ABBREVIATIONS

1-21	PANEL 1, CIRCUIT 21	KW	KILOWATTS
A	AMPERES	L	LIGHTING SYSTEM DEVICE
AC	ABOVE COUNTER	MC	MECHANICAL CONTRACTOR
AFF	ABOVE FINISH FLOOR	MCB	MAIN CIRCUIT BREAKER
AFG	ABOVE FINISH GRADE	MDP	MAIN DISTRIBUTION PANEL
BC	BELOW COUNTER	MLO	MAIN LUG ONLY
C	CONDUIT	MM	MULTIMEDIA OUTLETS (HI & LOW RECEPT. & LOW VOLT. OUTLETS)
C/B, CB	CIRCUIT BREAKER	NL	NIGHT LIGHT
DF	DRINK'G FOUNTAIN/H20 COOLER	NTS	NOT TO SCALE
DWG	DRAWING	P	PUMP
E	EXISTING TO REMAIN	PNL	PANEL
EC	ELECTRICAL CONTRACTOR	PS	PRIMARY SWITCH
EF	EXHAUST FAN	PT	PRIMARY TRANSFORMER
EGC	EQUIPMENT GROUNDING CONDUCTOR	PVC	POLYVINYL CHLORIDE
EH	ELECTRIC HEATER	Q	QUAD-PLEX (DOUBLE DUPLEX)
EMT	ELECTRICAL METALLIC TUBING	RGS	RIGID GALVANIZED STEEL
ERV	ENERGY RECOVERY VENTILATOR	S	SOUND SYSTEM DEVICE
E-R	EXISTING TO BE RELOCATED	TR	TAMPER RESISTANT
ETR	EXISTING TO REMAIN	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
EWC	ELECTRIC WATER COOLER	UGRD	UNDERGROUND
EWH	ELECTRIC WATER HEATER	UON	UNLESS OTHERWISE NOTED
G	GROUND	V	VOLT
GEC	GROUNDING ELECTRODE CONDUCTOR	VFD	VARIABLE FREQUENCY DRIVE
GFI	GROUND FAULT CIRCUIT INTERRUPTER	W	WIRE
GTD	GENERATOR TRANSFER DEVICE	WG	WIREGUARD
HOR	HORIZONTAL	WP	WEATHERPROOF
KCMIL	THOUSAND CIRCULAR MILS	XFMR	TRANSFORMER
KVA	KILOVOLT-AMPERES		

WIRE SIZE REQUIREMENTS

NOTE:
BASED ON A MAXIMUM OF 3.6-VOLT DROP (3%) ON 120V CIRCUITS.
WIRES FOR RUNS OVER 100'-0" SHALL BE DETERMINED ON THIS
A MAXIMUM OF A 3% DROP ALLOWED.

BRANCH CIRCUIT AMPS	LENGTH OF RUN - FROM PANEL TO FIRST CONNECTION - FEET								
AMPS	50'	60'	70'	80'	90'	100'	110'	120'	130'
15	#12	#12	#12	#10	#10	#10	#10	#10	#8
20	#12	#10	#10	#10	#10	#8	#8	#8	#8
30	#10	#10	#8	#8	#8	#6	#6	#6	#6

GENERAL ELECTRICAL DEMOLITION NOTES

1. SEE THIS SHEET FOR ELECTRICAL DEMOLITION KEY NOTE LEGEND.
2. CAUTION!!!! E.C. SHALL DISCONNECT AND REMOVE ALL ELECTRICAL EQUIPMENT, (WHICH INCLUDES BUT IS NOT LIMITED TO DEVICES, FIXTURES, WIRING (CIRCUITRY), CABLING, CONDUIT, ETC.), AS DESCRIBED AND SHALL GIVE THE OWNER AN OPPORTUNITY TO KEEP DEMOLISHED ELECTRICAL EQUIPMENT PRIOR TO THEM BEING DISCARDED.
3. EXISTING ELECTRICAL AND LOW VOLTAGE DEVICES SHOWN ON PLANS WITH AN "xR" ARE TO BE RELOCATED, AS INDICATED. REUSE EXISTING CIRCUITRY (WIRING) AND CONDUIT AND PROVIDE NEW AS REQUIRED TO CONNECT TO ELECTRICAL AND LOW VOLTAGE DEVICES PER THE NEW ELECTRICAL FLOOR PLANS. PROVIDE BLANK COVER PLATES FOR EMPTY GANG BOXES.
4. EXISTING ELECTRICAL AND LOW VOLTAGE DEVICES SHOWN ON PLANS WITH AN "xRP" ARE TO BE REPLACED WITH NEW DEVICES, AS INDICATED. REUSE EXISTING CIRCUITRY (WIRING) AND CONDUIT AND PROVIDE NEW AS REQUIRED TO CONNECT TO ELECTRICAL AND LOW VOLTAGE DEVICES PER THE NEW ELECTRICAL FLOOR PLANS. PROVIDE BLANK COVER PLATES FOR EMPTY GANG BOXES.
5. DEVICES SHOWN ON PLANS WITH AN "E" NEXT TO IT INDICATE THE DEVICE IS EXISTING FROM OLD DRAWINGS OR A TAKEOFF. E.C. IS TO VERIFY ACTUAL DEVICE LOCATIONS WHICH ARE TO REMAIN.

ELECTRICAL DEMOLITION KEY NOTES

1. DISCONNECT AND REMOVE ELECTRICAL DEVICE(S) WHICH WILL INTERFERE WITH THE DEMOLITION AND REMOVAL OF WALLS, FLOORING, AND/OR CEILING AS DESCRIBED IN THE ARCHITECTURAL DEMOLITION PLANS. REMOVE EXISTING CIRCUITRY (WIRING) AND CONDUIT BACK TO SOURCE OR PANEL AND DISCARD.
2. DISCONNECT AND REMOVE EXISTING ELECTRICAL CONNECTIONS TO EXISTING MECHANICAL EQUIPMENT WHICH IS TO BE REMOVED. COORDINATE DISCONNECTION WITH MECHANICAL CONTRACTOR. REMOVE CIRCUITRY (WIRING) AND CONDUIT BACK TO PANEL OR SOURCE AND DISCARD, UNLESS IT IS NOTED TO BE REUSED.
3. DISCONNECT AND REMOVE EXISTING ELECTRICAL CONNECTIONS TO EXISTING MECHANICAL EQUIPMENT WHICH IS TO BE REPLACED/RELOCATED. COORDINATE DISCONNECTION WITH MECHANICAL CONTRACTOR. REMOVE EXISTING CIRCUITRY (WIRING) AND CONDUIT BACK TO PANEL OR SOURCE AND DISCARD, UNLESS IT IS NOTED TO BE REUSED.
4. DISCONNECT AND RE-FEED THE EXISTING ELECTRICAL TRANSFORMER AND PANELS AS INDICATED. DISCONNECT AND CAP ASSOCIATED EXISTING FEEDERS AS NOTED. RE-FEED THE EXISTING ELECTRICAL TRANSFORMER BY PROVIDING AND INSTALLING NEW FEEDER CONDUCTORS AND CONDUIT TO THE NEW PANEL #PP-C AS SHOWN ON THE NEW ELECTRICAL PLANS.

