

FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE - GENERAL PURPOSE							KEYED NOTES
OVERCURRENT DEVICE RATING (AMPERES)	COPPER CONDUCTORS						
	WIRE SIZE (AWG OR KCMIL)		CONDUIT SIZE				
	PHASE & NEUTRAL	GROUND	SINGLE PHASE 2 WIRE+G (1PH, 24, 10)	SINGLE PHASE 3 WIRE+G (2PH, 24, 10)	THREE PHASE 3 WIRE+G (3PH, 24, 10)	THREE PHASE 4 WIRE+G (3PH, 24, 10)	
15-20	12	12	3/4"	3/4"	3/4"	3/4"	
25-30	10	10	3/4"	3/4"	3/4"	3/4"	
35-40	8	10	3/4"	3/4"	3/4"	3/4"	
45-50	8 (6)	10	3/4"	3/4"	3/4"	3/4"	1
60	6 (4)	10	3/4" (1")	3/4" (1")	3/4" (1")	1" (1 1/4")	1
70	4	8	1"	1 1/4"	1 1/4"	1 1/4"	
80	4 (3)	8	1"	1 1/4"	1 1/4"	1 1/4"	1
90-100	3 (2)	8	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1
110	2 (1)	6	1 1/4"	1 1/4"	1 1/4"	1 1/4" (1 1/2")	
125	1 (1/0)	6	1 1/4" (1 1/2")	1 1/4" (1 1/2")	1 1/4" (1 1/2")	1 1/2"	1
150	1/0	6	1 1/2"	1 1/2"	1 1/2"	1 1/2"	
175	2/0	6	2"	2"	2"	2"	
200	3/0	6	2"	2"	2"	2 1/2"	
225	4/0	4	2"	2"	2"	2 1/2"	
250	250	4	2 1/2"	2 1/2"	2 1/2"	2 1/2"	
300	350	4	2 1/2"	2 1/2"	2 1/2"	3"	
350	500	3	3"	3"	3"	3"	
400	500	3	3"	3"	3"	3"	
450	2-4/0	2-2	2-2"	2-2"	2-2"	2-2 1/2"	
500	2-250	2-2	2-2 1/2"	2-2 1/2"	2-2 1/2"	2-2 1/2"	
600	2-350	2-1	2-2 1/2"	2-2 1/2"	2-2 1/2"	2-3"	
700	2-500	2-1/0	2-3"	2-3"	2-3"	2-3 1/2"	
800	2-500	2-1/0	2-3"	2-3"	2-3"	2-3 1/2"	
1000	3-400	3-2/0	3-3"	3-3"	3-3"	3-3"	
1200	3-600	3-3/0	3-3 1/2"	3-3 1/2"	3-3 1/2"	3-3 1/2"	
1600	4-600	4-4/0	4-3 1/2"	4-3 1/2"	4-3 1/2"	4-3 1/2"	
2000	5-600	5-250	5-3 1/2"	5-3 1/2"	5-3 1/2"	5-3 1/2"	

**GENERAL NOTES:**  
1. CONTRACTOR TO SIZE FEEDERS AND BRANCH CIRCUITS BASED ON THIS SCHEDULE AND OVER CURRENT DEVICE SIZE, UNLESS NOTED OTHERWISE.  
2. CONTRACTOR MAY COMBINE 20A CIRCUITS AS NOTED IN SPECIFICATION.  
3. CONDUCTORS ARE BASED ON THHN/THWN-2 UP TO AND INCLUDING #4/0. LARGER THAN #4/0 ARE BASED ON TYPE XHHW.  
4. CONDUIT SIZES ARE VALID FOR EMT OR RSC. CONDUIT SIZES SHALL BE ADJUSTED AS REQUIRED FOR OTHER TYPES OF CONDUIT.  
5. SIZE OF DISCONNECT SWITCH LOCATED AT EQUIPMENT SHALL BE SIZED BASED UPON OVERCURRENT PROTECTION OF THAT DEVICE.  
6. OBTAIN APPROVAL FROM ENGINEER PRIOR TO INSTALLING DIFFERENT SIZE/QUANTITY OF CONDUCTORS TO OBTAIN AN EQUIVALENT AMPACITY.

**KEYED NOTES:**  
1. CONDUCTORS ARE BASED ON 90°C, 600V INSULATED WIRE APPLIED AT 75°C FOR TERMINATION RATED 60/75°C OR 75°C. FOR TERMINATION RATED AT 60°C, USE CONDUCTORS AND CONDUIT SIZES INDICATED IN PARENTHESES.

