOR EACH LAV, SINK, AND URINAL

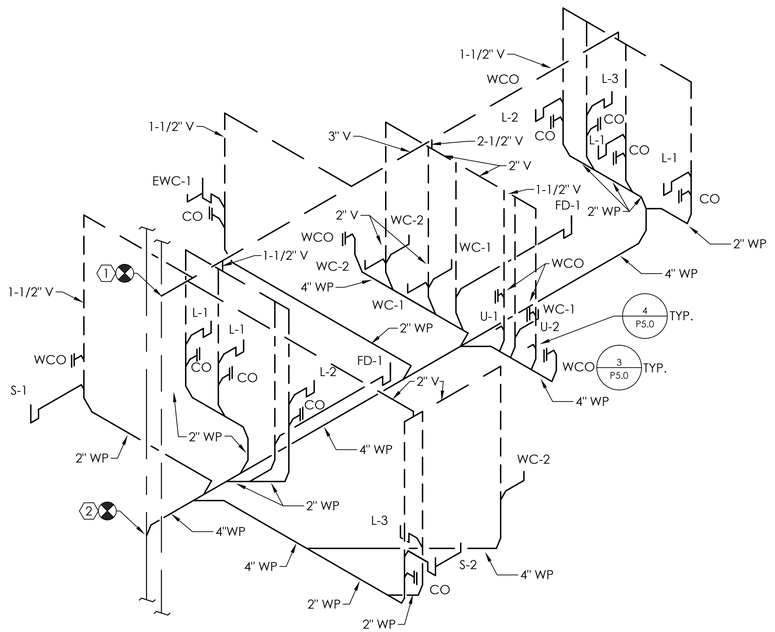
KEYNOTES

1. CONNECT (N) 3" VP TO (E) 6" RISER
2. CONNECT (N) 4" WP TO (E) 6" RISER
3. CONNECT (N) 2.5" DCW TO (E) 2.5" RISER
4. CONNECT (N) 1.25" DHW TO (E) 1.25" RISER
5. CONNECT (N) 0.5" DHWR TO (E) 0.75 DHWR RISER
6. ISOLATION VALVES ALONG WALL IN JANITOR'S CLOSET
7. MANUAL BALANCE VALVE - SET TO 0.5 GPM. LOCATE BENEATH COUNTERTOP
8. MANUAL BALANCE VALVE - SET TO 0.5 GPM. LOCATE WITHIN ACCESS ALONG WITH ISOLATION VALVE AND WATER HAMMER ARRESTOR.



3 ENLARGED PLUMBING PART PLAN - WASTE AND VENT

1/4" = 1'-0"



4 PLUMBING WASTE AND VENT RISER

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PLUMBING ENLARGED PLANS & RISERS

ADMINISTRATION WEST BUILDING
150 WEST CONGRESS
TUCSON, AZ

SEAL

CERTIFICATE NO. 43047 RONALD DOUGLAS STINGELIN DATE SIGNED 7/2/19 ARIZONA U.S.A.

THE SEAL OF PIMA COUNTY ARIZONA

REVS: DATE:
0

DRWN BY: RDS
CKD BY: JMZ
DATE: 2019/07/22
SCALE: 1/4"=1'-0"
SHEET NO:

P1.3
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W.O. NUMBER
19*10427

GENERAL NOTES

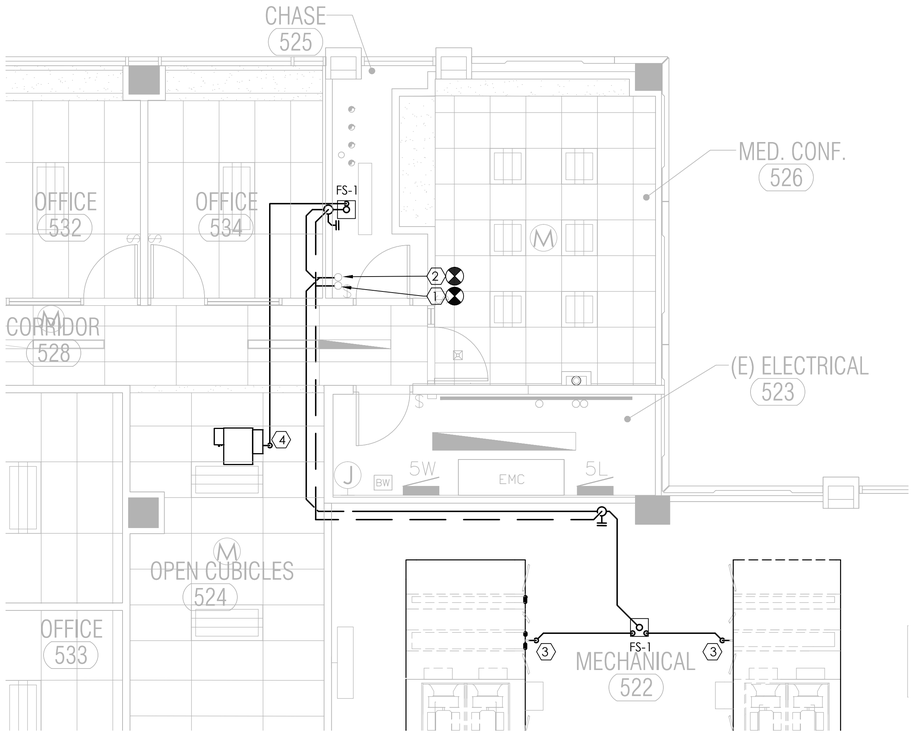
A. REFER TO PLUMBING FIXTURE SCHEDULE FOR INDIVIDUAL PLUMBING FIXTURE WATER, WASTE, AND VENT PIPING CONNECTION SIZES

B. NOTE: ALL WASTE PIPING IS ABOVE 4TH FLOOR CEILING

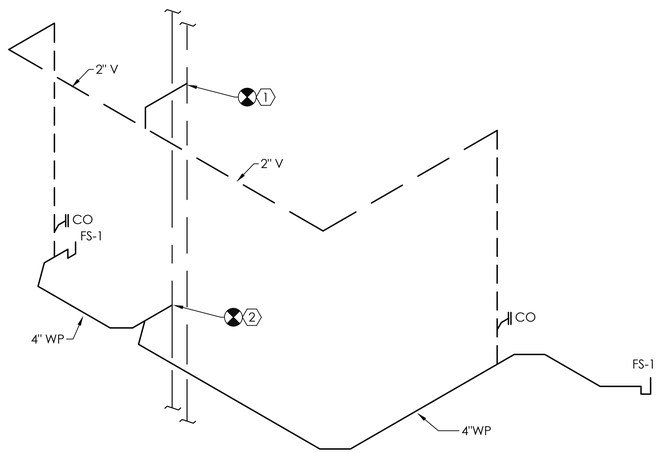
C. REFER TO SPECIFICATION 23 21 13 FOR ADDITIONAL COIL CONDENSATE PIPING REQUIREMENTS INCLUDING MATERIAL AND SLOPE.

KEYNOTES

1. CONNECT (N) 2" VP TO (E) 6" RISER
2. CONNECT (N) 4" WP TO (E) 6" RISER
3. CONNECT (N) 1" COIL CONDENSATE PIPING WITH P TRAP TO (N) AHU. ROUTE TO FLOOR SINK. PROVIDE WITH AIR GAP PER IPC REQUIREMENTS.
4. CONNECT (N) 3/4" COIL CONDENSATE PIPING WITH P TRAP TO (N) FCU. ROUTE TO FLOOR SINK. PROVIDE WITH AIR GAP PER IPC REQUIREMENTS.



1 **ENLARGED PLUMBING PART PLAN - WASTE AND VENT**
1/4" = 1'-0"



2 **PLUMBING WASTE AND VENT RISER**
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ADMIN WEST FIFTH FLOOR TI
PLUMBING ENLARGED PLANS & RISERS

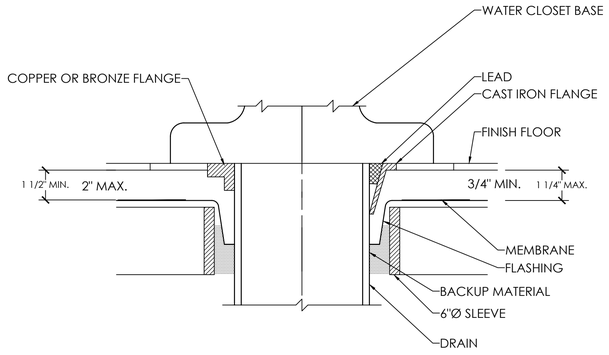
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SEAL

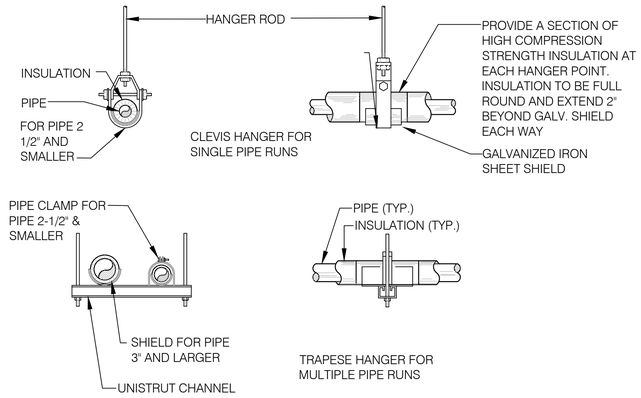
REVS: DATE:

DRWN BY: **RDS**
CKD BY: **JMZ**
DATE: **2019/07/22**
SCALE: **1/4" = 1'-0"**
SHEET NO:

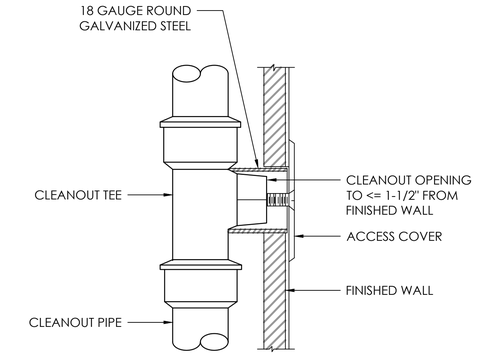
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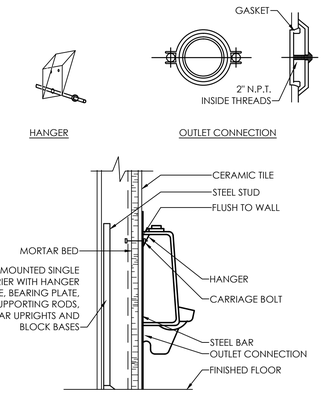
1 FLOOR MOUNTED WATER CLOSET SETTING
NTS



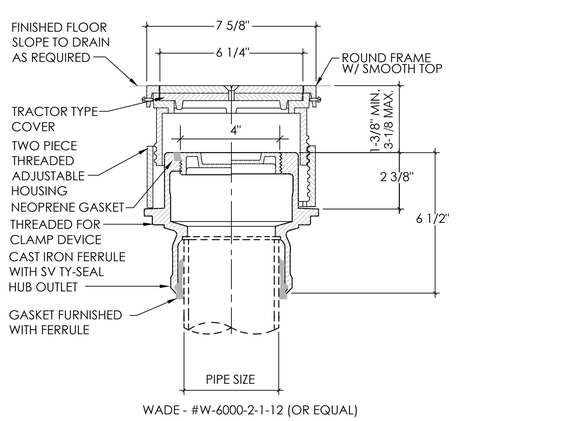
2 PLUMBING PIPE HANGERS
NTS



3 WALL CLEANOUT DETAIL
SCALE:NTS

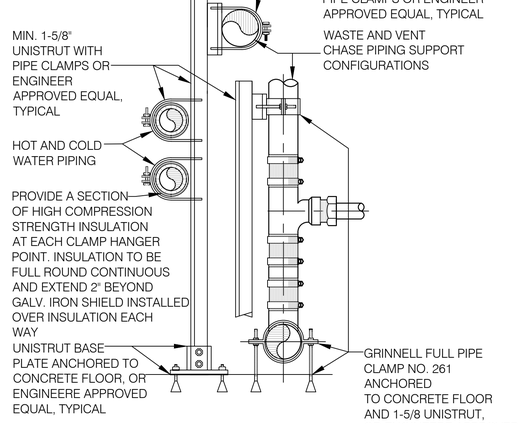


4 WALL HUNG URINAL DETAIL
NTS

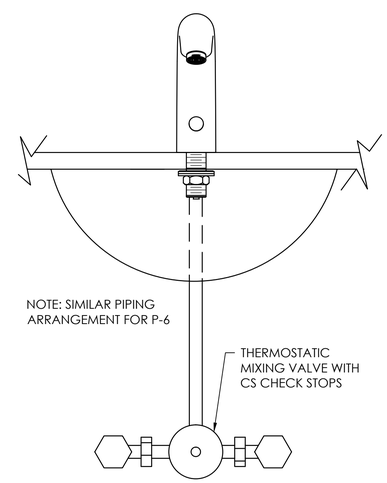


WADE - #W-6000-2-1-12 (OR EQUAL)

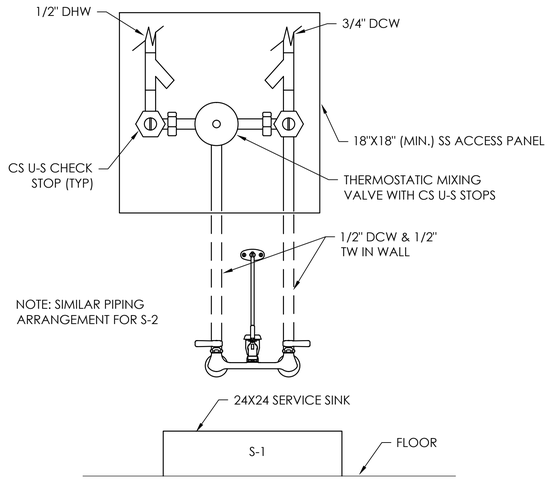
5 FLOOR CLEAN OUT DETAIL
NTS



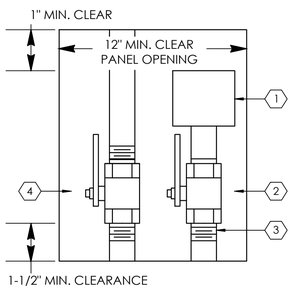
6 PLUMBING PIPE HANGERS
NTS



7 LAV TYPICAL SUPPLY PIPING
NTS



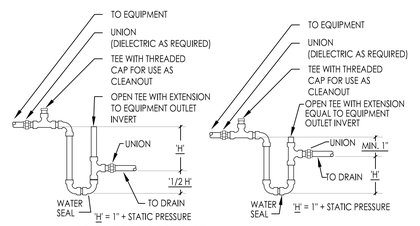
8 SERVICE SINK TYPICAL SUPPLY PIPING
NTS



KEY
1. WATER HAMMER ARRESTOR
2. BALL VALVE, SAME NOMINAL SIZE AS PIPE BRANCH IN CHASE. OPENING IN BALL VALVE TO MATCH PIPE I.D.
3. PIPE SAME SIZE AS BRANCH IN CHASE TO WHICH IT IS ATTACHED.
4. BRANCH ISOLATION VALVE, BALL VALVE, SIZED AS INDICATED ON PLANS

NOTE:
PROVIDE REDUCER IF REQUIRED BETWEEN VALVE AND WATER HAMMER ARRESTOR.

