DESIGN TEAM:						
ARCHITEC	ARCHITECT:					
R4 ARCHITECTURE, P.A.						
CHAF 124 F CHAF 704.6	CHARLOTTE NC OFFICE: 124 FLOYD SMITH DRIVE, SUITE 375 CHARLOTTE, NC 28262 704.688.7500					
CHAF 2000 CHAF 843.5	RLESTON SC OFFICE: SAM RITTENBERG BLVD., SUITE 116 RLESTON, SC 29407 31.6848					
PLUMBING ENGINEER	, MECHANICAL, & ELECTRICAL :					
McVEIGH 3708 FOR RALEIGH 919.650.65	& MANGUM ENGINEERING, INC. ESTVIEW RD. SUITE 103 , NC 27612 565					
McVEIGH 3708 FOR RALEIGH 919.650.6	AL ENGINEER. & MANGUM ENGINEERING, INC. ESTVIEW RD. SUITE 103 , NC 27612 565					
SYMI	BOLS INDEX					
SECTION	00 A0.0					
DETAIL						
ROOM #	FUTURE TENANT OO					
ELEVATION	00 Ao.o					
COLUMN						
PARTITION TYPE						
FINISHES	00					
NOTE						
DOOR #	00					
STOREFRONT	00					
ELEVATION TAG						
PR	OJECT MANUAL					

These drawings and the Project Manual for McDonalds' Standard Building Program Copyright 2013 are intended to describe and provide for a finished piece of work. They are intended to be cooperative, and what is called for by either will be as binding as if called for by both. The Project Manual for McDonalds' Standard Building Program Copyright 2013 is available through the McDonalds ACM or ECM

### ADA SURVEY REPORT

The General Contractor is responsible to obtain, read, and comply with the preconstruction ADA Survey Report. The General Contractor is responsible to make all modifications to satisfy, meet, and comply with each 'Item' 'Recommendations' outlined in the report, whether the item is or whether the item is not specifically delineated or specified in the Construction Documents.

# McDonald's

McDonald's Store ID# 32-0051 1726 West Cumberland St. Dunn, NC 28334



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### 2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (EXCEPT 1 & 2-FAMILY DWELLINGS AND TOWNHOUSES)

Address: _ Owner/Au Owned By: Code Enfor	chorized Agent: <u>Ja</u>	acob McCraven City/Cou on: City	Phone # ( <u>704</u> ) (	588-7500 E-	Aail jmccraven@	Pr4architecture.com State State State
CONTACT						
DESIGNEI	FIRM	]	NAME	LINCENSE #	TELEPHONE #	E-MAIL
Architectu Civil	al R4 Arch	itecture 1	Michael J Remesi	6239 -	(704)688-7500 (-)	mremesi@r4architecture
Electrical Fire Alarm	McVeigh	n & Mangum	G. Lewis Woods	039278	(919)650-6565 (-)	joshua.a.hooker@imegco
Plumbing	McVeigh McVeigh	n & Mangum	Jeff D. Roberts	041001	(919) 650-6565	joshua.a.hooker@imegco
Sprinkler-S	standpipe -				(-)	
Retianing V Other	$\frac{MCVeign}{Valls > 5' High} - \frac{1}{-}$	n & Mangum -	Joshua A Hooker		(-) (-)	_ joshua.a.nooker@imegco _ _ _ -
2018 NC B	UILDING CODE:	New Building	g Shell/G	Core 15	t Time Interior	Completions
2018 NC E (check all t	XISTING BUILDII hat apply)	Addition NG CODE: P1 Re	Phased rescriptive	l Construction Alteration Le Alteration Le	- Shell Core 🚺 vel I 📄 His vel II 📄 Cha	Remodel / Upfit toric Property nge of Use
			hapter 14	Alteration Lev	vel III	
CONS RENC	TRUCTED: (date) )VATED: (date`	$\begin{array}{c} 2006 \\ 2011 \\ \end{array}  PRC$	RENT OCCUPA	NCY(S) (Ch. 3) ANCY(S) (Ch. 3	: <u>A-2</u> ): A-2	
OCCUPAN	CY CATEGORY (T	able 1604.5): Cur	rent: <u>II</u>	Propo	sed: <u>II</u>	
BASIC BU	LDING DATA					
Construction (check all t	on Type:	I-A II-A		A IV		-A
Sprinklore		I-B II-E				
Standpipes		Yes Par	tial 🔀 NFI	$PA 13 \square N$	FPA 13K N	FPA 13D
Primary Fi	re District:	No Yes	Flood Hazard	··· ···	• Ves	
Special Ins	pections Required	: 🗙 No 🗌 Ye	s		~~	
		GI	ROSS BUILDING	AREA TABLE		
FLOOR	EXISTING	(SQ FT)	NEW (SC	Q FT)	SUB	-TOTAL
3rd Floor 2nd Floor			-			-
Mezzanine			-			-
1st Floor Basement	5,32	20	-		5	,320 -
TOTAL	5,32	20	-		5	,320
Education Factory Hazardoo Institution I-1 Co I-2 Co I-3 Co Mercant Resident Storage Utility an Accessory of Incidental This Special Uso Special Pro Mixed Occ	Image: mail imailimage: mailimage: mail image: mail image: mail image:	derate F-2 Low tonate H-2 De 2 2 2 2 2 4 4 cation (s): - - exempt as a Non-See 5 - List Code Section Yes Sepa	v   flagrate   H-   I-:   S-2   S-2   Open   eparated Use (see ns):	3 Combust [ 3 R-3 ] High-piled ] Enclosed	<ul> <li>H-4 Health</li> <li>I-4</li> <li>R-4</li> <li>Repair C</li> <li>. 3 Hr.</li> </ul>	H-5 HPM
Exception:	No	Yes	Non-Separated See below for are	Use (508.3) ea calculation f	or each story th	area of the occupancy
A	ctual Area of Occu	for each use shall n pancy $A$ +	the ratios of the a ot exceed 1.	actual floor are	of elemus drvi	deed by the allowable fl
Alle	wable Area of Oc	cupancy A A	illowarle Arra o	f Decupancy B	+ _	
		NOI				S 1.00
	DESCRIPTION ANI USE	(A) BLDC AREA PER BTORY (ACTUAL)	(B) TABLE 506.2 <sup>4</sup> AREA	(C) AREA FOR FRO INCREAS	NTAGE ALLOWA E <sup>1,5</sup> STORY O	BLE AREA PER R UNLIMITED <sup>2,3</sup>
STORY NO.			-	-		-
STORY NO.	-	-				
STORY NO. - -		- - -		-		-
STORY NO. - - - <sup>1</sup> Frontage	- - - area increases from meter which from	m Section 506.2 are	- - e computed thus	- - : 20 feet minin	um width -	- - -

	ł	ALLOW	ABLE HEIGH	IT			
		ALLO	OWABLE	SHOWN	ON PLANS	CODE REF	FERENCE
Building Height in Feet (Table	2 504.3)		-		-	-	
Building Height in Stories (Ta	ble 504.4)	21 "		1 1	-	-	
Provide code reference if the	e Shown on F	Plans q	uantity is not	. Dased of	1 Table 502	1.3 or 504.4.	
	FIRE PR	OTECT	'ION REQUIF	REMENTS	8		
	FIRE		RATING	DETAIL #	DESIGN #	SHEET # EOP	SHEET #
BUILDING ELEMENT	SEPARATION DISTANCE (FEET)	REQ'D	PROVIDED (W/ * REDUCTION)	AND SHEET #	FOR RATED ASSEMBLY	RATED PENETRATION	FOR RATED JOINTS
Structural Frame, including columns, girders,	-	-	-	-	-	-	-
Bearing Walls							
Exterior							
North	-	-	-	-	-	-	-
East	-	-	-	-	-	-	-
South	-	-	-	-	-	-	-
Interior	-	-	-	-	-	-	-
Nonbearing Walls and					4	F.	
Exterior walls					BI	1	
North	-	-		CĽ		-	-
East	-	D	יעק		-	-	-
South	$\mathbf{n}$	<b>X</b>	<b>F</b>	-	-	-	-
Interior walls and hatilio		<u> </u>	_	-	_	_	_
Floor Construction	1						
Including supporting beam and joists	IS	-	-	-	-	-	-
Floor Ceiling Assembly		-	-	-	-	-	-
Columns Supporting Floors		-	-	-	-	-	-
Roof Construction, including supporting beams and joists		-	-	-	-	-	-
Roof Ceiling Assembly		-	-	-	-	-	-
Columns Supporting Roof		-	-	-	-	-	-
Shaft Enclosures - Exit		-	-	-	-	-	-
Shaft Enclosures - Other		-	-	-	-	-	-
Corridor Separation		-	-	-	-	-	-
Occupancy/Fire Barrier Separ	ation	-	-	-	-	-	-
Smoke Barrier Separation		-	-	-	-	-	
Smoke Partition		-	-	-	-	-	_
Tenant/Dwelling Unit/		_	_	_	_	_	
Sleeping Unit Separation							
* Indicate section number per	mitting reduc	 tion					
	0						
PE	RCENTAGE (	OF WAI	LL OPENING	CALCUL	ATIONS		
FIRE SEPARATION DISTANCE	DEGREE OF OF	PENINGS ION	ALLO	OWABLE AI	REA	ACTUAL SHOWN	ON PLANS
	(TABLE 70	95.8)		(70)		(70)	
-	-			-		-	
-	-			-		-	
	LIFE SAF	ETY SY	STEM REOU	IREMEN	ГS		
					10		
Emergency Lighting:	Yes		No				
Exit Signs:	Yes		No				
Smoke Detection Systems	$\sum_{Vac}^{Yes}$		No				
Carbon Monoxide Detection	$\therefore \qquad  Yes$		No				
	LIFE SA	FETY P	LAN REQUIF	REMENTS	S		
Life Safety Plan Sheet #:							
Fire and/or smoke rate	d wall locatior	ns (Chaj	pter 7)				
Assumed and real prop	erty line locati	ions (if	not on the site	e plan)			
Exterior wall opening a	rea with respe	ect to dis	stance to assu	med prop	perty lines	(705.8)	
Occupancy Use for each	n area as it rela	ates to c	occupant load	calculatio	on (Table 1	0042)	
Occupant loads for each	n area			. N	R	1 A	
Common path of travel	distances (Ta	bles 100	06.2.7 10	Cut	1		
Dead end lengths (1020	0.4)	1	PL				
Clear exit widths for each	ch exit door	Y					
Maximum calculated o	ccupant load	apacity	y each exit do	or can ac	commodat	e based on egr	ess widtl
	r each ovit de	or					
A separate schematic n	lan indicating	g where	fire rated floo	or/ceiling	and/or ro	of structure is	provided
for purposes of occupa	ncy separation	n		,	,		
Location of doors with	panic hardwar	re (1010	.1.10)				
Location of doors with	delayed egress	s locks a	and the amoun	nt of delay	y (1010.1.9.	7)	
Location of doors with	lootnomognot			>			
Location of doors equip	and with here	tic egres	ss locks (1010.	.1.9.9)			
Location of amount	pped with hold	l-open d	ss locks (1010. levices	.1.9.9)			
Location of emergency	ped with hold escape window	ic egres l-open c ws (103 202)	ss locks (1010. levices 0)	1.9.9)			
Location of emergency The square footage of e	oped with hold escape window ach fire area (: ach smoke con	lic egres l-open d ws (103) 202) mpartm	ss locks (1010. levices 0) ent for Occurs	anev Clas	sification	-2 (407 5)	

Note any code exceptions or table notes that may have been utilized regarding the items above

				AC	CESSIBL	E DWELLING	G UNITS				
TOTAL ACCESSIBLE ACCESSIBLE TYPE A TYPE A TYPE B TYPE B TOTAL											
UNITS	REQUI	IS IRED	PROVII	DED	REQUIRE	D PROVIDED	REQUIRE	D PH	ROWDED	PRO	VIDED
-	-		-		-		$\mathbf{C}$	Y		/	-
						PU		_			
				<u>۲</u>		SIBLE PARKI SECTION 1106)	NG				
LOT OR PA	ARKING	ТОТ	AL # OF PA	ARIUNG	SPACES	# OF ACCES	SSIBLE SPA	CES P N SPA	ROVIDED CES WITH		TOTAL # CESSIBLE
AKEA			QUIRED	PRO	VIDED	5' ACCESS AISL	1 132" AC AISI	CESS LE	8' ACCES AISLE	SS PI	ROVIDED
	-		-		-	-	-		-		-
OTAL			-		-	-	-		-		-
			]	PLUM	BING FIX	<b>XTURE REQU</b> TABLE 2902.1)	IREMEN	TS			
USE	E –	WA	ATERCLOS	ETS	URINA		ATORIES		SHOWERS	G DRINKING	G FOUNTAIN
PACE E	XIST'G	MALE 2	FEMALE 2	UNISE 0	1	MALE F	EMALE UN	0	0	REGULAR	O ACCESSIBL
N	IEW	-	-	-	-	-	-	-	-	-	-
R	EQ'D	-	-	-	-	-	-	-	-	-	-
					ENER	RGY SUMMAH	RY				
					ENED						
NERGY I ne follow all also I an data s inual end	REQUIR ving data be provid sheet. If ergy cost	EMEN shall b led. Ea perfori for the	FS: e conside ich Desig mance m e propose	ered m ner sh ethod, ed desig	inimum a all furnis state the gn.	and any speci th the required annual energ	AY al attribu l portions y cost for	te rec s of th • the s	quired to r ne project standard r	neet the e informati reference o	nergy code on for the lesign vs 
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NOTE: OVERALL SQUARE FOOTAGE = 5,320 WORK AREA (RECONFIGURED SPACE) = 690 SQUARE FEET OR 13%.

WORK AREA (RECONFIGURED SPACE)

	STRUCTURAL ABBREVIATIONS						
# Ø & @	NUMBER OR POUND ROUND OR DIAMETER SQUARE AND AT	GA GALV GB GC GEN GT	GAGE GALVANIZED GRADE BEAM GENERAL CONTRACTOR GENERAL GIRDER TRUSS	SECT SCHED SIM SOG SP SPA	SECTION SCHEDULE SIMILAR SLAB ON GRADE SPRUCE PINE SPACE		
ALUM AR ARCH ASSY	ALUMINUM ANCHOR ROD ARCHITECTURE ASSEMBLY	HGT HORIZ HSA HT	HEIGHT HORIZONTAL HEADED STUD ANCHOR HIP TRUSS	SPEC SQ STD STIFF STL	SPECIFICATION SQUARE STANDARD STIFFENER STEEL		
B/ BETWN BLDG BM BOT	BOTTOM OF BETWEEN BUILDING BEAM BOTTOM	IF INFO INT	INSIDE FACE INFORMATION INTERIOR	STR STRUCT SYM SYP	STRAIGHT STRUCTURAL SYMMETRICAL SOUTHERN YELLOW PINE		
BPL BRG	BASE PLATE BEARING	JNT JST	JOINT JOIST	T&B T/ T/LI DANEL	TOP & BOTTOM TOP OF THT LIP PANEL		
C TO C CANT CFS CJ CL CLR CMU COL CONC CONC CONST CONT CONTR	CENTER TO CENTER CANTILEVER COLD FORMED STEEL CONSTRUCTION JOINT CENTER LINE CLEAR CONCRETE MASONRY UNIT COLUMN CONCRETE CONNECTION CONSTRUCTION CONTINUOUS CONTRACTION	LB LCS LG LLH LLV LONGIT LSH LSV LTS MANUF MAT'L MAX	POUND LAP COMPRESSION SPLICE LONG LONG LEG HORIZONTAL LONG LEG VERTICAL LONG SIDE HORIZONTAL LONG SIDE HORIZONTAL LONG SIDE VERTICAL LAP TENSION SPLICE MANUFACTURER MATERIAL MAXIMUM	TO PANEL TE THK THRD TRANSV TS TYP UON VER VERT WA	THET-OP PANEL THICKENED EDGE THICK THREADED TRANSVERSE THICKENED SLAB TYPICAL UNLESS OTHERWISE NOTED VERIFY VERTICAL WHERE APPLICABLE		
COORD CTR CTRD	COORDINATE CENTER CENTERED	MECH MIN MISC	MECHANICAL MINIMUM MISCELLANEOUS	w/ or W/ w/o WP	WITH WITHOUT WORK POINT		
DBA DEFL DIA DIAG DIFF DIM DO	DEFORMED BAR ANCHOR DEFLECTION DETAIL DIAMETER DIAGONAL DIFFERENT DIMENSION DITTO DRAWING	NIC NO or No NS NTS OC OD OF	NOT IN CONTRACT NUMBER NEAR SIDE NOT TO SCALE ON CENTER OUTSIDE DIAMETER OUTSIDE FACE	WWF	WELDED WIRE FABRIC		
EA	EACH	OPNG OPP	OPENING OPPOSITE	GEI	NERAL SYMBOLS		
EJ EL ELEC	EXPANSION JOINT ELEVATION ELECTRICAL	PAF PEMB PERP	POWER ACTUATED FASTENER PRE-ENGINEERED METAL BUILDING PERPENDICULAR		– PLAN, SECTION OR DETAIL NO – SHEET NUMBER		
ELEV ENGR EOD EOR	ELEVATOR ENGINEER EDGE OF DECK ENGINEER OF RECORD	PL PNL PREFAB PSF	PLATE PANEL PREFABRICATED POUNDS PER SQUARE FOOT		NORTH ARROW		
EOS EQ EQUIP	EDGE OF SLAB EQUAL EQUIPMENT	PSI PT P/C	POUNDS PER SQUARE INCH POINT PRECAST		KEYED NOTE TO PLAN		
ES EXIST EXP EXT	EACH SIDE EXISTING EXPANSION EXTERIOR	QTY	QUANTITY	$\langle 1 \rangle$	FOUNDATION TYPE		
EW FB	EACH WAY FLAT BAR	R or RAD RD REF	RADIUS ROUND REFERENCE	$\underline{\land}$	REVISION NUMBER		
FD FDN FF	FLOOR DRAIN FOUNDATION FINISH FLOOR	REINF REQ REQ'D	REINFORCE(MENT) REQUIRE REQUIRED	\$	FOOTING STEP		
FLR FS FTG	FLOOR FAR SIDE FOOTING	RET REV	RETAINING REVISION	\$ ₽	COLUMN UP/DOWN		



ROOF PLAN (GENERIC BUILDING SHOWN)



	ROC	<b>DF</b>			
ZONE 10 SF 50 SF					
1	16.0 psf -25.5 psf	16.0 psf -24.0 psf	16.0 psf -23.3 psf		
2	23.3 psf -42.8 psf	21.0 psf -32.2 psf	19.9 psf -27.6 psf		
3	23.3 psf -42.8 psf	21.0 psf -32.2 psf	19.9 psf -27.6 psf		
OVERHANG ZONE 1&2	-36.7 psf	-35.2 psf	-34.6 psf		
OVERHANG ZONE 3	-36.7 psf	-35.2 psf	-34.6 psf		
	WAL	LS			
ZONE	10 SF	100 SF	500 SF		
4	23.3 psf -25.3 psf	19.9 psf -21.8 psf	17.5 psf -19.4 psf		
4p	58.3 psf -40.8 psf	39.7 psf -33.9 psf	37.4 psf -29.2 psf		
5	23.3 psf -31.1 psf	19.9 psf -24.2 psf	17.5 psf -19.4 psf		
5p         58.3 psf         39.7 psf         37.4 psf           -46.7 psf         -36.3 psf         -29.2 psf					

2) POSITIVE PRESSURES ACT TOWARD THE BUILDING. NEGATIVE PRESSURES ACT AWAY FROM THE BUILDING. 3) SEE DIAGRAMS FOR LOCATION OF ZONES.
4) PRESSURES SHOWN ARE ULTIMATE PRESSURES, MULTIPLY BY 0.6 FOR NOMINAL PRESSURES.

a=5'-0"

### **DESIGN CRITERIA**

WELDING ELECTRODES

ANCHOR RODS .

WELDED STUDS .

DEFORMED BARS .

WELDABLE BARS . . PAINT & PROTECTION .

HIGH-STRENGTH BOLTS .

SOIL BEARING (DESIGN MAXIMUM) . .

GROUT - NONMETALLIC, SHRINKAGE-RESISTANT

DESIGN PER 2018 NORTH CAROLINA BUILDING CODE UNLESS OTHERWISE NOTED

LIVE LOADS:
ROOFS AND CANOPIES (REDUCIBLE)
DEAD LOADS: ROOF
WIND LOADS:ULTIMATE WIND SPEED: (ASCE 7-10)NOMINAL WIND SPEED92 MPHMEAN ROOF HEIGHT13'-8"RISK CATEGORYWIND EXPOSUREENCLOSURE CLASSIFICATIONINTERNAL PRESSURE COEFFICIENT± 0.18DIRECTIONALITY FACTOR (Kd)0.85SHAPE FACTORS
SNOW LOADS:10 PSFGROUND SNOW LOAD, Pg10 PSFFLAT ROOF SNOW LOAD (INCLUDING RAIN ON SNOW SURCHARGE)10 PSFEXPOSURE FACTOR, Ce0.9THERMAL FACTOR, Ct1.0IMPORTANCE FACTOR, I1.0
SEISMIC:       IMPORTANCE FACTOR, I       1.0         RISK OR OCCUPANCY CATEGORY       II         MAPPED SPECTRAL RESPONSE ACCELERATION, Ss       0.182         MAPPED SPECTRAL RESPONSE ACCELERATION, S1       0.085         SITE CLASS       D (ASSUMED)         SPECTRAL RESPONSE COEFFICIENT, Sds       0.303         SPECTRAL RESPONSE COEFFICIENT, Sd1       0.199         SEISMIC DESIGN CATEGORY       C         BASIC STRUCTURAL SYSTEM       BEARINGWALL         SEISMIC RESISTING SYSTEM       STEEL SYSTEM NOT SPECIFICALLY
RESPONSE MODIFICATION FACTOR, R       3.0         ANALYSIS PROCEDURE       EQUIV LATERAL FORCE         SEISMIC RESPONSE COEFFICIENT, Cs       0.059         DESIGN BASE SHEAR, V       0.06W
CONCRETE (DESIGN PER CURRENT EDITION ACI 318):           SLAB ON GRADE           FOOTINGS
ALL REINFORCING STEEL ASTM A615 GRADE 60. REINFORCING STEEL SHOWN ON THESE DRAWINGS TO BE WELDED SHALL BE ASTM A706 AND WELDING SHALL BE IN ACCORDANCE WITH AWS D1.4.
STRUCTURAL STEEL (DESIGN PER CURRENT EDITION AISC), UNLESS OTHERWISE NOTED (UON) MATERIALS SHALL BE AS FOLLOWS: W-SHAPES

AWS A5.1 OR A5.5 SERIES E70

. MIN 3/4Ø ASTM A325

ASTM A108

ASTM A1064 . ASTM A706

. SSPC PAINT 25

.. ASTM C1107

. GRADE 36 ASTM F1554

. . 2000 PSF (ASSUMED)

GENERAL NOTES

ENERAL NOTES						STEEL	
	-					ALL BOLTS SHALL BE SNUG TIGHT (AS DEFINED BY AISC) UON.	
OUNDATION	ALL FOUNDAT	IONS SHALL EX	XTEND A MININ	IUM OF 16" INC	HES BELOW THE	UNLESS OTHERWISE NOTED, BEAM-TO-BEAM AND BEAM-TO-COLUMN CONNECTIONS SHALL BE AS SHOWN IN DETAIL 1/S3.1	
OP OF FINISH GI CONCRETE	RADE.					BEAM REACTIONS AND CONNECTIONS THAT FALL OUTSIDE OF THE LIMITS OF THE DETAILS NOTED ABOVE SHALL BE DESIGNED BY THE SPECIALTY ENGINEER LICENSED IN THE STATE OF	
INLESS OTHERW HALL BE AS FOL	/ISE NOTED (U .LOWS:	ON) ON THE D	RAWINGS, MIN	IIMUM COVER F	FOR REINFORCING	CALCULATIONS FOR APPROVAL.	ARCHITECTURE
FOOTINGS SLABS ON GF					3' 2" FROM TOP	" MINIMUM SIZE OF ALL FILLET WELDS SHALL CONFORM TO SECTION J2 AISC SPECIFICATIONS " EVEN THOUGH SHOWN OTHERWISE ON ARCHITECTURAL, MECHANICAL, OR STRUCTURAL DRAWINGS.	7752 Gateway Lane
LL REINFORCING N CONFORMANC HE PLACING OF	G SHALL BE HE E WITH CRSI N THE CONCRE	ELD SECURELY MANUAL OF ST TE.	IN POSITION ANDARD PRAC	WITH STANDAR CTICE AND ACI	RD ACCESSORIES 318 DURING	ALL WELDS ALONG THE LENGTH OF MEMBERS INDICATED ON ARCHITECTURAL OR STRUCTURAL DRAWINGS, BUT NOT SIZED, SHALL BE A MINIMUM OF: 3/16 \screw 2-12	Suffe 204 Concord, NC 28027 Tel - 704 - 688-7500
INLESS OTHERW OLLOWS:	/ISE NOTED, S	PLICES IN REIN	NFORCING, WH	IERE PERMITTE	ED, SHALL BE AS	3/16 2-12	513A Savannah Hwy
WELDED WIR REINFORCING	E FABRIC G BARS			· · · · · · · · · · · · · · · · · · ·	WIRE SPACING PLUS 6'	FASTENERS	<b>Charleston, SC 29407</b> Tel - 843 - 531-6848
BAR SIZE	C	CONCRETE CO	MPRESSIVE S	TRENGTH		EXPANSION BOLTS SHALL BE HILTI KWIK BOLT 3, SIMPSON STRONG-TIE STRONG-BOLT2, DEWALT POWER-STUD+ SD1 OR APPROVED EQUAL, UON. EMBEDMENT DEPTH INTO CONCRETE OR SOLID GROUTED MASONRY SHALL BE AT LEAST 7 TIMES THE BOLT DIAMETER,	www.R4architecture.com
	3000 PSI	4000 PSI	5000 PSI	6000 PSI	7000 PSI	UON. CLEAN HOLE AND INSTALL IN STRICT ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.	
#3	22"	19"	17"	15"	14"		
#4	29	25	22	20	19	SCREW ANCHORS SHALL BE HILTI KWIK HUS-EZ, SIMPSON STRONG-TIE THEN HD, DEWALT SCREW-BOLT+ OR APPROVED EQUAL, UON. EMBEDMENT IN CONCRETE OR SOLID GROUTED	
#5		38"	34"	31"	24	MASONRY SHALL BE AT LEAST 9 TIMES THE BOLT DIAMETER, UON. CLEAN HOLE AND INSTALL	
#0	62"	54"	49"	44"	41"	IN STRICT ACCORDANCE WITH MANOFACTORER'S PRINTED INSTALLATION INSTRUCTIONS.	
#8	70"	62"	56"	51"	47"	POWER ACTUATED FASTENERS (PAF) SHALL BE 0.157" DIAMETER HILTI X-U, SIMPSON STRONG- TIE PDPA, DEWALT CSUPIN OR FOLIAL, LION, EMBED MINIMUM 1.1/4" INTO CONCRETE AND CMU	
#9	76"	70"	62"	57"	53"	UON. DO NOT PLACE WITHIN 1" OF CMU MORTAR JOINT. PAF SHALL COMPLETELY PENETRATE	
#10	84"	78"	70"	63"	59"	STRUCTURAL STEEL.	
#11	96"	87"	76"	70"	64"	ADHESIVE ANCHORING (EPOXY):	
#IT       30       07       70       70       04         NOTES:       INCREASE SPLICE LENGTH BY THE FOLLOWING (INCREASED LENGTHS ARE CUMULATIVE):       1       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10						<ul> <li>SIMPSON STRONG-TIE SET-3G, DEWALT PURE 110+ (OR EQUIVLANT ACRYLIC AC200+, HY 200, OR ATXP) OR APPROVED EQUAL, UON. EMBEDMENT DEPTH SHALL BE AT LEAST 12 TIMES THE INSERT DIAMETER, UON. HOLE DIAMETER SHALL BE NO GREATER THAN RECOMMENDED BY MANUFACTURER. THE HOLE SHALL BE CLEANED PER MANUFACTURER'S RECOMMENDATIONS BY BRUSHING OUT WITH WIRE BOTTLE BRUSH AND BLOWN OUT WITH AIR USING A COMPRESSOR WITH A FUNCTIONAL OIL TRAP (EXCEPT WHERE PERMITTED WHEN USING A DUST EXTRACTION SYSTEM IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS).</li> <li>ADHESIVE ANCHORING FOR MASONRY SHALL BE HILTI HIT-HY 70 OR HY 270 CARTRIDGE SYSTEM, SIMPSON STRONG-TIE SET-XP, DEWALT AC100+ OR APPROVED EQUAL, UON. EMBEDMENT DEPTH INTO SOLID GROUTED MASONRY SHALL BE AT LEAST 9 TIMES THE INSERT DIAMETER, UON. HOLE DIAMETER SHALL BE NO GREATER THAN RECOMMENDED BY MANUFACTURER. HOLES SHALL NOT BE PLACED WITHIN 1" OF A VERTICAL MORTAR</li> </ul>	SEAL 040012 05/25/2023 VGINEER
					2	JOINT. CLEAN HOLE IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS.	
			INLING OF DEF	WIO, WALL, ETC	с.	<ul> <li>GENERAL - ANCHORS SHALL MEET THE REQUIREMENTS OF ACI 355.4. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS AND PERFORMED BY AN INSTALLER TRAINED BY THE MANUFACTURER. INSTALLATION OF ADHESIVE ANCHORS HORIZONTALLY OR UPWARDLY, WHICH SUPPORT SUSTAINED TENSION LOADS SHALL BE PERFORMED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER IN ACCORDANCE WITH ACI318 AND CONTINUOUSLY INSPECTED PER ACI318. PROOF OF CURRENT CERTIFICATION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.</li> <li>CAPACITIES - UON, DESIGN BOND STRENGTH OF ANCHORS HAVE BEEN BASED ON CRACKED CONCRETE, ACI 355.4 TEMPERATURE CATEGORY B, AND INSTALLATIONS INTO DRY HOLES DRILLED WITH A ROTARY IMPACT DRILL OR ROCK DRILL INTO CONCRETE THAT HAS CURED AT LEAST 21 DAYS AND HAS A CONCRETE TEMPERATURE OF AT LEAST 50 DEGREES F AT TIME OF ANCHOR INSTALLATION.</li> </ul>	noi

### SHORING SYSTEMS

FORMS AND SHORING SYSTEMS SHALL BE DESIGNED BY AN ENGINEER REGISTERED IN FLORIDA ACCORDANCE WITH ACI 347, RECOMMENDED PRACTICE FOR CONCRETE FORMING & SECTIONS 6.1 & 6.2 OF ACI 318.

