DRAWING NOTES

(1) PROVIDE AND INSTALL WEATHERPROOF 120/208 VOLT, 3Φ, 4W, 200 AMP MCB INTERSECT PANEL WITH INTEGRATED AUTOMATIC TRANSFER SWITCH AND SURGE PROTECTION MOUNT PANEL ON SCREEN WALL. REFER TO PANEL SCHEDULE AND SPECIFICATIONS, SHEET E-1 FOR ADDITIONAL INFORMATION. COORDINATE ALL REQUIREMENTS WITH VERIZON WIRELESS REPRESENTATIVE PRIOR TO ORDERING. ALL CONDUITS FROM INTERSECT PANEL MUST ENTER/EXIT THROUGH SIDE, REAR OR BOTTOM. CONDUIT INSTALLATION MUST INCLUDE ALL NECESSARY FITTINGS, SEALANTS, ETC. TO MAINTAIN NEMA RATING OF ENCLOSURE. WHEN DRILLING INTO INTERSECT PANEL, ATS MUST BE COVERED TO AVOID METALLIC SHAVINGS DROPPING INTO ATS CONTACTS.

(2) CHARLES AND BATTERY CABINETS SHALL BE INSTALLED TO ALLOW FOR A MINIMUM 36" DOOR SWING CLEARANCE AT FRONT AND BACK OF CABINET. CONSTRUCTION MANAGER AND GENERAL CONTRACTOR SHALL INSURE THAT THE ISOLATION PAD THAT COMES WITH CHARLES AND BATTERY CABINETS ARE INSTALLED BENEATH THE CABINETS.

(3) CONTRACTOR SHALL TERMINATE ALARMS WIRING ON ALARMS TERMINAL BLOCK PROVIDED WITH CHARLES CABINET. REFER TO ALARM LEADS DETAIL, SHEET E-7 FOR ADDITIONAL INFORMATION.

(4) EXTEND 1-1/2" SEALTIGHT CONDUIT FROM VERIZON WIRELESS PANEL "PP1" AND TURN UP AT SIDE OF CHARLES CABINET. PENETRATE CONDUIT THROUGH SIDE OF CHARLES RF CABINET ABOVE BATTERY COMPARTMENT FOR EXTENSION OF RECTIFIER WIRING (8#10 AWG + 4#10 GRD). REFER TO PANEL SCHEDULE SHEET E-1 FOR ADDITIONAL INFORMATION.

(5) EXTEND ADDITIONAL 1-1/2" SEALTIGHT CONDUIT FROM VERIZON WIRELESS PANEL "PP1" AND TURN UP AT SIDE OF CHARLES CABINET. PENETRATE CONDUIT THROUGH SIDE OF CHARLES RF CABINET ABOVE BATTERY COMPARTMENT FOR EXTENSION OF CABINET RECEPTACLE WIRING (2#12 AWG + #12 GRD). CONDUIT IS SIZED TO ACCOMMODATE FUTURE RECTIFIER WIRING. REFER TO PANEL SCHEDULE SHEET E-1 FOR ADDITIONAL INFORMATION.

(6) PROVIDE AND INSTALL RAYCAP MAIN DISTRIBUTION BOX WITH SIX (6) OVP (TYP OF 3) MOUNTED ON PLATFORM SCREEN WALL EXTERIOR.

(7) PROVIDE AND INSTALL (NEMA 3R) 12"x12"x6'-0" TROUGH MOUNTED ON PLATFORM SCREEN WALL EXTERIOR FOR FIBER AND DC WIRING DISTRIBUTION.

(8) EXTEND HYBRIFLEX CABLES OUT OF BOTTOM OF TROUGH FOR EXTENSION TO EACH ANTENNA SECTOR.

(9) EXTEND TWO (2) 3" SEALTIGHT CONDUITS FROM NEW RAYCAP TROUGH AND TURN UP AT SIDE OF CHARLES CABINET. PENETRATE CONDUIT THROUGH SIDE OF CHARLES RF CABINET ABOVE BATTERY COMPARTMENT FOR EXTENSION OF DC WIRING AND FIBER CABLES. CONTRACTOR SHALL UTILIZE 3" FIBER CONDUIT FOR EXTENSION OF RAYCAP ALARMS WIRING. EACH END OF FIBER CONDUIT SHALL HAVE A 145P TAG WITH P-TOUCH LABEL READING, "FIBER/ALARMS".

(10) VERIZON WIRELESS PROVIDED, CONTRACTOR INSTALLED 15 KW NATURAL GAS -48V DC GENERATOR MOUNTED ON ELEVATED STEEL FRAMING. REFER TO SPECIFICATIONS, SHEET E-1 AND DETAILS, SHEET E-9 FOR ADDITIONAL INFORMATION.

(11) EXTEND TWO (2) PARALLEL SETS OF #4/0 AWG DC CONDUCTORS (4#4/0 AWG TOTAL) IN 2-1/2" SEALTIGHT CONDUIT FROM 350A PULL-OUT FUSE AT GENERATOR AND TURN UP AT SIDE OF CHARLES CABINET. CONTRACTOR SHALL PENETRATE THROUGH SIDE OF CHARLES CABINET ABOVE BATTERY COMPARTMENT AND TERMINATE DC RETURN FEED (2#4/0AWG) ON LUGS AT REAR OF RECTIFIER PLANT. TERMINATE DC FEED (2#4/0 AWG) ON NEW 400A BULLET BREAKER. VERIZON PROVIDED, CONTRACTOR INSTALLED 400A DC BULLET BREAKER BREAKER KIT AND ASSOCIATED ADAPTOR PLATE ON FRONT OF RECTIFIER PLANT. ALL DC WIRING FROM GENERATOR TO CHARLES CABINET SHALL BE SOUTHWIRE TELCOFLEX III. LABEL EACH END OF EACH CABLE RUN WITH "TO" AND "FROM" INFORMATION USING 145CN FIBER TAGS. CONTRACTOR SHALL COORDINATE WITH VERIZON WIRELESS CONSTRUCTION MANAGER ON FINAL WIRING METHOD/SIZE AND TERMINATION OF CONDUCTORS INSIDE OF CHARLES CABINET.

(12) EXTEND THREE (3) 24 GAUGE TWISTED PAIR CAT 5 CABLES WITH 4 PAIRS AND A DRAIN LEAD IN 1" SEALTIGHT CONDUIT WITH PULL ROPE FROM EXTERIOR GENERATOR AND TURN UP AT SIDE OF CHARLES CABINET. CONTRACTOR SHALL PENETRATE THROUGH SIDE OF CHARLES CABINET ABOVE BATTERY COMPARTMENT FOR FINAL CONNECTION TO SITE BOSS. CAT 5 CABLES SHALL BE USED FOR GENERATOR CONTROL/ ALARM WIRING (GENERATOR FAULT/TROUBLE AND GENERATOR RUN). ONE (1) CAT 5 SHALL BE LABELED AS "SPARE".

(13) EXTEND SINGLE PAIR, 22 GAUGE GRAY INSULATED CONDUCTORS IN 1" SEALTIGHT CONDUIT FROM EXTERIOR GENERATOR AND TURN UP AT SIDE OF CHARLES CABINET. CONTRACTOR SHALL PENETRATE THROUGH SIDE OF CHARLES CABINET ABOVE BATTERY COMPARTMENT FOR FINAL TERMINATION ALARM TERMINAL BLOCK LOCATED INSIDE OF CHARLES CABINET. CABLES SHALL BE USED FOR LOW GAS PRESSURE ALARM. CONTRACTOR SHALL LEAVE 3'-0" SERVICE LOOP INSIDE OF GENERATOR AND TAG BOTH ENDS OF CONDUCTORS "LOW GAS PRESSURE".

(14) EXTEND 6 PAIR, 16 GAUGE, THHN COPPER CONDUCTORS IN 1" CONDUIT FROM ALARM LEADS IN INTEGRATED LOAD CENTER (INTERSECT PANEL) AND TERMINATE AT ALARMS PUNCHDOWN BLOCK INSIDE OF CHARLES CABINET. CABLE PAIRS SHALL BE USED FOR ATS ALARMING (COMMERCIAL POWER FAIL/PHASE LOSS, POWER SURGE).

(15) PROVIDE AND INSTALL 24"x4"x1/4" THICK, GALVANIZED, STEEL GROUND BAR MOUNTED ON INSULATED STANDOFFS ON EQUIPMENT BACKBOARD. REFER TO SHEET E-5 FOR ADDITIONAL INFORMATION.

(16) EXTEND 1#500 KCMIL, GREEN, INSULATED, STRANDED, COPPER CONDUCTOR FROM EXTERIOR GROUND BAR AND BOND TO EXISTING INCOMING WATER SERVICE PIPE LOCATED IN BASEMENT LEVEL TENANT STORAGE ROOM. REFER TO GROUNDING PLAN, SHEET E-5 FOR ADDITIONAL INFORMATION.

(17) EXISTING BUILDING 277/480V, 3Φ, 4W, 1,200A SWITCHBOARD IN BASEMENT LEVEL MAIN ELECTRIC ROOM. UTILIZE EXISTING SPARE DUCT LOCATED WITHIN OVERHEAD INCOMING SERVICE TROUGH FOR EXTENSION OF NEW ELECTRIC SERVICE CABLES (BY UTILITY COMPANY).

(18) PROVIDE (6"W x 6"D x LENGTH REQUIRED) WIRE TROUGH WITH REMOVABLE COVERS FROM THE EXISTING INCOMING PEPCO SERVICE SECTION, SECURED TO ELECTRIC ROOM WALL ALONG REAR OF SWITCHBOARD, AND TERMINATE AT PROPOSED SERVICE DISCONNECT (ENCLOSED CIRCUIT BREAKER) FOR EXTENSION OF NEW NOMINAL 200A ELECTRIC SERVICE CABLES BY UTILITY COMPANY (4#2/0 AWG + #4GRD). PROVIDE AND INSTALL 2" NIPPLE BETWEEN TROUGH AND ENCLOSED CIRCUIT BREAKER.

(19) PROVIDE 480 VOLT RATED, 3P100 AMP ENCLOSED CIRCUIT BREAKER. MOUNT ENCLOSED CIRCUIT BREAKER ON MAIN ELECTRIC ROOM INTERIOR WALL AT REAR OF SWITCHBOARD. PROVIDE PHENOLIC NAMEPLATE READING "VERIZON WIRELESS ROOFTOP EQUIPMENT - 277/480V,3Φ,4W."

(20) 4#2/0 AWG + #4GRD - 2" CDT.

(21) CONTRACTOR FURNISHED AND INSTALLED METER CAN MOUNTED ON MAIN ELECTRIC ROOM INTERIOR WALL. METER GLOBE PROVIDED AND INSTALLED BY UTILITY COMPANY. COORDINATE FINAL MOUNTING LOCATION WITH BUILDING OWNER REPRESENTATIVE AND UTILITY COMPANY IN THE FIELD. PROVIDE PHENOLIC NAMEPLATE READING "VERIZON WIRELESS ROOFTOP EQUIPMENT - 277/480V,3Φ,4W."

(22) PROVIDE 480 VOLT RATED, 3P100 AMP SERVICE ENTRANCE RATED ENCLOSED CIRCUIT BREAKER. MOUNT ENCLOSED CIRCUIT BREAKER ADJACENT TO NEW METER ON MAIN ELECTRIC ROOM INTERIOR WALL. PROVIDE PHENOLIC NAMEPLATE READING "VERIZON WIRELESS - ROOFTOP TRANSFORMER PRIMARY DISCONNECT."

(23) PROVIDE "CAUTION TWO SOURCES OF SUPPLY" STICKER ON SERVICE DISCONNECT. BACKGROUND SHALL BE YELLOW WITH BLACK BLOCK STYLE LETTERING. REFER TO DETAIL, THIS SHEET.

(24) EXTEND 3#1 AWG + #8 GRD IN 1-1/4" CONDUIT (NORMAL).

(25) ROVIDE WEATHERPROOF, 600 VOLT RATED, 3P100 AMP NON-FUSED DISCONNECT SWITCH. MOUNT DISCONNECT SWITCH ON EQUIPMENT PLATFORM ADJACENT TO NEW TRANSFORMER. PROVIDE PHENOLIC NAMEPLATE READING "VERIZON WIRELESS - TRANSFORMER PRIMARY DISCONNECT."

