PROJECT:

CAMP NIANTIC UTILITY DUCTBANK INSTALLATION

NIANTIC, CONNECTICUT

PROJECT NUMBER: 16MIL23803

QUI TRANSTULIT SUSTINET

STATE OF CONNECTICUT

DANNEL P. MALLOY
GOVERNOR

MILITARY DEPARTMENT

MAJOR GENERAL THADDEUS J. MARTIN
ADJUTANT GENERAL

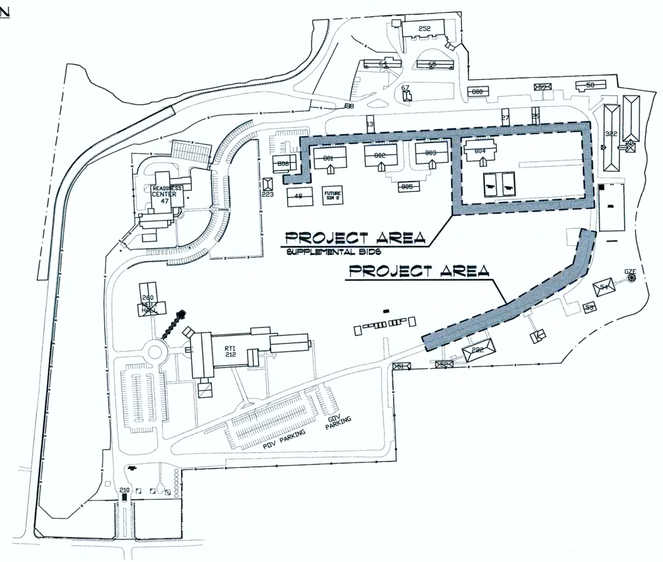
STATE OF CONNECTICUT MILITARY DEPARTMENT FACILITIES MANAGEMENT OFFICE

360 BROAD STREET
HARTFORD, CONNECTICUT 06105

GENERAL:

CONTRACTOR RESPONSIBLE TO LOCATE ALL EXISTING UTILITIES IN PROJECT AREA. CONTRACTOR TO CONTACT:
- CALL BEFORE YOU DIG @ 811

PROJECT SITE KEY PLAN



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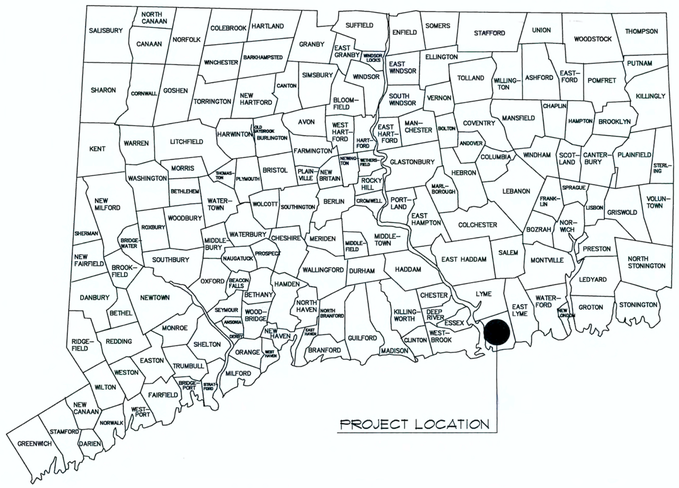
LOCATION PLAN

SRMR: EAST LYME, CONNECTICUT



Architect/Engineer

STATE OF CONNECTICUT BENJAMIN J NEUMANN 20274 LICENSED PROFESSIONAL ENGINEER

REVISION		
Mark	Date	Description
1	8/17/16	ADDENDUM #1

Drawn by: GWA
App'd by: EST
Scale: AS NOTED
File as:

North

STATE OF CONNECTICUT
MILITARY DEPARTMENT
Facilities Management Office
360 Broad Street Hartford, CT 06105
860.493.3725 Fax 860.524.4931

Project
UTILITY DUCTBANK INSTALLATION
CAMP NIANTIC, CONNECTICUT

Drawing Title
TITLE SHEET

Date
20 JULY 2016

Drawing No.
T1

TRACKING No.
NI-1202

DRAWN BY: GWA \\5582239\Fmc2\DPM\Project Files\NI 1202 Site Infrastructure Phase I BI-Q-669\Design Submissions\100% TM Submission\Drawings\ G3 100% Addendum FINAL.dwg Aug 17, 2016 - 9:04am

SYMBOL LIST

J : J	JUNCTION BOX (REFER TO PLAN FOR APPLICATION)
—— ——	CABLE TRAY RUN ABOVE CEILING
	'HOMERUN' TO PANELBOARD BREAKER, CONDUCTORS AS INDICATED OR SCHEDULED. PROVIDE (2)#12+(1)#12 GND -3/4"C. TO 20A-1P C/B. (UON) D: INDICATES DEDICATED CIRCUIT IG: INDICATES CIRCUIT WITH ISOLATED GROUND CONDUCTOR GFI: INDICATES THE CIRCUIT CONNECTED TO GFCI C/B
	POWER WIRING, CONDUCTORS AS INDICATED OR SCHEDULED
	UNDERGROUND LIGHTING WIRING, CONDUCTORS AS INDICATED OR SCHEDULES
	#4/0 AWG COPPER GROUND FROM COLUMN STEEL TO ¾"X10' COPPERWELD GROUND ROD (ALL CADWELD)
	REFER TO ELECTRICAL GROUNDING SYSTEMS WIRING DIAGRAM ON ELECTRICAL DETAIL DRAWINGS E200 SERIES
	FUSED DISCONNECT SWITCH
	DISCONNECT SWITCH
	FLOOR MOUNTED CONDUITS SLEEVES, POURED IN THE CONCRETE SLAB
	NEW PANELBOARD (120 / 208V, 3P, 4W)
	NEW PANELBOARD (277 / 480V, 3P, 4W)
C	COMMUNICATION MANHOLE (H) SUBSCRIPT COMMUNICATION HANDHOLE
E	POWER MANHOLE
T	TRANSFORMER

ABBREVIATION LIST

E	EXISTING TO REMAIN
RE	EXISTING TO BE REMOVED
RL	EXISTING TO BE RELOCATED
NL	NEW LOCATION OF EXISTING TO BE RELOCATED
NR	NEW TO REPLACE EXISTING
RR	REMOVE AND REPLACE ON NEW SURFACE
AFF	ABOVE FINISHED FLOOR
BFC	BELOW FINISHED FLOOR
UON	UNLESS OTHERWISE NOTED
WP	WEATHERPROOF PROTECTION (ENCLOSURE)
GRC	GALVANIZED RIGID CONDUIT
U/G E	UNDERGROUND POWER
U/G C	UNDERGROUND COMMUNICATION

NOTES:

1. THIS LIST OF SYMBOLS IS COMPREHENSIVE; NOT ALL SYMBOLS WILL APPEAR ON ALL DRAWINGS WITHIN THIS SET.
2. PROVIDE WIRE GUARDS FOR ALL FIRE ALARM DEVICES, EXIT SIGNS, EMERGENCY LIGHTING, THERMOSTATS, CLOCKS & SPEAKERS, FIXTURES IN ALL GYMNASIUMS, LOCKER ROOMS AND SHOWER ROOMS.

LEGEND

DESCRIPTION	EXISTING	PROPOSED	DESCRIPTION	EXISTING	PROPOSED
PROPERTY LINE			OVERHEAD WIRES	OHW	
SAWCUT			UTILITY POLE		
MINOR CONTOUR	47	47	ELECTRICAL MANHOLE		
MAJOR CONTOUR	50	50	ELECTRICAL - BURIED	E	
SPOT ELEVATION	× 21.4	× 36.3	TEL-DATA MANHOLE		
SILT SACK		S.S.	TEL-DATA - BURIED	T	
SILT FENCE			SPEED BUMP		
HAYBALE CHECK DAM			TREES/VEGETATION		
EDGE OF PAVEMENT			PARKING SPACE NUMBER		
CURB LINE			CONSTRUCTION ENTRANCE		
CONCRETE WALK			PRECAST CONCRETE SECURITY BARRIER		
FULL DEPTH PAVEMENT RECONSTRUCTION			MANUAL SECURITY GATE		
MILL & OVERLAY			TRAFFIC DETECTION LOOP		
PAVEMENT IMPROVEMENT			MODIFIED RIP-RAP		
BUILDING			LOAM & SEED		
CHAIN LINK FENCE					
TIMBER RAIL					
SIGN & SIGN POST					
ROADWAY PAINT LINE					
CROSSWALK LINE					
STORM MANHOLE					
STORM SEWER	SD				
CATCH BASIN					
SANITARY MANHOLE	S				
SANITARY SEWER	SS				
WATER VALVE					
WATER LINE	PW				
HYDRANT					

