ARC FLASH INFORMATION	
CATEGORY 0	USE THIS INFORMATION IN ACCORDANCE WITH APPLICABLE OSHA STANDARDS, NFPA 70E, AND OTHER REQUIRED SAFE ELECTRICAL WORK PRACTICES
18 INCHES	FLASH PROTECTION BOUNDARY
1.2 CAL/CM²	MAX INCIDENT ENERGY AT 18" WORKING DISTANCE
CATEGORY 0	PPE CATEGORY (PER NFPA 70E-2009)
480 VAC	SHOCK HAZARD WHEN COVER IS OPEN } PER NFPA 70E-2009
42 INCHES	LIMITED APPROACH } PER NFPA 70E-2009
12 INCHES	RESTRICTED APPROACH } PER NFPA 70E-2009
1 INCH	PROHIBITED APPROACH
	ORDER #: XXXXXXXX DATE: XX/XX/XX
VALUES PRODUCE BY A (EDC VENDOR) ENGINEERING ANALYSIS. ANY SYSTEM MODIFICATION, ADJUSTMENT OF PROTECTIVE DEVICE SETTINGS, OR FAILURE TO PROPERLY MAINTAIN EQUIPMENT WILL INVALIDATE THIS LABEL. FOR MORE INFORMATION, CONTACT (EDC VENDOR) AT (XXX) XXX-XXXX.	

NOTES:

A. AT APPROXIMATELY 8 WEEKS PRIOR TO POSSESSION DATE, EDC VENDOR SHALL REQUEST AS-BUILT FEEDER INFORMATION (CONDUCTOR MATERIAL, LENGTH, CONDUCTORS PER PHASE, SIZE, INSULATION TYPE, AND CONDUIT TYPE) IN ORDER TO COMPLETE AN ARC FLASH HAZARD STUDY. PROVIDE INFORMATION TO EDC VENDOR BY 7 WEEKS PRIOR TO POSSESSION DATE.

B. FOR EXISTING EQUIPMENT BEING RE-USED, DOCUMENT EXISTING OVERCURRENT PROTECTIVE DEVICE TYPES AND EXISTING FEEDER INFORMATION FOR COORDINATION WITH EDC VENDOR.

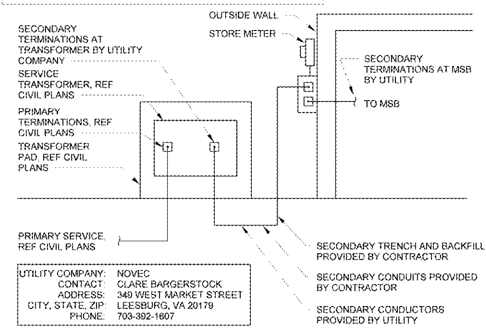
C. ARC FLASH INCIDENT ENERGY WARNING LABELS SHALL BE INSTALLED BY EDC VENDOR PRIOR TO POSSESSION.

4 ARC FLASH DETAIL

NTS 01.29.16 EP44

CT'S FURNISHED BY UTILITY, INSTALLED BY UTILITY
CT'S LOCATED AT CABINET
CT CABINET FURNISHED AND INSTALLED BY CONTRACTOR
METER BASE FURNISHED BY UTILITY, INSTALLED BY CONTRACTOR
METER FURNISHED AND INSTALLED BY UTILITY
METER LOCATION AT REAR WALL
METERING SEQUENCE IS HOT SEQUENCING
(CT'S ON LINE SIDE OF MAIN)
METERING CONDUIT (1-1/4") PROVIDED BY CONTRACTOR

