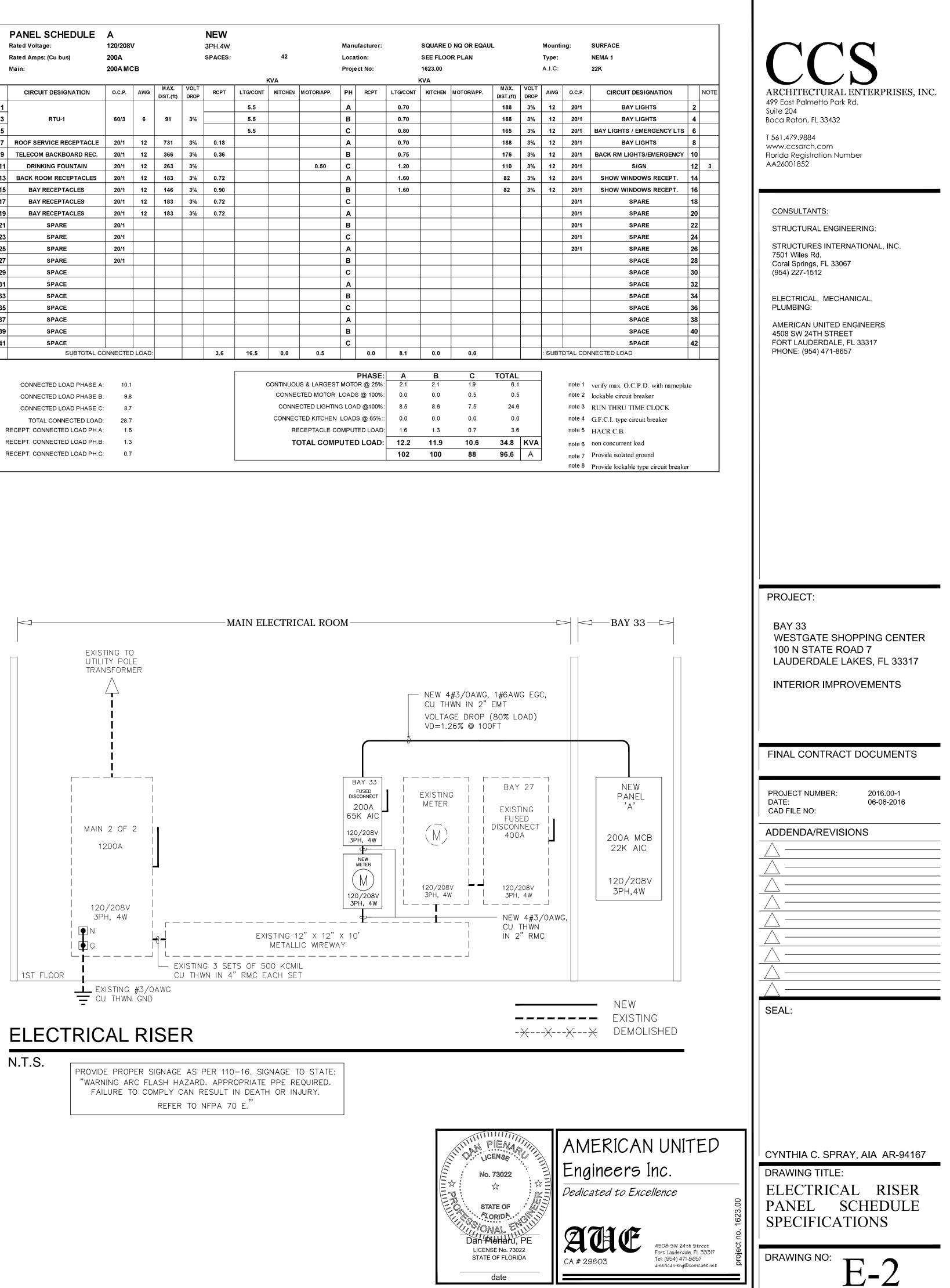
	VOLTAGE DROP CALCULATIONS
1. MATERIALS AND INSTALLATION, AS A MINIMUM, ARE TO CONFORM WITH THE ADOPTED EDITION OF THE NATIONAL ELECTRIC CODE NEC 2011, FBC 2014 (5TH EDITION), FFPC 2014, NFPA 72 2010, LOCAL CODES, ORDINANCES, INCLUDING ALL AMENDMENTS TO THE N.E.C EQUIPMENT, WHERE APPLICABLE, WILL BE LISTED WITH THE UNDERWRITERS LABORATORIES, INC. QUALITY AND WORKMANSHIP ESTABLISHED BY DRAWINGS AND SPECIFICATIONS ARE NOT TO BE REDUCED BY THE ABOVE MENTIONED CODES.	1. 3% VOLTAGE DROP CALCULATED FOR EVERY BRANCH CIRCU SHOWS MAXIMUM DISTANCE ALLOWED FOR THE SPECIFIED W SIZE BASED ON DESIGNED LOAD.