STANDARD ABBREVIATIONS

@	AT	EL/ELEV	ELEVATION	PCC	POINT OF COMPOUND CURVATURE
ABDN	ABANDON (ED)	EMH	ELECTRIC MANHOLE	PCPP	PERFORATED CORRUGATED POLYETHYLENE
AC	ACRE/AIR CONDITIONING	EX/EXIST	EXISTING	PED	PEDESTRIAN
AOBE	AS ORDERED BY THE ENGINEER	EG	EXISTING GRADE	PI	POINT OF INTERSECTION
BSMT	BASEMENT	FF	FIRST FLOOR	PT	POINT OF TANGENCY
BCLC	BITUMINOUS CONCRETE LIP CURBING	G	GAS	PRC	POINT OF REVERSE CURVATURE
BOW	BACK OF WALK	GEN	GENERATOR	PS	PARKING SPACES
BL	BASELINE	GG	GAS GATE	PVC	POLYVINYL CHLORIDE
BW	BOTTOM OF WALL	GRC	GALVANIZED RIGID CONDUIT	R	RADIUS
BIT	BITUMINOUS	HC	HANDICAP	REV	REVISION
BC	BOTTOM OF CURB	HYD	HYDRANT	ROW	RIGHT OF WAY
BLDG	BUILDING	IN	INCHES	RT	RIGHT
BOT	BOTTOM	INC	INCORPORATED	SAN	SANITARY
CATV	CABLE TELEVISION	INV	INVERT	SCH	SCHEDULE
CIP	CAST IRON PIPE	L	LENGTH OF CURVE	SF	SQUARE FEET
CB	CATCH BASIN	LT	LEFT	S	SOUTH
CL	CENTERLINE	LOC	LOCATION	STA	STATION
CLF	CHAIN LINK FENCE	LP	LIGHT POLE	STD	STANDARD
CL&P	CONNECTICUT LIGHT & POWER	MAX	MAXIMUM	STRM	STORM
CTDEEP	CONNECTICUT DEPT. OF ENERGY & ENV. PROTECTION	MIN	MINIMUM	T	TANGENT LENGTH/TEL-DATA
CTDOT	CONNECTICUT DEPT. OF TRANSPORTATION	MH	MANHOLE	TEL	TEL-DATA
CTARNG	CONNECTICUT ARMY NATIONAL GUARD	MISC	MISCELLANEOUS	TF	TOP OF FRAME
CONC	CONCRETE	MON	MONUMENT	TYP	TYPICAL
CO	CLEAN-OUT	NIC	NOT IN CONTRACT	TC	TOP OF CURB
CPP	CORRUGATED POLYETHYLENE PIPE	N	NORTH	TW	TOP OF WALL
CY	CUBIC YARDS	NCHRP	NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM	W	WATER
DIP	DUCTILE IRON PIPE	NTS	NOT TO SCALE	WG/WV	WATER GATE/VALVE
DWG	DRAWING	N/A	NOT APPLICABLE	XFMR	TRANSFORMER
E	EAST/ELECTRIC	N/F	NOW OR FORMERLY	&	AND
EOP	EDGE OF PAVEMENT	OH	OVERHEAD		
ELEC	ELECTRIC	PC	POINT OF CURVATURE		

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STATE OF CONNECTICUT · BENJAMIN J. NEILSON · 28274 · LICENSED · PROFESSIONAL ENGINEER

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GENERAL NOTES:

1. EXISTING CONDITIONS BASE MAPPING HAS BEEN COMPILED FROM MAPPING PROVIDED BY THE CTARNG.

2. UTILITY LOCATIONS SHOWN HEREON WERE PLOTTED FROM INFORMATION SUPPLIED BY THE CTARNG AND DATA OBTAINED FROM AS-BUILT DRAWINGS. THE ACCURACY AND COMPLETENESS OF SUBSURFACE INFORMATION SHOWN ON THESE DRAWINGS IS NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE FOR HIMSELF, THE LOCATIONS AND ELEVATIONS OF ALL UTILITIES WHICH MAY AFFECT HIS CONSTRUCTION OPERATIONS. THE CONTRACTOR MUST ADEQUATELY PROTECT AND SUPPORT UTILITIES AND HE SHALL BE RESPONSIBLE FOR ALL DAMAGE INCURRED AT NO EXPENSE TO THE OWNER. ANY ONE USING UTILITY INFORMATION AND DATA PROVIDED HEREIN SHALL CONTACT 'CALL BEFORE YOU DIG', 1-800-922-4455 OR WWW.CBYD.COM, 72 HOURS IN ADVANCE TO VERIFY THE LOCATION OF UTILITIES PRIOR TO STARTING CONSTRUCTION. (SEE NOTE 7. IN 'FIELD ENGINEERING NOTES')

3. IT IS THE RESPONSIBILITY OF EACH BIDDER IN EVALUATING THESE PLANS TO MAKE EXAMINATIONS IN THE FIELD BY VARIOUS METHODS AND OBTAIN NECESSARY INFORMATION FROM AVAILABLE RECORDS, UTILITY COMPANIES, AND INDIVIDUALS AS TO THE LOCATION OF SUBSURFACE STRUCTURES.

4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THIS PROJECT WORK SCOPE PRIOR TO THE INITIATION OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DOCUMENTS RELATIVE TO THE DRAWINGS, SPECIFICATIONS OR APPLICABLE CODES, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE AGENCY CONSTRUCTION COORDINATOR IN WRITING PRIOR TO THE START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE AGENCY CONSTRUCTION COORDINATOR SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF WORK AS DEFINED BY THE DRAWINGS AND IN FULL CONFORMANCE WITH LOCAL REGULATIONS AND CODES.

5. AREAS OUTSIDE THE PROJECT LIMIT LINE DISTURBED BY CONSTRUCTION SHALL BE RETURNED TO THEIR ORIGINAL CONDITION OR BETTER AND SHALL BE GRADED TO MEET PROPOSED CONSTRUCTION AS DIRECTED BY THE AGENCY CONSTRUCTION COORDINATOR. COST FOR THIS WORK SHALL BE BORNE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

6. THE CONTRACTOR SHALL PROCURE ALL THE NECESSARY PERMITS AND LICENSES, AT THE TIME REQUIRED, PAY ALL THE CHARGES AND FEES, AND GIVE NOTICES AS NECESSARY AND DUE IN CONNECTION WITH THE LAWFUL EXECUTION OF THE WORK AT NO ADDITIONAL COST TO THE OWNER.

7. ALL UTILITY BOXES, FRAMES, AND GRATES, ETC. AFFECTED BY THE CONSTRUCTION ACTIVITIES SHALL BE RESET/RECONSTRUCTED TO THE PROPER GRADE. ALL COST RELATED TO SUCH WORK SHALL BE CONSIDERED INCLUDED IN THE BID PRICE.

8. EXCAVATION OF ANY TYPE SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT UNDERGROUND UTILITIES OR STRUCTURES ARE NOT DAMAGED. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY FOR ANY DAMAGED INCURRED DURING EXCAVATION OPERATIONS. ALL EXCAVATION SHALL BE IN CONFORMANCE WITH THE LATEST OSHA REQUIREMENTS.

9. THE CONTRACTOR SHALL EXCAVATE AND LEGALLY DISPOSE OF GRUBBING MATERIALS AT A FACILITY APPROVED TO RECEIVE SUCH MATERIALS. THE COST FOR THIS WORK SHALL BE INCLUDED IN THE BID FOR THE PROJECT.

10. ALL DRIVEWAYS, ROADS, STAIRS, AND SIDEWALKS DISTURBED BY THE CONSTRUCTION IN OR OUTSIDE THE PROJECT LIMIT LINE SHALL BE RETURNED TO THEIR ORIGINAL CONDITION OR BETTER AND SHALL BE GRADED TO MEET THE PROPOSED CONSTRUCTION AS DIRECTED BY THE AGENCY CONSTRUCTION COORDINATOR AT NO ADDITIONAL COST TO THE OWNER.

11. THE CONTRACTOR SHALL SUFFICIENTLY COVER ALL DISTURBED AREAS AT THE END OF EACH WORK DAY TO AVOID ANY RISK OF INJURY TO PEDESTRIAN OR VEHICULAR TRAFFIC. THE CONTRACTOR SHALL INSTALL TEMPORARY SUPPORT SYSTEMS OVER TRENCH EXCAVATIONS THAT ARE TAMPER RESISTANT AND SAFE FOR VEHICULAR AND PEDESTRIAN TRAFFIC. THE CONTRACTOR SHALL INSTALL BARRICADES TO PROTECT AGAINST PEDESTRIAN ACCESS. THE CONTRACTOR SHALL OBTAIN APPROVAL OF THE TEMPORARY SAFETY MEASURES BY THE OWNER'S REPRESENTATIVE. ALL MAINTENANCE AND PROTECTION OF BOTH PEDESTRIAN AND VEHICULAR TRAFFIC ARE INCLUDED IN THE BID PRICE FOR THIS PROJECT.

12. THE STANDARD SPECIFICATIONS (FOR SITE CIVIL WORK) SHALL MEAN THE STATE OF CONNECTICUT, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, AND INCIDENTAL CONSTRUCTION, FORM 816, 2004, INCLUDING ALL SUPPLEMENTS THERE TO FORM 816 IS AVAILABLE FOR VIEWING ON THE CT DOT WEBSITE WWW.CT.GOV. DOT SITE UNDER THE "PUBLICATIONS" TAB.

13. ALL DISTURBED AREAS NOT PROVIDED WITH SPECIFIC SITE IMPROVEMENTS (PAVING, CONCRETE SIDEWALK, LANDSCAPING, ETC.) SHALL HAVE TOPSOIL INSTALLED AND TURF ESTABLISHED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

14. THE LOCATIONS OF ALL UNDERGROUND UTILITIES INSTALLED OR FOUND DURING CONSTRUCTION SHALL BE MEASURED FROM PERMANENT SURFACE FEATURES AND INDICATED BY THE CONTRACTOR ON RECORD DRAWINGS.

15. THE CONTRACTOR SHALL COMPLETE ALL WORK SO THAT ANY MATERIALS WHICH ARE TO REMAIN IN PLACE OR WHICH ARE TO REMAIN THE PROPERTY OF THE OWNER, WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY MATERIALS WHICH ARE TO REMAIN, OR WHICH ARE TO REMAIN THE PROPERTY OF THE OWNER, THE DAMAGED MATERIALS SHALL BE REPLACED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT THE EXPENSE OF THE CONTRACTOR.

16. AFTER CONSTRUCTION IS COMPLETED, THE CONTRACTOR SHALL REMOVE ALL EXCESS MATERIAL, DEBRIS, EQUIPMENT, ETC. AND RESTORE OR REPAIR ANY DAMAGE TO LANDSCAPING AS DIRECTED BY THE AGENCY CONSTRUCTION COORDINATOR.

