

DOCUMENT 00901

ADDENDUM 1

DATE: July 31, 2014
TO: PROSPECTIVE BIDDERS
FROM: Cannon Design
PROJECT: West Haven Combined Heat and Power (CHP) Plant Design

This Addendum forms part of and modifies the Construction Documents dated July 18, 2014. Where any original item called for in the Project Manual or indicated on the Drawings is supplemented hereby, the supplemental requirements shall be considered as added thereto.

Where any original item is amended, voided, or superseded hereby, the other provisions of such items not specifically amended, voided, or superseded shall remain in effect.

ATTACHMENTS:

Drawing:

Drawing AS.101 dated 7/31/14
Drawing ES.101 dated 7/31/14
Drawing EP.501 dated 7/31/14
Drawing EP.703 dated 7/31/14

Specifications:

None

NARRATIVE:

Documents issued for bid included on Drawing ES.101, proposed modification of electrical service where service enters the site at MH#9. The drawing calls for new exterior pad mounted equipment including meters and switch. Additional work is required to facilitate this work, such as site work and a retaining wall, was not specifically identified in the July 18, 2014 bid set. This addendum identifies this work which is a requirement of this contract. Actual site survey of this area is required to verify control points prior to commencement of construction activity. Additionally two isolation transformers were added to the project, this revision is also included.

Geotechnical Work:

Engage geotechnical engineer licensed in the state of Connecticut. Geotechnical engineer to propose location and coordinate with the hospital and others as required and engage drill activity for minimum of 3 boring locations for the noted pad, coordinate private utility mark-up, provide 3 geotechnical borings, including rock coring (15 feet) and observation well, provide inspectional services during boring activity, engage laboratory testing, prepare and issue for approval; geotechnical memorandum including global stability analysis of 1 section to be used to establish retaining wall requirements. Geotechnical engineer shall be retained during construction activity for this area as well as the remainder of the project and shall issue reports accordingly.

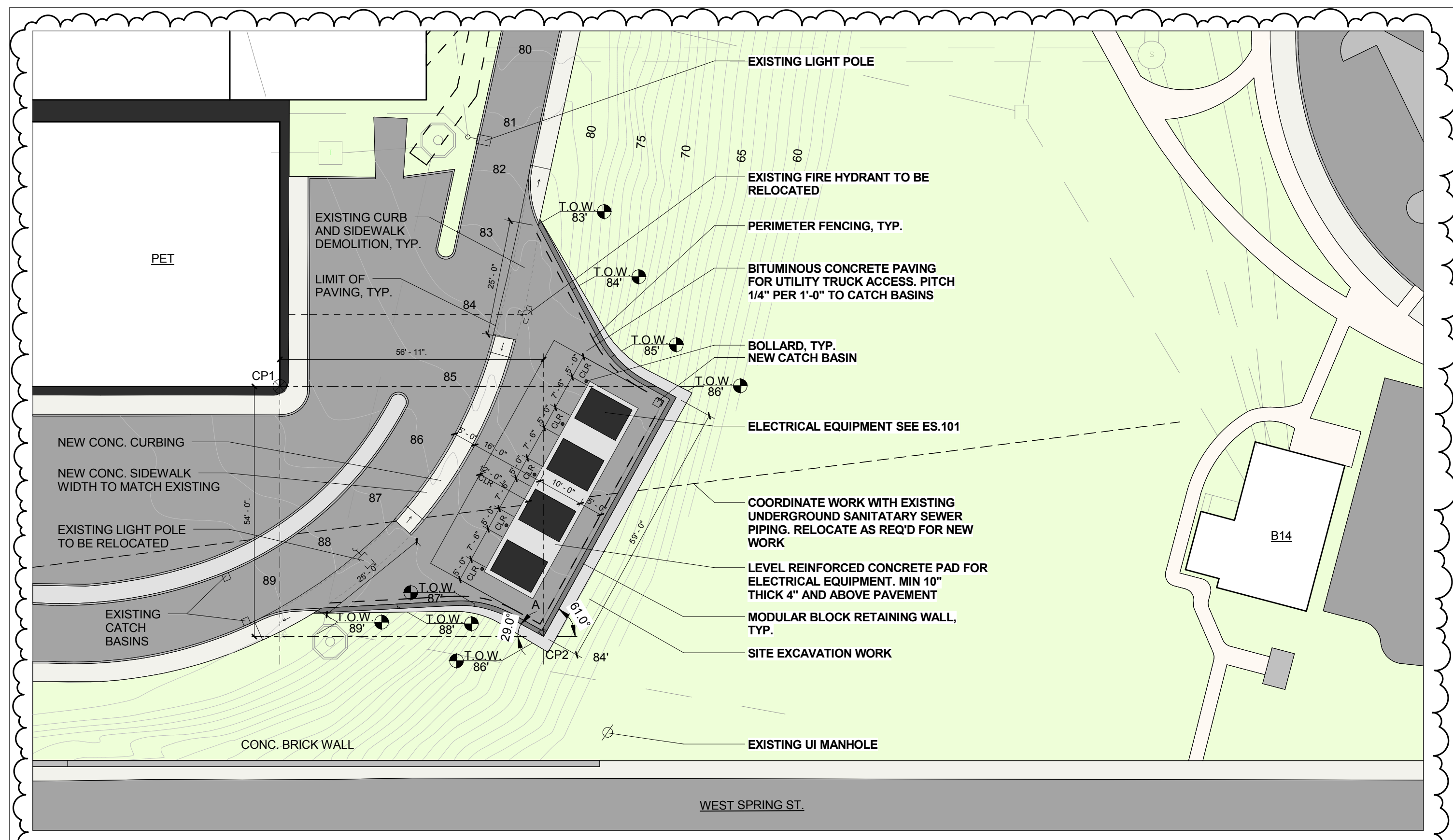
Site Work:

Provide a new 10" concrete pad (refer to detail 20/CS.203) for the new electrical equipment as shown on the attached drawing, modify the grades to accommodate the new pad, demo and

