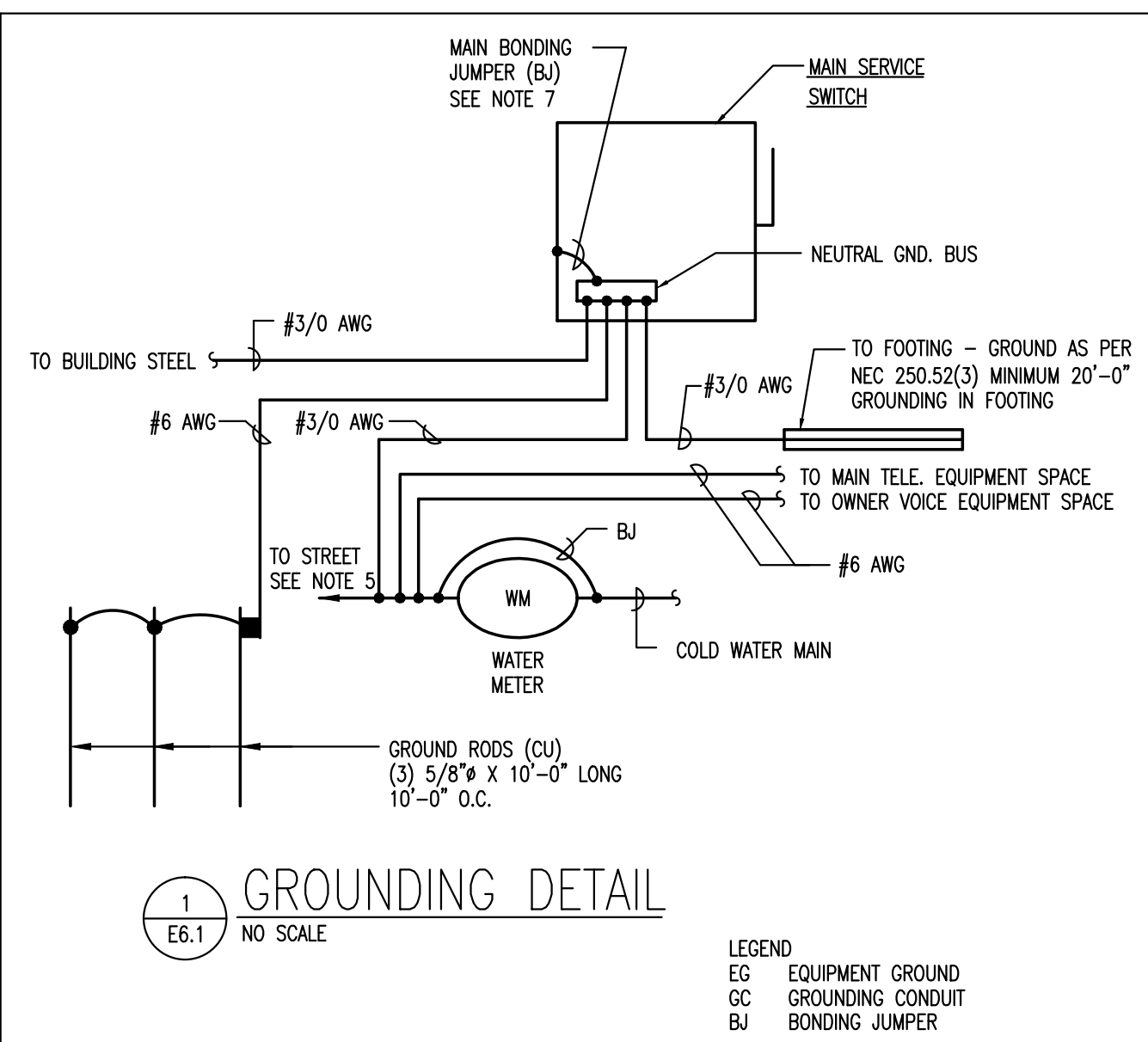


LEGEND OF FEEDER SIZES—COPPER CONDUCTORS

FEEDER SYMBOL	CONDUCTORS (3 PHASE, 3 WIRE) WITH GROUND	RACEWAY SIZE	CONDUCTORS (3 PHASE, 4 WIRE) WITH GROUND	RACEWAY SIZE	NOMINAL AMPERE RATING
(1)	3#6 & 1#10 GND.	1"	4#6 & 1#10 GND.	1"	60
(2)					
(3)	3#4 & 1#8 GND.	1"	4#4 & 1#8 GND.	1 1/4"	70
(4)					
(5)	3#1 & 1#6 GND.	1 1/4"	4#2 & 1#6 GND.	1 1/2"	100
(6)					
(7)	3#1 & 1#6 GND.	1 1/2"	4#1 & 1#6 GND.	1 1/2"	125
(8)					
(9)	3# 1/0 & 1#6 GND.	1 1/2"	4# 1/0 & 1#6 GND.	2"	150
(10)					
(11)	3# 2/0 & 1#6 GND.	2"	4# 2/0 & 1#6 GND.	2"	175
(12)					
(13)	3# 3/0 & 1#6 GND.	2"	4# 3/0 & 1#6 GND.	2"	200
(14)					
(15)	3# 4/0 & 1#4 GND.	2"	4# 4/0 & 1#4 GND.	2 1/2"	225
(16)					
(17)	3-250 KCMIL & 1#4 GND.	2 1/2"	4-250 KCMIL & 1#4 GND.	3"	250
(18)					
(19)	3-350 KCMIL & 1#4 GND.	3"	4-350 KCMIL & 1#4 GND.	3"	300
(20)					
(21)	3-500 KCMIL & 1#3 GND.	3"	4-600 KCMIL & 1#3 GND.	4"	350
(22)					
(23)	3-600 KCMIL & 1#3 GND.	3"	4-600 KCMIL & 1#3 GND.	4"	400
(24)					
(25)	6-250 KCMIL & 2#2 GND.	2-2 1/2"	8-250 KCMIL & 2#2 GND.	2-3"	500
(26)					
(27)	6-350 KCMIL & 2#1 GND.	2-3"	8-350 KCMIL & 2#1 GND.	2-3"	600