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	NOTES
S	SINGLE POLE SWITCH	MOUNT @ 44" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
x	2'x2' FIXTURE, TYPE X	SEE LIGHTING FIXTURE SCHEDULE FOR TYPES
x	1'x4' FIXTURE, TYPE X	SEE LIGHTING FIXTURE SCHEDULE FOR TYPES
x	2'x4' FIXTURE, TYPE X	SEE LIGHTING FIXTURE SCHEDULE FOR TYPES
x	ROUND FIXTURE, TYPE X	SEE LIGHTING FIXTURE SCHEDULE FOR TYPES
x	STRIP FIXTURE, TYPE X	SEE LIGHTING FIXTURE SCHEDULE FOR TYPES
x	EXIT SIGN, TYPE X	SEE LIGHTING FIXTURE SCHEDULE FOR TYPES
	OVERHEAD ELECTRICAL CONDUIT, SIZED AS SHOWN	OHE
	UNDERGROUND ELECTRICAL CONDUIT, SIZED AS SHOWN	UGE
	OVERHEAD TELEPHONE CONDUIT, SIZED AS SHOWN	OHT
	UNDERGROUND TELEPHONE CONDUIT, SIZED AS SHOWN	UGT

SYMBOL	DESCRIPTION	NOTES
	DUPLEX OUTLET - 20 AMP	MOUNT @ 16" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
	DUPLEX OUTLET - 20 AMP - GROUND FAULT	MOUNT @ 16" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
WP	WR GFCI DUPLEX OUTLET WITH WEATHER PROOF IN-USE COVER	MOUNT @ 24" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
	SINGLE-PHASE SPECIAL PURPOSE OUTLET, AS NOTED	REFER TO SHOP DRAWINGS FOR CONNECTION REQUIREMENTS
	THREE-PHASE SPECIAL PURPOSE OUTLET, AS NOTED	REFER TO SHOP DRAWINGS FOR CONNECTION REQUIREMENTS
J	JUNCTION BOX	
	SINGLE-PHASE MOTOR, AS SPECIFIED	
	THREE-PHASE MOTOR, AS SPECIFIED	
	SINGLE-PHASE FUSED OR NON-FUSED DISCONNECT	
	SINGLE-PHASE MANUAL STARTER OR COMB. DISC./STARTER	
	THREE-PHASE FUSED OR NON-FUSED DISCONNECT	
	THREE-PHASE MANUAL STARTER OR COMB. DISC./STARTER	
SM	MOTOR TOGGLE SWITCH WITH THERMAL OVERLOAD AND LOCKOUT	SQUARE D #CLASS 2510 FGJ5P (SINGLE POLE)
	1Ø BRANCH CIRCUIT PANELS (120/240V-1Ø-3W)	REFER TO SPECIFICATIONS AND RISER DIAGRAM
	3Ø BRANCH CIRCUIT PANELS (120/240V-3Ø-4W)	REFER TO SPECIFICATIONS AND RISER DIAGRAM
	3Ø DISTRIBUTION PANELS	REFER TO SPECIFICATIONS AND RISER DIAGRAM

PROJECT SPECIFICATIONS

260000 BASIC ELECTRICAL REQUIREMENTS

1. PRIOR TO SUBMITTING A PROPOSAL, BIDDER SHALL HAVE VISITED THE CONSTRUCTION SITE. HE SHALL BE FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH HE WILL HAVE TO OPERATE AND WHICH WILL IN ANY WAY AFFECT THE WORK UNDER THIS CONTRACT. NO SUBSEQUENT ALLOWANCE WILL BE MADE IN THIS CONNECTION ON BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLIGENCE ON HIS PART.
2. ELECTRICAL WORK SHALL COMPLY WITH THE LATEST ENFORCEABLE EDITION OF THE N.E.C., LOCAL AND STATE CODES, ORDINANCES, REGULATIONS, INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA), AND ADA GUIDELINES WITH THE LOCAL CODE AUTHORITIES HAVING JURISDICTION.
3. ELECTRICAL CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY ALL FEES, AND ARRANGE FOR ALL INSPECTIONS FOR HIS WORK. AT THE COMPLETION OF ELECTRICAL WORK, THE ELECTRICAL CONTRACTOR SHALL FURNISH THE OWNER WITH ALL CERTIFICATES OF FINAL INSPECTION AND APPROVALS.
4. THE CONTRACTOR SHALL EMPLOY QUALIFIED AND EXPERIENCED WORKMEN FOR THIS WORK.
5. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT ELECTRIC UTILITY COMPANY'S SERVICE POINTS AND PRIMARY SERVICE CONDUIT, ROUTING, AND SIZE WITH UTILITY COMPANY SERVICE PLANNERS/ENGINEERS PRIOR TO BEGINNING WORK. ELECTRICAL CONTRACTOR SHALL VERIFY AVAILABLE FAULT CURRENT WITH THE EXISTING TRANSFORMERS' DATA. FAULT CURRENT WAS NOT AVAILABLE AT THE TIME OF DESIGN. FOR THE PURPOSES OF BIDDING, ASSUME ALL SWITCHGEAR TO BE 65,000 A.I.C. RATED.
6. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL NEW ELECTRICAL UNDERGROUND WORK WITH EXISTING AND NEW UTILITIES PRIOR TO INSTALLATION. CONTACT MISS-DIG AT '811'.
7. ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL WORK INSTALLED UNDER HIS CONTRACT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER THE ACCEPTANCE OF THE BUILDING BY THE OWNER. SHOULD DEFECTS OCCUR WITHIN THIS PERIOD, REPAIR AND/OR REPLACE DEFECTIVE ITEMS AT NO EXPENSE TO THE OWNER.
8. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO (2) HOURS OF TRAINING AS NECESSARY TO THE OWNER ON THE ELECTRICAL EQUIPMENT AND/OR DEVICES.
9. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL OPERATING AND MAINTENANCE INSTRUCTION MANUALS, CERTIFICATES OF INSPECTION, TEST REPORTS, SPARE PARTS, AND RECORD DRAWINGS (AS-BUILTS) TO THE OWNER PRIOR TO CLOSEOUT. FINAL PAYMENT WILL ONLY BE MADE AFTER THE FINAL PUNCH LIST COMPLETION AND RECEIPT OF THE ABOVE CLOSEOUT DOCUMENTATION.
10. ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATIONS OF HIS EQUIPMENT AND WORK WITH OTHER BUILDING TRADES TO AVOID ANY INTERFERENCES BETWEEN HIS WORK AND THE WORK OF OTHER BUILDING TRADES. IF ANY DISCREPANCIES OCCUR, CONSULT WITH THE ENGINEER AND/OR OWNER BEFORE CONTINUING.
11. THE CONTRACTOR SHALL BE HELD FULLY RESPONSIBLE FOR THE PROPER RESTORATION OF ALL EXISTING SURFACES REQUIRING PATCHING, PLASTERING, PAINTING AND/OR REPAIR DUE TO THE INSTALLATION OF ELECTRICAL WORK UNDER THE TERMS OF THIS SPECIFICATION. CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETC. AS REQUIRED.
12. CUTTING AND/OR PATCHING THAT MAY BE REQUIRED FOR THE INSTALLATION OF THE ELECTRICAL SYSTEM(S) SHALL BE DONE AND/OR REPAIRED BY THE ELECTRICAL CONTRACTOR. NO CUTTING OF THE BUILDING STRUCTURAL SYSTEM SHALL BE DONE WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT.
13. CERTAIN REMODELING OF ELECTRICAL FACILITIES WILL BE REQUIRED IN THE EXISTING BUILDING. EXISTING CONDUIT RUNS ARE GENERALLY NOT SHOWN ALTHOUGH AN ATTEMPT HAS BEEN MADE TO SHOW SOME EXISTING CONDITIONS FOR WHICH THE INFORMATION HAS BEEN TAKEN FROM FIELD OBSERVATIONS OF THIS PROJECT. THE DRAWINGS SHOWING LOCATIONS OF EXISTING EQUIPMENT, OUTLETS, FIXTURES, ETC., IN EXISTING AREAS ARE APPROXIMATE ONLY (FIELD VERIFY).
14. BRANCH CIRCUITS SHALL BE REUSED WHERE PRACTICAL AND SHALL, IN ADDITION, BE REMODELED AS REQUIRED.
15. EXISTING ELECTRICAL WIRING WHICH WILL NOT BE MADE OBSOLETE AND WHICH WILL BE DISTURBED DUE TO CONSTRUCTION CHANGES REQUIRED BY THIS CONTRACT SHALL BE RESTORED TO OPERATING CONDITION AS REQUIRED AND/OR DIRECTED. WHERE REQUIRED, SHOWN AND/OR DIRECTED, OUTLETS AND CONDUIT RUNS SHALL BE RELOCATED. IN SOME CASES IT MAY BE NECESSARY TO EXTEND CONDUITS AND PULL IN NEW WIRING, INSTALL JUNCTION BOXES AND SPLICE IN NEW WIRING, OR REPLACE OLD WIRING WITH NEW.
16. OUTLETS FROM WHICH FIXTURES, SWITCHES, RECEPTACLES, AND/OR OTHER ELECTRICAL DEVICES ARE MOVED AND WHICH ARE NOT REPLACED OR REUSED SHALL BE REMOVED OR, IF IT IS NOT POSSIBLE TO REMOVE, HAVE A BLANK COVER PLACED ON THE OUTLET BOX. WHERE OUTLETS, BOXES, ETC. ARE COMPLETELY REMOVED, THE CONTRACTOR SHALL CUT OFF AND CAP CONDUITS AND REMOVE WIRING.
17. WHERE EXISTING CONDUIT IS TO BE ABANDONED, THE CONDUIT SHALL BE REMOVED IF IT IS EXPOSED, IN A CRAWL SPACE OR IN AN ACCESSIBLE CEILING. WHERE IT IS IMPOSSIBLE TO REMOVE THE CONDUIT, IT SHALL BE CUT OFF AND CAPPED OR PLUGGED.
18. WHERE EXISTING WIRE, CONDUIT AND OUTLET BOXES ARE NO LONGER USED, REMOVE WIRE BACK TO THE POWER SOURCE AND PROVIDE BLANK COVER ON OUTLET BOX. EXPOSED CONDUIT NOT REUSED SHALL BE REMOVED.
19. THE ELECTRICAL CONTRACTOR SHALL PERIODICALLY REMOVE FROM THE SITE ALL DEBRIS AND RUBBISH ACCUMULATING AS A RESULT OF THE ELECTRICAL INSTALLATION. UPON COMPLETION OF THE PROJECT, HE SHALL DISPOSE OF ALL DEBRIS AND RUBBISH AND SHALL LEAVE ALL AREAS CLEAN. THE INTERIORS OF ALL CABINETS, PULL BOXES, AND EQUIPMENT ENCLOSURES SHALL BE FREE OF ANY DEBRIS.
20. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND SHALL WORK WITH EXISTING SYSTEMS IN AN "AS FOUND" CONDITION.
21. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHOW OBSERVATIONS FROM CASUAL FIELD INVESTIGATIONS AND EXISTING DRAWINGS. FIELD VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND MOUNTING LOCATIONS. NOTIFY ENGINEER IF ANY DISCREPANCIES ARE FOUND THAT AFFECT THE WORK TO BE PERFORMED, PRIOR TO PROCEEDING.
22. ELECTRICAL JOINTS WILL BE PERMITTED ONLY IN JUNCTION AND OUTLET BOXES. ALL JOINTS SHALL BE FIRMLY BONDED TOGETHER AND TAPED OR SHALL BE MADE WITH MECHANICAL CONNECTORS.
23. WITHIN THIRTY (30) DAYS AFTER THE ELECTRICAL CONTRACTOR HAS BEEN NOTIFIED TO PROCEED WITH THE WORK, HE SHALL SUBMIT TO THE ENGINEER EIGHT (8) COPIES (OR ONE (1) ELECTRONIC COPY) OF EACH OF THE FOLLOWING DRAWINGS AND DATA SHEETS FOR REVIEW. ALL EQUIPMENT FOR WHICH SHOP DRAWINGS ARE BEING SUBMITTED SHALL NOT BE ORDERED UNTIL APPROVED DRAWINGS HAVE BEEN RETURNED. SUCH SUBMITTALS SHALL INCLUDE:
    - ELECTRICAL DISTRIBUTION EQUIPMENT, PANELBOARDS, CIRCUIT BREAKERS, CONTROLLERS AND DISCONNECT SWITCHES
24. ELECTRICAL MATERIALS SHALL BE NEW AND BEAR THE "UL" LABEL OR LISTING.
25. BRANCH CIRCUIT WIRE SHALL BE COPPER, RATED 75°C, MINIMUM SIZE #12 AWG, AND BE:
    (A) TYPE "THHN", "THWN", OR "THWN-2" AND INSTALLED IN CONDUIT (EMT, FOR INDOOR USE; SCHEDULE 40 PVC OR SCHEDULE 80 PVC, WHERE SUBJECT TO DAMAGE, FOR INDOOR WET LOCATIONS, AND SCHEDULE 40 PVC OR RMC FOR OUTDOOR USE), MINIMUM SIZE 1/2", OR
    (B) UNLESS OTHERWISE NOTED OR REQUIRED BY CODE.
    FEEDERS AND SECONDARY SERVICE CONDUCTORS SHALL BE STRANDED COPPER WITH 600 VOLT INSULATION, RATED 90°C, AND BE:
    (A) TYPE "THHN", "THWN", OR "THWN-2" AND BE INSTALLED IN EMT OR PVC CONDUIT, MINIMUM SIZE 1/2"
    (B) UNLESS OTHERWISE NOTED OR REQUIRED BY CODE
    INTERIOR MOTOR CONNECTIONS SHALL BE TYPE "MC" OR "AC" CABLE OR LIQUID TITE FLEXIBLE CONDUIT (BOTH WITH A 6FT. MAXIMUM LENGTH).
    ALL WIRE AND CABLE SHALL BE NEW AND SHALL BE DELIVERED TO PROJECT IN UNBROKEN AND UNDAMAGED CARTONS AND/OR REELS.
    ALL NEW BRANCH WIRING SHALL BE COLOR CODED BY THE FOLLOWING VOLTAGE SYSTEMS AND LABELED AT THEIR SOURCE PER 2011 NEC SECTION #210.5:

120/208V-3Ø-4W SYSTEM:	277/480V-3Ø-4W SYSTEM:
ØA - BLACK	ØA - BROWN
ØB - RED	ØB - ORANGE
ØC - BLUE	ØC - YELLOW
NEUTRAL - WHITE	NEUTRAL - N/A
E.G.C. - GREEN	E.G.C. - GREEN/YELLOW

    ALL CONDUIT AND JUNCTION BOXES SHALL BE APPROPRIATELY MARKED WITH THE CIRCUITS THEY CONTAIN AND A DESIGNATION THAT IT IS CONTAINING ELECTRICAL CONDUCTORS.
26. UNDERGROUND CONDUIT TO BE SCHEDULE 40 PVC OR SCHEDULE 80 PVC WHERE SUBJECT TO PHYSICAL DAMAGE.
27. FUSES SHALL BE "UL" LISTED, DUAL-ELEMENT AS MANUFACTURED BY BUSSMAN CO., OR APPROVED EQUAL (200,000 AIC).
28. DISCONNECT SWITCHES SHALL BE RATED 250V, OR 600V, FUSED OR NON-FUSED AS NOTED, HEAVY-DUTY, NEMA-1 FOR INDOOR USE, AND NEMA-3R FOR OUTDOOR USE BY SQUARE D OR SIMILAR.
29. PANELBOARDS SHALL BE RATED 277/480V, 3 PHASE, 4W OR 120/208V, 3 PHASE, 4W, AS NOTED WITH PLUG-IN/BOLT-ON TYPE BRANCH CIRCUIT BREAKERS RATED A MINIMUM OF 10,000 A.I.C. PANELBOARDS SHALL BE SIMILAR TO SQUARE D, TYPE NF, & NQ SERIES.
30. TRANSFORMERS SHALL BE ENERGY EFFICIENT, MEETING NEMA TP-1 STANDARDS, 277/480V, 3 PHASE, 4 WIRE PRIMARY WITH 120/208V, 3 PHASE, 4 WIRE SECONDARY, WITH WALL MOUNTING BRACKETS AND STANDARD TAPS.
31. FIRE CAULKING REQUIRED WHERE ANY PENETRATIONS ARE MADE THROUGH FIRE RATED WALLS, BY, E.C.
32. PROVIDE AN UPDATED, ACCURATE, AND TYPED PANEL SCHEDULE FOR ALL NEW AND EXISTING ELECTRICAL PANELS THAT ARE AFFECTED BY THE WORK IN THIS PROJECT. DOCUMENT ALL CHANGES ON FINAL AS-BUILT DRAWINGS AS REQUIRED. VERIFY ALL EXISTING LOADS AND WIRING - NOTIFY THE ARCHTIECT/ENGINEER IF EXISTING CONDITIONS ARE FOUND THAT VIOLATE INSTALLATION OR SAFETY CODES.
33. ALL NEW EQUIPMENT (DISCONNECTS, VARIABLE FREQUENCY DRIVES (VFD), ETC.) IDENTIFICATION SHALL BE APPROPRIATELY IDENTIFIED.
34. ANY NEW CONDUIT PENETRATIONS THROUGH WALL SHALL BE APPROPRIATELY FIRE-STOPPED, SMOKE-STOPPED, OR CAULKED WHEN PENETRATION SIZE EXCEEDS CONDUIT SIZE.
35. CIRCUITS SHOWN ON THE PLANS WITH AN * AFTER IT INDICATE THE CIRCUIT NUMBER FROM OLD DRAWINGS OR A TAKEOFF. E.C. IS TO VERIFY THE ACTUAL CIRCUIT AND USE IT IF DIFFERENT THAN THE CIRCUIT INDICATED.
36. E.C. SHALL FIELD VERIFY THAT ALL ADDITIONS AND CHANGES SHALL NOT OVERLOAD THE EXISTING CIRCUITS, PANELS, OR TOTAL SERVICE.