TO THE BEST OF OUR KNOWLEDGE AND ABILITY THESE DRAWINGS REPRESENT AN ACCURATE PRESENTATION OF EXISTING CONDITIONS BASED UPON CAREFUL EVALUATION OF OBSERVED CONDITIONS TO THE EXTENT REASONABLY POSSIBLE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND IMEDIATELY NOTIFY ENGINEER WITH ANY DISCREPANCY.	2. ALL CIRCUITS HAVE BEEN VERIFIED ON FLOOR PLANS BASEI ON HORIZONTAL STRAIGHT RUNS WITH ADDITIONAL 30 FEET OF VERTICAL RUNS. ACTUAL DISTANCES FOR EVERY CIRCUIT
BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF WORK. THE SUBMISSION OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION BEEN MADE, WILL NOT BE ALLOWED.	RUN SHALL BE FIELD MEASURED BY THE ELECTRICAL CONTRACTOR. CONTRACTOR SHALL PROVIDE NEXT WIRE SIZ FOR RUNS OVER MAXIMUM DISTANCE SHOWN ON PANEL SCHEDULES.
ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST-CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM IS TO BE FULLY OPERABLE AND ACCEPTANCE OF THIS SYSTEM BY THE ENGINEER MUST BE A CONDITION OF THE SUB CONTRACT.	NOTES: AN OPERATING MANUAL AND MAINTENANCE MANUAL SHALL PROVIDED TO THE BUILDING OWNER AS PER FBC 2014 405.7.4.2.
ALL WORK TO BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION. CONTRACTOR TO GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF ACCEPTANCE. CORRECTION OF ANY DEFECTS TO BE COMPLETED WITHOUT ADDITIONAL CHARGE AND TO NCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY. ALL REQUIRED INSURANCE TO BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY OF PROPERTY DAMAGE FOR THE DURATION OF THE WORK.	<ul> <li>MANUALS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:         <ol> <li>SUBMITTAL DATA STATING EQUIPMENT RATING AND SELEC</li> <li>OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE</li> <li>OPERATION MANUALS AND MAINTENANCE MANUALS FOR</li> <li>EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED</li> <li>ROUTINE MAINTENANCE SHALL BE CLEARLY IDENTIFIED.</li> <li>NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED</li> </ol> </li> </ul>
CONTRACTOR TO PAY FOR ALL PERMITS, FEES INSPECTIONS AND TESTINGS. ELECTRICAL INSTALLATION TO MEET ALL STANDARD REQUIREMENTS OF LOCAL POWER AND	
TELEPHONE COMPANIES. ELECTRICAL CONTRACTOR SHALL CONTACT LOCAL POWER AND TELEPHONE COMPANIES PRIOR TO START OF CONSTRUCTION. . ALL WIRING SHALL BE IN CONDUIT UNLESS OTHERWISE NOTED, MINIMUM WIRE SIZE SHALL BE #12 AWG, EXCLUDING CONTROL WIRING. ALL CONDUCTORS SHALL BE COPPER WITH	
THWN/THHN INSULATION. CONDUCTORS #10 AND SMALLER MAY BE SOLID; ALL THOSE #8 AND LARGER TO BE STRANDED. ALL UNDERGROUND RACEWAYS SHALL BE MINIMUM 3/4", GALVANIZED RIGID STEEL CONDUIT OR SCHEDULE 40 PVC. ALL OTHER RACEWAYS TO COMPLY WITH GOVERNING CODES. WHERE RIGID STEEL IS USED, IT SHALL BE COMPLETELY COATED WITH AN ALKALI AND RUST RESISTANT BITUMASTIC PAINT, COPPER NO. 50, AND THREADS SHALL BE COATED WITH ZINC CHROMATE. RIGID STEEL SHALL ALSO BE USED WHEN CONDUIT IS EXPOSED TO EXTERIOR ENVIRONMENT SUCH AS EXTERIOR OF BUILDING OR WHERE IT IS EXPOSED AND SUBJECT TO DAMAGE, INSIDE OF BUILDING.	
OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET OR DAMP LOCATIONS, AND BE OF SPECIAL CONSTRUCTION FOR OTHER CLASSIFIED AREAS. ALL BOXES SHALL BE RECESSED (FLUSH) IN WALLS OR	г
CEILINGS WHENEVER POSSIBLE. DISCONNECT SWITCHES SHALL BE H.P. RATED, GENERAL DUTY, QUICK-MAKE, QUICK-BREAK TYPE. ENCLOSURES SHALL BE AS REQUIRED BY N.E.C. AND LOCATION (WEATHERPROOF, EXPLOSION PROOF, ETC.). ENGRAVED LAMINATED PLASTIC IDENTIFICATION PLATES SHALL BE FURNISHED AND INSTALLED ON ALL DISCONNECT SWITCHES, CONTACTORS AND STARTERS.	EXISTING MAIN 2/2
LL FUSES FOR SAFETY SWITCHES SHALL BE DUAL ELEMENT, CARTRIDGE TYPE. FUSES HALL BE THOSE MANUFACTURED BY EITHER BUSSMAN OR LITTLEFUSE. THE CONTRACTOR HALL FURNISH TO THE OWNER ONE SPARE FUSE FOR EACH SIZE AND TYPE OF FUSE ISTALLED. FUSES 600 AMPS OR LESS SHALL BE CLASS RK1, TYPICAL UNLESS THERWISE NOTED. FUSES OVER 600 AMPS SHALL BE CLASS L.	EXISTING MAIN 1/2
LL GENERAL PURPOSE SWITCHES AND RECEPTACLES SHALL BE THE PRODUCT OF A NGLE MANUFACTURER. CATALOG NUMBERS LISTED ARE LEVITON: HOWEVER, COMPARABLE EVICES BY PASS & SEYMOUR, BRYANT, OR ARROW HART WILL BE ACCEPTED. COLOR F DEVICES AND PLATES SHALL BE WHITE UNLESS DICTATED OTHERWISE BY RCHITECT/OWNER.	
IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS OR A COMPLETE ELECTRICAL SYSTEM, AND PROVIDE ALL NECESSARY DEVICES AND COMPONENTS FOR EQUIPMENT BE PLACED IN PROPER WORKING ORDER.	
SEPARATE, GREEN TYPE THWN COPPER GROUND CONDUCTOR SHALL BE RUN FROM OUND LUG OF EACH GROUNDED RECEPTACLE TO AN APPROVED CONNECTION INSIDE E ENCLOSING STEEL OUTLET BOX. DEVICE MOUNTING SCREWS SHALL NOT BE INSIDERED AN APPROVED GROUND. A SEPARATE GROUND CONDUCTOR SHALL BE STALLED IN EVERY CONDUIT AND RACEWAY AND SECURELY BONDED IN AN APPROVED OUNDING TERMINAL AT BOTH ENDS OF THE RUN. THE GROUNDING CONDUCTOR SHALL SIZED IN ACCORDANCE WITH TABLE 250-122 OF THE N.E.C. CONTRACTOR SHALL	FUTURE METER AND
IZE CONDUIT TO ACCOMMODATE ADDITIONAL CONDUCTOR. DAD DATA IS BASED ON INFORMATION GIVEN TO THE ENGINEER AT THE TIME OF DESIGN. ERIFY ALL EQUIPMENT NAMEPLATE RATINGS BEFORE ORDERING.	FUTURE METER AND       FUTURE METER AND       DISCONNECT BELOW       BAY 37
RCUITS SHOWN ON PLANS ARE TO DETERMINE LOAD DATA AND PANEL SIZES. THE DNTRACTOR IS TO PROVIDE CIRCUITS AND ROUTING OF CONDUITS TO SUIT JOB DNDITIONS. JRNISH AND INSTALL DISCONNECT SWITCHES, WIRING, AND CONNECTIONS ON AIR	FUTURE METER AND
ONDITIONING SYSTEM AS SHOWN ON PLANS. ELECTRICAL CONTRACTOR SHALL PROVIDE ONDUIT AND WIRING FROM C.U.TO A.H.U. ,TERMINATION SHALL BE PERFORMED BY ECHANICAL CONTRACTOR. LL FLUORESCENT LIGHT FIXTURES SHALL HAVE IN LINE FUSING AND ENERGY SAVING	BAY 35 BAY 35 BAY 35 DISCONNECT BELOW BAY 33
BALLASTS. (ONLY REQUIRED IN MIAMI DADE COUNTY) ALL SWITCHGEAR, PANELS, STARTERS, CONTACTORS ETC., SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER, THE SYSTEM DESIGN IS BASED ON SQUARE "D"; HOWEVER, COMPARABLE EQUIPMENT BY G.E. & SIEMENS ONLY WILL BE ACCEPTABLE. TANDEM AND	
LF-SPACE CIRCUIT BREAKERS SHALL NOT BE USED. OVIDE IDENTIFICATION FOR ALL PANELS, CABINETS, ENCLOSURES, DISCONNECTS & ANSFORMERS USING ENGRAVED NAMEPLATES, WHITE LETTERING ON A BLACK CKGROUND. NAMEPLATES SHALL IDENTIFY PANEL DESIGNATION (NAME,) VOLTAGE, PHASE WIRE CONFIGURATION. PROVIDE TYPEWRITTEN DIRECTORIES UNDER PLASTIC COVER FOR L PANEL BRANCH CIRCUITS, CLEARLY INDICATING AREA AND TYPE OF LOAD SERVED BY CH BRANCH CKT PROTECTIVE DEVICE, INCLUDING SPARES. HAND PRINTED WILL NOT	
BE ACCEPTED. ENGRAVED, LAMINATED PLASTIC IDENTIFICATION PLATES SHALL BE FURNISHED AND INSTALLED ON ALL PANELS AND SWITCHGEAR. PLATES SHALL BE AFFIXED TO FRONT OF PANELS, INDICATING PANEL NAME, VOLTAGE AND AMPERAGE.	