17. ALL PROPOSED WORK MAY BE VARIED IN THE FIELD BY THE AGENCY CONSTRUCTION COORDINATOR TO MEET EXISTING CONDITIONS.

18. AS CONSTRUCTION IS COMPLETED, THE CONTRACTOR SHALL REMOVE ALL EXCESS MATERIAL, DEBRIS, ETC. AND RESTORE OR REPLACE ANY DAMAGE TO LANDSCAPING.

19. THE CONTRACTOR SHALL ANTICIPATE IN HIS BID THAT THE AREA OF HIS PROPOSED WORK MAY BE ENCUMBERED BY UTILITY COMPANIES OR OTHER CONTRACTORS FOR THE REMOVAL RELOCATION ADJUSTMENT CONSTRUCTION OF UTILITIES. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE REQUIRED NOTIFICATIONS. THE CONTRACTOR SHALL COORDINATE ALL ASPECTS OF HIS WORK WITH SAID UTILITY COMPANIES.

13 **GENERAL NOTES**
NTS

ELECTRICAL GENERAL NOTES:

1. THE CONTRACT DRAWINGS ARE DIAGRAMMATIC. VERIFY ALL CONDITIONS AND DIMENSIONS IN THE FIELD BEFORE COMMENCING ANY FABRICATION, ORDERING ANY MATERIAL OR PERFORMING ANY WORK. NOTIFY THE ENGINEER OF ANY CONDITIONS OR DIMENSIONS WHICH WOULD AFFECT THE PERFORMANCE OF WORK IN ACCORDANCE WITH THE CONTRACT DRAWINGS AND ALL APPLICABLE INDUSTRIES STANDARD AND CONNECTICUT CODES.

2. UNLESS OTHERWISE NOTED, ALL CONDUITS SHALL BE MINIMUM ¾" DIAMETER AND ABOVE ELECTROMETALLIC TUBING FOR INDOOR AND RIGID GALVANIZED STEEL FOR MECHANICAL SPACE/DAMP AREA OUTDOOR EXPOSED INSTALLATION.

3. UNLESS OTHERWISE NOTED, ALL INDOOR AND OUTDOOR WIRING SHALL BE 600V, 1/C COPPER TYPE "THHN-THWN" WIRES ALL WIRING FOR BELOW GRADE I INSTALLATIONS SHALL BE "XHHW-2".

4. UNLESS OTHERWISE NOTED, ALL PULL BOXES, JUNCTION BOXES AND ENCLOSURES FOR ELECTRICAL EQUIPMENT FOR ALL OUTDOOR AND NON-CLIMENET INDOOR ENVIRONMENT SHALL BE NEMA 4X STAINLESS STEEL.

5. ALL FIBER OPTIC CABLE OTHERWISE NOTED, SINGLE MODE FIBER OPTIC CABLE.

6. MAINTAIN THE INTEGRITY OF ALL CIRCUITS IN SERVICE THAT MAY BE AFFECTED BY THIS WORK.

7. FOR EACH RACEWAY, PROVIDE A GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.

8. WHERE CONDUITS ARE TO PENETRATE EXISTING CONCRETE, SUBMIT CONCRETE CUTTING LOCATIONS AND PROCEDURES FOR APPROVAL BY THE ENGINEER.

9. ALL OPENINGS SHALL BE SEALED AND PATCHED WITH AN APPROVED FIRE RATED, MATERIAL AND IN A MANNER TO MATCH THE SURROUNDING AREA.

10. ALL WIRE SHALL BE INSTALLED IN APPROVED RACEWAYS.

11. FURNISH AND INSTALL ALL NECESSARY MATERIALS IN ORDER TO PROVIDE A COMPLETE OPERATIONAL SYSTEM.

12. ALL WORK IN FINISHED AREAS SHALL BE CONCEALED.

13. FURNISH AND INSTALL IDENTIFICATION ON ENCLOSURES AND PANELBOARDS. PROVIDE TYPED SCHEDULES FOR PANELBOARDS.

14. FOR ALL JUNCTION BOXES AND ENCLOSURES INSTALLED IN DAMP OR WET LOCATIONS: CONDUITS SHALL ENTER ONLY THROUGH THE BOTTOM OR SIDES OF THE JUNCTION OR ENCLOSURE. TOP CONDUIT ENTRIES SHALL NOT BE PERMITTED. ALL CONDUIT CONNECTIONS SHALL BE MOISTURE TIGHT. USE MOISTURE TIGHT HUBS FOR ALL CONDUIT ENTRANCES INTO EQUIPMENT ENCLOSURES.

15. BEFORE SHUTDOWN OR DISCONTINUATION OF SERVICE ON ANY CIRCUIT, SYSTEM OR FEEDER, COORDINATE SUCH ACTIVITIES WITH THE ENGINEER IN ORDER TO MINIMIZE SHUTDOWN PERIODS. 48 HOUR NOTICE MUST BE GIVEN PRIOR TO ANY SHUT DOWN.

16. COORDINATE ALL ELECTRICAL WORK WITH OTHER TRADES.

17. ALL EXISTING ELECTRICAL INSTALLATIONS SHALL REMAIN.

18. ALL SURFACES AND EQUIPMENT DAMAGED IN THE COURSE OF THIS WORK SHALL BE RESTORED TO THEIR ORIGINAL CONDITION.

19. ALL EXISTING DRAINAGE SYSTEMS (PIPES, CATCH BASINS & MANHOLES/HANDHOUES) SHALL BE KEPT FREE OF DEBRIS AND SHALL BE MAINTAINED IN OPERATION DURING CONSTRUCTION TO THE SATISFACTION OF THE ENGINEER.

20. WHERE CONSTRUCTION CROSSES OR IS ADJACENT TO EXISTING UTILITY LINES, THE CONTRACTOR SHALL CAREFULLY HAND EXCAVATE SO AS TO LOCATE, MARK AND PROTECT THE UTILITY LINES AGAINST DAMAGE.

21. AREA AVAILABLE TO BE USED FOR THE CONTRACTORS TEMPORARY STORAGE AND STAGING SHALL BE DETERMINED BY THE ENGINEER.

22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF TRAFFIC AND WORK AREA PROTECTION.

23. A. VERIFY THE LOCATION OF EXISTING UNDERGROUND UTILITY WITHIN THE WORK AREA PRIOR TO CONSTRUCTION.
    B. EXERCISE EXTREME CAUTION WHEN WORKING ADJACENT TO EXISTING POWER, COMMUNICATIONS, GAS AND WATER LINES TO PREVENT DAMAGE TO THESE LINES.
    C. IMMEDIATELY REPAIR ANY DAMAGE TO EXISTING UTILITIES IN A MANNER APPROVED BY THE ENGINEER.

24. PROVIDE GRC CONDUIT FOR ALL WIRING RUNNING OUTSIDE THE BUILDING .USE EMT WITH COMPRESSION FITTINGS FOR ALL WIRING INSIDE THE BUILDINGS.

25. SEE CIVIL DRAWINGS FOR TRENCHING AND CONCRETE ENCASEMENT OF THE UNDERGROUND CONDUITS. ALL UNDERGROUND CONDUIT TYPE SHALL BE PVC SCHEDULE 40. EXCEPT ROADWAYS AND PARKING LOTS SHALL BE PVC SCHEDULE 80.

26. ALL WORK SHALL BE DONE IN CONFORMANCE WITH CONTRACT DOCUMENTS AND MEET THE REQUIREMENTS OF ALL APPLICABLE BUILDING CODES AND REGULATIONS.

9 **ELECTRICAL GENERAL NOTES**
NTS

FIELD ENGINEERING NOTES:

1. CONTRACTOR SHALL PROCURE A QUALIFIED SURVEYOR LICENSED IN THE STATE OF CONNECTICUT FOR ALL SITE LAYOUT WORK.

2. THE GENERAL CONTRACTOR SHALL PROVIDE FIELD ENGINEERING SERVICES TO ESTABLISH AND RECORD GRADES, LINES, AND ELEVATIONS.

3. THE GENERAL CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER OR LAND SURVEY OR REGISTERED BY THE STATE OF CONNECTICUT TO LAYOUT THE BUILDING, UNDERGROUND UTILITY LINES, AND OTHER SITE WORK FROM THE HORIZONTAL AND VERTICAL CONTROL INFORMATION FURNISHED BY THE OWNER AND TO ESTABLISH AND RECORD THE NECESSARY ELEVATIONS, AT NO ADDITIONAL COST TO THE STATE.