9 SHUTOFF VALVE AND WATER HAMMER ARRESTOR WITH ACCESS DOOR
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10 CONDENSATE TRAP DRAIN
NTS

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PLUMBING DETAILS

SEAL
CERTIFICATE NO. 43047 RONALD DOUGLAS STINGELIN DATE SIGNED 9/21/19 ARIZONA U.S.A.

REVS: 0 DATE:

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W.O. NUMBER
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ABBREVIATIONS

A, AMP	AMPERE
AC	ABOVE COUNTER
AF	AMP FUSE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
C	CONDUIT
CAB	CABINET
CAT	CATEGORY
CKT	CIRCUIT
CLG	CEILING
CU	COPPER
DIA	DIAMETER
DIST	DISTRIBUTION
DL	DAMP LABEL
DN	DOWN
DWG	DRAWING
EA	EACH
EL	ELEVATION
ELEC	ELECTRICAL
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EP	EMERGENCY POWER
EPO	EMERGENCY POWER OFF
(E)	EXISTING
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FC	FOOT CANDLES
FIXT	FIXTURE
FLEX	FLEXIBLE METALLIC CONDUIT
FLR	FLOOR
G	GROUND
GA	GAUGE
GALV	GALVANIZED
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GRS	GALVANIZED RIGID STEEL CONDUIT
HD	HEAVY DUTY
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HT	HEIGHT
HZ	HERTZ
IEEE	INSTITUTE OF ELECTRICAL & ELECTRONICS ENGINEERS
ISO	INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
J-BOX,JB	JUNCTION BOX
kAIC	THOUSAND AMPS INTERRUPTING CAPACITY
kHz	KILOHERTZ
kVA, KVA	KILOVOLT AMPERES
kW, KW	KILOWATTS
kWH, KWH	KILOWATT HOURS
LSI	LONG TIME, SHORT TIME, INVERSE
LSIG	LONG TIME, SHORT TIME, INVERSE, GROUND FAULT
LT	LIGHT
LV	LOW VOLTAGE
MA	MILLIAMPERE
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MFR	MANUFACTURER
MH	MANHOLE OR METAL HALIDE
MHz	MEGAHERTZ
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MV	MEDIUM VOLTAGE
N/A	NOT APPLICABLE
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION
NEUT, N	NEUTRAL
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO.	NUMBER
NTS	NOT TO SCALE
P	POLE
PB	PULLBOX
PH,Ø	PHASE
PNL	PANEL
PWR	POWER
REC	RECEPTACLE
REL	RELOCATED
REQ	REQUIRED
RGS	RIGID GALVANIZED STEEL
RPM	REVOLUTIONS PER MINUTE
SES	SERVICE ENTRANCE SECTION
SHT	SHEET
SPEC	SPECIFICATION
SQ	SQUARE
SURF	SURFACE
SW	SWITCH
SWBD	SWITCHBOARD
TBD	TO BE DETERMINED
TEMP	TEMPERATURE
TP	TAMPER PROOF
TYP	TYPICAL
UL	UNDERWRITERS LABORATORY
UON	UNLESS OTHERWISE NOTED
V	VOLT OR VOLTS
VA	VOLT AMPS
VFD	VARIABLE FREQUENCY DRIVE
W	WATT OR WIRE
W/	WITH
W/O	WITH OUT
WP	WEATHERPROOF
XFMR	TRANSFORMER

LIGHTING SYMBOLS

- SURFACE OR PENDANT MOUNTED FIXTURE. SEE FIXTURE SCHEDULE FOR TYPE AND MOUNTING. NUMBER INDICATES BRANCH CIRCUIT, UPPER CASE LETTERS INDICATE FIXTURE TYPE, LOWER CASE LETTER INDICATES SWITCH CONTROL.
- SURFACE MOUNTED FIXTURE. SEE FIXTURE SCHEDULE FOR TYPE. NUMBER INDICATES BRANCH CIRCUIT, UPPER CASE LETTERS INDICATE FIXTURE TYPE, LOWER CASE LETTER INDICATES SWITCH CONTROL.
- CHANNEL OR STRIP TYPE FIXTURE. SEE FIXTURE SCHEDULE FOR TYPE. NUMBER INDICATES BRANCH CIRCUIT, UPPER CASE LETTERS INDICATE FIXTURE TYPE, LOWER CASE LETTER INDICATES SWITCH CONTROL.
- WALL MOUNTED CHANNEL OR STRIP TYPE FIXTURE. SEE FIXTURE SCHEDULE FOR TYPE. NUMBER INDICATES BRANCH CIRCUIT, UPPER CASE LETTERS INDICATE FIXTURE TYPE, LOWER CASE LETTER INDICATES SWITCH CONTROL.
- SURFACE MOUNTED DIRECTIONAL FIXTURE. SEE FIXTURE SCHEDULE FOR TYPE. NUMBER INDICATES BRANCH CIRCUIT, UPPER CASE LETTERS INDICATE FIXTURE TYPE, LOWER CASE LETTER INDICATES SWITCH CONTROL.
- CEILING RECESSED FIXTURE. SEE FIXTURE SCHEDULE FOR TYPE. NUMBER INDICATES BRANCH CIRCUIT, UPPER CASE LETTERS INDICATE FIXTURE TYPE, LOWER CASE LETTER INDICATES SWITCH CONTROL.
- CEILING RECESSED FIXTURE, DOUBLE LINE INDICATES LENS ORIENTATION. SEE FIXTURE SCHEDULE FOR TYPE. NUMBER INDICATES BRANCH CIRCUIT, UPPER CASE LETTERS INDICATE FIXTURE TYPE, LOWER CASE LETTER INDICATES SWITCH CONTROL.
- RECESSED FIXTURE. SEE FIXTURE SCHEDULE FOR TYPE. NUMBER INDICATES BRANCH CIRCUIT, UPPER CASE LETTERS INDICATE FIXTURE TYPE, LOWER CASE LETTER INDICATES SWITCH CONTROL.
- RECESSED DIRECTIONAL FIXTURE. SEE FIXTURE SCHEDULE FOR TYPE. NUMBER INDICATES BRANCH CIRCUIT, UPPER CASE LETTERS INDICATE FIXTURE TYPE, LOWER CASE LETTER INDICATES SWITCH CONTROL.
- WALL MOUNTED FIXTURE. SEE FIXTURE SCHEDULE FOR TYPE. NUMBER INDICATES BRANCH CIRCUIT, UPPER CASE LETTERS INDICATE FIXTURE TYPE, LOWER CASE LETTER INDICATES SWITCH CONTROL.
- CEILING/WALL EXIT SIGN, SHADING INDICATES FACES. SEE FIXTURE SCHEDULE FOR TYPE. NUMBER INDICATES BRANCH CIRCUIT, LETTERS INDICATE FIXTURE TYPE. PROVIDE DIRECTIONAL ARROWS AS SHOWN.
- SHADING INDICATES LIGHTING FIXTURE WITH EMERGENCY BATTERY PACK MOUNTED IN FIXTURE, OR CONNECTED TO EMERGENCY POWER SOURCE.
- WALL MOUNTED SWITCH. LETTER INDICATES SWITCH LEG.
- WALL MOUNTED SWITCH. LETTER INDICATES AS FOLLOWS:
  - a - INDICATES SWITCH LEG
  - 2 - 2 POLE SWITCH
  - 3 - 3-WAY SWITCH
  - 4 - 4 WAY SWITCH
  - F - SWITCH UNIT EQUAL TO BUSS SSU OR STY
  - K - KEY OPERATED
  - L - LIGHTED HANDLE
  - LM - LOW VOLTAGE MASTER
  - M - MOTOR RATED SWITCH. NUMBER OF POLES AS REQUIRED
  - P - PILOT LIGHT SWITCH
  - T - TIME OPERATED
  - WP - WEATHERPROOF
  - XP - EXPLOSIONPROOF

  REFER TO CONTROLS SCHEDULE FOR WALL MOUNTED SWITCH SENSORS

POWER SYMBOLS

- DUPLEX RECEPTACLE. NEMA 5-20R UON MOUNTED FLUSH IN CEILING. NUMBER INDICATES BRANCH CIRCUIT.
- (2) DUPLEX RECEPTACLES, NEMA 5-20R UON MOUNTED FLUSH IN CEILING. NUMBER INDICATES BRANCH CIRCUIT.
- SIMPLEX RECEPTACLE IN 4"x4" BOX WITH PLASTER RING. NUMBERS INDICATE BRANCH CIRCUIT.
- DUPLEX RECEPTACLE, NEMA 5-20R UON, IN 4"x4" BOX WITH PLASTER RING. NUMBER INDICATES BRANCH CIRCUIT. "GFCI" INDICATES GROUND FAULT CIRCUIT INTERRUPTER. "S" INDICATES SWITCHED RECEPTACLE.
- DUPLEX RECEPTACLE, NEMA 5-20R UON, IN 4"x4" BOX WITH PLASTER RING, MOUNTED 1" ABOVE COUNTER BACKSPLASH TO BOTTOM. NUMBER INDICATES BRANCH CIRCUIT. "GFCI" INDICATES GROUND FAULT CIRCUIT INTERRUPTER.
- COMBO RECEPTACLE WITH (2) USB CHARGING PORTS; HUBBEL USB20X2W OR APPROVED EQUIVALENT.
- (2) DUPLEX RECEPTACLES, NEMA 5-20R UON, IN 4"x4" BOX WITH PLASTER RING. NUMBER INDICATES BRANCH CIRCUIT. SHADING INDICATES EMERGENCY POWER. "GFCI" INDICATES GROUND FAULT CIRCUIT INTERRUPTER.
- SPECIAL RECEPTACLE IN 4"x4" BOX WITH PLASTER RING. NUMBERS INDICATE BRANCH CIRCUIT AND NEMA RECEPTACLE TYPE.
- DUPLEX RECEPTACLE, NEMA 5-20R UON, IN FLUSH FLOOR BOX. NUMBER INDICATES BRANCH CIRCUIT.
- (2) DUPLEX RECEPTACLES, NEMA 5-20R UON, IN FLUSH FLOOR BOX. NUMBER INDICATES BRANCH CIRCUIT.
- WALL BOX. RECEPTACLE QUANTITY AND TYPE PER SPECIFICATIONS OR DETAILS. COORDINATE CONDUIT AND CABLING REQUIREMENTS WITH TELECOMMUNICATIONS/LOW VOLTAGE DESIGN.
- FLOOR BOX. RECEPTACLE QUANTITY AND TYPE PER SPECIFICATIONS OR DETAILS. COORDINATE CONDUIT AND CABLING REQUIREMENTS WITH TELECOMMUNICATIONS/LOW VOLTAGE DESIGN.
- PANELBOARD, SURFACE MOUNTED. SEE SINGLE-LINE DIAGRAM AND PANEL SCHEDULES FOR VOLTAGE, SIZE, AND POLES.
- CONTROL PUSHBUTTONS. SEE DRAWINGS FOR TYPES.
- MOTOR
- MOTOR RATED SWITCH. NUMBER OF POLES AS REQUIRED.
- HEAVY DUTY NON-FUSED SAFETY SWITCH. NUMBER INDICATES AMPS/POLES.
- HEAVY DUTY FUSED SAFETY SWITCH. NUMBER INDICATES AMPS/POLES.
- AUTOMATIC MOTOR STARTER. NUMBERS INDICATE POLES AND STARTER SIZE.
- COMBINATION SWITCH AND STARTER. NUMBERS INDICATE AMPS/POLES; STARTER SIZE. CONTROL VOLTAGE AS REQUIRED.
- COMBINATION FUSED SWITCH AND STARTER. NUMBERS INDICATE AMPS/POLES; STARTER SIZE. CONTROL VOLTAGE AS REQUIRED.
- VARIABLE FREQUENCY DRIVE (VFD). SEE SPECIFICATIONS FOR TYPE.
- AUTOMATIC TRANSFER SWITCH. NUMBERS INDICATE CURRENT RATING, VOLTAGE, AND POLES. SEE SPECIFICATIONS FOR TYPE.
- THERMOSTAT, MOUNT AT 60" AFF, UON. PROVIDE CONDUIT AND WIRING TO HEAT/AC UNIT AS REQUIRED.
- SPECIAL RECEPTACLE - CEILING MOUNTED

LINE TYPES

- EXISTING
- DEMOLITION
- NEW

PLAN SYMBOLS

- JUNCTION BOX MOUNTED EXPOSED OR ABOVE CEILING. 4"x4"xDEPTH PER SPECIFICATIONS, UON.
- JUNCTION BOX MOUNTED FLUSH IN WALL, UON. 4"x4"xDEPTH PER SPECIFICATIONS WITH 2-GANG PLASTER RING, UON. NUMBER INDICATES BRANCH CIRCUIT.
- CONDUIT AND WIRE CONCEALED ABOVE CEILING OR IN WALLS. WIRE IS #12 CU. UON. SEE SINGLE-LINE DIAGRAM AND/OR PANEL SCHEDULES.
- CONDUIT AND WIRE BURIED BELOW GRADE OR SLAB. WIRE IS #12 CU. UON. SEE SINGLE-LINE DIAGRAM AND/OR PANEL SCHEDULES.
- CONDUIT AND WIRE HOME RUN TO PANEL SHOWN. WIRE IS #12 CU. UON.
- CONDUIT STUB
- CONTINUATION
- CONDUIT RISE/FALL

DIAGRAM SYMBOLS

- CIRCUIT BREAKER PANELBOARDS. SEE SCHEDULES FOR NUMBER AND SIZES OF BREAKERS, PANEL SIZE, VOLTAGE, AND INTERRUPTING DUTY.
- AUTOMATIC TRANSFER SWITCH. NUMBERS INDICATE CURRENT RATING, VOLTAGE, AND POLES. SEE SPECIFICATIONS FOR TYPE.
- SWITCH. NUMBERS INDICATE AMPERES/POLES. SEE SPECIFICATIONS FOR TYPE.
- CIRCUIT BREAKER. NUMBERS INDICATE TRIP RATING/POLES. SEE SPECIFICATIONS FOR TYPE.
- METER AND CURRENT TRANSFORMERS. SEE SPECIFICATIONS FOR SIZE AND TYPE.
- GROUND CONNECTION.
- VARIABLE FREQUENCY DRIVE (VFD). SEE SPECIFICATIONS FOR TYPE.
- BUS DIAGRAM SYMBOL
- EQUIPMENT ENCLOSURE
- ELECTRICAL FEEDER ID CALLOUT
- MOTOR
- FAULT SYMBOL
- NON-FUSED DISCONNECT DIAGRAM SYMBOL
- CONNECTION POINT
- JUNCTION BOX
- MEDIUM VOLTAGE TRANSFORMER.