ALL UNDERGROUND PVC CONDUIT RUNS SHALL HAVE RIGID STEEL ELBOWS AND RIGID STEEL SECTIONS AT SLAB PENETRATIONS WHERE SUBJECT TO POSSIBLE DAMAGE. WHERE RIGID STEEL IS USED, IT SHALL BE COMPLETELY COATED WITH AN ALKALI AND RUST-RESISTANT BITUMASTIC PAINT, COPPER NO. 50, AND THREADS SHALL BE COATED	
ITH ZINC CHROMATE. HE ELECTRICAL CONTRACTOR SHALL MEET AND COORDINATE WITH THE LOCAL POWER OMPANY AT THE SITE PRIOR TO CONSTRUCTION. AT THAT TIME, THE CONTRACTOR HALL COORDINATE ALL RELATED WORK WITH THE UTILITY COMPANY'S RESPONSIBILITIES O MEET THE OWNER'S SCHED.	
ALL ELECTRICAL CONDUCTORS SHALL BE INSTALLED IN AN APPROVED RACEWAY, EMT, MC, RIGID GALVANIZED CONDUIT OR SCHEDULE 40 P.V.C. THERE SHALL BE NO TYPE NM' AND ELECTRICAL NON-METALLIC TUBING USED FOR BRANCH CIRCUITING. MAXIMUM NUMBER OF 120V CIRCUITS ALLOWED IN A COMMON CONDUIT SHALL BE SIX (6). "MC" YPE CABLE SHALL NOT BE USED AS HOME RUNS. THE CONTRACTOR SHALL STRICTLY CONFORM TO THE N.E.C. REQUIREMENTS OF DERATING FOR CONDUCTOR AMPACITY AND CONDUIT FILL.	
CONDUCTORS SHALL BE COLOR CODED AS FOLLOWS:208V SYSTEM NEUTRAL - WHITE240V (HIGH LEG) SYSTEM NEUTRAL - WHITE480V SYSTEM NEUTRAL - WHITEPHASE SEQUENCE ABC, TOP TO BOTTOM LEFT TO RIGHT, PHASE A - BLACKPHASE A - BLACK PHASE B - RED PHASE B - ORANGE GRD.CON - GREENPHASE A - BROWN PHASE B - PURPLE PHASE C - YELLOW GRD.CON - GREENPHASE A - BROWN PHASE B - PURPLE PHASE C - YELLOWPHASE SEQUENCE ABC, TOP TO BOTTOM LEFT TO RIGHT, FRONT TO BACK PHASE C - YELLOW	EXISTING
. CONTRACTOR SHALL BE RESPONSIBLE FOR SEALING ALL CONDUIT PENETRATIONS MADE THROUGH FIRE RATED WALLS, CEILINGS, SLABS, ETC. PENETRATION SEALS SHALL BE PER U.L. ASSEMBLY.	MAIN TELECOMMUNICATION BACKBOARD
CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF CONTRACT DRAWINGS AT JOB SITE WITH COLORED MARKINGS INDICATING PROGRESS OF WORK. THIS SET OF CONTRACT DRAWINGS IS TO BE SEPARATE FROM AND IN ADDITION TO CONTRACTOR'S CONSTRUCTION SET. EVERY UNIT OF EQUIPMENT, DEVICE, CONDUIT AND WIRE IS TO MARKED WHEN INSTALLED. USE <u>GREEN</u> TO INDICATE INSTALLATION AS SHOWN ON DRAWINGS AND USE <u>RED</u> TO INDICATE FIELD CHANGES. UPON COMPLETION OF WORK, THIS SET OF CONTRACT DRAWINGS IS TO BE TURNED OVER TO, AND BECOME PROPERTY OF THE ELECTRICAL	
ENGINEER.	ELECTRICAL ROOM PLANINscale: 1/2" = 1'-0"

JLATIONS	-								