Date

Rev

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McDonald's

Drawn By

**Checked By** 

Sheet Title

DESIGN

NOTES

CRITERIA &

GENERAL

Sheet Number

50.1

Issue Date 05/23/2023

Project No 220679

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THE REGISTERED ENGINEER SHALL SUBMIT A DIAGRAMMATIC DRAWING SHOWING THE SHORING AND RE-SHORING SEQUENCE AND PROPOSED POURING CYCLE. ALSO, CALCULATIONS SHALL BE SUBMITTED FOR REVIEW, TO SHOW THAT THE STRUCTURE WILL NOT BE OVERSTRESSED BY THE PROPOSED SHORING SEQUENCE.

SIGNED AND SEALED SHORING AND RE-SHORING DRAWINGS SHALL BE ISSUED TO THE STRUCTURAL ENGINEER OF RECORD AND THE BUILDING INSPECTOR.





- TO CONSTRUCTION. 2. FIELD VERIFY ALL EXISTING CONDITIONS SHOWN PRIOR TO DEMOLITION. THE ENGINEER SHALL BE NOTIFIED WHEN EXISTING CONDITIONS VARY FROM WHAT IS ANTICIPATED.
- ROOF FRAMING PRIOR TO THE START OF DEMOLITION. 4. WHERE EXISTING LOAD BEARING WALLS AND/OR FRAMING IS TO BE REMOVED, PROVIDE SHORING AND/OR TEMPORARY SUPPORT AS REQUIRED PRIOR TO ANY DEMOLITION. GC TO EMPLOY ENGINEER TO
- MAY BEGIN. DO NOT OVERCUT SAW JOINTS IN SLAB PAST PORTION TO BE REMOVED.
- FOUNDATION & SLAB ON GRADE NOTES: 1. FOR DESIGN CRITERIA AND GENERAL NOTES, SEE SHEET S0.1.
- 2. FOR DIMENSIONS, SECTIONS AND ELEVATIONS NOT SHOWN, SEE ARCH.
- 100'-0". SEE CIVIL AND ARCH DWGS FOR ACTUAL ELEVATIONS. 4. T/ISOLATED FTG EL = 1'-4" BELOW TOP OF SOG, TYP UON. 5. T/WALL FTG EL = 1'-4" BELOW TOP OF SOG, TYP UON.
- DENOTES EXISTING 8" CMU WALL. 6. 7. SEE 6/S3.1 FOR SOG CRACK CONTROL JOINT. 8. CONTRACTOR TO COORDINATE WITH EXISTING STRUCTURES, ALL
- FOUNDATIONS, INCLUDING SHEET PILING, SOIL STABILIZATION, ETC. 9. BOTTOM OF NEW FOOTINGS SHALL MATCH BOTTOM OF EXISITING FOOTINGS.
- 10. NEW SLAB ON GRADE INFILL. NEW SLAB SHALL CONSIST OF 5" THICK CONCRETE SLAB ON VAPOR RETARDER & COMPACTED FILL. REINFORCE w/ FIBERMESH OR WWF6x6-W1.4xW1.4. PROVIDE DOWELS AROUND ENTIRE PERIMETER INTO EXISTING SLAB PER 2/S3.1.

DEMOLITION PLAN NOTES: 1. COORDINATE ALL DEMOLITION SHOWN W/ THE ARCH DRAWINGS PRIOR

3. VERIFY SUPPORT OF EXISTING HEADERS, BEAMS, JOISTS, WALLS, AND SUBMIT SHORING PLAN FOR EOR APPROVAL BEFORE DEMOTION WORK

3. ELEVATIONS ARE BASED ON A T/GROUND FLOOR SLAB DATUM OF

PRECAUTIONS SHALL BE TAKEN TO AVOID UNDERMINING OF EXISTING





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			MCI					Office	Address
D C Is P	Drawn ByJOChecked ByABIssue Date 05/23/2023Project No220679								
<b>S</b> ] ]	Sheet Title FOUNDATION PLANS								
S	he	eet	N	un	nb	er	•		

**S1.0** 



### DEMOLITION PLAN NOTES: 1. COORDINATE ALL DEMOLITION SHOWN W/ THE ARCH DRAWINGS PRIOR TO

- CONSTRUCTION. 2. FIELD VERIFY ALL EXISTING CONDITIONS SHOWN PRIOR TO DEMOLITION. THE ENGINEER SHALL BE NOTIFIED WHEN EXISTING CONDITIONS VARY FROM WHAT IS ANTICIPATED.
- FRAMING PRIOR TO THE START OF DEMOLITION. 4. WHERE EXISTING LOAD BEARING WALLS AND/OR FRAMING IS TO BE REMOVED,

### ROOF PLAN NOTES: 1. FOR DESIGN CRITERIA AND GENERAL NOTES, SEE SHEET S0.1.

- 3. "#K" DENOTES FACTOR BEAM REACTION FOR SIZING BEAM CONNECTION. REACTIONS NOT LISTED SHALL BE DESIGNED USING THE LOWEST FACTORED LOAD GIVEN IN 1/S3.1 FOR A PARTICULAR BEAM SIZE.
- 4. \_\_\_\_\_ DECK. SEE PLAN.
- 5. BEAM OR JOIST WHICH REQUIRES SHORING. SHORE FOR ENTIRE LENGTH OF MEMBER BEFORE DEMOLITION. GC TO EMPLOY SHORING ENGINEER TO SUBMIT SHORING PLAN FOR EOR APPROVAL BEFORE DEMOLITION MAY BEGIN. 6. CONNECT EXISTING STEEL BEAMS TO STEEL GIRDER PER 5/S3.1 & 6/S3.1. NOTIFY
- PRIOR TO NEW WORK. 7. CONNECT TOP OF HSS COLUMN TO FACE OF EXISTING CMU WALL w/ BENT
- PL1/4x4"x12" x 6" LONG. CONNECT BENT PL TO FACE OF WALL w/ (2) 3/4" DIA. EPOXY ANCHORS AND BENT PL TO HSS w/ (2) 3/4" DIA THRU BOLTS IN 1" VERT SLOTTED HOLE. FIELD VERIFY PLATE DIMENSIONS PRIOR TO FABRICATION.

3. VERIFY SUPPORT OF EXISTING HEADERS, BEAMS, JOISTS, WALLS, AND ROOF PROVIDE SHORING AND/OR TEMPORARY SUPPORT AS REQUIRED PRIOR TO ANY DEMOLITION. GC TO EMPLOY ENGINEER TO SUBMIT SHORING PLAN FOR EOR APPROVAL BEFORE DEMOTION WORK MAY BEGIN.

2. INDICATES MOMENT CONNECTION, SEE 3/S3.1. "#K-FT" DENOTES FACTOR BEAM REACTION FOR SIZING BEAM CONNECTION.

INDICATES SPAN DIRECTION OF EXISTING 1-1/2" x 22 GA METAL ROOF

ENGINEER IF FIELD CONDITIONS ARE OUTSIDE THE SCOPE THESE SECTIONS



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TYP BEAM TO HSS COL CONN



COLUMN SIZE	MINIMUM WALL THICKNESS
HSS 4x4	1/4"
HSS 5x5	1/4"
HSS 6x6	1/4"
HSS 7x7	1/4"
HSS 8x8	1/4"
HSS 9x9	5/16"
HSS 10x10	5/16"
HSS 12x12	3/8"
HSS 14x14	1/2"
HSS 16x16	1/2"



1

SCALE: NTS

S3.1

6

S3.1

SCALE: NTS





- . BOLTS SHALL BE 3/4"Ø A325-N BEARING TYPE. BOLT LIMIT STATE IN SINGLE SHEAR = 17.9 KIPS.

- 4. TABLE VALUES ARE FOR UNCOPED BEAMS.

- 3. COLUMN THICKNESS SHALL BE THE MINIMUM TABULATED ABOVE FOR THIS SCHEDULE TO BE VALID.











1'-10"

-0

COL & PL

BASE PLATE SCHEDULE

PLATE

(t x N x B)

1"x22"x22"

<u>NOTE:</u> ANCHOR RODS SHALL BE GRADE 36 ASTM F1554 w/

NEW BASE PLATE DETAIL

HEADED NUT & WASHER & SET w/ SET-3G BY SIMPSON.

<u>COLUMN</u>

W10

4

S3.1

SCALE: NTS

ANCHOR RODS

(8) 1"

CO & PL

EMBED (MIN)

12"

1/4

- PL SIZE & ANCHOR

RODS, SEE SCHED

















![](_page_11_Figure_0.jpeg)

![](_page_12_Figure_0.jpeg)

DOOR HARDWARE LEEND         ITEM       QUANTITY         MANUFACTURER         HARDWARE SET #1 (HW1) MANAGERS OFFICE         HINGES       3 EA PER DOOR         HAGER BB1279 US 26D 4 1/2"X 4 1/2"									
ITEM     QUANTITY     MANUFACTURER       HARDWARE     SET #1 (HW1) MANAGERS OFFICE       HINGES     3 EA PER DOOR     HAGER BB1279 US 26D 4 1/2" X 4 1/2"	DOOR HARDWARE LEGEND								
HARDWARE SET #1 (HW1) MANAGERS OFFICE         HINGES       3 EA PER DOOR       HAGER BB1279 US 26D 4 1/2" X 4 1/2"	ITEM	QUANTITY	QUANTITY MANUFACTURER						
HINGES       3 EA PER DOOR       HAGER BB1279 US 26D 4 1/2" X 4 1/2"	HARDWARE SET #1 (HW1) MANAGERS OFFICE								
	HINGES	3 EA PER DOOR	HAGER BB1279 US 26D 4 1/2" X 4 1/2"						
LOCKSET 1 PER DOOR SCHLAGE ND53PD RHO 626	LOCKSET	1 PER DOOR	SCHLAGE ND53PD RHO 626						
WINDOW FRAME1 PER DOORVIEW FRAME LFRA100 24x30 DKB N.GUARD	WINDOW FRAME	1 PER DOOR	VIEW FRAME LFRA100 24x30 DKB N.GUARD						
GLASS 1 PER DOOR GLASS 23x29x1/4 CLEAR UMCO	GLASS	1 PER DOOR	GLASS 23x29x1/4 CLEAR UMCO						

DOOR	AND FRAME SCHEDULE												
			DOOR		_		FRAM	E			BUCK	HDWR	
MARK	MARK ROOM NAME		SIZE		TYPE	MATL	SI	ZE	TYPE	MATL	TYPE	SET	NOTES
		WDTH	HGT	THK			WDTH	HGT				NO	NO
FIRST FL	OOR												
001	BDAP CREW ACCESS DOOR	3'-0"	6'-8"	1-3/4"	D-1	WD	3'-4"	6'-10"	F-1	H.M.	B-1	HW1	ELECTRONIC LOC

NOTES:

1. ALL HARDWARE TO BE ADA AND PRESIDING ACCESSIBLE CODE COMPLIANT AND INSTALLED AT ADA AND ACCSSIBILITY CODE COMPLIANT HEIGHTS AFF- TYP. 2. GC TO INSTALL ACCESSIBILITY DOOR SIGNS WHERE REQ. BY LOCAL CODES- TYP.

3. ALL EXIT DOORS SHALL BE KEYLESS IN THE DIRECTION OF EGRESS.

4. THE OPENING FORCE OF ALL INTERIOR PUSH/ PULL DOORS SHALL NOT EXCEED 5 LBS.

5. THE OPENING FORCE OF ALL EXTERIOR PUSH/ PULL DOORS SHALL NOT EXCEED  $8\frac{1}{2}$  LBS. 6. PROVIDE PANIC HARDWARE FOR ALL EXTERIOR DOORS AS NOTED ON THE DOOR SCHEDULE.

7. ALL DOOR HARDWARE SHALL NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST TO OPERATE.

8. SEE DECOR DRAWINGS FOR ALL FINAL INTERIOR DOOR, AND FRAME FINISHES.

9. FINISHES FOR EXTERIOR STOREFRONT TO BE PER COLOR LEGEND- SEE 200 SERIES.

10. NOTE ALL NEW STOREFRONT TO BE IN FULL COMPLIANCE WITH 2012 NC ENERGY CODE REQ.

THE FOLLOWING BULLETPROOFING SHOULD ALREADY BE IN PLACE G.C. TO VERIFY THIS IS THE CASE- IF THESE ITEMS ARE NOT ALREADY IN PLACE G.C. TO COORDINATE WITH AREA CONSTRUCTION MANAGER REGARDING THE NEED TO INSTALL- TYP.

1) COOLER FREEZER DOORS HAVE DIAMOND PLATED ALUMINUM PROTECTION.

THE FOLLOWING IS REQUIRED PROTECTION:

1) KICK PLATES MADE OF <sup>1</sup>/<sub>8</sub>" DIAMOND PLATE ALUMINUM ON INSIDE OF METAL DELIVERY DOORS THAT ARE 36" HIGH AND UP TO 48" WIDE BASED ON DOOR WIDTH. THIS SHALL INCLUDE THE EXT. FREEZER ENTRY DOOR AND STOCK ROOM DELIVERY DOOR WHERE APPLICABLE- TYP.

2) REINFORCED THRESHOLDS OF <sup>3</sup>/<sub>16</sub>" DIAMOND PLATED ALUMINUM FOR ALL DOORS IN THE TRAVEL PATH. IF CODE ALLOWS A SMOOTH TRANSITION FROM SIDEWALK CONC. TO QUARRY TILE FLOOR NO THRESHOLD MAY BE INSTALLED IF DOOR HAS DOUBLE SWEEP ON INTERIOR AND EXTERIOR OF DOOR THAT CREATES A TIGHT SEAL. G.C. TO COORDINATE WITH AREA CONSTRUCTION MANAGER FOR FINAL DIRECTION- TYP.

![](_page_12_Figure_17.jpeg)

![](_page_12_Figure_18.jpeg)

![](_page_12_Figure_19.jpeg)

![](_page_12_Figure_20.jpeg)

![](_page_12_Figure_21.jpeg)

		a 1										
<u>GE</u> 1.	NERAL NOTES: THESE DRAWINGS WERE PREPARED BASED ON INFORMATION ATTAINED FROM A SITE SURVEY. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS IN FIELD PRIOR TO DEMOLITION & NOTIFY THE ARCHITECT IN CASE OF DISCREPANCIES ASAP. DEMOLITION IS TO BE EXECUTED SO AS NOT TO DISTURB EXISTING STRUCTURAL & ROOFING SYSTEMS, AND OTHER AREAS THAT ARE INTENDED TO REMAIN INTACT. VERIFY ALL CONSTRUCTION TO BE REMOVED THAT IS NOT INTEGRAL TO STRUCTURAL SYSTEM PRIOR TO DEMOLITION. ALL DIMENSIONS SHOWN AS EXISTING			/ RC v52		TE Cat	CTU CTU		E て L	an	ıe	
	SHOULD BE FIELD VERIFIED BY CONTRACTOR PRIOR TO DEMOLITION. VERIFY ALL DEMOLITION WORK W/ NEW CONSTRUCTION & INSTALLATION DRAWINGS PRIOR TO BEGINNING CONSTRUCTION OR DEMOLITION		Tel 51 Cl	on 1-70 13/	co ¤4 - A S rlo	ord 688 Sav	., N 8-75 7ar 7ar	1C 00 1 <b>na</b> ., S	23 ah 5C	80 H <sup>.</sup> 29	27 wy 40	7 <b>)7</b>
3.	DEMOLITION CONTRACTOR TO COORDINATE & REVIEW ALL CONSTRUCTION DOCUMENTS & DETERMINE THE EXTENT OF DEMOLITION WORK & BECOME FAMILIAR WITH THEM THOROUGHLY BEFORE PERFORMING ANY DEMOLITION WORK. BY THE ACT OF STARTING DEMOLITION, THE CONTRACTOR WILL BE DEEMED TO HAVE COMPLIED WITH THE FOREGOING, TO HAVE ACCEPTED SUCH CONDITIONS, AND TO HAVE MADE THE NECESSARY ALLOWANCES IN PREPARING HIS BID.		Tel	- 8. wm	43 · .R	4a)	-68 rch	ite			.co	m
4.	ELECTRICAL DEMOLITION NOTE: REFER TO ELECTRICAL DRAWINGS FOR DETAILED ELECTRICAL DEMOLITION NOTES.					10	N ON		~	¥) ./		
5.	VERIFY DISPOSITION OF ALL FURNISHINGS, MILLWORK, LIGHTING FIXTURES, ETC. TO BE REMOVED W/ OWNER. ALL ITEMS TO BE DISPOSED SHALL BE DISPOSED OF OFF-SITE AND IN AN EXPEDITIOUS MANNER.				HA		OS	P	A Review	a		
6.	PROTECT FROM DAMAGE DURING CONSTRUCTION ALL EXISTING WALLS, FLOORS, CEILINGS, ETC. THAT ARE TO REMAIN. CONTRACTOR TO PATCH & REPAIR ANY DAMAGED PORTIONS OF THE EXISTING BUILDING AS REQUIRED TO MATCH THE EXISTING ADJACENT CONSTRUCTION & FINISHES.					2 10 R		ROY	N. N.	isi 120	23	
7.	THIS PLAN INDICATES A GENERAL SCOPE OF WORK TO BE PERFORMED AND DOES NOT RELIEVE THE CONTRACTOR TO COMPLETE THE BUILDING MODIFICATIONS AS SHOWN AND REQUIRED BY THE CONTRACT DOCUMENTS.											
8.	IF CONTRACTOR ENCOUNTERS ANY HAZARDOUS MATERIALS DURING DEMOLITION OR CONSTRUCTION, HE SHALL IMMEDIATELY SUSPEND WORK & NOTIFY THE MCDONALD'S AREA CONSTRUCTION MANAGER BEFORE PROCEEDING.											
9.	ALL DEMOLITION SHALL BE CARRIED OUT IN A SAFE MANNER & IN STRICT ACCORDANCE WITH OSHA & ALL LOCAL JURISDICTIONAL REGULATIONS.		scription									
10.	THE SUB-CONTRACTOR SHALL FIELD VERIFY THE EXTENT OF DEMOLITION. THE WORK INCLUDES, BUT IS NOT LIMITED TO THE DEMOLITION AND REMOVAL OF ANY WALLS, COUNTERS, FURNITURE, BULKHEADS, DOORS, AND ELECTRICAL ITEMS INCLUDING CONDUITS AS SHOWN ON THE DRAWINGS OR AS REQUIRED TO COMPLETE THE INSTALLATION OF THE NEW WORK FOR A		ev Date De									
11.	COMPLETE JOB. THE HVAC SYSTEM SHALL NOT BE MODIFIED.		Re									
12.	THE EXISTING RESTROOM PLUMBING SHALL REMAIN. REMOVE THE FIXTURES AS REQUIRED FOR THE DEMO OR INSTALLATION OF NEW FINISHES AND INSTALL NEW FIXTURES.			Y.	)) ))	2-0051		pot				.C. 27609
13.	THERE IS NO WORK IN THE KITCHEN. EXISTING FINISHES, EQUIPMENT, PLUMBING FIXTURES HVAC DIFFUSERS, ETC SHALL NOT BE RELOCATED OR REPLACED UNLESS NOTED OTHERWISE.				フジョフリ	ce ID# 3:	0	land Str		5334	on	200 - Raleigh, N
14.	SITE FOR EMPLOYEE USE DURING CONSTRUCTION.					- Sit	# 255	her		NC 28	la Regi	d - Suite 2
13.	NUMBERS OF ALL NEW FINISHES WILL BE SPECIFIED IN THE FINAL DECOR DRAWINGS.			(0)		Store	<b>NSN</b> <sup>≠</sup>			nn, <sup>N</sup>	sethesd	orks Road
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				$ \Lambda^{\Lambda}\Lambda (C)$	ソコココ	<b>c</b> Dona		9041				46
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			D	ra	W	n F	By				JAI	M
LE	GEND:		C Is	ne ssu	eck 1e	Da	te	y	6,	/6/2	202	к :3
	EXISTING WALLS TO REMAIN		P S	ro he	je et	ct I	NO tle			220	068	31
	AREA OF SELECTIVE DEMOLITION & NEW FINISHES, REFER TO DEMO NOTES & DECOR FOR THE AMOUNT OF WORK TO BE PERFORMED AREA OF NO DEMOLITION OR RENOVATION EXISTING SOFFIT		F	rc Pla	op .n	os (C	ed ¦or	F] nti:	loo nu	or	ł)	
			S	he	et	Nı	ım	be	r			
				H			1		J			

![](_page_13_Figure_0.jpeg)

(4) RECESSED MOUNTED DIGITAL MENU

- STARTING POINT FOR

PLACEMENT OF INDOOR

MEASUREMENT OF

![](_page_13_Figure_1.jpeg)

![](_page_14_Figure_0.jpeg)

### SECTION DETAIL @ CABINET 5 1'' = 1' - 0''

- CT CERAMIC WALL TILE: CROSSVILLE COLOR BY NUMBERS COLOR: INTUITIVE GRAY. SIZE: 4"x12", PATTERN: RUNNING BOND GROUT: MAPEI 02 PEWTER - JOINT TO BE 1/6" MAX. USE THIS TILE WHEN HIGH LRV IS REQUIRED COORDINATE WITH THE MCDONALD'S AREA CONSTRUCTION MANAGER
- DECOR FINISH TO BE ORDERED/INSTALLED BY GC AND MANUFACTURED BY DECOR; REFER TO PORTFOLIO.
- FRP FIBERGLASS REINFORCED PLASTIC PANOLAM, GRAY SMOOTH, CLASS C, .075. FOR ORDERING, CONTACT KIMBERLY LAWSON Kimberly\_Lawson@panolam.com 1-866-925-4377

### KEY NOTES

- CG CORNER GUARD: 3/4" ANGLE BY DECOR  $\overset{\times}{\mathsf{A}}$  = BLACK
- COR CORIAN:
- A = 1/2" CORIAN CAMEO WHITE B = 1/2" CORIAN DEEP TITANIUM

![](_page_14_Figure_9.jpeg)

![](_page_14_Figure_10.jpeg)

![](_page_14_Figure_11.jpeg)

- A = IDMB / DIG. MERCH., SMOOTH BLACK PLASTIC LAMINATE BY GC B = TRASH/ COND., WHITE PLASTIC LAMINATE BY GC C = TRASH/ COND., LAMITECH GRAPHITE K MATTE FINISH
- D = SEE DECOR DRAWINGS. MFR BY DECOR. PURCHASE AND INSTALL BY GC
- E = McDELVIERY UNDERSCORE, LAMITECH GOLDENF = BASE BOARD, FORMICA COMPACT LAMINATE MATTE BLACK BY GC

4

<u>(5</u>) ∧-104

![](_page_14_Figure_23.jpeg)

### <u>GENERAL NOTES</u>

- ALL WALL LAMINATE PANELING MANUFACTURED BY DECOR PURCHASE AND INSTALL BY GC, UNO.
  ALL ELEMENTS 'BY CP' TO BE ORDERED BY CENTRAL PURCHASING AND INSTALLED BY GC, UNO.
  A&E TO VERIFY LOCATION AND QUANTITY OF LIGHTS AND DIFFUSERS AFTER SERVICE AREA WALL ADDITION.
- ARCHITECTURE 7752 Gateway Lane Suite 204 Concord, NC 28027 <sup>Tel - 704 - 688-7500</sup> **513A Savannah Hwy Charleston, SC 29407** <sup>Tel - 843 - 531-6848</sup> www.R4architecture.com CERT. NO. criptio ĹÔ. 00 ID# 32-0 eet H St Store - Site ID# NSN# 2550 st Cumberland ( unn, NC 28334 st € únn, /est Du ald's Ň 26 McDon 17 Office Addree JAM Drawn By MJR Checked By **Issue Date** 6/6/2023 Project No 220681 Sheet Title S.A.O. DETAILS Sheet Number A-104

![](_page_15_Figure_0.jpeg)

McDonald's USA Information. Proprietary and Confidential

NOTES:

Only use single pod with 3 P.O.S. Any even number of P.O.S. should use preferred double pods Secondary double pods can only be used on counter less than 8' width

![](_page_15_Figure_4.jpeg)

### AIR DISTRIBUTION DEVICE SCHEDULE X - TITUS MODEL TMS-AA 3-CONE CEILING DIFFUSER X - TITUS MODEL 50F RETURN/EXHAUST EGGCRATE GRILLE X - TITUS MODEL TDC-AA LOUVER-FACED CEILING DIFFUSER (w/ O.B.D.) X - TITUS MODEL 350FS SIDEWALL RETURN GRILLE (w/ O.B.D.) X - TITUS MODEL 300FL SIDEWALL SUPPLY DIFFUSER (w/ O.B.D.) X - TITUS MODEL 250FS CURVED-BLADE SUPPLY DIFFUSER (w/ O.B.D.) X - TITUS ML-38 (2' - 3/4" SLOTS) LINEAR DIFFUSER W/ MPI-38 BOOT PLENUM X - TITUS MLR-38 (2' - 3/4" SLOTS) LINEAR RETURN X - TITUS MLR-39 (5' - 1" SLOTS) LINEAR RETURN X - TITUS MODEL TMR-AA ROUND CEILING DIFFUSER NOTES: 1. COLOR TO BE SPECIFIED BY ARCHITECT. 2. NECK SIZES TO MATCH SIZE OF DUCTWORK TO EACH AIR DEVICE. EACH AIR DEVICE SHALL HAVE A VOLUME DAMPER IN THE DUCT CONNECTED TO THE DEVICE UNLESS NOTED OTHERWISE. IF AIR DEVICE IS LOCATED IN AN INACCESSIBLE CEILING, VOLUME DAMPER SHALL BE INTEGRAL WITH THE AIR DEVICE.

AND LOCATE VOLUME DAMPER WITHIN 2'-0" OF CENTER OF DEVICE.

4-WAY THROW	3-WAY THROW	2-WAY OPPOSITE THROW	2-WAY CORNER THROW	1-WAY THROW

- EACH AIR DEVICE SHALL HAVE A VOLUME DAMPER IN THE DUCT CONNECTED TO THE DEVICE UNLESS NOTED OTHERWISE. IF AIR DEVICE IS LOCATED IN AN INACCESSIBLE CEILING, PROVIDE INTEGRAL AIR DEVICE ACCESS PANEL EQUAL TO TITUS MODEL TRM, "RAPID MOUNT FRAME"

### GENERAL MECHANICAL NOTES

- IN PREPARATION OF THESE PLANS, THE ENGINEER HAS USED CERTAIN ABBREVIATIONS, CONVENTIONS, AND SYMBOLS, THE MEANING OF WHICH ARE ILLUSTRATED AND EXPLAINED WITHIN THE LEGEND.
- 2. PLANS ARE DIAGRAMMATIC ONLY. THEY ARE INTENDED TO INDICATE CAPACITY, SIZE, LOCATION, DIRECTION, AND GENERAL ARRANGEMENT, BUT NOT EXACT DETAILS OF CONSTRUCTION. THE FACT THAT ONLY CERTAIN FEATURES OF THE INSTALLATION ARE INDICATED MUST NOT BE TAKEN TO MEAN THAT OTHER FEATURES WILL NOT BE REQUIRED.
- COORDINATE WITH THE OTHER TRADES TO ENSURE THAT EACH TRADE SHALL HAVE SUFFICIENT SPACE TO INSTALL THEIR EQUIPMENT (DUCTWORK, PIPING, ELECTRICAL WORK, ETC.).
- 4. IN GENERAL, ALL PIPING AND DUCTWORK SHALL BE RUN IN THE CEILING SPACE UNLESS NOTED OR INDICATED OTHERWISE.
- SHOP DRAWING SUBMITTALS ARE ONLY REVIEWED FOR GENERAL CONFORMANCE WITH THE INFORMATION SHOWN ON THE CONSTRUCTION DOCUMENTS. THE GENERAL CONTRACTOR MUST REVIEW AND APPROVE THE SHOP DRAWINGS PRIOR TO THEIR SUBMITTAL TO THE ARCHITECT/ENGINEER. SUBMITTALS WHICH DO NOT CONTAIN THE CONTRACTOR'S SHOP DRAWING STAMP SHALL BE RETURNED WITHOUT REVIEW. ANY REQUESTED CHANGES TO THE CONTRACT DOCUMENTS SHALL BE COMMUNICATED IN WRITING PRIOR TO SUBMITTING THE SHOP DRAWINGS AND CLOUDED ON THE SHOP DRAWINGS.
- VERIFY ALL DIMENSIONS FROM ARCHITECTURAL PLANS AND FIELD DIMENSIONS.
- DUCT DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS.
- ALL RISES, DROPS, AND TRANSITIONS IN PIPING AND DUCTWORK MAY NOT NECESSARILY HAVE BEEN SHOWN. CONTRACTOR TO VERIFY.
- PROVIDE ALL STRUCTURAL MEMBERS, SUPPORT BRACKETS, FLASHING, HARDWARE, ETC. REQUIRED TO INSTALL A COMPLETE SYSTEM.
- 10. DIFFUSERS AND REGISTER LOCATIONS SHALL BE COORDINATED WITH LIGHT FIXTURE AND OTHER CEILING DEVICE LOCATIONS, FIELD VERIFY. 1. MOUNT ALL THERMOSTATS AND/OR SENSORS 4 FEET ABOVE FINISHED
- FLOOR, UNLESS OTHERWISE NOTED. 12. HORIZONTALLY RUNNING PIPE AND FITTINGS SHALL NOT BE ALLOWED
- WITHIN ELEVATED SLABS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS.

### MECHANICAL DEMOLITION NOTES

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPLACE ANY ITEM OR EQUIPMENT DAMAGED DURING DEMOLITION. ANY ITEM OR EQUIPMENT THAT IS REMOVED TO FACILITATE THE DEMOLITION SHALL BE REINSTALLED BACK TO ITS ORIGINAL CONDITION. PATCH ALL OPENINGS IN FLOOR, CEILINGS, AND WALLS MADE IN ADJACENT AREAS THAT ARE NOT BEING DEMOLISHED.
- REMOVE ALL HANGERS, SUPPORTS, AND ACCESSORIES ASSOCIATED WITH ITEMS OR EQUIPMENT BEING DEMOLISHED.
- EXISTING SERVICES ARE BASED ON ORIGINAL DRAWINGS AND LIMITED FIELD WORK. CONTRACTOR SHALL VERIFY EXISTING SERVICES PRIOR TO TIE-IN.
- RETURN AND EXHAUST GRILLES IN AREAS OF WORK SHALL BE COVERED WITH FILTER MEDIA DURING DEMOLITION.
- CONTRACTOR SHALL CONDUCT PRE AIR BALANCES ON EXISTING SYSTEMS BEING REUSED. NOTIFY ENGINEER OF ANY DISCREPANCIES. IF BALANCING DEVICES ARE NOT PRESENT IN EXISTING CONDITIONS CONTRACTOR SHALL PROVIDE AS REQUIRED.
- ROOMS IN THE CONSTRUCTION ZONE SHALL BE UNDER NEGATIVE PRESSURE IN RELATION TO OCCUPIED AREAS ADJOINING AREAS DURING OCCUPIED HOURS.
- CONTRACTOR SHALL COORDINATE WITH OWNER TO SCHEDULE ANY UTILITY SHUTDOWNS. PROVIDE TEMPORARY CONNECTIONS AS REQUIRED TO MAINTAIN ALL NECESSARY SERVICES.
- IF REQUIRED, CONTRACTOR SHALL COORDINATE WITH OWNER TO DETERMINE THE SALVAGE VALUE OF DEMOLISHED ITEMS. RECYCLABLE ITEMS WITHOUT SALVAGE VALUE SHALL BE PRESENTED TO RECYCLING FACILITY.
- DURING DEMOLITION OF DUCTWORK, CONTRACTOR SHALL INSPECT DUCTWORK FOR CLEANLINESS AND OVERALL APPEARANCE. IF DUCTWORK IS DEEMED UNSATISFACTORY THEN A RECOMMENDATION SHALL BE PROVIDED TO THE ARCHITECT AND ENGINEER.