BRANCH CIRCUIT VOLTAGE DROP WIRING SCHEDULE FOR SINGLE PHASE CIRCUITS						
BRANCH CIRCUIT RATING (A)	WIRE SIZE (AWG)	MAXIMUM BRANCH CIRCUIT LENGTH (IN FEET)				
		120V	208V	240V	277V	480V
20A	12	83	143	165	191	331
	10	128	222	256	295	511
	8	201	348	402	464	804
	6	313	542	625	721	1250
30A	10	85	148	170	197	341
	8	134	232	268	309	536
	6	208	361	417	481	833
	4	313	542	625	721	1250

**GENERAL NOTES:**  
1. THE ABOVE TABLE VALUES ARE BASED ON COPPER CONDUCTORS, IN STEEL CONDUIT, WITH A LOAD POWER FACTOR OF 0.85 PER NEC CHAPTER 9, TABLE 9.  
2. PROVIDE BRANCH CIRCUIT CONDUCTORS AS INDICATED IN THE TABLE ABOVE FOR ALL LIGHTING AND RECEPTACLE BRANCH CIRCUITS. WHERE BRANCH CIRCUITS SERVE DEDICATED EQUIPMENT, THE CONTRACTOR MAY PERFORM VOLTAGE DROP CALCULATIONS BASED ON ACTUAL EQUIPMENT CONNECTED LOAD AND PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO A MAXIMUM OF 3%.  
3. CONDUCTOR SIZES ARE BASED ON MAXIMUM OF 5 CURRENT CARRYING CONDUCTORS IN A SINGLE CONDUIT.  
4. LIMITS FOR CONDUCTOR LENGTHS SHOWN ARE BASED ON A MAXIMUM BRANCH CIRCUIT LOADING OF 64% OF THE BRANCH BREAKER RATING AND A MAXIMUM OF 3 PERCENT VOLTAGE DROP TO COMPLY WITH ASHRAE 90.1 AND THE NEC. FOR CIRCUITS LOADED GREATER THAN 64% OF BRANCH BREAKER RATING, THE CONTRACTOR SHALL PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO 3%.

**MOTOR CIRCUIT SIZING SCHEDULE (480V, 3 PHASE)**

MOTOR HP	SWITCH/FUSE	CIRCUIT BREAKER	STARTER SIZE/TYPE	MOTOR DISCONNECT (NOTE 3)
1/2	30/3A	15A	1	30A
3/4	30/3A	15A	1	30A
1	30/6A	15A	1	30A
1 1/2	30/6A	15A	1	30A
2	30/6A	15A	1	30A
3	30/10A	15A	1	30A
5	30/15A	15A	1	30A
7 1/2	30/20A	20A	1	30A
10	30/20A	25A	1	30A
15	30/30A	40A	2	30A
20	60/40A	60A	2	60A
25	60/50A	70A	2	60A
30	60/60A	80A	3	60A
40	100/80A	90A	3	100A
50	100/100A	100A	3	100A
60	200/125A	125A	4	200A
75	200/150A	150A	4	200A
100	200/200A	200A	4	200A
125	200/200A	225A	5	200A
150	400/250A	250A	5	400A
200	400/350A	350A	5	400A

**GENERAL NOTES:**  
1. BASED ON MOTOR FULL LOAD AMPERES AS PROVIDED BY THE NEC  
2. BASED ON MOTOR RUNNING OVERLOAD PROTECTIONS PROVIDED BY THERMAL OVERLOAD RELAYS.  
3. WHERE THE STARTER IS LOCATED REMOTE FROM THE MOTOR, PROVIDE DISCONNECT LOCATED AT THE MOTOR, SIZE AS INDICATED.