ERY BRANCH CIRCUIT R THE SPECIFIED WIRE		SHORT CIR FAULT CURRENT AT UT CURRENT SOURCE (I	FORMER SECONDARY			PANEL SCHEDULE Rated Voltage: Rated Amps: (Cu bus) Main:	A 120/208V 200A 200A MCB		
LOOR PLANS BASED		TRANSFORMER	FLA (A) S 830	SIZE (KVA)         Z (%)           300         1.2	NOT	ТЕ	CIRCUIT DESIGNATION	O.C.P.	AWG
DITIONAL 30 FEET FOR EVERY CIRCUIT ELECTRICAL VIDE NEXT WIRE SIZE		FAULT CURREN NO MOTOR CONTRIBU WITH MOTOR CONTRU	UTION	DISCONNECT 46889 A.I.C. 47049 A.I.C.	1,5	1 5 3 5	RTU-1	60/3	6
OWN ON PANEL		WIRE SIZE	E	500 KCMIL CU		7	ROOF SERVICE RECEPTACLE	20/1	12
		LENGTH C NUMBER		75 FEET 3		9	TELECOM BACKBOARD REC.	20/1	12
		FAULT C		ANEL A		11 13	DRINKING FOUNTAIN BACK ROOM RECEPTACLES	20/1 20/1	12 12
NCE MANUAL SHALL BE		NO MOTOR CONTRIB		<b>12151</b> A.I.C.		15	BAY RECEPTACLES	20/1	12
BC 2014 405.7.4.2. THE		WITH MOTOR CONTRIB		12151 A.I.C. 12311 A.I.C.		17	BAY RECEPTACLES	20/1	12
E FOLLOWING:		MOTOR CONTRIBUT		160 AMP <b>#3/O</b> AWG		19	BAY RECEPTACLES	20/1	12
RATING AND SELECTED		LENGTH (		<b>100</b> FEET		21	SPARE	20/1	
UIRING MAINTENANCE.		NUMBER	OF RUNS	1		23	SPARE	20/1	
NCE MANUALS FOR	l					25	SPARE	20/1	

Rated Voltage: 120/2				120/208V						Manufacturer				
Rated Amps: (Cu bus)			200A				SPACES:		42			Location:		
		Main:	200A M C	в								Project No:		
								H	ΚVA					
OTE		CIRCUIT DESIGNATION	O.C.P.	AWG	MAX. DIST.(ft)	VOLT DROP	RCPT	LTG/CONT	KITCHEN	MOTOR/APP.	РН	RCPT		
	1							5.5			A			
1,5	3	RTU-1	60/3	6	91	3%		5.5			в			
	5							5.5			c			
	7	ROOF SERVICE RECEPTACLE	20/1	12	731	3%	0.18				Α			
	9	TELECOM BACKBOARD REC.	20/1	12	366	3%	0.36				в			
	11	DRINKING FOUNTAIN	20/1	12	263	3%				0.50	С			
	13	BACK ROOM RECEPTACLES	20/1	12	183	3%	0.72				A			
	15	BAY RECEPTACLES	20/1	12	146	3%	0.90				в			
	17	BAY RECEPTACLES	20/1	12	183	3%	0.72				с			
	19	BAY RECEPTACLES	20/1	12	183	3%	0.72				A			
	21	SPARE	20/1								в			
	23	SPARE	20/1								с			
	25	SPARE	20/1								A			
	27	SPARE	20/1								в			
	29	SPACE									С			
	31	SPACE									A			
	33	SPACE									в			
	35	SPACE									с			
	37	SPACE									A			
	39	SPACE									В			
	41	SPACE									c			
		SUBTOTAL C			3.6	16.5	0.0	0.5	+ -	0.0				



/IDE F	ROP	ER S	SIGNA	ιGE	AS	PE	R 11	0 - 1	16.	SIG	NAGE	- 10	STA
RNIN	G AR	C FL	ASH	ΗA	ZAR	RD.	APPI	ROF	RIA	ΤE	PPE	REQ	UIRE
AILUF	RE TO	D CC	MPL`	Y C,	٩N	RES	SULT	IN	DE	ATH	OR	INJU	RY.
			RFF	FR	ТΟ	NF		70	F "				