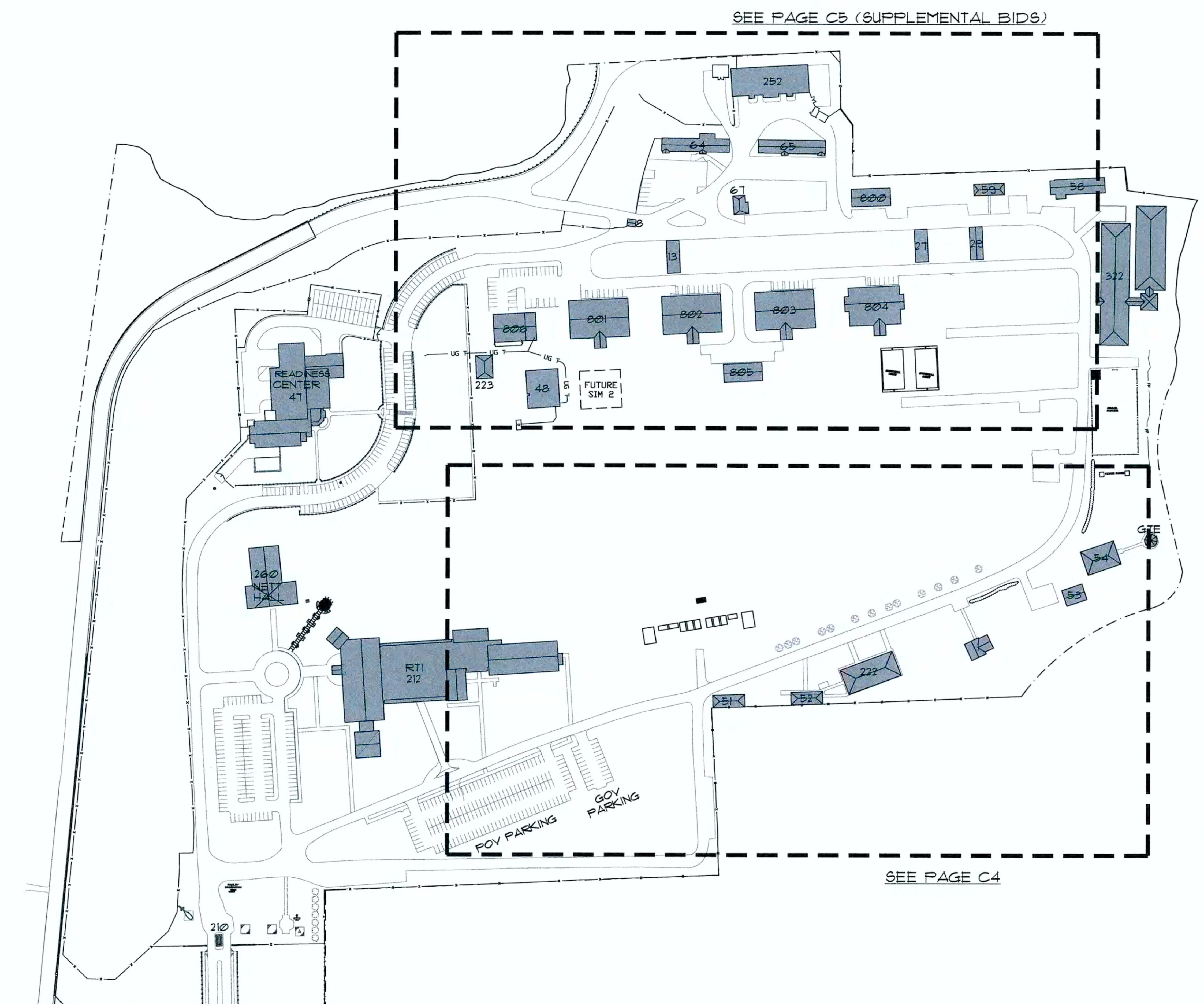
4. THE GENERAL CONTRACTOR SHALL FORWARD A LETTER FROM HIS LAND SURVEYOR OR PROFESSIONAL ENGINEER STATING THAT THE CONTROL INFORMATION FURNISHED BY THE OWNER IS ACCURATE OR SHALL IDENTIFY IN ACCURACIES, IF THEY EXIST. THE GENERAL CONTRACTOR SHALL NOT TAKE ADVANTAGE OF ERRORS, WHICH MAY BE INCLUDED IN THE CONTROL INFORMATION. STAKES AND MARKINGS SHALL BE PRESERVED.

5. THE LOCATIONS OF ITEMS NOT DIMENSIONED ON THE DRAWINGS SHALL BE FIELD STAKED BY THE CONTRACTOR AND THEIR LOCATIONS APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

6. SEE SPECIFICATION SECTION 01 72 10 - FIELD ENGINEERING FOR MORE INFORMATION ON FIELD ENGINEERING REQUIREMENTS.

7. IN ADDITION TO 'GENERAL NOTE 2.', CBYD DOES NOT COVER ALL OF CAMP NIANTIC. THEREFORE THE CONTRACTOR IS REQUIRED TO HIRE ON AN INDEPENDENT UTILITY LOCATER.

8 **FIELD ENGINEERING NOTES**
NTS



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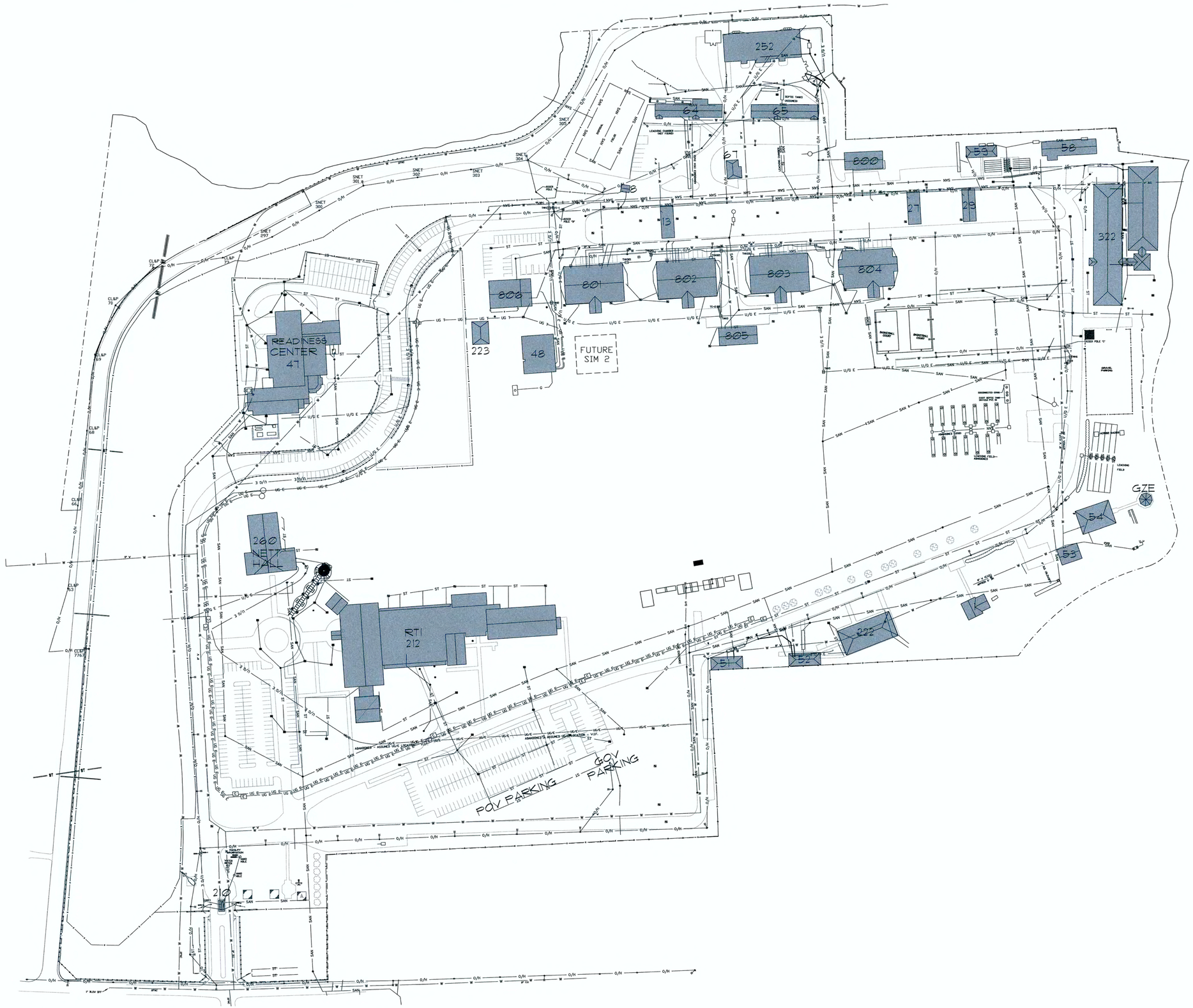

13 EXISITNG CONDITIONS PLAN
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KEY NOTE:

1. ALL EXTERIOR CONDUIT STUB-UP SHALL BE RGSC. ALL INTERIOR ELECTRICAL AND COMMUNICATION CONDUIT SHALL BE 'EMT' EXCEPT DAMP AREA. ALL ROUTING ARE APPROXIMATE. ACTUAL ROUTING AS PER CTARNG RECOMMENDATION AND CIVIL DWGS.

2. NEW SMART METERS WILL BE PROVIDED TO EACH BUILDING. EXACT LOCATION AS PER FIELD CONDITION AND CTARNG APPROVAL. CONTRACTOR TO COORDINATE WITH POWER COMPANY REPRESENTATIVE FOR SMART METER INSTALLATION REQUIREMENTS.

3a. BUILDINGS 1 AND 53 SHALL RUN 3PX-24PF TELEPHONE COPPER FROM BUILDING 54 (THE POINT).

3b. 24 STRAND SINGLE MODE FIBER OPTIC CABLE WILL BE RUN FROM EXISTING PANEL IN 212 (RT1) TO NEW PANEL IN BUILDING.

3c. BUILDING 1 AND 53, SHALL HAVE 6 STRAND SINGLE MODE FIBER OPTIC CABLE RUN FROM NEW PANEL IN 54 (THE POINT) AND TERMINATE AT EACH BUILDING.

3d. INSTALL TERMINATION ENCLOSURE THAT MATCHES EXISTING MAKE IN MODEL ALREADY IN USE IN BUILDING 212 (RT1) THAT CAN ADEQUATELY HOUSE THE 24 STRAND FIBER OPTIC CABLE TERMINATION.

3e. INSTALL A LOCKABLE 2X2X2 WALL MOUNTED ENCLOSURE THAT CAN ADEQUATELY HOUSE THE 24 STRAND FIBER OPTIC CABLE TERMINATION, A CISCO SWITCH AND UPS AT BUILDING 54 (THE POINT). RECOMMEND USE OF GREAT LAKES GL8230WD 1U WALL MOUNT ENCLOSURE.