FIRE ALARM SYMBOLS

- MANUAL PULLSTATION
- HORN/STROBE (C = CEILING-MOUNTED; cd = CANDELA RATING)
- HORN ONLY SYSTEM
- STROBE ONLY - WALL-MOUNTED (cd = CANDELA RATING)
- STROBE ONLY - CEILING-MOUNTED (cd = CANDELA RATING)
- SMOKE DETECTOR - CEILING-MOUNTED
- SMOKE DETECTOR - WALL-MOUNTED
- SMOKE DETECTOR - DUCT-MOUNTED
- MONITOR MODULE FOR TAMPER SWITCH
- MONITOR MODULE FOR FLOW SWITCH
- REMOTE TEST SWITCH
- AIM 4090-9001
- AREA OF REFUGE STATION WITH SIGN
- NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY
- MINI TRANSPONDER

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ELECRICAL SYMBOLS & ABBREVIATIONS

ADMINISTRATION WEST BUILDING
150 WEST CONGRESS
TUCSON, AZ

SEAL

Registered Professional Engineer
14857
ROBERT A. ALCALA
Date Signed 7/22/19
ARIZONA U.S.A.

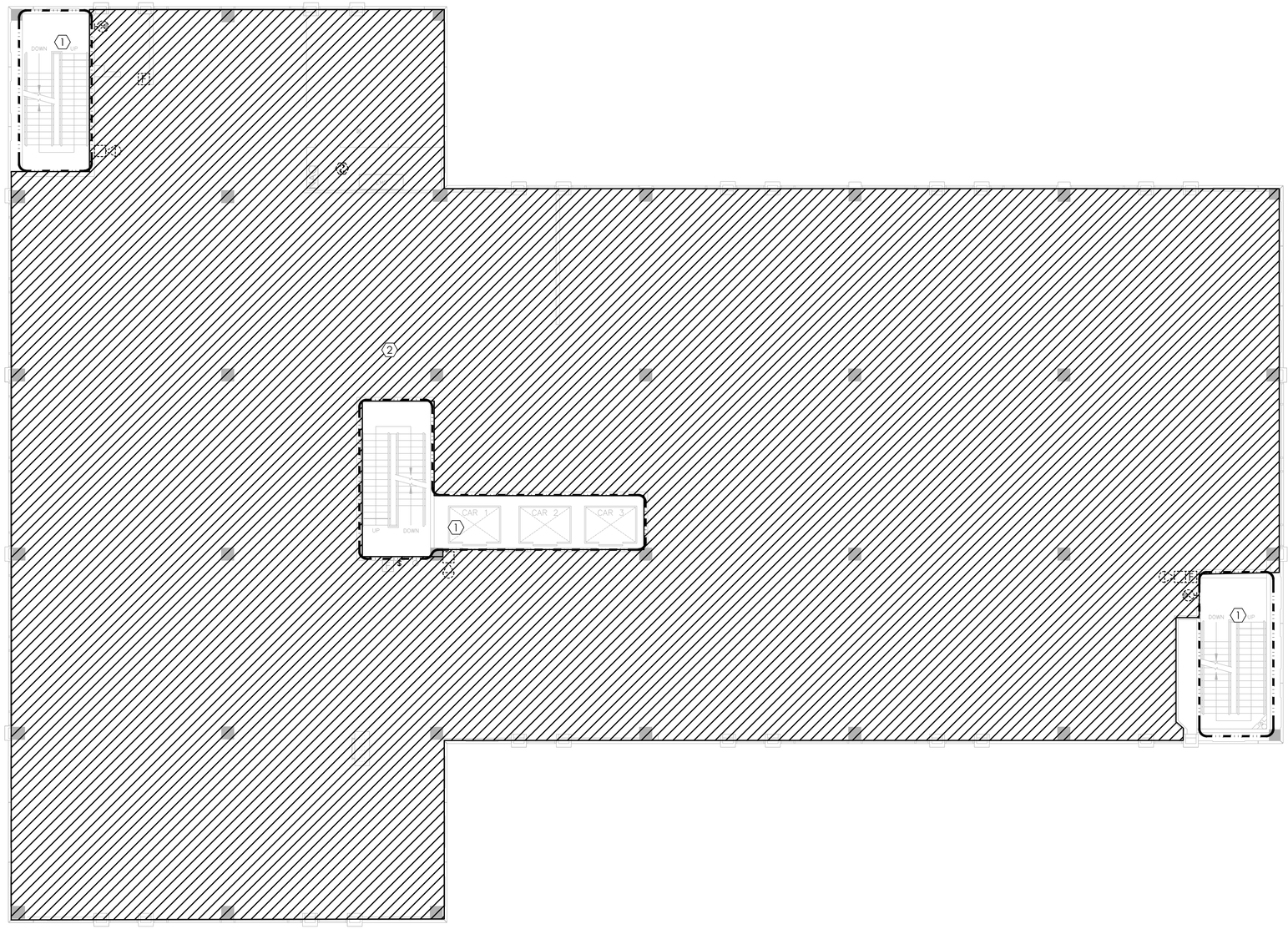
THE SEAL OF PIMA COUNTY ARIZONA

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W.O. NUMBER
19*10427



1 FIRE PROTECTION FLOOR 5 PLAN

1/8" = 1'-0"

GENERAL NOTES

A. A MINIMUM OF 7 DAYS NOTICE SHALL BE GIVEN TO PIMA COUNTY FACILITIES MANAGEMENT DEPARTMENT (PCFM) IN WRITING PRIOR TO UTILITY SERVICE SHUTDOWNS. AT A MINIMUM, THE NOTICE SHALL INDICATED THE AFFECTED UTILITY, ANTICIPATED DURATION OF OUTAGE, WORK TO BE PERFORMED, AND DATE/TIME OF COMMENCEMENT AND COMPLETION. OUTAGES SHALL BE SCHEDULED AFTER HOURS, WEEKENDS, AND/OR HOLIDAYS UNLESS OTHERWISE ARRANGED WITH PCFM. APPROVAL FROM PCFM SHALL BE OBTAINED (IN WRITING) PRIOR TO START OF WORK.

B. ALL WORK THAT WILL IMPACT ADDITIONAL FLOORS SHALL BE COORDINATED WITH PIMA COUNTY FACILITIES MANAGEMENT DEPARTMENT (IN WRITING), 7 DAYS PRIOR TO SCHEDULED WORK. WORK SHALL BE SCHEDULED AFTER HOURS, WEEKENDS, AND/OR HOLIDAYS UNLESS OTHERWISE ARRANGED WITH PCFM. APPROVAL FROM PCFM SHALL BE OBTAINED (IN WRITING) PRIOR TO START OF WORK.

C. ALL DRAWINGS ARE DIAGRAMMATIC AND INDICATIVE OF THE INFORMATION AVAILABLE AT THE TIME OF DESIGN, WHICH MAY NOT PRECISELY REFLECT FIELD CONDITIONS. FIELD VERIFY EXISTING CONDITIONS PRIOR TO BIDDING/CONSTRUCTING THE PROJECT. ANY CONFLICTS DISCOVERED BY THE CONTRACTOR WHICH MAY AFFECT THE SCOPE OF WORK SHALL BE REPORTED TO THE ARCHITECT & ENGINEER PRIOR TO BIDDING.

D. CONTRACTOR SHALL FIELD VERIFY, PRIOR TO BID, DEVICES IN WALLS TO REMAIN. REMOVE ALL DEVICES WIRING AND CONDUIT BACK TO SOURCE. CONDUIT AND BOXES LOCATED IN WALLS THAT ARE TO REMAIN SHALL BE ABANDONED IN PLACE; PROVIDE STAINLESS STEEL BLANK COVERS. CONFIRM WITH OWNER WHICH WALLS ARE TO REMAIN.

E. ANY REMAINING ELECTRICAL EQUIPMENT ASSOCIATED WITH MECHANICAL EQUIPMENT THAT HAS BEEN DEMOLISHED SHALL BE REMOVED INCLUDING ASSOCIATED CIRCUITRY BACK TO SOURCE.

F. EXISTING FIRE ALARM DEVICES TO BE REMOVED ONCE THE NEW FIRE ALARM SYSTEM HAS BEEN TESTED, COMMISSIONED, AND HAS APPROVAL FROM THE FIRE MARSHALL

KEYNOTES

1. EXISTING TO REMAIN.
2. DEMOLITION AREA.

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ELECTRICAL FLOOR 5 DEMOLITION PLAN

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TUCSON, AZ

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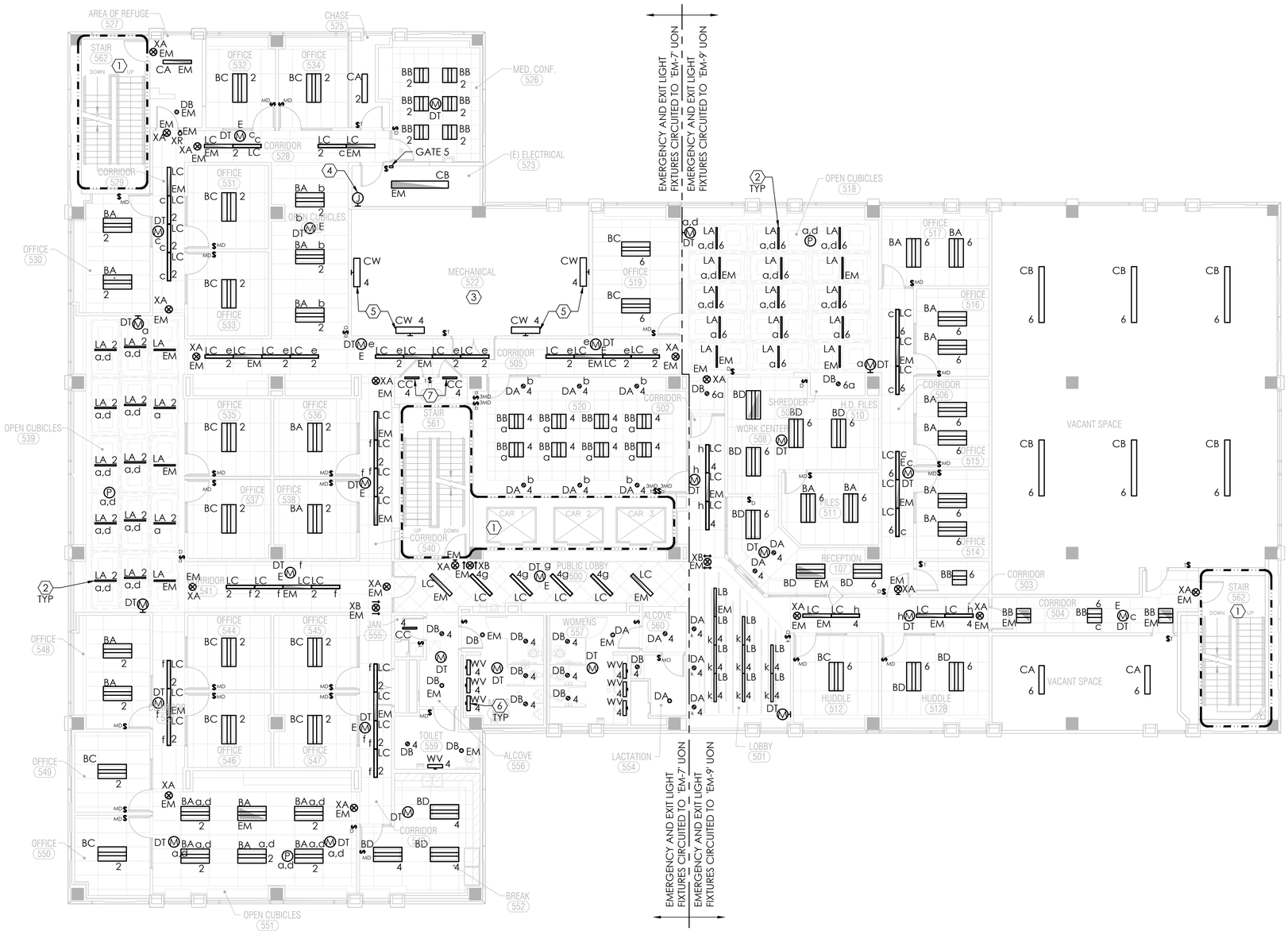




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1 LIGHTING FLOOR 5 NEW WORK PLAN

1/8" = 1'-0"

GENERAL NOTES

A. REFER TO ARCHITECTURAL REFLECTIVE CEILING PLANS (RCP) FOR EXACT FIXTURE PLACEMENT AND CEILING TYPES.

B. NO HORIZONTAL CONDUIT BETWEEN BOXES WITHIN WALLS, EACH BOX SHALL HAVE VERTICAL CONDUIT TO ABOVE CEILING.

C. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

D. CONDUCTOR AND CONDUIT SIZES ARE INDICATED ON THE PANELBOARD SCHEDULES. SIZES ARE MINIMUM FOR ENTIRE CIRCUIT.

E. CONTRACTOR SHALL PREPARE TYPE WRITTEN PANEL DIRECTORIES FOR EACH PANEL. DIRECTORY SHALL UTILIZE EXACT ROOM NUMBERS/NAMES AS SHOWN ON ARCHITECTURAL PLANS. DIRECTORY SHALL SPECIFICALLY COMPLY WITH NEC ARTICLE 408.4 (NEC 2017).