(26) PROVIDE WEATHERPROOF, 480 VOLT, 3Φ, DELTA PRIMARY : 120/208V, 3Φ, 4W, WYE SECONDARY, 75 KVA TRANSFORMER. SECONDARY CONDUCTOR SHALL NOT EXCEED 10 FEET IN LENGTH TO OVERCURRENT PROTECTION DEVICE. ADJUST TAP SETTING TO ACCOMMODATE FOR VOLTAGE DROP IN SECONDARY FEEDER AS REQUIRED. EXTEND #4 AWG, INSULATED, STRANDED, COPPER CONDUCTOR FROM SECONDARY SIDE OF TRANSFORMER TO EXISTING INCOMING WATER SERVICE PIPE IN BASEMENT LEVEL TENANT STORAGE ROOM. COORDINATE SERVICE GROUND TERMINATION LOCATION IN THE FIELD

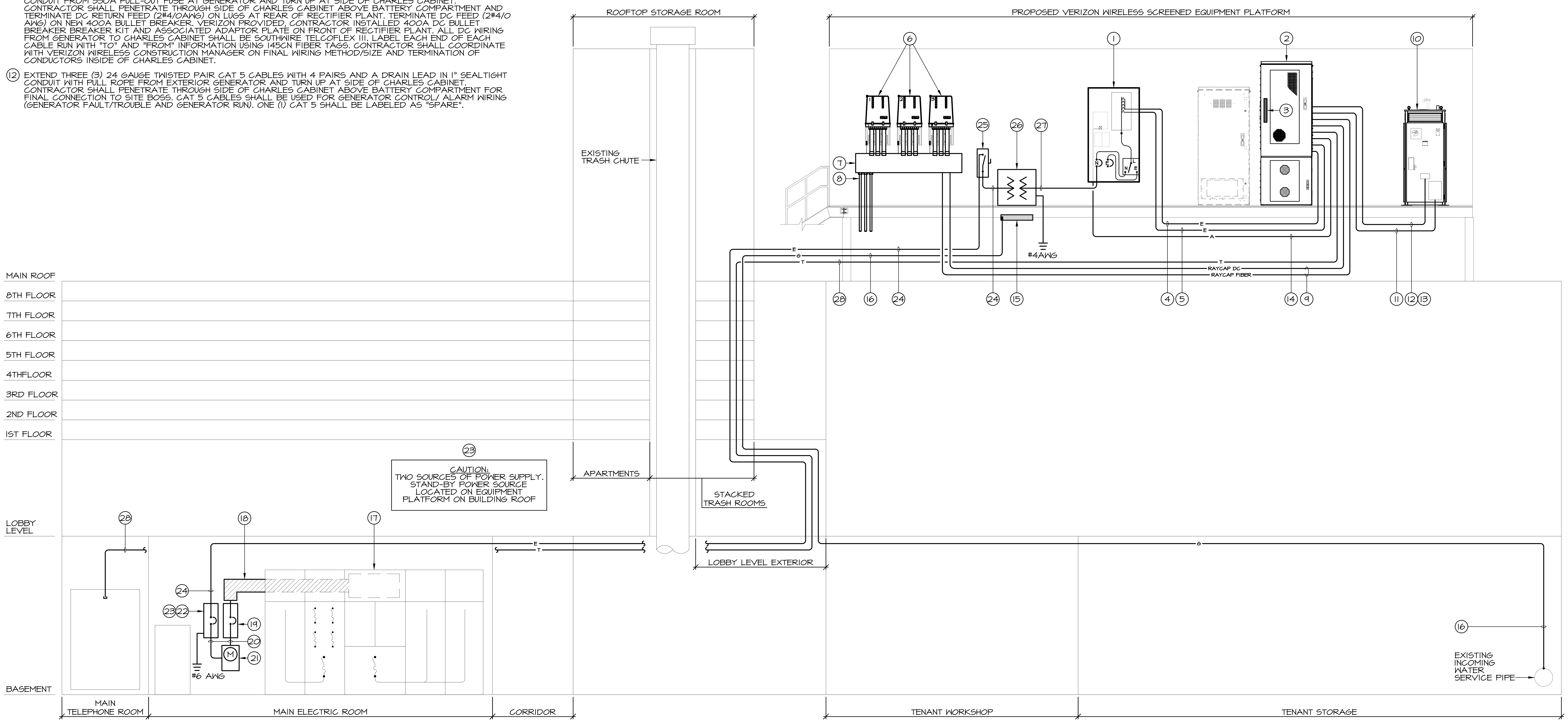
(27) EXTEND 4#3/0 AWG + #4 GRD - 2" CONDUIT.

(28) CONTRACTOR SHALL EXTEND ONE (1) - 2" CONDUIT AND PULLSTRING FROM EXISTING TELCO DEMARC LOCATION IN MAIN TELEPHONE ROOM ON BASEMENT LEVEL TO CHARLES CABINET MOUNTED ON VERIZON WIRELESS EQUIPMENT PLATFORM. COORDINATE EXACT TERMINATION LOCATION WITH VERIZON WIRELESS/ BUILDING REPRESENTATIVE IN THE FIELD. ENTIRE TELEPHONE CONDUIT ROUTING SHALL NOT CONTAIN ANY LB FITTINGS. ALL BENDS SHALL BE OF LONG SWEEPS OR MADE BY USING JUNCTION BOXES, 4" x 12" MINIMUM. REFER TO DETAIL, SHEET E-6.

(29) CONTRACTOR SHALL CLEARLY LABEL ALL VERIZON WIRELESS CONDUITS USING STENCIL OR STICKERS WITH BLOCK STYLE LETTERING READING "VERIZON WIRELESS". CONDUIT SHALL BE LABELED EVERY 20'-0" OR AT EVERY LEVEL FOR VERTICAL RUNS.

(30) ALL CONDUIT ROUTING INDOORS SHALL BE EMT. ALL CONDUIT ROUTING OUTDOORS AND EXPOSED TO WEATHER SHALL BE RIGID GALVANIZED STEEL. ALL CONDUITS AT EQUIPMENT PLATFORM SHALL BE SEALTIGHT.

(31) REFER TO ROUTING PLANS, SHEET E-3 FOR ADDITIONAL INFORMATION.



(29)(30)(31) POWER RISER DIAGRAM
NO SCALE

TEI
Telegent Engineering Inc.
2216 Commerce Road, Suite 1
Forest Hill, MD 21050
410-692-5816
www.tel-eng.com

DISTRICT OF COLUMBIA TIMOTHY SCHMIDT No. 10346 REGISTERED PROFESSIONAL ENGINEER

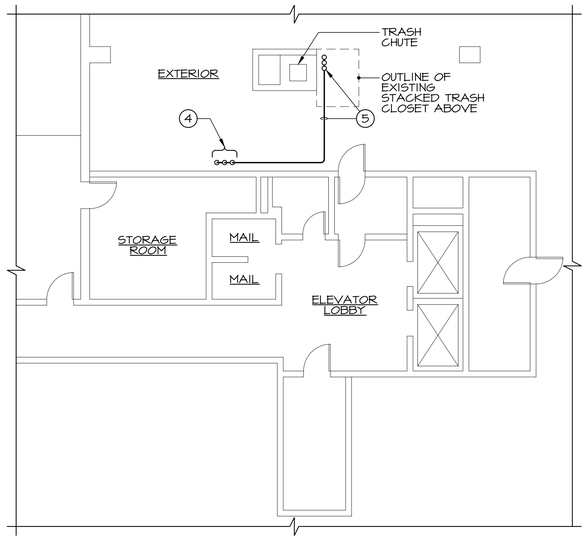
verizon
BEST WESTERN REPLACEMENT
101 G STREET, SW
WASHINGTON, D.C. 20024

REVISIONS:

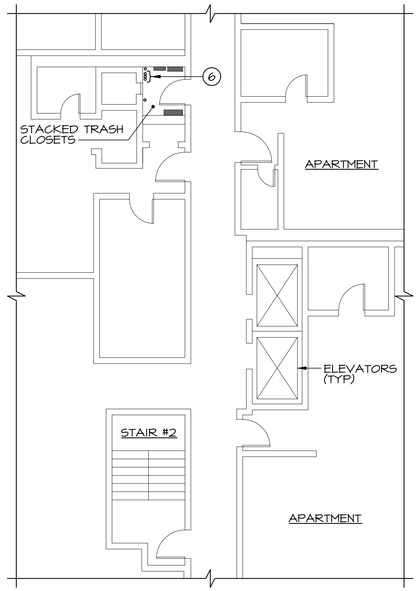
NO.	DESCRIPTION	DATE
	PERMIT DRAWINGS	11/27/17
	ELECTRIC SERVICE REV.	11/17/17

LAST REV.:
PROJECT NO: 17086P
DATE: NOVEMBER 17, 2017
SCALE: AS NOTED
TITLE: POWER RISER DIAGRAM AND NOTES
SHEET: E-2
E002
TEI#17086P

Board of Zoning Adjustment
District of Columbia
CASE NO.19415
EXHIBIT NO.58A2



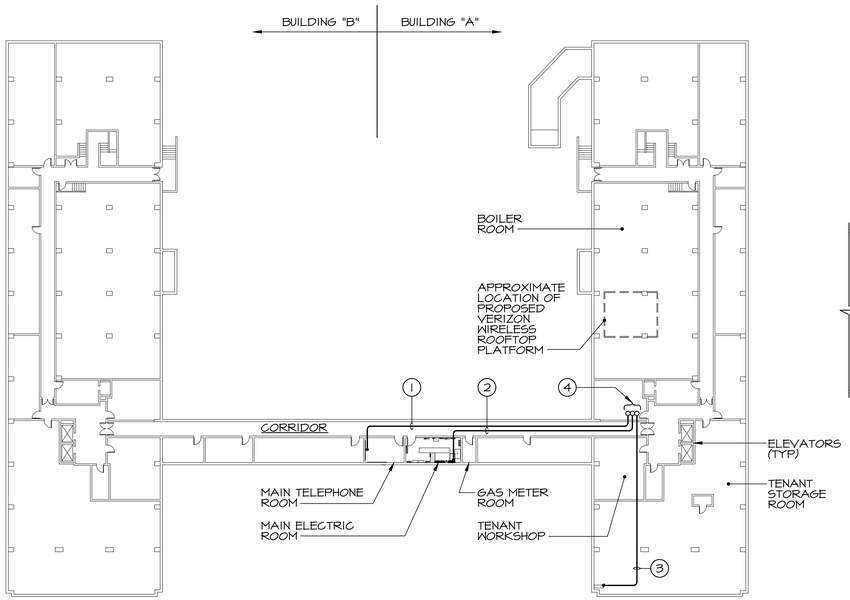
9 10 11 LOBBY LEVEL ROUTING PLAN
SCALE: 1/8" = 1'-0" (BUILDING "A")



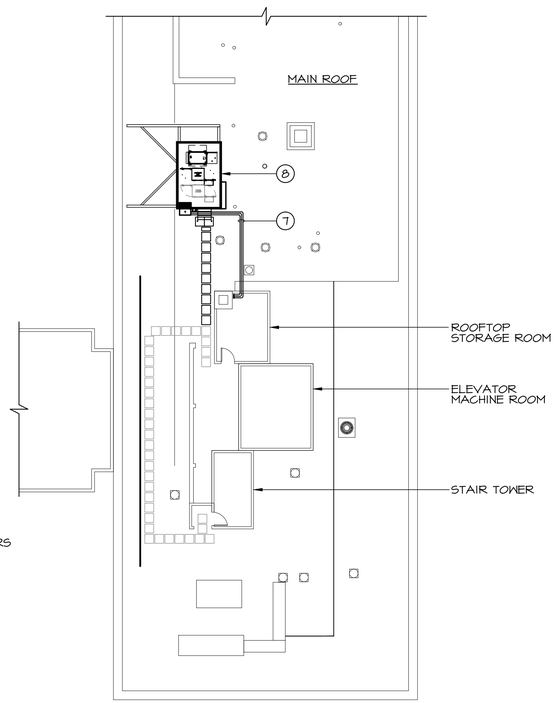
9 11 TYPICAL FLOOR ROUTING PLAN
SCALE: 1/8" = 1'-0" (BUILDING "A", 1ST - 8TH FLOORS)