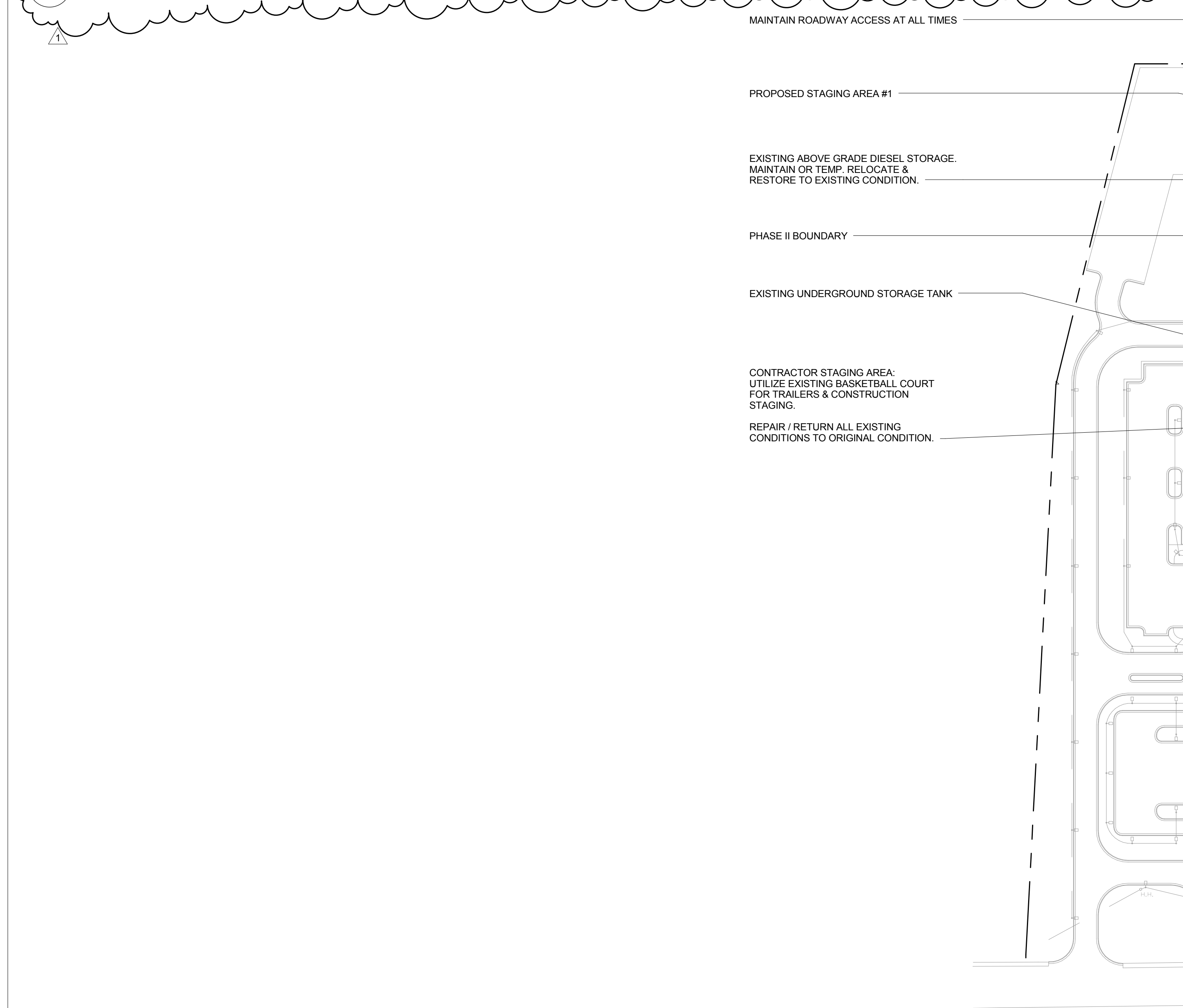
Cannon Design No. 004243.00

rework existing curbing and sidewalk (reference 10/CS.201 and 21/CS.203). Provide modular concrete block retaining wall (reference details 8/CS.201) conforming to the requirements of the geotechnical recommendations and new pavement (reference 13/CS.201) as required for the new installation. Provide new protective steel bollards (reference 14/CS.201) and perimeter fencing adjacent to retaining wall (reference 17 and 18/CS.203 SIM). Work also includes, tree and rock removal, storm water drainage modification, pavement markings, relocation of existing fire hydrant and sanitary line and light pole/ conduit which may be in conflict with the new electric equipment pad. The intent is for the contractor to be fully responsible for all aspects of this installation without limitation.

END OF ADDENDUM



2 ELECTRIC UTILITY AND ACCESS PLAN
1" = 20'-0"



1 PHASING PLAN
1" = 60'-0"

PHASE I:
CONSTRUCT SAND / SALT STORAGE BUILDING.
DEMO EXISTING INCINERATOR BUILDING - MAINTAIN ACCESS TO THE EXISTING SAND / SALT BUILDING

PHASE II:
CONSTRUCTION OF CHP PLANT

TRENCHING & CONSTRUCTION FOR UTILITY FEEDER WORK:
ROUTING OF NEW FEEDERS SHALL NOT DISRUPT EXISTING HOSPITAL FUNCTIONS. CONDUCT INVESTIGATIONS TO COORDINATE WITH EXISTING UTILITIES. REVIEW EXISTING AS-BUILTS. UTILIZE GROUND PENETRATING X-RAY TO LOCATE EXISTING UTILITIES. CONSTRUCTION BARRIERS / FENCING SHALL NOT PREVENT VEHICLE FLOW DURING REGULAR BUSINESS HOURS. ANY OTHER WORK AND/OR PHASING INCLUDING TRENCHING THAT CROSSES ROADS TO OCCUR OFF HOURS.

GENERAL NOTE:
CONTRACTOR TO ACCESS AND DEVELOP PROJECT SPECIFIC MOBILIZATION/STAGING AND PHASING PLANS FOR SUBMITTAL REVIEW AND APPROVAL BEFORE START OF WORK ON SITE.

LIMIT OF WORK:
LIMIT OF WORK LINE INDICATES PROPOSED RESTRICTED PROJECT AREA AT EXCAVATIONS (TRENCH, PIT OR LARGE OPENING) ASSUME A MINIMUM OF 10 FEET BEYOND EXCAVATION EDGE (AT EACH SIDE) FOR LIMIT OF WORK LOCATION.

TRENCHING ACROSS ROADS AND WALKS TO OCCUR DURING OFF HOURS

ELECTRICAL SWITCHES AND METERS WITH UTILITY TRACK ACCESS AND FENCING. SEE PLAN 2/AS.101

Rev. No.	Description	Date
1	ADDENDUM 1	07/31/2014

CONSULTANTS:

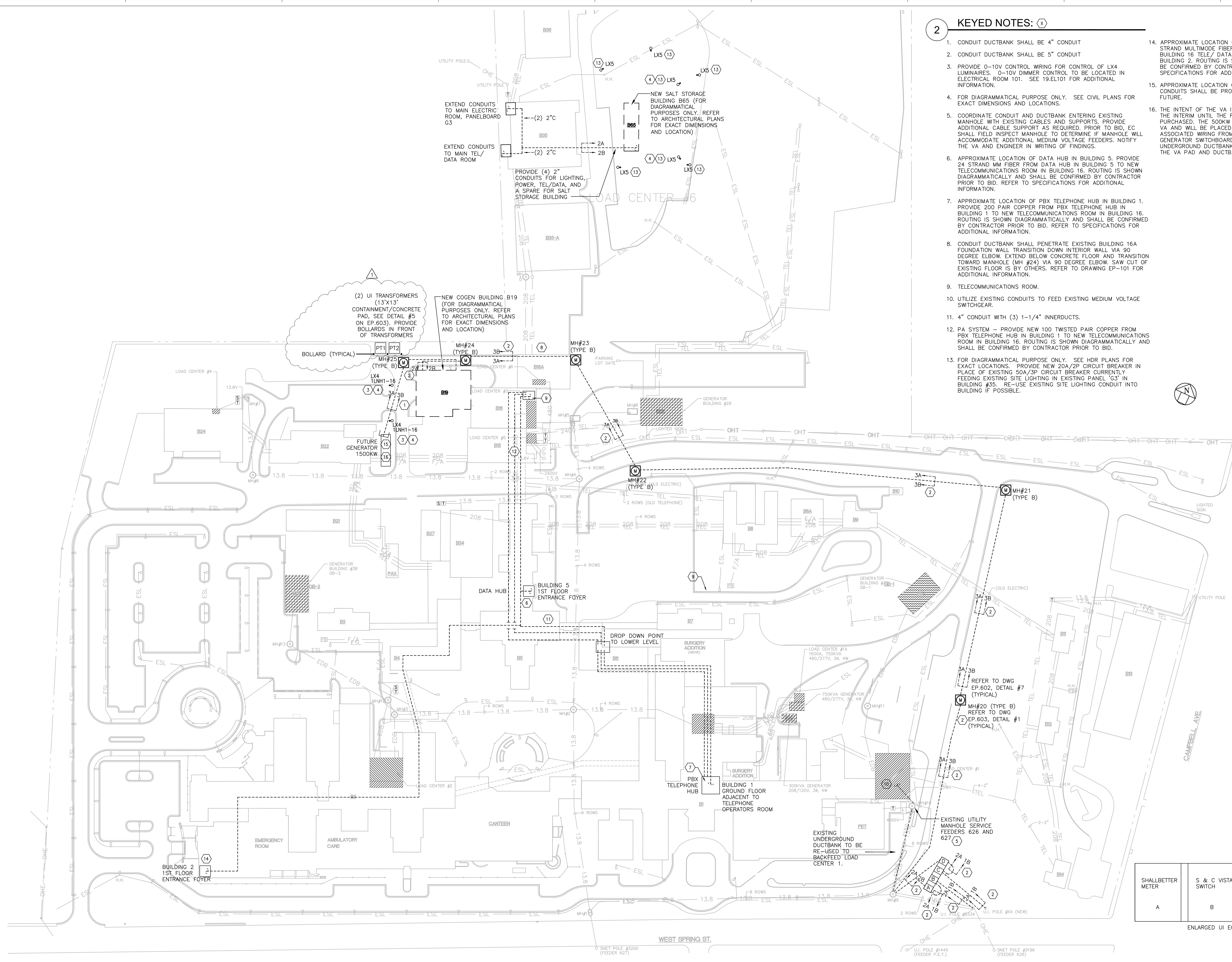
ARCHITECT/ENGINEERS:
CANNONDESIGN
100 Cambridge Street, Suite 1400
Boston, Massachusetts 02114
T: 617.742.5440 F: 617.723.8832