(28)					
(29)	6-600 KCMIL & 2#1/0 GND.	2-4"	8-600 KCMIL & 2#1/0 GND.	2-4"	800
(30)					
(31)	9-400 KCMIL & 3#2/0 GND.	3-3"	12-400 KCMIL & 3#2/0 GND.	3-3"	1000
(32)					
(33)	9-600 KCMIL & 3#3/0 GND.	3-4"	12-600 KCMIL & 3#3/0 GND.	3-4"	1200
(34)					
(35)	12-600 KCMIL & 4#4/0 GND.	4-4"	16-600 KCMIL & 4#4/0 GND.	4-4"	1600
(36)					
(37)	15-600 KCMIL & 5-250 KCMIL GND.	5-4"	20-600 KCMIL & 5-250 KCMIL GND.	5-4"	2000
(38)					
(39)	18-600 KCMIL & 6-350 KCMIL GND.	6-4"	24-600 KCMIL & 6-350 KCMIL GND.	6-4"	2500
(40)					
(41)	24-600 KCMIL & 8-400 KCMIL GND.	8-4"	32-500 KCMIL & 8-400 KCMIL GND.	8-4"	3000
(42)					
(43)	24-600 KCMIL & 8-500 KCMIL GND.	8-4"	32-600 KCMIL & 8-500 KCMIL GND.	8-4"	3200
(44)					
(45)	27-600 KCMIL & 9-500 KCMIL GND.	9-4"	36-600 KCMIL & 9-500 KCMIL GND.	9-4"	3500
(46)					
(47)	30-600 KCMIL & 10-500 KCMIL GND.	10-4"	40-600 KCMIL & 10-500 KCMIL GND.	10-4"	4000
(48)					
(A)	REFER TO TRANSFORMER FEEDER SCHEDULE PRIMARY SIDE INFORMATION				
(B)	REFER TO TRANSFORMER FEEDER SCHEDULE SECONDARY SIDE INFORMATION				
(C)	REFER TO TRANSFORMER FEEDER SCHEDULE GROUNDING INFORMATION				

GROUNDING NOTES:

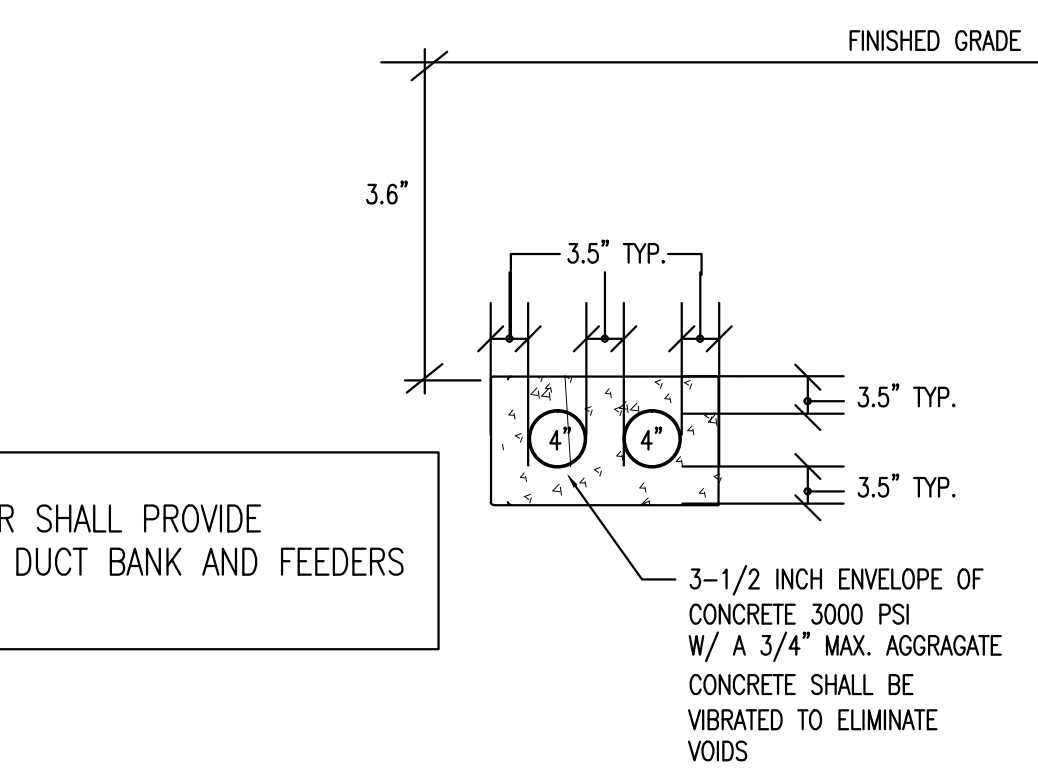
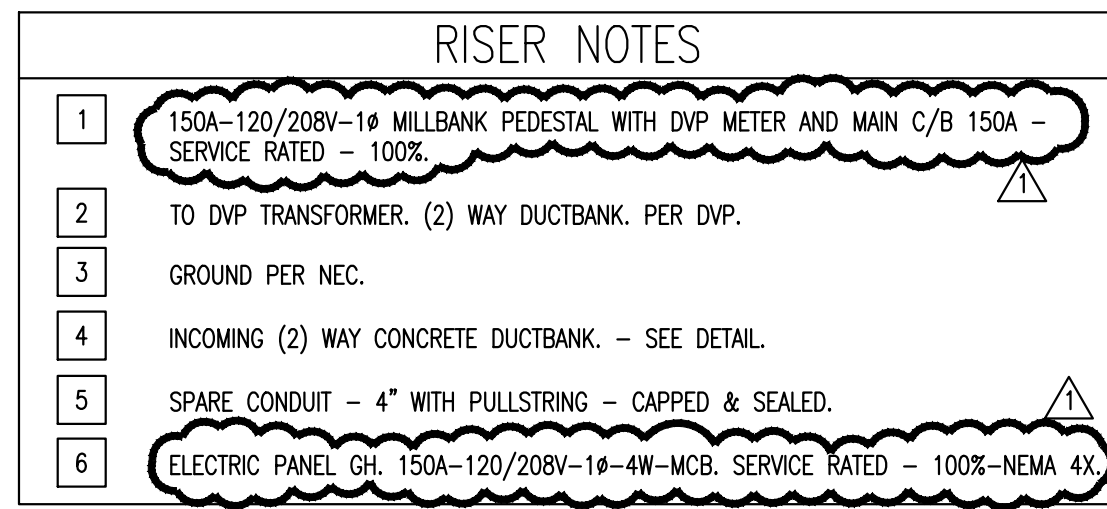
- ALL GROUNDING SHALL BE PER NEC 250
- CONDUITS SHALL BE PVC (SCH 40) WHEN USED.
- ALL GROUNDING CONNECTORS SHALL COMPLY WITH NEC 250-10 AND 70.
- ALL GROUNDING EQUIPMENT SHALL BE COPPER AND MUST BE LISTED FOR THE USE.
- NO SPLICES SHALL BE PERMITTED.
- GROUND ELECTRODE CONNECTOR SHALL BE WITHIN 5'-0" OF POINT OF ENTRANCE OF PIPE INTO THE BUILDING AND IT SHALL BE IN CONTACT WITH THE EARTH FOR AT LEAST 10'-0" BEYOND THE BUILDING EXTERIOR WALL.
- MAIN BONDING JUMPER SHALL BE SIZED PER NEC 250.28(D). FOR SUPPLY CONDUCTORS THROUGH 1100 KCMIL THE BONDING JUMPER SHALL BE 250 KCMIL (CU). FOR SUPPLY CONDUCTORS LARGER THAN 1100 KCMIL THE BONDING JUMPER SHALL HAVE AN AREA NOT LESS THAN 12.5 PERCENT OF THE AREA OF THE LARGEST UNGROUNDED SUPPLY CONDUCTOR OR EQUIVALENT AREA FOR PARALLEL SUPPLY CONDUCTORS.