MECH	ANICAL SYMBOL LEGEND	MECHA	NICAL ABBREVIATIONS
	CEILING SUPPLY DIFFUSER	AFF AHU	ABOVE FINISHED FLOOR
		A	
		BTUH	BRITISH THERMAL UNIT PER HOUR
	CEILING EXHAUST GRILLE	CLG CD	CEILING CONDENSATE DRAIN
	CEILING EXHAUST FAN	CU CFM	CONDENSING UNIT CUBIC FEET PER MINUTE
	IN-LINE EXHAUST FAN	Ø DX	DIAMETER DIRECT EXPANSION
WALL	DYNAMIC FIRE DAMPER, STYLE 'B' FIRE DAMPER,	DN	
FD	STYLE 'CR' FIRE DAMPER FOR ROUND DUCTS	EL	
	DYNAMIC SMOKE DAMPER	EQUIP	
SD		EF	EXAUST FAN
	COMBINATION DYNAMIC FIRE / SMOKE DAMPER	EA ESP	EXHAUST AIR EXTERNAL STATIC PRESSURE
FSD		FPM FB	FEET PER MINUTE FILTER BOX
		FPI FD	FINS PER INCH FIRE DAMPER
	RETURN / EXHAUST DUCT TURNING DN	FLEX FL or FLR	FLEXABLE FLOOR
	RETURN / EXHAUST DUCT TURNING UP	GALV	GALVANIZED
	SUPPLY / OUTSIDE DUCT TURNING DN	KW	
	SUPPLY / OUTSIDE DUCT TURNING UP	MANUF	MANUFACTURER
	EXISTING DUCT	MAX	
		OBD OA	OPPOSED BLADE DAMPER OUTSIDE AIR
	TRANSFER OPENING IN WALL ABOVE CEILING	<del>O</del> LBS	OVAL POUNDS
	3/4" UNDERCUT BELOW DOOR	RA RTU	RETURN AIR AND/OR ROOM AIR ROOFTOP UNIT
RD	RADIANT DAMPER (RD)	SQFT SQIN	SQUARE FEET SQUARE INCHES
	CONNECT TO EXISTING	SA	SUPPLY AIR
		MBH	
h		TAD	TYPICAL
	SIDE WALL SUPPLY GRILLE		VOLTS
-\->	SIDE WALL RETURN GRILLE	WB w/	WET BULB WITH
<u>A-12x12</u> 200 CFM	AIR DEVICE TYPE AND SIZE AIR FLOW CFM	w/O	WITHOUT
	THERMOSTAT, HUMIDISTAT, CO2 SENSOR	G	
∽R	REFRIGERANT PIPING (LINE SET)		
∽C	CONDENSATE DRAIN PIPING		PLAN OR DETAIL NO. SHEET NUMBER
20	PIPE TURNING UP		
<b>∠</b> +−5	PIPE TURNING DOWN		KEYED NOTE TO PLAN
M	2 POSITION MOTORIZED DAMPER		REVISION NUMBER
			NORTH ARROW
		N	
CHWR (			
CWS			
	BALL VALVE		
	CHECK VALVE		
	STRAINER		
$\checkmark$	STRAINER WITH BLOW DOWN VALVE		
	UNION		
© ⊠	NEEDLE VALVE WITH PRESSURE GAUGE		
Į.	THERMOMETER		
ιφι	BUTTERFLY VALVE		
$\bigotimes$	BALANCING VALVE		
	FLEX CONNECTION		
<b>⊠</b> ⋈	MOTORIZED CONTROL VALVE		
$\square$	TRIPLE DUTY VALVE		
	VERTICAL INLINE PUMP (PLAN VIEW)		
	PUMP		
- - -	AUTOMATIC AIR VENT		

![](_page_16_Picture_48.jpeg)

![](_page_16_Picture_49.jpeg)

### MECHANICAL SPECIFICATIONS

### PART 1 - GENERAL

- 1.01 INSTRUCTIONS
- A. SCOPE OF WORK SHALL INCLUDE ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY FOR A COMPLETE AND PROPERLY FUNCTIONING INSTALLATION IN ACCORDANCE WITH LOCAL AND STATE CODES, AND CONTRACT DRAWINGS AND SPECIFICATIONS.
- **1.02 LOCAL CONDITIONS**
- A. CONTRACTOR SHALL VISIT THE SITE AND OBSERVE ALL EXISTING LOCAL CONDITIONS WHICH WOULD AFFECT WORK UNDER THIS CONTRACT. CONTRACTOR SHALL EXAMINE ALL PLANS AND SPECIFICATIONS FOR THIS PROJECT AND CONSULT THEM FOR INSTRUCTIONS PERTAINING TO WORK OF THIS SECTION.

1.03 PERMITS AND FEES

- A. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND INSPECTIONS REQUIRED FOR PERTAINING TO WORK UNDER THIS CONTRACT AND PAY ALL CHARGES INCIDENTAL THERETO. DELIVER TO ARCHITECT ALL CERTIFICATES OF INSPECTION ISSUED BY AUTHORITIES HAVING JURISDICTION.
- 1.04 CODES AND STANDARDS
- A. FURNISH AND INSTALL MECHANICAL SYSTEMS TO MEET ALL CURRENT REQUIREMENTS OF NATIONAL, STATE AND MUNICIPAL CODES, RULES REGULATIONS, LAWS, AND STANDARDS AS THEY ARE ADOPTED BY THE GOVERNING AGENCY AND AS THEY MAY APPLY. 2018 NORTH CAROLINA STATE BUILDING CODE: ADMINISTRATIVE CODE AND POLICIES
- 2018 NORTH CAROLINA STATE BUILDING CODE: BUILDING CODE
- 2018 NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE
- 2018 NORTH CAROLINA STATE BUILDING CODE: EXISTING BUILDING CODE 2018 NORTH CAROLINA STATE BUILDING CODE: FIRE PREVENTION CODE
- 2018 NORTH CAROLINA STATE BUILDING CODE: FUEL GAS CODE
- 2018 NORTH CAROLINA STATE BUILDING CODE: MECHANICAL CODE 2018 NORTH CAROLINA STATE BUILDING CODE: PLUMBING CODE
- 2018 NORTH CAROLINA STATE BUILDING CODE: RESIDENTIAL CODE
- NATIONAL ELECTRICAL CODE, 2017 EDITION (NFPA 70 2017).

### 1.05 SUBMITTALS

- A. MATERIAL LIST: WITHIN TWENTY (20) DAYS OF AWARD OF CONTRACT, CONTRACTOR SHALL SUBMIT TO ARCHITECT A COMPLETE LIST OF MATERIALS TO BE PROVIDED FOR THE HVAC WORK. THE LIST SHALL INCLUDE SUPPLIERS' NAMES AND MANUFACTURERS' NAMES AND NUMBER OR SERIES FOR EACH ITEM ON LIST.
- B. SHOP DRAWINGS: SUBMIT TO THE ARCHITECT FOR APPROVAL, BEFORE COMMENCING WORK, SHOP DRAWINGS FOR ALL MATERIALS AND EQUIPMENT TO BE PROVIDED UNDER THIS CONTRACT. THE FOLLOWING APPLIES TO THE SHOP DRAWINGS:
- 1. CONTRACTOR SHALL SUBMIT WITHIN 30-DAYS AFTER AWARD OF CONTRACT. DRAWINGS AND/OR CUT SHEETS OF ALL MATERIALS AND EQUIPMENT, AND 1/4" SCALE EQUIPMENT ROOM DRAWINGS FOR APPROVAL BY ARCHITECT-ENGINEER. SUCH SUBMITTALS MUST CONTAIN OUTLINE DIMENSIONS, OPERATING CLEARANCES, INSTALLATION, OPERATING AND MAINTENANCE INFORMATION AND SUFFICIENT ENGINEERING DATA TO INDICATE SUBSTANTIAL COMPLIANCE WITH SPECIFICATIONS. ALL SHOP DRAWINGS FOR ONE SECTION OF WORK OR ONE MECHANICAL SYSTEM SHALL BE SUBMITTED AT ONE TIME IN LOOSE-LEAF 3-RING BINDERS; NO APPROVAL WILL BE GIVEN IF SUBMITTED PIECEMEAL.
- 2. WHERE CONTRACTOR CONSIDERS ADDITIONAL DETAIL OR SHOP DRAWINGS ESSENTIAL TO PROPER FABRICATION OR INSTALLATION OF EQUIPMENT, DUCTWORK AND PIPING HE SHALL PREPARE SUCH CONSISTENT WITH CURRENT INDUSTRY METHODS AND STANDARDS. ENGINEER RESERVES THE RIGHT TO DIRECT REMOVAL AND REPLACEMENT OF ANY ITEMS WHICH, IN HIS OPINION, DO NOT PRESENT AN ORDERLY AND REASONABLY NEAT AND WORKMANLIKE APPEARANCE, PROVIDED SUCH AN ORDERLY INSTALLATION CAN BE MADE USING CUSTOMARY TRADE METHODS. REMOVAL AND REPLACEMENT SHALL BE DONE WHEN DIRECTED IN WRITING BY ENGINEER AT THE CONTRACTOR'S EXPENSE AND WITHOUT ADDITIONAL EXPENSE TO OWNER
- 3. APPROVAL GRANTED ON SHOP DRAWINGS IS RENDERED AS A SERVICE ONLY AND SHALL NOT BE CONSIDERED AS GUARANTEE OF MEASUREMENTS OF BUILDING CONDITIONS; NOR SHALL IT BE CONSTRUED AS RELIEVING THE MECHANICAL CONTRACTOR OF BASIC RESPONSIBILITIES UNDER THIS CONTRACT.
- 4. CHANGES IN FOUNDATIONS, BASES, CONNECTIONS, PIPING, CONTROLS, STARTERS, ELECTRICAL EQUIPMENT, WIRING AND CONDUIT, SPACE OPENINGS, WALLS AND CEILINGS, AND VIBRATION ISOLATION IN ORDER TO ACCOMMODATE SUBSTITUTE
- EQUIPMENT SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND RECEIVE ENGINEER'S APPROVAL BEFORE INSTALLING MATERIALS OR EQUIPMENT. ANY EQUIPMENT OR MATERIALS INSTALLED PRIOR TO RECEIPT OF APPROVED SHOP DRAWINGS FROM ENGINEER SHALL BE SUBJECT TO REMOVAL AND/ OR ALTERATION AT THE DISCRETION OF THE MECHANICAL ENGINEER AT NO ADDITIONAL COST
- 6. APPROVAL OF ANY SUBMITTED DATA OR SHOP DRAWINGS FOR MATERIALS EQUIPMENT, APPARATUS DEVICES, ARRANGEMENTS AND/OR LAYOUTS WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY OF FURNISHING SAME OF PROPER DIMENSIONS, CAPACITIES, SIZES, QUANTITIES AND INSTALLATION DETAILS TO EFFICIENTLY PERFORM REQUIREMENTS AND INTENT OF CONTRACT. SUCH APPROVAL SHALL NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS OF ANY SORT
- C. ANY ELECTRICAL DEVIATIONS BETWEEN THE CONTRACT DOCUMENTS AND THE FURNISHED EQUIPMENT MUST BE SEPARATELY ACKNOWLEDGED BY A SUBSTITUTION REQUEST AND ADDITIONALLY NOTED ON THE SUBMITTAL
- D. PROVIDE MECHANICAL SHOP DRAWINGS FOR: AIR HANDLING UNITS, CONDENSING UNITS, VENTILATORS, AIR INLETS AND OUTLETS, DUCT ACCESSORIES, DUCT INSULATION, PIPE INSULATION, TEMPERATURE CONTROLS, DUCT MATERIALS, REFRIGERANT PIPING, CONDENSATE PIPING.

### **1.06 APPROVAL OF MATERIAL**

- A. EQUIPMENT OTHER THAN SPECIFIED IN THE CONTRACT DOCUMENTS REQUIRES APPROVAL FROM ENGINEER 10 DAYS PRIOR TO BID DATE.
- B. WRITTEN REQUEST FOR PRIOR APPROVAL MUST BE RECEIVED IN ENGINEER'S OFFICE BY CLOSE OF BUSINESS NO LATER THAN 10 DAYS PRIOR TO SCHEDULED BID DATE. REQUEST SHALL CONTAIN DETAILED INFORMATION ON THE PROPOSED ITEM. THIS SHALL INCLUDE:
  - . CATALOG CUTS SHEETS DETAILED SPECIFICATIONS
- DESCRIPTION OF DEVIATION FROM SPECIFIED ITEM.
- C. AN ADDENDA SHALL BE ISSUED LISTING ALL PROSPECTIVE CONTRACTORS LISTING ALL PRIOR APPROVED MANUFACTURERS AND PRODUCTS.

PART 2 - PRODUCTS

- 2.01 SPLIT SYSTEM HEAT PUMPS A. GENERAL: FURNISH AND INSTALL SPLIT SYSTEM HEAT PUMPS OF THE CAPACITY, OPERATING CHARACTERISTICS, AND ELECTRICAL CHARACTERISTICS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN
- B. MANUFACTURER:
- TRANE, CARRIER, OR LENNOX MAY BE SUBMITTED FOR APPROVAL PROVIDED THEY CONFORM TO ALL REQUIREMENTS OF THESE SPECIFICATIONS. C. WARRANTY
- CONTRACTOR SHALL INCLUDE IN HIS PRICE THE COST OF ONE YEAR'S WARRANTY ON ENTIRE SYSTEM PLUS AN ADDITIONAL FOUR YEARS WARRANTY ON COMPRESSOR. THE CONTRACTOR SHALL WARRANT EACH SYSTEM IN ITS ENTIRETY FOR ONE (1) FULL YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER. CONTRACTOR SHALL ALSO PROVIDE AN ADDITIONAL FOUR-YEAR WARRANTY ON EACH COMPRESSOR TO INCLUDE PARTS, REFRIGERANT AND OIL, EXCLUSIVE OF LABOR.
- D. INDOOR UNITS: 1. FAN SECTION
- SHALL BE INSULATED AND CONSTRUCTED OF GALVANIZED STEEL, BONDERIZED AND FINISHED WITH BAKED ENAMEL. THE VARIABLE-SPEED FAN MOTOR SHALL BE FACTORY LUBRICATED, HAVE INTERNAL OVERLOAD PROTECTION AND BE RESILIENTLY MOUNTED. FAN-MOTOR ASSEMBLY SHALL SLIDE OUT FOR SERVICE. REVERSIBLE FILTER RACK SHALL BE EQUIPPED WITH PERMANENT TYPE FILTER THAT SLIDES OUT FOR SERVICE. COOLING COIL:
- SHALL BE CONSTRUCTED WITH ALUMINUM PLATE FINS MECHANICALLY BONDED TO NONFERROUS TUBING (FOR UNITS 5 TONS AND SMALLER) OR SEAMLESS COPPER TUBING (FOR UNITS LARGER THAN 5 TONS) WITH ALL JOINTS BRAZED. COILS SHALL HAVE A FACTORY-INSTALLED REFRIGERANT METERING DEVICE AND BE EQUIPPED WITH REFRIGERANT LINE FITTINGS WHICH PERMIT MECHANICAL CONNECTIONS. COIL CASING SHALL BE INSULATED AND CONSTRUCTED OF GALVANIZED STEEL, BONDERIZED AND FINISHED WITH BAKED ENAMEL. ELECTRIC HEATER:
- ENCLOSURE SHALL BE INSULATED AND HAVE LARGE FRONT SERVICE ACCESS DOOR. HEATING ELEMENTS SHALL BE STAGED AS INDICATED IN THE EQUIPMENT SCHEDULE ON THE MECHANICAL PLANS. HEATER SHALL BE EQUIPPED WITH BOTH THERMAL AND CURRENT OVERLOAD DEVICES, AND THE REQUIRED HEATING AND COOLING SYSTEM CONTROLS. INCLUDING CONTROL CIRCUIT 24-V TRANSFORMER.

2.01 SPLIT SYSTEM HEAT PUMPS (CONT.)

- E. OUTDOOR UNIT: 1. GENERAL
- 2. COIL: FILTER DRIER.
- 3. FAN: TEMPERATURE.
- 4. COMPRESSOR ISOLATION AND BE COVERED WITH A SHIELD TO MUFFLE OPERATING SOUND.
- 5. CONTROLS:
- F. SPACE TEMPERATURE CONTROLS: 4. CONTROL SYSTEM:
- 5. SERVICE ACCESSIBILITY: BE THROUGH AN ACCESS PANEL.
- WIRING DIAGRAMS
- - A. PHENOLIC COATED CONDENSER COIL. B. COPPER FIN CONDENSER COIL.
  - EXTERNAL OR INTERNAL HOT GAS BYPASS.
- 2.03 LIGHT DUTY CEILING EXHAUST FANS
- RATINGS SUBMITTED FOR REVIEW.
- PART 3 EXECUTION 3.01 METAL DUCTWORK
- A. APPLICATION:
- B. SEAM AND JOINT SEALING:
- 3.02 AIR DISTRIBUTION SYSTEMS
- A GENERAL

- REQUIREMENTS.
- B. HANGERS AND SUPPORTS: 1. HANGERS:
  - A. SHEET METAL DUCT HANGERS:
  - AFTER APPLICATION. **B. FIBERGLASS DUCT HANGERS:**
  - 2. SUPPORTS
  - ALLOW FOR DUCT EXPANSION.
  - 3 FASTENERS:
  - C. FLEXIBLE DUCT: NECESSARY.

### HOUSING SHALL BE CONSTRUCTED OF GALVANIZED STEEL, BONDERIZED AND FINISHED WITH BAKED ENAMEL. THE UNIT SHALL BE DESIGNED AND TESTED FOR USE WITH HCFC-22 AND CONTAIN A SUFFICIENT CHARGE FOR THE ENTIRE SYSTEM. BRASS SERVICE VALVES WITH REFRIGERANT LINE FITTINGS AND SERVICE PARTS SHALL BE LOCATED IN EXTERIOR OF

SHALL CONSIST OF ALUMINUM FINS MECHANICALLY BONDED TO COPPER TUBING (FOR UNITS LARGER THAN 5 TONS) OR ALUMINUM TUBING (FOR UNITS 5 TONS AND SMALLER) WITH ALL JOINTS BRAZED. FACTORY INSTALLED COIL REFRIGERANT METERING DEVICE SHALL BE MOUNTED ON UNIT LIQUID SERVICE VALVE. LIQUID LINE SHALL INCLUDE A BI-FLOW

SHALL BE PROPELLER TYPE, DIRECT DRIVEN, AND ARRANGED FOR VERTICAL DISCHARGE. PROVIDE GRILLE OVER DISCHARGE. FAN MOTOR SHALL BE FACTORY LUBRICATED, INHERENTLY PROTECTED AND RESILIENTLY MOUNTED. TWO-SPEED FAN MOTOR SHALL AUTOMATICALLY SWITCH TO HIGH SPEED ABOVE 95° F AND BELOW 55° F OUTDOOR

SHALL BE OF THE WELDED-HERMETIC TYPE WITH INTERNAL VIBRATION

COMPRESSOR MOTOR SHALL HAVE BOTH THERMAL AND CURRENT SENSITIVE OVERLOAD DEVICE, AND START CAPACITOR AND RELAY COMPRESSOR SHALL BE EQUIPPED WITH A CRANKCASE HEATER AND HAVE INTERNAL HIGH PRESSURE PROTECTION.

SHALL BE FACTORY WIRED AND LOCATED IN A READILY ACCESSIBLE LOCATION ON UNIT SWING-OUT SERVICE DOOR. CONTROLS AND PROTECTIVE DEVICE SHALL INCLUDE A LIQUID LINE LOW-PRESSURE SWITCH, SUCTION LINE ACCUMULATOR AND PRESSURE RELIEF DEVICE. AN AUTOMATIC DEFROST CONTROL SHALL BE INCLUDED TO ACCOMPLISH DEFROSTING (ONLY IF COIL TEMPERATURES) EVERY 90 MINUTES SATURATED SUCTION TEMPERATURE INDICATES FREEZING FOR A PERIOD OF NOT MORE THAN 10 MINUTES. CONTROL WIRING TERMINAL BOARD SHALL BE DESIGNED TO MATCH INDOOR UNIT TERMINAL BOARD FOR STANDARDIZED POINT-TO-POINT CONNECTION. A TIME-DELAY RELAY SHALL PREVENT THE COMPRESSOR FROM SHORT-CYCLING AT LESS THAN 5-MINUTE INTERVALS.

THE INDOOR THERMOSTAT SHALL BE A FULLY-PROGRAMMABLE, 7-DAY, 4-EVENT PER DAY.

A CENTRALLY LOCATED WEATHERPROOF CONTROL PANEL SHALL CONTAIN THE FIELD POWER CONNECTION POINTS, CONTROL TERMINAL BLOCK AND CONTROL SYSTEM. POWER AND STARTING COMPONENTS SHALL INCLUDE FAN MOTOR CONTRACTORS, TIME DELAY RELAY(S) FOR THE COMPRESSOR(S), INHERENT FAN MOTOR OVERLOAD PROTECTION AND UNIT POWER TERMINAL BLOCKS FOR CONNECTION TO REMOTE DISCONNECT SWITCH. SAFETY AND OPERATING CONTROLS SHALL INCLUDE A MANUALLY RESET HIGH PRESSURE SWITCH AND AN AUTOMATIC RESET LOW PRESSURE SWITCH. BARRIER PANELS SHALL BE FURNISHED TO PROTECT AGAINST ACCIDENTAL CONTACT WITH LINE VOLTAGE WHEN ACCESSING THE CONTROL SYSTEM.

ENTRANCE TO THE SEPARATE COMPRESSOR(S) AND CONTROL COMPARTMENT SHALL

WIRING DIAGRAMS SHALL BE IN COLOR AND MARKED TO MATCH THE COLOR AND MARKINGS OF THE WIRES AND SHALL BE BOTH "POINT-TO-POINT" AND "LADDER DIAGRAMS. DIAGRAMS SHALL BE LAMINATED IN PLASTIC AND PERMANENTLY FIXED TO THE CONTROL COMPARTMENT DOOR. INSTALLATION AND MAINTENANCE MANUALS SHALL BE SUPPLIED WITH EACH UNIT WITHIN THE CONTROL COMPARTMENT. OPTIONS AND ACCESSORIES: THE FOLLOWING OPTIONS ARE TO BE AVAILABLE, AS MAY BE REQUIRED, AND SHALL BE FACTORY SUPPLIED AND MOUNTED. REFER TO DRAWING SCHEDULE FOR REQUIRED OPTIONS AND ACCESSORIES.

D. HOT GAS REHEAT/EXTERNAL HOT GAS BYPASS. E. CYCLING CONDENSER FAN CONTROL FOR LOW AMBIENT OPERATION TO 35° F

A. PROVIDE FANS OF THE SIZE, CAPACITY, AND ELECTRICAL CHARACTERISTICS INDICATED ON THE DRAWINGS. FANS SHALL BE AMCA CERTIFIED AS TO BOTH SOUND AND PERFORMANCE B. MANUFACTURER: PRODUCTS OF LOREN COOK, ACME, GREENHECK, OR PENN MAY BE

### SELECT METAL DUCT FOR EXHAUST AND OUTSIDE AIR DUCTWORK.

SEAL ALL TRANSVERSE JOINTS AND LONGITUDINAL SEAMS.

CONSTRUCT ALL DUCTWORK AND ACCESSORIES IN ACCORDANCE WITH LATEST EDITIONS OF APPLICABLE SMACNA MANUALS. STREAMLINE ALL DUCTWORK TO THE FULL EXTENT PRACTICAL AND EQUIP WITH PROPER AND ADEQUATE DEVICES TO ASSURE PROPER BALANCE AND QUIET DRAFTLESS DISTRIBUTION OF INDICATED AIR QUANTITIES. PROTECT ALL DUCTWORK AND SYSTEM ACCESSORIES FROM DAMAGE DURING CONSTRUCTION UNTIL ARCHITECT'S FINAL ACCEPTANCE OF PROJECT, PRIOR TO DUCTWORK FABRICATION, VERIFY IF ALL DUCTWORK AS DIMENSIONED AND GENERALLY SHOWN WILL SATISFACTORILY FIT ALLOCATED SPACES. TAKE PRECAUTIONS TO AVOID SPACE INTERFERENCE WITH BEAMS, COLUMNS, JOISTS, PIPES, LIGHTS, CONDUIT, OTHER DUCTS, EQUIPMENT, ETC. NOTIFY ARCHITECT IF ANY SPATIAL CONFLICTS EXIST, AND THEN OBTAIN ARCHITECT'S APPROVAL OF NECESSARY ROUTING. MAKE ANY SUCH NECESSARY REVISIONS WHICH ARE MINOR AT NO ADDITIONAL COST. CAREFULLY CORRELATE ALL DUCT CONNECTIONS TO AIR HANDLING UNITS AND FANS TO PROVIDE PROPER CONNECTIONS, ELBOWS AND BENDS WHICH MINIMIZE NOISE AND PRESSURE DROP. PROVIDE ALL CURVED ELBOWS WITH RADIUS RATIOS OF NOT LESS THAN 1.5 UNLESS OTHERWISE SHOWN OR APPROVED BY ARCHITECT. PROVIDE ALL MITERED ELBOWS WITH TURNING VANES. COORDINATE ANY AND ALL DIMENSIONS AT INTERFACES OF DISSIMILAR TYPE OF DUCTWORK AND AT INTERFACES OF DUCTWORK WITH EQUIPMENT SO THAT PROPER OVERLAPS, INTERFACES, ETC., OF INSULATION AND CONTINUITY OF VAPOR BARRIERS ARE MAINTAINED. IF NECESSARY, WHERE INTERFACING DIFFERENT TYPES OF INSULATION PROVIDE TRANSITIONS SO THAT INTERNAL FREE AREA OF DUCT REMAINS UNCHANGED. INSTALL HORIZONTAL RIGID DUCTWORK AS HIGH AS PRACTICAL ABOVE SUSPENDED CEILINGS SO THAT MOVABLE LIGHT FIXTURES MAY BE RELOCATED WITHOUT INTERFERENCE TO MEET ANY FUTURE PARTITION RELOCATION

SUPPORT DUCTS FROM THE BUILDING STRUCTURE WITH GALVANIZED STEEL HANGERS TO EACH SIDE OF THE DUCT. HANGERS FOR DUCT TO 60-IN. SHALL BE 1"x1/8" GALVANIZED STEEL BAND. SPACE HANGERS APPROXIMATELY 8- FT. (8') ALONG THE LENGTH OF DUCT. HANGERS SHALL EXTEND DOWN THE SIDE OF DUCT AND TURN UNDER. SHALL BE SECURED TO DUCT BY TWO OR MORE #14 SHEET METAL SCREWS. WHERE SPRAYED FIRE-PROOFING OCCURS, INSTALL HANGERS BEFORE APPLICATION OF SUCH TREATMENT AND WITHHOLD INSTALLATION OF DUCTS UNTIL

1. SUPPORT GLASS FIBER DUCT FROM THE BUILDING STRUCTURE WITH 3/4-IN. PERFORATED 24 GAUGE STEEL STRAPS OR #12 WIRE, SECURELY ANCHORED TO STRUCTURE ABOVE AND TO A 2"x1"x1" 24 GAUGE STEEL ANGLE. OR EQUIVALENT. CROSS SUPPORT UNDER THE DUCT. SPACE HANGARS AT ALL TURNS AND TRANSITIONS. AT NOT MORE THAN EIGHT FOOT (8') CENTERS ON STRAIGHT RUNS, AND ELSEWHERE AS NECESSARY TO MAINTAIN TRUE ALIGNMENT.

VERTICAL RISERS AND OTHER DUCT RUNS WHERE THE METHOD OF SUPPORT SPECIFIED ABOVE IS NOT APPLICABLE SHALL BE SUPPORTED BY SUBSTANTIAL ANGLE BRACKETS DESIGNED TO MEET FIELD CONDITIONS AND INSTALLED TO

SECURE HANGERS TO STEEL BEAMS OR METAL DECK WITH BEAM CLAMPS OR DROP THROUGH CONNECTIONS FROM THE METAL OR CONCRETE DECK.