DRAWING NOTES

1. EXTEND TELEPHONE CONDUIT OUT OF MAIN TELEPHONE ROOM AND CONTINUE HORIZONTALLY ACROSS BASEMENT LEVEL CEILING. COORDINATE FINAL ROUTING ACROSS CORRIDOR CEILING WITH EXISTING CONDITIONS.
2. EXTEND POWER CONDUIT OUT OF MAIN ELECTRIC ROOM AND CONTINUE HORIZONTALLY ACROSS BASEMENT LEVEL CEILING. COORDINATE FINAL ROUTING ACROSS CORRIDOR CEILING WITH EXISTING CONDITIONS.
3. ROUTE GROUND CONDUCTOR FROM EXISTING INCOMING WATER SERVICE PIPE IN BASEMENT LEVEL TENANT STORAGE ROOM ACROSS CEILING. COORDINATE FINAL ROUTING WITH EXISTING CONDITIONS.
4. TURN CONDUITS/CONDUCTOR UP THROUGH LOBBY LEVEL FLOOR SLAB INTO BUILDING EXTERIOR SPACE ABOVE. COORDINATE FINAL TURN UP LOCATION WITH EXISTING CONDITIONS.
5. ON LOBBY LEVEL, CONTINUE CONDUITS SECURED HORIZONTALLY TO EXTERIOR SPACE CEILING AND TURN UP INTO 1ST FLOOR STACKED TRASH ROOM ABOVE. COORDINATE FINAL TURN UP LOCATION WITH LOCATION OF STACKED TRASH ROOM ABOVE.
6. CONTINUE CONDUITS/ CONDUCTOR VERTICALLY UP THROUGH STACKED TRASH ROOMS, PENETRATING THROUGH EACH FLOOR SLAB ABOVE TO ROOFTOP STORAGE ROOM. COORDINATE FINAL PENETRATION LOCATIONS WITH EXISTING TRASH ROOM CONDITIONS ON EACH FLOOR PRIOR TO START OF WORK. CONTRACTOR SHALL CORE DRILL THROUGH EACH FLOOR SLAB AS REQUIRED AND COORDINATE ALL NECESSARY X-RAY/ GPR USAGE WITH BUILDING OWNER PRIOR TO START OF WORK.
7. AT MAIN ROOF LEVEL, TURN CONDUITS THROUGH STORAGE ROOM EXTERIOR WALL AND CONTINUE HORIZONTALLY ACROSS MAIN ROOF TO PROPOSED VERIZON WIRELESS ROOFTOP PLATFORM. COORDINATE FINAL ROUTING ACROSS MAIN ROOF WITH EXISTING CONDITIONS.
8. PROPOSED LOCATION OF VERIZON WIRELESS ROOFTOP EQUIPMENT PLATFORM. REFER TO SHEET E-4 FOR ADDITIONAL INFORMATION.
9. CONTRACTOR SHALL CLEARLY LABEL ALL VERIZON WIRELESS CONDUITS USING STENCIL OR STICKERS WITH BLOCK STYLE LETTERING READING "VERIZON WIRELESS". CONDUIT SHALL BE LABELED EVERY 20'-0" OR AT EVERY LEVEL FOR VERTICAL RUNS.
10. SECURE ALL CONDUITS ROUTING HORIZONTALLY TIGHT TO CEILING STRUCTURE USING KINDORF SUPPORTS SPACED EVERY 10'-0" ON CENTER. COORDINATE ROUTING WITH EXISTING CONDITIONS IN THE FIELD. SEAL ALL INTERIOR PENETRATIONS WITH U.L. APPROVED FIRE STOP MATERIAL. SEAL ALL EXTERIOR WALL/ FLOOR PENETRATIONS WEATHERTIGHT.
11. SECURE ALL CONDUITS ROUTING VERTICALLY TIGHT TO WALL USING KINDORF CHANNELS SPACED EVERY 10'-0" ON CENTER. COORDINATE ROUTING WITH EXISTING CONDITIONS IN THE FIELD. SEAL ALL EXTERIOR WALL/ FLOOR PENETRATIONS WEATHERTIGHT.



9 10 11 BASEMENT ROUTING PLAN
SCALE: 1" = 30'-0"



9 10 11 MAIN ROOF ROUTING PLAN
SCALE: 1/16" = 1'-0" (BUILDING "A")

0 30 60 90
SCALE: 1"=30'-0"

0 4 8 16 24
SCALE: 1/8"=1'-0"

0 4 8 12 16 32 48
SCALE: 1/16"=1'-0"

TEI
TELEGENT ENGINEERING INC.
2216 Commerce Road, Suite 1
Forest Hill, MD 21050
410-692-5816
www.tel-eng.com

DISTRICT OF COLUMBIA
THOMAS W. SCHMIDT
NO. 10346
REGISTERED
PROFESSIONAL ENGINEER

verizon
BEST WESTERN REPLACEMENT
101 G STREET, SW
WASHINGTON, D.C. 20024

REVISIONS:

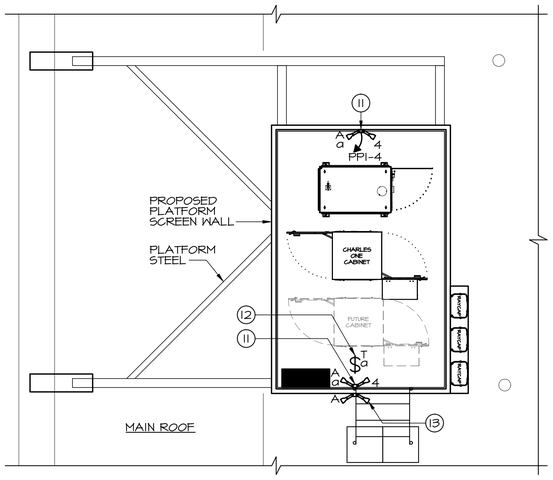
NO.	DESCRIPTION	DATE
	PERMIT DRAWINGS	11/27/17
	ELECTRIC SERVICE REV.	11/17/17

LAST REV.:
PROJECT NO: 17086P
DATE: NOVEMBER 17, 2017
SCALE: AS NOTED

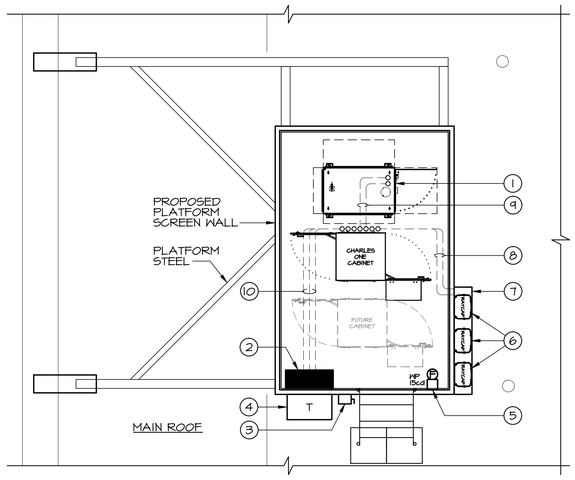
TITLE: ROUTING PLANS AND NOTES

SHEET: E-3
E003

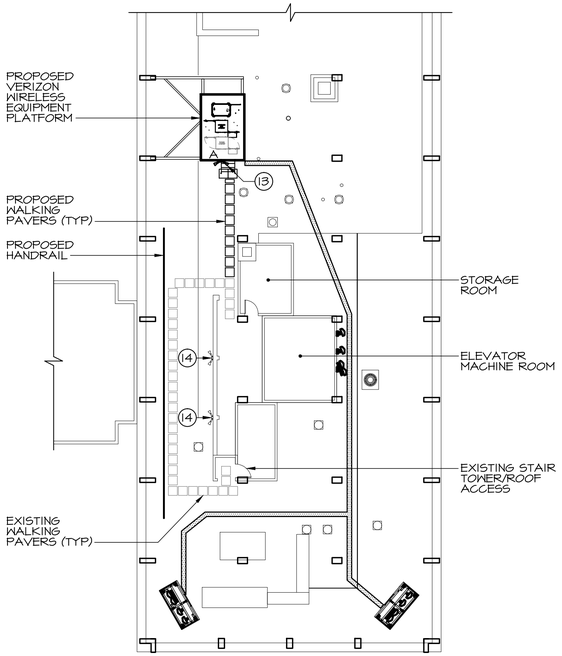
TE#17086P



PLATFORM LIGHTING PLAN
SCALE: 1/4" = 1'-0"



PLATFORM POWER PLAN
SCALE: 1/4" = 1'-0"

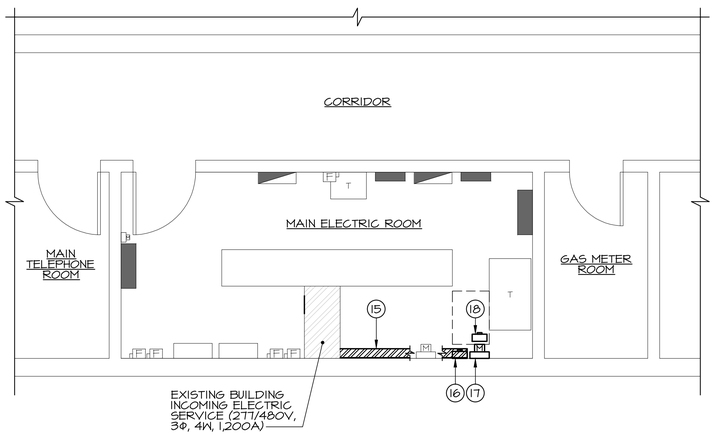


MAIN ROOF LIGHTING PART PLAN
SCALE: 1/16" = 1'-0"

LIGHTING FIXTURE SCHEDULE

TYPE	LAMPS	MOUNTING	DESCRIPTION/VOLTAGE	CATALOG NO.
A	1096 LUMENS 19.87 WATT LED 5199K	WALL OR EAVE	UL LISTED WET LOCATION LED SURFACE MOUNT WITH RUGGED CAST-ALUMINUM, CORROSION-RESISTANT HOUSING IN BRONZE OR WHITE FINISH AND CLEAR ACRYLIC LENSES, FULLY GASKETED TO PROTECT LEDS WITH TWO (2) ADJUSTABLE HEADS (120V)	LITHONIA LED FLOODLIGHT OFLR 6LC 120 P BZ

- CONTRACTOR SHALL BYPASS BUILT-IN PHOTOCELL. FIXTURE SHALL BE CONNECTED TO SWITCHED PORTION OF LIGHTING CIRCUIT AND BE CONTROLLED BY SPRING-WOUND TIMER SWITCH.



MAIN ELECTRIC ROOM POWER PLAN
SCALE: 1/4" = 1'-0" (BASEMENT LEVEL)