Drawing Title
PHASING PLAN
Approved: Project Director
JOSEPH SIMONETTA

Project Title
WEST HAVEN COMBINED HEAT AND POWER (CHP) PLANT DESIGN
Location
VA MEDICAL CENTER - WEST HAVEN CAMPUS
950 CAMPBELL AVE, WEST HAVEN, CT 06516
Date
07/31/2014
Checked
Author
Drawing Number
AS.101

Office of Construction and Facilities Management
Department of Veterans Affairs

three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 one half inch = one foot
 three quarters inch = one foot
 one quarter inch = one foot
 three eighths inch = one foot
 one eighth inch = one foot
 one sixteenth inch = one foot



- 2 KEYED NOTES:**
- CONDUIT DUCTBANK SHALL BE 4" CONDUIT
 - CONDUIT DUCTBANK SHALL BE 5" CONDUIT
 - PROVIDE 0-10V CONTROL WIRING FOR CONTROL OF LX4 LUMINAIRES. 0-10V DIMMER CONTROL TO BE LOCATED IN ELECTRICAL ROOM 101. SEE 19.EL101 FOR ADDITIONAL INFORMATION.
 - FOR DIAGRAMMATICAL PURPOSE ONLY. SEE CIVIL PLANS FOR EXACT DIMENSIONS AND LOCATIONS.
 - COORDINATE CONDUIT AND DUCTBANK ENTERING EXISTING MANHOLE WITH EXISTING CABLES AND SUPPORTS. PROVIDE ADDITIONAL CABLE SUPPORT AS REQUIRED. PRIOR TO BID, EC SHALL FIELD INSPECT MANHOLE TO DETERMINE IF MANHOLE WILL ACCOMMODATE ADDITIONAL MEDIUM VOLTAGE FEEDERS. NOTIFY THE VA AND ENGINEER IN WRITING OF FINDINGS.
 - APPROXIMATE LOCATION OF DATA HUB IN BUILDING 5. PROVIDE 24 STRAND MM FIBER FROM DATA HUB IN BUILDING 5 TO NEW TELECOMMUNICATIONS ROOM IN BUILDING 16. ROUTING IS SHOWN DIAGRAMMATICALLY AND SHALL BE CONFIRMED BY CONTRACTOR PRIOR TO BID. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
 - APPROXIMATE LOCATION OF PBX TELEPHONE HUB IN BUILDING 1. PROVIDE 200 PAIR COPPER FROM PBX TELEPHONE HUB IN BUILDING 1 TO NEW TELECOMMUNICATIONS ROOM IN BUILDING 16. ROUTING IS SHOWN DIAGRAMMATICALLY AND SHALL BE CONFIRMED BY CONTRACTOR PRIOR TO BID. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
 - CONDUIT DUCTBANK SHALL PENETRATE EXISTING BUILDING 16A FOUNDATION WALL TRANSITION DOWN INTERIOR WALL VIA 90 DEGREE ELBOW. EXTEND BELOW CONCRETE FLOOR AND TRANSITION TOWARD MANHOLE (MH #24) VIA 90 DEGREE ELBOW. SAW CUT OF EXISTING FLOOR IS BY OTHERS. REFER TO DRAWING EP-101 FOR ADDITIONAL INFORMATION.
 - TELECOMMUNICATIONS ROOM.
 - UTILIZE EXISTING CONDUITS TO FEED EXISTING MEDIUM VOLTAGE SWITCHGEAR.
 - 4" CONDUIT WITH (3) 1-1/4" INNERDUITS.
 - PA SYSTEM - PROVIDE NEW 100 TWISTED PAIR COPPER FROM PBX TELEPHONE HUB IN BUILDING 1 TO NEW TELECOMMUNICATIONS ROOM IN BUILDING 16. ROUTING IS SHOWN DIAGRAMMATICALLY AND SHALL BE CONFIRMED BY CONTRACTOR PRIOR TO BID.
 - FOR DIAGRAMMATICAL PURPOSE ONLY. SEE HDR PLANS FOR EXACT LOCATIONS. PROVIDE NEW 20A/3P CIRCUIT BREAKER IN PLACE OF EXISTING 50A/3P CIRCUIT BREAKER CURRENTLY FEEDING EXISTING SITE LIGHTING IN EXISTING PANEL "G3" IN BUILDING #35. RE-USE EXISTING SITE LIGHTING CONDUIT INTO BUILDING IF POSSIBLE.
 - APPROXIMATE LOCATION OF MAIN SECURITY ROOM. PROVIDE 6 STRAND MULTIMODE FIBER AND ASSOCIATED PATCH PANELS FROM BUILDING 16 TELE DATA ROOM TO MAIN SECURITY ROOM IN BUILDING 2. ROUTING IS SHOWN DIAGRAMMATICALLY AND SHALL BE CONFIRMED BY CONTRACTOR PRIOR TO BID. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
 - APPROXIMATE LOCATION OF GENERATOR PAD. UNDERGROUND CONDUITS SHALL BE PROVIDED TO LOCATION AND CAPPED FOR FUTURE.
 - THE INTENT OF THE VA IS TO UTILIZE A 500KW GENERATOR IN THE INTERIM UNTIL THE FUTURE 1500KW GENERATOR CAN BE PURCHASED. THE 500KW GENERATOR WILL BE PROVIDED BY THE VA AND WILL BE PLACED ON THE 1500KW GENERATOR PAD. ALL ASSOCIATED WIRING FROM THE 500KW GENERATOR TO THE GENERATOR SWITCHBOARD WILL BE PROVIDED BY THE VA VIA THE UNDERGROUND DUCTBANK. CONTRACTOR SHALL COORDINATE WITH THE VA PAD AND DUCTBANK LOCATIONS.

1 ELECTRICAL SITE PLAN
 1/48" = 1'-0"

SHALLBETTER METER	S & C VISTA SWITCH	S & C VISTA SWITCH	SHALLBETTER METER
A	B	C	D

ENLARGED UI EQUIPMENT PAD DETAIL

ADDENDUM 1	07/31/2014
Revisions:	Date

CONSULTANTS:

ARCHITECT/ENGINEERS:

CANNONDESIGN

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Project Title
ELECTRICAL SITE PLAN