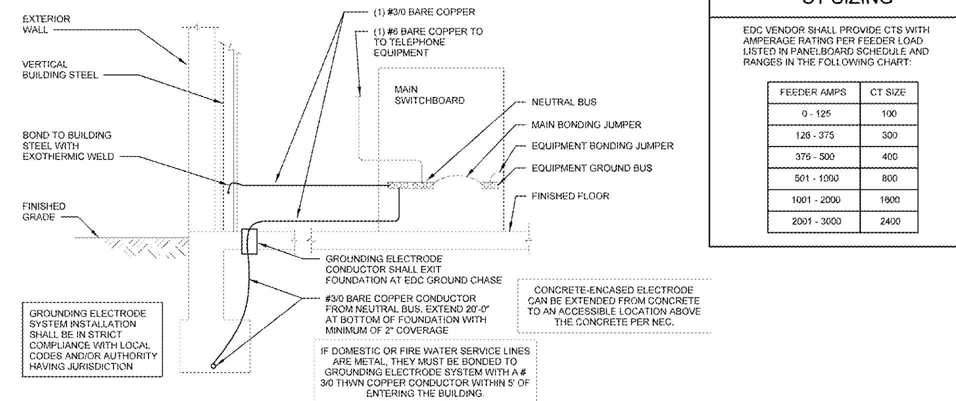
COORDINATE ALL REQUIREMENTS WITH LOCAL ELECTRICAL UTILITY (OR PRIMARY SERVICE PROVIDER WHERE APPLICABLE) PRIOR TO BID. PROVIDE ALL MATERIAL AND LABOR NECESSARY TO COMPLY WITH LOCAL REQUIREMENTS.



UTILITY COMPANY:	NOVEC
CONTACT:	CLARE BARGERSTOCK
ADDRESS:	349 WEST MARKET STREET
CITY, STATE, ZIP:	LEESBURG, VA 20179
PHONE:	703-392-1607

3 UTILITY COORDINATION

NTS 07.27.01 EP26



2 GROUNDING ELECTRODE SYSTEM

NTS 04.26 02 EP07-1

CT SIZING

EDC VENDOR SHALL PROVIDE CTS WITH AMPERAGE RATING PER FEEDER LOAD LISTED IN PANELBOARD SCHEDULE AND RANGES IN THE FOLLOWING CHART:

FEEDER AMPS	CT SIZE
0 - 125	100
126 - 375	300
376 - 500	400
501 - 1000	800
1001 - 2000	1600
2001 - 3000	2400

PANELBOARD NOTES

(1) TERMINATE GROUND ON ISOLATED GROUND BUS.
(2) INSTALL LOCKING DEVICE FURNISHED WITH PANELBOARD (LOCK-OFF FOR MAINTENANCE).
(3) INSTALL LOCKING DEVICE FURNISHED WITH PANELBOARD (LOCK-ON FOR CRITICAL LOAD).
(4) GFI BREAKER FOR PERSONNEL PROTECTION (5 mA).
(5) GFI BREAKER FOR EQUIPMENT PROTECTION (30 mA).
(6) CONDUCTOR SIZE HAS BEEN INCREASED FOR VOLTAGE DROP. SIZE EQUIPMENT GROUNDING CONDUCTOR PROPORTIONALLY PER NEC.
(7) REFER TO ONE-LINE DIAGRAM FOR AVAILABLE FAULT CURRENT FOR INTERRUPTING RATINGS.
(8) REFER TO ONE-LINE DIAGRAM FOR WIRE SIZES.
(9) FACTORY WIRED TO LOAD.
(10) REFER TO SITE LIGHTING PLAN FOR WIRE SIZES.
(11) THRU CONTACTOR.
(12) FACTORY PROVIDED WITH RED LABEL FOR FIRE ALARM CIRCUIT.
(13) DUAL TAP BREAKER. CONNECT EMERGENCY/NIGHT LIGHTING TO UNSWITCHED TERMINATION.
(X) DESIGNATES "SMART" BREAKER.