1419 Industry Drive
Traverse City, MI 49696
P 231.933.0510
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PROJECT TITLE:
City of Traverse City
Hardy Parking Deck Suite A-B Electrical Upgrades
Traverse City, MI

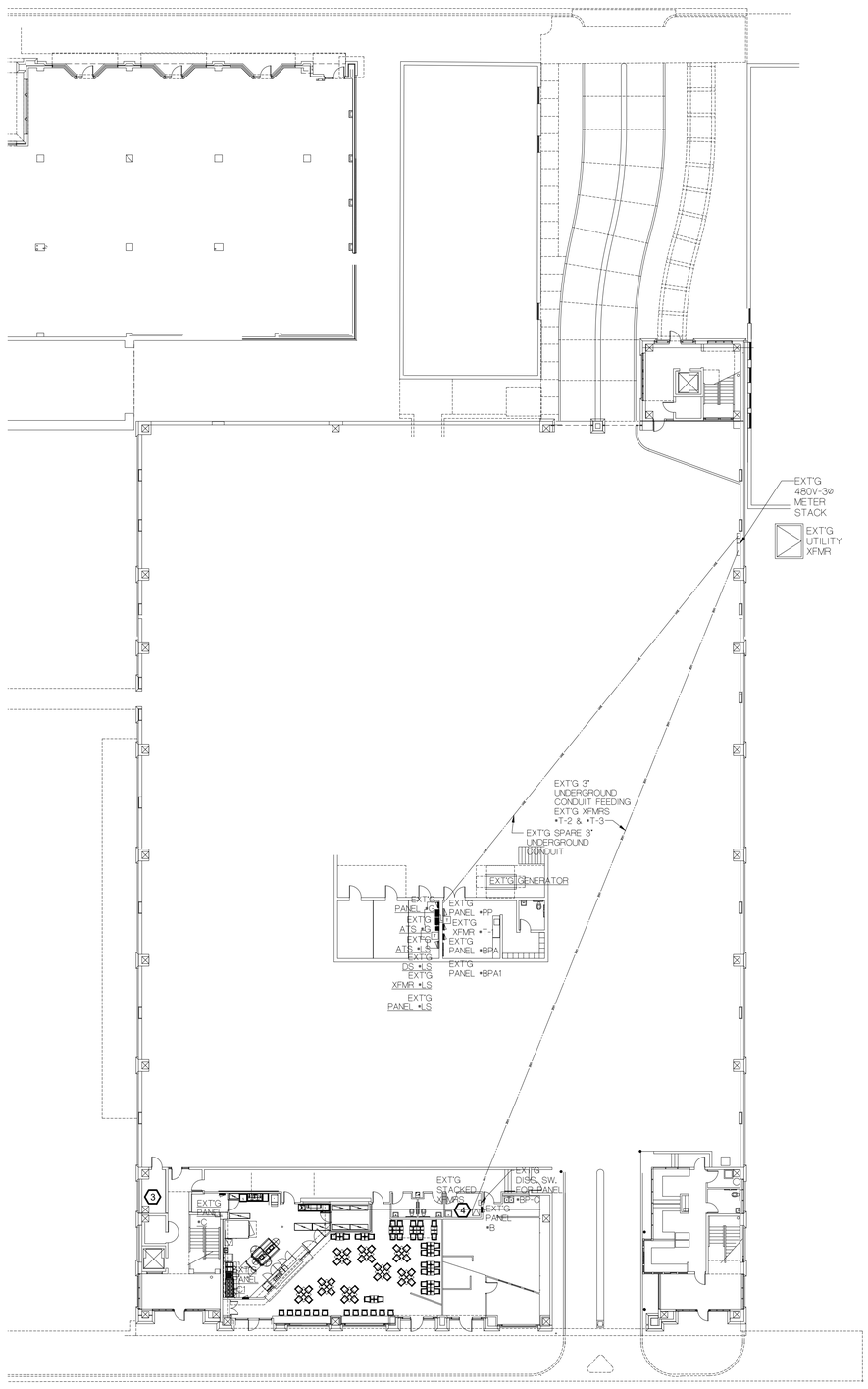
SHEET TITLE:
ELECTRICAL SCHEDULES & DETAILS

ENGR. PROJ.# 25013

DRAWN BY: JAV
CHECKED BY: JAV

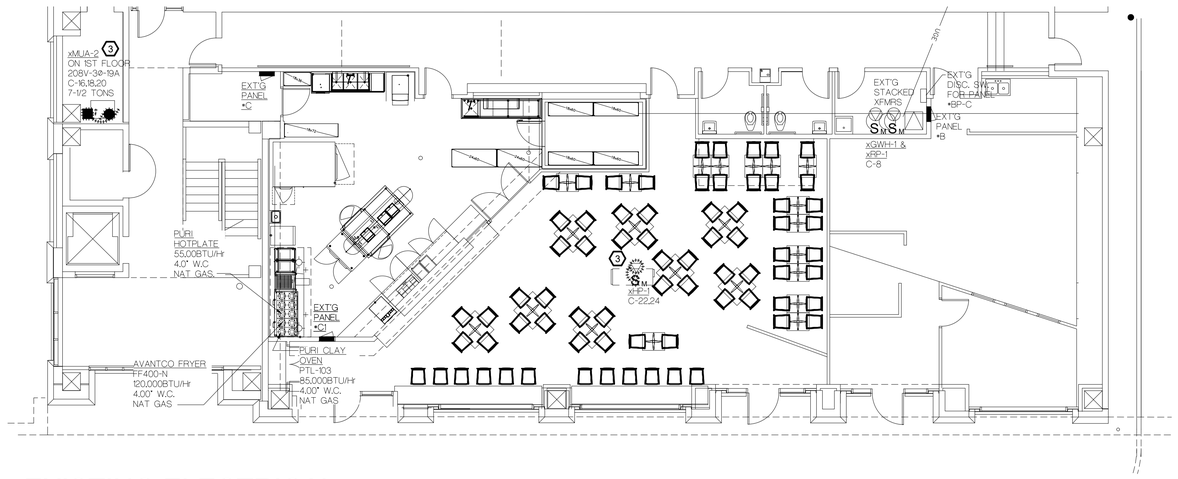
DATE:
04.25.2025 PLAN RVW/BIDS

SHEET NUMBER
E0



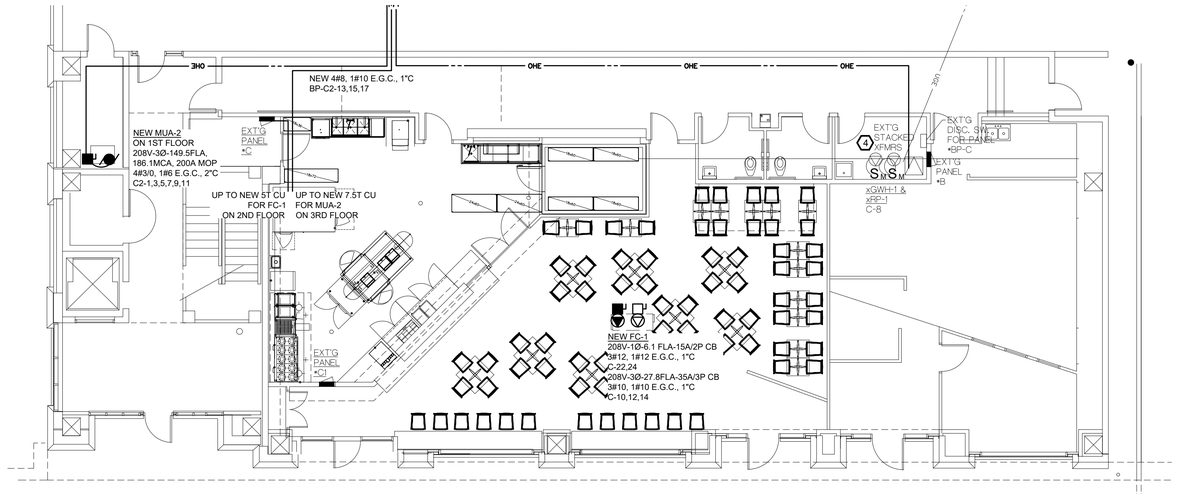
EXISTING ELECTRICAL
LEVEL 1 FLOOR PLAN

SCALE: 1" = 20'-0"



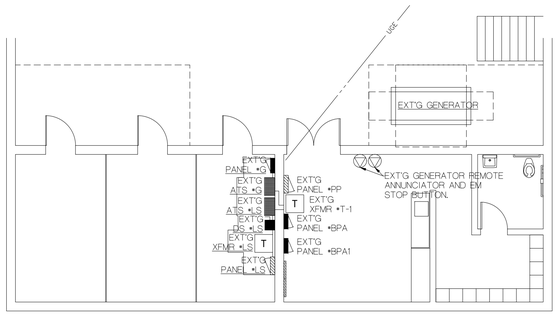
EXISTING ELECTRICAL
ENLARGED LEVEL 1 PLAN

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



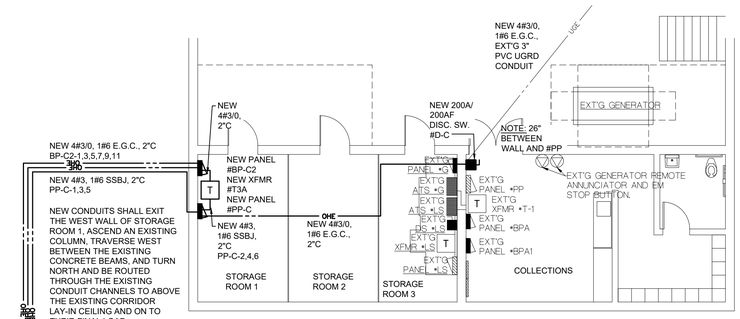
PROPOSED ELECTRICAL
ENLARGED LEVEL 1 PLAN

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



EXISTING ELECTRICAL
ENLARGED LEVEL 1 PLAN

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



PROPOSED ELECTRICAL
ENLARGED LEVEL 1 PLAN

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

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Traverse City, MI 49696
P 231.933.0510
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Hardy Parking Deck Suite A-B Electrical Upgrades