DRAWING NOTES

1. PROPOSED LOCATION OF VERIZON WIRELESS 15KW NATURAL GAS GENERATOR MOUNTED ON ELEVATED STEEL PLATFORM. REFER TO DETAIL, SHEET E-9.
2. PROVIDE AND INSTALL WEATHERPROOF 120/208 VOLT, 3Φ, 4W, 200 AMP MCB INTERSECT PANEL WITH INTEGRATED AUTOMATIC TRANSFER SWITCH AND SURGE PROTECTION MOUNTED ON BACKBOARD. REFER TO SHEET E-2 FOR ADDITIONAL INFORMATION.
3. PROVIDE WEATHERPROOF, 600 VOLT RATED, 3P100 AMP NON-FUSED DISCONNECT SWITCH. MOUNT DISCONNECT SWITCH ON VERIZON WIRELESS PLATFORM SCREEN WALL EXTERIOR. PROVIDE PHENOLIC NAMEPLATE READING "VERIZON WIRELESS - TRANSFORMER PRIMARY DISCONNECT."
4. PROVIDE WEATHERPROOF, 480 VOLT, 3Φ, DELTA PRIMARY ; 120/208V, 3Φ, 4W, WYE SECONDARY, 75 KVA TRANSFORMER. SECONDARY CONDUCTOR SHALL NOT EXCEED 10 FEET IN LENGTH TO OVERCURRENT PROTECTION DEVICE. ADJUST TAP SETTING TO ACCOMMODATE FOR VOLTAGE DROP IN SECONDARY FEEDER AS REQUIRED. EXTEND #4 AWG, INSULATED, STRANDED, COPPER CONDUCTOR FROM SECONDARY SIDE OF TRANSFORMER TO EXISTING BUILDING INCOMING WATER SERVICE PIPE IN BASEMENT LEVEL TENANT STORAGE ROOM. COORDINATE SERVICE GROUND TERMINATION LOCATION IN THE FIELD.
5. PROVIDE WEATHERPROOF AUDIBLE/VISUAL FIRE ALARM SIGNALING DEVICE TO MATCH BUILDING STANDARD MOUNTED ON EQUIPMENT PLATFORM (ABOVE ALL NEW EQUIPMENT). EXTEND SIGNAL CABLING IN 3/4" CONDUIT (RIGID STEEL WHERE EXPOSED TO WEATHER) AND CONNECT TO NEAREST FIRE ALARM WIRING LOOP. CONNECTION TO BUILDING SYSTEM SHALL BE COMPLETED BY BASE BUILDING FIRE ALARM CONTRACTOR.
6. PROPOSED LOCATION OF RAYCAP MAIN DISTRIBUTION BOX (TYP OF 3) MOUNTED ON VERIZON WIRELESS PLATFORM SCREEN WALL EXTERIOR. REFER TO DETAIL, SHEET E-6.
7. PROVIDE AND INSTALL (NEMA 3R) 12"x12"x6'-0" TROUGH MOUNTED ON PLATFORM SCREEN WALL EXTERIOR FOR FIBER AND DC WIRING DISTRIBUTION. REFER TO DETAIL, SHEET E-6.
8. EXTEND TWO (2) 3" SEALTIGHT CONDUITS FROM BOTTOM OF NEW RAYCAP TROUGH AND TURN UP THROUGH BOTTOM OF CHARLES R-F CABINET FOR EXTENSION OF DC WIRING AND FIBER CABLES. CONTRACTOR SHALL EXTEND RAYCAP ALARM WIRING IN 3" CONDUIT BEING USED FOR FIBER FOR EXTENSION INTO CHARLES CABINET. COORDINATE FINAL ROUTING IN THE FIELD.
9. PROPOSED ROUTE OF GENERATOR CONDUITS EXTENDING BELOW PLATFORM GRATING FROM GENERATOR AND TURN UP AT SIDE OF CHARLES CABINET. REFER TO POWER RISER, SHEET E-2 FOR ADDITIONAL INFORMATION.
10. PROPOSED ROUTE OF RECTIFIER/ALARM CONDUITS EXTENDING BELOW PLATFORM GRATING FROM INTERSECT PANEL AND TURN UP AT SIDE OF CHARLES CABINET. REFER TO POWER RISER DIAGRAM, SHEET E-2 FOR ADDITIONAL INFORMATION.
11. PROVIDE LIGHT FIXTURE AS DESIGNATED BY AN UPPERCASE SUBSCRIPT. MOUNT LIGHT FIXTURE TO PLATFORM SCREEN INTERIOR FOR EQUIPMENT PLATFORM ILLUMINATION. COORDINATE FINAL MOUNTING LOCATION WITH VERIZON WIRELESS REPRESENTATIVE.
12. PROVIDE AND INSTALL AN EXTERIOR GRADE, SPRING WOUND TIMER SWITCH AT VERIZON WIRELESS EQUIPMENT PLATFORM FOR CONTROL OF PLATFORM LIGHTING. TIMER SWITCH SHALL BE INTERMATIC OR APPROVED EQUAL WITH 60 MINUTE MAXIMUM SETTING. MOUNT SWITCH WITHIN WEATHERPROOF GANG BOX WITH DIE-CAST ALUMINUM, WEATHERPROOF GANG BOX COVER AS MANUFACTURED BY INTERMATIC (MODEL #WP1250MVXD). COORDINATE EXACT MOUNTING LOCATION WITH VERIZON WIRELESS REPRESENTATIVE IN THE FIELD.
13. PROVIDE LIGHT FIXTURE AS DESIGNATED BY AN UPPERCASE SUBSCRIPT. MOUNT LIGHT FIXTURE TO PLATFORM SCREEN EXTERIOR FOR RIOOFTOP ILLUMINATION. THIS LIGHT FIXTURE SHALL BE CONNECTED TO EXISTING BUILDING ROOF LIGHTING CIRCUIT AND BE CONTROLLED BY EXISTING ROOFTOP LIGHTING SWITCH CURRENTLY SERVING EXISTING ROOFTOP LIGHT FIXTURES.
14. EXISTING BUILDING ROOFTOP LIGHT FIXTURES MOUNTED ON EXTERIOR SCREEN WALL. CONTRACTOR SHALL ENSURE FIXTURES ARE OPERABLE AND SWITCH CONTROLLED AT ROOF ACCESS. CLEAN AND RE-LAMP FIXTURES AS REQUIRED.
15. PROVIDE (6"W x 6"D x LENGTH REQUIRED) WIRE TROUGH WITH REMOVABLE COVERS FROM THE EXISTING INCOMING PEPCO SERVICE SECTION, SECURED TO ELECTRIC ROOM WALL ALONG REAR OF SWITCHBOARD, AND TERMINATE AT PROPOSED SERVICE DISCONNECT (ENCLOSED CIRCUIT BREAKER) FOR EXTENSION OF NEW NOMINAL 200A ELECTRIC SERVICE CABLES BY UTILITY COMPANY (4#2/0 AWG + #4GRD). PROVIDE AND INSTALL 2" NIPPLE BETWEEN TROUGH AND ENCLOSED CIRCUIT BREAKER.
16. PROVIDE 480 VOLT RATED, 3P100 AMP ENCLOSED CIRCUIT BREAKER. MOUNT ENCLOSED CIRCUIT BREAKER ON MAIN ELECTRIC ROOM INTERIOR WALL AT REAR OF SWITCHBOARD. PROVIDE PHENOLIC NAMEPLATE READING "VERIZON WIRELESS ROOFTOP EQUIPMENT - 277/480V,3Φ,4W."
17. CONTRACTOR FURNISHED AND INSTALLED METER CAN MOUNTED ON ELECTRIC ROOM INTERIOR WALL. METER GLOBE PROVIDED AND INSTALLED BY UTILITY COMPANY. COORDINATE FINAL MOUNTING LOCATION WITH BUILDING OWNER REPRESENTATIVE AND UTILITY COMPANY IN THE FIELD. PROVIDE PHENOLIC NAMEPLATE READING "VERIZON WIRELESS ROOFTOP EQUIPMENT - 277/480V, 3Φ, 4W".
18. PROVIDE 480 VOLT RATED, 3P100 AMP SERVICE ENTRANCE RATED ENCLOSED CIRCUIT BREAKER. MOUNT ENCLOSED CIRCUIT BREAKER ADJACENT TO NEW METER ON MAIN ELECTRIC ROOM INTERIOR WALL. PROVIDE PHENOLIC NAMEPLATE READING "VERIZON WIRELESS - ROOFTOP TRANSFORMER PRIMARY DISCONNECT."

0 4 8 12 16 32 48
SCALE: 1/16"=1'-0"

0 1 2 3 4 8 12
SCALE: 1/4"=1'-0"

TEI
TELEGENT ENGINEERING INC.
2216 Commerce Road, Suite 1
Forest Hill, MD 21050
410-692-5816
www.tel-eng.com

DISTRICT OF COLUMBIA
THOMAS J. SCHMIDT
No. 10346
REGISTERED
PROFESSIONAL ENGINEER

verizon
BEST WESTERN REPLACEMENT
101 G STREET, SW
WASHINGTON, D.C. 20024

REVISIONS:

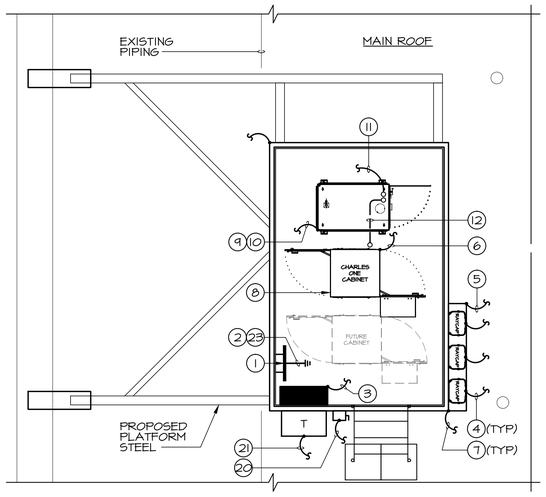
NO.	DESCRIPTION	DATE
	PERMIT DRAWINGS	11/27/17
	ELECTRIC SERVICE REV.	11/17/17

LAST REV.:
PROJECT NO: 17086P
DATE: NOVEMBER 17, 2017
SCALE: AS NOTED

TITLE: LIGHTING AND POWER PLAN, SCHEDULE, AND NOTES

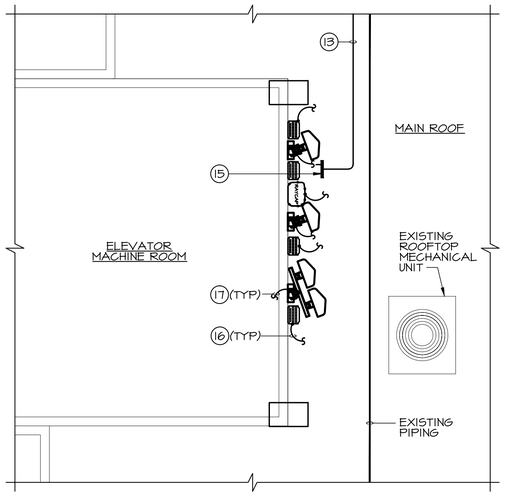
SHEET: E-4
E004

TEI#17086P



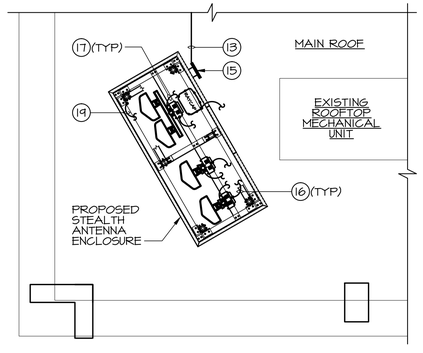
(14)(18)(22) GENERATOR GROUNDING PLAN

SCALE: 1/4" = 1'-0"



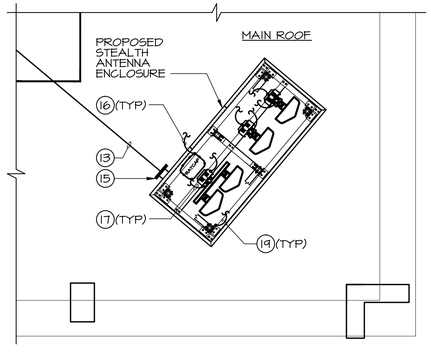
(14)(18)(22) ANTENNA SECTOR GROUNDING PLAN

SCALE: 1/4" = 1'-0" (ALPHA SECTOR)



(14)(18)(22) ANTENNA SECTOR GROUNDING PLAN

SCALE: 1/4" = 1'-0" (GAMMA SECTOR)

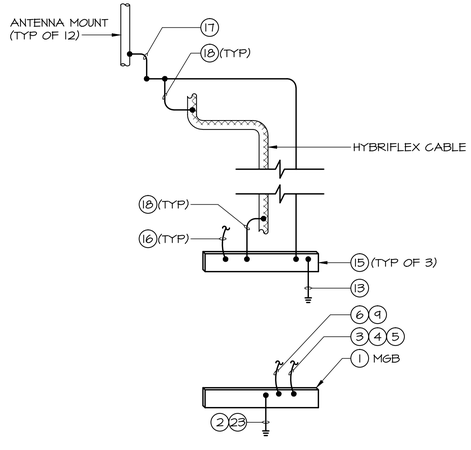


(14)(18)(22) ANTENNA SECTOR GROUNDING PLAN

SCALE: 1/4" = 1'-0" (BETA SECTOR)