INSTALL ALL FLEXIBLE ROUND DUCT WITHOUT KINKS OR SIMILAR OBSTRUCTIONS SO THAT PRESSURE DROP IS MINIMIZED, CUT AND REMOVE EXCESS LENGTHS AS

3.02 AIR DISTRIBUTION SYSTEMS (CONT.)

D. CHANGE IN SHAPE OR DIMENSION:

- WHERE DUCT SIZE OR SHAPE IS CHANGED TO EFFECT A CHANGE IN AREA, THE FOLLOWING SHALL APPLY 1. WHERE THE AREA AT THE END OF THE TRANSFORMATION RESULTS IN AN
- INCREASE IN AREA OVER THAT AT THE BEGINNING. THE SLOPE OF THE TRANSFORMATION SHALL NOT EXCEED ONE INCH IN SEVEN INCHES. 2. WHERE THE AREA AT THE END OF THE TRANSFORMATION RESULTS IN A
- DECREASE IN AREA FROM THAT AT THE BEGINNING, THE SLOPE OF THE TRANSFORMATION MAY BE ONE INCH IN FOUR INCHES, BUT ONE INCH IN SEVEN INCHES IS PREFERABLE, SPACE PERMITTING, 3. THE ANGLE OF TRANSFORMATION AT CONNECTIONS TO HEATING COILS OR
- OTHER EQUIPMENT SHALL NOT EXCEED THIRTY DEGREES FROM A LINE PARALLEL TO THE AIR FLOW ON THE ENTERING SIDE OF THE EQUIPMENT. NOR FIFTEEN DEGREES ON THE LEAVING SIDE. THE ANGLE OF APPROACH MAY BE INCREASED TO SUIT LIMITED SPACE CONDITIONS WHEN THE TRANSFORMATION IS PROVIDED WITH VANES APPROVED BY THE ARCHITECT. 4. ALL CHANGES IN SHAPE OR DIMENSION MUST BE APPROVED BY ENGINEER
- BEFORE INSTALLATION OF DUCT. E. CHANGES IN DIRECTION:
- CHANGES IN DIRECTION SHALL BE BASICALLY AS INDICATED ON THE DRAWINGS AND THE FOLLOWING SHALL APPLY: 1. SUPPLY DUCT TURNS OF NINETY DEGREES IN LOW PRESSURE DUCT SHALL BE MADE
- WITH MITERED ELBOWS FITTED WITH CLOSELY SPACED TURNING VANES DESIGNED FOR MAINTAINING A CONSTANT VELOCITY THROUGH THE ELBOW. 2. RETURN AND EXHAUST DUCT TURNS OF NINETY DEGREES IN LOW PRESSURE DUCT
- ALL BE MADE WITH MITERED ELBOWS, AS SPECIFIED HEREINBEFORE, FOR SUPPLY DUCTS, UNLESS RADIUS ELBOWS ARE INDICATED IN WHICH CASE THEY SHALL BE VANED AND CONSTRUCTED WITH A THROAT RADIUS THREE-QUARTERS THE DUCT WIDTH AND A FULL RADIUS HEEL.
- 3. TEES IN LOW PRESSURE DUCT SHALL CONFORM TO THE DESIGN REQUIREMENTS SPECIFIED HEREINBEFORE FOR ELBOWS.
- 4. BRANCH TAKE-OFFS IN LOW PRESSURE DUCT SHALL BE MADE WITH SPLITTER DAMPERS, AS INDICATED, IN SQUARE TAKE OFFS.
- 5. BRANCH TAKE-OFFS IN HIGH PRESSURE DUCT SHALL BE MADE WITH CONICAL TAPS. LOW PRESSURE GLASS FIBER DUCTWORK:
- MITER ALL LONGITUDINAL CORNERS (EXCEPT SEAMS) WITH JACKET UNDISTURBED. PROVIDE SHIP LAP CONSTRUCTION WITH 1 1/2 INCH MINIMUM TAPE OVERLAP ON ALL SIDES OF ALL LONGITUDINAL SEAMS AND TRANSVERSE JOINTS. PROVIDE ALL REINFORCEMENT, BRACING, SUSPENSION, WORKMANSHIP AND CONSTRUCTION DETAILS FOR THIS DUCTWORK AND ITS ACCESSORIES IN STRICT ACCORD WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION'S LATEST EDITION OF THE FIBROUS GLASS DUCT CONSTRUCTION STANDARDS, WHICHEVER IS MORE STRINGENT. COMPLETED DUCT SYSTEM(S) SHALL BE STABLE AND AIRTIGHT AT 2 INCHES W.G. INTERNAL STATIC PRESSURE. ENTIRE DUCT SYSTEM(S) SHALL BE INSTALLED BY AN A/E APPROVED, MANUFACTURER'S LICENSED CONTRACTOR. ENTIRELY COMPLY WITH NFPA BULLETIN 90A AND BE UL-181, CLASS I. TAPED JOINTS ON FIBERGLASS DUCTWORK SHALL BE MADE BY FIRST TAPING THE JOINT, THEN STAPLING THROUGH THE TAPE ON BOTH SIDES OF THE JOINT INTERFACE, AND THEN ADDING ANOTHER LAYER OF TAPE OVER THE STAPLED AND TAPED JOINT. STAPLES SHALL BE IN PAIRS WITH ONE STAPLE ON EACH SIDE OF THE JOINT INTERFACE AND WITH A DISTANCE BETWEEN STAPLE PAIRS OF NOT GREATER THAN 3 INCHES AS MEASURED AROUND THE PERIMETER OF THE TAPED JOINTS. STAPLES SHALL BE MINIMUM 1/2"x1/2". PROVIDE MASTIC MINIMUM TWO INCHES ON EITHER SIDE OF CLOSURE TAPE.

### 3.03 OPENINGS, CUTTING AND PATCHING A. GENERAL:

CONTRACTOR SHALL SET IN POSITION ALL SLEEVES AND INSERTS REQUIRED IN WALLS, PARTITIONS, CEILINGS, OR FLOORS, AND SHALL HAVE A REPRESENTATIVE ON-SITE DURING POURING OF CONCRETE TO MAINTAIN POSITION OF SLEEVES AND INSERTS UNTIL CONCRETE IS SET. CLOSE COORDINATION IS REQUIRED TO INSURE THAT ALL SLEEVES ARE PROPERLY SET. CORRECTNESS OF SIZE AND LOCATION OF OPENINGS SHALL BE VERIFIED BY CONTRACTOR AFTER FRAMING IS IN PLACE. CONTRACTOR SHALL DO ALL CUTTING AND PATCHING OF EXISTING AND/OR NEW BUILDING MATERIALS REQUIRED FOR INSTALLATION OF WORK HEREIN SPECIFIED. NOSTRUCTURAL MEMBERS SHALL BE CUT WITHOUT APPROVAL OF STRUCTURAL ENGINEER AND ALL SUCH CUTTING SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER, MEETING WITH APPROVAL OF STRUCTURAL ENGINEER TO MATCH ADJOINING SURFACES AND FINISHES, BY MECHANICS OF PARTICULAR TRADE INVOLVED. SLEEVES AND OPENINGS NOT USED DURING CONSTRUCTION SHALL BE SEALED WITH GROUT BY CONTRACTOR. OPENINGS BETWEEN PIPES AND SLEEVES THROUGH FIRE AND SMOKE WALLS OR FLOORS SHALL BE SEALED TO PREVENT PASSAGE OF SMOKE OR HEAT USING AN UNDERWRITERS' LABORATORIES APPROVED METHOD RATED AT LEAST EQUAL TO THE BARRIER BEING PENETRATED. METHOD OF SEALING SHALL BE SUBMITTED WITH PROOF OF UL APPROVAL WITH OTHER SUBMITTALS, ALL OPENINGS REQUIRED IN CONCRETE WHICH WERE OMITTED WHEN CONCRETE WAS POURED SHALL BE CAREFULLY MADE BY USE OF CORE BORING OPERATION WITH 5-IN, MAXIMUM HOLE SIZE UNLESS LARGER SIZE IS APPROVED BY STRUCTURAL ENGINEER. CUT NO OPENINGS IN PRESTRESSED OR PRECAST MEMBERS WITHOUT APPROVAL OF STRUCTURAL ENGINEER.

- B. SLEEVES: 1. WALLS AND PARTITIONS:
  - A. PIPE SLEEVES 8" DIAMETER AND SMALLER (ABOVE GRADE): SLEEVES SHALL BE MILD STEEL PIPE OR PLASTIC SLEEVES BUILT INTO WALL PARTITION OR BEAM, SIZED TO PASS PIPE AND COVERING, LEAVING A CLEAR SPACE OF 1/4" MINIMUM BETWEEN COVERING AND SLEEVE. PENETRATIONS OF FIRE
  - RATED BARRIERS SHALL HAVE MILD STEEL SLEEVES.
  - B. PIPE SLEEVES INSTALLED IN EXTERIOR WALLS BELOW GRADE: SCHEDULE 40 STEEL HOT DIPPED GALVANIZED AFTER FABRICATION OR CAST IRON SLEEVE WITH 1/4" x 3" CENTER FLANGE (WATER STOP) AROUND THE
- OUTSIDE. 2. PIPE SLEEVES IN FLOORS (ABOVE GRADE): SLEEVES SHALL BE 14 GAUGE GALVANIZEDSHEET STEEL OR PLASTIC, SET BEFORE
- FLOOR IS POURED, SIZED TO PASS PIPE AND COVERING, LEAVING A CLEAR SPACE OF 1/4" BETWEEN COVERING AND SLEEVE, AND SHALL EXTEND 1/2" ABOVE FINISHED FLOOR. 3. DUCT SLEEVES:
- SLEEVES OR OPENINGS SIZED TO PASS MECHANICAL DUCTS AND COVERING SHALL BE OF FRAMED CONSTRUCTION IN ROOF, WALL, OR PARTITIONS. C. SEALING OF SLEEVES:
- 1. SLEEVES BELOW GRADE:
- CAULK ANNULAR SPACE BETWEEN PIPE AND SLEEVE USING OAKUM AND POURED LEAD BOTH SIDES MINIMUM ONE INCH DEEP TO MAKE WALL PENETRATION WATER TIGHT. 2. SLEEVES ABOVE GRADE
- OPENINGS AROUND PIPES, DUCT, ETC., PASSING THROUGH SLEEVES SHALL BE MADE DRAFT FREE AND VERMIN-PROOF BY PACKING SOLIDLY WITH MINERAL WOOL OR FIBERGLASS.
- 3. SEALING OF SLEEVES THROUGH FIRE RATED BARRIERS: OPENINGS AROUND PIPES, ETC., THROUGH FIRE RATED BARRIERS SHALL BE SEALED USING AN UL APPROVED METHOD RATED AT LEAST EQUAL TO THE WALL BEING PENETRATED.
- 3.04 GUARANTEE AND SERVICE:
- A. IN ADDITION TO THE GUARANTEE OF EQUIPMENT BY THE MANUFACTURER OF EACH PIECE OF EQUIPMENT SPECIFIED HEREIN, THE MECHANICAL CONTRACTOR SHALL ALSO GUARANTEE SUCH EQUIPMENT AND SHALL BE HELD RESPONSIBLE FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE FOR NECESSARY ADJUSTMENTS AND/OR REPLACEMENTS OF ALL DEFECTIVE EQUIPMENT, MATERIALS AND WORKMANSHIP WITHOUT EXPENSE TO THE OWNER. PROVIDE A LETTER TO THE OWNER STATING THE CONTRACTOR'S
- GUARANTEE AND DATES OF GUARANTEE COVERAGE. B. CLEANING OF PERMANENT TYPE FILTERS; LUBRICATION, AND CLEANING OF STRAINERS SHALL BE TO 30-DAYS AFTER THE FINAL ACCEPTANCE.
- C. THE CONTRACTOR SHALL PROVIDE FOR A REPRESENTATIVE OF HIS FIRM, THE CONTROL SYSTEM CONTRACTOR, AND THE OWNER'S REPRESENTATIVE TO RETURN TO THE JOB AT THE CHANGE OF SEASONS. (SUMMER TO WINTER OR WINTER TO SUMMER) FOR THE FIRST YEAR ONLY, TO ADJUST THE AIR CONDITIONING SYSTEMS AND RECHECK OR RECALIBRATE CONTROLS AS MAY BE REQUIRED OF THE SEASON CHANGE FROM COOLING TO HEATING OR VICE VERSA.
- 3.05 ACCEPTANCE A. AS A PREREQUISITE TO REQUESTING FINAL INSPECTION, CONTRACTOR SHALL: 1. EMPLOY THE SERVICES OF A NEBB OR AABC CERTIFIED TEST AND BALANCCONTRACTOR TO TEST AND BALANCE EACH SYSTEM TO ASSURE DESIGN PERFORMANCE AND PROVIDE
  - ARCHITECT AND ENGINEER WITH PRELIMINARY TEST RESULTS. 2. FURNISH LETTER FROM AUTHORIZED REPRESENTATIVE OF CONTROL MANUFACTURER THAT ALL CONTROLS HAVE BEEN CHECKED FOR OPERATION AND CALIBRATION AND
- THAT ALL SYSTEMS ARE OPERATING AS INTENDED. B. ACCEPTANCE WILL BE MADE BY THE ARCHITECT-ENGINEER OR HIS REPRESENTATIVE ON THE BASIS OF TESTS AND INSPECTION OF THE JOB. CONTRACTOR SHALL FURNISH THE NECESSARY MECHANICS TO OPERATE SYSTEMS, MAKE ANY NECESSARY ADJUSTMENTS AND ASSIST WITH THE FINAL INSPECTION.

![](_page_17_Picture_137.jpeg)

![](_page_17_Picture_138.jpeg)

Ph: (919) 650-6565

![](_page_18_Figure_0.jpeg)

![](_page_18_Figure_1.jpeg)

![](_page_18_Figure_2.jpeg)

![](_page_18_Figure_3.jpeg)

![](_page_18_Figure_4.jpeg)

![](_page_18_Figure_5.jpeg)

### Level 1 - Mechanical Plan - Customer Area SCALE: 1/4" = 1'-0"

- # KEYED NOTES:
- 1. ALL EXISTING DIFFUSERS, ETC. TO BE CLEANED TO LIKE NEW CONDITION AND REUSED. REPAIR/REPLACE AS NEEDED. IF EXISTING LOCATION IS IN CONFLICT WITH NEW LIGHTING LAYOUT GC SHALL ADJUST SLIGHTLY AS REQ. FOR NEW LIGHTING LAYOUT- TYP.
- 2. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.

### DEMOLITION NOTES

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPLACE ANY ITEM OR EQUIPMENT DAMAGED DURING DEMOLITION. ANY ITEM OR EQUIPMENT THAT IS REMOVED TO FACILITATE THE DEMOLITION SHALL BE REINSTALLED BACK TO ITS ORIGINAL CONDITION. PATCH ALL OPENINGS IN FLOOR, CEILINGS, AND WALLS MADE IN ADJACENT AREAS THAT ARE NOT BEING DEMOLISHED.
- REMOVE ALL HANGERS, SUPPORTS, AND ACCESSORIES ASSOCIATED WITH ITEMS OR EQUIPMENT BEING DEMOLISHED.
- EXISTING SERVICES ARE BASED ON ORIGINAL DRAWINGS AND LIMITED FIELD WORK. CONTRACTOR SHALL VERIFY EXISTING SERVICES PRIOR TO TIE-IN.
- RETURN AND EXHAUST GRILLES IN AREAS OF WORK SHALL BE COVERED WITH FILTER MEDIA DURING DEMOLITION.
- CONTRACTOR SHALL CONDUCT PRE AIR BALANCES ON EXISTING SYSTEMS BEING REUSED. NOTIFY ENGINEER OF ANY DISCREPANCIES. IF BALANCING DEVICES ARE NOT PRESENT IN EXISTING CONDITIONS CONTRACTOR SHALL PROVIDE AS REQUIRED.
- ROOMS IN THE CONSTRUCTION ZONE SHALL BE UNDER NEGATIVE PRESSURE IN RELATION TO OCCUPIED AREAS ADJOINING AREAS DURING OCCUPIED HOURS.
- CONTRACTOR SHALL COORDINATE WITH OWNER TO SCHEDULE ANY UTILITY SHUTDOWNS. PROVIDE TEMPORARY CONNECTIONS AS REQUIRED TO MAINTAIN ALL NECESSARY SERVICES.
- IF REQUIRED, CONTRACTOR SHALL COORDINATE WITH OWNER TO DETERMINE THE SALVAGE VALUE OF DEMOLISHED ITEMS. RECYCLABLE ITEMS WITHOUT SALVAGE VALUE SHALL BE PRESENTED TO RECYCLING FACILITY.

NOTE: THESE DRAWINGS AND THE PROJECT MANUAL FOR MCDONALDS' STANDARD BUILDING PROGRAM COPYRIGHT 2013 ARE INTENDED TO DESCRIBE AND PROVIDE FOR A FINISHED PIECE OF WORK. THEY ARE INTENDED TO BE COOPERATIVE, AND WHAT IS CALLED FOR BY EITHER WILL BE AS BINDING AS IF CALLED FOR BY BOTH. THE PROJECT MANUAL FOR MCDONALDS' STANDARD BUILDING PROGRAM COPYRIGHT 2013 IS AVAILABLE THROUGH THE MCDONALDS ACM OR ECM.

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![](_page_18_Figure_22.jpeg)

GENERAL ELECTRICAL NOTES				ELECTRICA	L SYMBC	DL LEGEND
1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE APPLICABLE EDITION OF THE NATIONAL ELECTRICAL CODE AND ALL LOCAL AND STATE CODES.		WIRING AND WIRING DEVICES WIRING SYSTEM CONCEALED IN WALL OR CEILING, DASHED		TE WIRING RUN BELOW SLAB / GRADE.		COMMUNICATIONS
2. ALL MATERIAL SHALL BE NEW AND SHALL CONFORM TO THE STANDARDS OF THE UNDERWRITER'S LABORATORIES,		LOW VOLTAGE CONTROL WIRING SYSTEM CONCEALED IN W	ALL OR CEILIN	IG.		<ul> <li>'W' INDICATES 48" AFF MOUNTING.</li> <li>'INT' INDICATES INTERCOM OUTLET.</li> </ul>
3. ALL ELECTRICAL PERMITS AND INSPECTION FEES SHALL BE OBTAINED AND PAID FOR BY THE ELECTRICAL		WIRING SYSTEM TO BE RUN EXPOSED. DASHED LINES INDIC BRANCH CIRCUIT HOMERUN TO PANEL. NUMBER OF ARROW	ATE WIRING R	UN BELOW SLAB / GRADE. ATE NUMBER OF CIRCUITS. THREE CIRCUITS OF ALTERNATING		TELEPHONE OUTLET w/ 3/4"C, CEILING, FLOO         DATA OUTLET w/ 1"C, CEILING, FLOOR AND W
4. DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE ONLY THE GENERAL ARRANGEMENT. SEE ARCHITECTURAL		PHASES MAY BE COMBINED IN ONE CONDUIT, HOWEVER TH CIRCUIT BREAKERS, OR HANDLE-TIES ON THEIR BREAKERS.	EY SHALL EITH	IER BE EQUIPPED w/ DEDICATED NEUTRALS, COMMON TRIP	▼ <b>⊠ ⊘</b>	COMBINATION TEL / DATA OUTLET w/ 1"C, CE WALL MOUNTED TV OUTLET w/ 1"C, UON, SEE
DRAWINGS FOR EXACT DIMENSIONS.		MOTOR PROVIDED AND INSTALLED BY MECH. CONTRACTOR JUNCTION BOX, CEILING AND WALL MOUNTED.	R, WIRED BY EL	EC. CONTRACTOR, NUMERALS INDICATE HORSEPOWER.		RECEPTACLE (SIMPLEX, DUPLEX, DOUBLE DI IN FLOOR / WALL BOX, WIREMOLD FB-SERIES
ON THE CONSTRUCTION DOCUMENTS. THE GENERAL CONTRACTOR MUST REVIEW AND APPROVE THE SHOP DRAWINGS PRIOR TO THEIR SUBMITTAL TO THE ARCHITECT/ENGINEER. SUBMITTALS WHICH DO NOT CONTAIN THE CONTRACTORICS SHOP DRAWING STAMP SHALL BE DETURNED WITHOUT DEVIEW. ANY DESURE SHOP SHARES TO THE		<ul> <li>'P'INDICATES SYSTEMS FURNITURE POWER WHIP, SEE L</li> <li>'C' INDICATES SYSTEMS FURNITURE COMMUNICATIONS</li> <li>SINGLE SERVICE ELOOPBOX / POKE-THROUGH JUNCTION B</li> </ul>	DETAILS. WHIP, SEE DE'	TAILS.	GAP SP HSP	GENERATOR ANNUNCIATOR PANEL. SPEAKER CEILING AND WALL MOUNTED.
CONTRACTOR'S SHOP DRAWING STAMP SHALL BE RETURNED WITHOUT REVIEW. ANY REQUESTED CHANGES TO THE CONTRACT DOCUMENTS SHALL BE COMMUNICATED IN WRITING PRIOR TO SUBMITTING THE SHOP DRAWINGS AND CLOUDED ON THE SHOP DRAWINGS.		<ul> <li>ON-GRADE: HUBBELL B2536 SERIES BOX OR APPROVED</li> <li>ABOVE GRADE: HUBBELL S1PT4X4-J BOX SERIES OR APP</li> </ul>	EQUAL, UON. PROVED EQUA	L, UON.	DS	DISCONNECT SWITCH FOR NOTIFICATION. DOOR BELL PUSH BUTTON.
ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR ONE YEAR EFFECTIVE THE DAY THE		<ul> <li>'P' INDICATES SYSTEMS FURNITURE POWER WHIP, SEE I</li> <li>'C' INDICATES SYSTEMS FURNITURE COMMUNICATIONS V</li> </ul>	DETAILS. WHIP, SEE DE <sup>-</sup>	TAILS.	TX ▼ DA	LOW VOLTAGE TRANSFORMER. VISUAL / AUDIBLE DOOR NOTIFICATION.
ELECTRICAL CONTRACTOR SHALL MAKE ALL ELECTRICAL POWER CONNECTIONS TO HVAC, PLUMBING, AND OTHER		FIRE ALARM DEVICES <ul> <li>'C' INDICATES CEILING MOUNTED.</li> </ul>		SITE BOLLARD LIGHT FIXTURE		
EQUIPMENT AS REQUIRED. A COMPLETE GROUNDING SYSTEM SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH ARTICLE 250 OF THE	СО	CARBON MONOXIDE DETECTOR WALL OR CEILING MTD. HEAT DETECTOR WALL OR CEILING MOUNTED.	$\nabla$	GROUND MOUNTED FLOODLIGHT FIXTURE.		GROUND BAR.
NEC, AND AS SHOWN ON THE DRAWINGS.	S	SMOKE DETECTOR WALL OR CEILING MOUNTED.		GROUND MOUNTED LINEAR SIGNLIGHT FIXTURE.		DATA PATCH PANEL.
THE ELECTRICAL CONTRACTOR.	FACP	FIRE ALARM CONTROL PANEL.		POST TOP LIGHT FIXTURE.		
7. ALL WIRING SHALL BE INSTALLED IN GALVANIZED RIGID CONDUIT, INTERMEDIATE METAL CONDUIT, OR EMT. EMT SHALL NOT BE USED IN OR UNDER CONCRETE SLABS, OR IN MASONRY WALLS. USE SCHEDULE 40 PVC OUTDOORS WHERE NOT SUBJECT TO PHYSICAL DAMAGE OR BELOW FLOOR SLAB.		FIRE ALARM ANNUNCIATOR PANEL. FIRE ALARM NOTIFICATION APPLIANCE CABINET.		POLE MOUNTED SITE LIGHT FIXTURE (1 HEAD).		<ul> <li>'2' INDICATES 2-POLE.</li> <li>'3' INDICATES 3-WAY.</li> </ul>
HORIZONTALLY RUNNING CONDUIT <b>SHALL NOT BE ALLOWED</b> WITHIN ELEVATED CONCRETE SLABS UNLESS		DOOR HOLDER INTERFACE DEVICE.			_	<ul> <li>'4' INDICATES 4-WAY.</li> <li>'D' INDICATES 0-10V DIMMER SWITCH. CC</li> <li>'T' INDICATES 0-60 MINUTE TIMER SWITC</li> </ul>
CONCEALED BRANCH CIRCUITS RATED 30 AMPS OR LESS MAY UTILIZE TYPE MC FLEXIBLE METAL CABLE WHERE CODE	R	INPUT MODULE INTERFACE DEVICE. RELAY INTERFACE DEVICE.	NCAP	NURSE CALL NURSE CALL ANNUNCIATOR PANEL (MASTER STATION).		<ul> <li>'K' INDICATES KEY OPERATED SWITCH.</li> <li>'LV' INDICATES LOW VOLTAGE SWITCH.</li> <li>'LV2' INDICATES 2 BELAX LOW VOLTAGE</li> </ul>
ALLOWS. SUPPORT WITHIN 12" OF ALL CONNECTIONS AND NOT MORE THAN 4'-6" ON CENTER.	FS PS	FIRE ALARM FLOW SWITCH. FIRE ALARM PRESSURE SWITCH.	NCEC SD	NURSE CALL EQUIPMENT CABINET. STAFF DUTY STATION.	∢	<ul> <li>'[#]' INDICATES LIGHTING CONTROL ZONE</li> <li>SINGLE POLE SWITCH</li> </ul>
BUILDING LINES.	TS P	FIRE ALARM TAMPER SWITCH. FIRE ALARM PULL STATION.	SA FC	STAFF ASSIST STATION. EMERGENCY CALL STATION (CODE BLUE).	\$ <sup>VS</sup>	LINE VOLTAGE, VACANCY SENSOR SWITCH,
AWG UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL WIRE #8 AWG AND LARGER SHALL BE STRANDED. ALL CONDUCTORS #10 AND SMALLER SHALL BE SOLID, UNLESS OTHERWISE NOTED.	]♥Ĕ C	LOW FREQUENCY ALARM DEVICE.		NURSE DOME LIGHT	\$ <sup>OC</sup>	LINE VOLTAGE, OCCUPANCY SENSOR SWITC
FEEDERS RATED GREATER THAN 150 AMPERES MAY UTILIZE 75°C COMPACT ALUMINUM CONDUCTORS OF		VISUAL ONLY ALARM DEVICE. VISUAL / AUDIBLE ALARM DEVICE.	PC	PATIENT CALL STATION.		
CONTRACTOR TO VERIFY CONDUIT SIZES REQUIRED FOR ALUMINUM FEEDERS.	O B V	BELL ALARM DEVICE.	BS	<ul> <li>'T' INDICATES TOILET STATION, INSTALL WITHIN 12" OF TOILET BOWL.</li> </ul>	\$ LV PP P2	LOW-VOLTAGE CONCEALED POWER PACK F
PROVIDE A PULLWIRE IN ALL EMPTY CONDUITS.	ŠP ▼ SS	SPEAKER ALARM DEVICE.		'S' INDICATES SHOWER STATION.	PPA PPA2	LOW-VOLTAGE CONCEALED POWER PACK F
PROVIDE A TYPED DIRECTORY IN ALL PANELBOARDS CLEARLY DESCRIBING THE LOCATION OF AND TYPE OF LOAD	1 © E	SINGLE STATION CARBON MONOXIDE ALARM.	Å	LIGHTNING PROTECTION	PPD PPD2	
. PROVIDE ENGRAVED PHENOLIC NAMEPLATES FOR ALL PANELBOARDS AND DISCONNECT SWITCHES, BLACK LETTERS		SINGLE STATION SMOKE ALARM.		LIGHTNING PROTECTION DOWN CONDUCTOR AND GROUND ROD.		LEAST 56'-0" MINOR MOTION RANGE DIAMET
ON WHITE BACKGROUND.		SINGLE STATION DUCT SMOKE ALARM.		LIGHTNING PROTECTION CONDUCTOR.		LEAST 56'-0" MINOR MOTION RANGE DIAMET
INTERRUPTING RATING AS MANUFACTURED BY BUSS, UNLESS NOTED OTHERWISE.		RECEPTACLES ALL RECEPTACLES SHALL BE A MINIMUM RATING OF 120 VOI	LT, 20 AMP, UC	N. VERTICAL MOUNTED BOX HEIGHTS SHALL BE TO CENTER,	TC IV	TIMECLOCK, REFER TO LIGHTING CONTROL INVERTER, 50W, 277V, 90 MINUTE BATTERY.
POWER COMPANY PRIOR TO PROJECT START-UP. NOTIFY ENGINEER OF ANY CHANGES AS MAY BE REQUIRED.		<ul> <li>HORIZONTAL MOUNTED BOX HEIGHTS SHALL BE TO TOP, UC</li> <li>'AFI' INDICATES ARC FAULT CIRCUIT INTERRUPTER.</li> <li>'GEI' INDICATES GROUND FAULT CIRCUIT INTERRUPTER</li> </ul>	DN.			
AVAILABLE FAULT CURRENT AT SERVICE TRANSFORMER TO BE FIELD VERIFIED WITH SERVING UTILITY. ACTUAL FAULT CURRENT VALUES TO BE FIELD MARKED ON ALL GEAR IN ACCORDANCE WITH NEC 110.24.		'WP' INDICATES WEATHERPROOF IN USE, WEATHER RES LOCATED IN WET OR DAMP LOCATIONS SHALL BE WP, W	SISTANT RECE /HETHER INDIG	PTACLE w/ IN-USE EXTRA DUTY COVER. RECEPTACLES CATED OR NOT.		<ul> <li>SEE FIXTURE SCHEDULE FOR DETAILS.</li> <li>'N/L' INDICATES FIXTURE UNSWITCHED (I LOWER CASE LETTERING DENOTES SWI     </li> </ul>
PROVIDE SCHEDULE 40 PVC CONDUIT UNDERGROUND FROM TELEPHONE EQUIPMENT ROOM TO CONNECTION POINT AS DIRECTED BY LOCAL TELEPHONE COMPANY.		<ul> <li>'EWC'INDICATES ELECTRIC WATER COOLER.</li> <li>'EX' INDICATES EXISTING TO BE REUSED.</li> <li>'HD' INDICATES HAND DRYER CONNECTION.</li> </ul>				<ul> <li>SHADING:</li> <li>1/2 SHADING INDICATES FIXTURE TO BE</li> </ul>
ALL TERMINALS, SPLICING CONNECTORS, LUGS, ETC. SHALL BE IDENTIFIED FOR USE WITH THE MATERIAL (CU/AL) OF THE CONDUCTOR AND SHALL BE PROPERLY INSTALLED.		TR' INDICATES TAMPER RESISTANT (INTEGRAL TO RECE TAMPER RESISTANT TYPE. ALL NON-LOCKING, 120V, 15A MECHANICAL ROOMS, ELECTRICAL ROOMS, AND JANITO	PTACLE). ALL AND 20A REC	DWELLING UNIT DUPLEX RECEPTACLES SHALL BE LISTED EPTACLES SHALL BE TAMPER RESISTANT, EXCEPT IN WHETHER INDICATED OR NOT	<u></u>	DOWNLIGHT RECESSED FIXTURE, ARROW IN DOWNLIGHT SURFACE MOUNTED FIXTURE.
THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL ELECTRICAL EQUIPMENT FROM FOREIGN MATERIAL DURING CONSTRUCTION (PAINT, SPACKLE, ETC.).		<ul> <li>'CH' INDICATES HALF CONTROLLED.</li> <li>'CF' INDICATES FULL CONTROLLED (BOTH PLUGS OF DUF ISPI INDICATES FULL CONTROLLED ON ADTROADD OF DUF</li> </ul>	PLEX).			EMERGENCY EGRESS LIGHT FIXTURE. EXIT SIGN FIXTURE, CEILING AND WALL MOL
PENETRATIONS OF REQUIRED SMOKE PARTITIONS SHALL BE SEALED USING METHODS APPROVED UNDER THE STATE		<ul> <li>SB INDICATES RECEPTACLE FOR SMARTBOARD, SEE DE 'USB' INDICATES 20A 125V TAMPER RESISTANCE RECPTA SHADING:</li> </ul>	ACLE AND USB	A+C FAST CHARGING.		CEILING FAN.
SMOKE STOPPING IS ACCOMPLISHED.		<ul> <li>CENTER SHADING INDICATES DEVICE MOUNTED ABOVE</li> <li>1/2 SHADING INDICATES DEVICE TO BE SWITCHED.</li> </ul>	COUNTER TO	P 3'-8" AFF, UON.		LINEAR PENDANT FIXTURE.
WHERE PENETRATIONS ARE MADE THROUGH A REQUIRED FIRE-RESISTIVE WALL, FLOOR, OR PARTITION FOR THE PURPOSE OF RUNNING RACEWAY CARRYING ELECTRICAL, TELEPHONE, TELEVISION, OR LOCAL COMMUNICATION AND/OR SIGNALING CIRCUITS, THE OPENING AROUND THE RACEWAY SHALL BE FIRE STOPPED PER THE STATE	$ \begin{array}{c c}                                    $	SIMPLEX RECEPTACLE, CEILING, FLOOR AND WALL MOUNTED DUPLEX RECEPTACLE, CEILING, FLOOR AND WALL MOUNTED	:D. D. FLOOR IS SI	NGLE SERVICE FLOORBOX / POKE-THROUGH, ONE DUPLEX		2' x 4' LIGHTING FIXTURE. DIAGONAL INDICAT
BUILDING CODE. COORDINATION WITH THE GENERAL CONTRACTOR SHALL BE MAINTAINED TO INSURE THAT THIS FIRE STOPPING IS ACCOMPLISHED. USE APPROVED ASSEMBLIES SUCH AS THE FOLLOWING: A UP TO 1" PENETRATIONS OF 1, 2, 3, & 4 HOUR GYPSUM WALLS - UL #WI 1001.		<ul> <li>ON-GRADE: HUBBELL B2536 SERIES BOX OR APPROVED</li> <li>ABOVE GRADE: HUBBELL S1PT4X4-J SERIES BOX OR APP</li> </ul>	EQUAL, UON. PROVED EQUA	L, UON.		2' x 2' LIGHTING FIXTURE.
<ul> <li>B. UP TO 4" PENETRATIONS OF 1 &amp; 2 HOUR GYPSUM WALLS - U.L.#WL1001;</li> <li>C. UP TO 4" PENETRATIONS OF 1 &amp; 2 HOUR CONC. OR BLOCK WALLS &amp; FLOORS - U.L.#CAJ1009;</li> </ul>		DOUBLE DUPLEX RECEPTACLE, CEILING, FLOOR AND WALL I 220V RECEPTACLE, CEILING, FLOOR AND WALL MOUNTED.	MOUNTED.		$\bigcirc$	ROUND BOWL / DRUM PENDANT FIXTURE.
IN REQUIRED FIRE RATED WALLS AND PARTITIONS, OPENINGS FOR INSTALLATION OF BOXES THAT ARE GREATER		'DRYER' INDICATES NEMA 14-30R.     SPECIAL RECEPTACLE (AS INDICATED), CEILING, FLOOR AND	) WALL MOUN	TED.		SURFACE FIXTURE.
THAN 16 SQUARE INCHES SHALL BE PROTECTED AS REQ'D BY U.L. COORDINATE CLOSELY WITH THE GENERAL CONTRACTOR TO INSURE THAT THE INTEGRITY OF THE U.L. RATING IS MAINTAINED.		MULTI-OUTLET ASSEMBLY.			<del>`\\</del>	TRACK LIGHT FIXTURE.
WHERE A HOME RUN IS SHOWN, THE CIRCUIT SHALL BE INSTALLED IN A DEDICATED CONDUIT, DO NOT COMBINE WITH OTHER CIRCUITS. WHERE A CIRCUIT HOMERUN IS NOT SHOWN, THE CONTRACTOR SHALL COMBINE CIRCUITS AS	⊨FSD	MISCELLANEOUS DEVICES 120V FIRE / SMOKE DAMPER (FURNISHED & INSTALLED BY DI	IV 23, CIRCUITI	ED BY DIV 26).	ਸ 	
A. A MAXIMUM OF THREE 20A BRANCH CIRCUITS MAY BE COMBINED IN A COMMON HOMERUN SHARING A COMMON NEUTRAL OR WITH SEPARATE NEUTRALS FOR A MAXIMUM OF TOTAL OF SIX CURRENT CARRYING CONDUCTORS.	SD	120V SMOKE DAMPER (FURNISHED & INSTALLED BY DIV 23, C	CIRCUITED BY	DIV 26).		DASHED LINES ADJACET TO EQUIPMENT
<ul> <li>B. 20A BRANCH CIRCUITS SERVING NON-LINEAR LOADS (FLUOR. LIGHTING, EMPLOYEE WORKSTATIONS, DATA SYSTEMS, ETC.) USING SHARED NEUTRALS SHALL UTILIZE #10 CU NEUTRAL, MINIMUM.</li> <li>C. ALL BRANCH CIRCUITS LARGER THAN 20A SHALL BE SEPARATELY HOMERUN TO THE PANEL</li> </ul>	M	120V MOTORIZED DAMPER (FURNISHED & INSTALLED BY DIV	23, CIRCUITEI	D BY DIV 26).	30/3/20	<ul> <li>NUMBERS INDICATE AMP FRAME / # POL</li> <li>'NF' INDICATES NON-FUSIBLE.</li> </ul>
ALL RACEWAYS SHALL BE CONCEALED UNLESS OTHERWISE NOTED. THE ELECTRICAL CONTRACTOR SHALL BE	ER	EMERGENCY RELAY.				120 / 208V PANELBOARD, SURFACE OR RECE 277 / 480V PANELBOARD, SURFACE OR RECE
CLOSE OUT DOCUMENTS:				ANEL IN THE COMM ROOM, COORDINATE W/ SECURITY	Ţ	TRANSFORMER.
A. AS-BUILTS: WITHIN 30 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, RECORD DRAWINGS OF THE ACTUAL IINSTALLATION SHALL BE PROVIDED TO THE BUILDING OWNER, INCLUDING:		INSTALLER FOR LOCATION OF SECURITY PANEL. CCTV CAMERA.				SWITCHBOARD, SEE SCHEDULE FOR DETAIL
<ul> <li>b. FLOOR PLANS INDICATING LOCATION AND AREA SERVED FOR ALL DISTRIBUTION.</li> <li>B. OPERATION AND MAINTENANCE MANUALS: AN OPERATING MANUAL AND MAINTENANCE MANUAL SHALL BE</li> </ul>		ACCESS CONTROL PANEL. CARD READER, OUTLET BOX AT 3'-10" AFF.				UTILITY METER
PROVIDED TO THE BUILDING OWNER. THE MANUALS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING: a. SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE;		DOOR CONTACT.				ENCLOSED CIRCUIT BREAKER
<ul> <li>DERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED;</li> <li>NAMES AND ADDRESSES OF AT LEAST ONE OUT USED OF DVICE ACENOV</li> </ul>	PB	PUSH BUTTON, OUTLET BOX AT 3'-10" AFF.				
C. NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY.	GC	GATE CONTACT. REQUEST TO EXIT.				
WHERE OCCUPANT SENSORS, TIME SWITCHES, PROGRAMMABLE SCHEDULE CONTROLS, PHOTOSENSORS, OR DAYLIGHTING CONTROLS ARE INSTALLED, COMMISSIONING SHALL BE PROVIDED. FOR ANY OCCUPANCY SENSORS, CONFIRM THAT THE PLACEMENT, SENSITIVITY, AND TIME OUT AD JUSTMENTS VIEW ACCEPTABLE DEPENDENT AND THE OUT AD JUSTMENTS VIEW ACCEPTABLE DEPENDENT.	ES MS	ELECTRIC STRIKE. MOTION SENSOR.				
FOR ANY TIME SWITCHES AND PROGRAMMABLE SCHEDULE CONTROLS, CONFIRM THAT PROGRAMMING TURNS LIGHTS OFF; FOR ANY PHOTOSENSOR CONTROLS, CONFIRM THAT THE PLACEMENT AND SENSITIVITY ADJUSTMENTS	GB	GLASS BREAK SENSOR.				
REDUCE ELECTRIC LIGHTS BASED ON THE AMOUNT OF USABLE DAYLIGHT IN SPACE AS SPECIFIED. COMMISSIONING SHALL BE PERFORMED BY THE CONTRACTOR UNDER THE DIRECTION OF THE LIGHTING CONTROLS CERTIFIED MANUFACTURER'S REPRESENTATIVE, CERTIFICATE DOCUMENTATION OF THE REPRESENTATIVE SHALL BE INCLUDED						
IN SHOP DRAWING / PRODUCT DATA SUBMITTAL.						

