

**GENERAL ELECTRICAL NOTES**

- CODES:** ALL ELECTRICAL WORK SHALL CONFORM TO THE LATEST APPROVED VERSION OF THE NATIONAL ELECTRICAL CODE, UNDERWRITERS LABORATORIES, NATIONAL BOARD OF UNDERWRITERS, AND ANY STATE, COUNTY, OR MUNICIPAL LAWS OR AUTHORITIES HAVING JURISDICTION. ALL MATERIAL AND EQUIPMENT SHALL BE APPROVED FOR THE INTENDED USE.
- INSPECTIONS:** THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS REQUIRED FOR THE COMPLETION OF HIS WORK. THE ELECTRICAL CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS AND TESTS REQUIRED BY THE ABOVE AGENCIES. HE SHALL FURNISH REQUIRED CERTIFICATES OF INSPECTION TO THE OWNER, INCLUDING THE ELECTRICAL CERTIFICATE FROM FIRST STATE INSPECTION AGENCY.
- CONTRACTOR'S RESPONSIBILITY:** IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL LABOR, TOOLS, MATERIALS, AND SUPERVISION TO COMPLETE ALL THE ELECTRICAL WORK AS SHOWN AND DESCRIBED ON THE DRAWINGS. ALL INCIDENTAL MATERIALS NORMALLY REQUIRED FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM, ALTHOUGH NOT SPECIFICALLY IDENTIFIED ON THESE DRAWINGS, ARE UNDERSTOOD TO BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL WORK INCLUDING MATERIALS IS SUBJECT TO APPROVAL OF THE OWNER. ANY QUESTIONS PERTAINING TO THESE NOTES OR LOCATIONS OF EQUIPMENT AND DEVICES MUST BE RESOLVED BY THE ENGINEER. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM.
- WIRE ROUTING:** THE ELECTRICAL SYSTEM AND WIRE ROUTING SHALL BE DETERMINED BY THE ELECTRICAL CONTRACTOR AND APPROVED BY THE OWNERS REPRESENTATIVE. ROUTING MAY BE MODIFIED BY THE CONTRACTOR AFTER VERIFYING ALL DIMENSIONS AND CONDITIONS FOR POSSIBLE INTERFERENCES WITH MECHANICAL EQUIPMENT, PLUMBING, DUCTWORK, STRUCTURAL SUPPORTS, ETC.
- FIXTURES:** THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL REQUIRED SUPPORTS FOR FIXTURES AND EQUIPMENT. LIGHTING FIXTURES, FANS, ETC., SHALL BE SECURELY MOUNTED TO OUTLET BOXES AND BUILDING CONSTRUCTION. CONTRACTOR SHALL PROVIDE ATTIC STOCK FOR INTERIOR LED FIXTURES. FIXTURES SHALL HAVE A MANUFACTURES WARRANTY OF NO LESS THAN 5 YEARS.
- OUTLET BOXES:** ALL OUTLET BOXES SHALL BE SQUARE AND PLUMB WITH THE SURFACE AND LABELED ON THE COVER PLATE WITH THE CIRCUIT NUMBER AND PANEL. OUTLET BOXES SHALL BE METAL, NON-GANG ABLE KNOCKOUT TYPE. MINIMUM SIZE SHALL BE 4"X2". PROVIDED PLASTER RINGS OF DEPTH REQUIRED TO REACH FINISHED SURFACES.
- CIRCUITS:** IDENTIFY ALL CIRCUITS BY NUMBER IN PANEL BOARD INDEX CARDS. NUMBER CIRCUIT BREAKERS ACCORDINGLY.
- PANEL SCHEDULE:** CONTRACTOR SHALL ADHERE TO THE PANEL SCHEDULE(S) AS SPECIFIED AND PROVIDE REVISED CIRCUIT DIRECTORY CARD(S). DIRECTORY CARD(S) SHALL BE NEATLY AND ACCURATELY TYPED, HAVE A TRANSPARENT COVER(S), AND CONTAIN ALL INFORMATION FROM THE DRAWING PANEL SCHEDULE.
- NEUTRALS:** ALL CIRCUITS SHALL HAVE DEDICATED NEUTRALS AND GROUND WIRES. NEUTRALS SHALL NOT BE SHARED BY MORE THAN ONE PHASE CONDUCTOR.
- GROUNDING:** PROVIDE ALL WIRING, GROUNDING CONDUCTORS, AND GROUNDING DEVICES REQUIRED TO COMPLY WITH ARTICLE 250 OF THE N.E.C.
- RECEPTACLES:** INSTALL G.F.I. RECEPTACLES AS PER N.E.C. MOUNT RECEPTACLES. MOUNT SWITCH OUTLETS 4'-0" A.F.F. AND RECEPTACLES 18" A.F.F. UNLESS OTHERWISE NOTED.
- COVER-PLATES:** COVER-PLATES FOR WIRING DEVICES SHALL BE SMOOTH, UNBREAKABLE NYLON, IVORY COLOR. COVER-PLATES FOR WEATHER PROOF DEVICES SHALL BE GASKETED LEXAN, SELF-CLOSING TYPE.
- CONDUIT:** NO EXPOSED CONDUIT SHALL BE INSTALLED ON THE EXTERIOR SURFACES OF THE BUILDING.
- WIRE AND CABLE:** INSTALL WIRE AND CABLE OF SIZE, TYPE, AND QUALITY INDICATED ON DRAWINGS OR AS REQUIRED BY THE N.E.C. CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE NOTED, AND SHALL ALLOW SUFFICIENT SLACK AT BOXES TO PERMIT PROPER TERMINATION AT DEVICE WITHOUT SPLICES.
- MC:** METALLIC CLAD CABLE, MINIMUM SIZE #12 AWG SHALL BE USED FOR ALL INTERIOR WIRING NOT IN CONDUIT.
- WIRE IDENTIFICATION:** ALL POWER WIRING SHALL BE PROPERLY COLOR CODED AND BE IN CONFORMANCE WITH THE N.E.C. APPROVED WIRE LABELS SHALL BE USED AT EACH JUNCTION BOX AND TERMINATION TO IDENTIFY THE WIRE WITH ITS PANEL AND CIRCUIT NUMBERS.
- INSULATION TAPE** SHALL BE VINYL PLASTIC ELECTRICAL TAPE, MINIMUM 7 MIL THICK, SCOTCH #33 OR APPROVED EQUAL.
- SPLICES:** SPLICES OF #10 WIRE AND SMALLER SHALL BE MADE WITH APPROVED TYPE PRESSURE CONNECTORS AND INSULATING CAPS (WIRE NUTS). SPLICES IN #8 WIRE AND LARGER SHALL BE MADE WITH APPROVED TYPE POLARIS AND INSULATED TO SAME THICKNESS AS THE ORIGINAL INSULATION, WITH AN APPROVED TAPE HAVING HIGH DIELECTRIC STRENGTH. ELIMINATE ALL UNNECESSARY SPLICES.
- JUNCTION AND PULL BOXES** SHALL BE GALVANIZED FINISHED STEEL OF CODE THICKNESS AND OF AMPLE SIZE TO PROPERLY ENCLOSE THE CONDUCTORS. BOXES SHALL BE MOUNTED IN A READILY ACCEPTABLE LOCATION.
- SEALTITE:** LIQUID-TIGHT FLEXIBLE METAL CONDUIT (SEALTITE) SHALL BE USED AT EXTERIOR TERMINATIONS WITH A MAXIMUM LENGTH OF 3 FT. AND MINIMUM SIZE 1/2".
- HVAC** COORDINATE WITH MECHANICAL CONTRACTOR TO PROVIDE POWER TO ALL REQUIRED MECHANICAL EQUIPMENT.
- PHONE CABLES:** PROVIDE AND INSTALL EMPTY CONDUIT STUB UPS FOR PHONE AND DATA CABLING SYSTEM AS INDICATED. ALL PHONE AND DATA CABLES SHALL BE INSTALLED BY THE OWNERS SELECTED VENDOR.
- ENERGIZING:** THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ENERGIZING ALL DEVICES, FIXTURES, AND EQUIPMENT REQUIRING ELECTRICAL POWER.
- COORDINATE FINAL LOCATION** OF ALL ELECTRICAL OUTLETS, SWITCHES, PANEL BOARDS, AND DISCONNECTS WITH OWNER AND ALL OTHER TRADES. PROVIDE COORDINATION FLOOR PLANS AND ELEVATIONS. OWNER HAS THE OPTION OF MOVING DEVICES UP TO 10' WITHOUT COST, PROVIDED SUCH DIRECTION IS GIVEN PRIOR TO INSTALLATION.