Traverse City, MI

SHEET TITLE:
MECHANICAL &ELECTRICAL
LEVEL 1
FLOOR PLANS

ENGR. PROJ.#
25013

DRAWN BY:
JAV
CHECKED BY:
JAV

DATE:
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PLAN RVW/BIDS

SHEET NUMBER
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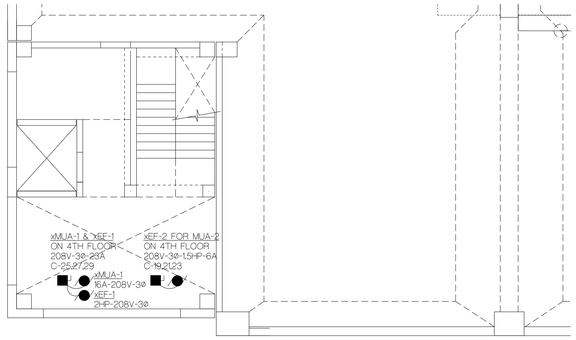
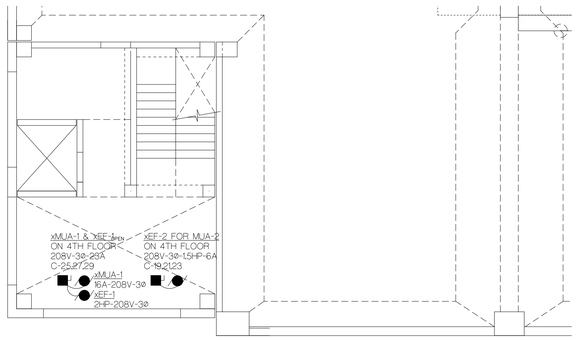


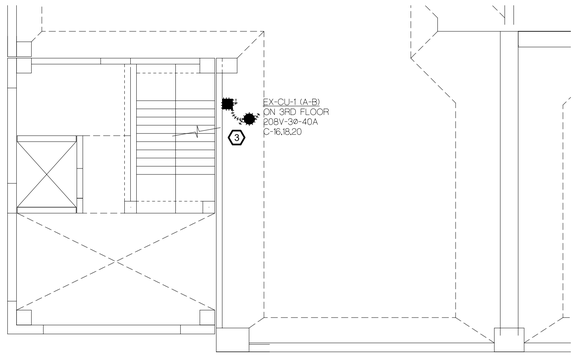
EXISTING ELECTRICAL ENLARGED LEVEL 4 PLAN

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



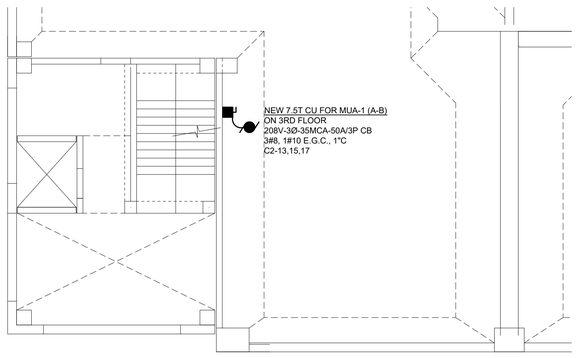
PROPOSED ELECTRICAL ENLARGED LEVEL 4 PLAN

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



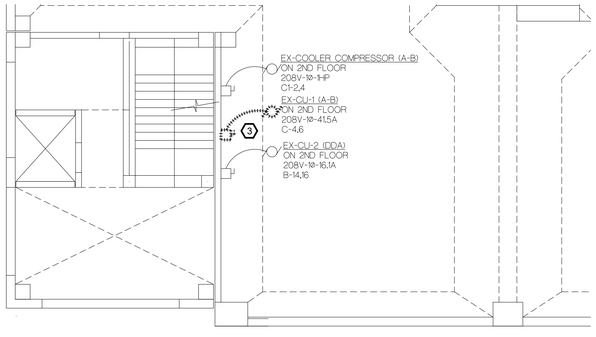
EXISTING ELECTRICAL ENLARGED LEVEL 3 PLAN

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



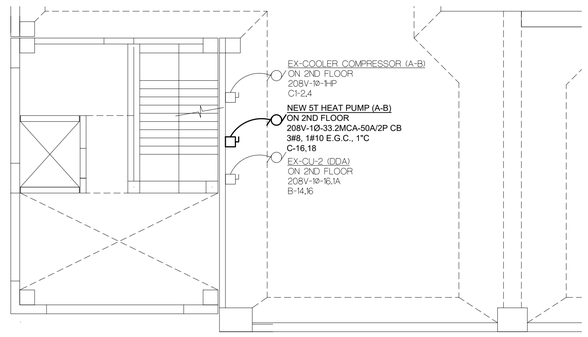
PROPOSED ELECTRICAL ENLARGED LEVEL 3 PLAN

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



EXISTING ELECTRICAL ENLARGED LEVEL 2 PLAN

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



PROPOSED ELECTRICAL ENLARGED LEVEL 2 PLAN

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

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Hardy Parking Deck Suite A-B Electrical Upgrades
Traverse City, MI