DRAWING NOTES

1. PROVIDE AND INSTALL 24"x4"x1/4" GALVANIZED STEEL, GROUND BAR MOUNTED ON INSULATED STANDOFFS (MASTER GROUND BAR) ON NEW EQUIPMENT PLATFORM.
2. EXTEND #500 KCMIL, INSULATED, STRANDED, COPPER CONDUCTOR FROM EXTERIOR GROUND BAR AND BOND TO EXISTING BUILDING INCOMING WATER SERVICE PIPE IN BASEMENT LEVEL TENANT STORAGE ROOM. ROUTE GROUND CONDUCTOR WITH NEW POWER AND TELCO CONDUIT TO FURTHEST EXTENT POSSIBLE. REFER TO ROUTING PLAN, SHEET E-3.
3. EXTEND #2 AWG, GREEN, INSULATED, STRANDED COPPER GROUND CONDUCTOR FROM ENCLOSURE OF PANEL BOARD TO MASTER GROUND BAR.
4. EXTEND #6 AWG, GREEN, INSULATED, STRANDED COPPER GROUND CONDUCTOR FROM EACH MAIN DISTRIBUTION BOX MOUNTED ON EQUIPMENT PLATFORM TO MASTER GROUND BAR.
5. EXTEND #2 AWG, GREEN, INSULATED, STRANDED COPPER GROUND CONDUCTOR FROM RAYCAP TROUGH AND BOND TO MASTER GROUND BAR.
6. EXTEND #2 AWG, GREEN, INSULATED, STRANDED COPPER GROUND CONDUCTOR FROM MASTER GROUND BAR MOUNTED ON PLATFORM AND BOND TO GROUND LUG AT BOTTOM OF CHARLES R-F CABINET.
7. EXTEND #2 AWG, GREEN INSULATED, STRANDED COPPER GROUND CONDUCTOR FROM PLATFORM STEEL AND BOND TO MASTER GROUND BAR IN TWO (2) PLACES (180 DEGREES A PART).
8. EXTEND #6 AWG, GREEN INSULATED, STRANDED COPPER GROUND CONDUCTOR FROM ARMOR GROUND CONNECTOR TO GROUND BAR MOUNTED IN CHARLES CABINET FOR ARMORED FIBER CABLE GROUNDING.
9. CONTRACTOR SHALL DRILL TWO (2) HOLES HORIZONTALLY AT BOTTOM, REAR OF GENERATOR ENCLOSURE, REMOVE PAINT FROM LUG AREA, APPLY SMALL AMOUNT OF NO-OX TO THE LUG/ CABINET SURFACE AND BOLT LUG TO FRAME USING STAINLESS STEEL HARDWARE. LABEL GROUND WIRES WITH THE FAR-END TERMINATION AND LEAD NUMBER ON 145CN TAGS.
10. EXTEND #2 AWG, GREEN, INSULATED, STRANDED COPPER GROUND CONDUCTOR FROM MASTER GROUND BAR AND BOND TO GENERATOR FRAME.
11. EXTEND #2 AWG, GREEN, INSULATED, STRANDED COPPER GROUND CONDUCTOR FROM MASTER GROUND BAR AND BOND TO GENERATOR BUSS BAR.
12. EXTEND #2AWG, GREEN, INSULATED, STRANDED COPPER CONDUCTOR IN 3/4" SEALTIGHT CONDUIT FROM THE FRAME GROUND POINT INSIDE THE GENERATOR COMPARTMENT AND TURN UP THROUGH BOTTOM OF CHARLES CABINET. ONE CONTINUOUS RUN (UN-SPLICED) TO LAND ON DC PLANT CABINETS MAIN GROUND BAR. LABEL EACH END, "DC GEN MAIN CKT GROUND" "FROM DC GEN FRAME TO DC PLANT MAIN GROUND BAR".
13. EXTEND #2 AWG, GREEN INSULATED, STRANDED COPPER GROUND CONDUCTOR (ROOF GROUND RING) FROM MASTER GROUND BAR AT EQUIPMENT PLATFORM TO EACH SECTOR GROUND BAR. ROUTE GROUND CONDUCTOR ADJACENT TO NEW HYBRIFLEX CABLES TO FURTHEST EXTENT POSSIBLE.
14. PROVIDE BONDING CONNECTION FROM CABLETRAY TO EQUIPMENT GROUND CONDUCTOR.
15. PROVIDE AND INSTALL 12"x4"x1/4" THICK, GALVANIZED STEEL, COAX GROUND BAR MOUNTED AT EACH ANTENNA SECTOR FOR HYBRIFLEX CABLE/ ANTENNA GROUNDING. COORDINATE FINAL MOUNTING LOCATION IN THE FIELD.
16. EXTEND #6 AWG, GREEN, INSULATED, STRANDED COPPER GROUND CONDUCTOR FROM ANTENNA SECTOR GROUND BAR TO PROPOSED RF EQUIPMENT (RRH/ DISTRIBUTION BOX). TYPICAL OF EACH ANTENNA SECTOR.
17. PROVIDE BONDING CONNECTION BETWEEN ANTENNA MAST AND ANTENNA SECTOR GROUND BAR. TYPICAL OF EACH ANTENNA SECTOR.
18. PROVIDE BONDING CONNECTION TO OUTER CONDUCTOR OF HYBRIFLEX CABLE VIA COAX GROUNDING KIT. REFER TO DETAIL, THIS SHEET.
19. EXTEND #2 AWG, GREEN, INSULATED, STRANDED COPPER GROUND CONDUCTOR FROM STEALTH ANTENNA ENCLOSURE STEEL AND BOND TO SECTOR GROUND BAR.
20. EXTEND #2 AWG, GREEN, INSULATED, STRANDED COPPER GROUND CONDUCTOR FROM PRIMARY DISCONNECT ENCLOSURE TO MASTER GROUND BAR ON EQUIPMENT BACKBOARD.
21. EXTEND #4 AWG, INSULATED, STRANDED, COPPER CONDUCTOR FROM SECONDARY SIDE OF TRANSFORMER TO EXISTING BUILDING INCOMING WATER SERVICE PIPE IN BASEMENT LEVEL TENANT STORAGE ROOM.
22. REFER TO SHEET E-6 FOR GROUNDING GENERAL NOTES.
23. CONTRACTOR SHALL PROVIDE AND INSTALL GROUND WIRE WARNING TAG ON MAIN GROUND CONDUCTOR AT CONNECTION POINT TO EXISTING BUILDING INCOMING WATER SERVICE PIPE. LABEL SHALL READ, "WARNING - IF THIS CLAMP OR WIRE IS LOOSE OR MUST BE REMOVED, PLEASE CALL VERIZON NOC 1-800-852-2671".



NOTE:
ALL GROUND CONDUCTORS SHALL BE #2 AWG COPPER UNLESS OTHERWISE STATED.

GROUNDING SYSTEM DIAGRAM

NO SCALE

0 1 2 3 4 8 12

SCALE: 1/4"=1'-0"

TEI
TELEGENT ENGINEERING INC.
2216 Commerce Road, Suite 1
Forest Hill, MD 21050
410-692-5816
www.tel-eng.com

DISTRICT OF COLUMBIA
THOMAS J. SCHMIDT
No. 10346
REGISTERED
PROFESSIONAL ENGINEER

verizon

BEST WESTERN REPLACEMENT

101 G STREET, SW
WASHINGTON, D.C. 20024

REVISIONS:

NO.	DESCRIPTION	DATE
	PERMIT DRAWINGS	11/27/17
	ELECTRIC SERVICE REV.	11/17/17

LAST REV.:
PROJECT NO: 17086P
DATE: NOVEMBER 17, 2017
SCALE: AS NOTED

TITLE:
GROUNDING PLANS, DETAIL, AND NOTES

SHEET:
E-5
E005

TEI#17086P

GENERAL NOTES - GROUNDING

1. THE INTERIOR GROUND RING SHALL BE AS SHOWN WITH A MINIMUM NUMBER OF BENDS.
2. ALL BENDS SHALL BE MADE WITH THE GREATEST PRACTICAL RADIUS AND SHALL NOT BE LESS THAN ONE (1) FOOT. WHEN THE ONE (1) FOOT MINIMUM IS NOT PRACTICAL, THE MINIMUM SHALL NOT BE LESS THAN SIX (6) INCHES.
3. USE OF 90° BENDS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
4. ALL BONDING CONNECTIONS TO THE INTERIOR GROUND RING SHALL BE BI-DIRECTIONAL. FLOOR PLAN IS DIAGRAMMATIC AND MAY NOT NECESSARILY REFLECT THIS REQUIREMENT.
5. TO INSURE CONTINUITY OF CONDUITS WITHIN THE PROPOSED CELLULAR TELEPHONE FACILITY, ALL CONDUITS SHALL BE METALLICALLY SUPPORTED FROM THE UNISTRUT FRAMING WHEN RUN ON CEILING. ALL CONDUIT RUN ON WALLS SHALL BE BONDED TO THE INTERIOR GROUND RING EVERY 25 FEET.
6. ALL CONDUITS USED AS RACEWAYS FOR GROUNDING CONDUCTORS SHALL BE BONDED AT BOTH ENDS IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
7. ALL INTERIOR BONDING CONNECTIONS NOT INDICATED SHALL BE MADE USING ONE CRIMP TYPE 'C' TAP SHALL BE MADE INCORPORATING TWO-HOLE CRIMP TYPE LUGS.
8. PROVIDE ANDREW 36" GROUNDING CABLE REQUIRING FIELD ATTACHABLE CRIMP-ON LUG. DO NOT USE THE LUGS PROVIDED WITH THE GROUNDING KIT; PROVIDE TWO HOLE LUGS. GROUNDING CABLE SHALL BE CUT TO SHORTEST LENGTH POSSIBLE. ALL BONDING CONNECTIONS TO THE EXTERIOR GROUND BAR PLATE SHALL BE MADE USING STAINLESS STEEL NUTS AND BOLTS. CORROSION INHIBITOR SHALL BE APPLIED BETWEEN NUTS AND BOLTS AND GROUND BAR PLATE.
9. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD) TO NEAREST GROUND ROD USING ERICO CADWELD "ONE-SHOT" CONNECTIONS.
10. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG BARE, TINNED SOLID COPPER, UNLESS NOTED OTHERWISE.
11. ALL GROUND CONNECTIONS ABOVE GRADE SHALL BE TWO-HOLE COPPER COMPRESSION TYPE WITH STANDARD LENGTH BARREL (BURNDY # YA2CL-2TC14E1). SINGLE HOLE LUGS ARE NOT ACCEPTABLE.
12. ALL GROUNDING SHALL BE IN ACCORDANCE WITH VERIZON BALTIMORE/ WASHINGTON REGION GROUNDING STANDARDS.
13. ALL MOUNTING HARDWARE FOR EXTERIOR LOCATIONS SHALL BE STAINLESS STEEL, INCLUDING NUTS, BOLTS, FLAT AND LOCK WASHERS.
14. ALL EXTERIOR MECHANICAL CONNECTIONS SHALL BE MADE USING OXIDE-INHIBITING JOINT COMPOUND. THE COMPOUND SHALL BE APPLIED TO ALL SURFACES OF BOLTS, WASHERS, NUTS AND CONNECTING SURFACES OF GROUND BAR PLATES. ALL BARE COPPER SURFACES OF CONDUCTORS SHALL BE COATED PRIOR TO LUGGING. JOINT COMPOUND SHALL BE BURNDY ELECTRICAL PENETROX E, OR EQUIVALENT.
15. TYPICAL BI-DIRECTIONAL BONDING CONNECTIONS TO THE INTERIOR GROUND RING SHALL BE MADE USING DOUBLE CRIMP TYPE "C" TAP CONNECTORS.
16. ALL EXOTHERMIC WELD CONNECTIONS AND FIELD CUTS OF METALLIC OBJECTS EXPOSED TO WEATHER SHALL BE FIRST SPRAYED WITH COLD GALVANIZING (AFTER COOL DOWN) THEN BE TOPPED WITH BRUSH ON MARINE GRADE GALVANIZING.
17. ALL CONDUIT USED AS SLEEVES FOR GROUNDING OR BONDING CONDUCTORS SHALL BE PVC.
18. THE MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS ON ANY PART OF THE SYSTEM. IF DUE TO SOIL CONDITIONS OR OTHER PARAMETERS, THIS MAXIMUM IS EXCEEDED, CONTACT VERIZON FOR ADDITIONAL INSTRUCTIONS.
19. PRIOR TO START OF GROUNDING WORK, THE CONTRACTOR SHALL OBTAIN THE LATEST COPY OF THE VERIZON BALTIMORE/WASHINGTON REGION GROUNDING STANDARDS. ANY OMISSION OF INFORMATION ON THIS DOCUMENT DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY. ALL VERIZON GROUNDING REQUIREMENTS SHALL BE MET AS OUTLINED IN VERIZON'S GROUNDING STANDARDS.
20. ALL EXTERIOR GROUND BARS SHALL BE GALVANIZED STEEL, SIZE AS NOTED ON PLANS, AND MANUFACTURED BY ELECTRIC MOTIONS COMPANY, INC. (WWW.ELECTRICMOTIONSCOMPANY.COM).
21. CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING A CLAMP ON RESISTANCE TEST TO DETERMINE THE OHMS RESISTANCE RATING OF FINAL GROUNDING SYSTEM. RESULTS OF TEST SHALL BE COMMUNICATED TO VERIZON WIRELESS CONSTRUCTION MANAGER INCLUDED IN CLOSEOUT PACKAGE.