SWITCHBOARD NOTES

1. THE SWITCHBOARD IS PART OF A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) LISTED SERIES RATED SYSTEM THAT REQUIRES THE DOWN STREAM BREAKERS TO BE TESTED WITH THE SWITCHBOARD AS A COMPLETE NRTL LISTED SYSTEM. THE MANUFACTURER WILL PROVIDE SPECIFIC BREAKER TYPES (CATALOG NUMBERS) TO COMPLY WITH THE TESTS FOR A SERIES RATED SYSTEM. ANY REPLACEMENT BREAKERS SUPPLIED SHALL MATCH EXISTING TYPES (CATALOG NUMBERS) SUPPLIED BY THE ORIGINAL SYSTEM MANUFACTURER. FAILURE TO SUPPLY THE CORRECT BREAKERS WILL VOID THE SERIES SYSTEM RATING OF THE COMPLETE ELECTRICAL SYSTEM.
2. GROUND FAULT PERFORMANCE TEST:
   A. THE GROUND FAULT PROTECTION SYSTEM [illegible] BE PERFORMANCE TESTED BY THE EDC VENDOR WHEN THE EQUIPMENT IS FIRST INSTALLED IN ACCORDANCE WITH THE NEC. CONTACT THE EDC VENDOR FOR CO[illegible]NG THE GROUND FAULT TESTING WITH THE UTILITY.
   B. THE TEST SHALL BE CONDUCTED IN ACCORDANCE WITH INSTRUCTIONS THAT SHALL BE PROVIDED WITH THE EQUIPMENT. A WRITTEN RECORD OF THIS TEST SHALL BE MADE AND SHALL BE AVAILABLE TO THE AUTHORITY HAVING JURISDICTION.
   C. EQUIPMENT SHALL BE DE-ENERGIZED AND ISOLATED FROM THE UTILITY. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A 120V, 20A POWER SOURCE FOR THE TEST SET.
3. PORTABLE GENERATOR QUICK CONNECT BREAKER: BREAKER "QC" IS LOAD-LIMITED THROUGH THE [illegible]ING AUTOMATION SYSTEM TO SELECTED STANDBY LOADS. BREAKER "QC" IS PROPERLY INTERLOCKED WITH THE MAIN SERVICE ENTRANCE BREAKER TO PREVENT SIMULTANEOUS OPERATION FROM TWO POWER SOURCES.
4. EDC VENDOR SHALL PROVIDE A LABEL ON THE FACE OF EACH SWITCHBOARD AND/OR PANELBOARD NEAR THE LOCATION OF EACH SUB-METERING CT. LABEL SHALL INDICATE BREAKER NUMBER, LOAD SERVED AND CT CHANNEL NUMBER.

FIRE PUMP KEYNOTES

(1) SWITCHBOARD MFR. SHALL PROVIDE PLACARD ON SWITCHBOARD THAT STATES "SERVICE NO.1 OF 2 SERVICES. SERVICE NO.2 IS LOCATED IN THE SPRINKLER ROOM". IN ONE INCH LETTERS.

(2) CONTRACTOR SHALL PROVIDE PLACARD NEAR FIRE PUMP CONTROLLER THAT STATES "FIRE PUMP DISCONNECTING MEANS - SERVICE NO.2 OF 2 SERVICES. SERVICE NO.1 IS LOCATED IN MAIN ELECTRICAL ROOM". IN ONE INCH LETTERS.

MSB3 PANELBOARD

480Y/277 V, 3PH, 4W
3000 A, M.C.B.
1600 A GENERATOR BREAKER
(7) AIC, FULLY RATED
NEUTRAL BAR, GROUND BAR
SERVICE ENTRANCE LABEL & LISTING
FREE STANDING NEMA 1 ENCLOSURE

SERVES: MAIN SERVICE
LOCATION: EDC1
PANEL PROVIDED WITH EDC

	DESCRIPTION	WIRE	BRKR	PL	A		B		C		PL	BRKR	WIRE	DESCRIPTION	
1		--	--	--	0.00	0.00					--	--	--	SPACE	2
3	FIRE PUMP SECTION	--	--	--			0.00	0.00			--	--	--	SPACE	4
5		--	--	--					0.00	0.00	--	--	--	SPACE	6
7		--	--	--	0.00	0.00					--	--	--	SPACE	8
9	3000A MAIN BREAKER	--	--	--			0.00	0.00			--	--	--	SPACE	10
11		--	--	--					0.00	0.00	--	--	--	SPACE	12
13		--	--	--	0.00	0.00					--	--	--	SPACE	14
15	1600A GENERATOR BREAKER	--	--	--			0.00	0.00			--	--	--	SPACE	16
17		--	--	--					0.00	0.00	--	--	--	SPACE	18
19					762.75	0.00					--	--	--	SPACE	20
21	DISTRIBUTION SECTION (8) 480/277/3		3000 A	3			748.56	0.00			--	--	--	SPACE	22
23									742.26	0.00	--	--	-	SPACE	24
				TOTAL CONNECTED	762.75		748.56		742.26		KVA				
				TOTAL CONNECTED	2757.12		2705.90		2679.65		AMPS				
				TOTAL LOAD	2253.58		KVA		2710.63		AMPS				
	PER NEC ARTICLE 220			FEEDER LOAD	2123.83		KVA		2554.57		AMPS				