3f. PROVIDE A FIBER OPTIC CABLE TERMINATION ENCLOSURE OF 1 U IN WIDTH TO FIT AND INSTALL GOVERNMENT FURNISHED WALL MOUNTED SETT ENCLOSURE AND DATA AND PHONE SERVICE SWITCHGEAR AT BUILDING 1 AND 53.

3g. PROVIDE ELECTRICAL SUPPRESSION DEVICES FOR BUILDING 1, 54 AND 53. DEVICE SHALL BE MULTIPLE PAIR STATION PROTECTOR ASSEMBLIES, UL LISTED WITH T1 355, 356 AND 126 PROTECTOR MODULES, FAILSHORT AND INTEGRAL AIR GAP BACKUP MECHANISM, MAX OR HEAVY DUTY SURGE PROTECTOR MODULES: 6 PAIR CAPACITY PLUS LONG LIFE AND LOW MAINTENANCE. COMPLETE WITH HINGED COVER. MUST MEET RUS/RDUP REQUIREMENTS.

3h. PROVIDE 25 PAIR STATION PROTECTOR FOR BUILDING 54 (THE POINT). DEVICE SHALL CONSIST OF METAL BACKPLATE, METAL GROUNDING PLATES FOR MOUNTING TPSR MODULES, GROUNDING LUG, WIRING RING, & A METAL COVER. DEVICE SHALL BE UL LISTED AND MUST MEET RUS/RDUP

4. FURNISH AND INSTALL (4)-4" PVC SCHEDULE 80 FOR NEW AND FUTURE COMMUNICATION DUCT BANK. FURNISH AND INSTALL P12X-24PF (SOLID UN-TINNED COPPER, #24AWG RATED.) CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE EXACT CABLE QUANTITY AND SIZE AS PER CTARNG RECOMMENDATION INCLUDING TELEPHONE/DATA CABLE.

5. FURNISH AND INSTALL NEMA 3R RATED DISCONNECT SWITCH. BASED ON EXISTING CONDITION, CONTRACTOR SHALL BE RESPONSIBLE TO FURNISH AND INSTALL NEW DISCONNECT SWITCH AT UNISTRUT MOUNTED, UNLESS OTHERWISE DIRECTED BY CTARNG.

6. TERMINATE 35KV CABLE FOR FUTURE CONNECTIONS WITHIN THE MANHOLE.

7. REMOVE EXISTING UTILITY POLES AND STREET LIGHTING (TYP.6-PL).

8. PROVIDE CATV CABLE FROM BUILDING 212 (RT1).

9. ROAD CROSSINGS SHALL BE FIELD COORDINATED SO AS TO NOT DAMAGE NEW ROAD SURFACE.

10. CONDUITS INSTALLED UNDER ROADWAY, DRIVEWAYS, PARKING LOTS, ETC SHALL BE CONCRETE ENCASED.

11. INSTALL ABOVE GROUND PEDESTAL THAT SHALL PROVIDE WEATHERPROOF ENVIRONMENT TO SPLICE EXISTING P50-24PF CABLING BUILDING 212 (RT1) TO SUPPORT EXISTING ANALOG SERVICES FROM PEDESTAL RUN P25X-24PF CABLING TO BUILDING 54 THRU MH3 AND BY BUILDING 53 AND P3X AND 24PF CABLING TO BUILDING 52 THRU NEW HANDHOLE.

GENERAL NOTES:

1. EXISTING OVERHEAD SERVICES TO BE RELOCATED UNDERGROUND. ALL NEW DUCTBANK, MANHOLES, WIRING, ETC. SHALL BE INSTALLED AND ACCEPTED BEFORE CHANGEOVER SHALL OCCUR. COORDINATE WITH THE AGENCY CONSTRUCTION COORDINATOR AND POWER COMPANY BEFORE PROCEEDING WITH CHANGEOVER. REMOVE AND DISPOSE OF ALL EXISTING OVERHEAD LINES AND POLES IN ACCORDANCE WITH LOCAL AND NATIONAL REQUIREMENTS.

2. INSTALL NEW UNDERGROUND DUCTBANK SYSTEM FOR INSTALLATION 35KV POWER AND COMMUNICATIONS LOOPS. PROVIDE NEW POWER WIRING AS INDICATED IN THE NARRATIVE. PROVIDE NEW COMMUNICATIONS WIRING TO MATCH EXISTING CABLE(S) ON OVERHEAD POLES.

3. RIGID STEEL CONDUIT SHALL BE USED TO SWEEP OUT OF THE GROUND AND ONTO POLES AND BUILDINGS. ALL CONDUIT UNDER TRAFFIC AREAS SHALL BE CONCRETE-ENCASED.

4. ALL DUCTBANK SHALL BE A MINIMUM OF 24 INCH DEEP (TO TOP). WARNING TAPE SHALL BE INSTALLED ABOVE DUCTBANK A MAXIMUM OF 12" DEEP BELOW GRADE.

5. PROVIDE NEW PAD-MOUNTED TRANSFORMERS TO RE-FEED EXISTING BUILDINGS.

6. MINIMIZE REMOVAL OF PLANTINGS: REPLACE ONLY TREES THAT ARE NECESSARY FOR TRENCHING: REPLACEMENT TREES SHALL MATCH SIZE OF SHAPE OF TREES REMOVED.

7. REPAIR ALL DISTURBED PAVEMENT TO PRE-EXISTING CONDITION OR BETTER (SEE DETAIL D/1)

8. SEE 10/D1 FOR TYPICAL DETAILS RELATING TO ELECTRICAL & TELECOMMUNICATION MANHOLE STRUCTURES

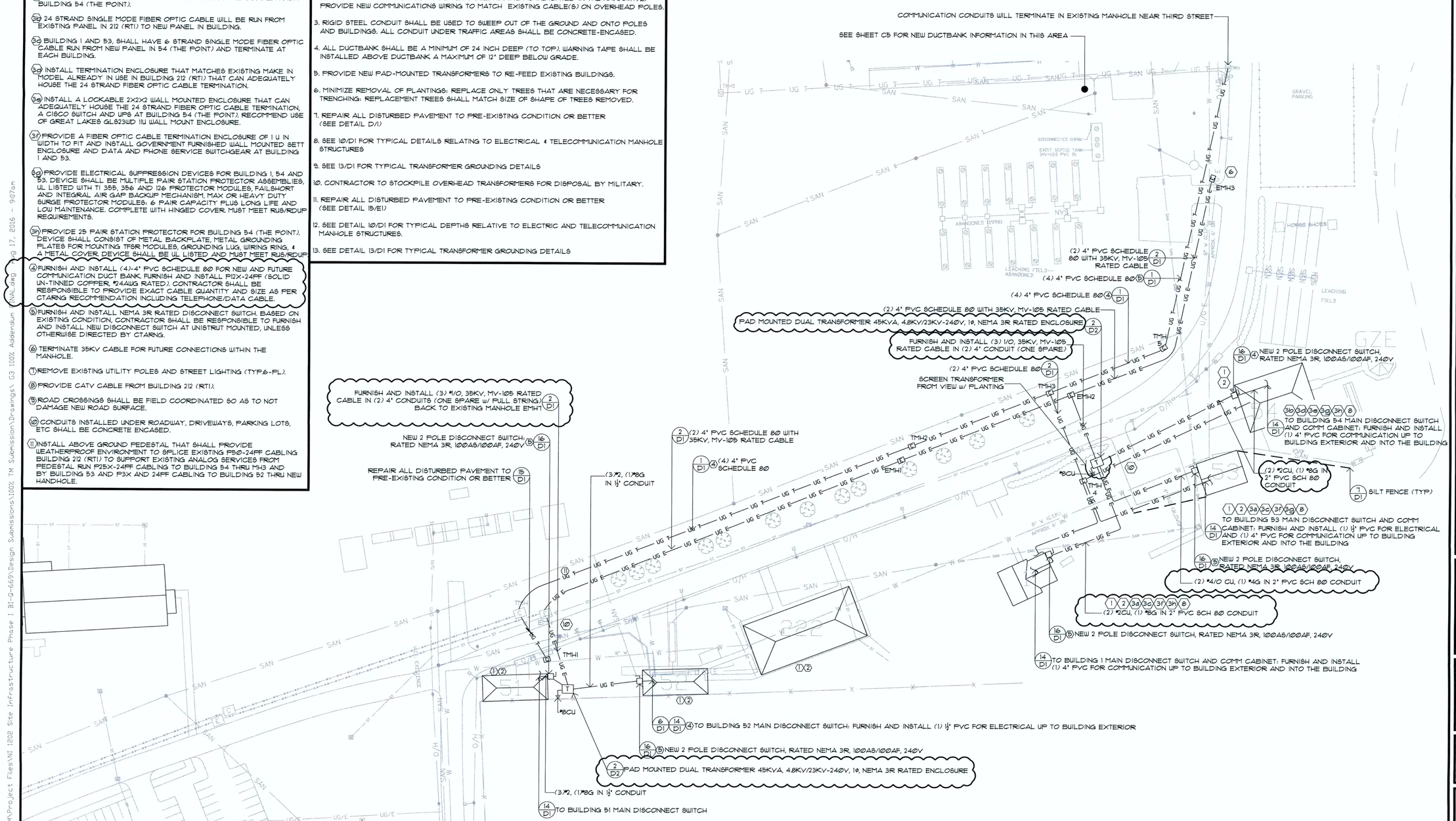
9. SEE 13/D1 FOR TYPICAL TRANSFORMER GROUNDING DETAILS

10. CONTRACTOR TO STOCKPILE OVERHEAD TRANSFORMERS FOR DISPOSAL BY MILITARY.

11. REPAIR ALL DISTURBED PAVEMENT TO PRE-EXISTING CONDITION OR BETTER (SEE DETAIL 15/E1)

12. SEE DETAIL 10/D1 FOR TYPICAL DEPTHS RELATIVE TO ELECTRIC AND TELECOMMUNICATION MANHOLE STRUCTURES.

13. SEE DETAIL 13/D1 FOR TYPICAL TRANSFORMER GROUNDING DETAILS



13 PARTIAL ELECTRICAL SITE PLAN (SOUTH)
1" = 50'-0"

GENERAL:

CONTRACTOR RESPONSIBLE TO LOCATE ALL EXISTING UTILITIES IN PROJECT AREA. CONTRACTOR TO CONTACT:
- CALL BEFORE YOU DIG @ 811

Architect/Engineer

STATE OF CONNECTICUT BENJAMIN J NEUBERT #16274 LICENSED PROFESSIONAL ENGINEER

REVISION		
Mark	Date	Description
1	8/17/16	ADDENDUM #1

Drawn by: GWA
App'd by: EST
Scale: AS NOTED
File as:

North

STATE OF CONNECTICUT
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Facilities Management Office
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Project
UTILITY DUCTBANK INSTALLATION
CAMP NIANTIC, CONNECTICUT

Drawing Title
ELECTRICAL SITE PLAN (SOUTH)

Date
20 JULY 2016

Drawing No.
C4

TRACKING No.
NI-1202

DRAWN BY: GWA

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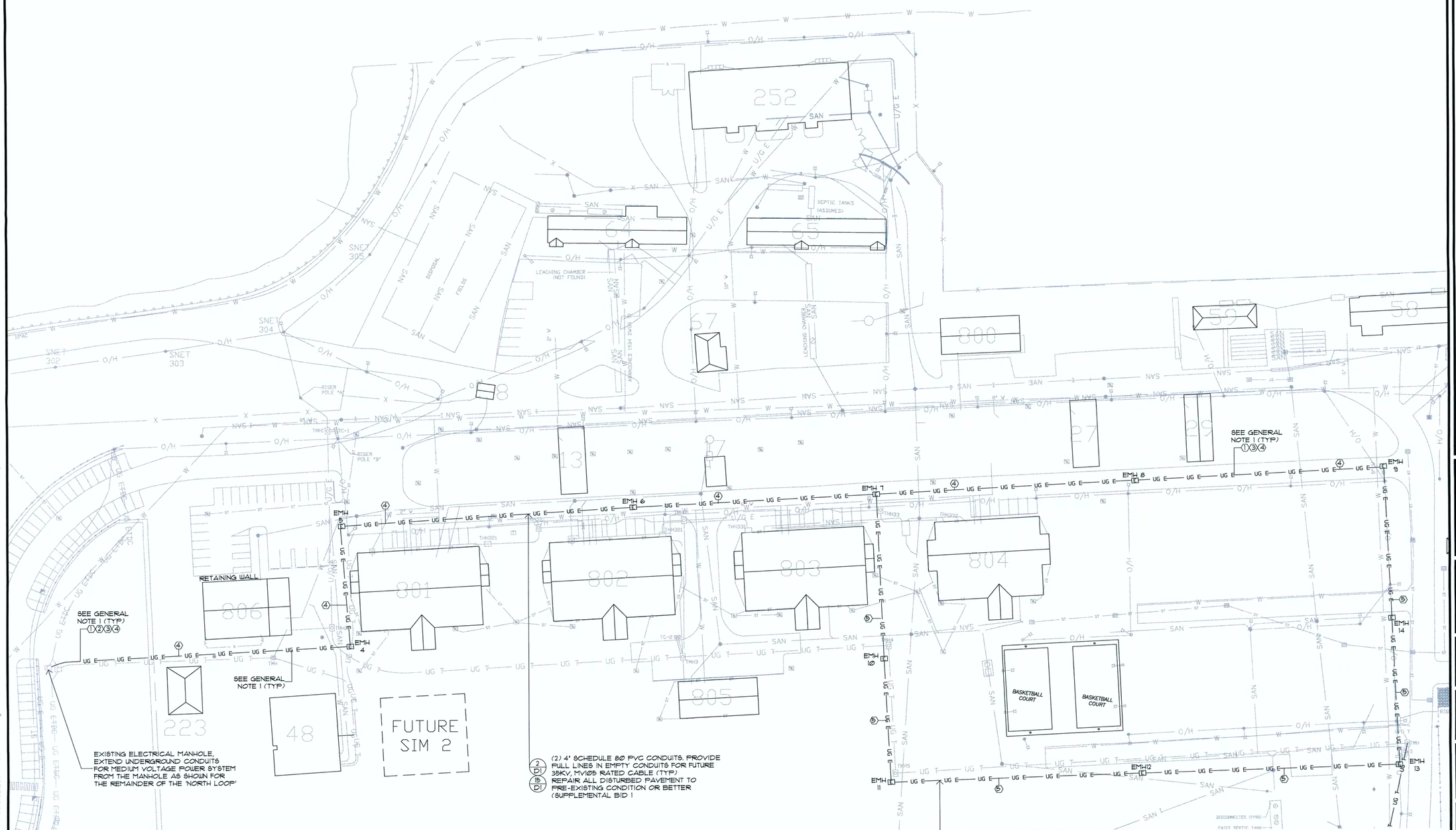
KEY NOTES:

1. ALL ROUTING IS APPROXIMATE. ACTUAL ROUTING AS PER CTARNG RECOMMENDATION, FIELD CONDITIONS, AND CIVIL PLANS.
2. ALL ELECTRICAL CONDUIT SHALL BE CONCRETE ENCASED. SEE DETAILS FOR MORE INFORMATION.
3. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR EARTHWORK ASSOCIATED WITH UNDERGROUND CONDUIT TRENCH WORK AND EQUIPMENT PAD INSTALLATION. PROVIDE SAW-CUTING OF DRIVEWAYS AND SIDEWALKS AS REQUIRED. BACKFILL TRENCHES WITH SAND AROUND ENTIRE CONDUIT RUN (SEE DETAILS). FINISH BACK FILLING WITH EXCAVATED EARTH. RESEED GRASSY AREAS. PATCH DRIVEWAYS AND SIDEWALKS WITH LIKE MATERIAL (BLACK-TOP, CONCRETE, ETC.).
4. SUPPLEMENTAL BID 1
5. SUPPLEMENTAL BID 2

GENERAL NOTES:

1. INSTALL NEW UNDERGROUND DUCTBANK SYSTEM FOR INSTALLATION 35KV POWER LOOP.
2. RIGID STEEL CONDUIT SHALL BE USED TO SWEEP OUT OF THE GROUND AND ONTO POLES AND BUILDINGS. ALL CONDUIT SHALL BE CONCRETE ENCASED.
3. ALL DUCTBANK SHALL BE A MINIMUM OF 24" DEEP (TO TOP). WARNING TAPE SHALL BE INSTALLED ABOVE DUCTBANK A MAXIMUM OF 12" DEEP BELOW GRADE.
4. ALL EXCAVATED MATERIAL TO BE REMOVED OFF-SITE.
5. SEE 10/D1 FOR TYPICAL DETAILS RELATING TO ELECTRICAL & TELECOMMUNICATION MANHOLE STRUCTURES
6. SEE 13/D1 FOR TYPICAL TRANSFORMER GROUNDING DETAILS
7. REPAIR ALL DISTURBED PAVEMENT TO PRE-EXISTING CONDITION OR BETTER (SEE DETAIL 15/E1)
8. SEE DETAIL 10/D1 FOR TYPICAL DEPTHS RELATIVE TO ELECTRIC AND TELECOMMUNICATION MANHOLE STRUCTURES.
9. SEE DETAIL 13/D1 FOR TYPICAL TRANSFORMER GROUNDING DETAILS



13 PARTIAL ELECTRICAL SITE PLAN (NORTH) SUPPLEMENTAL BID 1 & 2
1" = 50'-0"

GENERAL:

CONTRACTOR RESPONSIBLE TO LOCATE ALL EXISTING UTILITIES IN PROJECT AREA. CONTRACTOR TO CONTACT:
- CALL BEFORE YOU DIG @ 811

Architect/Engineer

STATE OF CONNECTICUT BENJAMIN J NELSON 26274 LICENSED PROFESSIONAL ENGINEER

REVISION		
Mark	Date	Description
1	8/17/16	ADDENDUM #1

Drawn by: GWA
App'd by: EST
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File #s:

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Project
UTILITY DUCTBANK INSTALLATION
CAMP NIANTIC, CONNECTICUT

Drawing Title
ELECTRICAL SITE PLAN (NORTH) SBI 1 & 2

Date
20 JULY 2016

Drawing No.
C5

TRACKING No.
NI-1202

DRAWN BY: GWA

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LUMINAIRE AND POLE SCHEDULE

Type	Symbol	Label	Qty	Manufacturer	Description	Lamp	File	Lumens	LLF	Watts
SL-1		A	11	ANP LIGHTING BVA01-T2 LED-T3- 5 or BEACON LIGHTING or SUN VALLEY LIGHTING	WITH CLEAR PLASTIC DIRECTIONAL LENSES	SIXTY LEDS, LUMINAIRE OUTPUT: 6586 Lms.	BVA01-10LEDT3-5K-T29835 (1).IES	Absolute	1.00	67.9

GENERAL NOTES:

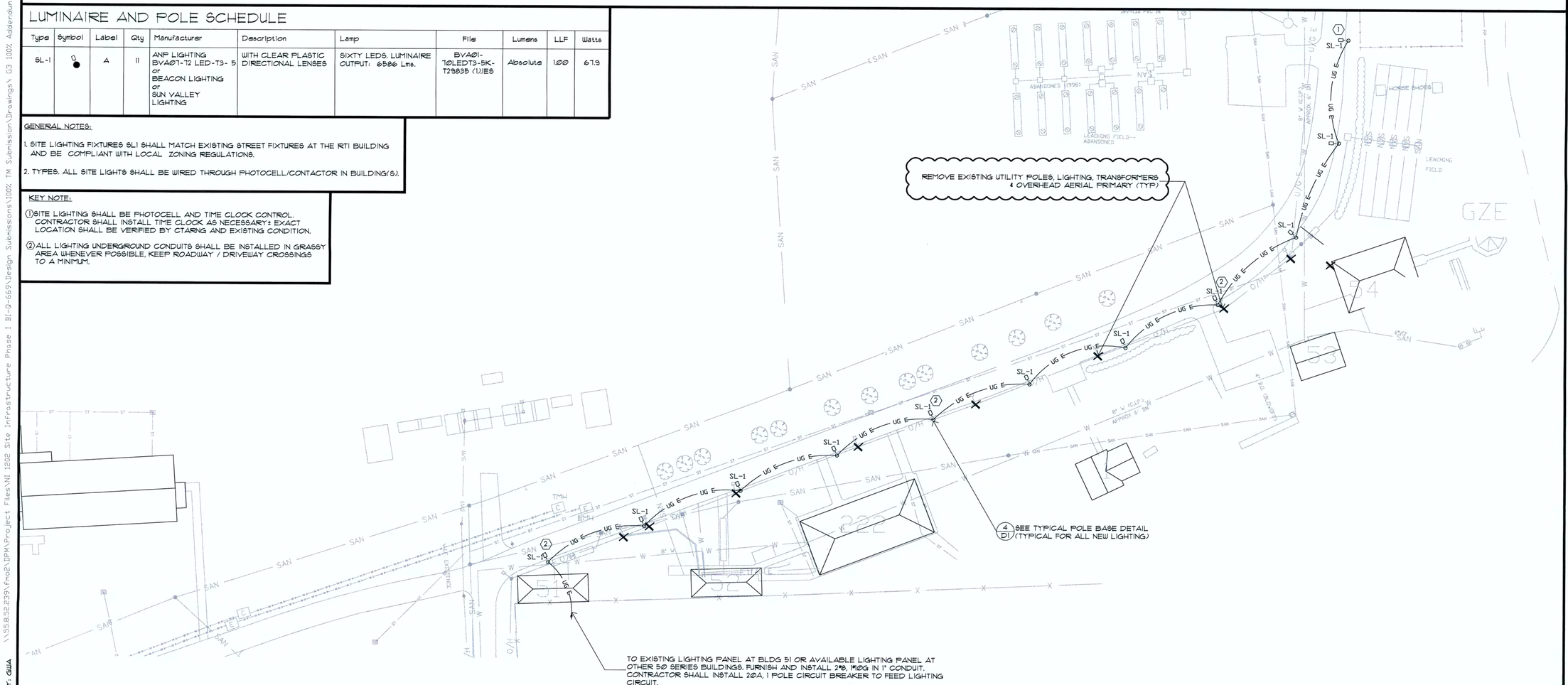
1. SITE LIGHTING FIXTURES SL1 SHALL MATCH EXISTING STREET FIXTURES AT THE RTI BUILDING AND BE COMPLIANT WITH LOCAL ZONING REGULATIONS.

2. TYPES. ALL SITE LIGHTS SHALL BE WIRED THROUGH PHOTOCELL/CONTACTOR IN BUILDING(S).

KEY NOTE:

1. SITE LIGHTING SHALL BE PHOTOCELL AND TIME CLOCK CONTROL. CONTRACTOR SHALL INSTALL TIME CLOCK AS NECESSARY: EXACT LOCATION SHALL BE VERIFIED BY CTARNG AND EXISTING CONDITION.

2. ALL LIGHTING UNDERGROUND CONDUITS SHALL BE INSTALLED IN GRASSY AREA WHENEVER POSSIBLE, KEEP ROADWAY / DRIVEWAY CROSSINGS TO A MINIMUM.



13 LIGHTING LAYOUT
1" = 50'-0"

GENERAL:

CONTRACTOR RESPONSIBLE TO LOCATE ALL EXISTING UTILITIES IN PROJECT AREA. CONTRACTOR TO CONTACT:
- CALL BEFORE YOU DIG @ 811

Architect/Engineer

STATE OF CONNECTICUT BENJAMIN J. NEUMON 27874 LICENSED PROFESSIONAL ENGINEER

REVISION		
Mark	Date	Description
1	8/17/16	ADDENDUM #1

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Scale: AS NOTED
File as:
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Project
UTILITY DUCTBANK INSTALLATION
CAMP NIANTIC, CONNECTICUT

Drawing Title
ELECTRICAL SITE LIGHTING PLAN (SOUTH)

Date
20 JULY 2016

Drawing No.
C6

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NI-1202

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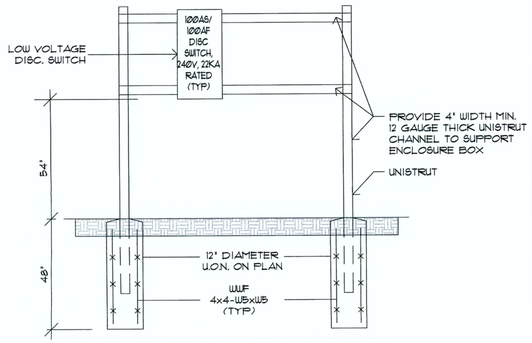
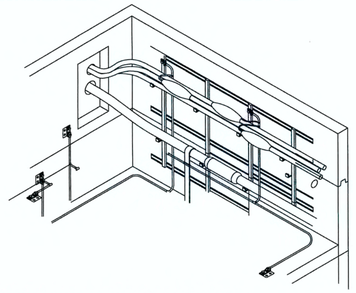


16 TYPICAL FOUNDATION DETAIL FOR ELECTRICAL EQUIPMENT/DISCONNECT SWITCH AS REQUIRED
NTS

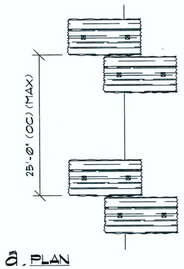
NOTES:

1. BOND AND GROUND ALL PRIMARY CABLE. IF GROUNDING INSERTS ARE NOT AVAILABLE, GROUND RODS MUST BE INSTALLED.

2. SEE SPECIFICATIONS FOR ACTUAL MANHOLE TYPE TO BE PROVIDED.



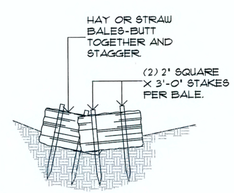
11 CABLE BONDING IN MANHOLE DETAIL
NTS



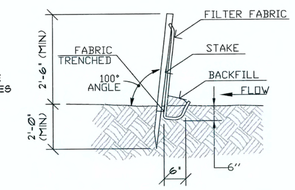
a. PLAN

NOTES:

1. MINIMUM LENGTH OF SILT FENCE IS 15 L.F.
2. MAXIMUM POST SPACING IS 8'-0".
3. JOINTS ONLY AT SUPPORT POST WITH MINIMUM 2' OVERLAP, SECURELY SEALED.
4. SEDIMENTATION DEPOSITS SHALL BE REMOVED WHEN THEY REACH ½ THE HEIGHT OF THE SILT FENCE.
5. SILT FENCE SHALL NOT BE USED IN A WATER COURSE.
6. UPON ESTABLISHMENT OF GROUND COVER ON DISTURBED AREAS & WHEN DIRECTED BY THE ENGINEER, FENCE WILL BE REMOVED & ANY SEDIMENTATION WILL BE THINLY SPREAD UPON EXISTING GROUND COVER.
7. PERPENDICULAR SILT FENCE WINGS MUST BE INSTALLED AT THE FOLLOWING INTERVALS TO REDUCE WATER VELOCITY ALONG THE FACE OF THE SILT FENCE: (SEE 2002 DEP GUIDELINES)



b. ELEVATION

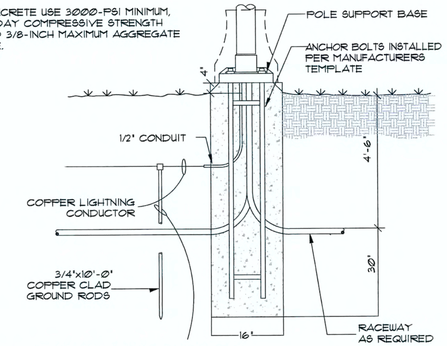


c. SILT FENCE INSTALLATION

7 TYPICAL HAYBALE & SILT FENCE INSTALLATION (SWALE)
NTS

NOTE:

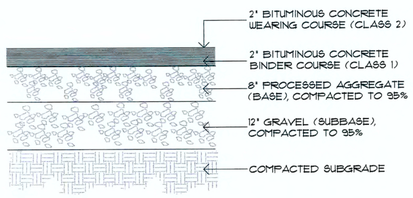
1. CONCRETE USE 3000-PSI MINIMUM, 28 DAY COMPRESSIVE STRENGTH AND 3/8-INCH MAXIMUM AGGREGATE SIZE.



4 TYPICAL POLE BASE DETAIL
NTS

GENERAL:

CONTRACTOR RESPONSIBLE TO LOCATE ALL EXISTING UTILITIES IN PROJECT AREA. CONTRACTOR TO CONTACT:
- CALL BEFORE YOU DIG @ 811



15 BITUMINOUS CONCRETE PAVEMENT (HEAVY DUTY)
NTS

NOTES:

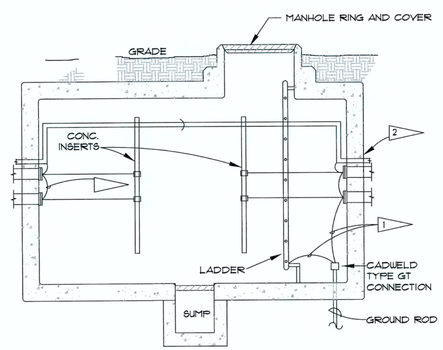
1. SEE SPECIFICATIONS FOR ACTUAL MANHOLE TYPE TO BE PROVIDED.