Approved: Project Director
JOSEPH SIMONETTA

Project Title
WEST HAVEN COMBINED HEAT AND POWER (CHP) PLANT DESIGN

Project Number
 VA701-P-0163

Building Number
 19

Drawing Number
ES.101

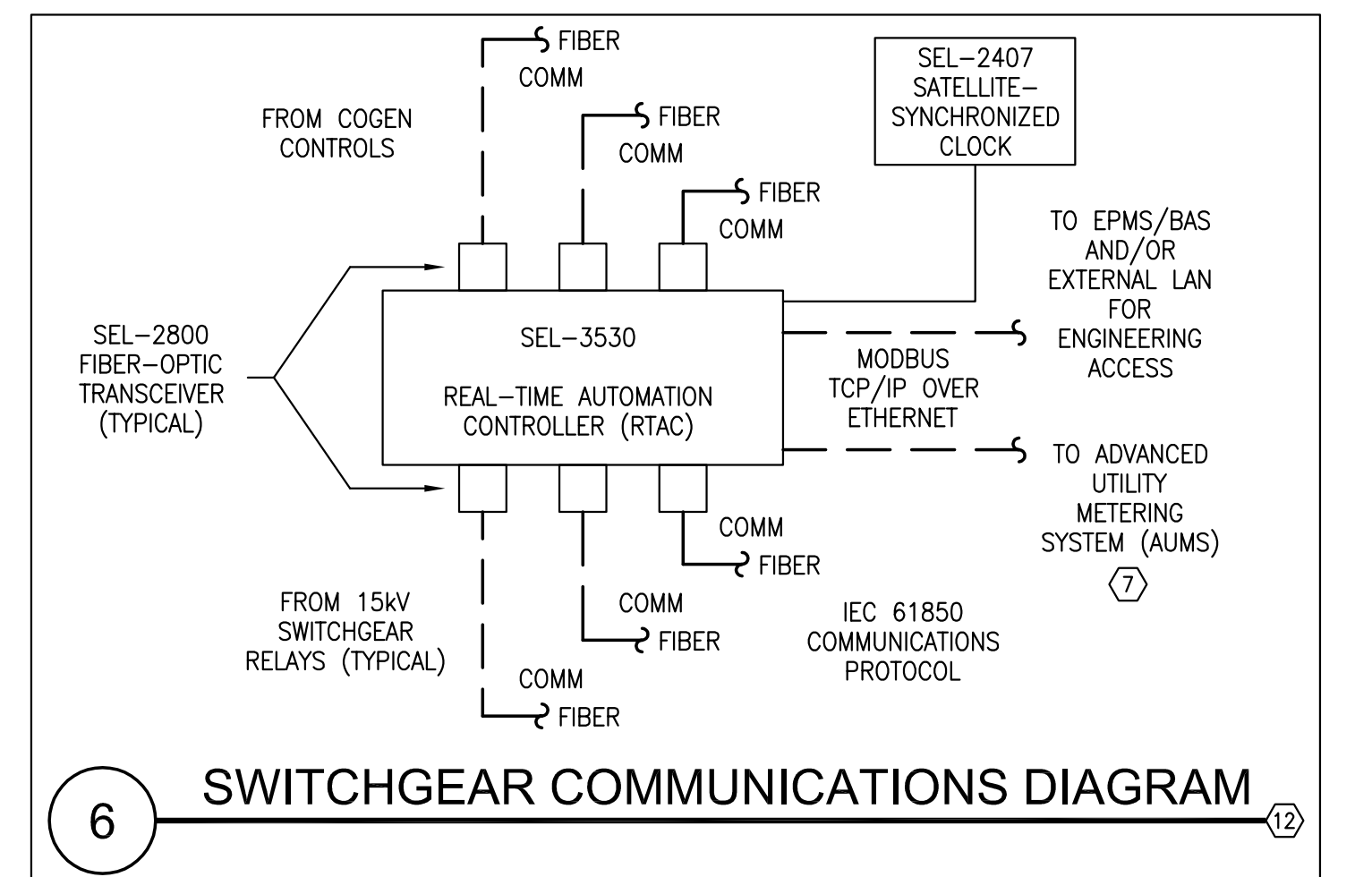
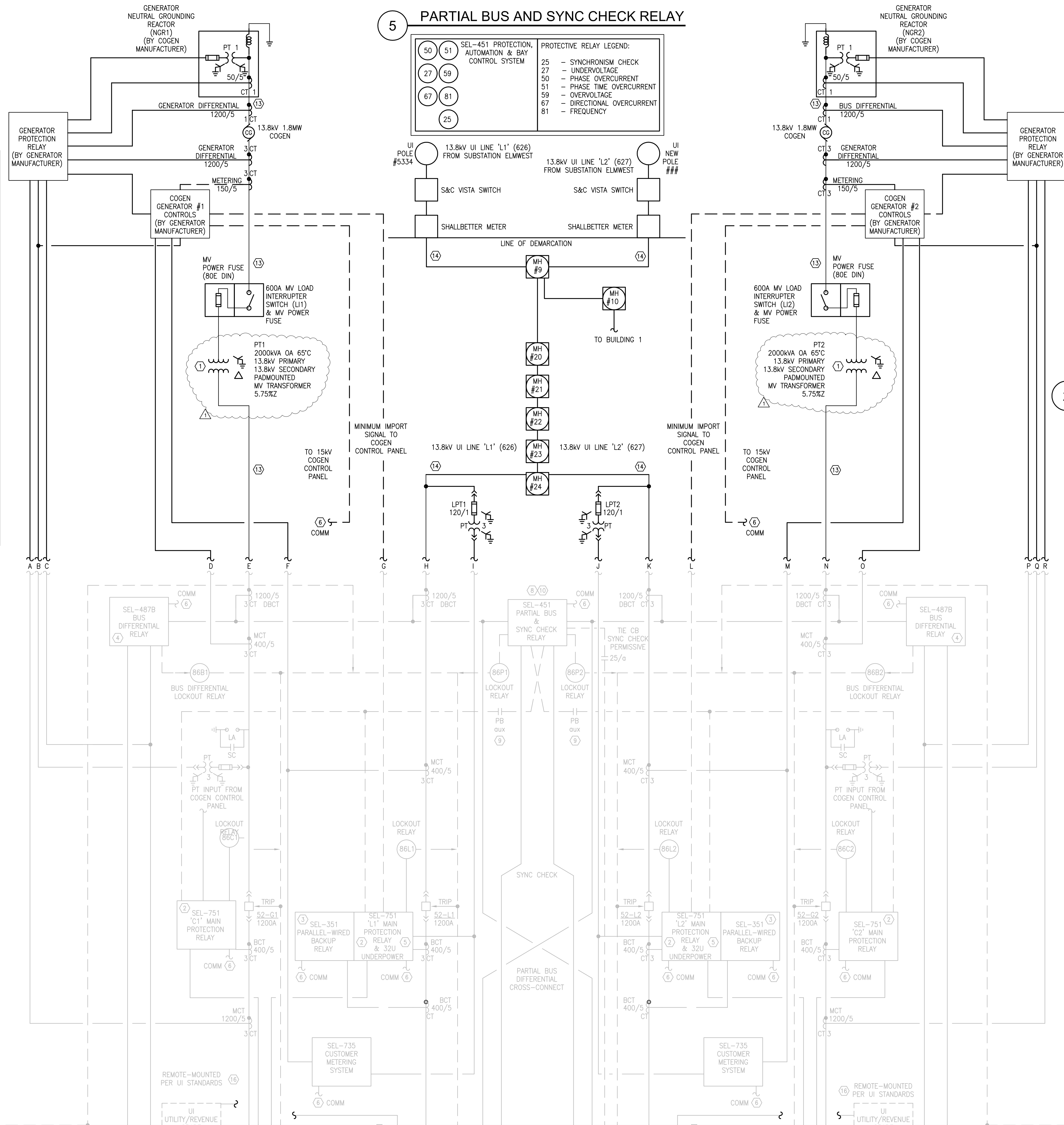
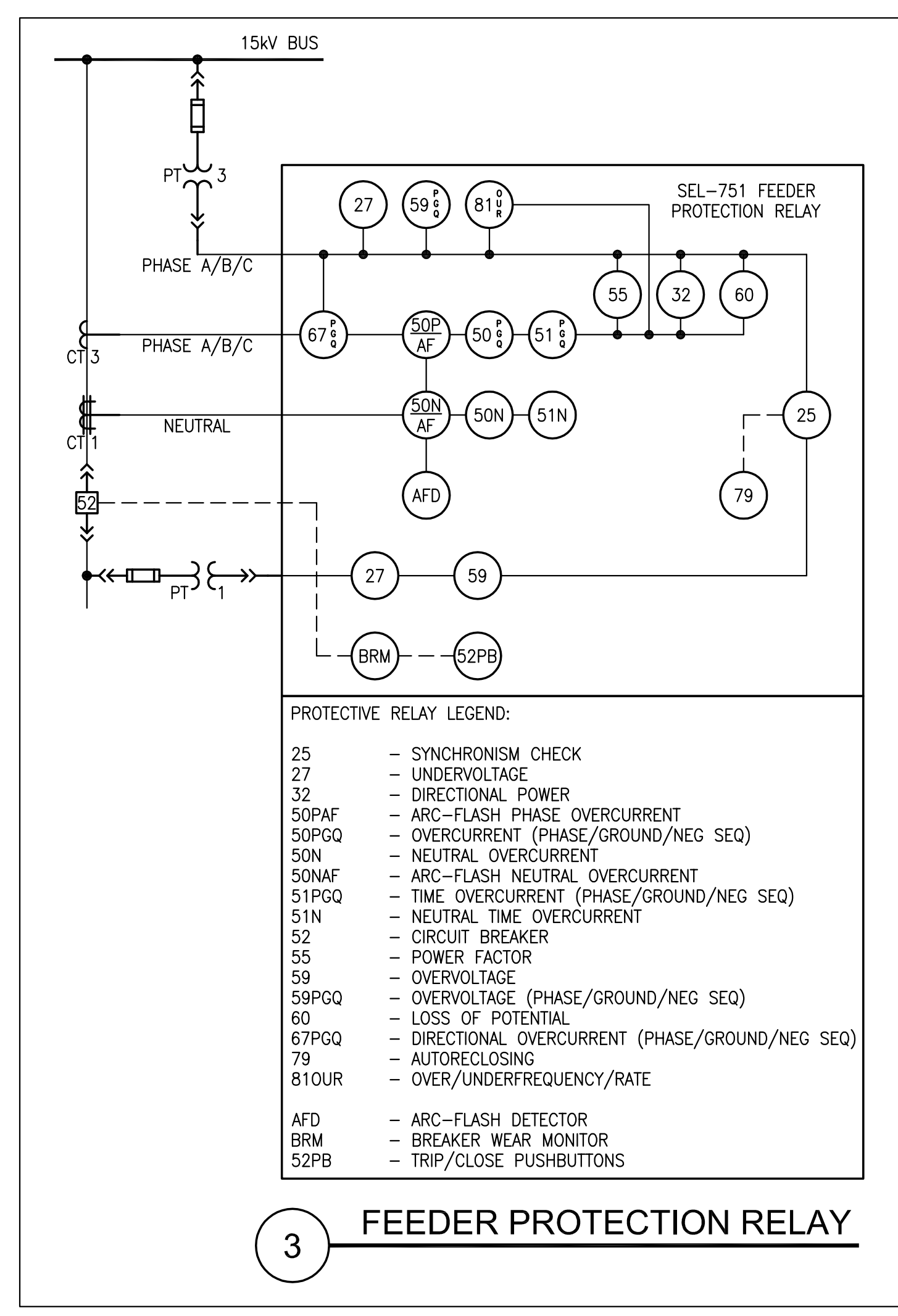
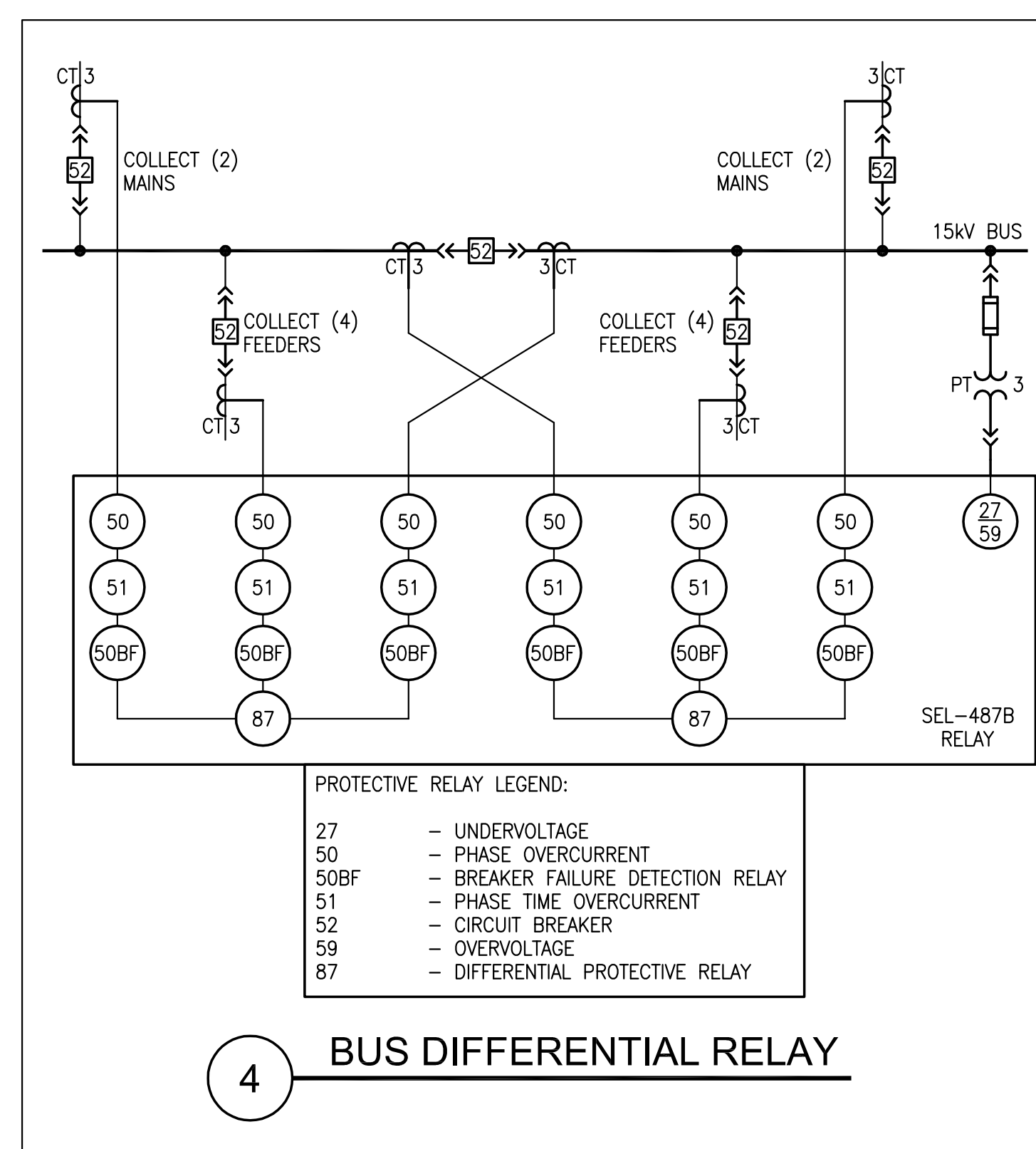
Date
 07/31/2014