MSB1 PANELBOARD

480Y/277 V, 3PH, 4W
3000 A, M.L.O.
(7) AIC, FULLY RATED
FLOOR MOUNT
GROUND BUS

SERVES: 480V DISTRIBUTION
LOCATION: EDC1
PANEL PROVIDED WITH EDC

	DESCRIPTION	WIRE	BRKR	PL	A		B		C		PL	BRKR	WIRE	DESCRIPTION	
1					27.71	27.71									2
3	AHU2 (6) 480/3	1/0	125 A	3			27.71	27.71			3	125 A	1	AHU3 480/3	4
5									27.71	27.71					6
7					65.37	55.84									8
9	HYBRID HOUSE DTA (8) 480/3		250 A	3			65.37	55.84			3	225 A		HYBRID HOUSE DTB (8) 480/3	10
11									65.37	55.84					12
13					66.21	36.26									14
15	PANEL H1B (8,9) 480/277/3		400 A	3			63.35	29.25			3	225 A		PANEL H1P (8,9) 480/277/3	16
17									62.63	31.46					18
19					64.56	130.45									20
21	PANEL H2B (8) 480/277/3		400 A	3			68.51	130.45			3	600 A		PANEL H1A (8,9) 480/3	22
23									63.11	130.45					24
25					15.68	98.24									26
27	PANEL H3B (8) 480/277/3		125 A	3			15.96	98.24			3	400 A		PANEL H2A (8) 480/3	28
29									17.24	98.24					30
31					0.00	174.71									32
33	PLM (3,9) 480/3	--	15 A	3			0.00	166.17			3	800 A		PANEL H4B (8) 480/277/3	34
35									0.00	162.49					36
37	SPACE	--	--	--	0.00	0.00					--	--	--	SPACE	38
39	SPACE	--	--	--			0.00	0.00			--	--	--	SPACE	40
41	SPACE	--	--	--					0.00	0.00	--	--	--	SPACE	42
				TOTAL CONNECTED	762.75		748.56		742.26		KVA				
				TOTAL CONNECTED	2757.12		2705.90		2679.65		AMPS				
				TOTAL LOAD	2253.58		KVA		2710.63		AMPS				
	PER NEC ARTICLE 220			FEEDER LOAD	2123.83		KVA		2554.57		AMPS				