- UPON COMPLETION OF THE WORK, THE ELECTRICAL CONTRACTOR SHALL DEMONSTRATE THAT THE INSTALLATIONS ARE COMPLETE AND IN PERFECT OPERATING ORDER WITH WIRING FREE FROM GROUNDS OR SHORTS AND WITH EQUIPMENT AND RACEWAYS PROPERLY GROUNDED.
- RACEWAYS:** ALL ABOVE GRADE WIRING, IN RACEWAYS OR OTHERWISE, SHALL BE INSTALLED AT RIGHT ANGLES TO OR PARALLEL WITH BUILDING LINES. ALL HANGERS AND FASTENERS MUST BE COMPATIBLE WITH RACEWAY MATERIAL AND CONFORM TO THE N.E.C. CONDUIT SHALL BE LOCATED AND INSTALLED SO THAT IT WILL NOT BE NORMALLY VISIBLE AND FOLLOW THE ROUTING OF MECHANICAL PIPING OR DUCTWORK WHEN EITHER ARE PRESENT. BELOW GRADE RACEWAYS MAY BE INSTALLED IN A DIRECT HORIZONTAL PATH BETWEEN SERVICE POINTS, AND SHALL CONFORM TO THE N.E.C. PROVIDE PROPER SEPARATION BETWEEN LOW VOLTAGE CONDUIT AND DATA/COMMS/VOICE CABLING.
- PVC:** SCHEDULE 40, MINIMUM SIZE 1" POLYVINYL CHLORIDE (RIGID NON-METALLIC CONDUIT) SHALL BE USED FOR ALL EXTERIOR RGS AND BELOW GRADE WIRING. ALL UNDERGROUND CONDUIT SHALL BE BURIED 24" TO 30" BELOW GRADE AND SHALL BE MARKED 8" TO 10" ABOVE CONDUIT WITH 6" WIDE POLYETHYLENE YELLOW MARKING TAPE WHICH READS "CAUTION - ELECTRIC LINE BELOW." (PANDUIT CAT. #HTUGY-E) LONG SWEEP ELLS SHALL BE USED FOR ALL UNDERGROUND, INCOMING SERVICE CONDUITS.
- PENETRATIONS AND PATCHING** SHALL BE PERFORMED BY THE CONTRACTOR. WORK SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER TO MATCH THE EXISTING CONSTRUCTIONS AND MEET WITH THE OWNERS APPROVAL. ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL MATCH THE RATING OF THE ASSEMBLY.
- EQUIPMENT TESTING:** THE ELECTRICAL CONTRACTOR SHALL TEST ALL EQUIPMENT AND DEVICES INSTALLED TO THE SATISFACTION OF THE OWNER. RESPONSIBILITY AS TO THE OPERATION OF ALL EQUIPMENT SHALL APPLY ONLY TO THOSE ITEMS FURNISHED BY THE ELECTRICAL CONTRACTOR, BUT THE ELECTRICAL CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR ACCURATE WORK. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LABOR AND TEST INSTRUMENTS REQUIRED FOR TESTING THIS ELECTRICAL WORK, INCLUDING INFRARED IMAGES.
- O & M MANUAL:** THE CONTRACTOR SHALL FURNISH THE OWNER WITH A DIGITAL O & M MANUAL THAT PROVIDES BASIC DATA RELATING TO THE DESIGN AND MAINTENANCE OF THE BUILDING ELECTRICAL DISTRIBUTION SYSTEM. THE MANUAL SHALL INCLUDE A TABLE OF CONTENTS, TABS, ELECTRONIC AND HARD COPY OF AS BUILTS, AND MANUFACTURERS OPERATIONAL AND MAINTENANCE INFORMATION FOR ELECTRICAL EQUIPMENT.
- SHOP DRAWING SUBMITTALS** ARE REQUIRED FOR ALL SUBSTITUTIONS: LIGHT FIXTURES, PANELS, WIRING DEVICES, PHONE PATCH PANEL, PHONE CABLE, AND PHONE DEVICES. SUBMIT NOT LESS THAN 1 DIGITAL OR 3 PHYSICAL COPIES OF SHOP DRAWINGS TO THE OWNER FOR REVIEW AND APPROVAL WITHIN 10 DAYS AFTER THE AWARD OF THE CONTRACT. ALL SUBSTITUTIONS MUST BE APPROVED BY THE OWNER.
- FIRE ALARM:** A COMPLETE AND OPERATIONAL SYSTEM SHALL BE PROVIDED TO COMPLY WITH DELAWARE STATE FIRE MARSHALL REQUIREMENTS.
- QUALITY OF MATERIALS:** ALL MATERIALS SHALL BE NEW AND SHALL BEAR THE U.L. LABEL OR BE U.L. LISTED, WHERE APPLICABLE, AND SHALL BE INSTALLED IN ACCORDANCE WITH THE N.E.C. AND NEMA STANDARDS. THE MATERIALS DESCRIBED ARE INTENDED TO SET A HIGH STANDARD OF COMMERCIAL QUALITY.
- SPECIFIED ITEMS:** WHERE MATERIALS OR EQUIPMENT ARE SPECIFIED BY MANUFACTURER OR BRAND NAME AND CATALOG NUMBER, SUCH DESIGNATION IS TO ESTABLISH STANDARDS OF QUALITY AND STYLE. THE CONTRACTOR ASSUMES THE RISK IF AN ITEM IS SUBSTITUTED FOR BID PURPOSES WITHOUT APPROVAL. MATERIALS SO SPECIFIED, OR APPROVED EQUALS, SHALL BE FURNISHED UNDER THE CONTRACT UNLESS CHANGED BY WRITTEN AGREEMENT. SUBSTITUTIONS MAY BE ACCEPTED ALONG WITH APPROPRIATE DEDUCTS TO THE BID PRICE.
- RECORD DRAWINGS:** THE CONTRACTORS SHALL KEEP AT THE JOB SITE A CLEAN SET OF DRAWINGS FOR HIS USE AND RECORD THEREON ANY AND ALL CHANGES OR DEVIATIONS FROM THE ORIGINAL DRAWINGS. THIS SET OF DRAWINGS SHALL BE KEPT UP-TO-DATE AND SHALL BE TURNED OVER TO THE OWNER AT THE COMPLETION OF THE JOB.
- OWNER'S RIGHTS:** THE OWNER RESERVES THE RIGHT TO CHANGE, WITHOUT ADDITIONAL COST, THE LOCATION OF ANY OUTLET OR APPARATUS SPECIFIED OR SHOWN ON THE DRAWINGS, PROVIDED SUCH CHANGE DOES NOT ADD MORE THAN 10'-0" TO THE CONDUIT AND/OR CIRCUIT, AND CHANGE IS ORDERED BEFORE THE INSTALLATION FOR SAID WORK HAS COMMENCED.
- GUARANTEE:** THE CONTRACTOR SHALL SUBMIT A GUARANTEE IN WRITING TO THE OWNER THAT WARRANTS THE INSTALLATION IS FREE FROM DEFECTS FOR A PERIOD OF ONE (1) YEAR AFTER ALL WORK IS COMPLETED, ACCEPTED BY THE OWNER, AND THE OWNER OCCUPIES THE SPACE. PROVIDE A 5 YEAR WARRANTY ON LIGHTING FIXTURES.
- COORDINATION:** PROGRESS OF THE ELECTRICAL WORK SHALL BE COORDINATED WITH THE OWNER SO THAT ALL WORK WILL BE FULLY COMPLETED ON SCHEDULE. THE CONTRACTOR SHALL WORK IN HARMONY WITH OTHER TRADES. EXECUTION AND COORDINATION OF THE WORK SHALL BE PERFORMED IN AN INTELLIGENT MANNER.
- SAFETY:** THE CONTRACTOR SHALL PERFORM HIS WORK IN A CLEAN AND SAFE MANNER. HE SHALL, AT ALL TIMES, TAKE WHATEVER MEASURES ARE NECESSARY TO ASSURE THE SAFETY OF ALL PERSONNEL. THE CONTRACTOR SHALL CLEAN UP AFTER EACH WORKING DAY AND SECURE INCOMPLETE WORK IN A SAFE AND ORDERLY CONDITION. ALL DEBRIS SHALL BE REMOVED FROM THE SITE IN A TIMELY MANNER.
- TEMPORARY LIGHTING AND POWER:** ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING MEANS OF TEMPORARY POWER AND LIGHTING DURING CONSTRUCTION.
- BRANCH CIRCUITS:** BRANCH CIRCUIT CONDUCTORS SHALL BE A MINIMUM SIZE OF #12 AWG. FOR 120/208V CIRCUITS, WHERE THE CIRCUIT DISTANCE EXCEEDS ONE HUNDRED FEET TO THE FIRST DEVICE, THE SIZE OF THE WIRES SHALL BE INCREASED FROM THAT SPECIFIED BY THE FOLLOWING AMOUNTS.

LENGTH	HOMERUN	REMAINDER OF CIRCUIT
0-100'	AS SPECIFIED	AS SPECIFIED
101-175'	ONE SIZE	AS SPECIFIED
176-300'	TWO SIZES	ONE SIZE
301-450'	THREE SIZES	TWO SIZES

**ELECTRICAL ABBREVIATIONS**

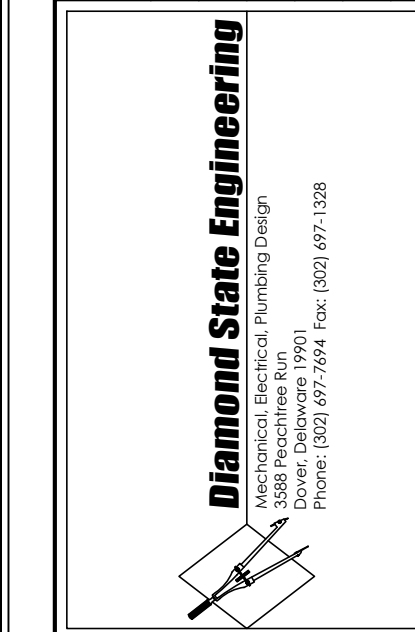
ABBR	DESCRIPTION	ABBR	DESCRIPTION
A	AMPS	IG	ISOLATED GROUND
ABBR	ABBREVIATION	MCM	THOUSAND CIRCULAR MILS
AC	ALTERNATING CURRENT	KV	KILOVOLT
ADA	AMERICANS WITH DISABILITIES ACT	KVA	KILOVOLT AMPS
AFB	ABOVE FINISHED FLOOR	KW	KILOWATT S
AFG	ABOVE FINISHED GRADE	KWH	KILOWATT HOURS
AIC	AMPS INTERRUPTING CURRENT	LSIG	LONGTIME, SHORT TIME, INSTANTANEOUS, GROUND
AL	ALUMINIUM	LP	LIGHT POLE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MAX	MAXIMUM
AV	AUDIO/VISUAL	MIN	MINIMUM
AWG	AMERICAN WIRE GAUGE	MVA	MEGAVOLT AMPS
C	CONDUIT	N	NEW
CB	CIRCUIT BREAKER	NC	NORMALLY CLOSED
CCTV	CLOSED CIRCUIT TELEVISION	NEC	NATIONAL ELECTRICAL CODE
CKT	CIRCUIT	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
CL	CLOCK	NEUT N	NEUTRAL
DL	DAY-LIGHTING	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
DIA	DIAMETER	NIC	NOT IN CONTRACT
E	EMERGENCY	NL	NORMAL
ELEC	ELECTRIC	NO	NORMALLY OPEN
EMT	ELECTRICAL METALLIC TUBING	P	POLE
EQ	EQUAL	PC	PHOTOCELL
EX	EXISTING	PD	PROTECTIVE DEVICE
FUT	FUTURE	PH	PHASE
FA	FIRE ALARM	PNL	PANEL
FAA	FIRE ALARM ANUNCIATOR	RM	ROOM
FACP	FIRE ALARM CONTROL PANEL	SPD	SURGE PROTECTION DEVICE
FATC	FIRE ALARM TERMINAL CABINET	S.T.	SHUNT TRIP
FDR	FEEDER	T	TRIP SETTING
F	FRAME SIZE	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
GFI	GROUND FAULT INTERRUPTER	TYP	TYPICAL
G OR GFCI	GROUND FAULT CIRCUIT INTERRUPTER	UL	UNDERWRITERS LABORATORY
GFEP	GROUND FAULT EQUIPMENT PROTECTION	UON	UNLESS OTHERWISE NOTED
GFP	GROUND FAULT PROTECTION	V	VOLTS
G	GROUND	WG	WEATHERPROOF AND GFCI
HP	HORSEPOWER	WP	WEATHER PROOF
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS	XFMR	TRANSFORMER
DISC	DISCONNECT	NF	NON FUSED

NOTES:  
SOME ABBREVIATIONS MAY NOT BE USED WITHIN THESE DRAWINGS.