F. BRANCH CIRCUITING DOES NOT INDICATE QUANTITY OF CONDUCTORS; CONTRACTOR SHALL PROVIDE REQUIRED QUANTITY FOR SWITCHING FUNCTIONS, HOME RUNS AND FIXTURE CONNECTIONS SHOWN. EACH CONDUIT RUN SHALL HAVE A GREEN INSULATED GROUNDING CONDUCTOR.

G. EXIT AND AREA OF REFUGE SIGNS SHALL BE FED BY AN UNSWITCHED LEG OF EMERGENCY LIGHTING CIRCUIT. EMERGENCY LIGHT FIXTURES SHALL BE CONTROLLED WITH THE NORMAL LIGHTING VIA A 924 RELAY. LIGHT FIXTURES LOCATED IN AREA OF REFUGE SHALL BE UNSWITCHED AND SHALL SERVE AS NIGHT LIGHT.

H. ALL LIGHT FIXTURES ON NORMAL POWER SHALL BE FED FROM PANEL '5L'.

I. REFER TO ARCHITECTURAL PLANS FOR DEMOLITION OF ELECTRICAL ITEMS.

J. DRAWINGS DO NOT EXACTLY INDICATE QUANTITY OF DEVICES (i.e. POWER PACKS, PHOTOCELLS, VACANCY SENSORS, ETC). CONTRACTOR SHALL PROVIDE REQUIRED QUANTITY OF DEVICES FOR SWITCHING FUNCTION FOR A COMPLETE AND OPERATIONAL SYSTEM.

K. WHERE LAY-IN PANEL CEILINGS OCCUR, LOCATE FIXTURES IN PANEL CENTERS UNLESS DIMENSIONED OTHERWISE BY ARCHITECT.

L. CONFIRM MOUNTING HEIGHTS WITH CEILING FINISH HEIGHTS.

M. A MINIMUM OF TWO WEEKS NOTICE SHALL BE GIVEN TO PIMA COUNTY FACILITIES MANAGEMENT DEPARTMENT (PCFM) IN WRITING PRIOR TO UTILITY SERVICE SHUTDOWNS. AT A MINIMUM, THE NOTICE SHALL INDICATE THE AFFECTED UTILITY, ANTICIPATED DURATION OF OUTAGE, WORK TO BE PERFORMED, AND DATE/TIME OF COMMENCEMENT AND COMPLETION. OUTAGES SHALL BE SCHEDULED AFTER HOURS, WEEKENDS AND HOLIDAYS UNLESS OTHERWISE ARRANGED WITH PCFM. APPROVAL FROM PCFM SHALL BE OBTAINED (IN WRITING) PRIOR TO START OF WORK.

N. ALL WORK THAT WILL IMPACT ADDITIONAL FLOORS SHALL BE COORDINATED WITH PIMA COUNTY FACILITIES MANAGEMENT DEPARTMENT (IN WRITING), 7 DAYS PRIOR TO SCHEDULED WORK. WORK SHALL BE SCHEDULED AFTER HOURS, WEEKENDS AND HOLIDAYS UNLESS OTHERWISE ARRANGED WITH PCFM. APPROVAL FROM PCFM SHALL BE OBTAINED (IN WRITING) PRIOR TO START OF WORK

O. ALL DRAWINGS ARE DIAGRAMMATIC AND INDICATIVE OF THE INFORMATION AVAILABLE AT THE TIME OF DESIGN WHICH MAY NOT PRECISELY REFLECT FIELD CONDITIONS. FIELD VERIFY EXISTING CONDITIONS PRIOR TO BIDDING/CONSTRUCTING THE PROJECT. ANY CONFLICTS DISCOVERED BY THE CONTRACTOR WHICH MAY AFFECT THE SCOPE OF WORK SHALL BE REPORTED TO THE ARCHITECT & ENGINEER PRIOR TO BIDDING.

P. PROVIDE SHOP DRAWINGS TO ARCHITECT/ENGINEER PRIOR TO PERFORMING WORK.

KEYNOTES

1. EXISTING TO REMAIN.
2. SUSPEND LIGHT FIXTURE SO BOTTOM OF REFLECTOR IS 1" BELOW ADJACENT CEILING.
3. WIRING WITHIN THIS ROOM SHALL BE SURFACE MOUNTED WITHOUT ANY HORIZONTAL WALL PENETRATIONS.
4. J-BOX FOR EMERGENCY LIGHTING HOMERUN TO PANEL 'EM'. REFER TO ONE-LINE DIAGRAM.
5. LIGHT FIXTURE BELOW DUCTWORK. CONTRACTOR TO COORDINATE LOCATION WITH MECHANICAL PRIOR TO ROUGH-IN.
6. LIGHT FIXTURES ABOVE MIRRORS. CONTRACTOR TO VERIFY LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
7. SURFACE WALL MOUNT LIGHT FIXTURE 6" ABOVE DOOR.

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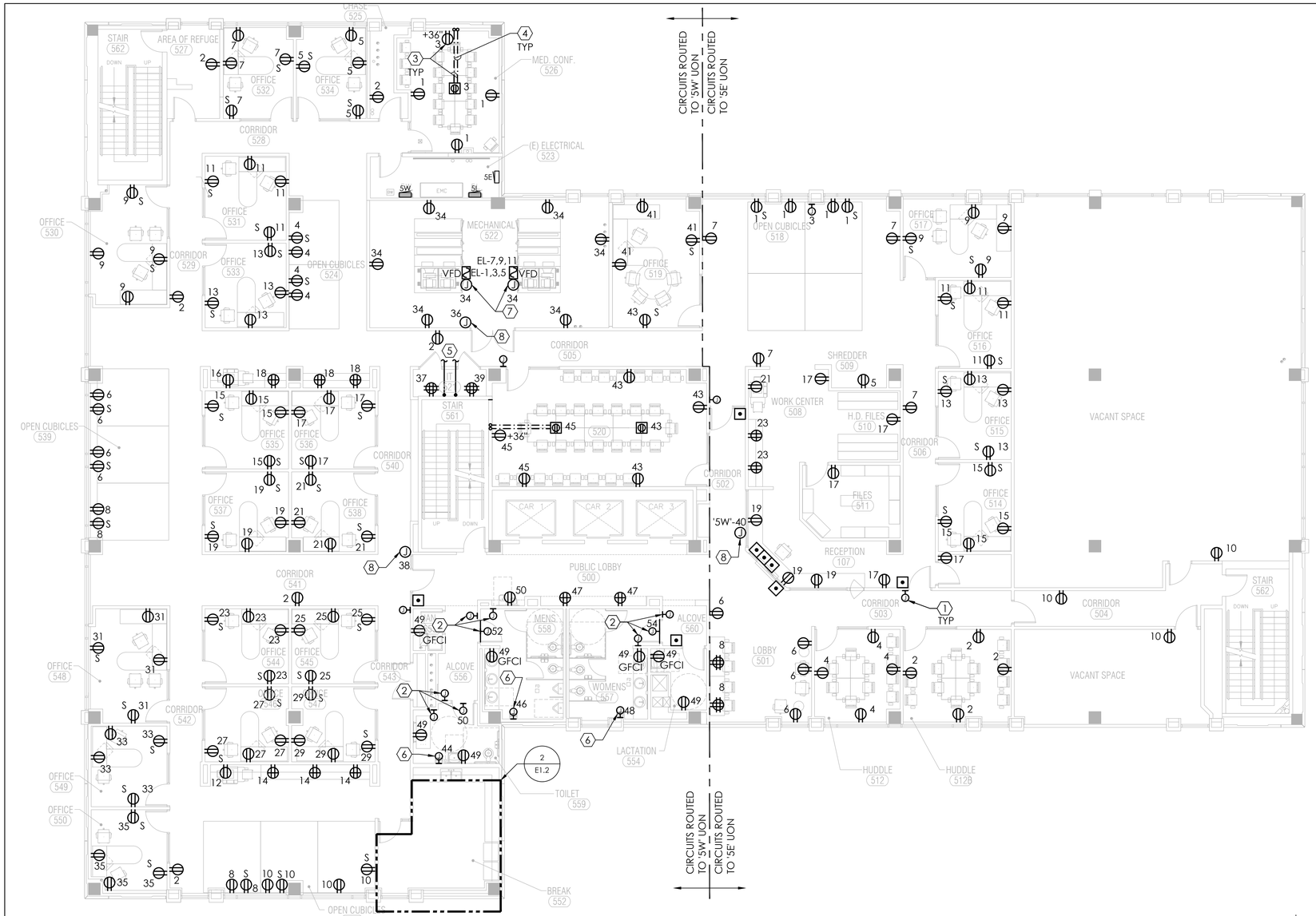
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LIGHTING FLOOR 5 NEW WORK PLAN

ADMINISTRATION WEST BUILDING
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TUCSON, AZ

SEAL
Registered Professional Engineer
14857
ROBERT A. ALCALA
Date Signed 7/22/2019
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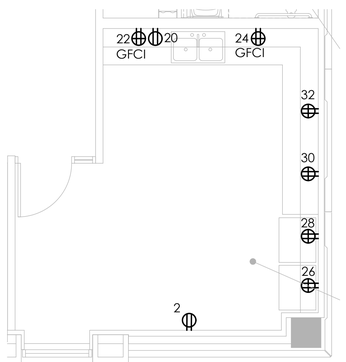
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1 POWER FLOOR 5 NEW WORK PLAN

1/8" = 1'-0"



2 ENLARGED BREAKROOM POWER PLAN

1/4" = 1'-0"

GENERAL NOTES

A. DEVICE MOUNTING HEIGHTS ARE SHOWN FOR REFERENCE ONLY. COORDINATE FINAL MOUNTING HEIGHTS AND/OR LOCATIONS AS REQUIRED WITH ARCHITECTURAL DETAILS, ELEVATIONS AND/OR MILLWORK CONTRACTOR.

B. RECEPTACLES WITHIN SIX (6) FEET OF A SINK OR BASIN LOCATIONS SHALL BE GFCI TYPE. EXTERIOR RECEPTACLES SHALL BE WEATHER PROOF (WP) TYPE WITH 'IN-USE' TYPE COVERS.

C. NO HORIZONTAL CONDUIT BETWEEN BOXES WITHIN WALLS, EACH BOX SHALL HAVE VERTICAL CONDUIT TO ABOVE CEILING.

D. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

E. LABEL WIRING DEVICES WALL PLATES WITH PERMANENT ADHESIVE LABELS (BLACK LETTERS ON CLEAR BACKGROUND), 1/8" MINIMUM LETTERING HEIGHT, STATING PANEL AND CIRCUIT NUMBER.

F. CONTRACTOR SHALL PREPARE TYPE WRITTEN PANEL DIRECTORIES FOR EACH PANEL. DIRECTORY SHALL UTILIZE EXACT ROOM NUMBERS/NAMES AS SHOWN ON ARCHITECTURAL PLANS. DIRECTORY SHALL SPECIFICALLY COMPLY WITH NEC ARTICLE 408.4 (NEC 2017).

G. CONDUCTOR AND CONDUIT SIZES ARE INDICATED ON THE PANELBOARD SCHEDULES. SIZES ARE MINIMUM FOR ENTIRE CIRCUIT. EACH CIRCUIT SHALL HAVE A SEPARATE NEUTRAL (NO SHARED NEUTRALS).

H. RECEPTACLES IN LOBBIES SHALL BE TAMPER RESISTANT TYPE, ALL OTHERS SHALL BE COMMERCIAL GRADE.

I. OFFICE PARTITION/MODULAR FURNITURE SERVED BY MULTIWIRE BRANCH CIRCUIT SHALL BE PROVIDED WITH A MEANS THAT WILL SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS WHERE THE BRANCH CIRCUIT ORIGINATES, PER NEC 210.4.

J. BRANCH CIRCUITING DOES NOT INDICATE QUANTITY OF CONDUCTORS; CONTRACTOR SHALL PROVIDE REQUIRED QUANTITIES FOR FUNCTIONS INDICATED FOR HOMERUNS. EACH CONDUIT RUN SHALL HAVE A GREEN INSULATED GROUNDING CONDUCTOR.

K. A MINIMUM OF 7 DAYS NOTICE SHALL BE GIVEN TO PIMA COUNTY FACILITIES MANAGEMENT DEPARTMENT (PCFM) IN WRITING PRIOR TO UTILITY SERVICE SHUTDOWNS. AT A MINIMUM, THE NOTICE SHALL INDICATED THE AFFECTED UTILITY, ANTICIPATED DURATION OF OUTAGE, WORK TO BE PERFORMED, AND DATE/TIME OF COMMENCEMENT AND COMPLETION. OUTAGES SHALL BE SCHEDULED AFTER HOURS, WEEKENDS, AND/OR HOLIDAYS UNLESS OTHERWISE ARRANGED WITH PCFM. APPROVAL FROM PCFM SHALL BE OBTAINED (IN WRITING) PRIOR TO START OF WORK.