ARCHITECTURE GHT AS ADJACENT RECEPTACLE, w/ CONDUIT STUBBED OUT ABOVE ACCESSIBLE CEILING. 7752 Gateway Lane Suite 204 OR AND WALL MOUNTED. Concord, NC 28027 Tel - 704 - 688-7500 WALL MOUNTED. EILING, FLOOR AND WALL MOUNTED. E ARCH PLANS FOR MOUNTING HEIGHT. 513A Savannah Hwy DUPLEX, 220V OR SPECIAL), COMBINATION TEL/DATA OUTLET w/ 1"C, AND INTERCOM OUTLET Charleston, SC 29407 Tel - 843 - 531-6848 S OR APPROVED EQUAL, ŰON. www.R4architecture.com DORDINATE EXACT TYPE AND RATING w/ LIGHTING CONTROLLED. LESEAL SWITCH. 039278 E. SEE LIGHTING CONTROL SCHEDULE FOR DETAILS. , MANUAL-ON / AUTO-OFF, DUAL-TECHNOLOGY, PROVIDE COMPLETE ROOM COVERAGE. EWIS WU CH, AUTO-ON / AUTO-OFF, DUAL-TECHNOLOGY, PROVIDE COMPLETE ROOM COVERAGE. 2023.05.24 17:57:38-03'00' CH w/ DIMMING, AUTO-ON / AUTO-OFF, DUAL-TECHNOLOGY, PROVIDE COMPLETE ROOM TCH, AUTO-ON / AUTO-OFF, DUAL-TECHNOLOGY, PROVIDE COMPLETE ROOM COVERAGE. FOR OCCUPANCY SENSOR. FOR OCCUPANCY SENSOR, AUTO-ON / AUTO-OFF. FOR OCCUPANCY SENSOR, MANUAL-ON / AUTO-OFF. FOR OCCUPANCY SENSOR, MANUAL-ON / AUTO-OFF, 0-10V DIMMING. CY SENSOR, CEILING AND WALL MOUNTED, MANUAL-ON / AUTO-OFF w/ EXTENDED RANGE (AT FER AT 9'-0" AFF MOUNTING HEIGHT). ANCY SENSOR, CEILING AND WALL MOUNTED, AUTO-ON / AUTO-OFF w/ EXTENDED RANGE (AT FER AT 9'-0" AFF MOUNTING HEIGHT). DIAGRAM. NITE LIGHT). ITCH / RELAY CONTROLLING THE FIXTURE. PROVIDED w/ 90-MINUTE, MINIMUM BATTERY BACKUP. NDICATES WALL WASH TYPE AND DIRECTION TO AIM FIXTURE. JNTED. SHADING INDICATES ILLUMINATED FACE, ARROWS INDICATE CHEVRONS. 0 2 1 0 Street Õ 32 TES FIXTURE UNSWITCHED (NITE LIGHT). ID# and 334 Site V# 255( Imberla NC 28; JU  $\overline{}$ **X** McDonald's Store West Cu Dunn, Bethe Forks R INDICATES CLEARANCES. E NEMA 3R ENCLOSURES FOR EXTERIOR DISCONNECTS. \_ES / AMP FUSE. 26 ESS MOUNTED. SEE SCHEDULE FOR DETAILS. ESS MOUNTED. SEE SCHEDULE FOR DETAILS. <u>Offic</u> Addr IMEG Drawn By IMEG Checked By Issue Date 05/23/2023 Project No 220679

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**Sheet Title** 

NOTES

LEGEND &

**E-001** 

GENERAL

ELEC <sup>-</sup>	TRICAL ABBREVIATIONS
А	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
С	CONDUIT
CB, CKT BKR	CIRCUIT BREAKER
CLG	CEILING
CU	COPPER OR CONDENSING UNIT
DISC	DISCONNECT
EC	ELECTRICAL CONTRACTOR
ECB	
ELEV	
ENI	
EOR	
ES	
G GND	
GACP	
GD	GENERATOR DISCONNECT
GEN	GENERATOR
GEI	
НОА	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
НТ	HEIGHT
IG	ISOLATED GROUND
JB, J-BOX	JUNCTION BOX
JPC	JOCKEY PUMP CONTROLLER
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY
kcmil	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERE
LC	LIGHTING CONTRACTOR
MC	MECHANICAL CONTRACTOR
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
N/L	NIGHT LIGHT
NAC	NOTIFICATION APPLIANCE CABINET
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
00	ON CENTER
PNL	
PVC	POLY-VINYL-CHLORIDE (SCHEDULE 40, UON)
SE	
IBB	
TMOD	
IMGB	
V \/A	
WP	WEATHERPROOF

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### **BRANCH CIRCUIT VOLTAGE DROP TABLE**

BRANCH CIRCUIT UNGROUNDED AND NEUTRAL CONDUCTORS ADJUSTED FOR VOLTAGE DROP OF 3%. EQUIPMENT GROUNDING CONDUCTOR SIZE INCREASE IN PROPORTION TO UNGROUNDED

- CONDUCTORS PER NEC 250.122(B). VOLTAGE DROP CALCULATIONS BASED ON 100% CIRCUIT LOAD, 100% POWER FACTOR, AND 6 OR LESS
- CURRENT CARRYING CONDUCTORS PER RACEWAY. DISTANCE INDICATES CONDUCTOR LENGTH FROM OVERCURRRENT DEVICE TO LAST DEVICE / OUTLET /
- EQUIPMENT THE LARGER OF THE CONDUCTOR SIZES INDICATED IN THE PANEL SCHEDULES AND THE VOLTAGE
- DROP TABLE ABOVE, SHALL BE USED.
- WHERE THE WIRE SIZE IS LARGER THAN THE MAXIMUM WIRE SIZE TERMINAL OF THE EQUIPMENT, PROVIDE A JUNCTION BOX AND SPLICE DOWN TO THE LARGEST WIRE SIZE POSSIBLE. THE BOX SHALL BE LOCATED AS CLOSE TO THE TERMINATION AS POSSIBLE, BUT NO FARTHER THAN 15 FEET. WHERE BRANCH CIRCUIT EXCEEDS DISTANCES NOTED ABOVE AND SIZES ARE NOT OTHERWISE NOTED ON PLANS NOTIEY ENGINEER

OVER-	BRANCH										
CURRENT ROTECTION	CONDUCTOR (PH&N / G)	RACEWAY	120V, 1Ø	_208V, 1Ø	208V, 3Ø	_277V, 1Ø	480V, 1Ø	_480V, 3Ø			
15A	#12 / #12	1/2"	60'	105'	121'	140'	242'	280'			
	#10 / #10	1/2"	96'	167'	193'	222'	386'	445'			
	#8 / #8	3/4"	153'	266'	307'	354'	614'	709'			
	#6 / #6	1"	244'	423'	488'	563'	976'	1127'			
20A	#12 / #12	1/2"	45'	78'	91'	105'	182'	210'			
	#10 / #10	1/2"	72'	125'	144'	167'	289'	334'			
	#8 / #8	3/4"	115'	199'	230'	265'	460'	532'			
	#6 / #6	1"	183'	317'	366'	422'	732'	845'			
30A	#10 / #10	1/2"	48'	83'	96'	111'	193'	222'			
	#8 / #8	3/4"	76'	133'	153'	177'	307'	354'			
	#6 / #6	1"	122'	211'	244'	281'	488'	563'			
	#4 / #4	1-1/4"	194'	336'	388'	448'	776'	896'			
40A	#8 / #10	3/4"	57'	99'	115'	132'	230'	266'			
	#6 / #8	1"	91'	158'	183'	211'	366'	422'			
	#4 /#4	1-1/4"	145'	252'	291'	336'	582'	672'			
	#3 / #4	1-1/4"	183'	318'	367'	423'	734'	847'			
50A	#6 / #10	1"	73'	126'	146'	169'	292'	338'			
	#4 / #6	1-1/4"	116'	201'	233'	268'	465'	538'			
	#3 / #6	1-1/4"	146'	254'	293'	338'	587'	678'			
	#2 / #4	1-1/4"	185'	320'	370'	427'	740	855'			
60A	#6 / #10	1"	61'	105'	122'	140'	244'	281'			
	#4 / #6	1-1/4"	97'	168'	194'	224'	388'	448'			
	#3 / #6	1-1/4"	122'	212'	244'	282'	489'	565'			
	#2 / #4	1-1/4"	154'	267'	308'	356'	617'	712'			
70A	#4 / #8	1-1/4"	83'	144'	166'	192'	332'	384'			
	#3 / #6	1-1/4"	104'	181'	209'	242'	419'	484'			
	#2 / #4	1-1/4"	132'	229'	264'	305'	529'	610'			
	#1 / #4	1-1/2"	166'	298'	333'	385'	667'	770'			
80A	#3 / #8	1-1/4"	91'	159'	183'	211'	367'	423'			
	#2 / #6	1-1/4"	115'	200'	231'	267'	462'	534'			
	#1 / #4	1-1/2"	145'	253'	292'	336'	583'	674'			
	#1/0 / #4	1-1/2"	184'	319'	368'	425'	736'	850'			
90A	#2 / #8	1-1/4"	102'	178'	205'	237'	411'	475'			
	#1 / #6	1-1/2"	129'	224'	259'	299'	519'	599'			
	#1/0 / #4	1-1/2"	163'	283'	327'	377'	654'	756'			
	#2/0 / #4	2"	206'	357'	413'	476'	825'	953'			
1004	#2 / #8		92'	160'	185'	213'	370'	427'			
1007	#1 / #6	1-1/2"	116'	202'	233'	269'	467'	539'			
	#1/0 / #4	1-1/2"	147'	255'	294'	340'	589'	680'			
	#2/0 / #4	- יי <i>ב</i> יי	195'	200	271'	428	742'	857'			

![](_page_20_Figure_9.jpeg)

![](_page_20_Figure_17.jpeg)

![](_page_20_Picture_18.jpeg)

FEEDER SCHEDULE									
###	WIRE SIZES (COPPER)	WIRE SIZES (ALUMINUM)	CONDUIT						
30	4#10, #10 GND	1/2"	N/A	N/A					
60	4#6, #10 GND	1"	N/A	N/A					
80	4#3, #8 GND	1 1/4"	N/A	N/A					
90	4#3, #8 GND	1 1/4"	N/A	N/A					
100	4#2, #8 GND	1 1/4"	N/A	N/A					
125	4#1, #6 GND	1 1/2"	N/A	N/A					
150	4#1/0, #6 GND	1 1/2"	N/A	N/A					
175	4#2/0, #6 GND	2"	4#4/0, #4 GND	2"					
200	4#3/0, #6 GND	2"	4-250KCMIL, #4 GND	2 1/2"					
225	4#4/0, #4 GND	2 1/2"	4-300KCMIL, #2 GND	2 1/2"					
1200	4 SETS 4-350KCMIL, #3/0 GND	(4) 3"	4 SETS 4-500KCMIL, 600KCMIL GND	(4) 3 1/2"					
1200S	4 SETS 4-350KCMIL	(4) 3"	4 SETS 4-500KCMIL	(4) 3 1/2"					

NOTES:

. NEUTRAL WIRES NOT REQ'D FOR TRANSFORMER PRIMARIES.

SEE RISER DIAGRAM FOR SERVICE GROUNDING ELECTRODE CONDUCTOR SIZING IN LIEU OF GROUND INDICATED (COPPER ROUNDS IN ALL CASES).

"S" INDICATES SERVICE FEEDERS.

"C" INDICATES FEEDERS COMPENSATED FOR CONTINUOUS LOAD. . "+" INDICATES FEEDERS COMPENSATED FOR VOLTAGE DROP.

"n" INDICATES AN ADDITIONAL NEUTRAL.

DERIVED SYSTEM GROUNDING ELECTRO	ODE SIZING
30 KVA (OR LESS), 480-120/208V XFMR	#8 AWG CU
45 KVA, 480-120/208V XFMR	#6 AWG CU
75 KVA, 480-120/208V XFMR	#2 AWG CU
112.5 KVA, 480-120/208V XFMR	#2 AWG CU
150 KVA, 480-120/208V XFMR	#2/0 AWG CU
225 KVA, 480-120/208V XFMR	#3/0 AWG CU
300 KVA (OR MORE), 480-120/208V XFMR	#3/0 AWG CU
TVSS CONDUCTOR SIZING	
30SS	5#10, 3/4"C
60SS	5#6, 1"C
NOTE: CONDUCTORS LENGTH SHALL BE LIMITED TO NOT MO	ORE THAN 18".

### KEYED NOTES:

- 1. NEW 125A PANEL TO REPLACE EXISTING 125A PANEL IN NEW LOCATION, FED FROM PREVIOUSLY USED BREAKER IN MDP
- 2. EC. SHALL VERIFY EXISTING PANEL LOADS AND THAT THE FEEDER CONDUCTOR ARE ADEQUATE AND UP TO CURRENT ELECTRICAL CODES.
- 3. CONTRACTOR TO PROVIDE 30-DAY TEST FOR MAXIMUM DEMAND PER NFPA 70, ART 220.87 OR OBTAIN UTILITY STATEMENTS FOR A 1-YR PERIOD FROM OWNER TO ENSURE EXISTING CAPACITY IS SUFFICIENT AND REPORT FINDING TO ENGINEER OF RECORD (EOR).
- 4. CONTRACTOR TO VERIFY EXISTING SPARE BREAKERS AND USE ACCORDINGLY.

### CONTRACTOR NOTE:

REFERENCE THE SCOPE OF WORK PLAN FOR COORDINATION BETWEEN MCDONALD'S, CONTRACTORS, AND/OR LANDLORD SUPPLIED AND INSTALLED ITEMS/EQUIPMENT/SYSTEMS. ALL ITEMS/WORK NOT SPECIFICALLY INDICATED ON PLAN OR IN THE SCOPE OF WORK SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.

### CONTRACTOR NOTE:

RISER DIAGRAM IS BASED ON THE BEST INFORMATION AVAILABLE. THE ELECTRICAL CONTRACTOR IS TO VERIFY THAT ALL EXISTING EQUIPMENT BEING RE-USED IS ADEQUATE AND UP TO CURRENT ELECTRICAL CODES. THE ELECTRICAL CONTRACTOR IS TO FIELD VERIFY ALL ELECTRICAL EQUIPMENT PRIOR TO BIDDING THE JOB. IF ANY DISCREPANCIES ARE ENCOUNTERED, CONTACT THE ENGINEER OF RECORD

### NOTES:

- 1. ELECTRICAL CONTRACTOR SHALL REVIEW ENTIRE SET OF CONTRACT DOCUMENTS INCLUDING BUT NOT NECESSARILY LIMITED TO ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND ENTIRE PROJECT MANUAL. ELECTRICAL CONTRACTOR SHALL ACKNOWLEDGE AND INCLUDE IN THE SCOPE OF WORK (CONTRACT) ALL CONDITIONS PERTINENT TO THE COMPLETION OF THE ELECTRICAL WORK. ELECTRICAL CONTRACTOR SHALL FULLY COORDINATE ELECTRICAL WORK WITH THE INSTALLATION OF WORK BY ALL OTHER TRADES AND MAKE NECESSARY FIELD ADJUSTMENTS AS REQUIRED TO ACCOMMODATE THE ELECTRICAL INSTALLATION. ALL OF THE ABOVE SHALL BE INCLUDED IN THE SCOPE OF WORK AT NO ADDITIONAL COST TO THE OWNER.
- 2. VERIFY ALL REQUIREMENTS AND COORDINATE EXACT LOCATION OF INCOMING ELECTRICAL SERVICE WITH LOCAL POWER COMPANY PRIOR TO PROJECT START-UP. NOTIFY ENGINEER OF ANY CHANGES AS MAY BE REQUIRED.
- 3. ENGRAVED, LAMINATED PLASTIC IDENTIFICATION PLATES SHALL BE FURNISHED AND INSTALLED ON ALL PANELS AND SWITCHGEAR. PLATES SHALL BE AFFIXED TO FRONT PANELS, INDICATING PANEL NAME, VOLTAGE AND AMPERAGE. PROVIDE UPDATED PANEL DIRECTORIES FOR ALL PANELS.
- 4. ELECTRICAL CONTRACTOR SHALL CAREFULLY EXAMINE THE DRAWINGS AND SPECIFICATIONS, VISIT THE SITE OF THE WORK, AND BECOME FULLY INFORMED AS TO ALL CONDITIONS AND MATTERS THAT CAN, IN ANY WAY, AFFECT THE WORK OR THE COST THEREOF, SHOULD THE CONTRACTOR FIND DISCREPANCIES IN, OR OMISSIONS FROM, THE DRAWINGS, SPECIFICATIONS OR OTHER DOCUMENTS OR BE IN DOUBT AS TO MEANING. NOTIFY THE ARCHITECT/ENGINEER AT ONCE. IN WRITING. OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND NEW WORK. OR BETWEEN ELECTRICAL WORK AND THE WORK OF OTHER TRADES PRIOR AND OBTAIN CLARIFICATION PRIOR TO SUBMITTING ANY BID. LACK OF SUCH NOTIFICATION SHALL BE CONSTRUED TO INDICATE NO DISCREPANCIES OR CONFLICTS EXIST. ADDITIONAL COMPENSATION WILL NOT BE GRANTED AFTER AWARD OF CONTRACT FOR ANY WORK REQUIRED TO COMPLY WITH THESE REQUIREMENTS.
- 5. SHARED NEUTRALS ARE NOT ALLOWED. EACH CIRCUIT SHALL HAVE ITS OWN INDEPENDENT NEUTRAL. EACH CONDUIT RUN SHALL CONTAIN A GROUND WIRE. CONDUIT ONLY IS NOT AN ACCEPTABLE GROUND PATH.
- 6. FOR GENERAL CONTRACTOR AND ALL SUBCONTRACTORS: NO PRICING SHOULD BE DONE FROM A PARTIAL SET AND NO CHANGE ORDER WILL BE ALLOWED FOR PRICING BASED ONLY ON A PARTIAL SET OF REVIEW OF A SINGLE TRADE'S DRAWINGS. ALL TRADES SHOULD CROSS REFERENCE ARCHITECTURAL SHEETS AND ALL OTHER TRADES FOR ADDITIONAL INFORMATION, CLARIFICATIONS AND COORDINATION REQUIRED - TYPICALLY RELATED TO PRICING RELATED TO ANY CONTRADICTIONS THAT MAY BE FOUND IN THE DOCUMENT SET BIDDERS SHOULD INCLUDE THE MOST RESTRICTIVE (I.E. MOST EXPENSIVE) AS PART OF THE BID. ALL BIDS AND PRICING IN THEIR ENTIRETY SHALL BE BASED SOLELY ON THE FULL AND COMPLETE SET OF CONSTRUCTION DOCUMENTS ISSUED FOR THIS SPECIFIC PROJECT - TYPICALLY NO CHANGE ORDER OR MODIFICATION TO THE CONTRACT DOCUMENTS SHALL BE MADE OR CONSIDERED BASED ON GENERAL CONTRACTOR OR SUBCONTRACTOR ASSUMPTIONS BASED ON REVIEW OF A PARTIAL SET OR PAST PROJECT COMPARISONS.
- 7. THESE DRAWINGS AND THE PROJECT MANUAL FOR MCDONALDS' STANDARD BUILDING PROGRAM COPYRIGHT 2013 ARE INTENDED TO DESCRIBE AND PROVIDE FOR A FINISHED PIECE OF WORK. THEY ARE INTENDED TO BE COOPERATIVE, AND WHAT IS CALLED FOR BY EITHER WILL BE AS BINDING AS IF CALLED FOR BY BOTH. THE PROJECT MANUAL FOR MCDONALDS' STANDARD BUILDING PROGRAM COPYRIGHT 2013 IS AVAILABLE THROUGH THE MCDONALDS ACM OR ECM.

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Sheet Number

### ELECTRICAL SPECIFICATIONS AND GENERAL NOTES:

ANOTHER RECOGNIZED TESTING LABORATORY.

- 1. THE ELECTRICAL CONTRACTOR (E.C.) SHALL PROVIDE ALL LABOR AND MATERIALS NECESSARY FOR A COMPLETE AND FULLY OPERATIONAL ELECTRICAL SYSTEM/INSTALLATION.
- 2. MATERIALS AND INSTALLATION SHALL COMPLY WITH ALL CODES, LAWS, AND ORDINANCES OF FEDERAL, STATE, AND LOCAL GOVERNING BODIES HAVING JURISDICTION.
- 3. ALL MATERIALS AND EQUIPMENT SHALL BE LISTED AND/OR LABELED BY U.L., ETL, CSA, OR
- 4. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, GOVERNMENTAL FEES, TAXES AND LICENSES NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF ALL ELECTRICAL WORK.
- 5. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO GOVERNMENTAL AGENCIES, UTILITY COMPANIES, AND LOCAL CODE OFFICIALS. SHOP DRAWINGS AND/OR INSTALLATION DETAILS WHICH ARE REQUIRED BY THESE AGENCIES FOR THEIR APPROVAL
- 6. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT, ENGINEER, AND PROJECT MANAGER IN WRITING OF ANY MATERIALS OR APPARATUS BELIEVED TO BE INADEQUATE, UNSUITABLE, IN VIOLATION OF LAWS, ORDINANCES, RULES, OR REGULATIONS OF THE AUTHORITIES HAVING JURISDICTION.
- 7. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE FIRE PREVENTION BUREAU ALL DOCUMENTS, INCLUDING DRAWINGS AND SUBMITTALS, REQUIRED TO OBTAIN APPROVAL OF THE EMERGENCY LIGHTING, LIFE SAFETY, AND EXIT SIGN SYSTEM(S) FOR TYPES AND LOCATIONS. A COPY OF THE APPROVED DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT AND ENGINEER PRIOR TO THE START OF CONSTRUCTION.
- 8. ALL NEW ELECTRICAL WORK OR MODIFICATIONS TO EXISTING ELECTRICAL DISTRIBUTION PANELS, PANELBOARDS, METERS, ETC. SHALL BE INSTALLED AS INDICATED ON THE ELECTRICAL CONSTRUCTION DOCUMENTS. E.C. SHALL SUBMIT SHOP DRAWINGS OF ALL EQUIPMENT TO BE INSTALLED INDICATING FLOOR PLAN LAYOUT, ELEVATIONS, AND AL DIMENSIONS FOR APPROVAL OF THE ENGINEER PRIOR TO INSTALLATION. CODE REQUIRED CLEARANCES IN FRONT OF ALL ELECTRICAL EQUIPMENT SHALL BE MAINTAINED AT ALL TIMES.
- 9. THE CONTRACTOR SHALL INCLUDE IN BID AN ALLOWANCE FOR THE FOLLOWING ADDITIONAL LIFE SAFETY DEVICES. INCLUDING INSTALLATION AND ALL CONDUIT AND WIRE, FOR ADDITIONAL DEVICES AS MAY BE REQUIRED BY THE REVIEW OF THE AUTHORITY HAVING JURISDICTION. (2) EXIT SIGN FIXTURES

CONTRACTOR SHALL PROVIDE A UNIT PRICE FOR EACH FOR QUANTITY ADJUSTMENT.