**ELECTRICAL LEGEND**

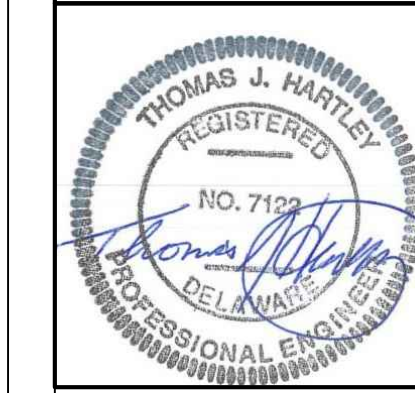
SYMBOL	DESCRIPTION
	LED SURFACE MOUNT. SEE FIXTURE SCHEDULE.
	EXIT/EMERGENCY LIGHT (POWERED FROM LOCAL CIRCUIT). SHADED FACE INDICATES DIRECTION OF TRAVEL. SEE FIXTURE SCHEDULE.
	EMERGENCY LIGHT. SEE FIXTURE SCHEDULE.
	OUTDOOR EGRESS LIGHT POWERED FROM LOCAL EXIT LIGHT. SEE FIXTURE SCHEDULE.
	2' X 2' GRID MOUNTED LED FIXTURE.
	EXTERIOR WALL PACK. SEE FIXTURE SCHEDULE.
	POLE MOUNTED AREA LIGHT. SEE FIXTURE SCHEDULE.
	HUBBELL 5262 SERIES 110V OUTLET DUPLEX OUTLET (48" A.F.F. TYP.). (G = GROUND FAULT CURRENT INTERRUPTER) (WP = WEATHERPROOF & GFCI W/BUBBLE COVER)
	CIRCUIT DESIGNATION (NOT NECESSARILY A DIRECT HOMERUN)
	ELECTRICAL PANEL
	LIGHTING CALCULATION POINT - NUMBER SIGNIFIES FOOTCANDLE LEVEL
	NON-FUSED DISCONNECT SWITCH
	OCCUPANCY SENSOR, POWER PACK. REFER TO SCHEDULE FOR DETAILS
	SWITCH - 48" A.F.F. U.O.N. - DIMMING SWITCH - PILOT LIGHT - MOTOR RATED
	SMOKE DETECTOR, HEAT DETECTOR
	FIRE ALARM PULL STATION
	CARD READER BACKBOX - COORDINATE WITH ACCESS CONTROL VENDOR
	ADA PUSHBUTTON BACKBOX - COORDINATE WITH ACCESS CONTROL VENDOR
	LOW VOLTAGE
	FIRE ALARM - COMBINATION FIRE ALARM HORN & FLASHING STROBE LIGHT W/ ADJUSTABLE LIGHT LEVEL. M.H. 7"-6" A.F.F.

DATE	2025-12-12
REVISION	
SUBMITTED FOR DESIGN/BUILD TEAM REVIEW AND COMMENT	
NO.	A
	B



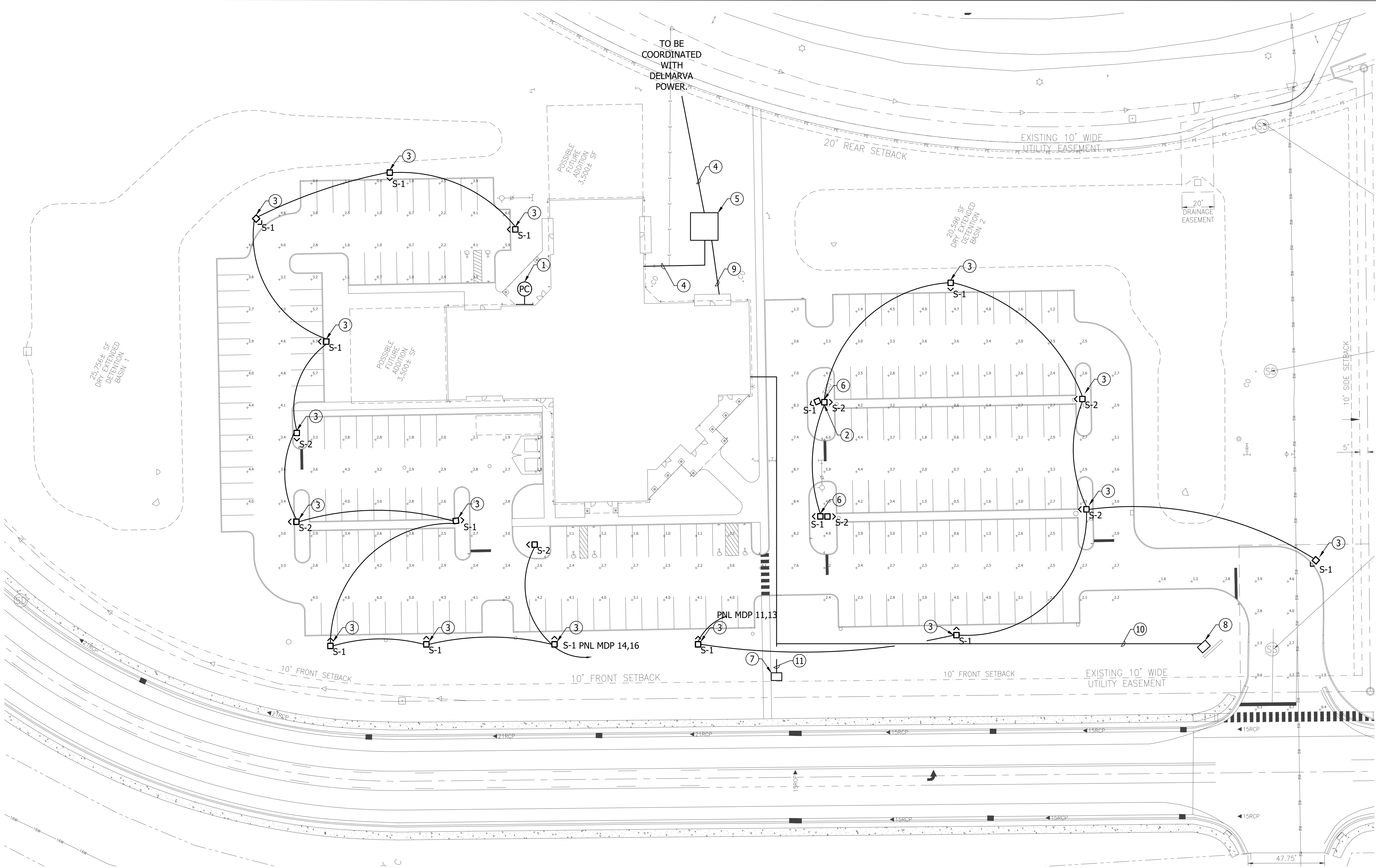
NEW CONSTRUCTION FOR:  
**HORIZON FARM CREDIT**  
BRIDGEVILLE, DE

**ELECTRICAL NOTES AND SYMBOLS**



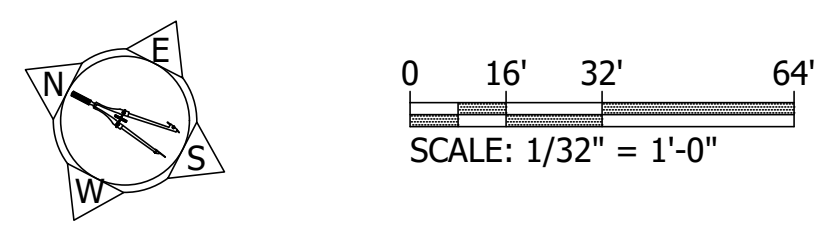
SCALE	: AS NOTED
DESIGN BY	: BEM
DRAWN BY	: BEM
CHECKED BY	: TJH/PJG
DSE JOB #	: 25-2-0007
DATE	: 07/08/2025

**E 0.0**



- DRAWING NOTES**  
(APPLIES TO THIS DRAWING)
- 1 PROVIDE NEMA TWISTLOCK PHOTOCELL ON NORTH SIDE OF BUILDING @ 12'-0" A.F.G.
  - 2 EXTERIOR LIGHTING SHALL BE PHOTOCELL CONTROLLED.
  - 3 PROVIDE 23' STEEL POLE, 2' CONCRETE BASE, CONDUIT, CONDUCTORS, AND LIGHT FIXTURE. SEE POLE BASE DETAIL ON SHEET E5.0.
  - 4 PROVIDE CONDUIT AND CONDUCTORS. TRANSFORMER TERMINATIONS BY DP&L.
  - 5 PROVIDE DP&L APPROVED CONCRETE PAD. SEE DETAIL ON SHEET E5.1.
  - 6 PROVIDE DUAL HEAD 23' STEEL POLE, 2' CONCRETE BASE, CONDUIT, CONDUCTORS, AND LIGHT FIXTURE. SEE POLE BASE DETAIL ON SHEET E5.0.
  - 7 PROVIDE 18X30, AT GRADE, POLYMER CONCRETE BOX. LID SHALL BE MARKED WITH TELECOM. COORDINATE FINAL LOCATION WITH UTILITY AND COMMUNICATION PROVIDER.
  - 8 PROVIDE 18X30, AT GRADE, POLYMER CONCRETE BOX TO SERVE SIGN AND SIGN LIGHTING.
  - 9 UNDERGROUND CONDUIT TO FIRE PUMP ROOM TO SERVE FIRE PUMP CONTROLLER.
  - 10 (2) 1 1/4" PVC CONDUIT.  
(1) TO SERVE SIGN  
(1) SPARE W/PULL STRING
  - 11 (3) 4" PVC CONDUIT EACH W/  
(3) 1 1/2" INNERDUCT W/PULL STRING