L. ALL WORK THAT WILL IMPACT ADDITIONAL FLOORS SHALL BE COORDINATED WITH PIMA COUNTY FACILITIES MANAGEMENT DEPARTMENT (IN WRITING), 7 DAYS PRIOR TO SCHEDULED WORK. WORK SHALL BE SCHEDULED AFTER HOURS, WEEKENDS, AND/OR HOLIDAYS UNLESS OTHERWISE ARRANGED WITH PCFM. APPROVAL FROM PCFM SHALL BE OBTAINED (IN WRITING) PRIOR TO START OF WORK.

M. ALL DRAWINGS ARE DIAGRAMMATIC AND INDICATIVE OF THE INFORMATION AVAILABLE AT THE TIME OF DESIGN, WHICH MAY NOT PRECISELY REFLECT FIELD CONDITIONS. FIELD VERIFY EXISTING CONDITIONS PRIOR TO BIDDING/CONSTRUCTING THE PROJECT. ANY CONFLICTS DISCOVERED BY THE CONTRACTOR WHICH MAY AFFECT THE SCOPE OF WORK SHALL BE REPORTED TO THE ARCHITECT & ENGINEER PRIOR TO BIDDING.

N. PROVIDE SHOP DRAWINGS TO ARCHITECT/ENGINEER PRIOR TO PERFORMING WORK.

KEYNOTES

1. CONTRACTOR TO PROVIDE AND INSTALL DSX CARD READER DOOR ACCESS SYSTEM PER PIMA COUNTY STANDARDS. CONTRACTOR TO HAND CARDS OVER AT END OF PROJECT. UNLESS NOTED OTHERWISE. REFER TO ELECTRIC STRIKE DOOR ELEVATION ON SHEET E5.1.
2. PROVIDE AND INSTALL JUNCTION BOX AND CONDUIT FOR ELECTRIC STRIKE CONTROLLED DOOR. REFER TO POWER SWING DOOR OPERATOR ELEVATION ON SHEET E5.1.
3. PROVIDE FIRE-RATED POKE-THROUGH, HUBBELL SYSTEM ONE OR APPROVED EQUAL. CONDUIT TO BE ROUTED ABOVE ACCESSIBLE 3RD FLOOR CEILING. COORDINATE LOW-VOLTAGE REQUIRED COMPONENTS WITH OWNER PRIOR TO ORDERING.
4. PROVIDE (1) 1-1/2" CONDUIT FROM FIRE RATED POKE THRU DEVICE TO ABOVE ACCESSIBLE 4TH FLOOR CEILING FOR DATA CONDUCTORS. COORDINATE INSTALLATION WITH OWNER PRIOR TO ROUGH-IN.
5. TWO 4" CONDUITS FOR TELECOM, ROUTE ABOVE CORRIDOR CEILING TO NORTH WALL OF ELECTRICAL ROOM.
6. PROVIDE 120V CIRCUIT FOR HAND DRYER COORDINATE CONNECTION REQUIREMENTS WITH MANUFACTURERS RECOMMENDATIONS.
7. PROVIDE 120V CIRCUIT FOR LIGHTS INTEGRAL TO MECHANICAL EQUIPMENT COORDINATE CONNECTION REQUIREMENTS WITH MANUFACTURERS RECOMMENDATIONS.
8. PROVIDE 120V CIRCUIT FOR HVAC CONTROL PANELS COORDINATE CONNECTION REQUIREMENTS WITH MANUFACTURERS RECOMMENDATIONS.

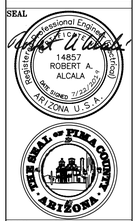
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POWER FLOOR 5 NEW WORK PLAN

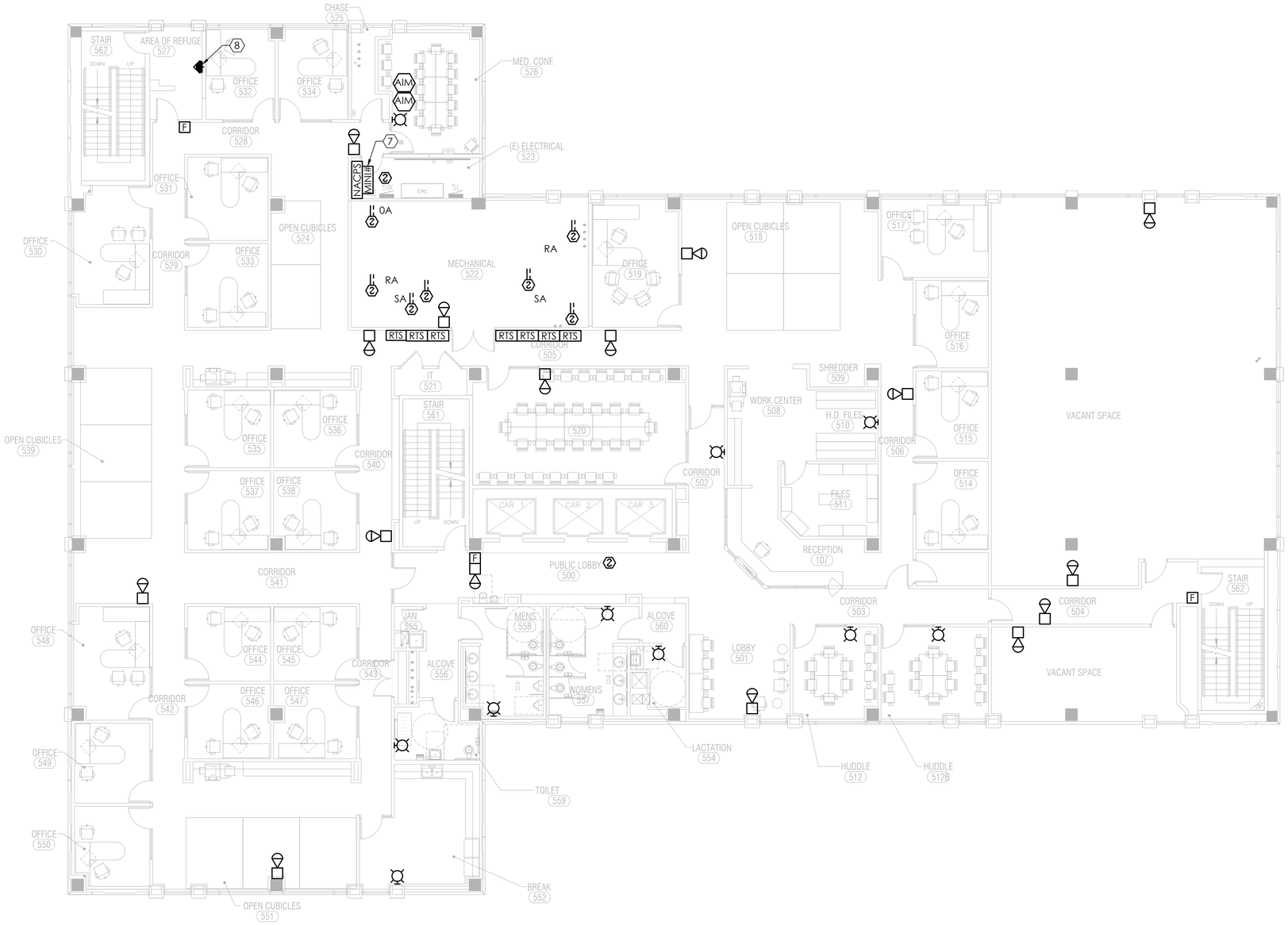
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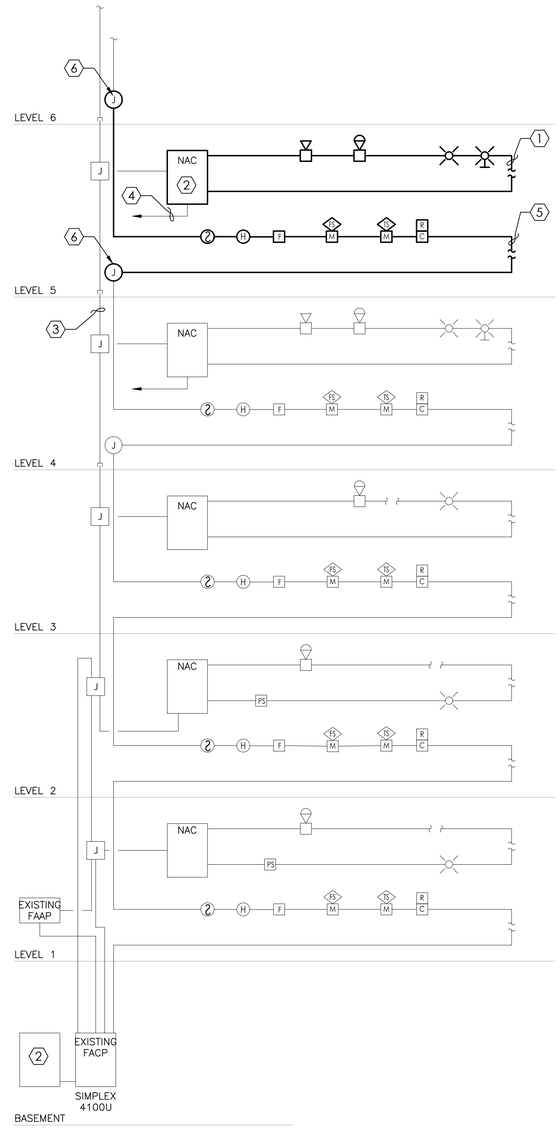
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1 FIRE ALARM FLOOR 5 NEW WORK PLAN

1/8" = 1'-0"



2 FIRE ALARM RISER DIAGRAM

1/8" = 1'-0"

GENERAL NOTES

A. EXISTING FIRE ALARM HEADEND EQUIPMENT TO BE USED/EXPANDED.

B. PROVIDE POWER SUPPLIES AS REQUIRED TO DRIVE VISUAL DEVICES.

C. PROVIDE AND INSTALL MINIMUM ¾" CONDUIT, WIRING PER EQUIPMENT MANUFACTURER REQUIREMENTS.

D. NO HORIZONTAL CONDUIT BETWEEN BOXES WITHIN WALLS, EACH BOX SHALL HAVE VERTICAL CONDUIT TO ABOVE CEILING

E. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

F. THIS PROJECT REQUIRES NEW DEVICES TO BE CONNECTED TO AN EXISTING SYSTEM. THE CONTRACTOR SHALL COORDINATE WITH THE FIRE ALARM VENDOR FOR EXACT REQUIREMENTS TO ENSURE PROPER OPERATION OF NEW DEVICES WITH THE EXISTING FIRE ALARM CONTROL PANEL.

G. THE EXISTING FIRE ALARM CONTROL PANEL IS MANUFACTURED BY SIMPLEX. NEW DEVICES SHALL BE COMPATIBLE WITH EXISTING SIMPLEX SYSTEM.

H. THE CONTRACTOR SHALL OBTAIN SHOP DRAWINGS FROM THE FIRE ALARM VENDOR INDICATING A COMPLETE LAY OUT OF ALL EQUIPMENT (NEW AND EXISTING) TO INCLUDE CONDUIT ROUTING, CONDUCTORS, VOLTAGE DROPS, AND BATTERY DROP CALCULATIONS AS REQUIRED BY THE FIRE MARSHALL HAVING JURISDICTION.

I. CONTRACTOR SHALL ISSUE FIRE ALARM VENDOR SHOP DRAWINGS TO FIRE MARSHALL HAVING JURISDICTION AND OBTAIN APPROVAL FROM SUCH OFFICE PRIOR TO ANY ROUGH IN. THE APPROVED FIRE MARSHALL PLANS SHALL BE THE CONSTRUCTION DOCUMENTS FOR LOCATIONS AND QUANTITIES OF FIRE ALARM DEVICES.

J. CONTRACTOR SHALL PROVIDE ALL DEVICES, CONDUIT, CONDUCTORS, RELAYS, MODULES, ETC.. FOR A COMPLETE AND FULLY OPERATION SYSTEM. THIS INCLUDES ANY PROGRAMMING OR DESIGN REQUIRED BY THE VENDOR OF CHOICE.

K. CONTRACTOR SHALL TEST THE NEW DEVICES PRIOR TO THE FIRE MARSHALL HAVING JURISDICTION AND/OR PROJECT ENGINEERS SITE VISIT OF APPROVED INSTALLATION.

L. PROVIDE CONTROL MODULE AND CONNECTION TO EXISTING FIRE ALARM SYSTEM FOR FIRE/SMOKE DAMPER. REFER TO GENERAL NOTE I ON SHEET E1.2 FOR DUCT DETECTOR REQUIREMENTS.