(2) EMERGENCY LIGHTING FIXTURES

- 10. THE CONTRACTOR SHALL INCLUDE IN BID ELECTRICAL UNIT PRICES (EUP) TO PROVIDE ADDITIONAL LIFE SAFETY DEVICES WITHIN FINISHED CEILING SYSTEMS, INCLUDING ALL CONDUIT AND WIRE, FOR EACH TYPE OF DEVICE AS SCHEDULED IN NOTE NUMBER 9. THE UNIT PRICE SHALL INCLUDE ALL GENERAL CONTRACTOR ASSOCIATED COSTS TO INSTALL DEVICES WITHIN INSTALLED CEILING SYSTEMS.
- 11. THE CONTRACTOR SHALL CAREFULLY EXAMINE THE CONTRACT DOCUMENTS, MAKE A SCHEDULED ARRANGEMENT WITH THE PROJECT MANAGER TO VISIT THE SITE, AND THOROUGHLY BECOME FAMILIAR WITH THE BUILDING STANDARDS AND LOCAL CONDITIONS RELATING TO THE WORK. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF THE OBLIGATIONS OF THE CONTRACT.
- 12. THE CONTRACTOR SHALL PROVIDE TEMPORARY POWER AND WIRING FOR THE PERFORMANCE OF ALL TRADES, FOR THE ENTIRE PERIOD OF CONSTRUCTION AND SHALL REMOVE ALL TEMPORARY WIRING AT THE COMPLETION OF CONSTRUCTION. ALL COSTS FOR ESTABLISHING AND REMOVING TEMPORARY POWER SHALL BE INCLUDED IN BID.
- 13. THE EXISTING POWER, SIGNAL, AND COMMUNICATIONS SYSTEMS ARE TO REMAIN IN SERVICE TO PROVIDE FOR THE OWNER'S EXISTING FUNCTIONS. SHOULD IT BECOME NECESSARY TO SHUT-DOWN ANY SYSTEM OR PORTION OF A SYSTEM, APPROVAL IN WRITING MUST BE OBTAINED FROM THE PROJECT MANAGER AND SHALL BE ONLY FOR THE PERIOD AND TIME AGREED UPON. THE BID IS TO INCLUDE THE COST OF ANY TEMPORARY WIRING AND PREMIUM TIME REQUIRED FOR THE SHUTDOWN.
- 14. ALL MATERIALS AND EQUIPMENT SHALL BE ERECTED, INSTALLED, TOOLED, CONNECTED, CLEANED, ADJUSTED, TESTED, CONDITIONED, AND PLACED IN SERVICE IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS AND RECOMMENDATIONS.
- 15. ALL CUTTING, DRILLING, AND PATCHING OF MASONRY, DRYWALL, CONCRETE, STEEL, OR IRON WORK BELONGING TO THE BUILDING SHALL BE DONE BY THIS CONTRACTOR IN ORDER THAT WORK MAY BE PROPERLY INSTALLED. UNDER NO CONDITIONS MAY STRUCTURAL WORK BE CUT. EXCEPT AT THE DIRECTION OF THE ARCHITECT/ENGINEER OR THEIR REPRESENTATIVE.
- 16. SHOP DRAWINGS SHALL INCLUDE MANUFACTURER'S NAMES, CATALOG NUMBERS, CUTS, DIAGRAMS, AND OTHER SUCH DESCRIPTIVE DATA AS MAY BE REQUIRED TO IDENTIFY AND REVIEW THE EQUIPMENT. SUBMITTALS SHALL BE IN LOGICAL GROUPS (FOR EXAMPLE ALL LIGHTING FIXTURES). PARTIAL SUBMITTALS WILL NOT BE REVIEWED.

17. SUBMIT FOUR (4) COPIES OF THE FOLLOWING SHOP DRAWINGS FOR REVIEW: A. LIGHTING FIXTURES AND LAMPS

- B. WIRING DEVICES C. LOW VOLTAGE RELAYS AND SWITCHES
- D. DIMMERS AND CONTROLS
- 18. CONTRACTOR SHALL PROVIDE "AS-BUILT' DOCUMENTATION AND HARD COPY REPRODUCIBLE DRAWINGS AT THE COMPLETION OF THE PROJECT AND SUBMIT TO THE ARCHITECT AND THE ENGINEER. AS-BUILT DRAWINGS SHALL INDICATE EXACT CIRCUIT NUMBERS, LOCATIONS OF ALL DEVICES, CEILING FIXTURES, AND RACEWAY FOR LIGHTING, TELECOMMUNICATIONS AND POWER DISTRIBUTION SYSTEMS AS INSTALLED.
- 19. ALL MATERIAL, EQUIPMENT, WIRING DEVICES, ETC. SHALL BE NEW AND OF COMMERCIAL GRADE UNLESS SPECIFICALLY INDICATED AS EXISTING TO BE REUSED ON DRAWINGS.
- 20. EXCEPT AS NOTED OTHERWISE, ALL WORK REQUIRED FOR THE ELECTRICAL INSTALLATION AS SHOWN ON DRAWINGS SHALL INCLUDE ALL LABOR, INSTALLATION METHODS, EQUIPMENT, AND MATERIALS AND SHALL BE IN STRICT COMPLIANCE WITH ALL BUILDING STANDARDS.
- 21. PROVIDE A COMPLETE METAL RACEWAY SYSTEM, FITTINGS AND ENCLOSURES FOR ALL ELECTRICAL WIRING SYSTEMS TO BE INSTALLED FOR THE PROJECT, SYSTEMS SHALL INCLUDE, BUT NOT BE LIMITED TO POWER, COMMUNICATIONS, SECURITY, PAGING, TEMPERATURE CONTROL AND CONTROLS.

### 22. NOT USED.

- 23. MINIMUM CONDUIT SIZE SHALL BE 1/2 INCH FOR GENERAL LIGHTING AND POWER CIRCUITRY UNLESS OTHERWISE INDICATED AND/OR REQUIRED BY CODE.
- 24. FLEXIBLE CONDUIT CONNECTIONS TO RECESSED LIGHTING FIXTURES SHALL BE MADE WITH FLEXIBLE
- STEEL CONDUIT, 1/2 INCH MINIMUM, INCLUDING AN INSULATED COPPER GREEN EQUIPMENT GROUNDING CONDUCTOR OR SHALL BE MADE WITH METAL CLAD TYPE CABLE.
- 25. NOT USED.
- 26. WIRE NUMBER 8 AND SMALLER FOR USE IN INTERIOR DRY LOCATIONS SHALL BE TYPE THWN THERMOPLASTIC 600 VOLT INSULATED COPPER CONDUCTORS. FEEDERS AND POWER WIRING NUMBER 6 AND LARGER SHALL BE TYPE THW 600 VOLT INSULATED COPPER. WIRE WHICH IS INSTALLED IN RACEWAY IN MOIST OR DAMP LOCATIONS SHALL BE THW, 600 VOLT INSULATED COPPER CONDUCTORS. NO WIRE SMALLER THAN NUMBER 12 AWG SHALL BE USED FOR LIGHTING OR POWER.

### 27. BRANCH CIRCUIT HOMERUN WIRING

- A. GENERAL PURPOSE BRANCH CIRCUIT HOMERUNS CONSISTING OF TWO NETWORKS SHALL HAVE PHASE, NEUTRAL AND GROUND CONDUCTORS INCREASED TO NUMBER 10 AWG, THWN AS A MINIMUM. WHERE HOERUN (ONE OR MORE NETWORKS) EXCEEDS 100 LINEAR FEET, CONDUCTOR SIZE SHALL BE INCREASED ONE TRADE SIZE.
- B. ALL BRANCH CIRCUITS, FEEDERS, AND HOMERUNS SHALL BE PROVIDED WITH AN
- INSULATED COPPER GREEN GROUNDING CONDUCTOR ROUTED IN THE SAME CONDUIT. GROUNDING CONDUCTOR SHALL BE SIZED PER THE REQUIREMENTS OF NEC SECTION 250. C. HOMERUN LENGTH SHALL BEGIN AT HE CENTRAL POINT OF ALL DISTRIBUTED CIRCUITS TO THE PANELBOARD CIRCUIT BREAKER

28. ALL NEW CIRCUIT BREAKERS FOR EXISTING PANELBOARDS AND DISTRIBUTION PANELBOARDS SHALL MATCH EXISTING BUILDING PANELBOARD MANUFACTURER AND CIRCUIT BREAKER TYPE ALL CIRCUIT BREAKERS SHALL BE BOLT ON TYPE. AIC RATING OF NEW CIRCUIT BREAKER SHALL MATCH AIC RATING OF PANELBOARD IN WHICH IT IS INSTALLED. WHERE SERIES RATED TYPE CIRCUIT BREAKERS ARE USED, NEW CIRCUIT BREAKERS SHALL BE INSTALLED SO AS TO MAINTAIN THE UL SERIES RATING OF THE ENTIRE SYSTEM. THE CONTRACTOR SHALL PROVIDE A NEW TYPEWRITTEN PANEL DIRECTORY FOR EACH PANEL CHANGED AT THE COMPLETION OF THE PROJECT. EACH CIRCUIT BREAKER SHALL BE LABELED TO IDENTIFY LOAD TYPE AND LOCATION

29. THE CONTRACTOR SHALL VERIFY THE CEILING CONSTRUCTION TYPE WITH ARCHITECTURAL DETAILS BEFORE ORDERING LIGHTING FIXTURES IN ORDER TO CONFIRM PROPER MOUNTING.

30. EACH SWITCH, LIGHT, RECEPTACLE, OR OTHER MISCELLANEOUS DEVICE SHALL BE PROVIDED WITH A GALVANIZED OR SHERARDIZED PRESSED STEEL OUTLET BOX OF THE KNOCKOUT TYPE, OF NOT LESS THAN NUMBER 14 U.S. GAUGE STEEL. CONDUITS SHALL BE FASTENED WITH LOCKNUTS AND BUSHINGS AND ALL UNUSED KNOCKOUTS SHALL BE LEFT SEALED. THERE SHALL BE SUFFICIENT ROOM FOR WIRES AND BUSHINGS AND DEEP BOXES SHALL BE INSTALLED WHERE REQUIRED. BOXES SHALL BE SECURELY AND ADEQUATELY SUPPORTED.

### 31. NOT USED

CONTRACTOR.

### 34. NOT USED

35. NOT USED

36. NUMBERED CIRCUITS SHOWN ON PLAN ARE FOR THE CONVEYANCE OF DESIGN INTENT ONLY. ACTUAL FIELD CONDITIONS WILL AFFECT CIRCUITRY. INDICATE THE ACTUAL CIRCUIT NUMBERS INSTALLED ON THE "AS-BUILT" DRAWINGS.

37. BUILDING STANDARDS A. ALL NEW CONDUIT RACEWAYS AND BOXES FOR ALL SYSTEMS SHALL BE INSTALLED TIGHT-UP TO THE BOTTOM OF THE STRUCTURAL BEAMS WHERE REQUIRED AND PROPERLY SUPPORTED FROM STRUCTURAL MEMBERS.

B. ALL NEW CONDUIT RUNS SHALL BE INSTALLED ABOVE AND OVER THE TOP OF ALL NEW AND/OR EXISTING DUCTWORK, PIPING, CONDUITS, PULLBOXES, ETC. E.C. SHALL PROVIDE ALL NECESSARY ACCESSIBLE PULLBOXES. CONDUIT BENDS SHALL NOT EXCEED CODE REQUIREMENTS WITHIN A SINGLE RUN. E.C. SHALL PROVIDE ALL PULLBOXES AS REQUIRED.

E. NEW CONDUIT AND PULLBOXES TO BE INSTALLED BELOW NEW OR EXISTING DEUCTWORK SHALL BE MOUNTED TIGHT UP TO BOTTOM OF DUCT WITH 90 DEGREE BENDS UP SIDEWALL OF DUCT TO MEET REQUIREMENTS OF LETTER C ABOVE. SUPPORTS SHALL NOT PRENETRATE DUCTWORK, AND SHALL BE INDEPENDENT OF ALL DUCTWORK SUPPORTS. DIRECT CONTACT OF CONDUIT RACEWAY SYSTEMS WITH DUCTWORK OR PIPING SHALL BE PROVIDED WITH

VIBRATION SEPARATION METHOD APPROVED BY THE ENGINEER. F. NEW CONDUIT AND BOXES TO BE INSTALLED WITHIN ALL EXISTING FINISHED BUILDING BIDS FOR SUCH CONDITIONS. FIELD VERIFY ALL LOCATIONS ON SITE PRIOR TO FINAL BIDS.

DRYWALL, FURRED BUILDING WALLS, PARTITIONS, AND COLUMNS SHALL BE INSTALLED WITH EMT AND FLEXIBLE RACEWAYS NOT MORE THAN 6'-0" LONG. ELECTRICAL CONTRACTOR SHALL INCLUDE ALL COSTS FOR DRYWALL ACCESS, CUTTING, PATCHING, PAINTING, ETC, IN EXCEPTIONS DURING BIDS SHALL BE SUBMITTED IN WRITING.

G. THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL BE HELD RESPONSIBLE TO HAVE EXAMINED THE CONSTRUCTION SITE WITH RESPECT TO CONSTRUCTION DRAWINGS, ACTUAL FIELD CONDITIONS, DOOR FRAME HEIGHTS, PIPING OBSTRUCTIONS, DUCTWORK HEIGHTS AND LEVELS, FLOOR LEVELS, CEILING HEIGHTS, ETC. PRIOR TO FINAL BIDS.

COVER.

39. PERFORM ALL WORK OF A DEMOLITION NATURE THAT MAY BE REQUIRED OR NECESSARY FOR THE FULL AND COMPLETE EXECUTION OF THE WORK, WHETHER EXPLICITLY SHOWN AND/OR SPECIFIED OR NOT. EXACT EXTENT OF DEMOLITION WILL NOT BE FULLY INDICATED BY DRAWINGS. DETERMINE THE NATURE AND EXTENT OF DEMOLITION THAT WILL BE NECESSARY BY COMPARING THE CONTRACT DOCUMENTS WITH ARCHITECTURAL AND DEMOLITION DRAWINGS TO EXISTING CONDITIONS. ELECTRICAL EQUIPMENT WHICH WILL NOT BE REUSED SHALL BE TURNED OVER TO THE OWNER OR REMOVED FROM THE PREMISES AS DETERMINED BY THE PROJECT MANAGER.

40. ANY EXISTING ELECTRICAL MATERIAL AND EQUIPMENT WHICH INTERFERES WITH THE NEW ADDITION OR THE REMOVAL OF EXISTING WALLS SHALL BE REMOVED OR RELOCATED BY THE CONTRACTOR. VERIFY REMOVAL AND NEW LOCATION OF EQUIPMENT WITH THE PROJECT MANAGER AND THE ARCHITECT/ENGINEER PRIOR TO WORK.

CONTRACTOR.

### 43. NOT USED

WORK

32. IN SUSPENDED CEILINGS, SUPPORT CONDUITS AND JUNCTION BOXES DIRECTLY FROM THE STRUCTURAL SYSTEM, DECK OR FRAMING PROVIDED FOR THAT PURPOSE. LIGHTING BRANCH CIRCUIT CONDUITS SHALL NOT BE CLIPPED TO THE CEILING SUPPORT WIRES OR SPLINE UNLESS THE CEILING SYSTEM HAS BEEN SPECIFICALLY DESIGNED FOR THAT PURPOSE AND APPROVAL HAS BEEN GRANTED BY THE ARCHITECT AND THE ENGINEER.

33. E.C. SHALL PROVIDE "3M" FIRESEAL SYSTEMS FOR ALL CORES AND RACEWAY PENETRATIONS IN FIRE RATED WALLS AND PARTITIONS. FIRE RATE WALL AND CEILING PENETRATIONS, ETC. USING "CP-25" CAULK, "303" PUTTY AND/OR "FLAMESEAL" PUTTY AS PER MANUFACTURER'S INSTRUCTIONS TO MAINTAIN EXISTING AND NEW FIRE RATINGS. VERIFY FIRE RATING CONDITIONS AND LOCATIONS PRIOR TO FINAL BIDS. ALL OPEN SLEEVE PENETRATIONS SHALL BE FIRESEALED INSIDE AND OUTSIDE BY E.C. AFTER ALL CABLING IS COMPLETELY INSTALLED. SEALING METHODS SHALL BE PROVIDED BY E.C. AND SHALL BE SUBJECT TO THE APPROVAL OF THE CABLING

C. NEW CONDUIT RUNS OR PULLBOXES SHALL NOT BE INSTALLED LESS THAN 2 INCHES ABOVE RECESSED LIGHTING FIXTURES UNLESS APPROVED BY THE ENGINEER.

D. NEW CONDUIT RUNS OR PULLBOXES SHALL NOT BLOCK OR PREVENT FULL AND COMPLETE ACCESS AND OPERATION OF NEW OR EXISTING HVAC EQUIPMENT, ACCESS DOORS, PIPING VALVES, JUNCTION BOXES, DUCT HEATERS, MAIN SUPPLY AND RETURN AIR DUCTS, PULLBOXES, CLEANOUTS, ETC.

H. ALL NEW BUILDING STANDARD EQUIPMENT, DEVICES, AND MATERIALS SHALL BE EQUAL TO OR GREATER IN QUALITY TO EXISTING APPROVED BUILDING STANDARD MATERIALS PRESENTLY INSTALLED IN BUILDING, EQUIPMENT, DEVICES AND MATERIALS SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, PROJECT MANAGER, AND THE ENGINEER.

I. ALL EMERGENCY AND EXIT SIGN JUNCTION BOXES SHALL BE PAINTED RED. PANEL TAG AND CIRCUIT NUMBER FOR ALL WIRING WITHIN JUNCTION BOX SHALL BE INDICATED ON

J. ALL JUNCTION BOXES SERVING LIGHTING AND POWER SHALL HAVE CIRCUIT NUMBERS AND PANEL TAGS FOR ALL WIRING WITHIN JUNCTION BOX SHALL BE INDICATED ON COVERS.

38. A NEW PANELBOARD COPPER GROUND BUS SHALL BE INSTALLED FOR EQUIPMENT GROUNDING REQUIREMENTS FOR ALL PANELBOARDS LACKING A GROUND BUS.

41. VERIFY CLEARANCES FOR ALL NEW OR EXISTING RELOCATED ELECTRICAL WORK BEFORE PROCEEDING WITH CONSTRUCTION. COORDINATE USAGE OF AVAILABLE SPACE WITH ALL TRADES. IN THE EVENT OF CONFLICTS, NOTIFY THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH THE

42. WHERE EXISTING CONDUIT IS SHOWN ON THE DRAWINGS, IT IS SHOWN DIAGRAMMATICALLY. THE EXACT ROUTING OF THE EXISTING CONDUIT SHALL BE DETERMINED ON THE JOB SITE BY THE

44. ALL HANGER AND/OR ROD SUPPORT SYSTEMS SHALL BE SUPPORTED TO THE BOTTOM RIB OF THE METAL DECK, WHERE APPLICABLE.

45. PROVIDE A WRITTEN GUARANTEE THAT THE ELECTRICAL INSTALLATION IS FREE FROM MECHANICAL AND ELECTRICAL DEFECTS. CONTRACTOR AT THEIR COST SHALL REPLACE AND/OR REPAIR, TO THE SATISFACTION OF THE OWNER AND/OR THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, ANY PARTS OF THE INSTALLATION WHICH MAY FAIL WITHIN A PERIOD OF 12 MONTHS FROM CONSTRUCTION ACCEPTANCE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, PROVIDED THAT SUCH FAILURE IS DUE TO DEFECTS IN MATERIAL, WORKMANSHIP, OR FAILURE TO FOLLOW THE SPECIFICATIONS, MANUFACTURER'S INSTALLATION INSTRUCTIONS AND/OR DRAWINGS.

- 46. CONTRACTOR SHALL PROVIDE ALL NECESSARY PROPERLY SIZED WALL OR MILLWORK MOUNTED BOXES, RINGS, SUPPORTS, AND DEVICES AS REQUIRED VIA COORDINATION WITH ARCHITECTURAL WALL SECTIONS, AND MILLWORK DETAILS.
- 47. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE DRAWINGS. WHERE MORE STRINGENT REQUIREMENTS THAN THOSE DESCRIBED HEREIN OR AS SET FORTH UNDER CODES. LAWS, AND ORDINANCES OF FEDERAL, STATE, AND LOCAL GOVERNING BODIES HAVING JURISDICTION, THOSE GREATER REQUIREMENTS SHALL BE ADHERED TO.
- 48. ALL NEW EMERGENCY LIGHTING FIXTURES AND EXIT SIGNS SHALL BE PROVIDED WITH AN INTEGRAL EMERGENCY BACKUP BALLAST TO ILLUMINATE THE FIXTURES IN THE EVENT OF A POWER FAILURE. ALL COMPONENTS SHALL BE IN COMPLIANCE WITH NFPA 101 AND NFPA 70 SECTION700. BALLAST BATTERY SHALL MAINTAIN 87.5% OF THE NOMINAL BATTERY VOLATAGE AFTER 1.5 HOURS TO COMPLY WIT HNEC SECTION700 AND UL 924.

49. IDENTIFICATION OF ELECTRICAL ITEMS

A. PROVIDE PERMANENT IDENTIFICATION MARKING AND NAMEPLATES FOR ALL CONDUCTORS AND EACH ITEM OF ELECTRICAL APPARATUS AND ASSOCIATED CONTROLLED EQUIPMENT, WITH THE SAME INSCRIPTIONS AS SHOWN ON THE DRAWINGS. ALL IDENTIFICATION MARKINGS SHALL BE CLEARLY AND NEATLY APPLIED.

B. APPLY ENGRAVED PLASTIC LAMINATE NAMEPLATES WITH NON-CORRODING TYPE SCREW FASTENERS OR RIVETS TO ALL MOTOR STARTERS, DISCONNECT SWITCHES, RELAYS, REMOTE CONTROL PANELS, PUSH BUTTON STATIONS, PANELBOARDS, SWITCHBOARDS, TRANSFORMERS, AND OTHER ELECTRICAL APPARATUS. NAMEPLATES SHALL BE WHITE WITH BLACK CORE, 1-1/4" X 3" MINIMUM WITH 3/16" HIGH LETTERING. THE NAMEPLATE SHALL IDENTIFY: -NAME OF DEVICE OR

-LOAD THE DEVICE IS SERVING

C. PROVIDE A TYPEWRITTEN DIRECTORY OF CIRCUITS IN LIGHTING AND POWER PANELS AND PROVIDE PANEL IDENTIFICATION IN BLACK ALKYD PAINT STENCILED INSCRIPTIONS ON THE INSIDE OF THE DOOR, DIRECTLY ABOVE THE CENTERLINE OF THE DIRECTORY FRAME, OR ON THE VERTICAL AND HORIZONTAL CENTERLINE OF DOORS WITHOUT DIRECTORY FRAMES.

D. PROVIDE ON DEVICE PLATES FOR LOCAL TOGGLE SWITCHES, TOGGLE SWITCH MANUAL STARTERS, PILOT LIGHTS AND OTHER ELECTRICAL ITEMS, WHOSE FUNCTION IS NOT READILY APPARENT, ENGRAVED SUITABLE INSCRIPTIONS OR PLASTIC LAMINATE NAMEPLATES DESCRIBING THE EQUIPMENT CONTROLLED OR INDICATED.

E. EMBOSSED SELF-ADHERING PLASTIC TAPE LABELS WILL NOT BE ACCEPTED.

- 50. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL EXISTING OR NEW NON-ACCESSIBLE SYSTEM DEVICES, PULLBOXES, AND EQUIPMENT, ETC. FOR RELOCATION TO ACCESSIBLE CEILING AREAS. E.C. SHALL INCLUDE ALL COMPLETE COSTS FOR RELOCATION AND VERIFY SUCH CONDITIONS WITH ARCHITECTURAL CEILING PLANS PRIOR TO FINAL BIDS.
- 51. EXISTING CONDITIONS OF ALL EXISTING BUILDING EQUIPMENT, DEVICES, FIXTURES, AND SYSTEMS THAT REQUIRE REWIRING, REUSE, RELOCATION, OR REFURBISHING AS PER DRAWINGS AND SPECIFICATIONS SHALL BE FIELD VERIFIED BY THE E.C. PRIOR TO COMMENCEMENT OF ANY WORK TO BE COMPLETELY OPERATIONAL. E.C. SHALL SUBMIT A WRITTEN STATEMENT AND ITEMIZED LISTING OF ALL EXISTING CONDITIONS OF THE FOLLOWING, ALTHOUGH NOT LIMITED TO THOSE LISTED:
- A. HVAC EQUIPMENT B. EXIT SIGNS AND EMERGENCY LIGHTING FIXTURES C. LIFE SAFETY/FIRE ALARM SYSTEM DEVICES
- D. LIGHTING AND RECEPTACLE DEVICES.
- THE WRITTEN STATEMENT SHALL BE SUBMITTED TO THE PROJECT MANAGER, ARCHITECT, AND ENGINEER PRIOR TO WORK. IN THE EVENT THAT THE CONTRACTOR COMMENCES WORK WITHOUT SUBMITTAL, THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY AND COST TO MAINTAIN THE ABOVE IN GOOD WORKING ORDER AND CONDITION.
- 52. E.C. SHALL REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL ELECTRICAL AND COMMUNICATIONS OUTLETS. ELECTRICAL ENGINEERING DRAWINGS SHALL BE USED FOR CIRCUITING INFORMATION ONLY.
- 53. E.C. SHALL REFER TO MECHANICAL AND PLUMBING ENGINEERING DRAWINGS FOR EXACT LOCATIONS OF ALL MECHANICAL AND PLUMBING EQUIPMENT.

### ELECTRICAL DEMOLITION NOTES

- A. THE EXTENT OF THE ELECTRICAL DEMOLITION WORK IS INDICATED HEREIN.
- B. PARTIAL AND TOTAL DEMOLITION OF PORTIONS SHALL BE PERFORMED ALONG WITH ALL NECESSARY MODIFICATIONS TO THAT PORTION OF THE EXISTING BUILDING WHICH SHALL REMAIN SO THAT IT CONTINUES TO FUNCTION UNAFFECTED BY THE DEMOLITION AND ASSOCIATED NEW CONSTRUCTION.
- C. THE DRAWINGS INDICATE THE GENERAL AREAS OF WORK INVOLVED. HOWEVER, THE CONTRACTOR SHALL PERFORM WORK OUTSIDE THOSE AREAS SHOWN AS IS NECESSARY TO COMPLY WITH THE INTENT OF THIS SECTION.
- D. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE EXISTING BUILDING AND WITH THE WORK OF ALL OTHER TRADES AND INCLUDE ALL WORK NECESSARY TO COMPLY WITH THE INTENT OF THE DEMOLITION.
- E. IT SHALL BE UNDERSTOOD THAT FIELD CONDITIONS MAY BE ENCOUNTERED DURING THE EXECUTION OF THIS CONTRACT WHICH WILL REQUIRE EXTENSION OR RELOCATION OF EXISTING SYSTEMS OR EQUIPMENT WHICH ARE NOT SPECIFICALLY SHOWN ON THE DRAWINGS BUT, WHICH ARE REQUIRED TO MEET THE STATED INTENT THAT THE BUILDING CONTINUE TO FUNCTION UNAFFECTED BY THE DEMOLITION AND ASSOCIATED NEW CONSTRUCTION. THIS CONTRACT SHALL INCLUDE SUCH WORK AS WOULD NORMALLY BE EXPECTED IN AN EXISTING BUILDING OF THIS AGE AND TYPE.
- F. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL TOOLS, EQUIPMENT, LABOR, ETC. IN ORDER TO ACCOMPLISH THE DEMOLITION PORTION OF THE CONTRACT DOCUMENTS.
- G. THE DEMOLITION OF CERTAIN AREAS OF THE EXISTING BUILDING SHALL BE PERFORMED BY THE GENERAL CONTRACTOR.
- H. THE ELECTRICAL CONTRACTOR SHALL INCLUDE COORDINATION WITH THE GENERAL CONTRACTOR AND SUCH DEMOLITION OF THE EXISTING ELECTRICAL SYSTEMS AS IS NECESSARY SO THAT THE DEMOLITION WORK OF THE GENERAL CONTRACTOR SHALL NOT DAMAGE THOSE PORTIONS OF THE ELECTRICAL SYSTEMS WHICH ARE TO REMAIN IN SERVICE, ARE TO BE REUSED, OR ARE TO BECOME THE PROPERTY OF THE OWNER.
- I. TURN OVER TO OWNER, UPON REQUEST, ITEMS SHOWN AS BEING REMOVED AND NOT REINSTALLED.
- J. EQUIPMENT OR MATERIALS WHICH ARE TO BE REUSED OR TURNED OVER TO THE OWNER SHALL BE CAREFULLY REMOVED, CLEANED, AND STORED IN A CLEAN, DRY AREA. SHOULD THE CONTRACTOR ENCOUNTER SUCH EQUIPMENT WHICH IS NOT IN SATISFACTORY CONDITION FOR REUSE AND NOT IN WORKING ORDER, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY.
- K. DISCONNECT ELECTRICAL SERVICES TO ALL EQUIPMENT REQUIRING REMOVAL. CONDUIT SHALL BE REMOVED BACK TO AN INACCESSIBLE LOCATION WIRE AND CABLE SHALL BE REMOVED BACK TO THE POINT OF ORIGIN.
- L. REMOVE AND REINSTALL CEILINGS IN EXISTING BUILDING AS REQUIRED FOR THE WORK. COORDINATE WITH THE GENERAL CONTRACTOR. IN SUCH AREAS, REMOVE AND REINSTALL ALL ELECTRICAL DEVICES WHICH ARE TO REMAIN IN OR ON THE CEILING.
- M. WHERE NEW CEILINGS CONFLICT WITH EXISTING ELECTRICAL WORK WHICH IS TO REMAIN RELOCATE THE ELECTRICAL WORK INVOLVED TO CLEAR THE NEW CONSTRUCTION.
- N. WHERE NEW WALL OR FLOOR FINISHES CONFLICT WITH EXISTING ELECTRICAL WORK WHICH IS TO REMAIN, RELOCATE THE ELECTRICAL WORK INVOLVED OR PROVIDE BOX EXTENSIONS OR SIMILAR DEVICES AND REINSTALL ON THE NEW FINISH.
- O. WHERE EXISTING BRANCH CIRCUITS AND SYSTEMS ARE INTERRUPTED BY DEMOLITION NEW WORK. OR NEW MECHANICAL DUCTWORK, EXTEND AND RECONNECT THOSE CIRCUITS AND SYSTEMS. WHERE THOSE CIRCUITS OR SYSTEMS MUST REMAIN IN SERVICE DURING THE EXECUTION OF THIS CONTRACT, PROVIDE TEMPORARY CONNECTIONS UNTIL FINAL CONNECTIONS ARE COMPLETE.