Checked
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Drawn
 EP

Office of Construction and Facilities Management

Department of Veterans Affairs



- 15KV SWITCHGEAR KEYED NOTES:**
- 15KV SWITCHGEAR CONFIGURATION INCLUDING METERING, RELAYING AND PROTECTION SCHEMES SHALL COMPLY WITH UI SPECIFICATIONS FOR CUSTOMER-OWNED 15KV METAL CLAD SWITCHGEAR (MAIN-TIE-MAIN BISSING ARRANGEMENT) AND UI STANDARD FOR INTERCONNECTION OF DISTRIBUTED GENERATION.
 - MAIN AND FEEDER CIRCUIT BREAKER PROTECTION RELAY: SCHWEITZER ENGINEERING LABORATORIES SEL-751 OR EQUAL. REFER TO EP.502 RELAY FUNCTION TABLE FOR RELAY FUNCTIONS.
 - PARALLEL-WIRED BACKUP RELAYS SHALL BE PROVIDED FOR L1 AND L2 MAINS PER UI STANDARD SPECIFICATIONS. PRIMARY RELAYS (SEL-751) SHALL BE ALLOWED TO REACT TO AN EVENT(S) PRIOR TO BACKUP RELAYS (SEL-351) BEING ENGAGED (TIME-CURRENT CURVES FOR BACKUPS SHALL BE SET JUST BEYOND PRIMARY CURVES). REFER TO EP.502 RELAY FUNCTION TABLE FOR RELAY FUNCTIONS.
 - BUS DIFFERENTIAL RELAY SCHEME SHALL PROVIDE A SUMMATION OF CURRENTS INTO AND OUT OF EACH SWITCHGEAR BUS. CURRENT IN SHALL EQUAL CURRENT OUT, AND ANY DIFFERENCE CURRENT SHALL BE DETECTED BY THE BUS DIFFERENTIAL RELAY, INITIATING TRIP OF ALL CIRCUIT BREAKERS CONNECTED TO THE BUS INSIDE THE OFFENDING ZONE. THIS ACTION PROVIDES RAPID ISOLATION OF A FAULTED BUS FROM THE REMAINDER OF THE SYSTEM. BUS DIFFERENTIAL RELAY: SCHWEITZER ENGINEERING LABORATORIES SEL-487B OR EQUAL. REFER TO EP.502 RELAY FUNCTION TABLE FOR RELAY FUNCTIONS.
 - MINIMUM IMPORT RELAY SCHEME SHALL PREVENT COGENERATION EXPORT TO THE UTILITY. WHEN TOTAL POWER FLOW IN THE DIRECTION OF THE SWITCHGEAR BUS (FROM THE UTILITY) FALLS BELOW A PRE-SET MINIMUM THRESHOLD FOR A PRE-SET PERIOD OF TIME, THAT UTILITY LINE SHALL BE ISOLATED FROM THE FACILITY POWER DISTRIBUTION SYSTEM BY OPENING THE INTERTIE (MAIN CIRCUIT BREAKER). MINIMUM IMPORT RELAY: SCHWEITZER ENGINEERING LABORATORIES SEL-751 OR EQUAL.
 - PROVIDE FIBER OPTIC COMMUNICATIONS WIRING TO REAL-TIME AUTOMATION CONTROLLER (RTAC), FOR EXTENSION TO EPMS/BAS AND/OR EXTERNAL LAN FOR ENGINEERING ACCESS.
 - COORDINATE WITH SCHNEIDER ELECTRIC FOR AIMS INTERFACE FOR WORK REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. CONTACT JOHN HOTCHKISS AT SCHNEIDER ELECTRIC (615-336-3063).
 - PARTIAL BUS DIFFERENTIAL RELAY SCHEME SHALL PROVIDE BUS PROTECTION AND FAULT ISOLATION AS A BACKUP TO THE FULL BUS DIFFERENTIAL SCHEME. ONLY INPUTS TO EACH BUS ARE SUMMED, AND NON-ZERO RESULTS INDICATE FAULTED ZONE. TRIP OF THE TIE AND MAIN CIRCUIT BREAKERS INSIDE THE OFFENDING ZONE IS INITIATED, ISOLATING THE FAULTED ZONE FROM THE REMAINDER OF THE SYSTEM. PARTIAL BUS RELAY: SCHWEITZER ENGINEERING LABORATORIES SEL-451. REFER TO EP.502 RELAY FUNCTION TABLE FOR RELAY FUNCTIONS.
 - UPON ACTIVATION OF PARTIAL BUS DIFFERENTIAL RELAY (AND 'PB aux' PARTIAL BUS AUXILIARY CONTACT CLOSURE), TRIP CURVES FOR SEL-751 MAIN FEEDER RELAYS IN OPPOSITE ZONE (i.e., NOT THE FAULTED ZONE) SHALL BE TIME DELAY SHIFTED TO MAINTAIN CONTINUITY THROUGH THE DURATION OF THE EVENT.
 - SYNC CHECK RELAY SHALL VERIFY UI LOAD BUS #1 / LOAD BUS #2 SYNCHRONIZATION PRIOR TO PERMITTING CLOSE OF BUS TIE CIRCUIT BREAKER. SYNC CHECK PERMISSIVE SHALL BE ACHIEVED THROUGH THE USE OF AN AUXILIARY CONTACT FROM THE SYNC CHECK RELAY WIRED TO THE 'CLOSE' CIRCUIT OF THE TIE CIRCUIT BREAKER. SYNC CHECK RELAY: SCHWEITZER ENGINEERING LABORATORIES SEL-451.
 - STUCK BREAKER PROTECTION SCHEME SHALL ACTIVATE A 62 TIMING RELAY THROUGH AN AUXILIARY CONTACT OF THE BREAKER TO BE TRIPPED. AT THE EXPIRATION OF THE TIME DELAY, THE 62 TIMING RELAY SHALL TRIP A LOCKOUT RELAY THAT WILL TRIP ALL BREAKERS INSIDE THE FAULTED ZONE. SHOULD THE FEEDER BREAKER TRIP AND THE AUX CONTACT CHANGE LOGICAL STATE BEFORE THE TIMEOUT (i.e., BREAKER NOT STUCK), THE 62 TIMER WILL AUTOMATICALLY RESET AND WILL NOT TRIP THE STUCK BREAKER LOCKOUT RELAY. THE 62 TIMING RELAY SHALL BE SET FOR 9 CYCLES, AND BE EQUIPPED WITH A TARGET TO INDICATE THE RELAY HAS TIMED OUT. TIME DELAY RELAY: SCHWEITZER ENGINEERING LABORATORIES SEL-501.
 - REFER TO ELECTRIC POWER MANAGEMENT SYSTEM (EPMS) ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.
 - PROVIDE MV-105 MEDIUM VOLTAGE CONDUCTORS AS FOLLOWS:
(3) #1/0 AWG (PHASE), (1) #1/0 AWG (GROUND), (1) 5" CONDUIT.
 - PROVIDE MV-105 MEDIUM VOLTAGE CONDUCTORS AS FOLLOWS:
750 KCMIL COMPACT ROUND COPPER EPR INSULATED FLAT STRIP, LOW SMOKE JACKETED CABLE, REDUCED DIAMETER, WITH (3) YELLOW STRIPES AND PHASE ID ON JACKET, PACKAGED THREE SINGLE CONDUCTOR CABLES TRIPLEXED. CABLES SHALL BE IN ACCORDANCE WITH UI MATERIAL SPECIFICATION. PROVIDE (2) 5" CONDUIT (1 ACTIVE, 1 SPARE). COORDINATE WITH UI PRIOR TO PLACING ORDER, TO ENSURE MATCH WITH UI UTILITY CONDUCTOR ARRANGEMENT.
 - PROVIDE METERING CURRENT TRANSFORMERS AND POTENTIAL TRANSFORMERS AT UI REVENUE METERING CUBICLES PER UI TECHNICAL SPECIFICATIONS (AS FOLLOWS):
CURRENT TRANSFORMERS: GENERAL ELECTRIC/ITI MODEL # 755X142044
TYPE JKM 5C
POTENTIAL TRANSFORMERS: GENERAL ELECTRIC CATALOG # 765X021051
TYPE JWM-5A
REFER TO UI ELECTRIC OFFICE MEMORANDUM 'PRIMARY METERING REQUIREMENTS' FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
 - UI SHALL PROVIDE 'K12' PULSE GENERATION AT UTILITY REVENUE METERS, TO ALLOW DATA FROM METERS TO BE AVAILABLE TO THE FACILITY EPMS SYSTEM.
 - GACT AND GBCT SHALL BE LOCATED ON FEEDER BREAKER CABLES.
 - TOT SHALL BE INSTALLED FOR FUTURE USE, TO BE ABLE TO DETERMINE POWER FLOW ACROSS THE TIE CB ONLY.