**RACEWAY / CONDUCTOR / CABLE APPLICATION SCHEDULE**

	WIRE	RACEWAY	CABLE / CORD
	COPPER, TYPE THHN/THWN-2	ELECTRICAL METALLIC TUBING (EMT) INTERMEDIATE METAL CONDUIT (IMC) RIGID STEEL CONDUIT (RSC) FLEXIBLE METAL CONDUIT (FMC) LIQUID TIGHT FLEXIBLE METAL CONDUIT (LFMC) SURFACE RACEWAY	METAL CLAD TYPE CABLE WITH INSULATED GROUND WIRE (TYPE MC) VFC CABLE
<b>FEEDERS - EXTERIOR</b>			
EXPOSED, SURFACE MOUNTED TO STRUCTURE	X	X X X	
EXPOSED, WITH FREESTANDING SUPPORT	X	X X X	
ROOFTOPS (WHEN APPROVED BY ENGINEER)	X	X X X	
<b>FEEDERS - INTERIOR</b>			
CONCEALED, ACCESSIBLE CEILINGS	X	X X X	
CONCEALED, INACCESSIBLE CEILINGS	X	X X X	
CONCEALED IN GYPSUM BOARD PARTITION WALLS	X	X X X	
EXPOSED, BELOW 10' AFF AND SUBJECT TO DAMAGE	X	X X X	
EXPOSED, BELOW 10' AFF AND NOT SUBJECT TO DAMAGE	X	X X X	
EXPOSED, ABOVE 10' AFF UNFINISHED SPACES	X	X X X	
EXPOSED, FINISHED SPACES	X	X X X	X
DAMP AND WET LOCATIONS	X	X X X	
<b>BRANCH CIRCUITS - EXTERIOR</b>			
EXPOSED, SURFACE MOUNTED TO STRUCTURE	X	X X X	
EXPOSED, WITH FREESTANDING SUPPORT	X	X X X	
ROOFTOPS (WHEN APPROVED BY ENGINEER)	X	X X X	
<b>BRANCH CIRCUITS - INTERIOR</b>			
CONCEALED, ACCESSIBLE CEILINGS	X	X X X	X
CONCEALED, INACCESSIBLE CEILINGS	X	X X X	
CONCEALED IN GYPSUM BOARD PARTITION WALLS	X	X X X	X
EXPOSED, BELOW 10' AFF AND SUBJECT TO DAMAGE	X	X X X	
EXPOSED, BELOW 10' AFF AND NOT SUBJECT TO DAMAGE	X	X X X	
EXPOSED, ABOVE 10' AFF UNFINISHED SPACES	X	X X X	
EXPOSED, FINISHED SPACES	X	X X X	X
DAMP AND WET LOCATIONS	X	X X X	
<b>SPECIAL APPLICATIONS</b>			
CONNECTION BETWEEN VFC AND MOTORS (KEYED NOTE 1)			X
CLASS 1 CONTROL CIRCUITS	X	X X X	
CLASS 2 CONTROL CIRCUITS	X	X X X	
CLASS 3 CONTROL CIRCUITS	X	X X X	
CONNECTIONS TO TRANSFORMERS, MOTORS AND VIBRATING EQUIPMENT	X	X X X	

**GENERAL NOTES:**  
1. TRANSITION FROM PVC/HDPE AND PROVIDE RIGID STEEL OR RTRC SWEEPS WHERE CONDUITS PENETRATE WALLS, CONCRETE SLABS, CONCRETE BASES, AND ASPHALT.  
2. REFER TO SPECIFICATIONS FOR RESTRICTIONS ON MC/AC CABLE INSTALLATION.  
3. EMT SHALL NOT BE USED ON THE EXTERIOR OF A BUILDING OR IN AREAS SUBJECT TO DAMAGE BELOW 10' AFF.

**KEYED NOTES:**  
1. NON-ARMORED CABLE SHALL BE INSTALLED IN RACEWAY. ARMORED CABLE SHALL BE INSTALLED IN TRAY OR FREE-AIR AS APPLICABLE.  
2. CONDUIT AND BUILDING WIRE ALLOWED PER ONE OF THE FOLLOWING METHODS: ROUTED OUTSIDE THE BUILDING, ROUTED UNDER A MINIMUM OF 2" OF CONCRETE BENEATH THE BUILDING, OR ENCASED IN A MINIMUM OF 2" OF CONCRETE.  
3. EMERGENCY FEEDERS IN OCCUPANCIES THAT ARE UNDER 700,10(0) SHALL HAVE A TWO HOUR RATING. RATING SHALL BE OBTAINED BY ROUTING CONDUIT AND BUILDING WIRE IN SPRINKLERED SPACE.  
4. IN A TWO HOUR SHAFT, OUTSIDE OF THE BUILDING, IN A LISTED TWO HOUR RATED RACEWAY, OR UNDER A MINIMUM OF 2" OF CONCRETE, OR BY USING A LISTED TWO-HOUR RATED CABLE ASSEMBLY.  
5. SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS BASED ON UL TESTING AND RATING.  
6. INTERMEDIATE METAL CONDUIT AND RIGID STEEL CONDUIT, INCLUDING ALL FITTINGS, BOXES AND SUPPORTS, SHALL BE TREATED WITH CORROSION RESISTANT PAINT. FLEXIBLE CORD SHALL ONLY BE USED FOR FINAL CONNECTION TO LUMINAIRES.