**PARTIAL SITE PLAN - ELECTRICAL**  
1/32" = 1'-0"



1  
E1.0

DATE	2025-12-12
REVISION	2026-01-05
NO.	A
	B

**Submitted for Design/Build Team Review and Comment**

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**NEW CONSTRUCTION FOR:**  
**HORIZON FARM CREDIT**  
BRIDGEVILLE, DE

**ELECTRICAL SITE PLAN**

SCALE	: AS NOTED
DESIGN BY	: BEM
DRAWN BY	: BEM
CHECKED BY	: TJH/PG
DSE JOB #	: 25-2-0007
DATE	: 07/08/2025

E 1.0

E1.0 ELECTRICAL SITE PLAN, 4/8/2025 8:45 AM, ARCH D (36.00 X 24.00 INCHES), Katie Beatty

**DISTRIBUTION PANELBOARD: PANEL MDP**  
 VOLTS: 208Y/120 MOUNTING: SURFACE A.I.C. RATING: 14K  
 PHASEWIRE: 3 PHASE, 4 WIRE ENCLOSURE: TYPE 1 MAINS TYPE: MCB  
 SERVED BY: Utility Transformer EQUIPMENT: EQUIPMENT GRD BAR MAINS RATING: 800A  
 SERVICE ENTRANCE RATED NEUTRAL BAR MCB RATING: 800A

ROOM DESIGNATION: ELEC RM  
LOCATION:

CKT NO.	CKT. BKR.	CIRCUIT DESCRIPTION	CIRCUIT DESCRIPTION	CKT. BKR.		CKT NO.
				TRIP	P	
1	1	20A SKYFOLD DOOR - CONTROLS				2
3	1	20A WATER HEATER HW-2	ODU-1	90A	3	4
5						6
7	3	90A ODU-4	ODU-2	110A	3	8
9						10
11	2	20A LTS - WEST PARKING				12
13						14
15	2	50A WATER HEATER HW-1	LTS - EAST PARKING	20A	2	16
17						18
19	2	25A CU-3	DOAS-1	225A	3	20
21						22
23	3	20A SKYFOLD DOOR	PANEL P2	200A	3	26
25						28
27	3	20A SKYFOLD DOOR	PANEL P2	200A	3	30
29	3	200A PANEL P1	PANEL P4	100A	3	32
31						34
33						36
35	3	200A PANEL P3	SPARE	20A	1	38
37			SPARE	20A	1	40
39			SPARE	20A	1	42
41	1	20A SPARE	SPARE	20A	1	44

NOTES:

**DISTRIBUTION PANELBOARD: PANEL P1**  
 VOLTS: 208Y/120 MOUNTING: SURFACE A.I.C. RATING: 10K  
 PHASEWIRE: 3 PHASE, 4 WIRE ENCLOSURE: TYPE 1 MAINS TYPE: M.C.B.  
 SERVED BY: PANEL MDP EQUIPMENT: EQUIPMENT GRD BAR MAINS RATING: 200A  
 NEUTRAL BAR MCB RATING: ---

ROOM DESIGNATION: ELEC RM  
LOCATION:

CKT NO.	CKT. BKR.	CIRCUIT DESCRIPTION	CIRCUIT DESCRIPTION	CKT. BKR.		CKT NO.
				TRIP	P	
1	3	20A SOUTH EAST ROOM RECPTS.	SOUTH EAST OFFICE RECPTS.	20A	3	2
3	3	20A EAST OPEN OFFICE RECPTS.	EAST OFFICE RECPTS.	20A	3	4
5	3	20A SPARE	SPARE	20A	3	6
7	3	20A NORTH EAST OFFICE RECPTS. 2	EAST BREAKOUT ROOM RECPTS.	20A	3	8
9	3	20A EAST LTS.	ROOF / ATTIC LTS.	20A	3	10
11						12
13	2	15A AH2 INDOOR UNITS 16-24	AH4 INDOOR UNITS 2-7	15A	2	14
15	1	20A SPARE	SPARE	20A	1	16
17	1	20A SPARE	SPARE	20A	1	18
19	1	20A SPARE	SPARE	20A	1	20
21	1	20A SPARE	SPARE	20A	1	22
23	1	20A SPARE	SPARE	20A	1	24
25	1	20A SPARE	SPARE	20A	1	26
27	1	20A SPARE	SPARE	20A	1	28
29	1	20A SPARE	SPARE	20A	1	30
31	1	20A SPARE	SPARE	20A	1	32
33	1	20A SPARE	SPARE	20A	1	34
35	1	20A SPARE	SPARE	20A	1	36
37	1	20A SPARE	SPARE	20A	1	38
39	1	20A SPARE	SPARE	20A	1	40
41	1	20A SPARE	SPARE	20A	1	42

NOTES:

**DISTRIBUTION PANELBOARD: PANEL P3**  
 VOLTS: 208Y/120 MOUNTING: SURFACE A.I.C. RATING: 10K  
 PHASEWIRE: 3 PHASE, 4 WIRE ENCLOSURE: TYPE 1 MAINS TYPE: M.L.O.  
 SERVED BY: PANEL MDP EQUIPMENT: EQUIPMENT GRD BAR MAINS RATING: 200A  
 NEUTRAL BAR MCB RATING: ---

ROOM DESIGNATION: STORAGE 105A  
LOCATION:

CKT NO.	CKT. BKR.	CIRCUIT DESCRIPTION	CIRCUIT DESCRIPTION	CKT. BKR.		CKT NO.
				TRIP	P	
1	1	20A WEST CONF ROOM 1 RECPTS.	WEST CONF ROOM 2 RECPTS.	20A	1	2
3	1	20A SOUTHWEST LOBBY RECPTS.	RECEPTION RECPTS.	20A	1	4
5	1	20A SOUTH OPEN OFFICE RECPTS.	SOUTH OFFICE RECPTS.	20A	1	6
7	1	20A SOUTHWEST ROOMS RECPTS.	SUPPLY / SPRINKLER RECPTS.	20A	1	8
9	1	20A SOUTH HALLWAY RECPTS.	SPARE	20A	1	10
11	1	20A WEST LOBBY RECPTS.	WEST ROOMS RECPTS.	20A	1	12
13	1	20A BATHROOM RECPTS.	MISC. CENTER RECPTS.	20A	1	14
15	1	20A BREAKROOM RECPTS.	KIT CHEN RECPTS.	20A	1	16
17	1	20A CENTER LTS.	SOUTH LTS.	20A	1	18
19	1	20A WEST LTS.	SOUTHWEST LTS.	20A	1	20
21	2	15A AH1 INDOOR UNIT 1.1 AND 1.2	AH1 INDOOR UNIT 2.1 AND 2.2	15A	2	22
23						24
25	2	15A AH1 INDOOR UNITS 3,5,6	AH2 INDOOR UNITS 1-10	15A	2	26
27						28
29	2	15A BRANCH SELECTOR BOXES	AH2 INDOOR UNITS 11-15	15A	2	30
31						32
33	1	20A SPARE	SPARE	20A	1	34
35	1	20A SPARE	SPARE	20A	1	36
37	1	20A SPARE	SPARE	20A	1	38
39	1	20A SPARE	SPARE	20A	1	40
41	1	20A SPARE	SPARE	20A	1	42

NOTES:

**DISTRIBUTION PANELBOARD: PANEL P3**  
 VOLTS: 208Y/120 MOUNTING: SURFACE A.I.C. RATING: 10K  
 PHASEWIRE: 3 PHASE, 4 WIRE ENCLOSURE: TYPE 1 MAINS TYPE: M.L.O.  
 SERVED BY: PANEL MDP EQUIPMENT: EQUIPMENT GRD BAR MAINS RATING: 200A  
 NEUTRAL BAR MCB RATING: ---

ROOM DESIGNATION: STORAGE 105A  
LOCATION:

CKT NO.	CKT. BKR.	CIRCUIT DESCRIPTION	CIRCUIT DESCRIPTION	CKT. BKR.		CKT NO.
				TRIP	P	
1	1	20A WEST CONF ROOM 1 RECPTS.	WEST CONF ROOM 2 RECPTS.	20A	1	2
3	1	20A SOUTHWEST LOBBY RECPTS.	RECEPTION RECPTS.	20A	1	4
5	1	20A SOUTH OPEN OFFICE RECPTS.	SOUTH OFFICE RECPTS.	20A	1	6
7	1	20A SOUTHWEST ROOMS RECPTS.	SUPPLY / SPRINKLER RECPTS.	20A	1	8
9	1	20A SOUTH HALLWAY RECPTS.	SPARE	20A	1	10
11	1	20A WEST LOBBY RECPTS.	WEST ROOMS RECPTS.	20A	1	12
13	1	20A BATHROOM RECPTS.	MISC. CENTER RECPTS.	20A	1	14
15	1	20A BREAKROOM RECPTS.	KIT CHEN RECPTS.	20A	1	16
17	1	20A CENTER LTS.	SOUTH LTS.	20A	1	18
19	1	20A WEST LTS.	SOUTHWEST LTS.	20A	1	20
21	2	15A AH1 INDOOR UNIT 1.1 AND 1.2	AH1 INDOOR UNIT 2.1 AND 2.2	15A	2	22
23						24
25	2	15A AH1 INDOOR UNITS 3,5,6	AH2 INDOOR UNITS 1-10	15A	2	26
27						28
29	2	15A BRANCH SELECTOR BOXES	AH2 INDOOR UNITS 11-15	15A	2	30
31						32
33	1	20A SPARE	SPARE	20A	1	34
35	1	20A SPARE	SPARE	20A	1	36
37	1	20A SPARE	SPARE	20A	1	38
39	1	20A SPARE	SPARE	20A	1	40
41	1	20A SPARE	SPARE	20A	1	42