ELECTRICAL ONE-LINE FEEDER SCHEDULE

07.30.04 E[illegible]-1

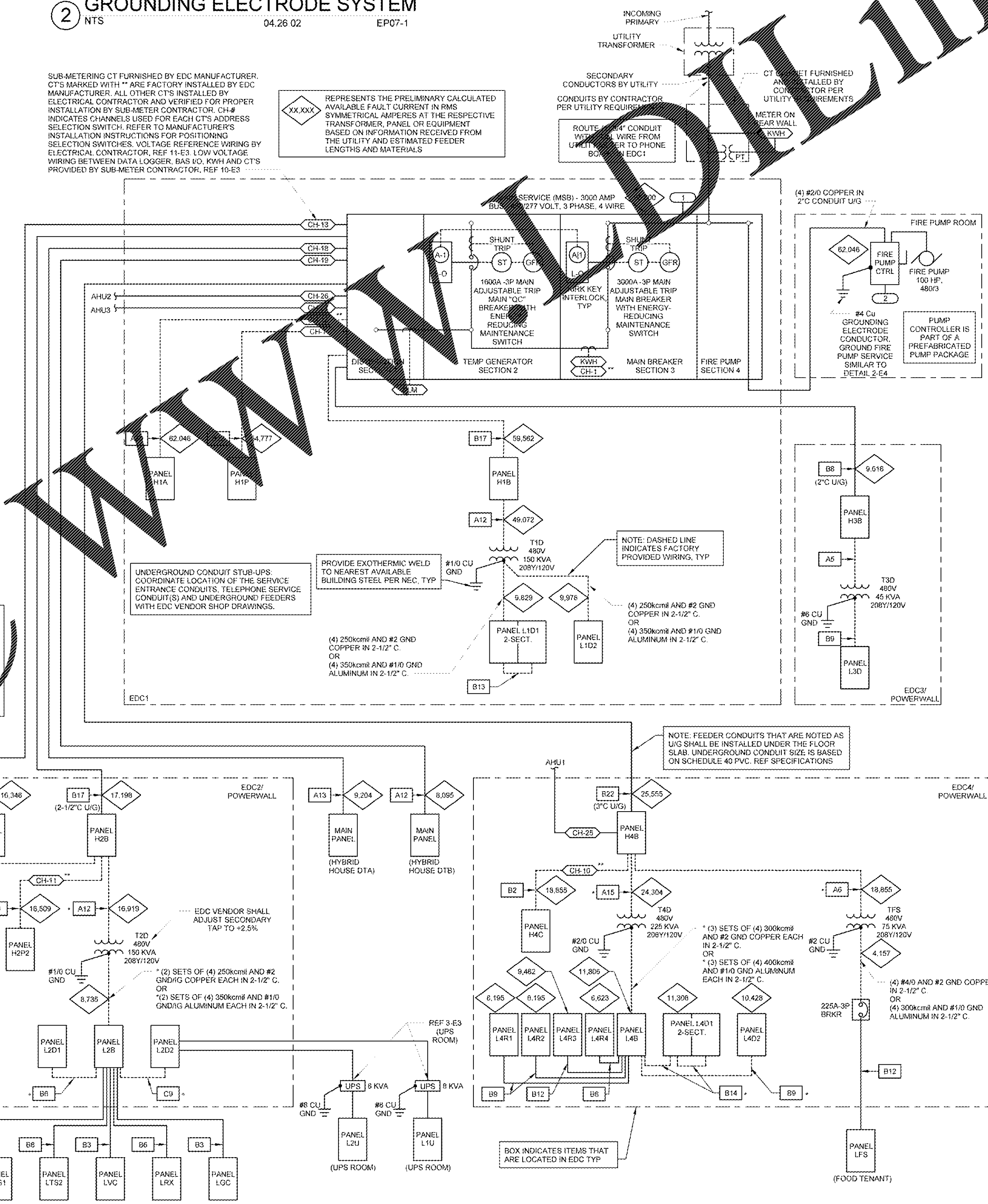
FEEDER CONDUCTOR SIZE (75°C)						[illegible]										
FEEDER AMPACITY	NO. OF SETS	COPPER CONDUCTORS (THWN)		ALUMINUM CONDUCTORS (XHHW-2)		3 PHASE CONDUCTORS AND GROUND			3 PHASE CONDUCTORS, NEUTRAL, AND GROUND			3 PHASE CONDUCTORS, NEUTRAL, GROUND, AND ISOLATED GROUND				
		PHASE & NEUTRAL	GROUND & I.G.	PHASE & NEUTRAL	GROUND & I.G.	NO.	COPPER FEEDERS	ALUMINUM FEEDERS	NO.	COPPER FEEDERS	ALUMINUM FEEDERS	NO.	COPPER FEEDERS	ALUMINUM FEEDERS		
30	1	10	10	-	-	A1	[illegible]	-	[illegible]	1/2"	-	C1	3/4"	-		
50	1	8	10	6	6	[illegible]	3/4"	3/4"	[illegible]	[illegible]	1"	C2	3/4"	1"		
60	1	6	10	4	6	[illegible]	3/4"	1"	[illegible]	1"	1"	C3	1"	1-1/4"		
65	1	6	8	4	[illegible]	[illegible]	3/4"	1"	B4	1"	1"	C4	1"	1-1/4"		
85	1	4	[illegible]	2	[illegible]	A5	1"	1-1/4"	B5	1-1/4"	1-1/4"	C5	1-1/4"	1-1/4"		
100	1	3	[illegible]	[illegible]	[illegible]	A6	[illegible]	1-1/4"	B6	1-1/4"	1-1/4"	C6	1-1/4"	1-1/2"		
115	1	2	[illegible]	[illegible]	4	[illegible]	[illegible]	1-1/4"	B7	1-1/4"	1-1/2"	C7	1-1/4"	1-1/2"		
130	1	1	[illegible]	[illegible]	4	[illegible]	[illegible]	1-1/2"	B8	1-1/2"	2"	C8	1-1/2"	2"		
150	1	1/0	6	3/0	4	[illegible]	1-1/2"	1-1/2"	B9	1-1/2"	2"	C9	2"	2"		
175	1	2/0	6	4/0	[illegible]	A10	1-1/2"	2"	B10	2"	2"	C10	2"	2"		
200	1	[illegible]	6	[illegible]	4	A11	2"	2"	B11	2"	2-1/2"	C11	2"	2-1/2"		
230	1	4/0	4	[illegible]	2	A12	2"	2"	B12	2-1/2"	2-1/2"	C12	2-1/2"	2-1/2"		
[illegible]	[illegible]	250kcmil	[illegible]	[illegible]	2	A13	2"	2-1/2"	B13	2-1/2"	2-1/2"	C13	2-1/2"	2-1/2"		
[illegible]	2	1/0	[illegible]	3/0	2	A14	1-1/2"	1-1/2"	B14	2"	2"	C14	2"	2"		
[illegible]	2	2/0	3	4/0	1	A15	1-1/2"	2"	B15	2"	2"	C15	2"	2-1/2"		
380	1	[illegible]	3	750kcmil	1	A16	2-1/2"	3"	B16	3"	3-1/2"	C16	3"	3-1/2"		
400	2	[illegible]	3	250kcmil	1	A17	2"	2"	B17	2"	2-1/2"	C17	2"	2-1/2"		
460	2	4/0	2	300kcmil	1/0	A18	2"	2-1/2"	B18	2-1/2"	2-1/2"	C18	2-1/2"	2-1/2"		
500	2	250kcmil	2	350kcmil	1/0	A19	2"	2-1/2"	B19	2-1/2"	2-1/2"	C19	2-1/2"	2-1/2"		
600	2	350kcmil	1	500kcmil	2/0	A20	2-1/2"	2-1/2"	B20	2-1/2"	3"	C20	3"	3"		
[illegible]	2	500kcmil	1/0	750kcmil	3/0	A21	2-1/2"	3"	B21	3"	3-1/2"	C21	3"	3-1/2"		
800	3	300kcmil	1/0	400kcmil	3/0	A22	2-1/2"	2-1/2"	B22	2-1/2"	2-1/2"	C22	2-1/2"	3"		