SHEET TITLE:
MECHANICAL &ELECTRICAL
LEVEL 1
FLOOR PLANS

ENGR. PROJ.#
25013

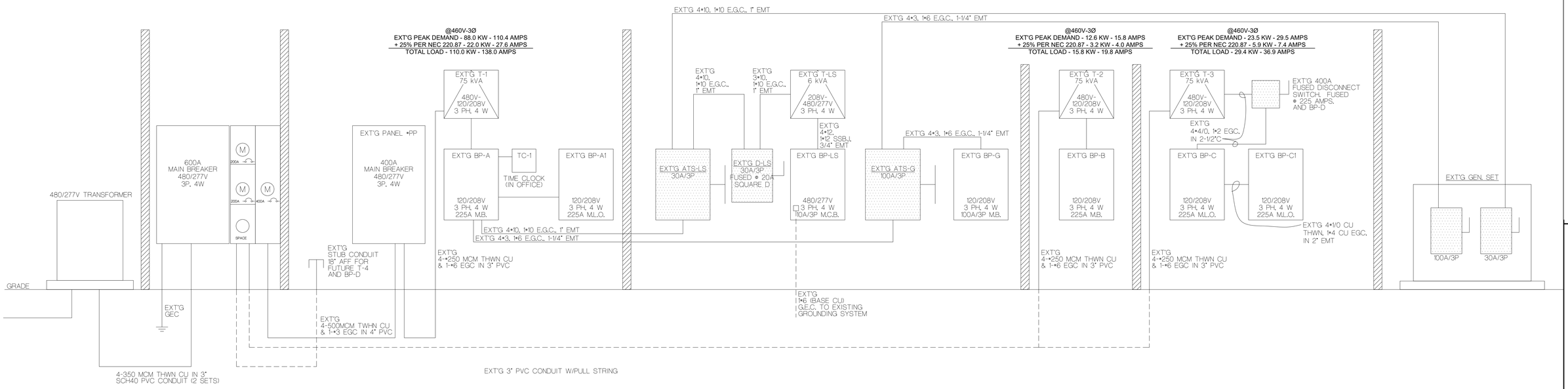
DRAWN BY:
JAV
CHECKED BY:
JAV

DATE:
04.25.2025
PLAN RVW/BIDS

SHEET NUMBER
E2

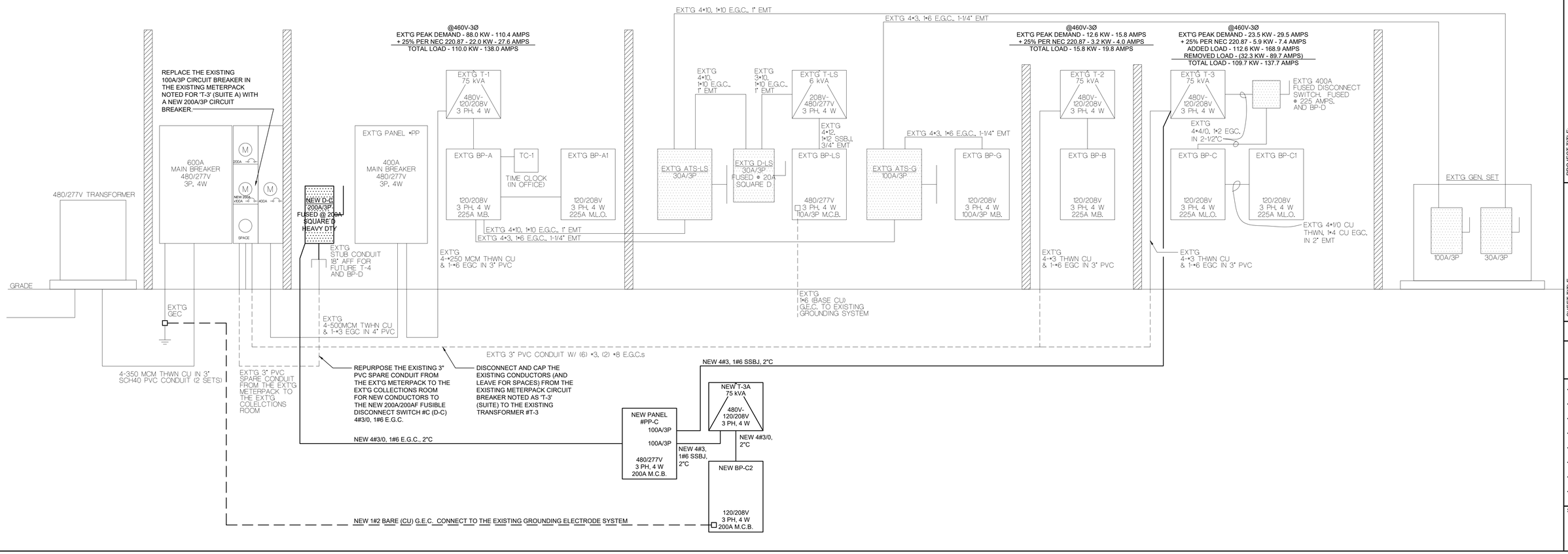
EXISTING ELECTRICAL RISER DIAGRAM

NO SCALE



PROPOSED ELECTRICAL RISER DIAGRAM

NO SCALE



1419 Industry Drive
Traverse City, MI 49696
P 231.933.0510
W www.nealisengineering.com
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PROJECT TITLE:
City of Traverse City
Hardy Parking Deck Suite A-B Electrical Upgrades
Traverse City, MI

SHEET TITLE:
ELECTRICAL RISER DIAGRAM & PANEL SCHEDULES

ENGR. PROJ.# 25013

DRAWN BY: JAV
CHECKED BY: JAV

DATE: 04.25.2025
PLAN RVW/BIDS

SHEET NUMBER
E3

EXT'G PANEL #BP-A

200 AMPS M.C.B. 120/208V-3Ø -4W SQUARE D TYPE NQ SURFACE PANEL

CIR NO.	AMP/ POLES	DESCRIPTION	LOAD	LOAD	DESCRIPTION	AMP/ POLES	CIR NO.
1	20/1	EXT'G RECEPTS - NE TOWER	***	***	EXT'G RECEPTS - SW TOWER	20/1	2
3	20/1	EXT'G GEN-SET BATTERY	***	***	EXT'G RECEPTS - RETAIL CORRIDOR	20/1	4
5	20/1	EXT'G GEN-SET COOLANT	***	***	EXT'G CU-3	25/2	6
7	20/1	SPARE	***				8
9	20/1	EXT'G UNKNOWN LOAD	***	***	EXT'G EH-2	30/2	10
11							12
13	100/3	EXT'G PANEL *BP-A1	***	***	EXT'G AIR COMPRESSOR	25/2	14
15							16
17	20/1	EXT'G RECEPTS - STORAGE, SHOP	***	***	SPARE	20/1	18
19	20/1	EXT'G RECEPTS - SHOP	***	***	SPARE	20/1	20
21	20/1	SPARE	***	***	SPARE	20/1	22
23	20/1	EXT'G RECEPTS - SE TOWER	***	***	EXT'G EXHAUST FANS - METER ROOM	15/1	24
25	20/1	EXT'G RECEPTS - OUTDOORJRRIGATION	***	***	EXT'G UNKNOWN LOAD	20/1	26
27	20/1	EXT'G RECEPTS - ELEVATOR *1 ROOM	***	***	EXT'G RECEPTS - ELEVATOR *2 ROOM	20/1	28
29	20/1	EXT'G ELEVATOR *1 CAR LIGHTS	***	***	EXT'G ELEVATOR *2 CAR LIGHTS	20/1	30
31	20/1	EXT'G RECEPTS - ELEVATOR *1 SMOKE	***	***	EXT'G RECEPTS - ELEVATOR *2 SMOKE	20/1	Ⓑ 32
33			***	***			34
35	20/3	EXT'G ATS *LS	***	***	EXT'G ATS*G	100/3	36
37			***	***			38
39	20/1	EXT'G UNKNOWN LOAD	***	***	SPARE	20/1	40
41	20/1	EXT'G UNKNOWN LOAD	***	***	SPARE	20/1	42

Ⓑ DENOTES BREAKER LOCK ON CIRCUIT BREAKER.