NOTES:

**PANEL MDP**  
SCALE: N.T.S. 1 E 4.0

**PANEL P1**  
SCALE: N.T.S. 2 E 4.0

**PANEL P2**  
SCALE: N.T.S. 3 E 4.0

**PANEL P3**  
SCALE: N.T.S. 4 E 4.0

**LUMINAIRE SCHEDULE**

TYPE	DESCRIPTION	BASIS OF DESIGN		BALLAST/DRIVER		SOURCE		WATTS	INPUT VOLTAGE	MOUNTING	COMMENTS
		MANUFACTURER	SERIES	QTY	TYPE	TYPE	LUMENS				
A	LOW PROFILE CENTER BASKET TROFFER. FROSTED PMMA LENS, COLD ROLLED STEEL FRAME, DIMMING	ELITE	22-OEHP-LED	1	LED	LED	2,000-7,000	3500K-5000K	17-55	120/277V	LOW PROFILE TROFFER
B	SURFACE MOUNT TROFFER. FROSTED PMMA LENS, COLD ROLLED STEEL FRAME, DIMMING	ELITE	OSMT-LED	1	LED	LED	2,400-6,000	3000K-5000K	21-52	120/277V	SURFACE MOUNT TROFFERS
C	RECESSED LINEAR LED, FROSTED ACRYLIC LENS, RATED FOR WET LOCATIONS	FOCAL POINT	FSM2LWL	1	LED	LED	500-4,000	3000K-4000K	5.5-32.4	120/277V	RECESSED
EX	ALUMINUM HOUSING WITH ACRYLIC FACE LED EXIT/EMERGENCY COMBO, RATED FOR DAMP LOCATIONS	MAXILUME	ELX-LED-736	1	LED	LED	-	-	3	120/277V	RECESSED CEILING OR RECESSED WALL MOUNT
E	THERMOPLASTIC LED EMERGENCY LIGHT, RATED FOR DAMP LOCATIONS	MAXILUME	ELM-LED-806	1	LED	LED	1	-	4	120/277V	UNIVERSAL J-BOX PATTERN KNOCK-OUT
F	OUTDOOR ADJUSTABLE LED REMOTE HEADS, DIE-CAST ALUMINUM, RATED FOR WET LOCATIONS	MAXILUME	ELM-LED-882	1	LED	LED	-	-	-	120/277V	J-BOX
G	CONTEMPORARY SQUARE LINEAR VANTY WITH SWIT CHABLE COLOR TEMPERATURE, DIMMING, PMMA LENS.	ELITE	OVL-LED-24	1	LED	LED	1700L	2700K-5000K	24	120/277V	J-BOX
S-1	EAGLE SERIES AREA LIGHT & STRAIGHT STEEL POLE COMBO, POLYCARBONATE LENS, DIE CAST ALUMINUM, TYPE FT DISTRIBUTION.	ATLAS	PXSLPMS	1	LED	LED	12000-24000	3500K-5000K	79-170	120/277V	25' FIXTURE HEIGHT - 25' POLE ON 6" POLE BASE.
S-2	EAGLE SERIES AREA LIGHT & STRAIGHT STEEL POLE COMBO, POLYCARBONATE LENS, DIE CAST ALUMINUM, TYPE 5 DISTRIBUTION	ATLAS	PXSLPMS	1	LED	LED	12000-24000	3500K-5000K	79-170	120/277V	25' FIXTURE HEIGHT - 25' POLE ON 6" POLE BASE.
WP-1	INDEPENDENCE TALL WALL LIGHT, POLYCARBONATE HOUSING, RATED FOR WET LOCATIONS, CLASS 2	ATLAS	WS2L	1	LED	LED	2000	4000K-5000K	18	120/277V	J-BOX

NOTES:

**LIGHTING SCHEDULE**  
SCALE: N.T.S. 7 E 4.0

**DISTRIBUTION PANELBOARD: PANEL P4**  
 VOLTS: 208Y/120 MOUNTING: SURFACE A.I.C. RATING: 10K  
 PHASEWIRE: 3 PHASE, 4 WIRE ENCLOSURE: --- MAINS TYPE: M.L.O.  
 SERVED BY: PANEL MDP EQUIPMENT: NEUTRAL BAR MAINS RATING: ---  
 EQUIPMENT GRD BAR MCB RATING: 100A

ROOM DESIGNATION: SUPPLY RM 006  
LOCATION:

CKT NO.	CKT. BKR.	CIRCUIT DESCRIPTION	CIRCUIT DESCRIPTION	CKT. BKR.		CKT NO.
				TRIP	P	
1						2
3	3	20A JOCKEY PUMP	UNIT HEATER	30A	3	4
5						6
7						8
9	3	20A SPRINKLER SYSTEM	FACP	20A	1	10
11			SPARE	20A	1	12
13	1	20A SPARE	SPARE	20A	1	14
15	1	20A SPARE	SPARE	20A	1	16
17	1	20A SPARE	SPARE	20A	1	18
19	1	20A SPARE	SPARE	20A	1	20
21	1	20A SPARE	SPARE	20A	1	22
23	1	20A SPARE	SPARE	20A	1	24

NOTES:

**PANEL P4**  
SCALE: N.T.S. 5 E 4.0

**DISTRIBUTION PANELBOARD: PANEL P5**  
 VOLTS: 208Y/120 MOUNTING: SURFACE A.I.C. RATING: 10K  
 PHASEWIRE: 3 PHASE, 4 WIRE ENCLOSURE: --- MAINS TYPE: M.L.O.  
 SERVED BY: PANEL MDP EQUIPMENT: NEUTRAL BAR MAINS RATING: ---  
 EQUIPMENT GRD BAR MCB RATING: 100A

ROOM DESIGNATION: SUPPLY RM 006  
LOCATION:

CKT NO.	CKT. BKR.	CIRCUIT DESCRIPTION	CIRCUIT DESCRIPTION	CKT. BKR.		CKT NO.
				TRIP	P	
1						2
3	3	20A SERVER ROOM UPS	SERVER RECPT.	15A	1	4
5			SERVER RECPT.	15A	1	6
7	1	20A SERVER AND IT STORAGE RECPTS.	SERVER RECPT.	15A	1	8
9	1	20A IT STORAGE RECPTS.	SERVER AND IT STORAGE LTS.	20A	1	10
11	1	20A SPARE	SPARE	20A	1	12
13	1	20A SPARE	SPARE	20A	1	14
15	1	20A SPARE	SPARE	20A	1	16
17	1	20A SPARE	SPARE	20A	1	18
19	1	20A SPARE	SPARE	20A	1	20
21	1	20A SPARE	SPARE	20A	1	22
23	1	20A SPARE	SPARE	20A	1	24

NOTES:

**PANEL P5**  
SCALE: N.T.S. 6 E 4.0

NEW CONSTRUCTION FOR:  
**HORIZON FARM CREDIT**  
BRIDGEVILLE, DE

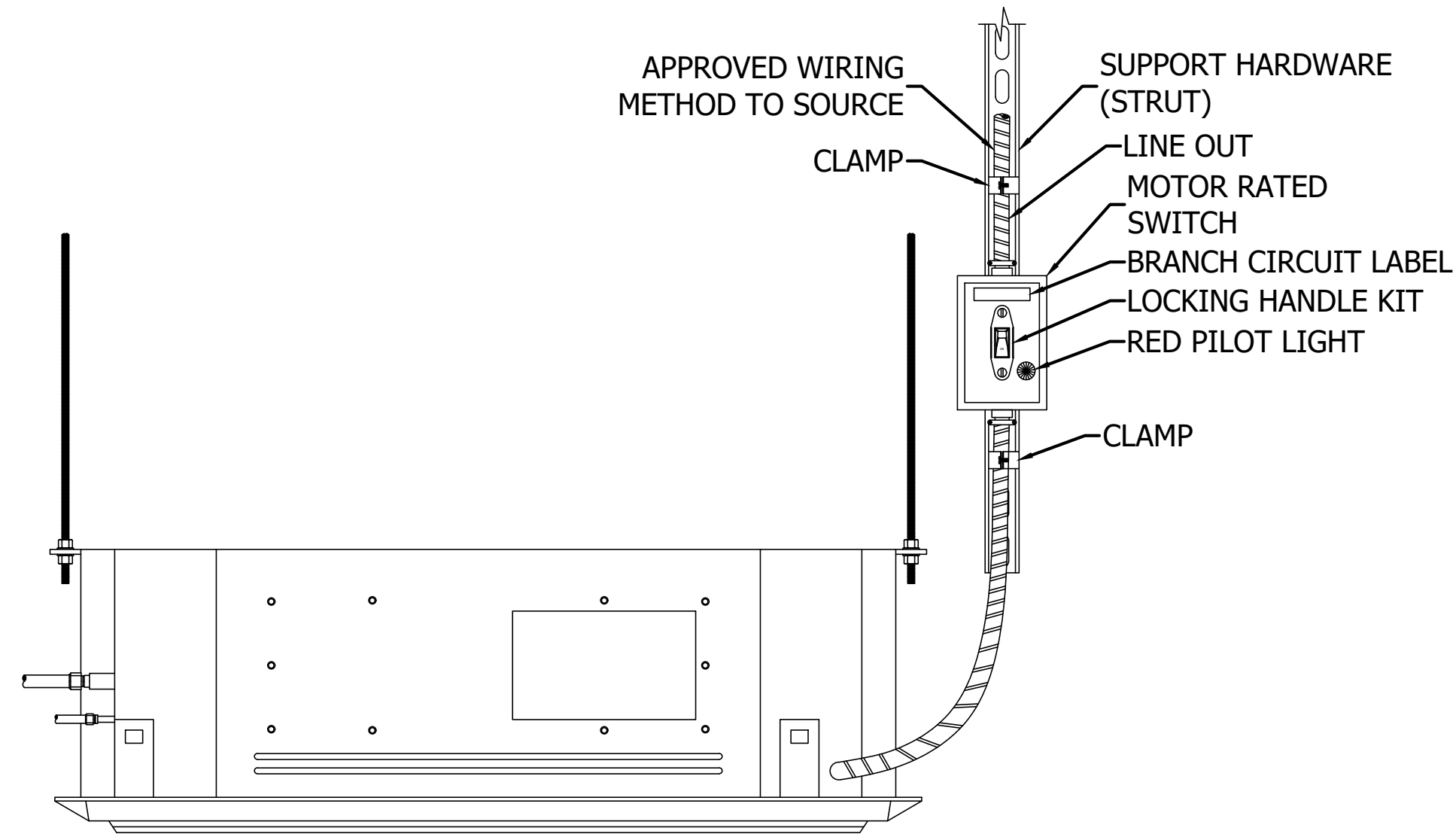
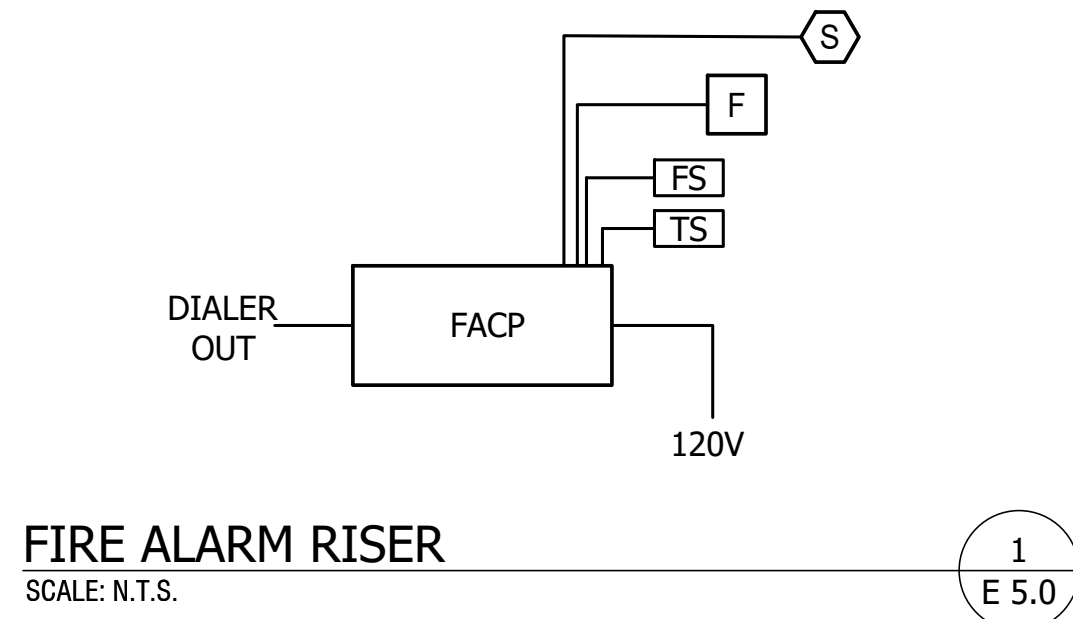
**ELECTRICAL SCHEDULES**

SCALE : AS NOTED  
 DESIGN BY : BEM  
 DRAWN BY : BEM  
 CHECKED BY : TJH/PJG  
 DSE JOB # : 25-2-0007  
 DATE : 07/08/2025

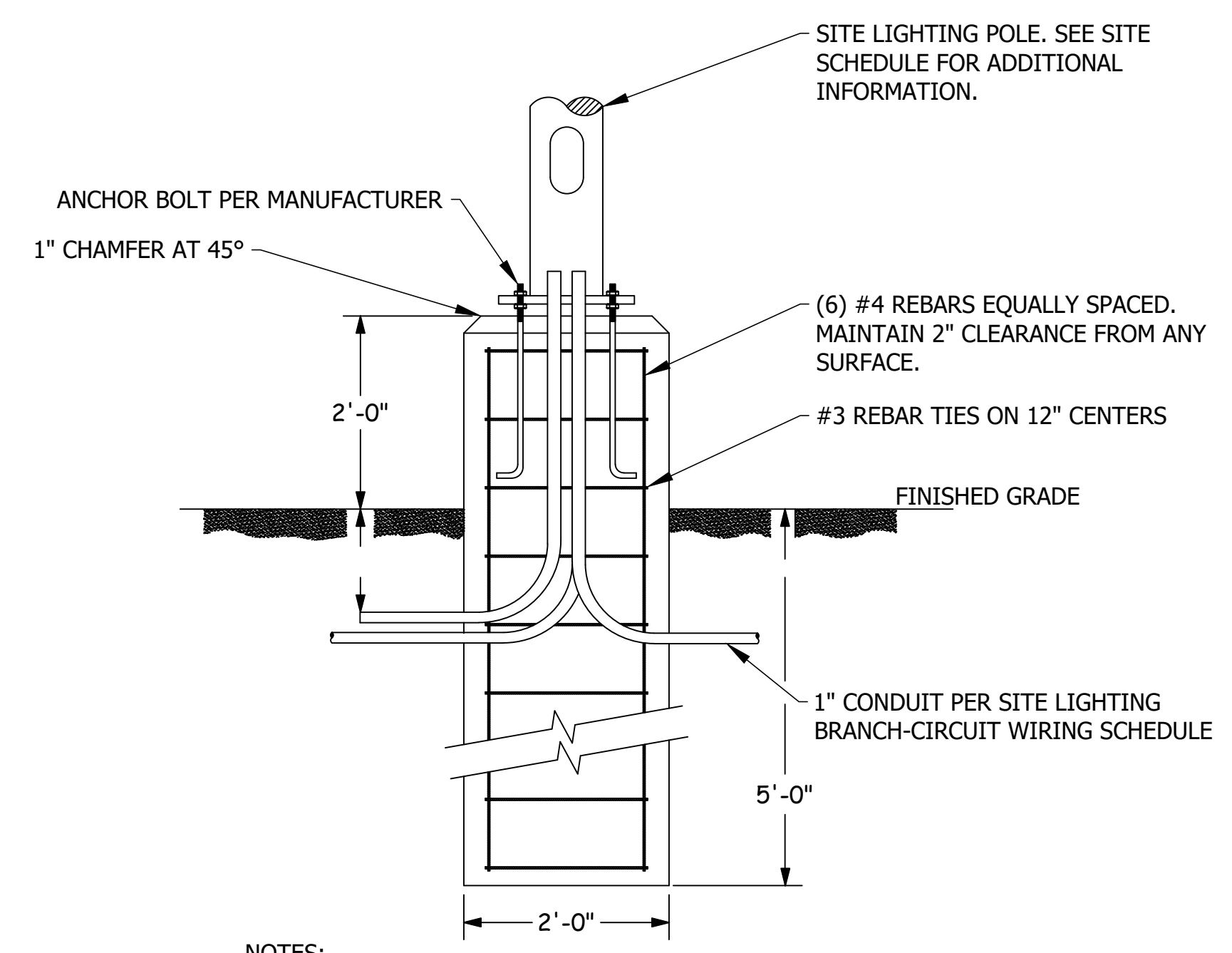
E 4.0

E4.0 ELECTRICAL SCHEDULES, 4/8/2026 8:45 AM, ARCH D (36.00 X 24.00 INCHES), Katie Beachy

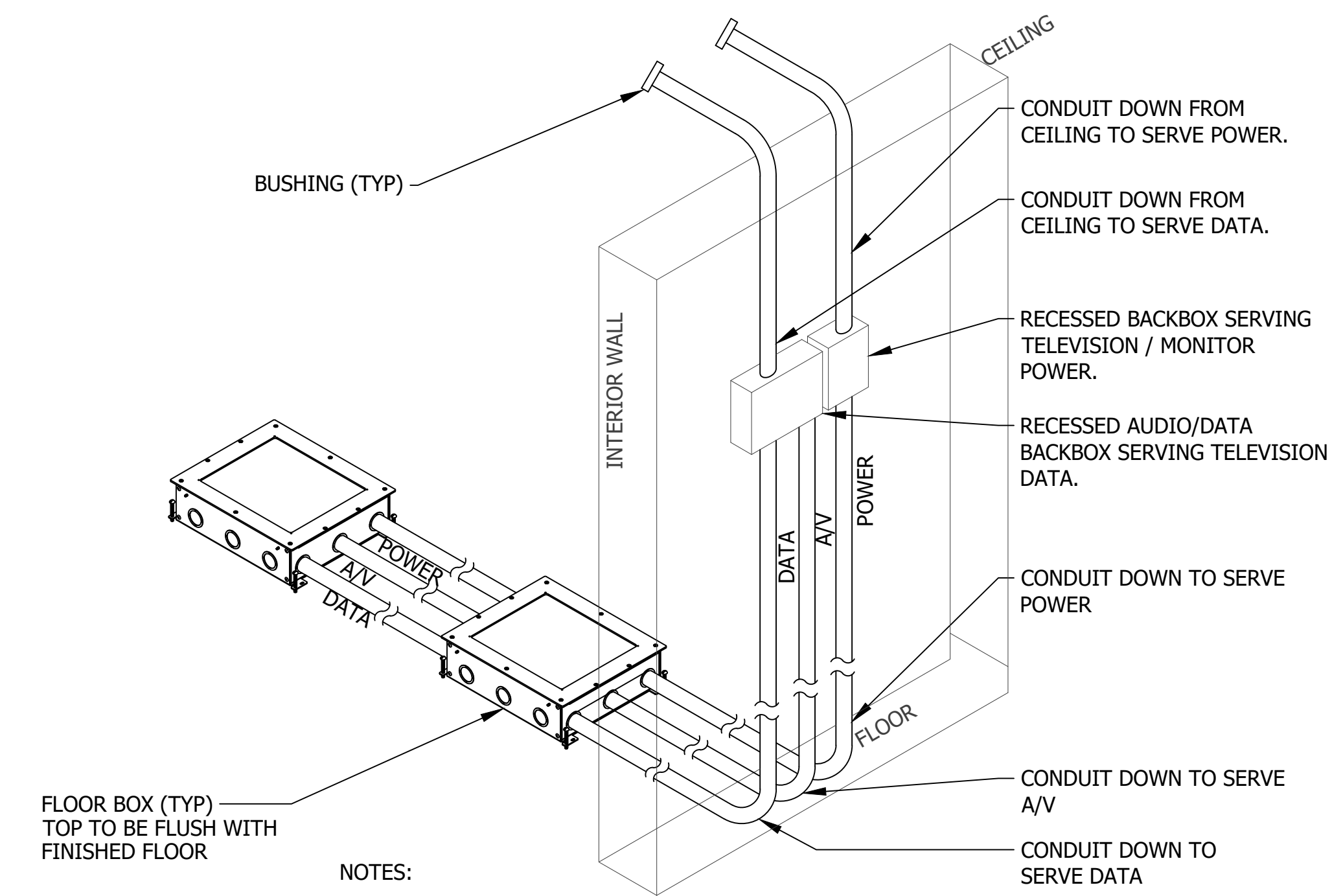
FIRE ALARM SYMBOLS:	
	SMOKE DETECTOR
	FIRE ALARM PULL STATION
	SPRINKLER SYS. FLOW SWITCH
	TAMPER SYS. FLOW SWITCH
	FIRE ALARM CONTROL PANEL