E(PANELBOARD RP-CC															
#	LOAD TYPE	DESCRIPTION	CB TYPE	CB	VA	8A	8B	8C	VA	CB	CB TYPE	DESCRIPTION	LOAD TYPE	#	
1	NC	EXISTING LOAD		20	500	1000			500	20		EXISTING LOAD	NC	2	
3	NC	EXISTING LOAD		20	500		1000		500	20		EXISTING LOAD	NC	4	
5	NC	EXISTING LOAD		20	500			1000	500	20		EXISTING LOAD	NC	6	
7	NC	EXISTING LOAD		20	500	1000			500	20		EXISTING LOAD	NC	8	
9	M	AHJ-2		20	1320			1820	500	15		EXISTING LOAD	NC	10	
11		SPARE		20					500	15		EXISTING LOAD	NC	12	
13		SPARE		20						20		SPARE		14	
15		SPARE		20						20		SPARE		16	
17		SPARE		20						20		SPARE		18	
19		SPARE		20						20		SPARE		20	
21		SPARE		20						20		SPARE		22	
23		SPARE		20						20		SPARE		24	
25		SPARE		20						20		SPARE		26	
27		SPARE		20						20		SPARE		28	
29		SPARE		20						20		SPARE		30	
31	NC	EXISTING LOAD		50	4160	4160				20		SPARE		32	
33	NC	EXISTING LOAD		50	4160		4160			20		SPARE		34	
35	NC	EXISTING LOAD		20	500			500		20		SPARE		36	
37	NC	EXISTING LOAD		20	500	500				20		SPARE		38	
39	NC	EXISTING LOAD		20	500			500		20		SPARE		40	
41	NC	EXISTING LOAD		20	500			1000	500	20		EXISTING LOAD	NC	42	
					6660	7480		3000							
					8A	8B	8C								

  

PANELBOARD INFORMATION	BRANCH CIRCUIT CONNECTED LOAD	DEMAND FACTOR	CALCULATED LOAD	FEEDER AND OVER SIZING	NOTES
VOLTAGE: 208V/120V	CONTINUOUS LOAD (C)	100%		125%	
BUS AMPACITY: 400A	ELECTRIC HEAT (E)	100%		100%	
MAIN TYPE: MLO	NON-CONTINUOUS LOAD (NC)	15820	100%	15820	100%
MINIMUM A.L.C.: _____	KITCHEN LOAD (K)	100%		100%	
MOUNTING: SURFACE	RECEPTACLE BASE LOAD (R)	100%		100%	
<input type="checkbox"/> FEED-THROUGH LUGS	RECEPTACLE DEMAND LOAD (R)	50%		100%	
<input type="checkbox"/> DOUBLE LUGS	LIGHTING LOAD (L)	100%		125%	
<input type="checkbox"/> INTEGRAL SPD	ADDITIONAL TRACK LIGHTING LOAD	100%		100%	
	MOTORS, HIGHEST LOAD (MH)	125%		100%	
	MOTORS, REMAINING LOAD (M)	1320	100%	1320	100%
			TOTAL(KVA): 17.14		
			TOTAL (AMPS): 48	TOTAL (AMPS): 48	

NOTE: DEMAND AND SIZING INFORMATION IS CALCULATED FROM CONNECTED LOAD

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REVISION  
ADDENDUM NO.1  
05-22-2026

5145 Livernois, Suite 100  
Troy, Michigan 48066-9276  
www.PeterBassoAssociates.com  
PBA Project No: 2026-0004-03  
Peter Basso  
Associates  
CONSULTING ENGINEERS

PROJECT TITLE  
ANCHOR BAY SCHOOL DISTRICT  
MANOCE ELEMENTARY SCHOOL  
HVAC Upgrade  
5201 County Line Road, Casco, MI 48064

SHEET TITLE  
ELECTRICAL STANDARD  
SCHEDULES  
DATE  
05-1-2026  
ISSUE  
CONSTRUCTION  
DOCUMENTS  
SHEET No.

Not for Construction  
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