NOTES: 1. CONDUIT SIZE BASED ON CONDUCTOR PROPERTIES LISTED IN THE CURRENT NEC EDITION, CHAPTER 9, TABLES 5 AND 5A, AND CONDUIT AREAS LISTED CHAPTER 9, TABLE 4 FOR EMT WITH 40% FILL. OTHER CONDITIONS MAY REQUIRE A LARGER CONDUIT, SIZED PER NEC.

2. EDC VENDOR SHALL FURNISH ANY LUG ADAPTERS REQUIRED TO TERMINATE FEEDER CONDUCTORS. INSTALL LUG ADAPTERS PER MANUFACTURER'S RECOMMENDATIONS

SUB-METERING CT FURNISHED BY EDC MANUFACTURER. CT'S MARKED WITH ** ARE FACTORY INSTALLED BY EDC MANUFACTURER. ALL OTHER CT'S INSTALLED BY ELECTRICAL CONTRACTOR AND VERIFIED FOR PROPER INSTALLATION BY SUB-METER CONTRACTOR. CH-# INDICATES CHANNELS USED FOR EACH CT'S ADDRESS SELECTION SWITCH. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR POSITIONING SELECTION SWITCHES. VOLTAGE REFERENCE WIRING BY ELECTRICAL CONTRACTOR, REF 11-E3. LOW VOLTAGE WIRING BETWEEN DATA LOGGER, BAS I/O, KWH AND CT'S PROVIDED BY SUB-METER CONTRACTOR, REF 10-E3

XX,XXX — REPRESENTS THE PRELIMINARY CALCULATED AVAILABLE FAULT CURRENT IN RMS SYMMETRICAL AMPERES AT THE RESPECTIVE TRANSFORMER, PANEL OR EQUIPMENT BASED ON INFORMATION RECEIVED FROM THE UTILITY AND ESTIMATED FEEDER LENGTHS AND MATERIALS



EDC3 & EDC4 [illegible] BE SHIPPED IN SE[illegible]ATE SP[illegible]S. ASSEMBLE SECTIONS AND TERMINATE FURNISHED FEEDER CABLING BETWEEN SECTIONS. FEEDERS IDENTIFIED WITH ASTERISK (*) RE[illegible] EDC VENDOR SHOP DRAWINGS FOR FINAL CONNECTION REQUIREMENTS

1 ONE-LINE DIAGRAM

NTS

RETAIL DESIGN COLLABORATIVE

STIPULATION FOR REUSE

CONSULTANTS

Randall C. Hasse P.E.

Walmart
LEESBURG, VIRGINIA
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ONE-LINE DIAGRAM, DETAILS AND SCHEDULES

SHEET: E4

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