EXT'G PANEL #BP-A1

200 AMPS M.L.O. 120/208V-3Ø -4W SQUARE D TYPE NQ SURFACE PANEL

CIR NO.	AMP/ POLES	DESCRIPTION	LOAD	LOAD	DESCRIPTION	AMP/ POLES	CIR NO.
1	20/1	EXT'G CIRC PUMP *1	***	***	EXT'G BOILER *1	15/1	2
3	20/1	EXT'G CIRC PUMP *2	***	***	EXT'G BOILER *2 & *3	15/1	4
5	20/1	EXT'G CIRC PUMP *3	***	***	EXT'G RECEPTS - TENANT STORAGE	25/1	6
7	30/2	EXT'G BASEBRD HTR-METER REPAIR RM	***	***	EXT'G BASEBRD HTR-LOCKER ROOM	30/2	8
9							10
11	50/2	EXT'G HEAT PUMP-PARK'G GARAGE OFF.	***	***	EXT'G UNKNOWN LOAD	20/1	12
13				***	EXT'G BASEBRD HTR-MAIN OFFICE	20/2	14
15	20/1	EXT'G UNKNOWN LOAD	***				16
17	20/1	EXT'G UNKNOWN LOAD	***	***	SPARE	20/1	18
19	20/3	EXT'G UNKNOWN LOAD	***	***	SPARE	20/1	20
21				***	EXT'G CHARGING OUTLET DDA HALL	20/1	22
23				***	EXT'G CONDENSING UNIT-MECH. RM.	20/2	24
25	20/2	EXT'G LOBBY HEATER	***				26
27				***	SPARE	20/1	28
29	--	SPACE	---	---	SPACE	--	30
31	--	SPACE	---	---	SPACE	--	32
33	--	SPACE	---	---	SPACE	--	34
35	--	SPACE	---	---	SPACE	--	36
37	--	SPACE	---	---	SPACE	--	38
39	--	SPACE	---	---	SPACE	--	40
41	--	SPACE	---	---	SPACE	--	42

EXT'G PANEL #BP-C

225 AMPS M.L.O. 120/208V-3 -4W SQUARE D TYPE NQOD SURFACE PANEL
PANEL WITH 150A/3P CIRCUIT BREAKER TO FEED EXT'G PANEL #BP-C1

CIR NO.	AMP/ POLES	DESCRIPTION	LOAD	LOAD	DESCRIPTION	AMP/ POLES	CIR NO.
1	20/1	DINING ROOM LIGHTS	***	***	OFFICE	20/1	2
3	20/1	DINING ROOM LIGHTS	***	---	SPARE	15/1	4
5	20/1	DINING ROOM LIGHTS	***	***	GWH-1 & RP-1	20/1	6
7	20/1	DINING ROOM LIGHTS	***	***	HEAT TRACE-WATER LINE	20/1	8
9	20/1	DINING ROOM LIGHTS	***				10
11	20/1	DINING ROOM LIGHTS	***	***	EXT'G CU-1 - 2ND FLOOR	50/3	12
13	20/1	KITCHEN LIGHTS - EM LIGHTS	***				14
15	20/1	INSIDE SIGN	***				16
17	20/1	EM LIGHTS - DINING ROOM	***	***	EXT'G MUA-2	20/3	18
19							20
21	15/3	EF-2	***	***	HEATER-1 CEILING DINING ROOM	60/2	22
23							24
25				***	SCONCE LIGHTS	20/1	26
27	25/3	MUA-1 & EF-1	***	***	RECEPTACLES EXTERIOR WALLS	20/1	28
29				***	OUTSIDE SIGN	20/1	30

EXISTING PEAK DEMAND - 23.5 KW - 65.2 AMPS, INCLUDES EXISTING PANEL *BP-C1

* DENOTES GFI WITH 30MA TRIP, CIRCUIT BREAKER

EXT'G PANEL #BP-C1

225 AMPS M.L.O. 120/208V-3 -4W SQUARE D TYPE NQOD RECESSED PANEL

CIR NO.	AMP/ POLES	DESCRIPTION	LOAD	LOAD	DESCRIPTION	AMP/ POLES	CIR NO.
1	20/1	*1 SMOKER - HOOD LIGHTS	***	***	*21A COOLER COMPRESSOR	15/2	2
3	20/1	*6 REACH-IN REFRGERATOR & RANGE	***				4
5	20/1	*7 FREEZER COUNTER	***	***	SPARE	20/1	6
7	20/1	*9 HEATED CABINET	***	***	*21B COOLER EVAPORATOR	20/1	8
9	20/1	*9 HEATED CABINET	***	***	*21C & *21D COOLER DOOR HTR & LTS	20/1	10
11	50/2	*12 UNDERCOUNTER DISHWASHER	***	***	*25 RECEPTACLES & CASH REGISTER	20/1	12
13				***	*26 REFRIGERATED COUNTER	20/1	14
15	20/1	*15 ICE MAKER	***	***	*27 FOOD WARMER	20/1	16
17	20/1	*18 FOOD SLICER & HALL FREEZER	***	***	*27 FOOD WARMER	20/1	18
19	20/1	*19 FOOD PROCESSOR	***	***	*28 REFRIGERATED COUNTER	20/1	20
21	20/1	*38 DIGITAL SCALES RECEPTACLES	***	***	*29A SODA DISPENSER	20/1	22
23	20/1	HOOD LIGHTS	***	***	*29B ICE MAKER	20/1	24
25	60/2	BAR FEED	***	***	*30 COFEE BREWER	20/1	26
27				***	*31 TEA BREWER	20/1	28
29	20/1	ICE MACHINE	***	***	*25 RECEPTACLES	20/1	30

EXT'G PANEL #PP

400 AMPS M.C.B. 480/277V-3Ø -4W SQUARE D TYPE NF SURFACE PANEL

CIR NO.	AMP/ POLES	DESCRIPTION	LOAD	LOAD	DESCRIPTION	AMP/ POLES	CIR NO.
1							2
3	40/3	EXISTING PUMP P-4	***	***	EXISTING PUMP P-5	40/3	4
5							6
7							8
9	40/3	EXISTING PUMP P-6	***	***	EXISTING PUMP P-7	40/3	10
11							12
13							14
15	70/3	EXISTING ELEVATOR *1	***	***	EXISTING ELEVATOR *3	70/3	16
17							18
19				***	EXT'G LTS - SIGN	20/1	Ⓛ 20
21	100/3	EXISTING XFMR *T-1 / PANEL *BP-A	***	***	EXT'G LTS - LEVEL 3 E. OUTER & 3 S.E.	20/1	Ⓛ 22
23				***	EXT'G LTS - LEVEL 4 POLE LTS EAST	20/1	Ⓛ 24
25	20/1	Ⓛ EXT'G LTS - LEVEL 4 POLE LTS WEST	***	***	EXT'G UNKNOWN LOAD	20/1	Ⓛ 26
27	20/1	Ⓛ EXT'G LTS - LEVEL 3	***	***	EXT'G LTS - LEVEL 3 WEST & S.W.	20/1	Ⓛ 28
29	20/1	Ⓛ EXT'G UNKNOWN LOAD	***	***	EXT'G LTS - LEVEL 2 W. OUTER	20/1	Ⓛ 30
31	20/1	Ⓛ EXT'G UNKNOWN LOAD	***	***	EXT'G LTS - LEVEL 1 & LEVEL 2 INNER	20/1	Ⓛ 32
33	20/1	Ⓛ EXT'G LTS - LEVEL 1	***	***	EXT'G UNKNOWN LOAD	20/1	Ⓛ 34
35	20/1	Ⓛ EXT'G LTS - LEVEL 2 E. OUTER & 2 S.E.	***	***	EXT'G UNKNOWN LOAD	20/1	Ⓛ 36
37	20/1	SPARE	***	***	EXT'G LTS	20/1	Ⓛ 38
39	20/1	SPARE	***	***	EXISTING OFFICE TIME CLOCK	30/1	Ⓛ 40
41	20/1	SPARE	***	***	EXT'G LTS - SNOW CHUTE	20/1	Ⓛ 42

Ⓛ DENOTES CIRCUIT PRESENTLY PASSES THRU LIGHTING CONTROL PANEL.