F4 15kV METAL-CLAD (N-SWGR-1) SWITCHGEAR ONE-LINE DIAGRAM
NOT TO SCALE

CONSULTANTS: ADDENDUM 1 Revisions:		ARCHITECT/ENGINEERS: CANNONDESIGN 100 Cambridge Street, Suite 1400 Boston, Massachusetts 02114 T: 617.742.5440 F: 617.723.8832		Project Title WEST HAVEN COMBINED HEAT AND POWER (CHP) PLANT DESIGN		Project Number VA701-P-0163		Office of Construction and Facilities Management	
Date: 07/31/2014		Approved: Project Director JOSEPH SIMONETTA		Location VA MEDICAL CENTER - WEST HAVEN CAMPUS 850 CAMPBELL AVE, WEST HAVEN, CT 06516		Building Number 19		Drawing Number EP.501	
Date: 07/31/2014		Checked: BP		Drawn: EP		Department of Veterans Affairs			

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LUMINAIRE SCHEDULE

TAG	DESCRIPTION	INSTALLATION METHOD	DEPTH	LAMP		BALLAST/DRIVER		INPUT WATTS	SHIELDING/OPTICS	FEATURES/OPTIONS	NOTES
				TYPE	QTY	TYPE	QTY				
LH1	COMPACT FLUORESCENT VAPOR PROOF GLOBE	SURFACE		42W CFL	1	ELECTRONIC		120	44W	CLEAR PRISMATIC GLASS GLOBE	DECAST ALUMINUM HOUSING AND GUARD, GREY FINISH, UL WET LOCATION LISTED
ERU	SELF-CONTAINED, STANDBY-POWERED LIGHTING BATTERY UNIT	SURFACE WALL		12V, 19W PWA-36 SEALED BEAM		INTEGRAL DRIVER		120/227	19W	SPECULAR OR SEM-SPECULAR INTERNAL REFLECTOR-INDUSED PRISMATIC ACRYLIC REFRACTOR, OR LENS, TO MATCH TEARDROP BODY CONTOUR	STEEL SURFACE HOUSING - WHITE, PPC, ADJUSTABLE LAMP HEADS, 12VDC LEAD CALCIUM BATTERY, RATED 50W @ 90 MIN-SELF-TESTING DIAGNOSTICS
FS1	LINEAR FLUORESCENT	SURFACE MOUNT		T32R 3000K	3	HIGH PERFORMANCE ELECTRONIC		277	96W	LOW PROFILE, CURVED PRISMATIC ACRYLIC DIFFUSER WITH SIDE PRISMS FOR BRIGHTNESS CONTROL	CODE-GUAGE STEEL, LUMINOUS ENDPLATES
LD1	4" ROUND SHOWER LIGHT	RECESSED CEILING		1000 DELIVERED LUMENS LED 3500K		INTEGRAL DRIVER		277	31W	NON CONDUCTIVE REGRESSED HIGH TRANSMISSIVE LENS	4" APERTURE, IP65 WET LOCATION RATING
LH1	HAZARDOUS LINEAR LED STRIP	SURFACE/SUSPEND PER ARCHITECTURAL CEILING		LED 3500K		INTEGRAL DRIVER		120	42W	EXTRUDED (A) STABILIZED OPAL POLYCARBONATE WITH INTEGRAL PRISMS	MARINE GRADE EXTRUDED ALUMINUM, CHEMICALLY PRIMED AND POWDERCOAT FINISH, CONTINUOUS RUNS PER PLANS WITH JOINER BARS, PROVIDE CHAIN HANGER SET WHERE SUSPENDED
LH2	LED VAPOR PROOF GLOBE	SURFACE WALL		LED 4000K	1	ELECTRONIC		277	15W	FROSTED GLASS DIFFUSER	DECAST ALUMINUM HOUSING AND GUARD, CORROSION RESISTANT INDUSTRIAL GREY FINISH, GASKETER, UL WET LOCATION LISTED
L11	INDUSTRIAL LINEAR LED STRIP	SURFACE/SUSPEND PER ARCHITECTURAL CEILING		LED 3500K		INTEGRAL DRIVER		277	39W	HIGH EFFICIENCY POLYMER REFLECTOR FOR BRIGHTNESS CONTROL	SINGLE/CONTINUOUS RUNS PER PLANS, PROVIDE CHAIN HANGER SET WHERE SUSPENDED, DLC CERTIFIED
L12	INDUSTRIAL LINEAR LED STRIP	SURFACE/SUSPEND PER ARCHITECTURAL CEILING		LED 3000K		INTEGRAL DRIVER		120	39W	HIGH EFFICIENCY POLYMER REFLECTOR FOR BRIGHTNESS CONTROL	SINGLE/CONTINUOUS RUNS PER PLANS, PROVIDE CHAIN HANGER SET WHERE SUSPENDED, DLC CERTIFIED
L1T	2" LINEAR LED	SURFACE WALL		LED 3500K		INTEGRAL DRIVER		277	10W/FT	FROSTED WHITE WARP AROUND ACRYLIC LENS	HEAVY GAUGE ALUMINUM HOUSING, SATIN CLEAR ANODIZED FINISH
LK1	LINEAR LED	MILLION MOUNT		LED 3000K		INTEGRAL DRIVER		277	10W/FT	DIRECT ASYMMETRIC FORWARD THROW BEAM WITH FROSTED LENS TO REDUCE BRIGHTNESS	WET LOCATION (IP64 RATED), EXTRUDED ALUMINUM HOUSING, DIRECT MILLION FEED ON 1/2" BLOCKS, INTEGRAL EMERGENCY BATTERY BACKUP
LK2	LINEAR LED	SURFACE		LED 2700K		INTEGRAL DRIVER		277	5W/FT	30/40 DEGREE BEAM SPREAD, CLEAR LENS	WET LOCATION (IP64 RATED), EXTRUDED ALUMINUM HOUSING, SLIM ADJUSTABLE MOUNTING, ELECTROSTATIC POLYESTER POWDER COAT CUSTOM RAL COLOR FINISH, CONTINUOUS RUNS PER PLAN WITH END TO END CONFIGURATION
LK3	LINEAR LED	CANTILEVERED SURFACE		LED 2700K		INTEGRAL DRIVER		277	5W/FT	30/40 DEGREE BEAM SPREAD, CLEAR LENS	WET LOCATION (IP64 RATED), EXTRUDED ALUMINUM HOUSING, ADJUSTABLE EXTENDED ARM MOUNTING, ELECTROSTATIC POLYESTER POWDER COAT CUSTOM RAL COLOR FINISH, CONTINUOUS RUNS PER PLAN WITH END TO END CONFIGURATION
LK4	POST TOP LED	POLE MOUNTED		LED 4000K		INTEGRAL 0-10V DIMMING DRIVER		277	55W	TYPE 2, FULL CUT OFF OPTICS, PROVIDE DIFFUSING LENS	LOW PROFILE DIE CAST ALUMINUM HOUSING ARM MOUNTED ON 4" SQUARE, 15" HIGH ALUMINUM POLE. FADE RESISTANT TOIC POWDERCOAT BRONZE, PROVIDE WITH INTEGRAL PHOTOCELL
LK5	POST TOP LED	POLE MOUNTED		LED 4000K		INTEGRAL DRIVER		120	210W	TYPE 2, FULL CUT OFF OPTICS	LOW PROFILE DIE CAST ALUMINUM HOUSING ARM MOUNTED ON 4" SQUARE, 30" HIGH ALUMINUM POLE. FADE RESISTANT TOIC POWDERCOAT BRONZE, PROVIDE WITH INTEGRAL PHOTOCELL
LK6	LED WALL PACK	SURFACE WALL		LED 4000K		INTEGRAL DRIVER		277	18W	MEDIUM THROW, FULL CUT OFF OPTICS	WEDGE SHAPED DIE CAST ALUMINUM HOUSING, INTEGRAL PIR MOTION SENSING DEVICE, FADE RESISTANT TOIC POWDERCOAT BRONZE
KS	EXIT SIGN	SUSPEND/SURFACE/WALL MOUNT PER ARCHITECTURAL CEILING		LED		INTEGRAL POWER SUPPLY		120/227	5.5W PER FACE	CLEAR ACRYLIC FACE, CODE SIZE "EXIT" LETTERS & DIRECTIONAL CHEVRONS, ENGRAVED & FILLED W/PLAS/ANODIZED ALUMINUM FOR DOUBLE FACE SIGNAL, GREEN LETTERS	CONCEALED SHEET METAL HOUSING, BRUSHED ALUMINUM FACE-SINGLE/DOUBLE FACE WITH DIRECTIONAL CHEVRONS AS SHOWN, PROVIDE MOUNTING HARDWARE TO ACCOMMODATE CEILING/WALL, INTEGRAL EMERGENCY BATTERY BACKUP
KS2	WET LOCATION EXIT SIGN	SUSPEND/SURFACE/WALL MOUNT PER ARCHITECTURAL CEILING		LED		INTEGRAL POWER SUPPLY		120/227	5.5W PER FACE	STENCIL CUT, CODE SIZE "EXIT" LETTERS & DIRECTIONAL CHEVRONS-GREEN ACRYLIC SHEET BACKING	UL WET LOCATION LISTED, DECAST ALUMINUM HOUSING WITH IMPACT RESISTANT POLYCARBONATE COVERS, WINDAID/CORROSION RESISTANT HARDWARE, SURGE PROTECTION, SINGLE/DOUBLE FACE AND DIRECTIONAL CHEVRONS AS SHOWN, PROMOUNT WITH WHERE REQ'D, COLOR 303, INTEGRAL EMERGENCY BATTERY BACKUP