![](_page_21_Picture_109.jpeg)

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![](_page_22_Figure_0.jpeg)

![](_page_22_Picture_1.jpeg)

![](_page_22_Figure_2.jpeg)

![](_page_22_Picture_3.jpeg)

![](_page_22_Figure_4.jpeg)

GENERAL NOTES:

1. HATCHED AREA'S NOT INCLUDED IN SCOPE. KEYED NOTES:

- (#) 1. EXTEND EXISTING LIGHTING CIRCUITS TO NEW FIXTURES. FIXTURE TYPE AND LAYOUT ACCORDING TO MCDONALD'S BUILDING STANDARDS AND LAHJ LIGHT LEVEL REQUIREMENTS. VERIFY CIRCUIT CAPACITY PRIOR.
   2 NO ELECTRICAL WORK IN THIS AREA

![](_page_22_Picture_11.jpeg)

![](_page_22_Picture_14.jpeg)

FG formerly McVeigh & Mangum Engineering www.IMEGCorp.com 3708 Forestview Road, Suite 103, Raleigh, North Carolina 27612 Ph: (919) 650-6565 F-1507

![](_page_23_Picture_0.jpeg)

![](_page_23_Picture_1.jpeg)

![](_page_23_Figure_2.jpeg)

1

E-102

![](_page_23_Figure_3.jpeg)

![](_page_23_Figure_4.jpeg)

### Level 1-Power Plan Overall SCALE: 1/16" = 1'-0"

ITEM#	TAG#	QTY
9.19	E1	1
9.21	E1	1
9.23	E1	1
20.01	E1	1
20.01	E2	1
22.01	E2	1
23.15	E2	1
23.51	E2	1
23.59	E2	1
24.02	E2	1
39.25	E1	1
39.31	E1	1
39.31	E2	1
41.06	E1	1
41.18	E1	1
47.20	E1	1
50.56	E4	1
50.57	E1	1
50.58	E1	1
50.58	E2	1
97.14	E1	1
97.14	E4	1
97.15	E1	1
116.24	E2	1
117.24	E1	1
118.03	E2	2
122.27	E1	1
122.28	E1	1
123.54	E1	1
125.00	E1	2
177.00	E1	1
181.01	E2	1
211.00	E6	1
215.04	E1	11
215.04	E3	11
215.07	E1	1
215.07	E3	1
216.00	E11	1
219.05	E3	1
700.09	E1	1
700.11	E1	1
900.57	E2	3
900.60	E2	1
90029.08	E1	1
9203.02	E1	1
9205.09	E1	1
9215.00	E1	4
9219.00	E1	2

THESE DRAWINGS AND THE PROJECT MANUAL FOR MCDONALD'S STANDARD BUILDING PROGRAM COPYRIGHT 2013 ARE INTENDED TO DESCRIBE AND PROVIDE FOR A FINISHED PIECE OF WORK. THEY ARE INTENDED TO BE COOPERATIVE, AND WHAT IS CALLED FOR BY EITHER WILL BE AS BINDING AS IF CALLED FOR BY BOTH. THE PROJECT MANUAL FOR MCDINALDS' STANDARD BUILDING PROGRAM COPYRIGHT 2013 IS AVAILABLE THROUGH THE MCDONALDS ACM OR ECM.

GENERAL NOTES:

- HATCHED AREA'S NOT INCLUDED IN SCOPE.
- EXISTING BUILDING SYSTEMS.

### # KEYED NOTES:

- 3. NO ELECTRICAL WORK IN THIS AREA.

- 7. LOCATION OF MDP, AP1, AP2, AP3 AND CP1

			KITCH	EN EQUIP	MENT SC	HEDULE			
DESCRIPTION	VOLTS	PHASE	HP	BREAKER SIZE	AMPS	CONN TYPE	PLUG TYPE	CONN HEIGHT	REMARKS
HASE - DELIVERY 5" x 5" x 96"	-	-	-	20	0.00	DIRECT	-	8"	UTILITY CHASE AND RECEPTACLES PROVIDED BY K.E.S.
ITILITY CHASE - FAST FORWARD DT VERSION - NTERNAL WALL	-	-	-	0	0.00	DIRECT	-	0"	EC TO BRING INDIVIDUAL CIRCUITS TO TERMINAL BLOCK INSIDE KES CHASE AND MAKE FINAL CONNECTIONS PER LOCAL CODES
ITILITY CHASE - FAST FORWARD DT VERSION -	-	-	-	0	0.00	DIRECT	-	0"	EC TO BRING INDIVIDUAL CIRCUITS TO TERMINAL BLOCK INSIDE KES CHASE
UTOMATED BEVERAGE SYSTEM - 2.0	120.00	1.00	-	20	5.00	PLUG & CORD	NEMA 5-20P	24"	FOR SODA TOWER - POWER FROM SAME PHASE AS POS
UTOMATED BEVERAGE SYSTEM - 2.0	120.00	1.00	-	20	5.00	PLUG & CORD	NEMA 5-20P	46"	FOR PRE-COOLER.
IOT WATER DISPENSER	120.00	1.00	-	20	15.00	PLUG & CORD	NEMA 5-20P	18"	PLUGS INTO OUTLET IN KES SUPPLIED CHASE
SPRESSO BREWER	240.00	1.00	-	30	28.33	PLUG & CORD	NEMA L6-30P	0"	PLUGS INTO KES PROVIDED CHASE
REAMER DISPENSER	120.00	1.00	-	20	1.00	PLUG & CORD	NEMA 5-20P	0"	PLUGS INTO KES PROVIDED CHASE
WEETENER DISPENSER	120.00	1.00	-	20	0.60	PLUG & CORD	NEMA 5-20P	0"	PLUGS INTO KES PROVIDED CHASE
PRANGE JUICE DISPENSER	120.00	1.00	-	20	4.50	PLUG & CORD	NEMA 5-15P	0"	E.C. TO EXTEND CIRCUIT TO 5-15R RECEPTACLE IN KES PROVIDED CHASE
CE MACHINE - 1000 LB.	120.00	1.00	-	20	1.10	PLUG & CORD	NEMA 5-20P	18"	MOUNT 9" BELOW CEILING - CIRCUIT BREAKERS SHALL BE HACR TYPE
CE MACHINE - 1430 LB.	208.00	3.00	-	20	11.30	DIRECT	SEE REMARKS	0"	EC SUPPLIES 30A-3P NF DISC SW MTD9" BELOW CEILING PER NEC 404 8(A) FX. 2 VERIEY W/ AHI
CE MACHINE - 1430 LB.	0.00	0.00	-	0	0.00	JB	-	54"	CONTROL WIRES TO REMOTE CONDENSER
CE MACHINE REMOTE CONDENSOR - 1430 LB.	208.00	1.00	-	20	1.00	DIRECT	SEE REMARKS	0"	EC TO PROVIDE WP 30A-2P DISC SW W/15A FUSE - POWERED BY 39.10 - LOCATION BY ACM
CE MACHINE REMOTE CONDENSER - 1000 LB.	208.00	3.00	1.50	20	9.30	DIRECT	SEE REMARKS	0"	EC TO PROVIDE WP 30A-3P NF DISC AT UNIT ON ROOF - CIRCUIT BREAKERS SHALL BE HACR TYPE. CONTROL WIRES TO ICE
	120.00	1.00		20	15.00			10"	MACHINE - LOCATION BY ACM
	120.00	1.00	-	20	15.00	PLUG & CORD	NEMA 5-15P	18"	
8"W x 50"D ORDER ASSEMBLY TABLE W/	208.00	1.00	-	20	1.00	KES BRKER		0	
IEATED SURFACE-COPL	120.00	1.00	-	20	5.40	PANEL		0	EC TO BRING POWER DOWN CHASE, AND CONNECT TO
CU TABLE - COPL	120.00	1.00	-	20	2.00	DIRECT	SEE REMARKS	18"	BREAKER PANEL 125A/3P BREAKER PANEL TO SUPPLY SERVICE FOR TOASTER
CU TABLE - KES MOUNTED BREAKER PANEL	120.00	1.00	-	125	100.00	DIRECT	SEE REMARKS	0"	AND STEAMER ON ECU TABLE
ONVERTIBLE REFRIGERATOR/FREEZER	208.00	1.00	-	20	5.00	PLUG & CORD	NEMA 5-20P	0"	UNIT PLUGS INTO RACEWAY RECEPTACLE
ONVERTIBLE REFRIGERATOR/FREEZER	120.00	1.00	-	20	5.00	PLUG & CORD	NEMA 5-20P	66"	HIEGHT TO BOTTOM OF RECEPTACLE
ONVERTIBLE REFRIGERATOR/FREEZER	120.00	1.00	-	20	5.00	PLUG & CORD	NEMA 5-20P	0"	
IDED -PIN & SLEEVE	208.00	1.00	-	20	13.20	PLUG & CORD	PIN & SLEEVE	18"	BY KES - HEIGHT TO BOTTOM OF RECEPTACLE #320000(B) PROVIDED BY KES - HEIGHT TO BOTTOM OF RECEPTACLE
1IN UHC TABLE	120.00	1.00	-	20	2.20	PLUG & CORD	320C4W	66"	KES- HEIGHT TO BOTTOM OF RECEPTACLE
DN-CUE OVEN	208.00	1.00	-	20	20.00	PLUG & CORD	PIN & SLEEVE	56"	PLUGS INTO OEP
INIVERSAL RADIANT TOASTER - PIN & SLEEVE	208.00	3.00	-	30	21.30	PLUG & CORD	430P9W	66"	PLUGS INTO OVERHEAD RECEPTACLE # 430C6W (B) PROVIDED BY KES - HEIGHT TO BOTTOM OF RECEPTACLE; IF NOT REPLACING UTX TOASTER THEN TOASTER WILL BE SINGLE PHASE.
INIVERSAL CONTACT TOASTER - PIN & SLEEVE	208.00	1.00	-	30	21.30	PLUG & CORD	330P6W	66"	PLUGS INTO OVERHEAD RECEPTACLE # 330C6W (B) PROVIDED BY KES - HEIGHT TO BOTTOM OF RECEPTACLE
REP TABLE - 2 - SIDED - 83"L	120.00	1.00	-	20	5.40	PLUG & CORD	320R4W	0"	PLUGS INTO RACEWAY RECEPTACLE 320R4W- POWERED BY BREAKER PANEL @ FCU TABLE
APID BUN STEAMER	208.00	1.00	-	20	15.00	PLUG & CORD	330P6W	66"	PLUGS INTO BACK OF ECU TABLE RACEWAY RECEPTACLE
EACH-IN REFRIGERATOR-SINGLE WIDE	120.00	1.00	0.33	20	8.00	PLUG & CORD	NEMA 5-15P	18"	-
EFRIGERATOR - SPECIALTY COFFEE- 27" WIDE	120.00	1.00	0.17	20	2.00	PLUG & CORD	NEMA 5-20P	34"	EC TO EXTEND CIRCUIT TO RECEPTACLE IN PRESENTER'S
DELIVERY TABLETS	120.00	1.00	-	20	3.00	PLUG & CORD	(2) NEMA 5-20P	66"	FOR DELIVERY STATION
OS - KVS MONITOR	0.00	0.00	-	0	0.00	PLUG & CORD	JB	0"	CABLE PROVIDED AND INSTALLED BY POS SUPPLIER
OS - KVS MONITOR	120.00	1.00	-	20	1.50	DIRECT	IG4700	0"	INSTALLATION TO BE COORDINATED W/ OWNER/POS INSTALLE
OS REGISTER - DELIVERY	120.00	1.00	-	20	3.00	PLUG & CORD	IG4700	42"	-
OS REGISTER - DELIVERY	0.00	0.00	-	0	0.00	PLUG & CORD	4Х4Х4 РВ	42"	EXTEND 2'' CONDUIT TO ABOVE CEILING FOR POS DATA CABLES
OS - VIDEO MONITOR	120.00	1.00	-	20	1.50	PLUG & CORD	IG4700	66"	CABLE PROVIDED AND INSTALLED BY POS SUPPLIER
TICKY LABEL PRINTER	120.00	1.00	-	20	0.70	PLUG & CORD	IG4700	38'	FOR DELIVERY STATION
CONOMY OEP BOX W/MOUNTING HARDWARE	0.00	0.00	-	0	0.00	DIRECT	JB	0"	STEEL MOUNTING CHANNEL SUPPLIED BY E.C.
CONOMY OEP BOX W/MOUNTING HARDWARE	0.00	0.00	-	0	0.00	DIRECT	BY KES	0"	CEILING MOUNTED
ELOCATED COFFEE BREWER	0.00	0.00	-	0	0.00	-	-	0"	G.C. TO VERIFY AND REWORK ALL EXISTING UTILITIES AS
ELOCATED BLENDER	0.00	0.00	-	0	0.00	-	-	0"	G.C. TO VERIFY AND REWORK ALL EXISTING UTILITIES AS
ELOCATED FROZEN CARBONATED BEVERAGE	0.00	0.00	-	0	0.00	-	-	0"	G.C. TO VERIFY AND REWORK ALL EXISTING UTILITIES AS
ELOCATED SHAKE MACHINE	0.00	0.00		0	0.00	-	-	0"	G.C. TO VERIFY AND REWORK ALL EXISTING UTILITIES AS
ELOCATED BLEND IN CUP MACHINE	0.00	0.00		0	0.00	-	-	0"	G.C. TO VERIFY AND REWORK ALL EXISTING UTILITIES AS
ELOCATED POS PC HARDWARE	0.00	0.00		0	0.00	-	-	0"	REQUIRED. G.C. TO VERIFY AND REWORK ALL EXISTING UTILITIES AS
FLOCATED RECEIPT PRINTER	0.00	0.00		0	0.00		-	0"	REQUIRED. G.C. TO VERIFY AND REWORK ALL EXISTING UTILITIES AS
	0.00	0.00	-	I V	0.00	-	-	۲ĭ	REQUIRED.

REFER TO KITCHEN EQUIPMENT SCHEDULE FOR EQUIPMENT SPECS AND CONNECTIONS. REFER TO KITCHEN DESIGNER'S AND ARCHITECTURAL ELEVATIONS/DIMENSIONS FOR EXACT EQUIPMENT LOCATIONS. DRAWINGS ARE DIAGRAMMATIC IN NATURE. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS IN FIELD PRIOR TO DEMOLITION & NOTIFY ENGINEER OF DISCREPANCIES ASAP. DEMOLITION IS TO BE EXECUTED SO AS NOT TO DISTURB 5. E.C. SHALL FIELD VERIFY EXISTING ELECTRICAL CAPACITIES AND CIRCUITRY PRIOR TO STARTING DEMOLITION. EC SHALL UPDATE PANEL SCHEDULES ACCORDINGLY.

EXTEND EXISTING CIRCUITS AND DATA SERVING POINT OF SALE AND KIOSKS TO NEW LOCATION. EXTEND EXISTING CIRCUITS AND DATA SERVING MENU BOARDS TO NEW LOCATION.

4. NEW KITCHEN ECU TABLE(50.58), PANEL, AND ITS EQUIPMENT IS A REPLACEMENT OF LIKE KIND. CIRCUIT NEW

PANEL/TABLE TO CIRCUIT PREVIOUSLY POWERING DEMOLISHED EQUIPMENT. 5. EQUIPMENT IS A REPLACEMENT OF LIKE KIND AND LOAD. REFER TO SCHEDULE FOR CONNECTION TYPE. CIRCUIT TO

EXISTING CIRCUIT POWERING EQUIPMENT REMOVED DURING REMODEL. 6. EQUIPMENT IS A REPLACEMENT OF LIKE KIND AND LOAD IN NEW LOCATION. REFER TO SCHEDULE FOR CONNECTION TYPE. EXTEND EXISTING CIRCUIT TO NEW LOCATION.

![](_page_23_Picture_23.jpeg)

![](_page_23_Picture_24.jpeg)

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![](_page_23_Picture_26.jpeg)

Sheet Number

**E-102** 

### GENERAL PLUMBING NOTES

- IN THE PREPARATION OF THESE PLANS, THE ENGINEER HAS USED CERTAIN ABBREVIATIONS, CONVENTIONS, AND SYMBOLS, THE MEANING OF WHICH ARE ILLUSTRATED AND EXPLAINED WITHIN THE LEGEND.
- PLANS ARE DIAGRAMMATIC ONLY. THEY ARE INTENDED TO INDICATE CAPACITY, SIZE, LOCATION, DIRECTION AND GENERAL ARRANGEMENT, BUT NOT EXACT DETAILS OF CONSTRUCTION. THE FACT THAT ONLY CERTAIN FEATURES OF THE INSTALLATION ARE INDICATED MUST NOT BE TAKEN TO MEAN THAT OTHER FEATURES WILL NOT BE REQUIRED.
- COORDINATE WITH THE OTHER TRADES TO ENSURE THAT EACH TRADE SHALL HAVE SUFFICIENT SPACE TO INSTALL THEIR EQUIPMENT (DUCTWORK, PIPING, ELECTRICAL WORK, ETC.).
- SHOP DRAWING SUBMITTALS ARE ONLY REVIEWED FOR GENERAL CONFORMANCE WITH THE INFORMATION SHOWN ON THE CONSTRUCTION DOCUMENTS. THE GENERAL CONTRACTOR MUST REVIEW AND APPROVE THE SHOP DRAWINGS PRIOR TO THEIR SUBMITTAL TO THE ARCHITECT/ENGINEER. SUBMITTALS WHICH DO NOT CONTAIN THE CONTRACTOR'S SHOP DRAWING STAMP SHALL BE RETURNED WITHOUT REVIEW. ANY REQUESTED CHANGES TO THE CONTRACT DOCUMENTS SHALL BE COMMUNICATED IN WRITING PRIOR TO SUBMITTING THE SHOP DRAWINGS AND CLOUDED ON THE SHOP DRAWINGS.
- 5. VERIFY ALL DIMENSIONS FROM ARCHITECTURAL PLANS AND FIELD DIMENSIONS.
- 6. ALL RISES AND DROPS IN PIPING ARE NOT NECESSARILY SHOWN.
- PROVIDE STOP OR ANGLE VALVES ON EACH WATER CONNECTION TO EACH PLUMBING FIXTURE.
- PROVIDE ALL STRUCTURAL MEMBERS, SUPPORT BRACKETS, FLASHING, HARDWARE, ETC. REQUIRED TO INSTALL A COMPLETE SYSTEM.
- PROVIDE CHROME PLATED ESCUTCHEON PLATES AT ALL EXPOSED WALL PENETRATIONS AND CEILING PENETRATIONS.
- ). PROVIDE CLEANOUTS ON SANITARY LINES AND CONDENSATE DRAIN LINES AS REQUIRED BY CODE.
- 1. PROVIDE ACCESS PANELS FOR ALL SHUT-OFF VALVES LOCATED ABOVE GYPSUM BOARD CEILINGS. COORDINATE WITH GENERAL CONTRACTOR.

12. HORIZONTALLY RUNNING PIPE AND FITTINGS SHALL NOT BE ALLOWED WITHIN ELEVATED SLABS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS.

### PLUMBING DEMOLITION NOTES

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPLACE ANY ITEM OR EQUIPMENT DAMAGED DURING DEMOLITION. ANY ITEM OR EQUIPMENT THAT IS REMOVED TO FACILITATE THE DEMOLITION SHALL BE REINSTALLED BACK TO ITS ORIGINAL CONDITION.
- ALL OPENINGS AND SURFACES MADE BARE BY DEMOLITION AND/OR REMOVAL OF AIR OUTLETS, EQUIPMENT, CONTROLS, ETC. SHALL BE REPAIRED AND/OR PATCHED TO MATCH ADJACENT FINISH. PREPARE SURFACES TO RECEIVE NEW FINISH, SEE ARCHITECTURAL DRAWINGS FOR NEW FINISH SCHEDULE. ALL REPAIRS AND NEW FINISHES SHALL BE BY TRADES SKILLED IN FINISH WORKS.
- REMOVE ALL HANGERS, SUPPORTS, AND ACCESSORIES ASSOCIATED WITH ITEMS OR EQUIPMENT BEING DEMOLISHED.
- EXISTING SERVICES ARE BASED ON ORIGINAL DRAWINGS AND LIMITED FIELD WORK. CONTRACTOR SHALL VERIFY EXISTING SERVICES PRIOR TO TIE-IN. MAJOR DEVIATION BETWEEN THE CONTRACT DOCUMENTS AND EXISTING FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF ARCHITECT/ENGINEER FOR IMMEDIATE EVALUATION AND FURTHER DIRECTION.
- RETURN AND EXHAUST GRILLES IN AREAS OF WORK SHALL BE COVERED WITH FILTER MEDIA DURING DEMOLITION.
- CONTRACTOR SHALL COORDINATE WITH OWNER TO SCHEDULE ANY UTILITY SHUTDOWNS PROVIDE TEMPORARY CONNECTIONS AS REQUIRED TO MAINTAIN ALL NECESSARY SERVICES.
- IF REQUIRED, CONTRACTOR SHALL COORDINATE WITH OWNER TO DETERMINE THE SALVAGE VALUE OF DEMOLISHED ITEMS. RECYCLABLE ITEMS WITHOUT SALVAGE VALUE SHALL BE PRESENTED TO RECYCLING FACILITY.
- NOT ALL CONTROL CIRCUITS AND DEVICES ARE INDICATED. FOR EACH CONTROL AND, DEVICE THERE IS A CIRCUIT OR FEEDER BACK TO THE POINT OF ORIGIN. WHERE WALLS, FLOORS OR CEILING ARE TO BE DEMOLISHED ALL MATERIAL, SURFACE OR FLUSH MOUNTED THEREON SHALL BE REMOVED UNLESS INDICATED OR REQUIRED TO REMAIN TO SERVE A DEVICE.
- COORDINATE ALL DEMOLITION WITH ALL TRADES INVOLVED.
- ). EXISTING PIPING AND/OR CONDUIT RUN CONCEALED IN FLOOR SLAB OR UNDERGROUND AND NOT INDICATED OR SPECIFIED FOR REUSE IN NEW WORK SHALL BE ABANDONED UNLESS NOTED OTHERWISE. CUT PIPING AND/OR CONDUIT AT FLOOR AND MINIMUM 12" BELOW GRADE. PATCH AS NOTED IN PARAGRAPH 2 ABOVE.

PLUMBING S	YMBOL LEGEND	PLUM	PLUMBING ABBREVIATIONS				
		A/C	ABOVE CEILING				
		AFF	ABOVE FINISHED FLOOR				
	HOT WATER PIPE	AFG					
		BFF	BELOW FINISHED FLOOR				
	HOT WATER RETURN PIPE	BFG	BELOW FINISHED GRADE				
	EXISTING COLD WATER PIPE	BIU	BRITISH THERMAL UNIT				
	EXISTING HOT WATER RETURN PIPE	Ø	DIAMETER				
			DOMESTIC WATER				
	FIRE	DN	DOWN				
		DWV	DRAIN WASTE VENT				
	GREASE WASTE	DFU	DRAINAGE FIXTURE UNIT				
	SOIL OR WASTE PIPE	ED	EQUIPMENT DRAIN				
		ED ED	EXAUST FAN				
	EXISTING SOIL OR WASTE PIPE	EA					
	STORM						
	STORM SECONDARY	GPM	GALLONS PER MINUTE				
		GC	GENERAL CONTRACTOR				
	VENT PIPE	GCO	GRADE CLEANOUT				
	EXISTING VENT PIPE	GW	GREASE WASTE				
		HW	HOT WATER				
	CHILLED WATER RETURN PIPE	HWR	HOT WATER RETURN				
		IN	INCHES				
	CHILLED WATER SUPPLY PIPE	IE	INVERT ELEVATION				
	CONDENSER WATER PIPE	MANUF	MANUFACTURER				
	COOLING WATER RETURN PIPE	OST	OVERELOW STORM				
		PC	PLUMBING CONTRACTOR				
	COOLING WATER SOFFLY FIFE	SAN or S	SANITARY				
O	TURNED UP	ST	STORM				
0		V	VENT				
	IURNED DOWN	VTR	VENT TO ROOF				
		WCO	WALL CLEANOUT				
			WASTE				
	TEE, OUTLET UP	WIR					
	· · · · · · · · · · · · · · · · · · ·	w/	WITH				
T&P	TEMPERATURE AND PRESSURE RELIEF DRAIN PIPING	w/O	WITHOUT				
ED	EMERGENCY DRAIN PAN PIPING						
	GATE VALVE	GE	ENERAL SYMBOLS				
	PRESSURE RELIEF VALVE						
	BALL VALVE						
FIXTURE	PLUMBING FIXTURE DESIGNATION (UNDER LINED)		KEYED NOTE TO PLAN				
$\oplus$	CONNECT TO EXISTING						
$\oslash$	DISCONNECT FROM EXISTING						
	MEDICAL GAS PIPE						
	NATURAL GAS PIPE						
	COMPRESSED AIR PIPE						
· · · · ·	NITROGEN PIPE						
	OXYGEN PIPE	1					
		1					
		J					

		I	PLUMBING FIXTURE SCHEDULE				
	MODEL #		CONNECTION SCHEDULE				
DEGIGINATION				WASTE	CONNECTION SCHEDULE         WASTE       VENT       CW       HW         3"       2"           4"       2"		
<u>FS-1</u>	JR SMTIH	3150	FLOOR SINK - 12" X 12" X 8" DEEP SUMP, 2" OUTLET; 3/4 GRATE CAST IRON BODY; NIKALOY TOP; ACID RESISTING ENAMEL INTERIOR DOME; BOTTOM STRAINER; FLASHING CLAMP	3"	2"		_
<u>TD-1</u>	JR SMITH	9660-10N W/ 9660-447-SSADA GRATE	TRENCH DRAIN - 16-GAUGE TYPE 304 STAINLESS STEEL WITH DOME BOTTOM STRAINER AND MEDIUM DUTY BAR GRATE LOAD CLASS "B". REFER TO KES SHEETS FOR DIMENSIONS.	4"	2"		_

NOTES: CATALOG NUMBERS AND MANUFACTURERS ARE TO INDICATE TYPE AND QUALITY OF FIXTURE DESIRED. SUBMIT CUTSHEETS OF THESE AND ALTERNATE MANUFACTURERS FOR ARCHITECT AND OWNER APPROVAL PRIOR TO PURCHASE OF ANY FIXTURES. INFORMATION ON ALTERNATE FIXTURES PROPOSED BY THE CONTRACTOR SHALL INCLUDE THE ADD/DEDUCT ASSOCIATED WITH ACCEPTANCE OF THAT FIXTURE (OR THE ALTERNATE PACKAGE AS A WHOLE).

Nonald's Store - Site ID# 32-0051       Rev       Date       Description         Image: Store - Site ID# 32-0051         Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051         Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051         726 West Cumberland Street       Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051         726 West Cumberland Street       Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051         726 West Cumberland Street       Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051         726 West Cumberland Street       Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051         726 West Cumberland Street       Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051         726 West Cumberland Street       Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051       Image: Store - Site ID# 32-0051         8ethesda Region       Image: Store - Si	Checked By       Mchain       Mchain         Indice       NSN# 2550       Indice       NSN# 2550         Indice       NSN# 2550       Indice       Indice         Indice       Indice       Indice       Indice	Correl 51 Cl Tel WW	<b>3</b> <b>3</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b>	<b>co</b> ) 04 - <b>A S</b> <b>rle</b> 43 - 7. <b>R</b> 2	rd 688 av 2531 4a1	, N 3-75 7 an 0 n -682 rch	IC 00 1 na , S 18 ite	2 ah SC ctu	80 H 29 ure	27 wy 040 .co	, )7 m
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**Sheet Title** 

NOTES,

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SYMBOLS

ARCHITECTURE

7752 Gateway Lane

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### PLUMBING SPECIFICATIONS

PART 1-TGENERALS SCOPE OF WORK SHALL INCLUDE ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY FOR A COMPLETE AND PROPERLY FUNCTIONING INSTALLATION FOR MCDONALD'S IN DUNN, NORTH CAROLINA IN ACCORDANCE WITH LOCAL AND STATE CODES, AND CONTRACT DRAWINGS AND SPECIFICATIONS.

- 1.02 LOCAL CONDITIONS CONTRACTOR SHALL VISIT THE SITE AND OBSERVE ALL EXISTING LOCAL CONDITIONS WHICH WOULD AFFECT WORK UNDER THIS CONTRACT. CONTRACTOR SHALL EXAMINE ALL PLANS AND SPECIFICATIONS FOR THIS PROJECT AND CONSULT THEM FOR INSTRUCTIONS PERTAINING TO WORK OF THIS SECTION.
- 1.03 PERMITS AND FEES CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND INSPECTIONS REQUIRED FOR PERTAINING TO WORK UNDER THIS CONTRACT AND PAY ALL CHARGES INCIDENTAL THERETO. DELIVER TO ARCHITECT ALL CERTIFICATES OF INSPECTION ISSUED BY AUTHORITIES HAVING RISDICTION.