REVISED PANEL #BP-C

225 AMPS M.L.O. 120/208V-3 -4W SQUARE D TYPE NQOD SURFACE PANEL
PANEL WITH 150A/3P CIRCUIT BREAKER TO FEED EXT'G PANEL #BP-C1

CIR NO.	AMP/ POLES	DESCRIPTION	LOAD	LOAD	DESCRIPTION	AMP/ POLES	CIR NO.
1	20/1	DINING ROOM LIGHTS	***	***	OFFICE	20/1	2
3	20/1	DINING ROOM LIGHTS	***	---	SPARE	15/1	4
5	20/1	DINING ROOM LIGHTS	***	***	GWH-1 & RP-1	20/1	6
7	20/1	DINING ROOM LIGHTS	***	***	HEAT TRACE-WATER LINE	20/1	8
9	20/1	DINING ROOM LIGHTS	***				10
11	20/1	DINING ROOM LIGHTS	***	10,000	NEW 5-TON FAN COIL ELECTRIC HEAT	NEW 35/3	12
13	20/1	KITCHEN LIGHTS - EM LIGHTS	***				14
15	20/1	INSIDE SIGN	***	6,906	NEW 5-TON HEAT PUMP	NEW 50/2	16
17	20/1	EM LIGHTS - DINING ROOM	***				18
19				---	SPARE	20/1 N	20
21	15/3	EF-2	***	1,269	NEW 5-TON FAN COIL	NEW 15/2	22
23							24
25				***	SCONCE LIGHTS	20/1	26
27	25/3	MUA-1 & EF-1	***	***	RECEPTACLES EXTERIOR WALLS	20/1	28
29				***	OUTSIDE SIGN	20/1	30

EXISTING PEAK DEMAND - 23.5 KW - 65.2 AMPS, INCLUDES EXISTING PANEL *BP-C1

* DENOTES GFI WITH 30MA TRIP, CIRCUIT BREAKER

EXISTING PEAK DEMAND	23.5 KW	65.2 AMPS
+ 25% PER NEC 220.87	5.9 KW	16.3 AMPS
REMOVED LOAD	(32.3 KW)	(89.7 AMPS)
ADDED LOAD	18.2 KW	50.4 AMPS
TOTAL LOAD	27.9 KW	77.3 AMPS

EXT'G PANEL #LS

10 AMPS M.C.B. 480/277V-3Ø -4W SQUARE D TYPE NF SURFACE PANEL WITH TRIM KIT, GROUND BAR KIT, COPPER MAINS, AND SOLID NEUTRAL

CIR NO.	AMP/ POLES	DESCRIPTION	LOAD	LOAD	DESCRIPTION	AMP/ POLES	CIR NO.
1	20/1	LIGHTS - EMERGENCY	***	---	SPARE	20/1	2
3	20/1	LIGHTS - EMERGENCY	***	---	SPARE	20/1	4
5	20/1	LIGHTS - EMERGENCY	***	---	SPARE	20/1	6
7	--	SPACE	---	---	SPACE	--	8
9	--	SPACE	---	---	SPACE	--	10
11	--	SPACE	---	---	SPACE	--	12
13	--	SPACE	---	---	SPACE	--	14
15	--	SPACE	---	---	SPACE	--	16
17	--	SPACE	---	---	SPACE	--	18

EXT'G PANEL #G

100 AMPS M.C.B. 120/208V-3Ø -4W SQUARE D TYPE NQ SURFACE PANEL WITH TRIM KIT, GROUND BAR KIT, COPPER MAINS, AND SOLID NEUTRAL

CIR NO.	AMP/ POLES	DESCRIPTION	LOAD	LOAD	DESCRIPTION	AMP/ POLES	CIR NO.
1	20/1	EXT'G COMM CKT (SERVER)	***	***	EXT'G RECEPTS - OFFICE	20/1	2
3	20/1	EXT'G COMM CKT (SERVER)	***	***	EXT'G COILING DOOR	20/1	4
5	20/1	EXT'G STATE ST EXIT PEDASTAL	***	***	EXT'G DOOR OPENERS/STATE ST GATE	20/1	6
7	20/1	EXT'G PAY STATION	***	***	EXT'G RECEPTS - OFFICE (AMY/GREG)	20/1	8
9	20/1	EXT'G COILING DOOR	***	***	EXT'G RECEPTS - COUNTER	20/1	10
11	20/1	EXT'G DOOR OPENERS	***	***	EXT'G COPIER/OFFICE LIGHTS	20/1	12
13	20/1	EXT'G RECEPTS - OFFICE (NICOLE)	***	***	EXT'G TIME CLOCK	20/1	14
15	20/1	EXT'G RECEPTS - OFFICE (CLERK)	***	***	EXT'G COMP. OUTLET (CLERK)	20/1	16
17	20/1	SPARE	---	***	EXT'G COMP. OUTLET CASHIER (CLERK)	20/1	18
19	20/1	SPARE	---	***	EXT'G COMPUTER ROOM DED. CIRCUIT	20/1	20
21	20/1	SPARE	---	---	SPARE	20/1	22
23	--	SPACE	---	---	SPACE	--	24
25	--	SPACE	---	---	SPACE	--	26
27	--	SPACE	---	---	SPACE	--	28
29	--	SPACE	---	---	SPACE	--	30

NEW PANEL #PP-C

200 AMPS M.C.B. 480/277V-3 -4W SQUARE D TYPE NF SURFACE MTD. PANEL

CIR NO.	AMP/ POLES	DESCRIPTION	LOAD	LOAD	DESCRIPTION	AMP/ POLES	CIR NO.
1							2
3	100/3	EXISTING XFMR #T-3 (75 kVA)	27900	66500	NEW XFMR #T-3A (75 kVA)	100/3	4
5							6
7	--	SPACE	---	---	SPACE	--	8
9	--	SPACE	---	---	SPACE	--	10
11	--	SPACE	---	---	SPACE	--	12
13	--	SPACE	---	---	SPACE	--	14
15	--	SPACE	---	---	SPACE	--	16
17	--	SPACE	---	---	SPACE	--	18
19	--	SPACE	---	---	SPACE	--	20
21	--	SPACE	---	---	SPACE	--	22
23	--	SPACE	---	---	SPACE	--	24
25	--	SPACE	---	---	SPACE	--	26
27	--	SPACE	---	---	SPACE	--	28
29	--	SPACE	---	---	SPACE	--	30

TOTAL PANEL LOAD = 94.4 KW - 118.5 A
CONTAINS CAPACITY FOR 36KW EWH REPLACEMENT OF EXT'G GWH

NEW PANEL #BP-C2

200 AMPS M.C.B. 120/208V-3 -4W SQUARE D TYPE NQ SURFACE MTD. PANEL

CIR NO.	AMP/ POLES	DESCRIPTION	LOAD	LOAD	DESCRIPTION	AMP/ POLES	CIR NO.
1				---	SPACE	--	2
3				---	SPACE	--	4
5	200/3	NEW MAKEUP AIR UNIT #2 (1ST FLOOR STORAGE ROOM)	53,860	---	SPACE	--	6
7				---	SPACE	--	8
9				---	SPACE	--	10
11				---	SPACE	--	12
13				---	SPACE	--	14
15	50/3	NEW 7.5 TON CONDENSING UNIT FOR MAKEUP AIR UNIT #2	12,609	---	SPACE	--	16
17				---	SPACE	--	18
19	--	SPACE	---	---	SPACE	--	20
21	--	SPACE	---	---	SPACE	--	22
23	--	SPACE	---	---	SPACE	--	24
25	--	SPACE	---	---	SPACE	--	26
27	--	SPACE	---	---	SPACE	--	28
29	--	SPACE	---	---	SPACE	--	30

TOTAL PANEL LOAD = 66.5 KW - 184.5 A

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