KEYNOTES

1. TYPICAL CLASS A NOTIFICATION APPLIANCE CIRCUIT. SEE FLOOR PLANS FOR DEVICE QUANTITY.
2. EXISTING SIMPLEX NOTIFICATION APPLIANCE CIRCUIT (NAC) EXTENDER PANEL TO REPLACE AT EXISTING LOCATION AND RECONNECT TO EXISTING CIRCUIT.
3. EXISTING CONDUIT STUB-UP TO FIFTH FLOOR.
4. EXISTING 120V EMERGENCY POWER CIRCUIT.
5. TYPICAL CLASS A INITIATING DEVICE CIRCUIT/SIGNALING LINE CIRCUIT IDC/SLC. SEE FLOOR PLANS FOR DEVICE QUANTITY.
6. INTERCEPT EXISTING IDC/SLC LOOP. PROVIDE AND INSTALL NEW JUNCTION BOX IN ACCESSIBLE LOCATION. EXTEND NEW FIRE ALARM CABLING IN CONDUIT AS NOTED.
7. PROVIDE NEW TRANSPONDER
8. PROVIDE AREA OF REFUGE COMMUNICATION SYSTEM. HEAD END COMMUNICATIONS RECEIVER TO BE LOCATED ON THE 1ST FLOOR. FIRE RATED CABLE WILL BE NEEDED IF THE SYSTEM DOES NOT COMMUNICATE OFFSITE

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FIRE ALARM FLOOR 5 NEW WORK PLAN

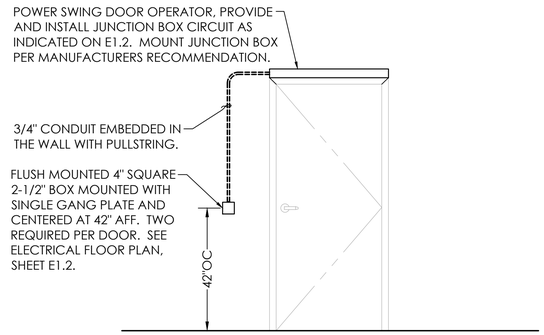
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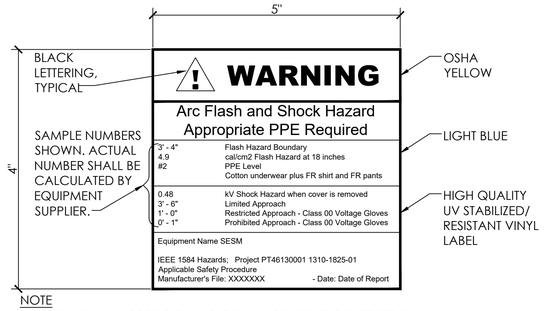
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3 POWER SWING DOOR OPERATOR ELEVATION

NOT TO SCALE

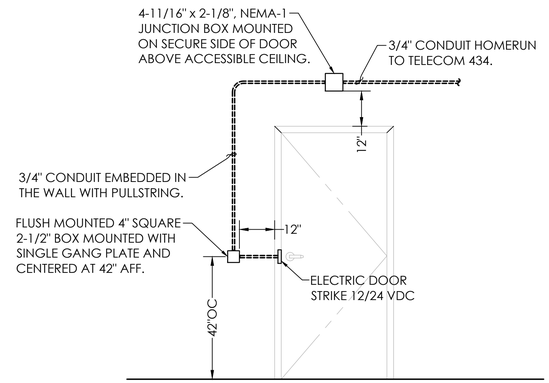


NOTE

VALUES SHOWN ARE FOR EXAMPLE ONLY. EQUIPMENT SUPPLIER SHALL PERFORM CALCS PER NEC 110.16.

1 ARC FLASH WARNING LABEL

NOT TO SCALE



2 ELECTRIC STRIKE DOOR ELEVATION

NOT TO SCALE

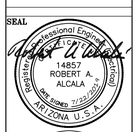
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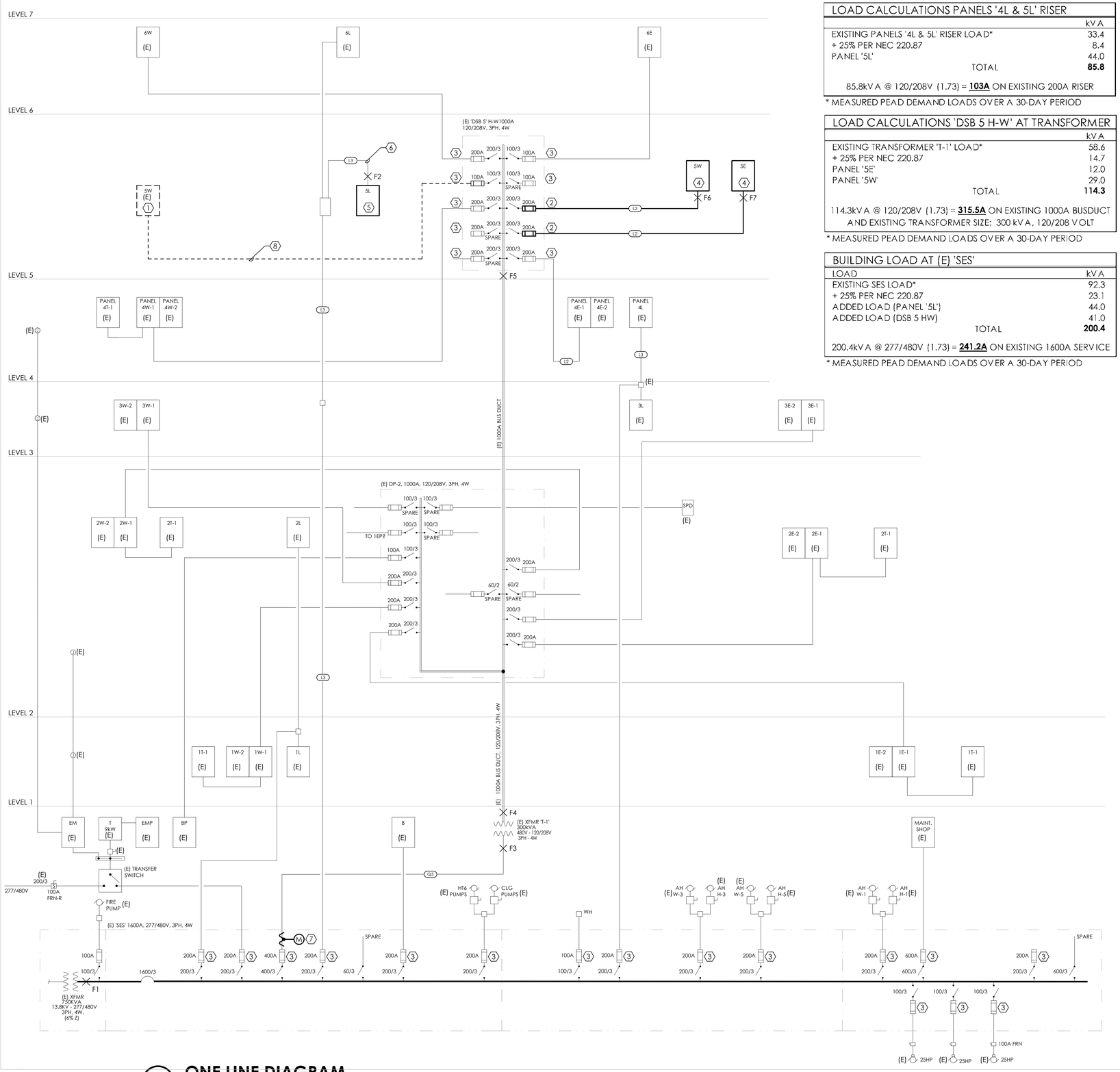


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SCALE:
SHEET NO:

E5.1
45 OF 48

W.O. NUMBER
19*10427



LOAD CALCULATIONS PANELS '4L & 5L' RISER

	kVA
EXISTING PANELS '4L & 5L' RISER LOAD*	33.4
+ 25% PER NEC 220.87	8.4
PANEL '5L'	44.0
TOTAL	**85.8**

85.8kVA @ 120/208V (1.73) = **103A** ON EXISTING 200A RISER

* MEASURED PEAD DEMAND LOADS OVER A 30-DAY PERIOD

LOAD CALCULATIONS 'DSB 5 H-W' AT TRANSFORMER

	kVA
EXISTING TRANSFORMER 'T-1' LOAD*	58.6
+ 25% PER NEC 220.87	14.7
PANEL '5E'	12.0
PANEL '5W'	29.0
TOTAL	**114.3**

114.3kVA @ 120/208V (1.73) = **315.5A** ON EXISTING 1000A BUSDUCT AND EXISTING TRANSFORMER SIZE: 300 kVA, 120/208 VOLT

* MEASURED PEAD DEMAND LOADS OVER A 30-DAY PERIOD

BUILDING LOAD AT (E) 'SES'

LOAD	kVA
EXISTING SES LOAD*	92.3
+ 25% PER NEC 220.87	23.1
ADDED LOAD (PANEL '5L')	44.0
ADDED LOAD (DSB 5 HW)	41.0
TOTAL	**200.4**

200.4kVA @ 277/480V (1.73) = **241.2A** ON EXISTING 1600A SERVICE

* MEASURED PEAD DEMAND LOADS OVER A 30-DAY PERIOD

GENERAL NOTES

A. EXISTING (E) SYSTEM TO BE MAINTAINED IN SERVICE UNLESS SHOWN AS DEMO.

B. EXISTING ITEMS TO REMAIN UNLESS OTHERWISE NOTED AND ARE SHOWN WITH LIGHT LINE WORK, EXISTING ITEMS TO BE REMOVED ARE DASHED AND NEW WORK IS SHOWN AS SOLID BOLD LINES.

C. EQUIPMENT SUPPLIER SHALL PREPARE ARC FLASH STUDY AND CONTRACTOR SHALL PROVIDE LABELING FOR DISTRIBUTION EQUIPMENT, PANELS AND VFD'S AS REQUIRED PER NEC 110-16. EQUIPMENT LABELS SHALL READ AS FOLLOWS: "WARNING - POTENTIAL ARC FLASH HAZARD - APPROPRIATE PPE AND TOOLS REQUIRED WHEN WORKING ON THIS EQUIPMENT." REFER TO ARC FLASH DETAIL. 1, SHEET E5.1.

D. ELECTRICAL EQUIPMENT SHALL BE FULLY RATED, REFER TO FAULT CURRENT CALCULATIONS. SERIES RATED NOT PERMITTED.

E. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

KEYNOTES

1. NEW PANEL BOARD.
2. EXISTING FUSIBLE SWITCH WITH NEW FUSES (SIZE AS INDICATED) TO BE RE-USED FOR NEW PANEL DESIGNATION AS NOTED.
3. EXISTING FUSIBLE SWITCH (AND FUSES) SHALL REMAIN.
4. EXISTING PANEL TO BE REMOVED.
5. REMOVE AND REPLACE EXISTING PANEL IN PLACE. SALVAGE EXISTING CIRCUIT BREAKERS TO OWNER.
6. PROVIDE NEW SPLICE AND FEEDER IN EXISTING CONDUIT.
7. NEW 400A 480V 3PH POWER METER WITH DEMAND "VARIS" #E2X SERIES OR APPROVED EQUIVALENT. INSTALL CT IN 'SES' AND CONNECT TO EXISTING DELTA CONTROLS BACNET ENERGY MANAGEMENT SYSTEM. VERIFY POINT OF CONNECTION WITH OWNER PRIOR TO BID; PROVIDE ALL CONDUIT AND WIRE REQUIRED FOR CONNECTION WITH RS-485 JACK.
8. REMOVE EXISTING FEEDER AND CONDUIT.

Fault Current Calculation 'SES'

Fault	F1	F2	F3	F4	F5	F6	F7
Location	(E) SES	Panel '5L'	(E)300 kVA XFMR pri.	XFMR sec	'DSB5 H-W'	Panel '5W'	Panel '5E'
AFC (from utility)*	32,600	32,600	32,600	29,865	12,601	11,200	11,200
Conductor size		3/0	3/0		1	3/0	3/0
Length**		104	20		75	24	30
# of Sets		1	2		1	1	1
Type of Conduit		STEEL	STEEL		BUSWAY	STEEL	STEEL
C value***		12844	12844		62900	12844	12844
Voltage primary		480	480		208	208	208
Voltage secondary (xfmr)				208			
xfmr impedence				5.4			
xfmr kva				300			
'f' Factor		0.95	0.09	4.47	0.13	0.17	0.22
Multiplier		0.51	0.92	0.18	0.89	0.85	0.82
Calculated Fault Current Rated (Fully)	32,600	16,697 FULLY	29,865 FULLY	12,601 FULLY	11,200 FULLY	9,538 FULLY	9,197 FULLY

* Value obtained from serving utility fault current charts.
** Lenghts intended for design purposes only. Refer to floor plans for actual distances.
** Conductor values obtained from Bussmann SPD, based on 2017 NEC

FEEDER SCHEDULE

PLAN MARK	PARALLEL SETS	FEEDER & GROUND	CONDUIT SIZE	AMPACITY
B1	1	2#10 & 1#10GND	3/4"	35
G3	1	4#2 & 1#2GND	1-1/4"	115
L2	1	4#3/0 & 1#6GND	2"	200
L3	1	4#3/0 & 1#6GND	(E)	200
Q3	1	3#750MCM	(E)	475

1 **ONE LINE DIAGRAM**
SCALE: 1/8" = 1'-0"

GLHN
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2939 E. Broadway Blvd, Tucson, AZ 85716
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PIMA COUNTY FACILITIES MANAGEMENT, 150 WEST CONGRESS, TUCSON ARIZONA 85701 (520)740-3085

ADMIN WEST FIFTH FLOOR TI
SINGLE ONE LINE DIAGRAM

ADMINISTRATION WEST BUILDING
150 WEST CONGRESS
TUCSON, AZ

SEAL
Registered Professional Engineer (Electrical) 14857 ROBERT A. ALCALA STATE OF ARIZONA U.S.A. 7/22/19