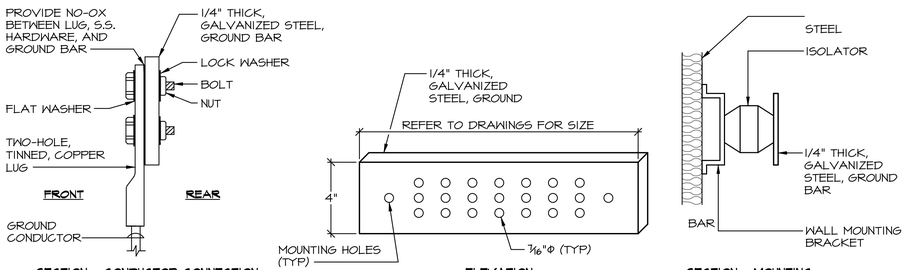
GROUND BAR MANUFACTURER: ELECTRIC MOTION COMPANY, INC.
CONTACT: RANDY AUCLAIR
PHONE: 860.379.8515
WEB ADDRESS: WWW.ELECTRICMOTIONCOMPANY.COM

VERIZON WIRELESS GROUND BAR ORDERING INFORMATION			
PART #	SIZE (T/H/L)	MATERIAL	
EM SGC 412-VZW *	1/4" x 4" x 12"	GALVANIZED	
EM SGC 424-VZW *	1/4" x 4" x 24"	GALVANIZED	
EM SCG 412-VZW *	1/4" x 4" x 12"	COPPER	
EM SCG 424-VZW *	1/4" x 4" x 24"	COPPER	
* GROUND BAR OPTIONS (ADDED TO SUFFIX OF ABOVE PART #'S)			
SUFFIX	KIT DESCRIPTION		
BIIB	CONSISTS OF GROUND BAR, ISOLATORS, AND BEAM CLAMP		
BIM	CONSISTS OF GROUND BAR, ISOLATORS, AND WALL MOUNTING BRACKET		
NR	CONSISTS OF GROUND BAR ONLY AND ANTI-THEFT/ NON-REMOVABLE HARDWARE.		

(EXAMPLE PART #: EM-SGC-424-VZW-BIM)

DETAIL - VZW GROUND BAR PART #'S

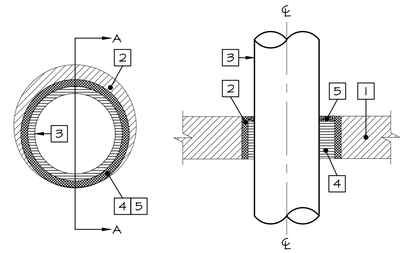
NO SCALE (ELECTRIC MOTION COMPANY, INC.)



GROUND BAR AND ALL ASSOCIATED "ANTI-THEFT" MOUNTING HARDWARE, ISOLATORS, ETC. ARE INCLUDED WITH GROUND BAR KIT BY ELECTRIC MOTION COMPANY (EMC), INC.

DETAIL - EXTERIOR GROUND BAR (EGB)

NO SCALE



NOTES:

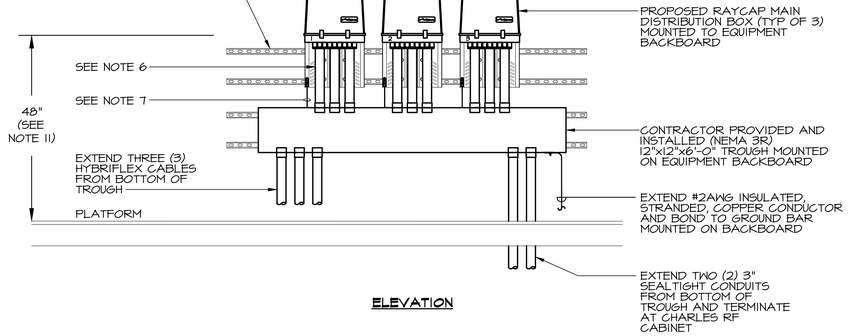
1. FLOOR OR WALL ASSEMBLY - MINIMUM 3-3/4" (2-HR RATING) OR MINIMUM 4-1/2" (3-HR RATING) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE FLOOR, OR 4-3/4" (2-HR RATING) OR MINIMUM 5" (3-HR RATING) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) WALL. WALL MAY ALSO BE CONSTRUCTED OF ANY U.L. CLASSIFIED CONCRETE BLOCKS*. MAXIMUM DIAMETER OF OPENING IS 16".
2. METAL SLEEVE - (OPTIONAL) NOMINAL 16" DIAMETER (OR SMALLER) STEEL PIPE, CONDUIT OR STEEL EMT CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY, FLUSH WITH FLOOR OR WALL SURFACES.
3. THROUGH PENETRATIONS - ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN FIRESTOP SYSTEM. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUIT OR TUBING MAY BE USED: (STEEL PIPE, CONDUIT, COPPER TUBE).
4. FORMING MATERIAL* - MINIMUM 2-3/4" (2-HR RATING) OR MINIMUM 3" (3-HR RATING) THICKNESS OF MINIMUM 3.5 PCF MINERAL FIBER INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. FORMING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
5. FILL VOID OR CAVITY MATERIAL* - SEALANT - MINIMUM 1" THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL. DRY MIX MATERIAL MIXED WITH WATER AT A RATE OF 2.1 PARTS DRY MIX TO 1 PART WATER BY WEIGHT IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATIONS INSTRUCTIONS.

5A. FILL, VOID OR CAVITY MATERIAL* - NOT SHOWN - TWO COMPONENT FILL MATERIAL USED AS AN ALTERNATE TO ITEM 5. MIN. MINIMUM 1" THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL. READY-MIXED COMPONENT MIXED WITH ACCELERATOR COMPONENT AT A RATE OF 66 PARTS OF READY-MIXED COMPONENT TO 1 PART ACCELERATOR COMPONENT BY WEIGHT IN ACCORDANCE WITH ACCOMPANYING INSTALLATION INSTRUCTIONS.

* BEARING THE U.L. CLASSIFICATION MARKING

DETAIL - PIPE/CONDUIT PENETRATION THROUGH RATED WALL/FLOOR ASSEMBLY

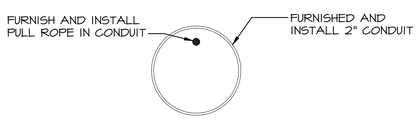
NO SCALE (U.L. THROUGH-PENETRATION FIRESTOP SYSTEM #C-AJ-1081)



1. ALL RAYCAP MAIN DISTRIBUTION BOXES SHALL BE MOUNTED AT 48" A.F.G. MEASURED AT LID GASKET SEAM. NO OBSTRUCTIONS DIRECTLY ABOVE THE DISTRIBUTION BOX SO THAT THE COVER CAN BE REMOVED.
2. ALL UNISTRUT SHALL BE SIZED TO ACCOMMODATE BOTH CONDUIT INSTALLS, 12" MINIMUM.
3. ALL HARDWARE SHALL BE GALVANIZED STEEL.
4. ALL EXTERIOR CONDUIT SHALL BE SEALTIGHT.
5. THE TROUGH SHALL BE 12"X12"X6'-0" NEMA 3R CLASS.
6. REMOVE THREE (3) 2-1/2" BLACK, HYBRIFLEX CABLE COMPRESSION FITTINGS SUPPLIED WITH THE RAYCAP BOX AND INSTALL THREE (3) 2-1/2" RIGID GALVANIZED STEEL CONDUITS WITH COMPRESSION CONNECTORS AND BUSHINGS BETWEEN THE RAYCAP BOX AND THE TOP OF THE TROUGH. TWO (2) CONDUITS SHALL BE INSTALLED SIDE BY SIDE IN THE REAR. ONE (1) CONDUIT SHALL BE INSTALLED IN THE FRONT AND LABELED "FIBER ONLY".
7. EXTEND #6AWG INSULATED, STRANDED, COPPER CONDUCTOR, BOLTED FROM BASE OF THE RAYCAP AND BOND TO MAIN GROUND BAR ON PLATFORM.
8. PULL STRING SHALL BE TERMINATED INSIDE TROUGH BOX FOR ALU USE.
9. VERIZON WIRELESS SUPPLIED PEEL AND STICK LABEL READING "VERIZON WIRELESS" TO BE INSTALLED ON RAYCAP DISTRIBUTION BOX MOUNTED ON BACKBOARD. PROVIDE AND INSTALL APPROPRIATE SIGNAGE AT FINAL RAYCAP BOX/TROUGH LOCATION. SIGNAGE SHALL CONSIST OF SHOCK HAZARD SIGNS AND VERIZON WIRELESS SITE ID SIGN. COORDINATE FINAL MOUNTING LOCATION OF EACH SIGN WITH VERIZON WIRELESS REPRESENTATIVE.
10. CONDUITS EXTENDING OUT OF TOP OF TROUGH SHALL BE STACKED ONE BEHIND THE OTHER AS OPPOSED TO SIDE BY SIDE TO ALLOW ADDITIONAL CLEARANCE BETWEEN RAYCAP BOXES. REFER TO PLAN VIEW FOR SUGGESTED STACKING OF CONDUITS. FINAL STACKING METHOD SHALL BE COORDINATED WITH VERIZON WIRELESS REPRESENTATIVE IN THE FIELD. (CONDUITS ARE SHOWN IN LINE FOR DIAGRAMMATIC PURPOSES ONLY).
11. FINAL MOUNTING HEIGHT OF RAYCAP BOXES SHALL BE 48" FROM FINISHED PLATFORM GRATING TO BOTTOM SEAL OF RAYCAP BOX.

DETAIL- PLATFORM MOUNTED RAYCAP BOX

NO SCALE



NOTE:
1. ENTIRE TELCO CONDUIT PATHWAY SHALL NOT CONTAIN ANY LB FITTINGS. ALL BENDS SHALL BE OF LONG SWEEPS OR MADE BY USING JUNCTION BOXES.

DETAIL- 2" TELCO CONDUIT

NO SCALE

TELEGENT ENGINEERING INC.
2216 Commerce Road, Suite 1
Forest Hill, MD 21050
410-692-5816
www.tel-eng.com

DISTRICT OF COLUMBIA — TIMOTHY W. SCHMIDT — NO. 10346 — REGISTERED PROFESSIONAL ENGINEER

verizon
BEST WESTERN REPLACEMENT
101 G STREET, SW
WASHINGTON, D.C. 20024

REVISIONS:

NO.	DESCRIPTION	DATE
	PERMIT DRAWINGS	11/27/17
	ELECTRIC SERVICE REV.	11/17/17

LAST REV.:
PROJECT NO: 17086P
DATE: NOVEMBER 17, 2017
SCALE: AS NOTED

TITLE:
DETAILS

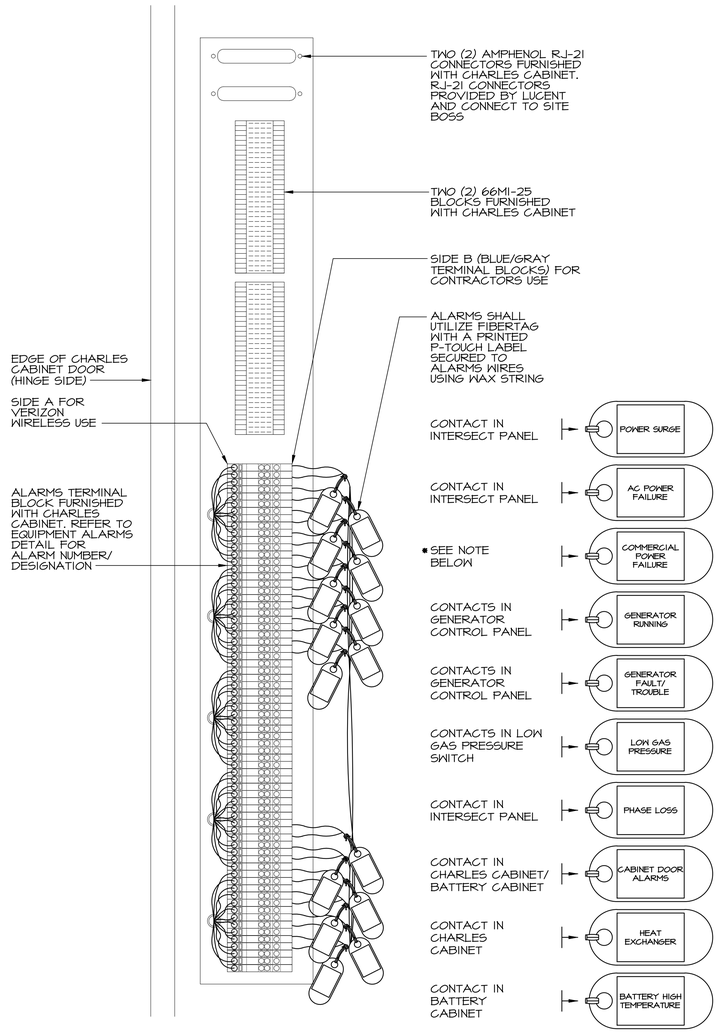
SHEET:
E-6
E006

TE#17086P

Alarm number	Description
CC1	Battery Discharge
CC2	Commercial Power Failure
CC3	Door Intrusion
CC4	Tech on Site
CC5	Generator Failure
CC6	Generator Low Fuel
CC7	Generator Running
CC8	High Temp
CC9	Inverter Failure
CC10	Multiple Rectifier Failure
CC11	Rectifier Failure
CC12	Smoke/Fire
CC13	Smoke/Fire Detector Failure
CC14	Surge Suppressor Lightning Arrestor
CC15	Tower Light
CC16	Tower Light Beacon
CC17	Tower Light Strobe
CC18	Tower Light Power Failure
CC19	Tower Light (side)
CC20	Converter Failure
CC21	Tower Mounted Amplifier
CC22	Explosive Gas
CC23	2nd HVAC Compressor Run
CC24	HVAC-1 Failure
CC25	HVAC-2 Failure
CC26	Low Temp
CC27	AC Power Failure
CC28	Microwave Major = Critical
CC29	Microwave Minor = Minor
CC30	RRH Power Failure
CC31	RRH Humidity Alarm
CC32	RRH Intrusion Alarm

DETAIL - EQUIPMENT ALARMS LIST

NO SCALE



• NOTE:
ELECTRICAL CONTRACTOR SHALL ENSURE "COMMERCIAL POWER FAILURE" IS CONNECTED. EXTEND JUMPER FROM TERMINAL CC27 (AC POWER FAILURE) TO TERMINAL CC2 (COMMERCIAL POWER FAILURE) AS REQUIRED.

DETAIL - ALARM LEADS TERMINAL

NO SCALE

TEI

TELEGENT ENGINEERING INC.
2216 Commerce Road, Suite 1
Forest Hill, MD 21050
410-692-5816
www.tel-eng.com

DISTRICT OF COLUMBIA
THOMAS W. SCHMIDT
NO. 10346
REGISTERED
PROFESSIONAL ENGINEER

verizon

BEST WESTERN REPLACEMENT

101 G STREET SW
WASHINGTON, D.C. 20024

REVISIONS:

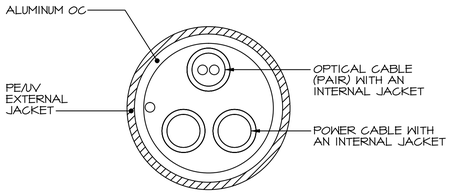
NO.	DESCRIPTION	DATE
	PERMIT DRAWINGS	11/27/17
	ELECTRIC SERVICE REV.	11/17/17

LAST REV.:
PROJECT NO: 17086P
DATE: NOVEMBER 17, 2017
SCALE: AS NOTED

TITLE:
DETAILS

SHEET:
E-7
E007

TEI#17086P

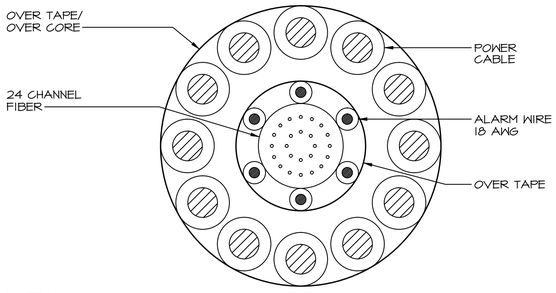


NOTES

1. USED FROM EACH SECTOR DISTRIBUTION BOX TO EACH RRH
2. 1 PAIR OF #8AWG DC WIRE
3. 1 PAIR OF SM FIBER
4. FIXED LENGTHS OF EITHER 15' OR 30'

DETAIL - 1x1 HYBRIFLEX CABLE (5/8")

NO SCALE

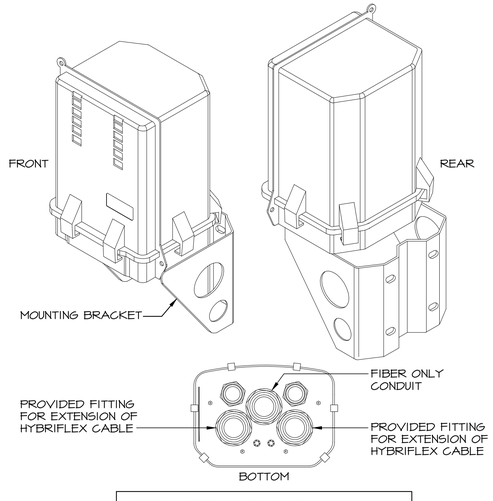


NOTES

1. USED FROM MAIN BOTTOM DISTRIBUTION BOX TO MAIN TOP DISTRIBUTION BOX
2. 6 PAIRS OF #6 AWG DC WIRE (3 PAIRS NEEDED FOR TODAY, 3 PAIRS FOR FUTURE GROWTH)
3. 12 PAIRS OF SM FIBER (3 PAIRS NEEDED FOR TODAY, 3 PAIRS FOR FUTURE GROWTH, 6 PAIRS ARE SPARES)
4. 9 PAIRS OF 18 AWG ALARM WIRE

DETAIL - 6x12 HYBRIFLEX CABLE (1 1/4")

NO SCALE

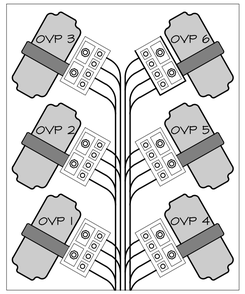


MANUFACTURER:	RAYCAP
DIMENSIONS:	10.31"D X 15.73"W X 19.15"H
WEIGHT:	32 LBS (SYSTEM)

DETAIL - MAIN DISTRIBUTION BOX

NO SCALE

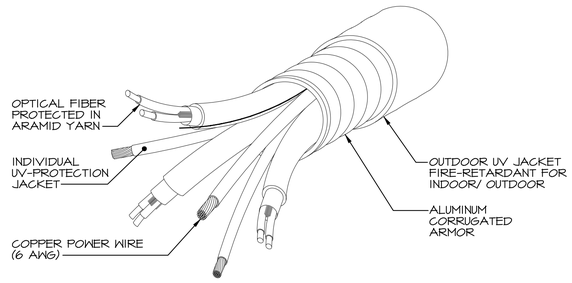
OVP IDENTIFIERS		BULK HEAD IDENTIFIERS
OVP - 1	B1-RRH-1	1-ACTIVE
	ALPHA	7-SPARE
OVP - 2	B1-RRH-2	2-ACTIVE
	BETA	8-SPARE
OVP - 3	B1-RRH-3	3-ACTIVE
	GAMMA	9-SPARE
OVP - 4	B2-RRH-1	4-ACTIVE
	ALPHA	10-SPARE
OVP - 5	B2-RRH-2	5-ACTIVE
	BETA	11-SPARE
OVP - 6	B2-RRH-3	6-ACTIVE
	GAMMA	12-SPARE



NOTE:
IN THE EVENT THE ALARMS WIRING TO THE RAYCAP BOXES IS STRANDED, CONTRACTOR SHALL TERMINATE EACH END WITH AN APPROPRIATELY SIZED (AWG) SPADE CONNECTOR WITH INSULATED CRIMP TONGUE. SOLID WIRE DOES NOT REQUIRE SPADE CONNECTOR.

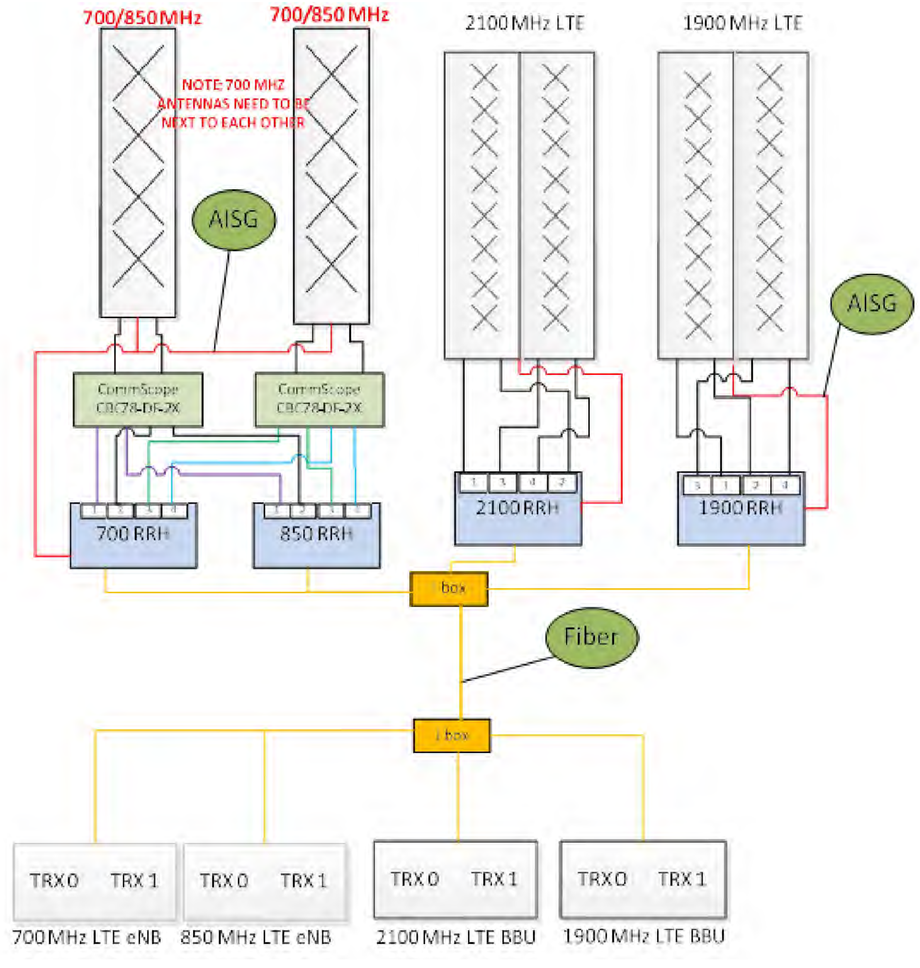
DETAIL- RAYCAP OVP IDENTIFIERS

NO SCALE



HYBRIFLEX CABLE CONSTRUCTION

NO SCALE



DETAIL - ANTENNA PLUMBING DIAGRAM

NO SCALE

TEI
TELEGENT ENGINEERING INC.
2216 Commerce Road, Suite 1
Forest Hill, MD 21050
410-692-5816
www.tel-eng.com

DISTRICT OF COLUMBIA
THOMAS SCHMIDT
No. 10346
REGISTERED PROFESSIONAL ENGINEER

verizon
BEST WESTERN REPLACEMENT
101 G STREET, SW
WASHINGTON, D.C. 20024

REVISIONS:

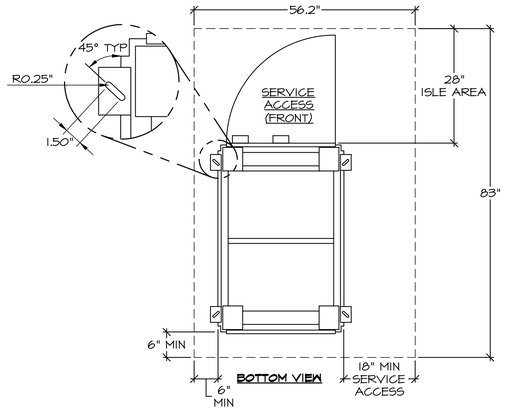
NO.	DESCRIPTION	DATE
	PERMIT DRAWINGS	11/27/17
	ELECTRIC SERVICE REV.	11/17/17

LAST REV.:	
PROJECT NO:	17086P
DATE:	NOVEMBER 17, 2017
SCALE:	AS NOTED

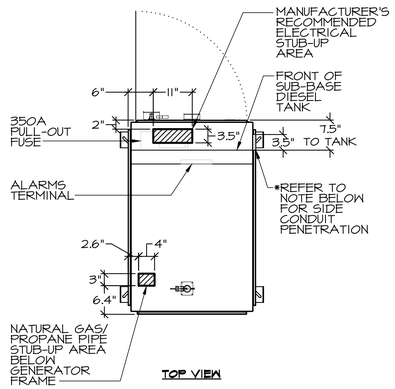
TITLE:
HYBRIFLEX DETAILS AND DIAGRAM

SHEET:
E-8
E008

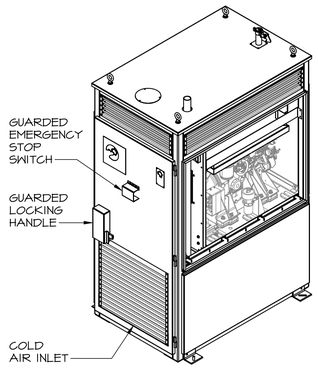
TEI#17086P



BOTTOM VIEW

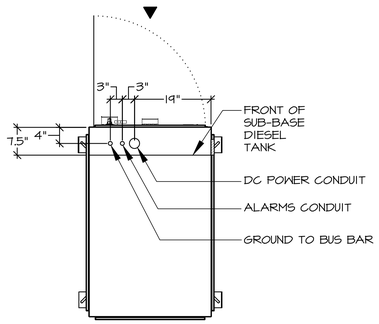


TOP VIEW

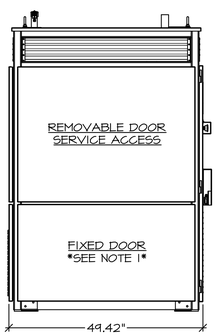


ISOMETRIC VIEW

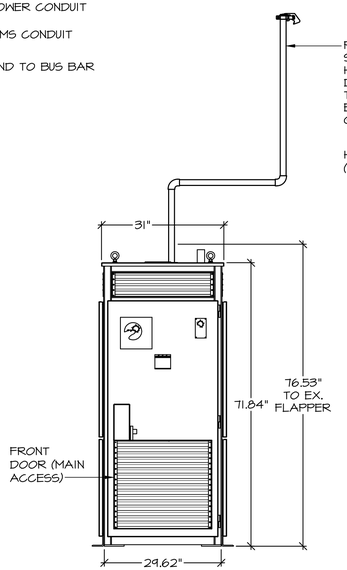
NOTE:
CONTRACTOR SHALL UTILIZE VOID BETWEEN FRONT OF SUB-BASE FUEL TANK AND GENERATOR FRAME FOR EXTENSION OF CONDUITS THROUGH SIDE GENERATOR PANEL. DIMENSIONS SHOWN ABOVE WERE PROVIDED BY FIELD MEASUREMENTS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO CONDUIT INSTALLATION TO ENSURE CONDUIT PENETRATIONS DO NOT IMPEDE ON GENERATOR FRAMING, BOLT PATTERN, AND SUB-BASE FUEL TANK. ALL CONDUIT PENETRATIONS THROUGH SIDE PANEL SHALL BE SEALED WEATHERTIGHT.



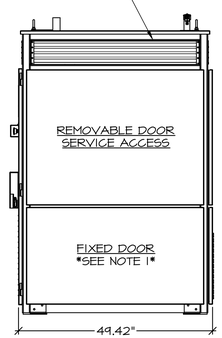
CONDUIT PLAN



LEFT ELEVATION



FRONT ELEVATION



RIGHT ELEVATION

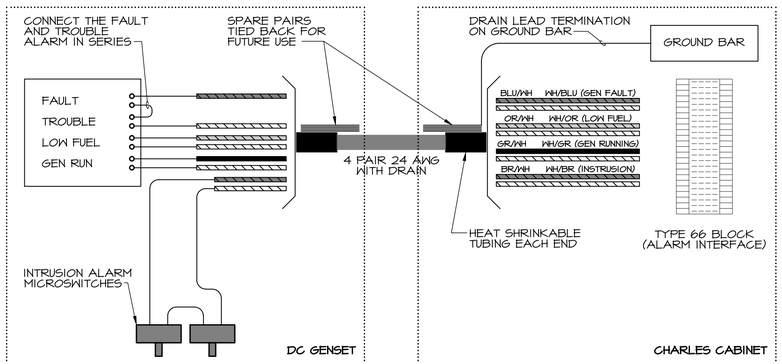
NOTE:
1. BOTTOM PORTION OF VERTICAL ENCLOSURE WILL BE LEFT EMPTY ON NATURAL GAS AND PROPANE GENERATORS. DIESEL GENERATORS WILL HAVE A 55 GALLON SUB-BASE FUEL TANK WITH-IN THIS PORTION OF THE ENCLOSURE.

DETAIL- POLAR POWER 15KW DC GENERATOR

NO SCALE

GENERAL NOTES

1. **START DC GENERATOR** WHEN BATTERY (BUS) VOLTAGE "DROPS TO" 52V.
   - AFTER 30 SECONDS ADJUSTABLE WARMUP TIME THE GENERATOR DELIVERS FULL RATED POWER.
   - 280A (15 KW UNIT) INTO THE BATTERY BUS IN CURRENT REGULATION (LIMIT) MODE OPERATION.
   - WHEN THE BATTERY VOLTAGE "INCREASES TO" 53.5V THE DC GENERATOR CONTROLLER WILL SWITCH TO CONSTANT VOLTAGE MODE (KEEPING THE BATTERY VOLTAGE STEADY AT 53.5V AND THUS REDUCING THE CURRENT).
2. **AUTOMATIC STOP** WHEN THE GENERATOR MEETS ALL THREE CONDITIONS BELOW
   - FIRST CONDITION, STOP VOLTAGE: THE BATTERY VOLTAGE IS HIGHER THAN 53.5V (FIELD ADJUSTABLE), WHEN POWER IS RESTORED THE BATTERY VOLTAGE WILL INCREASE TO 54V DUE TO THE RECTIFIERS COMING ONLINE. THIS ALSO FORCES THE DC GENERATOR OUTPUT CURRENT TO DROP AS THE RECTIFIERS CARRY THE LOAD. THE RECTIFIERS AUTOMATICALLY CARRY THE LOAD BECAUSE THEY ARE SET AT A HIGHER VOLTAGE.
   - SECOND CONDITION, LOW CURRENT DEMAND: CURRENT DROPS TO 15 AMPS (FIELD ADJUSTABLE).
   - THIRD CONDITION, TIME OUT: ELAPSED TIME 60 SEC (FIELD ADJUSTABLE). THIS DELAY IS TO CONFIRM UTILITY POWER IS FULLY RESTORED.
3. **COMMISSIONING TESTS:**
   - A COMMISSIONING TEST SERIES THAT INCLUDES A 4 HOUR RUN UNDER FULL LOAD IS REQUIRED. THE COMMISSIONING TESTS SHALL BE PERFORMED BY THE VENDOR, AND WITNESSED BY A REPRESENTATIVE FROM VERIZON WIRELESS. COMMISSIONING TEST SHALL BE IN ACCORDANCE AND COMPLIANCE WITH NETWORK STANDARD #NSTD1519 TABLE 2.27.
   - CONTRACTOR WILL COORDINATE DC GENSET COMMISSIONING WITH POLAR POWER. IT IS ESSENTIAL TO PROVIDE POLAR ENOUGH LEAD TIME (7 DAYS) SO THAT THEY CAN MANAGE THEIR ENGINEER'S SCHEDULES AND SO THAT THEY CAN NOTIFY THAT APPROPRIATE VERIZON WIRELESS FIELD OPS MANAGER AND SITE TECHNICIAN. CONTACT: LUCIE HOUSTON - LHOUSTON@POLARPOWERINC.COM 310.830.4153.
   - CONTRACTOR AND POLAR POWER ENGINEER WILL TEST GENERATOR ALARMS WITH THE SITE TECHNICIAN AND THE NOCC DURING COMMISSIONING.
   - CONTRACTOR SHOULD REQUEST A COPY OF THE COMMISSIONING REPORT FROM POLAR POWER TO INCLUDE IN THE CLOSE OUT PACKAGE (COP).
   - CONTRACTOR IS RESPONSIBLE FOR ARRANGING FOR FUELING OF DIESEL DC GENERATOR AHEAD OF COMMISSIONING AND REFUELING THE TANK TO 80% CAPACITY WHEN LOAD TESTING IS COMPLETED.
   - CONTRACTOR WILL ADD "GEN KEY" LABEL TO GENERATOR ACCESS KEY AND STORE IT IN THE SITE'S ACCESS BOX.
4. DIESEL DC GENERATOR SETS WILL BE EQUIPPED WITH INTEGRAL (BELLY) TANKS NOMINALLY SIZED FOR A MINIMUM OF 42 HOURS OF RUN TIME AT 100% LOAD UNLESS OTHERWISE NOTED (REFER TO FUEL STORAGE SUBSYSTEMS).
5. PROPANE SYSTEMS SHALL UTILIZE A TANK (PROVIDED BY OTHER) AND SIZED TO PROVIDE FOR 48 HOURS OF CONTINUOUS OPERATION.
6. FUEL TANKS FOR LPG SYSTEMS SHALL PROVIDE AT LEAST 48 HOURS OF CONTINUOUS ENGINE OPERATION.
7. NOTE THAT THE SEPARATION DISTANCES IN NFPA 58 SECTION 6.3 MAY BE HALVED IF THE LPG TANK IS EQUIPPED WITH AN INTEGRAL MANUAL SHUTOFF VALVE PER SECTION 11.15.2.3.
8. AN ENGRAVED PLACARD THAT READS, "CAUTION: -48V FROM DC PLANT PRESENT AT MAIN GENERATOR OUTPUT FUSE TERMINATION AT ALL TIMES. TO REMOVE -48VDC OPEN GENERATOR DISCONNECT OUTSIDE REAR OF GENERATOR".
9. ENGRAVED PLACARDS THAT READ, "DANGER, AUTOMATIC MACHINERY MAY START WITHOUT WARNING, THIS IS A SPECIAL PURPOSE GENERATOR WITH A SPECIFIC VOLTAGE THAT HAS NO RESIDENTIAL OR COMMERCIAL USE OR APPLICATION, AND THIS CABINET IS EQUIPPED WITH INTRUSION ALARMS THAT ARE REMOTELY MONITORED. LAW ENFORCEMENT WILL IMMEDIATELY BE CONTACTED IF THE CABINET IS OPENED WITHOUT PRIOR AUTHORIZATION".



NOTES:

1. RUN ONE (1) EACH BLUE CAT5E CABLE FROM THE GENERATOR ENGINE COMPARTMENT (SO THAT IT CAN LAND ON THE BACK OF THE CONTROL BOARD) TO THE CHARLES CABINET (SO THAT IT CAN LAND ANYWHERE ON THE T105).
2. IT IS PERMITTED TO USE THE SAME CONDUIT RUN AS THE ALARM CABLE.
3. CABLE SHOULD HAVE AN 8-PIN RJ45 MODULAR CONNECTOR ON BOTH SIDE, WIRED STRAIGHT.
4. LABEL BOTH ENDS OF CABLE WITH "GEN REMOTE COM, FROM: ALARMS CABINET TO GEN ENGINE COMPARTMENT".
5. LEAVE CABLE COILED AT BOTH ENDS FOR FUTURE DEPLOYMENT.

DETAIL- POLAR POWER ALARM INTERCONNECTS

NO SCALE

TEI
TELEGENT ENGINEERING INC.
2216 Commerce Road, Suite 1
Forest Hill, MD 21050
410-692-5816
www.tel-eng.com

DISTRICT OF COLUMBIA
THOMAS J. SCHMIDT
No. 10346
REGISTERED
PROFESSIONAL ENGINEER

verizon
BEST WESTERN REPLACEMENT
101 G STREET, SW
WASHINGTON, D.C. 20024

REVISIONS:

NO.	DESCRIPTION	DATE
	PERMIT DRAWINGS	11/27/17
	ELECTRIC SERVICE REV.	11/17/17

LAST REV.:
PROJECT NO: 17086P
DATE: NOVEMBER 17, 2017
SCALE: AS NOTED

TITLE:
POLAR POWER DC GENERATOR DETAILS AND NOTES

SHEET:
E-9
E009

TE#17086P