1 E6.1 GROUNDING DETAIL
NO SCALE

POWER RISER DIAGRAM - ELECTRICAL

NO SCALE



NOTE: CONTRACTOR SHALL PROVIDE ELECTRICAL DUCT BANK AND FEEDERS

SECTION "A" - "A"

NO SCALE

- CONTRACTOR SHALL PROVIDE MAIN INCOMING UNDER CONCRETE INCASED IN DUCT BANK WITH FEEDERS PER NEC ARTICLE 300-5 230-8 AND POWER COMPANY REQUIREMENTS.
- ALL INSTALLATION WORK SHALL ALSO COMPLY WITH POWER CO. REQUIREMENTS.
- ALL CONDUIT TO BE 4" PVC SCHEDULE 40 WITH SPACERS.
- SEAL WATER TIGHT AND FOR GAS LEAK PER POWER CO REQUIREMENTS.

SECONDARY ELECTRICAL DUCT BANK DETAIL WITH POWER CO FEEDERS

NO SCALE

Panelboard Schedule

GH Panel		Location SITE		Voltage 120/208		Surface New		1 Phase - 3 Wire - Copper Bussing			
18100_GH.xls	Feed from DVP	Main Size 150 Amp	Main Circuit Breaker	Feeder See Riser	AIC 44K						
Load Name	Poles Trip	Item Load in VA				Phase Loads		Phase Loads			
LIGHTS GREENHOUSE	1 20	1	800			800	800				
LIGHTING GREENHOUSE	1 20	3	800								
LIGHTS GREENHOUSE	1 20	6	800			800	700				
EMERGENCY LTS:NL	1 20	7	700								
EXTERIOR EGRESS LTS	1 20	9	800			800	1500				
ELECTRIC WATER HEATER (208V-1P-4 SKW)	2 30	11				1500	1500				
EXTERIOR RECEPT COUNTER ABOVE	1 20	15	180				180				
EXTERIOR BOLLARDS	1 20	17	800			800	900				
EXTERIOR BOLLARDS	1 20	19	900				0				
SPARE	1 20	21					0				
SPARE	1 20	23					0				
Totals			180	5200	3000	4300	4080				

Demand Load Calculations

Lighting Load	5,200	6,500 calc at 125%
Receptacle Load	3,060	3,060 10 KVA @ 100% 0 remaining bal @ 50%
Mechanical Load	1,900	1,900 calc at 100%
Misc Circuit Load	3,000	3,000 calc at 100%
Misc 2		0 calc at 125%
Misc 3		0 calc at 100%
14,480 Total Demand Load		

Panel Size Calculations

Total Demand Load	14,480
Factored Voltage	208
Total Demand Amps	69.5
Highest Phase Amps	56.8
Connected Load Amps	63.3
Spare Capacity %	0%
Panel Amps	87 Amps required to be at 80% capacity of Demand per NEC

General Notes (1) GFI C/B

DATE	DESCRIPTION	DESIGNED BY:	CHECKED BY:
04/23/2019	SINGLE PHASE SERVICE CHANGE		
03/26/2019	BID/PERMIT SUBMISSION		



MEADOLARK CONSERVATORY GREENHOUSE
9150 MEADOLARK GARDENS CT, VIENNA, VA 22182
PROJECT NUMBER: 181200
SCALE: AS SHOWN
POWER RISER DIAGRAM
ELECTRICAL

HURST ENGINEERS

308 HILLWOOD AVE.
FALLS CHURCH, VA. 22046
(703) 534-7872

HE Project Number: 18-100

NOTE: THE CONSTRUCTION OF THIS PROJECT REQUIRES THE CONTRACTOR TO COORDINATE WORK SHOWN ON THIS DRAWING WITH THAT OF ALL OTHER TRADES. IN ADDITION, ALL PIPING, CONDUITS, DUCTWORK, ETC., ARE TO BE INSTALLED WITHIN THE JOISTS / GIRDERS AND TO MAINTAIN THE MINIMUM REQUIRED CLEARANCES, U.O.N. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE ARCHITECT WITH COORDINATION DRAWING DEVELOPED BY SUB CONTRACTORS & REFLECTING ALL TRADES. CHANGES RESULTING FROM CONFLICTS WITH OTHER TRADES AND WORK, IN THE EVENT OF ANY CONFLICTS THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING FOR CLARIFICATION BEFORE PROCEEDING.