GENERAL NOTES:
 1. REFERENCED PRODUCTS ARE INCLUDED HEREIN, OF MANUFACTURERS & PRODUCTS, THAT GENERALLY CONFORM TO THE LUMINAIRE DESIGN INTENT ESTABLISHED HEREIN, & IN THE PROJECT MANUAL, EQUIVALENT PRODUCTS BY OTHER MANUFACTURERS MAY BE CONSIDERED, PRIOR TO BID.
 2. DETERMINE SPECIFIC LUMINAIRE PART NUMBERS BASED ON THE REFERENCED PRODUCT SERIES, WRITTEN DESCRIPTIONS & PROJECT MANUAL SPECIFICATIONS.
 3. INCLUDE HEREIN, OF MANUFACTURER'S SERIES &/OR MODEL NUMBERS DOES NOT IMPLY UNCONDITIONAL PRODUCT APPROVAL - MANUFACTURER'S STANDARD PRODUCTS MAY REQUIRE CUSTOM MODIFICATIONS TO MEET THE REQUIREMENTS SPECIFIED HEREIN & IN THE PROJECT MANUAL.
 4. LISTED SIZES, LAMPING, & TYPES OF LUMINAIRES MAY NOT BE AVAILABLE FROM ANY GIVEN MANUFACTURER OR SERIES.
 5. ALERT ARCHITECT TO DISCREPANCIES PRIOR TO BID.

ABBREVIATIONS:
 CONC CONCRETE LG LAY-IN GRID PL PLASTER SPEC SPECULAR
 RW BRICK WALL LP-RB LOW REFLECTANCE PRG POLYESTER POWER COAT S'SPEC SEM-SPECULAR
 T/D DIRECT/INDIRECT MT MASONRY TILE CORB PROM PROMATIC SS STAINLESS STEEL
 ELRD EMERG. LIG. BYPASS DEVICE PAF PAINT AFTER FABRICATION REFLECT REFLECTOR/REFLECTANCE TBS TO BE SELECTED BY ARCH
 EXP EXPOSED PARA PARABOLIC SP SPRING CEILING SYSTEM UNW UNIVERSAL 120-277VAC

NOTES:
 1 TO MATCH EXISTING ADJACENT PARKING LOT POLE LIGHTING, DESIGN STANDARD: GARDCO P21-DM-42-1-2-55LA-NR-UNW-BRP-PC-SF41-2-0L
 2 TO MATCH EXISTING ADJACENT PARKING LOT POLE LIGHTING, DESIGN STANDARD: GARDCO P32-DM-41-1-2-215LA-NR-UNW-BRP-PC-SF41-2-0L

B4 LUMINAIRE SCHEDULE
 1/8" = 1'-0"

TRANSFORMER SCHEDULE

TRANSFORMER DESIGNATION	TYPE											PHASE	PRIMARY VOLTAGE	SECONDARY VOLTAGE	K-RATING	D" OR 30" SHIFT	KVA (OUTSIDE AIR)	KVA (FORCED AIR)	FEATURES					MOUNTING			WEIGHT (LBS)	REMARKS		
	MINERAL OIL	SULFONE	R-TEMP	SEED OIL	DRY	STAND ALONE	INTERNAL PRIMARY SUBSTITUTION	INTERNAL USG	MY PROMOUNT	CAST COIL	VP								HARBONIC SUPP. (HS)	HARBONIC COND. (HC)	HARBONIC FILTER (HFT)	ISOLATION DRY	TP-1	CSL-3	FA PROVISIONS	EXTENSOR PAD			FLOOR	WALL
T11	-	-	-	-	X	-	-	-	-	-	-	-	-	-	3	480	208/120	-	-	45	-	-	-	X	-	-	-	-	-	FED FROM 1PH41
T12	-	-	-	-	X	-	-	-	-	-	-	-	-	-	3	480	208/120	-	-	112.5	-	-	-	X	-	-	-	-	-	FED FROM 1ATSE1
T13	-	-	-	-	X	-	-	-	-	-	-	-	-	-	3	480	208/120	-	-	112.5	-	-	-	X	-	-	-	-	-	FED FROM 1ATSE2
T14	-	-	-	-	X	-	-	-	-	-	-	-	-	-	3	480	208/120	-	-	112.5	-	-	-	X	-	-	-	-	-	FED FROM 1ATSE3
T21	-	-	-	-	X	-	-	-	-	-	-	-	-	-	3	480	208/120	-	-	45	-	-	-	X	-	-	-	-	-	FED FROM 2PH41
T22	-	-	-	-	X	-	-	-	-	-	-	-	-	-	3	480	208/120	-	-	112.5	-	-	-	X	-	-	-	-	-	FED FROM N-USS-1
T23	-	-	-	-	X	-	-	-	-	-	-	-	-	-	3	480	208/120	-	-	45	-	-	-	X	-	-	-	-	-	FED FROM 2PS41
T24	-	-	-	-	X	-	-	-	-	-	-	-	-	-	3	480	208/120	-	-	45	-	-	-	X	-	-	-	-	-	FED FROM 2PE41
T31	-	-	-	-	X	-	-	-	-	-	-	-	-	-	3	480	208/120	-	-	45	-	-	-	X	-	-	-	-	-	FED FROM 3PH41
T32	-	-	-	-	X	-	-	-	-	-	-	-	-	-	3	480	208/120	-	-	45	-	-	-	X	-	-	-	-	-	FED FROM 3PE41
P11	X	-	-	-	-	-	-	-	X	-	-	-	-	-	3	13.8	13.8	-	-	2000	-	-	-	X	-	-	-	-	-	FED FROM COGEN 1
P12	X	-	-	-	-	-	-	-	X	-	-	-	-	-	3	13.8	13.8	-	-	2000	-	-	-	X	-	-	-	-	-	FED FROM COGEN 2

REMARKS:
 1.
 2.
 3.
 4.

GENERAL NOTES:
 A. K-1, UNLESS NOTED OTHERWISE

E4 TRANSFORMER SCHEDULE
 1/8" = 1'-0"

ARCHITECT/ENGINEERS:  100 Cambridge Street, Suite 1400 Boston, Massachusetts 02114 T: 617.742.5440 F: 617.723.8832			Drawing Title SCHEDULES Approved: Project Director JOSEPH SIMONETTA		Project Title WEST HAVEN COMBINED HEAT AND POWER (CHP) PLANT DESIGN Location VA MEDICAL CENTER - WEST HAVEN CAMPUS 950 CAMPBELL AVE, WEST HAVEN, CT 06516 Date: 07/31/2014 Checked: BP Drawn: EP			Project Number 004243.00 Building Number 19 Drawing Number EP.703		Office of Construction and Facilities Management 	
1 ADDENDUM 1 Rev. No. Description Date 07/31/2014			VA FORM 08-6231								