REVS: DATE:
0

DRWN BY: JLV
CKD BY: RAA
DATE: 2019/07/22
SCALE:
SHEET NO:
E6.1
46 OF 48
W.O. NUMBER
19*10427

5W

NEW

TYPE: NEW , SURFACE MOUNTED, NEMA 1
SERVICE: 208Y/120 V 3 Ø,4 W
POLES: 60 PLUG ON
LOCATION: ELECTRICAL RM

BUS: 200 AMP
MAINS: 200 A MLO
NEUTRAL: FULL
AIC: 10 kAIC

**	ØA	ØB	ØC	C	Wire	G	Load	CB		CKT		CB		Load	C	Wire	G	ØA	ØB	ØC	**
2	0.5			3/4	#12	#12	Receptacles - Conf. 526	20	/1	1	2	20	/1	ecep-505,525,529,541-54	3/4	#12	#12	1.1			2
2		0.4		3/4	#12	#12	Receptacles - Conf. 526	20	/1	3	4	20	/1	Recep - Open C. 524	3/4	#12	#12		0.7		2
2			0.7	3/4	#12	#12	Receptacles - Off. 534	20	/1	5	6	20	/1	Recep - Open C. 539	3/4	#12	#12			0.7	2
2	0.7			3/4	#12	#12	Receptacles - Off. 532	20	/1	7	8	20	/1	Recep - Open C. 539,551	3/4	#12	#12	0.7			2
2		0.7		3/4	#12	#12	Receptacles - Off. 530	20	/1	9	10	20	/1	Recep - Open C. 551	3/4	#12	#12		0.7		2
2			0.7	3/4	#12	#12	Receptacles - Off. 531	20	/1	11	12	20	/1	Recep - Copier Rm 551	3/4	#12	#12			1.2	2
2	0.7			3/4	#12	#12	Receptacles - Off. 533	20	/1	13	14	20	/1	AC Recep - Open C. 551	3/4	#12	#12	0.5			2
2		0.7		3/4	#12	#12	Receptacles - Off. 535	20	/1	15	16	20	/1	Recep - Copier Corr. 505	3/4	#12	#12		1.2		2
2			0.7	3/4	#12	#12	Receptacles - Off. 536	20	/1	17	18	20	/1	AC Recep - Corr. 505	3/4	#12	#12			0.5	2
2	0.7			3/4	#12	#12	Receptacles - Off. 537	20	/1	19	20	20	/1	Disposal - Break 552	3/4	#12	#12	1.1			2
2		0.7		3/4	#12	#12	Receptacles - Off. 538	20	/1	21	22	20	/1	Coffee - Break 552	3/4	#12	#12		0.6		2
2			0.7	3/4	#12	#12	Receptacles - Off. 544	20	/1	23	24	20	/1	Microwave - Break 552	3/4	#12	#12			1.2	2
2	0.7			3/4	#12	#12	Receptacles - Off. 545	20	/1	25	26	20	/1	Refrigerator - Break 552	3/4	#12	#12	0.7			2
2		0.7		3/4	#12	#12	Receptacles - Off. 546	20	/1	27	28	20	/1	Refrigerator - Break 552	3/4	#12	#12		0.7		2
2			0.7	3/4	#12	#12	Receptacles - Off. 547	20	/1	29	30	20	/1	AC Recep - Break 552	3/4	#12	#12			0.5	2
2	0.7			3/4	#12	#12	Receptacles - Off. 548	20	/1	31	32	20	/1	AC Recep - Break 552	3/4	#12	#12	0.5			2
2		0.7		3/4	#12	#12	Receptacles - Off. 549	20	/1	33	34	20	/1	Recep - Mech. 522	3/4	#12	#12		1.1		2
2			0.7	3/4	#12	#12	Receptacles - Off. 550	20	/1	35	36	20	/1	Main Control Pnl - Rm 522	3/4	#12	#12			0.5	
2	0.4			3/4	#12	#12	Recep - IT 521	20	/1	37	38	20	/1	Term. Unit Power Supply	3/4	#12	#12	0.5			
2		0.4		3/4	#12	#12	Recep - IT 521	20	/1	39	40	20	/1	Term. Unit Power Supply	3/4	#12	#12		0.5		
2			0.7	3/4	#12	#12	Receptacles - Off. 519	20	/1	41	42	15	/1	FC-501	3/4	#12	#12			0.1	3
2	0.7			3/4	#12	#12	Receptacles - Conf. 520	20	/1	43	44	20	/1	Hand Dryer - Toilet 559	3/4	#12	#12	0.4			
2		0.5		3/4	#12	#12	Receptacles - Conf. 520	20	/1	45	46	20	/1	Hand Dryer - Mens 558	3/4	#12	#12		0.4		
2			0.4	3/4	#12	#12	Recep - Lobby 500	20	/1	47	48	20	/1	Hand Dryer - Women 557	3/4	#12	#12			0.4	
2	1.3			3/4	#12	#12	Recep - Rms 554-560	20	/1	49	50	20	/1	AutoDoor - Toilet 559	3/4	#12	#12	1.8			
		0.4		3/4	#12	#12	Electric Water Cooler	20	/1	51	52	20	/1	AutoDoor - Mens 558	3/4	#12	#12		1.8		
							Spare	20	/1	53	54	20	/1	AutoDoor - Women 557	3/4	#12	#12			1.8	
							Spare	20	/1	55	56	20	/1	Spare							
							Spare	20	/1	57	58	20	/1	Spare							
							Spare	20	/1	59	60	20	/1	Spare							

**	DEMAND FACTORS AS NOTED
1	LTG & CONTINUOUS LOAD
2	RECEPTACLE LOAD
3	MOTOR LOAD
4	KITCHEN EQUIPMENT LOAD
5	SUBPANEL FEED AT 100%

CIRCUIT BREAKER NOTES
A - HACR CIRCUIT BREAKER
C- SOLENOID OPERATED CIRCUIT BREAKER
G - GFI CIRCUIT BREAKER
L - TO BE LOCKABLE IN OPEN POSITION

LOAD SUMMARY	ØA	ØB	ØC
NON-CONTINUOUS LOAD	2.7	3.0	2.7
LIGHTING & CONTINUOUS LOAD			
RECEPTACLE LOAD	7.2	6.6	6.5
MOTOR LOAD			0.1
KITCHEN EQPT LOAD			
TOTAL kVA	9.9	9.6	9.2
TOTAL AMPS	82	80	77
TOTAL LOAD (kVA)			29

NOTES:

E5

NEW

TYPE: NEW , SURFACE MOUNTED, NEMA 1
SERVICE: 208Y/120 V 3 Ø,4 W
POLES: 60 PLUG ON
LOCATION: ELECTRICAL RM

BUS: 200 AMP
MAINS: 200 A MLO
NEUTRAL: FULL
AIC: 10 kAIC

**	ØA	ØB	ØC	C	Wire	G	Load	CB		CKT		CB		Load	C	Wire	G	ØA	ØB	ØC	**
2	0.7			3/4	#12	#12	Recep - Open Cub. 518	20	/1	1	2	20	/1	Recep - Huddle 512B	3/4	#12	#12	0.7			2
2		0.7		3/4	#12	#12	Furniture Connect - 518	20	/1	3	4	20	/1	Recep - Huddle 512A	3/4	#12	#12		0.7		2
2			1.2	3/4	#12	#12	Shredder - Open C. 518	20	/1	5	6	20	/1	Recep - Lobby 501	3/4	#12	#12			0.7	2
2	0.7			3/4	#12	#12	Recep - Rms 506, 518	20	/1	7	8	20	/1	Recep - Lobby 501	3/4	#12	#12	0.4			2
2		0.7		3/4	#12	#12	Recep - Office 517	20	/1	9	10	20	/1	Recep - Lobby 501	3/4	#12	#12		0.4		2
2			0.7	3/4	#12	#12	Recep - Office 516	20	/1	11	12	20	/1	Recep - 504, Vacant Sp.	3/4	#12	#12			0.5	2
2	0.7			3/4	#12	#12	Recep - Office 515	20	/1	13	14	20	/1	DSX Card Access Sys.	3/4	#12	#12	0.5			
2		0.7		3/4	#12	#12	Recep - Office 514	20	/1	15	16	20	/1	Spare							
2			0.9	3/4	#12	#12	Recep - 507,509-511,512	20	/1	17	18	20	/1	Spare							
2	0.5			3/4	#12	#12	Recep - Reception 507	20	/1	19	20	20	/1	Spare							
2		1.2		3/4	#12	#12	Recep - Copier Rm 508	20	/1	21	22	20	/1	Spare							
2			0.4	3/4	#12	#12	Recep-Work Center 508	20	/1	23	24	20	/1	Spare							
							Space	20	/1	25	26	20	/1	Space							
							Space	20	/1	27	28	20	/1	Space							
							Space	20	/1	29	30	20	/1	Space							
							Space	20	/1	31	32	20	/1	Space							
							Space	20	/1	33	34	20	/1	Space							
							Space	20	/1	35	36	20	/1	Space							
							Space	20	/1	37	38	20	/1	Space							
							Space	20	/1	39	40	20	/1	Space							
							Space	20	/1	41	42	20	/1	Space							
							Space	20	/1	43	44	20	/1	Space							
							Space	20	/1	45	46	20	/1	Space							
							Space	20	/1	47	48	20	/1	Space							
							Space	20	/1	49	50	20	/1	Space							
							Space	20	/1	51	52	20	/1	Space							
							Space	20	/1	53	54	20	/1	Space							
							Space	20	/1	55	56	20	/1	Space							
							Space	20	/1	57	58	20	/1	Space							
							Space	20	/1	59	60	20	/1	Space							

**	DEMAND FACTORS AS NOTED
1	LTG & CONTINUOUS LOAD
2	RECEPTACLE LOAD
3	MOTOR LOAD
4	KITCHEN EQUIPMENT LOAD
5	SUBPANEL FEED AT 100%

CIRCUIT BREAKER NOTES
A - HACR CIRCUIT BREAKER
C- SOLENOID OPERATED CIRCUIT BREAKER
G - GFI CIRCUIT BREAKER
L - TO BE LOCKABLE IN OPEN POSITION

LOAD SUMMARY	ØA	ØB	ØC
NON-CONTINUOUS LOAD	0.5		
LIGHTING & CONTINUOUS LOAD			
RECEPTACLE LOAD	3.6	3.9	3.9
MOTOR LOAD			
KITCHEN EQPT LOAD			
TOTAL kVA	4.1	3.9	3.9
TOTAL AMPS	34	32	32
TOTAL LOAD (kVA)			12

NOTES:

(E) 'EM'**

EXISTING

TYPE: EXIST
SERVICE: 480Y/277 V 3 Ø,4 W
POLES: 42 BOLT ON
LOCATION: BASEMENT

BUS: 100 AMP
MAINS: 100 A MLO
NEUTRAL: FULL
AIC: 14,000
NEMA 3R

**	ØA	ØB	ØC	Cond	Wire	Gnd	Load	CB		CKT		CB		Load	Cond	Wire	Gnd	ØA	ØB	ØC	**
1							e} LIGHTS EAST STAIR	20	/1	1	2	20	/1	e} 4TH FLR F/S DAMPER	3/4	#12	#12	0.4			
1							e} LIGHTS EAST STAIR	20	/1	3	4	20	/1	e} LIGHTS ELEC EQUIP RM							1
1							e} LIGHTS EAST STAIR	20	/1	5	6	20	/1	e} SPARE							
1	0.5			3/4	#12	#12	n} LIGHTS 5TH FLR WEST	20	/1	7	8	20	/1	e} LIGHTS 4TH FLR WEST	3/4	#12	#12	0.7			1
1		0.3		3/4	#12	#12	n} LIGHTS 5TH FLR EAST	20	/1	9	10	20	/1*	e} SPARE							
1			0.5	3/4	#12	#12	e} LIGHTS 4TH FLR EAST	20	/1	11	12	20	/1*	e} SPARE							
1							e} MIDDLE STAIR	20	/1	13	14	20	/1	e} LIGHTS 1ST FLR WEST							1
1							e} MIDDLE STAIR	20	/1	15	16	20	/1	e} LIGHTS 1ST FLR EAST							1
1							e} MIDDLE STAIR	20	/1	17	18	20	/1	e} LIGHTS 2ND FLR EAST							1
1							e} LIGHTS WEST STAIR	20	/1	19	20	20	/1	e} LIGHTS 2ND FLR WEST							1
1							e} LIGHTS WEST STAIR	20	/1	21	22	20	/1	e} LIGHTS 3RD FLR EAST							1
1							e} LIGHTS WEST STAIR	20	/1	23	24	20	/1	e} LIGHTS 3RD FLR WEST							1

**	DEMAND FACTORS AS NOTED
1	LTG & CONTINUOUS LOAD
2	RECEPTACLE LOAD
3	MOTOR LOAD
4	KITCHEN EQUIPMENT LOAD
5	SUBPANEL FEED AT 100%

CIRCUIT BREAKER NOTES
A - HACR CIRCUIT BREAKER
C- SOLENOID OPERATED CIRCUIT BREAKER
G - GFI CIRCUIT BREAKER
L - TO BE LOCKABLE IN OPEN POSITION
N - INSTALL NEW CB IN EXISTING PANEL

LOAD SUMMARY	ØA	ØB	ØC
NON-CONTINUOUS LOAD @ 100%	0.4		
LIGHTING & CONTINUOUS LOAD @ 125%	1.5	0.3	0.6
RECEPTACLE LOAD PER NEC 220-13			
MOTOR LOAD PER NEC 430-24			
KITCHEN EQPT LOAD PER NEC 220-20			
TOTAL kVA	1.8	0.3	0.6
TOTAL AMPS	7	1	2
TOTAL LOAD (kVA)			3

NOTES:
* USE EXISTING SPARE CIRCUIT BREAKER FOR CIRCUIT LISTED IF CIRCUITS IDENTIFIED FOR 4TH FLOOR (CKT. 8 AND CKT. 11) ARE NOT ACCURATE.
** SWITCH ALL UNUSED CIRCUIT BREAKERS INTO THE OFF POSITION.