- NOTES:
1. MOTOR RATED SWITCH SHALL BE MOUNTED WITHIN 2 FEET OF UNIT BEING SERVED.
  2. MOTOR RATE SWITCH SHALL BE SERVICABLE (IE: NOT BLOCKED BY UNIT OR OBSTRUCTION).
  3. PROVIDE MACHINE GENERATED LABEL INDICATING PANELBOARD AND CIRCUIT NUMBER (IE: LP2 CKT #4).

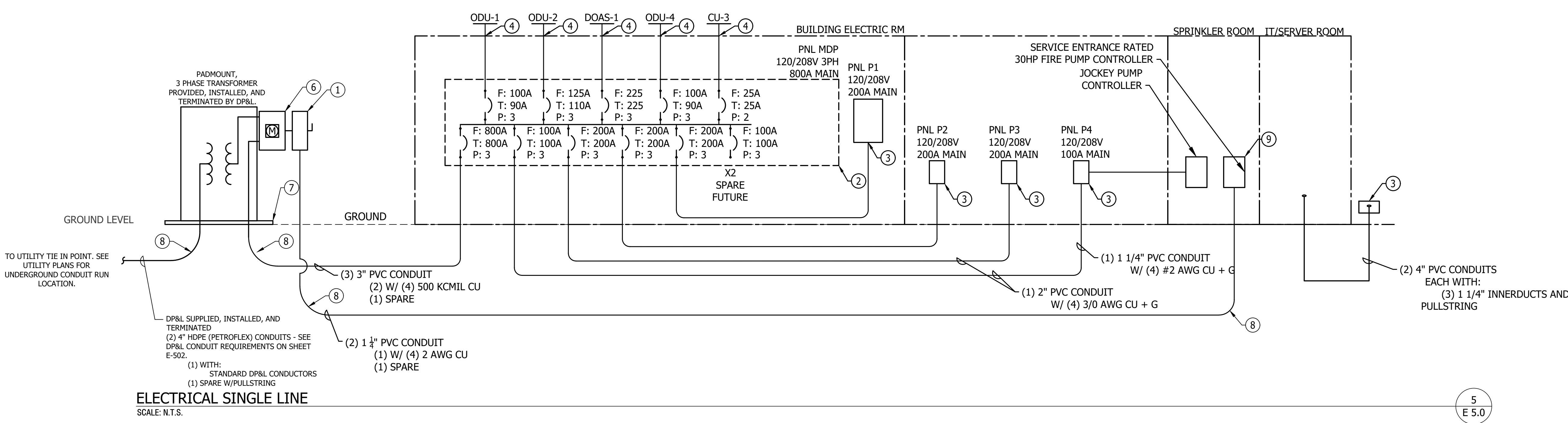


- NOTES:
1. PROVIDE DRILLED SHAFT TO SPECIFIED DIMENSIONS.
  2. CONCRETE FOUNDATION SHALL HAVE A MINIMUM 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
  3. PROVIDE STANDARD COMPACT FILL AS REQUIRED.



- NOTES:
1. ALL POWER WIRING, RACEWAY, BOXES, RECEPTACLES & COVER PLATES SHALL BE PROVIDED UNDER DIVISION 26.
  2. ALL LOW VOLTAGE DATA, VOICE, AUDIO & CATV CABLES, DEVICE JACKS & TERMINATIONS SHALL BE PROVIDED UNDER DIVISION 27.
  3. PROVIDE AUDIO/VISUAL FLOOR BOX (TYP)

- DRAWING NOTES**  
(APPLIES TO THIS DRAWING)
1. PROVIDE DP&L APPROVED, NEMA 3R, TRANSFORMER MOUNTED DISCONNECT SWITCH. LOCKED IN THE "ON" POSITION.
  2. PROVIDE SERVICE ENTRANCE RATED PANEL, MOUNTING HARDWARE, CONDUIT, CONDUCTORS AND ALL REQUIRED APPURTENANCES.
  3. PROVIDE PANEL, CONDUIT, CONDUCTORS, MOUNTING HARDWARE, AND ALL REQUIRED APPURTENANCES.
  4. PROVIDE 2HR FIRE RATED PENETRATION SEALS THROUGH WALL AND CEILING OF FIRE RATED AREAS..
  5. PROVIDE TRAFFIC RATED, PREFORMED POLYMER CONCRETE ENCLOSURE. COORDINATE FINAL LOCATION WITH PHONE AND INTERNET DEMARCATON.
  6. PROVIDE DP&L APPROVED, TRANSFORMER MOUNTED METER CABINET. WIRING TERMINATIONS TO BE COMPLETED BY DP&L.
  7. INSTALL CONCRETE PAD PER DP&L STANDARDS. SEE DRAWING E5.1.
  8. PROVIDE LONG SWEEP ELLS IN UNDERGROUND CONDUIT RUNS.
  9. FIRE PUMP SUPPLIED AND INSTALLED BY FIRE PROTECTION CONTRACTOR. EC TO COORDINATE WITH FIRE PROTECTION CONTRACTOR FOR FINAL EQUIPMENT SELECTION BEFORE INSTALLATION.



DATE	2025-12-12
REVISION	2026-01-05
NO.	A
	B

REVISION COMMENT: SUBMITTED FOR DESIGN/BUILD TEAM REVIEW AND COMMENT

**Diamond State Engineering**  
3008 Peachtree Dunwoody Road, Suite 1000, Atlanta, GA 30328  
Phone: 404.977.7474 Fax: 404.977.1208

**NEW CONSTRUCTION FOR:**  
**HORIZON FARM CREDIT**  
BRIDGEVILLE, DE

**ELECTRICAL DETAILS**  
**1 OF 2**

SCALE : AS NOTED  
DESIGN BY : BEM  
DRAWN BY : BEM  
CHECKED BY : TJH/PG  
DSE JOB # : 25-2-0007  
DATE : 07/08/2025

**E 5.0**

E5.0 ELECTRICAL DETAILS, 7/8/2026 8:45 AM, ARCH D (36.00 X 24.00 INCHES), Katie Betchy



Delmarva Power is currently Engineering the installation of your underground service, or your job has been determined to be installed utilizing our Accelerated Electric Service process. In both cases, there are items that must be completed by you, the customer, or the customer's representative. One of those items includes installing appropriate conduit and providing pictures to your Field Engineer or Service Associate. In addition to reading over, signing, and returning the service agreement, you MUST provide pictures of the conduit prior to backfilling.

**WE MUST RECEIVE A MINIMUM OF 4 PICTURES AS SHOWN BELOW IN EXAMPLES PROVIDED**

1. Prior to backfilling material into the conduit trench please provide a minimum of **four digital photographs**, one at each bend installation showing a ruler for reference of correct installation depth and displaying properly specified long-sweep bends, one showing the conduit riser to and including the meter socket, one showing the end of the conduit adjacent to the pole/equipment serving your project (see Attachment A for example photographs). Immediately e-mail these pictures to your field engineer or service associate upon completion of the conduit installation. Email confirmation of the conduit completion is required before the job will be released to construction.

**CONDUIT INSTALLATION GUIDELINES**

- **Conduits:** Install *Schedule 40 PVC Grey Electrical* conduit or *black HDPE (high-density polyethylene), SDR-13.5* with a **MULE TAPE** pull cord rated at a minimum of 400lbs pull strength. The Mule Tape pull cord shall be blown in after completion of conduit installation so that the cord will be in proper usable condition during the installation of facilities by DPL. All secondary/service conduits must be continuous to the meter socket.
- The meter socket riser must be **grey schedule 40 PVC**. The meter socket riser should be plumb and secured to the meter socket by a properly sized bushing and lock nut.
- **For conduits extended to new DPL equipment:**
  - o The conduit ends shall be turned up and capped to 3 feet above grade with a long radius sweep 90 Degree bends. DPL will not be responsible to dig for ends of any conduits extended to new equipment that are not turned up and 3 feet above grade. Delmarva Power will provide a sub-up detail indicating the required spacing and grouping of all conduits based on the intended orientation of newly installed equipment.
- **For conduits extended to existing DPL equipment and poles:**
  - o Conduit ends shall be installed, capped and left below grade at a maximum distance of 36" from the energized equipment or pole. The ends of the conduit shall be marked with a stake (mark stake with "DPL CONDUIT X inch" in black sharpie). An additional 10' of mule tape shall be left coiled in the capped end.