1.04 CODES AND STANDARDS

- A. FURNISH AND INSTALL MECHANICAL SYSTEMS TO MEET ALL CURRENT REQUIREMENTS OF NATIONAL, STATE AND MUNICIPAL CODES, RULES REGULATIONS, LAWS, AND STANDARDS AS THEY ARE ADOPTED BY THE GOVERNING AGENCY AND AS THEY MAY APPLY. 2018 NORTH CAROLINA STATE BUILDING CODE: ADMINISTRATIVE CODE AND POLICIES
- 2018 NORTH CAROLINA STATE BUILDING CODE: BUILDING CODE
- 2018 NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE 2018 NORTH CAROLINA STATE BUILDING CODE: EXISTING BUILDING CODE
- 2018 NORTH CAROLINA STATE BUILDING CODE: FIRE PREVENTION CODE
- 2018 NORTH CAROLINA STATE BUILDING CODE: FUEL GAS CODE 2018 NORTH CAROLINA STATE BUILDING CODE: MECHANICAL CODE
- 2018 NORTH CAROLINA STATE BUILDING CODE: PLUMBING CODE
- 2018 NORTH CAROLINA STATE BUILDING CODE: RESIDENTIAL CODE • NATIONAL ELECTRICAL CODE, 2017 EDITION (NFPA 70 - 2017).
- 1.05 SUBMITTALS A. MATERIAL LIST:
- WITHIN TWENTY (20) DAYS OF AWARD OF CONTRACT, CONTRACTOR SHALL SUBMIT TO ARCHITECT A COMPLETE LIST OF MATERIALS TO BE PROVIDED FOR THE HVAC WORK. THE LIST SHALL INCLUDE SUPPLIERS' NAMES AND MANUFACTURERS' NAMES AND NUMBER OR SERIES FOR EACH ITEM ON LIST. B SHOP DRAWINGS
- SUBMIT TO THE ARCHITECT FOR APPROVAL, BEFORE COMMENCING WORK, SHOP DRAWINGS FOR ALL MATERIALS AND EQUIPMENT TO BE PROVIDED UNDER THIS CONTRACT. THE FOLLOWING APPLIES TO THE SHOP DRAWINGS:
- 1. CONTRACTOR SHALL SUBMIT WITHIN 30-DAYS AFTER AWARD OF CONTRACT, DRAWINGS AND/OR CUT SHEETS OF ALL MATERIALS AND EQUIPMENT, AND 1/4" SCALE EQUIPMENT ROOM DRAWINGS FOR APPROVAL BY ARCHITECT-ENGINEER. SUCH SUBMITTALS MUST CONTAIN OUTLINE DIMENSIONS, OPERATING CLEARANCES, INSTALLATION, OPERATING AND MAINTENANCE INFORMATION AND SUFFICIENT ENGINEERING DATA TO INDICATE SUBSTANTIAL COMPLIANCE WITH SPECIFICATIONS. ALL SHOPDRAWINGS FOR ONE SECTION OF WORK OR ONE MECHANICAL SYSTEM SHALL BE SUBMITTED AT ONE TIME IN LOOSE-LEAF 3-RING BINDERS; NO APPROVAL WILL BE GIVEN IF SUBMITTED PIECEMEAL
- WHERE CONTRACTOR CONSIDERS ADDITIONAL DETAIL OR SHOP DRAWINGS ESSENTIAL TO PROPER FABRICATION OR INSTALLATION OF EQUIPMENT, DUCTWORK, AND PIPING HE SHALL PREPARE SUCH CONSISTENT WITH CURRENT INDUSTRY METHODS AND STANDARDS. ENGINEER RESERVES THE RIGHT TO DIRECT REMOVAL AND REPLACEMENT OF ANY ITEMS WHICH, IN HIS OPINION, DO NOT PRESENT AN ORDERLY AND REASONABLY NEAT AND WORKMANLIKE APPEARANCE, PROVIDED SUCH AN ORDERLY INSTALLATION CAN BE MADE USING CUSTOMARY TRADE METHODS. REMOVAL AND REPLACEMENT SHALL BE DONE WHEN DIRECTED IN WRITING BY ENGINEER AT THE CONTRACTOR'S EXPENSE AND WITHOUT ADDITIONAL EXPENSE TO OWNER.
- 3. APPROVAL GRANTED ON SHOP DRAWINGS IS RENDERED AS A SERVICE ONLY AND SHALL NOT BE CONSIDERED AS GUARANTEE OF MEASUREMENTS OF BUILDING CONDITIONS; NOR SHALL IT BE CONSTRUED AS RELIEVING THE MECHANICAL CONTRACTOR OF BASIC RESPONSIBILITIES UNDER THIS CONTRACT.
- 4. CHANGES IN FOUNDATIONS, BASES, CONNECTIONS, PIPING, CONTROLS, STARTERS, ELECTRICAL EQUIPMENT, WIRING AND CONDUIT, SPACE OPENINGS, WALLS AND CEILINGS, AND VIBRATION
- ISOLATION IN ORDER TO ACCOMMODATE SUBSTITUTE EQUIPMENT SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND RECEIVE ENGINEER'S APPROVAL BEFORE INSTALLING MATERIALS OR EQUIPMENT. ANY EQUIPMENT OR MATERIALS INSTALLED PRIOR TO RECEIPT OF APPROVED SHOP DRAWINGS FROM ENGINEER SHALL BE SUBJECT TO REMOVAL AND/OR ALTERATION AT THE DISCRETION OF THE MECHANICAL ENGINEER AT NO ADDITIONAL COST
- APPROVAL OF ANY SUBMITTED DATA OR SHOP DRAWINGS FOR MATERIALS, EQUIPMENT, APPARATUS DEVICES, ARRANGEMENTS AND/OR LAYOUTS WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY OF FURNISHING SAME OF PROPER DIMENSIONS, CAPACITIES, SIZES, QUANTITIES AND INSTALLATION DETAILS TO EFFICIENTLY PERFORM REQUIREMENTS AND INTENT OF CONTRACT. SUCH APPROVAL SHALL NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS OF ANY SORT
- C. ANY ELECTRICAL DEVIATIONS BETWEEN THE CONTRACT DOCUMENTS AND THE FURNISHED EQUIPMENT MUST BE SEPARATELY ACKNOWLEDGED BY A SUBSTITUTION REQUEST AND ADDITIONALLY NOTED ON THE SUBMITTAL
- D. PROVIDE PLUMBING SHOP DRAWINGS FOR: WASTE AND VENT PIPING, DOMESTIC WATER PIPING, VALVES, PLUMBING FIXTURES AND PIPE INSULATION. 1.06 CONNECTING TO WORK OF OTHERS
- BEFORE STARTING HIS WORK, AND FROM TIME TO TIME AS WORK PROGRESSES, PLUMBING CONTRACTOR SHALL EXAMINE WORK AND MATERIALS INSTALLED BY OTHERS INSOFAR AS THEY APPLY TO HIS WORK AND SHALL NOTIFY ENGINEER IMMEDIATELY IN WRITING IF CONDITIONS EXIST WHICH WILL. SHOULD CONTRACTOR START HIS WORK WITHOUT SUCH NOTIFICATION, IT SHALL BE CONSTRUED AS.
- B. AN ACCEPTANCE BY HIM OF ALL CLAIMS OR QUESTIONS AS TO SUITABILITY OR WORK OF OTHERS TO RECEIVE HIS WORK. HE SHALL REMOVE AND REPLACE, AT HIS OWN EXPENSE, ALL WORK UNDER THIS CONTRACT WHICH MAY HAVE TO BE REMOVED ON ACCOUNT OF SUCH DEFECTS. 1.07 CONTRACT DRAWINGS
- A. IT IS THE INTENT OF DRAWINGS AND SPECIFICATIONS TO OBTAIN A COMPLETE AND FULLY OPERATIONAL, AND SATISFACTORY INSTALLATION. AN ATTEMPT HAS BEEN MADE TO SEPARATE AND COMPLETELY DEFINE WORK UNDER THIS CONTRACT, HOWEVER, SUCH SEPARATE DIVISIONAL DRAWINGS AND SPECIFICATIONS SHALL NOT RELIEVE CONTRACTOR FROM FULL RESPONSIBILITY OF COMPLIANCE WITH WORK OF HIS TRADE WHICH MAY BE INDICATED ON ANY DRAWING OR IN ANY SECTION OF THE SPECIFICATIONS.
- CONTRACTOR SHALL CAREFULLY EXAMINE ARCHITECTURAL, STRUCTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS PRIOR TO SUBMITTING BID. CONTRACTOR WILL BE REQUIRED TO FURNISH, INSTALL AND CONNECT WITH APPROPRIATE SERVICES ALL ITEMS SHOWN ON ANY DRAWINGS WITHOUT ADDITIONAL EXPENSE TO OWNER. ARCHITECT SHALL BE NOTIFIED PRIOR TO BID DATE OF ANY DISCREPANCIES, OMISSIONS, CONFLICTS OR INTERFERENCES WHICH OCCUR BETWEEN DRAWINGS OR BETWEEN DRAWINGS AND SPECIFICATIONS. IF SUCH NOTIFICATION IS RECEIVED IN ADEQUATE TIME, ADDITIONAL DATA OR CHANGES WILL BE ISSUED BY ADDENDUM TO ALL BIDDERS. SUBMITTAL OF BID BY CONTRACTOR SHALL INDICATES THE CONTRACTOR'S ACKNOWLEDGEMENT AND ACCEPTANCE TO PROVIDE ALL NECESSARY EQUIPMENT, MATERIALS AND LABOR TO MEET THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IN ACCORDANCE WITH ALL CODE REQUIREMENTS.
- ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER MECHANICAL DRAWINGS WITH REFERENCE TO BUILDING CONSTRUCTION. PLUMBING DRAWINGS ARE DIAGRAMMATIC BUT SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION OF BUILDING AND WORK OF OTHER TRADES WILL PERMIT. WHERE LOCATIONS OF EQUIPMENT, DEVICES OR FIXTURES ARE CONTROLLED BY ARCHITECTURAL FEATURES, ESTABLISH SUCH LOCATIONS BY REFERRING TO DIMENSIONS ON ARCHITECTURAL DRAWINGS AND NOT BY SCALING DRAWINGS. CHANGES FROM DRAWINGS NECESSARY TO MAKE WORK OF CONTRACTOR CONFORM WITH BUILDING AS CONSTRUCTED AND TO FIT WORK OF OTHER TRADES OR RULES OF BODIES HAVING JURISDICTION SHALL BE MADE BY CONTRACTOR AT HIS OWN EXPENSE. SOME DRAWINGS MAY HAVE BEEN PREPARED FROM EXISTING DRAWINGS WITH INTENT OF PROVIDING THE CONTRACTOR WITH INFORMATION CONCERNING THE EXISTING CONDITIONS. DATA SHOWN HAS NOT BEEN COMPLETELY VERIFIED BY ARCHITECT/ENGINEER AND NO GUARANTEE OF ACCURACY OF THIS INFORMATION IS GIVEN OR INTENDED. IT SHALL BE THE RESPONSIBILITY OF CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS. DATA WHICH IS SHOWN BUT PROVES TO BE INCORRECT SHALL IN NO WAY RELIEVE THE CONTRACTOR FROM INSTALLING HIS WORK WITHIN THE INTENT OF PLANS AND SPECIFICATIONS, NOR SHALL IT CONSTITUTE BASIS FOR A CHANGE ORDER UNLESS, IN THE OPINION OF THE ARCHITECT/ENGINEER IT IS DETERMINED TO BE AN EXTRA COST OVER AND ABOVE THE BASIC INTENT OF THESE PLANS AND SPECIFICATIONS. 1.08 DAMAGE TO OTHER WORK
- A. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER PROTECTIVE MEASURES WHEN WORKING OVERHEAD OR IN FINISHED AREAS. HE/SHE SHALL REPAIR, REPLACE OR TOUCH-UP ALL FINISHED SURFACES WHICH MAY BE DAMAGED AS A RESULT OF HIS OPERATIONS. 1.09 STORAGE AND WORK AREAS
- A. ALL EQUIPMENT AND MATERIALS SHALL BE PROTECTED FROM THE WEATHER, DAMAGE, MOISTURE. DIRT. DEBRIS. ETC. USE OF CARDBOARD, VISQUEEN, OR OTHER SIMILAR MATERIALS WHILE STORED OUTSIDE IS NOT ACCEPTABLE. DO NOT INSTALL DAMAGED EQUIPMENT. 1.10 APPROVAL OF MATERIAL
- A. EQUIPMENT OTHER THAN SPECIFIED IN THE CONTRACT DOCUMENTS REQUIRES APPROVAL FROM ENGINEER 10 DAYS PRIOR TO BID DATE. B. WRITTEN REQUEST FOR PRIOR APPROVAL MUST BE RECEIVED IN ENGINEER'S OFFICE BY CLOSE
- OF BUSINESS NO LATER THAN 10 DAYS PRIOR TO SCHEDULED BID DATE. REQUEST SHALL CONTAIN DETAILED INFORMATION ON THE PROPOSED ITEM. THIS SHALL INCLUDE: . CATALOG CUTS SHEETS
- DETAILED SPECIFICATIONS DESCRIPTION OF DEVIATION FROM SPECIFIED ITEM.
- C. AN ADDENDA SHALL BE ISSUED LISTING ALL PROSPECTIVE CONTRACTORS LISTING ALL PRIOR APPROVED MANUFACTURERS AND PRODUCTS.

B. ABOVE GRADE: WELD JOINTS. C. DIELECTRIC UNIONS: SHALL BE USED AT ALL JOINTS OF DISSIMILAR PIPE MATERIALS ABOVE GROUND. **B. PIPING INSULATION:** 1. ELECTRIC WATER COOLER WASTE: A. 3/4-LB., 1 1/2 INCH BLANKET. B. FSK JACKET. 2. DOMESTIC COLD AND HOT WATER MAINS AND RISERS: A. 1-INCH STANDARD FIBERGLASS. B. FACTORY JACKET AND FITTING COVERS AIR PLENUMS: NFPA-90A, PARAGRAPHS 2-3.3.1 AND 2-3.10.1. HANDICAP-ACCESSIBLE FIXTURES). C. ACCEPTABLE MANUFACTURERS: C. FLOOR DRAINS: SEE SCHEDULE. D. ROOF DRAINS: ZURN-100 OR EQUAL 6. WATER SYSTEM SPECIALTIES. 2.03 PIPING SPECIALTIES SCREW. 2.04 PIPE INSULATION

PART 2 - PRODUCTS

2.01 PLUMBING SYSTEMS

A. PIPE MATERIALS:

- CONDUCTIVITY SHALL BE 0.30 AT 75 DEG F. 2.05 HANGERS AND SUPPORTS
- PIPING FROM STRUCTURE. MATERIALS. 2.06 SLEEVES:
- A. WALLS AND PARTITIONS: 1. PIPE SLEEVES 8-INCH DIAMETER AND SMALLER (ABOVE GRADE): SLEEVES SHALL BE MILD 2. PIPE SLEEVES INSTALLED IN EXTERIOR WALLS BELOW GRADE:SCHEDULE 40 STEEL HOT

- C. SEALING OF SLEEVES:

- STEEL PIPE OR PLASTIC SLEEVES BUILT INTO WALL, PARTITION OR BEAM, SIZED TO PASS PIPE AND COVERING, LEAVING A CLEAR SPACE OF 1/4-INCH MINIMUM BETWEEN COVERING AND SLEEVE. PENETRATIONS OF FIRE RATED BARRIERS SHALL HAVE MILD STEEL SLEEVES. DIPPED GALVANIZED AFTER FABRICATION OR CAST IRON SLEEVE WITH 1/4-INCH X 3-INCH CENTER FLANGE (WATER STOP) AROUND THE OUTSIDE
- B. PIPE SLEEVES IN FLOORS (ABOVE GRADE): SLEEVES SHALL BE 14 GAUGE GALVANIZED SHEET STEEL OR PLASTIC, SET BEFORE FLOOR IS POURED, SIZED TO PASS PIPE AND COVERING, LEAVING A CLEAR SPACE OF 1/4-INCH BETWEEN COVERING AND SLEEVE, AND SHALL EXTEND 1/2-INCH ABOVE FINISHED FLOOR.
- PENETRATION WATER TIGHT.
- SLEEVES SHALL BE MADE DRAFT FREE AND VERMIN-PROOF BY PACKING SOLIDLY WITH MINERAL WOOL OR FIBERGLASS.
- 3. SEALING OF SLEEVES THROUGH FIRE RATED BARRIERS: OPENINGS AROUND PIPES, ETC., THROUGH FIRE RATED BARRIERS SHALL BE SEALED USING AN UL APPROVED METHOD RATED AT LEAST EQUAL TO THE WALL BEING PENETRATED.

### 1. DWV (DRAIN, WASTE, AND VENT) PIPING:

- FITTINGS SHALL BE LONG RADIUS FITTINGS, EXCEPT FITTINGS IN VENT PIPING MAY BE SHORT RADIUS FITTINGS. MINIMUM SIZE PIPING SHALL BE 2 INCHES FOR BURIED PIPING AND 1 1/4 INCHES FOR ABOVEGROUND PIPING. CONTRACTOR'S OPTION:
- A. BELOW GRADE: CAST IRON, ASTM A74, STANDARD, SINGLE HUB, COATED, WITH JOINTS CAULKED AND LEADED. B. ABOVE GRADE: CAST IRON, NO HUB, CISPI STANDARD 301, WITH CAST IRON COUPLING WITH GASKET AND STAINLESS STEEL BANDS.
- C. ABOVE AND BELOW GRADE: PVC, SCHEDULE 40, MEETING ASTM D1785, WITH SOLVENT WELD JOINTS MEETING ASTM D2564. 2. DOMESTIC WATER PIPING (CONTRACTOR'S OPTION): A. BELOW GRADE:
  - 1. COPPER, MEETING ASTM B88: TYPE K, COATED WITH COAL TAR SHELLAC, 95/5 SOLDERED JOINTS. 2. SDR PIPE: PVC, SCHEDULE 40, MEETING ASTM 2241.
  - 1. CPVC, MEETING ASTM D2846 AND F441. PIPING UP TO 1 1/4" SHALL BE SCHEDULE 40. PIPING 1 1/2" AND LARGER SHALL BE SCHEDULE 80; SOLVENT
  - 2. COPPER, MEETING ASTM B88: TYPE L, WITH 95/5 SOLDERED JOINTS.
- 3. ROOF DRAINAGE PIPING: SAME AS DWV ABOVE. INSULATE ALL ROOF DRAINAGE PIPE

- 3. DOMESTIC WATER PIPING EXPOSED TO EXTERIOR:
- NITRILE RUBBER BASED ELASTOMERIC SHEET INSULATION; ARMSTRONG "ARMAFLEX 2". MINIMUM INSULATION THICKNESS SHALL BE 3/4-INCH. 4. CPVC WATER PIPING AND PVC WASTE, VENT AND ROOF DRAIN PIPING RUN IN RETURN
- WRAP WITH A FIRE PROTECTIVE JACKET WITH A MAXIMUM FLAME SPREAD RATING OR 25 AND A MAXIMUM SMOKE DEVELOPMENT RATING OF 50 IN ACCORDANCE WITH
- 5. PIPING TO BE UNINSULATED: PIPING RUN-OUTS TO FIXTURES (EXCEPT AS NOTED FOR
- 1. MANUFACTURERS' MODEL NUMBERS ARE LISTED TO ESTABLISHED A STANDARD OF QUALITY AND LEVEL OF PERFORMANCE. 2. EQUIVALENT ITEMS OF THE FOLLOWING MANUFACTURES ARE ACCEPTABLE:
- A. FIXTURES: SEE FIXTURE SCHEDULE.
- 1. AMERICAN-STANDARD, ELJER, KOHLER, CRANE, ELKAY, JUST, AND BRIGGS. B. FIXTURE TRIM: SEE FIXTURE SCHEDULE. 1. AMERICAN-STANDARD, KOHLER, SPEAKMAN, MOEN, DELTA, T&S BRASS,
- CHICAGO FAUCET, SYMMONS, BRIGGS.
- 3. DRAIN AND FIXTURE SPECIALTIES: J.R. SMITH, JOSAM, ZURN.
- A. FLOOR AND EXTERIOR CLEANOUTS: ZURN-1440 OR EQUAL B. WALL CLEANOUT: ZURN-1441 OR EQUAL W/ SMOOTH SECURED COVER.
- 4. WATER COOLERS: SEE FIXTURE SCHEDULE, OASIS, ELKAY, HALSEY TAYLOR. 5. WATER HEATERS: SEE FIXURE SCHEDULE, RHEEM, A.O. SMITH, STATE, LOCHINVAR.
- A. WATER HAMMER ARRESTORS SHALL CONFORM TO PDI WH201 AND ASSE 1010. ACCEPTABLE: ZURN SHOKTROLS Z-1700 OR EQUAL.
- B. WALL HYDRANTS AND HOSE BIBBS: SEE FIXTURE SCHEDULE.
- A. ESCUTCHEONS SHALL BE MANUFACTURED WALL, CEILING AND FLOOR PLATES; DEEP-PATTERN TYPE WHERE REQUIRED TO CONCEAL PROTRUDING FITTINGS AND SLEEVES. CONSTRUCT OF ONE-PIECE CAST BRASS WITH POLISHED CHROME PLATE FINISH AND SET-
- A. FLEXIBLE ELASTOMERIC CELLULAR INSULATION, TYPE I, ASTM C 534, FLEXIBLE EXPANDED CLOSED-CELL STRUCTURE WITH SMOOTH SKIN ON BOTH SIDES. PRODUCT AS MANUFACTURED BY ARMSTRONG OR EQUIVALENT BY RUBATEX OR HALSTEAD. AVERAGE MAXIMUM THERMAL
- B. FLEXIBLE ELASTOMERIC CELLULAR INSULATION ADHESIVE, SOLVENT-BASED, CONTACT ADHESIVE RECOMMENDED BY INSULATION MANUFACTURER.
- A. PROVIDE HANDERS, RODS, AND SUPPORT CLAMPS AS REQUIRED TO PROPERLY SUPPORT
- B. PROVIDE BUILDING ATTACHMENTS OR CONCRETE INSERTS APPROPRIATE FOR BUILDING
- 1. SLEEVES BELOW GRADE: CAULK ANNULAR SPACE BETWEEN PIPE AND SLEEVE USING OAKUM AND POURED LEAD BOTH SIDES MINIMUM ONE INCH DEEP TO MAKE WALL
- 2. SLEEVES ABOVE GRADE: OPENINGS AROUND PIPES, DUCT, ETC., PASSING THROUGH

### PART 3 - EXECUTION

- 3.01 PIPE INSULATION INSTALLATION A. INSTALL ONE INCH THICK PIPE INSULATION ON HOT WATER PIPING. INSTALL ONE INCH THICK PIPE INSULATION ON COLD WATER PIPING THAT IS ABOVE THE ROOF INSULATION. B. INSTALL INSULATION IN STRICT ACCORDANCE WITH MANUFACTURERS WRITTEN
- RECOMMENDATIONS. 3.02 TESTING OF WATER DISTRIBUTION SYSTEMS
- A. TEST FOR LEAKS AND DEFECTS IN NEW WATER DISTRIBUTION PIPING SYSTEMS. IF TESTING IS PERFORMED IN SEGMENTS, SUBMIT SEPARATE REPORT FOR EACH TEST, COMPLETE WITH DIAGRAM OF PORTION OF SYSTEM TESTED.
- B. LEAVE UNCOVERED AND UNCONCEALED NEW WATER DISTRIBUTION PIPING UNTIL IT HAS BEEN TESTED AND APPROVED. EXPOSE WORK THAT HAS BEEN COVERED OR CONCEALED BEFORE IT HAS BEEN TESTED AND APPROVED FOR TESTING.
- C. CAP AND SUBJECT THE PIPING SYSTEM TO A STATIC WATER PRESSURE OF 50 PSIG ABOVE THE OPERATING PRESSURE WITHOUT EXCEEDING PRESSURE RATING OF PIPING SYSTEM MATERIALS. ISOLATE TEST SOURCE AND ALLOW TO STAND FOR 4 HOURS. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED. D. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST SYSTEM OR PORTION
- THEREOF UNTIL SATISFACTORY RESULTS ARE OBTAINED. E. PREPARE REPORTS FOR TESTS AND REQUIRED CORRECTIVE ACTION.
- 3.03 TESTING OF DRAINAGE AND VENT PIPING SYSTEMS A. TEST FOR LEAKS AND DEFECTS IN NEW DRAINAGE AND VENT PIPING SYSTEMS. IF TESTING IS
- PERFORMED IN SEGMENTS, SUBMIT A SEPARATE REPORT FOR EACH TEST, COMPLETE WITH A DIAGRAM OF THE PORTION OF THE SYSTEM TESTED.
- B. LEAVE UNCOVERED AND UNCONCEALED NEW DRAINAGE AND VENT PIPING UNTIL IT HAS BEEN TESTED AND APPROVED. EXPOSE FOR TESTING WORK THAT HAS BEEN COVERED OR CONCEALED BEFORE IT HAS BEEN TESTED AND APPROVED
- C. TEST PIPING OF PLUMBING DRAINAGE AND VENTING SYSTEMS ON COMPLETION OF ROUGH-IN PIPING INSTALLATION. TIGHTLY CLOSE ALL OPENINGS IN PIPING SYSTEM AND FILL WITH WATER TO POINT OF OVERFLOW, BUT NOT LESS THAN 5 FEET HEAD OF WATER, WATER LEVEL SHALL NOT DROP DURING THE PERIOD FROM 15 MINUTES BEFORE INSPECTION STARTS THROUGH COMPLETION OF INSPECTION. INSPECT JOINTS FOR LEAKS. AFTER PLUMBING FIXTURES HAVE BEEN SET AND THEIR TRAPS FILLED WITH WATER, TEST CONNECTIONS AND PROVE GASTIGHT AND WATERTIGHT. PLUG STACK OPENINGS ON ROOF AND BUILDING DRAIN WHERE IT LEAVES THE BUILDING AND INTRODUCE AIR INTO THE SYSTEM EQUAL TO PRESSURE OF 1-INCH WATER COLUMN. USE A U TUBE OR MANOMETER INSERTED IN THE TRAP OF A WATER CLOSET TO MEASURE THIS PRESSURE. AIR PRESSURE SHALL REMAIN CONSTANT WITHOUT INTRODUCING ADDITIONAL AIR THROUGHOUT PERIOD OF INSPECTION. INSPECT PLUMBING FIXTURE CONNECTIONS FOR GAS AND WATER LEAKS.
- D. REPAIR LEAKS AND DEFECTS USING NEW MATERIALS AND RETEST SYSTEM OR PORTION THEREOF UNTIL SATISFACTORY RESULTS ARE OBTAINED. E. PREPARE REPORTS FOR TESTS AND REQUIRED CORRECTIVE ACTION.
- 3.04 CLEANING
- A. PURGE NEW POTABLE WATER DISTRIBUTION PIPING SYSTEMS PRIOR TO USE. B. USE PURGING AND DISINFECTING PROCEDURE PRESCRIBED BY AUTHORITY HAVING
- JURISDICTION OR, IF A METHOD IS NOT PRESCRIBED BY THAT AUTHORITY, THE PROCEDURE DESCRIBED IN EITHER AWWA C651 OR AWWA C652OR AS DESCRIBED BELOW: 1. FLUSH PIPING SYSTEM WITH CLEAN, POTABLE WATER UNTIL DIRTY WATER DOES NOT
- APPEAR AT OUTLETS 2. FILL SYSTEM OR PART THEREOF WITH WATER/CHLORINE SOLUTION CONTAINING AT LEAST 50 PARTS PER MILLION OF CHLORINE. ISOLATE (VALVE OFF) AND ALLOW TO STAND FOR 24
- HOURS. PROVIDE PROPER SIGNAGE TO PREVENT ACCIDENTAL USE DURING DISINFECTION. 3. DRAIN SYSTEM OR PART THERE OF OF PREVIOUS SOLUTION AND REFILL WITH WATER/CHLORINE SOLUTION CONTAINING AT LEAST 200 PARTS PER MILLION OF CHLORINE.
- ISOLATE AND ALLOW TO STAND FOR 3 HOURS. 4. FLUSH SYSTEM WITH CLEAN, POTABLE WATER UNTIL CHLORINE DOES NOT REMAIN IN WATER COMING FROM SYSTEM FOLLOWING ALLOWED STANDING TIME.
- C. SUBMIT WATER SAMPLES IN STERILE BOTTLES TO AUTHORITY HAVING JURISDICTION. REPEAT PROCEDURE IF BIOLOGICAL EXAMINATION MADE BY THE AUTHORITY SHOWS EVIDENCE OF CONTAMINATION.
- PREPARE AND SUBMIT REPORTS FOR PURGING AND DISINFECTING ACTIVITIES. E. CLEAN INTERIOR OF PIPING SYSTEM. REMOVE DIRT AND DEBRIS AS WORK PROGRESSES. 3.05 AS-BUILT DRAWINGS
- A. UPON COMPLETION OF INSTALLATION, THE CONTRACTOR SHALL FURNISH TO THE ARCHITECT A SET OF DRAWINGS, MARKED TO SCALE, INDICATING THE SIZE AND LOCATION OF PIPING AND DUCTS, AND NOTING ALL MAJOR CHANGES MADE DURING CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN THE DRAWINGS FROM THE ARCHITECT AND SHALL BEAR ALL COSTS IN OBTAINING THE DRAWINGS AND PROVIDING THE AS-BUILT DRAWINGS. THE CONTRACTOR SHALL DELIVER THE DRAWINGS PLUS TWO SETS OF AS-BUILT DRAWINGS TO THE ARCHITECT, EACH SHEET IN EACH SET SHALL BE SIGNED BY A PRINCIPAL REPRESENTATIVE OF THE CONTRACTOR, DATED AND HAVE "AS-BUILT" STAMPED NEAR THE SIGNATURE, DRAWINGS SHALL GIVE ACCURATE DIMENSIONS MEASURED FROM COLUMNS, WALLS, BEAMS AND OTHER FIXED PARTS OF THE BUILDING TO THE CONCEALED MATERIALS. THE CONTRACTOR SHALL MAINTAIN A SET OF DRAWINGS AT THE SITE AND EACH DAY SHALL RECORD INSTALLATION OF PIPE, DUCTS, ETC. TO INSURE ACCURATE "AS-BUILT" DRAWINGS. THE CONTRACTOR SHALL ALSO FURNISH A SET OF DRAWINGS AND TWO SETS OF CONTRACTOR SIGNED AND DATED AS-BUILT PRINTS OF THE CONTROLS.
- 3.06 GUARANTEE AND SERVICE A. IN ADDITION TO THE GUARANTEE OF EQUIPMENT BY THE MANUFACTURER OF EACH PIECE OF EQUIPMENT SPECIFIED HEREIN, THE MECHANICAL CONTRACTOR SHALL ALSO GUARANTEE SUCH EQUIPMENT AND SHALL BE HELD RESPONSIBLE FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE FOR NECESSARY ADJUSTMENTS AND/OR REPLACEMENTS OF ALL DEFECTIVE EQUIPMENT, MATERIALS AND WORKMANSHIP WITHOUT EXPENSE TO THE OWNER. PROVIDE A LETTER TO THE OWNER STATING THE CONTRACTOR'S GUARANTEE AND DATES OF GUARANTEE COVERAGE.
- 3.07 REMOVAL OF RUBBISH A. CONTRACTOR SHALL AT ALL TIMES KEEP PREMISES FREE FROM ACCUMULATIONS OF WASTE MATERIAL OR RUBBISH GENERATED BY WORK UNDER THIS CONTRACT.
- 3.08 EXCAVATION, BACKFILLING AND COMPACTION A. ALL EXCAVATION, BACKFILLING, COMPACTION, TESTING, ETC. REQUIRED FOR THE INSTALLATION OF UNDERGROUND PIPING IN THIS DIVISION OF THE SPECIFICATIONS SHALL BE DONE BY THE PLUMBING CONTRACTOR. THIS WORK SHALL BE DONE IN STRICT ACCORDANCE WITH EXCAVATION AND BACKFILLING SECTION OF DIVISION 2.

![](_page_25_Picture_108.jpeg)

![](_page_25_Picture_109.jpeg)

![](_page_26_Picture_0.jpeg)

![](_page_26_Picture_1.jpeg)

Level 1-Plumbing Water Plan - Overall SCALE: 1/8" = 1'-0"

![](_page_26_Picture_3.jpeg)

![](_page_26_Picture_4.jpeg)

![](_page_26_Picture_5.jpeg)

![](_page_26_Figure_7.jpeg)

Level 1 - Plumbing Water Plan - Customer Area

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

- # KEYED NOTES:
- 1. DISCONNECT AND REMOVE EXISTING PLUMBING FIXTURES AND ALL ASSOCIATED TRIM. REMOVE EXISTING WATER, WASTE, AND VENT PIPING TO MAIN. CAP AND SEAL PIPING.
- 2. SAW CUT FLOOR SLAB AS REQUIRED TO INSTALL NEW PIPING TO SERVE NEW FIXTURES. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING PIPING PRIOR TO BEGINNING CONSTRUCTION. PATCH SLAB TO MATCH EXISTING. COORDINATE WITH GC.
- 3. EXTEND NEW SANITARY PIPING AND CONNECT TO EXISTING SANITARY PIPING IN THIS AREA. FIELD VERIFY EXACT LOCATION, SIZE, INVERT, AND DIRECTION OF FLOW OF EXISTING PIPING.
- 4. EXTEND NEW VENT PIPING AND CONNECT TO EXISTING VENT PIPING IN THIS AREA. VERIFY EXACT LOCATION AND SIZE OF EXISTING PIPING IN FIELD.
- 5. EXTEND NEW CW PIPING AND CONNECT TO EXISTING CW PIPING IN THIS AREA. VERIFY EXACT LOCATION AND SIZE OF EXISTING PIPING IN FIELD.
- 6. EXTEND NEW HW PIPING AND CONNECT TO EXISTING HW PIPING IN THIS AREA. VERIFY EXACT LOCATION AND SIZE OF EXISTING PIPING IN FIELD.

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![](_page_26_Figure_18.jpeg)

![](_page_26_Picture_19.jpeg)

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