5L

NEW

TYPE: NEW , SURFACE MOUNTED, NEMA 1
SERVICE: 480Y/277 V 3 Ø,4 W
POLES: 24 BOLT ON
LOCATION: ELECTRICAL ROOM

BUS: 100 AMP
MAINS: 100 A MCB
NEUTRAL: FULL
AIC: 18 kAIC

**	ØA	ØB	ØC	C	Wire	G	Load	CB		CKT		CB		Load	C	Wire	G	ØA	ØB	ØC	**
3	5.8			1	#6	#10	Air Handler	45	/3	1	2	20	/1	Lts - 505,523-539,541-551	3/4	#12	#12	1.5			1
3		5.8			#6		Unit	-		3	4	20	/1	Lts.500-03,505,520,552-60	3/4	#12	#12		1.3		1
3			5.8		#6		'AHU-5A'	-		5	6	20	/1	Lts - 504, 506-519, VAC.	3/4	#12	#12			1.3	1
3	5.8			1	#6	#10	Air Handler	45	/3	7	8	20	/1	Spare							
3		5.8			#6		Unit	-		9	10	20	/1	Spare							
3			5.8		#6		AHU-5B'	-		11	12	20	/1	Spare							
							Space	20	/1	13	14	20	/1	Spare							
							Space	20	/1	15	16	20	/1	Spare							
							Space	20	/1	17	18	20	/1	Spare							
							Space	20	/1	19	20	20	/1	Space							
							Space	20	/1	21	22	20	/1	Space							
							Space	20	/1	23	24	20	/1	Space							

**	DEMAND FACTORS AS NOTED
1	LTG & CONTINUOUS LOAD
2	RECEPTACLE LOAD
3	MOTOR LOAD
4	KITCHEN EQUIPMENT LOAD
5	SUBPANEL FEED AT 100%

CIRCUIT BREAKER NOTES
A - HACR CIRCUIT BREAKER
C- SOLENOID OPERATED CIRCUIT BREAKER
G - GFI CIRCUIT BREAKER
L - TO BE LOCKABLE IN OPEN POSITION

LOAD SUMMARY	ØA	ØB	ØC
NON-CONTINUOUS LOAD			
LIGHTING & CONTINUOUS LOAD	1.8	1.6	1.6
RECEPTACLE LOAD			
MOTOR LOAD	13.1	13.1	13.1
KITCHEN EQPT LOAD			
TOTAL kVA	14.9	14.7	14.7
TOTAL AMPS	53.9	53	53
TOTAL LOAD (kVA)			44

NOTES:

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PIMA COUNTY FACILITIES MANAGEMENT, 150 WEST CONGRESS, TUCSON ARIZONA 85701 (520)740-3085

ADMIN WEST FIFTH FLOOR TI
PANEL SCHEDULES

ADMINISTRATION WEST BUILDING
150 WEST CONGRESS
TUCSON, AZ

SEAL
Registered Professional Engineer
14857
ROBERT A. ALCALA
Date Signed 7/22/2019
ARIZONA U.S.A.
THE SEAL OF PIMA COUNTY ARIZONA

REVS: DATE:
0

DRWN BY: JLV
CKD BY: RAA
DATE: 2019/07/22
SCALE:
SHEET NO:
E7.1
47 OF 48
W.O. NUMBER
19*10427

COMcheck Software Version 4.1.1.0

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: Pima County 5th Floor Remodel
Project Type: New Construction

Construction Site:
Administration West Building
150 West Congress
Tucson, AZ 85701

Owner/Agent:
Pima County Facilities Management
150 West Congress
Tucson, AZ 85701
520.740.3085

Designer/Contractor:
GLHN Architects and Engineers
2939 East Broadway Blvd
Tucson, AZ 85716
520.881.4546

Additional Efficiency Package(s)

High efficiency HVAC. Systems that do not meet the performance requirement will be identified in the mechanical requirements checklist report.

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-Office	15585	0.79	12312
		Total Allowed Watts =	12312

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-Office				
LED: BA: Refer tp Light Fixture Schedule: Other:	1	25	29	725
LED: BB: Refer tp Light Fixture Schedule: Other:	1	19	16	304
LED: BC: Refer tp Light Fixture Schedule: Other:	1	15	43	645
LED: BD: Refer tp Light Fixture Schedule: Other:	1	12	22	264
LED: CA: Refer tp Light Fixture Schedule: Other:	1	4	30	120
LED: CB: Refer tp Light Fixture Schedule: Other:	1	7	60	420
LED: CC: Refer tp Light Fixture Schedule: Other:	1	3	17	51
LED: CW: Refer tp Light Fixture Schedule: Other:	1	4	30	120
LED: DA: Refer tp Light Fixture Schedule: Other:	1	14	17	238
LED: DB: Refer tp Light Fixture Schedule: Other:	1	14	12	168
LED: LA: Refer tp Light Fixture Schedule: Other:	1	30	26	780
LED: LB: Refer tp Light Fixture Schedule: Other:	1	9	28	252
LED: LC: Refer tp Light Fixture Schedule: Other:	1	54	16	864
LED: WV: Refer tp Light Fixture Schedule: Other:	1	7	20	144
LED: XA: Refer tp Light Fixture Schedule: Other: Exemption:Exit signs	1	14	4	Exempt
LED: XB: Refer tp Light Fixture Schedule: Other: Exemption:Exit signs	1	4	4	Exempt
LED: XR: Refer tp Light Fixture Schedule: Other: Exemption:Exit signs	1	1	1	Exempt
			Total Proposed Watts =	5094

Interior Lighting PASSES: Design 59% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.1.0 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

LISA VICKERY ELECTRICAL DESIGNER — Name - Title
Signature
07/22/2019 — Date

LIGHT FIXTURE SCHEDULE

1423.06 PC, ADMIN WEST BLDG, 5th FLOOR IMPROVEMENTS

TYPE	MANUFACTURER	CATALOG NO.	DESCRIPTION	LED MODULE(S) COLOR TEMP.	LED MODULE(S) DELIVERED LUMENS	VOLTS	MOUNTING	VA	NOTES	DLC ID NUMBER	EQUIVALENT MANUFACTURER
BA	LITHONIA	2BLTBA4 40LHE ADP GZ1 LP835	2x4 LED TROFFER WITH ROUNDED RIBBED DIFFUSE CENTER LENS AND 0-10V/ 1% DIMMING	3500K	4000	120-277	RECESSED GRID	29	1, 2		COOPER PHILIPS
BB	LITHONIA	2BLTBA2 20LHE ADP GZ1 LP835	2x2 LED TROFFER WITH ROUNDED RIBBED DIFFUSE CENTER LENS AND 0-10V/ 1% DIMMING	3500K	2000	120-277	RECESSED GRID	16	1, 2		COOPER PHILIPS
BC	LITHONIA	2BLTBA4 60LHE ADP GZ1 LP835	2x4 LED TROFFER WITH ROUNDED RIBBED DIFFUSE CENTER LENS AND 0-10V/ 1% DIMMING	3500K	5800	120-277	RECESSED GRID	43	1, 2		COOPER PHILIPS
BD	LITHONIA	2BLTBA4 60LHE ADP GZ1 LP835	2x4 LED TROFFER WITH ROUNDED RIBBED DIFFUSE CENTER LENS AND 0-10V/ 1% DIMMING	3500K	3000	120-277	RECESSED GRID	22	1, 2		COOPER PHILIPS
CA	LITHONIA	ZL1D L48 3000LM FST MVOLT 35K 80CRI WH ZACVH	4' LENSED STRIP WITH CABLE SUSPENSION	3500K	3900	120-277	PENDANT @ 8'-0" AFF	30	-	PHW7JGM5	COOPER PHILIPS
CB	LITHONIA	ZL1D L96 6000LM FST MVOLT 35K 80CRI WH ZACVH	8' LENSED STRIP WITH CABLE SUSPENSION	3500K	8200	120/277	PENDANT @ 8'-0" AFF	60	-	PKSXUH8T	COOPER PHILIPS
CC	LITHONIA	ZL1D L24 1500LM FST MVOLT 35K 80CRI WH ZACVH	4' LENSED STRIP WITH CABLE SUSPENSION	3500K	2000	120-277	PENDANT @ 8'-0" AFF	17	-	PP98KVB1	COOPER PHILIPS
CW	LITHONIA	ZL1D L48 3000LM FST MVOLT 35K 80CRI WH	4' LENSED STRIP BACK MOUNTED	3500K	3900	120-277	WALL/BACK @ 8'-0" AFF	30	-	PHW7JGM5	COOPER PHILIPS
DA	JUNO	IC22LED G4 14LM 35K 90CRI MVOLT ZT1 / 27 HZWH	6" DIA. LED DOWNLIGHT WITH CLEAR MATTE DIFFUSE OPEN TRIM, WIDE DISTRIBUTION, & 0-10V/ 1% DIMMING	3500K	1400	120-277	RECESSED CEILING	17	1, 2		COOPER PHILIPS
DB	JUNO	IC22LED G4 09LM 35K 90CRI MVOLT ZT1 / 27 HZWH	6" DIA. LED DOWNLIGHT WITH CLEAR MATTE DIFFUSE OPEN TRIM, WIDE DISTRIBUTION, & 0-10V/ 1% DIMMING	3500K	900	120-277	RECESSED CEILING	12	1, 2		COOPER PHILIPS
LA	PRUDENTIAL	BOLT LED35 HO 3' SAL TMW UNV CA96" X3 DM10	3'x 2 3/8"W LINEAR LED FIXTURE WITH WHITE FROSTED LENS AND 0-10V/ 10% DIMMING.	3500K	2670	120-277	PENDANT	26		PUX46YW4	COOPER PHILIPS
LB	PRUDENTIAL	BOLT LED35 SO 4' SAL TMW UNV CA96" X3 DM10	4'x 2 3/8"W LINEAR LED FIXTURE WITH WHITE FROSTED LENS AND 0-10V/ 10% DIMMING.	3500K	3040	120-277	PENDANT	28.8			COOPER PHILIPS
LC	MARK	SL6L LOP 4FT FLP TG 80CRI 35K 400LMF MIN1 277 ZT	4'x 6"W LINEAR LED FIXTURE WITH WHITE FROSTED LENS.	3500K	1380	277	RECESSED CEILING	16	1, 2	UUAZM	COOPER PHILIPS
WV	WAC	WS-85624 AL	25"W EDGE-LIT LED VANITY FIXTURE	3500K	1250	120-277	WALL	20.5			ORREN ELLIS / SALAS 1 TECH / SPAN BATH LUMITHREE / KAYLED 4
XA	LITHONIA	LX W 3 R 120/277	RED LED EXIT SIGN WITH WHITE HOUSING, SINGLE FACE. ARROWS AND MOUNTING AS INDICATED ON PLANS.	RED LEDs	N/A	120/277	UNIVERSAL	4			SURE-LITES / AP LIGHTOLIER / LL SERIES DUAL LITE / LX SERIES
XB	LITHONIA	LX W 3 R 120/277	RED LED EXIT SIGN WITH WHITE HOUSING, DUAL FACE. ARROWS AND MOUNTING AS INDICATED ON PLANS.	RED LEDs	N/A	120/277	UNIVERSAL	4			SURE-LITES / AP LIGHTOLIER / LL SERIES DUAL LITE / LX SERIES
XR	LITHONIA	LQM PW1R 120/277 SW01 / SW17 - "AREA OF REFUGE" WITH ACCESS PICTOGRAPH	SINGLE FACE LED "AREA OF REFUGE" SIGN WITH INTERNATIONAL SYMBOL OF ACCESSIBILITY INCLUDED.	RED LEDs	N/A	120/277	SURFACE WALL +7'-0" AFS	0.74			SURE-LITES / AP LIGHTOLIER / LT SERIES DUAL LITE / LX SERIES

NOTES

1. LIGHT FIXTURES MUST HAVE EITHER A DLC OR ENERGY STAR CERTIFICATION; SUBMITTAL DATA MUST INCLUDE CERTIFICATION LISTING NUMBER.
2 DRIVER & LED MODULE MUST BE ACCESSIBLE FROM BELOW CEILING. PROVIDE EXTENDED LEAD WIRES FOR SO DRIVERS CAN BE REMOVED TO BELOW CEILING WITHOUT DISCONNECTING LEADS.
* NUMBER LIST IS AN ENERGY STAR CERTIFICATION ID NUMBER.

LIGHTING CONTROLS SCHEDULE

1423.17 PCAW 5TH FLR. REOVATION

TYPE	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LOAD RATING 120V/277V	VOLTAGE	MOUNTING	NOTES
NB	nLIGHT	nBRG 8	NETWORK BRIDGE	NA	24VDC	WALL	4, 6
(M)E DT	nLIGHT	nRM PDT 10 G	DUAL TECHNOLOGY, 500 SF COVERAGE E = 2000 SF LARGE MOTION COVERAGE	NA	24VDC	CEILING RECESSED	1, 2, 5
$ N1	nLIGHT	nPODM IV	WALL SWITCH, ON/OFF SINGLE CHANNEL	NA	24VDC	WALL	1, 2
$ D	nLIGHT	nPODM DX IV	WALL SWITCH, ON/OFF + RAISE/LOWER	NA	24VDC	WALL	1, 2
$ MD	nLIGHT	nWSX PDT LV DX IV	SWITCH, DUAL TECH, 0-10V DIMMER 600 SF SMALL MOTION COVERAGE	NA	24VDC	WALL	1, 2, 5
(M) DT	nLIGHT	nWV PDT 16	WALL MOUNT, DUAL TECH, 40FT X 120DEG. SMALL MOTION COVERAGE	NA	24VDC	WALL	3, 5
$ MO	SENOR SWITCH	WSX PDT SA IV	SWITCH, DUAL TECH, SINGLE RELAY, 600 SF SMALL MOTION COVERAGE	800W / 1200W LED	120/277VAC	WALL	1, 2
(P)	nLIGHT	nRM ADCX DX	DUAL ZONE SWITCHING & 0-10V DIMMING CLOSED LOOP PHOTOSENSOR	NA	24VDC	CEILING RECESSED	5

NOTES

1. PROVIDE WITH BRUSHED STAINLESS STEEL COVER PLATE.
2. PROVIDE VACANCY SENSOR WITH MANUAL - ON & SENSOR - OFF.
3. PROVIDE MINIMUM 6' CLEARANCE BETWEEN OCCUPANCY SENSORS AND HVAC DIFFUSERS/HEAT SOURCES
4. LOCATE IN ELECTRICAL ROOM & CONNECT TO NETWORK BRIDGE 4TH FLOOR ELECTRICAL 436.
5. PROVIDE 0-10V DIMMING POWER/RELAY PACK AS REQUIRED. LOCATED IN ACCESSIBLE CEILING ABOVE ROOM OR AREA WALL CONTROL.
6. PROVIDE WITH POWER SUPPLIES AND GATEWAY.

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ADMIN WEST FIFTH FLOOR TI
LIGHT FIXTURE SCHEDULE

ADMINISTRATION WEST BUILDING
150 WEST CONGRESS
TUCSON, AZ

SEAL
Registered Professional Engineer
14857
ROBERT A. ALCALA
Date Signed 7/22/2019
ARIZONA U.S.A.

THE SEAL OF PIMA COUNTY ARIZONA

REVS: DATE:
0

DRWN BY: JLV
CKD BY: RAA
DATE: 2019/07/22
SCALE:
SHEET NO:

E7.2
48 OF 48
W.O. NUMBER
19*10427