**Bends:** ALL 90, 45- and 30-Degree Long Sweeps shall be 36 Inch Radius. No exceptions. All bends must be Schedule 40 PVC Grey Electrical conduit - White plumbing conduit WILL NOT BE ACCEPTED. DPL shall allow only (3) three 90 Degree Long Radius Sweeps per conduit run or a total of 270 degrees for the entire conduit run. Based upon this condition, each run shall include (1) one 90 Degree long radius sweep at conduit start, (1) one 90-degree long radius sweep at conduit end, and at most, (1) one 90-degree or (2) 45-degree or (3) 30-degree long radius sweep(s) along the conduit path. If any additional conduit sweeps are necessary, DPL shall work with the customer in determining the location and arrangement for the installation of a DPL supplied and customer installed pull box.



Measurement showing 26" or more cover



Sweep up into meter pan showing mule tape or pull string



Capped off end at DPL equipment



Inside of Meter Pan with mule tape/pull string

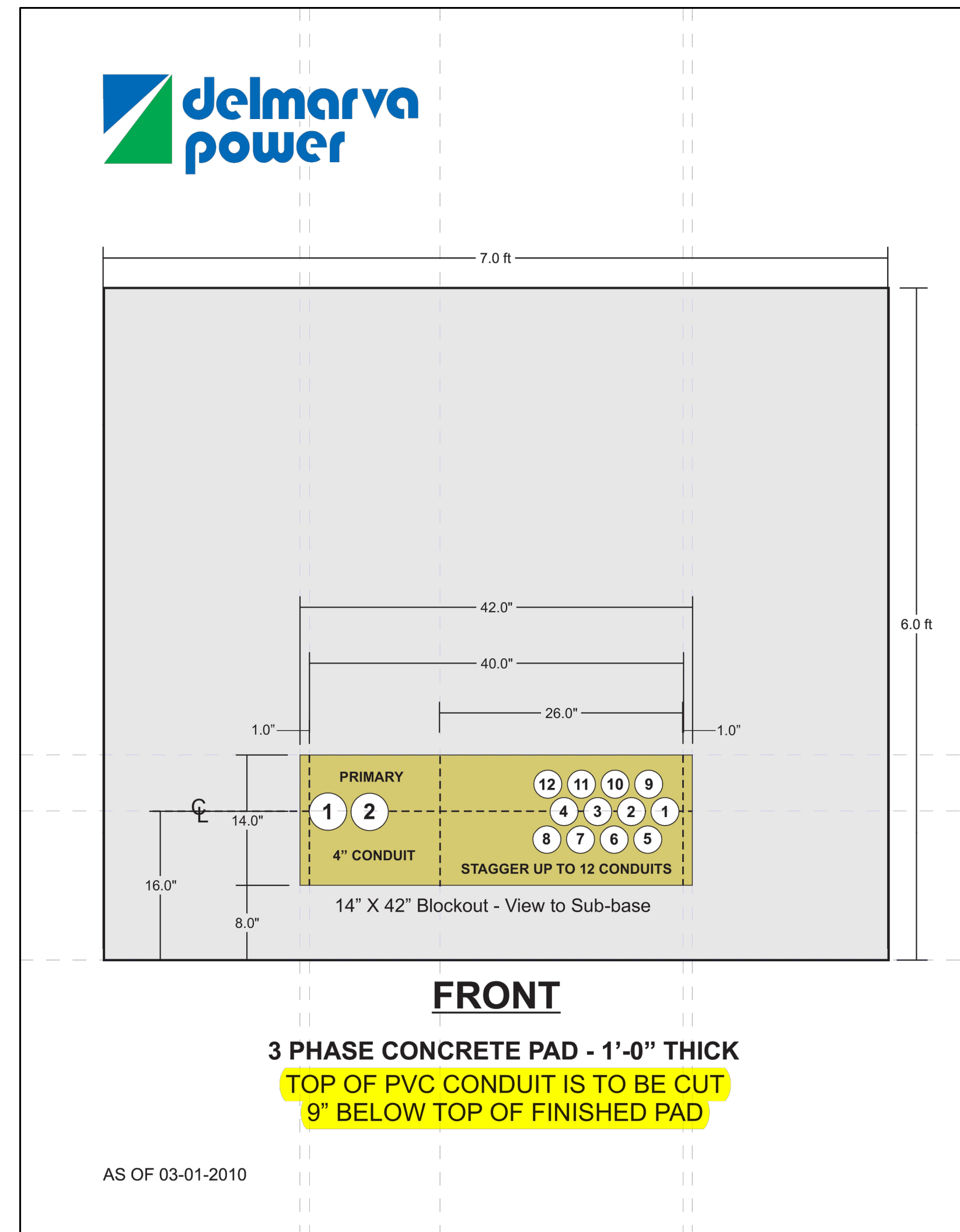


Show any sweeps or bends as necessary

**DELMARVA POWER CONDUIT GUIDELINES/REQUIREMENT**

1/2" = 1'-0"

1  
E5.1



CONTRACTOR INSTALLED - CONCRETE TRANSFORMER PAD  
SCALE: N.T.S.

2  
E5.1

**Design Information**

Fire Pump System - General Information							
Description	Manufacturer	HP	Volts	Phase	HZ	SF	Frame
Fire Pump Motor	Aurora	30	208	3	60	1.15	2B4JP
Jockey Pump Motor	MTH	0.5	120	1	60		
Fire Pump Controller	Tornatech		208	1	60		
Notes:							Input Values
							Result Values

Estimated Wire Lengths	
Description	Distance
Service- Entrance	
Utility transformer to meter	10
Meter to Fire Pump Controller	80
Total:	90
With Safety Margin (15%)	103.5

Voltage Drop (VD) =  $1.732 \times (\text{ohms-cmil}) \times \text{Amps} \times \text{Length}$   
cmil

Voltage Drop % (VD%) =  $(\text{VD}/\text{equipment volts}) \times 100$

Amps =  $\frac{\text{kVA} \times 1000}{1.732 \times \text{Volts}}$

Package Fire Pump System - Calculated Motor Load						
Load Description	Horse Power HP	Full Load Amps	Multiple	Total Amps	kVA	Notes:
Fire Pump Motor	30	92	1.25	115	41.3816	
Jockey Pump Motor	0.5	9.8	1.25	12.25	1.47	
Fire Pump Controller		5	1	5	1.7992	
Total					44.6508	
Notes:						Input Values
						Result Values

**Motor Load Conversion - kVA to Amps**

Amps =  $\frac{\text{kVA} \times 1000}{1.73 \times \text{Volts}}$

Amps = 124.09 Amps

Fire Pump System - Calculated Load						
Load Description	Horse Power HP	Full Load Amps	Multiple	Total Amps	kVA	Notes:
Fire Pump Motor	30	92	1	92	33.10528	
Jockey Pump Motor	0.50	9.8	1	9.8	2.03448	
Fire Pump Controller		5	1	5	1.7992	
Total					36.93896	
Notes:						Input Values
						Result Values

**Load Conversion - kVA to Amps**

Amps =  $\frac{\text{kVA} \times 1000}{1.73 \times \text{Volts}}$

Amps = 102.6538462 Amps

**Conductor Size Selection: #2**

**Review NEC Chapter 9 Table 8 to get Ohms kFT Circular mils Cmil)**

- 1 Start with assumed conductor size #2 THWN 75 C Amp Rating = 380 Amps
- 2 Ampacity Rating = 115A
- 3 Cmil Value = 66360 Table 8 Chapter 9 NEC
- 4 Ohm = 0.194
- 5 k Value (Calculated) = 12.87384
- 6 Lock Rotor Amps (Motor Code UNKNOWN): 2kVA/HP = 516

K Value Formula =  $\text{Ohms}/1000 \times \text{Cmil Value}$   
Calculated K Value = 12.87384

**Service Entrance**

Starting Voltage Drop FP = Fire Pump  
JP = Jockey ump

Starting Voltage Drop =  $1.732 \times \text{K value} \times ((\text{FP amp}) + (\text{JP amp})) \times \text{Length of wire}$   
Cmil value

Starting Voltage Drop = 17.92412172 Starting Volts dropped (SVD)

**National Electric Code (NEC) Code 695.7(A): Maximum allowed starting voltage drop % is 15%;**

Starting Voltage Drop (VD %) =  $(\text{SVD} / \text{Volts}) \times 100$

Starting Voltage Drop (VD %) = 8.617366212 % Calculated Voltage Drop meets Code

Running Voltage Drop =  $1.732 \times \text{K value} \times ((\text{FP amp}) + (\text{JP amp})) \times \text{Length of wire}$   
Cmil value

Running Voltage Drop (VD %) =  $(\text{SVD} / \text{Volts}) \times 100$

**National Electric Code (NEC) Code 695.7(A): Maximum allowed running voltage drop % is 5%;**

Running Voltage Drop = 4.340148134 Running Volts dropped (RVD)

Running Voltage Drop (VD %) = 2.08660968 % Calculated Voltage Drop meets Code

**FIRE PUMP - VOLTAGE DROP CALCULATIONS**

SCALE: N.T.S.

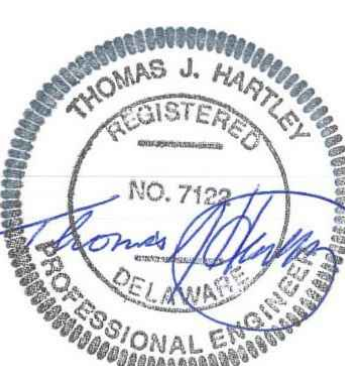
2  
E5.1

NO.	REVISION	DATE
A	SUBMITTED FOR DESIGN/BUILD TEAM REVIEW AND COMMENT	2025-12-12
B		2026-01-05



NEW CONSTRUCTION FOR:  
**HORIZON FARM CREDIT**  
BRIDGEVILLE, DE

ELECTRICAL DETAILS  
2 OF 2



SCALE : AS NOTED  
DESIGN BY : BEM  
DRAWN BY : BEM  
CHECKED BY : TJH/PJG  
DSE JOB # : 25-2-0007  
DATE : 07/08/2025

E 5.1