2. MANHOLE SHALL MEET CL4P REQUIREMENTS.

1 ELECTRICAL CONTRACTOR SHALL GROUND ALL NEW METAL ITEMS IN EACH MANHOLE WITH 4/0 BARE STRANDED CONDUCTORS FROM THE GROUND SYSTEM. CONNECT NEW 4/0 FEEDER GROUND CONDUCTORS TO MANHOLE GROUND CONDUCTORS.

2 CONTRACTOR SHALL DAMP-PROOF EXTERIOR OF MANHOLES IN THE AREAS DISTURBED BY THE INSTALLATION OF THE NEW DUCTS PER CL4P REQUIREMENTS.

3 SEE 11/D1 FOR CABLE GROUNDING WITHIN MANHOLE STRUCUTRE

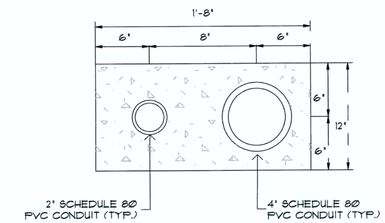


10 MANHOLE GROUNDING DETAIL
NTS

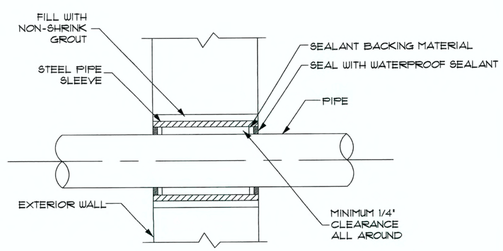
NOTES:

1. CONCRETE-ENCASED DUCT BANK TO BE PROVIDED WHERE UNDERGROUND ROUTE IS INSTALLED BENEATH ROADWAY, DRIVEWAY , PARKING LOT, ETC (ALL PAVED SURFACE)

2. PROVIDE UTILITY WARNING TAPE



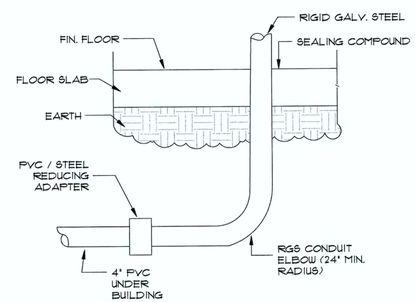
3 TYPICAL (1) 2" & (1) 4" CONCRETE ENCASED DUCTBANK
NTS



14 TYPICAL PIPE SLEEVE THRU EXTERIOR WALL DETAIL
NTS

NOTE:

1. (DETAIL SHOWN FOR CLARITY, MULTIPLE CONDUITS MAY BE REQUIRED)

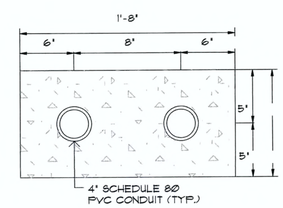


6 TYPICAL CONDUIT STUB UP DETAIL
NTS

NOTES:

1. CONCRETE-ENCASED DUCT BANK TO BE PROVIDED WHERE UNDERGROUND ROUTE IS INSTALLED BENEATH ROADWAY, DRIVEWAY , PARKING LOT, ETC (ALL PAVED SURFACE)

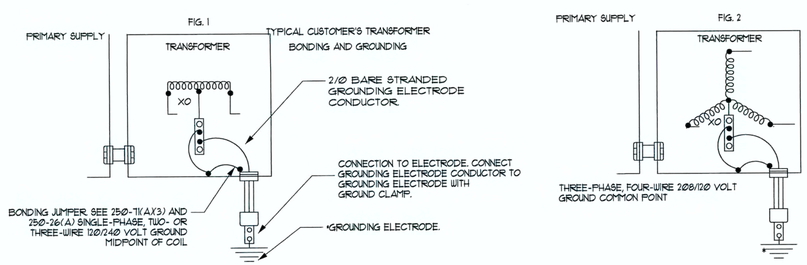
2. CONCRETE USE 3000-PSI MINIMUM, 28 DAY COMPRESSIVE STRENGTH AND 3/8-INCH MAXIMUM AGGREGATE SIZE.



2 TYPICAL (2) 4" CONCRETE ENCASED DUCTBANK
NTS

NOTES:

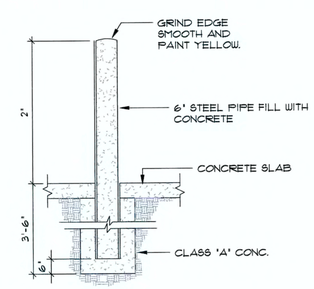
1. PRIMARY WINDINGS ARE NOT SHOWN FOR SIMPLICITY.



13 TYPICAL BONDING AND GROUNDING DETAIL
NTS

NOTE:

1. CONCRETE USE 3000-PSI MINIMUM, 28 DAY COMPRESSIVE STRENGTH AND 3/8-INCH MAXIMUM AGGREGATE SIZE.

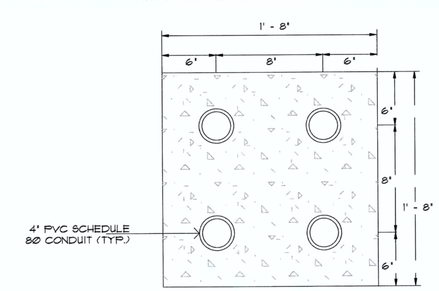


5 TYPICAL BOLLARD DETAIL
NTS

NOTES:

1. CONCRETE-ENCASED DUCT BANK TO BE PROVIDED WHERE UNDERGROUND ROUTE IS INSTALLED BENEATH ROADWAY, DRIVEWAY , PARKING LOT, ETC (ALL PAVED SURFACE)

2. CONCRETE USE 3000-PSI MINIMUM, 28 DAY COMPRESSIVE STRENGTH AND 3/8-INCH MAXIMUM AGGREGATE SIZE.



1 TYPICAL (4) 4" CONCRETE ENCASED DUCTBANK
NTS

Architect/Engineer

STATE OF CONNECTICUT BENJAMIN J NEIDWICKI 28274 LICENSED PROFESSIONAL ENGINEER

REVISION		
Mark	Date	Description
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Project
UTILITY DUCTBANK INSTALLATION
CAMP NIANTIC, CONNECTICUT

Drawing Title
DETAIL SHEET

Date
20 JULY 2016

Drawing No.
D1

TRACKING No.
NI-1202

DRAWN BY: GWA

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NOTES:

A) TRANSFORMER FOUNDATION:
1. THE FOUNDATION SHALL COMPRISE A STEEL REINFORCED CONCRETE PAD, 84"x84"x12" WITH A MINIMUM STRENGTH OF 3000PSI.
2. THE REINFORCING STEEL SHALL BE #5 BARS, GRADE NO. 60 STEEL.
3. THE TOP SURFACE SHALL BE SMOOTH AND LEVEL WITH A 1" CHAMFER ALONG THE UPPER EDGES.
4. THE FOUNDATION SHALL BE INSTALLED WITH THE TOP SURFACE APPROXIMATELY 6" ABOVE FINAL GRADE, ON A FIRM, LEVEL AND COMPACTED BASE OF 12" OF CRUSHED STONE.

B) CABLE CONDUITS:
1. PRIMARY AND SECONDARY CABLE CONDUITS MUST BE LOCATED WITHIN THEIR DESIGNATED AREAS WHERE PRACTICAL. THE SECONDARY CONDUITS SHOULD BE HELD TO THE FRONT OF THE SECONDARY ZONE. THE RESTRICTIONS ON THE NUMBER OF CONDUITS ALLOWED IN THE SECONDARY ZONE ARE BASED UPON PHYSICAL LIMITATIONS.
2. WHEN THE SECONDARY CONDUCTOR SIZE EXCEEDS 600 MCM A MAXIMUM OF (6) CONNECTIONS PER PHASE ARE POSSIBLE

C) GROUNDING AND BONDING:
1. THE SYSTEM SHALL BE SOLIDLY GROUNDED.
2. FOUR COPPERWELD GROUND RODS AND A 2/0 BARE COPPER GROUND GRID SHALL BE INSTALLED AND CONNECTED AS SHOWN.
3. THE GROUND GRID TAILS SHALL BE BROUGHT BELOW GRADE INTO THE FOUNDATION WINDOW AS SHOWN.
4. EACH END SHALL BE SUFFICIENT LENGTH TO CONNECT TO THE TRANSFORMER TANK GROUND PADS. THIS REQUIRES A MINIMUM OF 48" ABOVE FINISHED GRADE.
5. THE GROUND RODS, GROUND GRID, PRIMARY NEUTRALS, SECONDARY NEUTRALS, TRANSFORMER TANK AND METAL CONDUITS SHALL ALL BE EFFECTIVE BONDED TOGETHER.
6. THE MINIMUM CONDUCTOR SIZE FOR BONDING METAL CONDUITS IS #2 AND BARE COPPER.
7. GROUNDING BUSHINGS SHALL BE USED FOR BONDING ALL METAL CONDUITS (U.L. S.S. #32-146000)
8. GROUND ROD / GROUND GRID CONNECTORS MUST BE TIGHTENED UNTIL THE BOLT HEAD SHEARS IN ORDER FOR THE CONNECTION TO BE EFFEXTIVE.

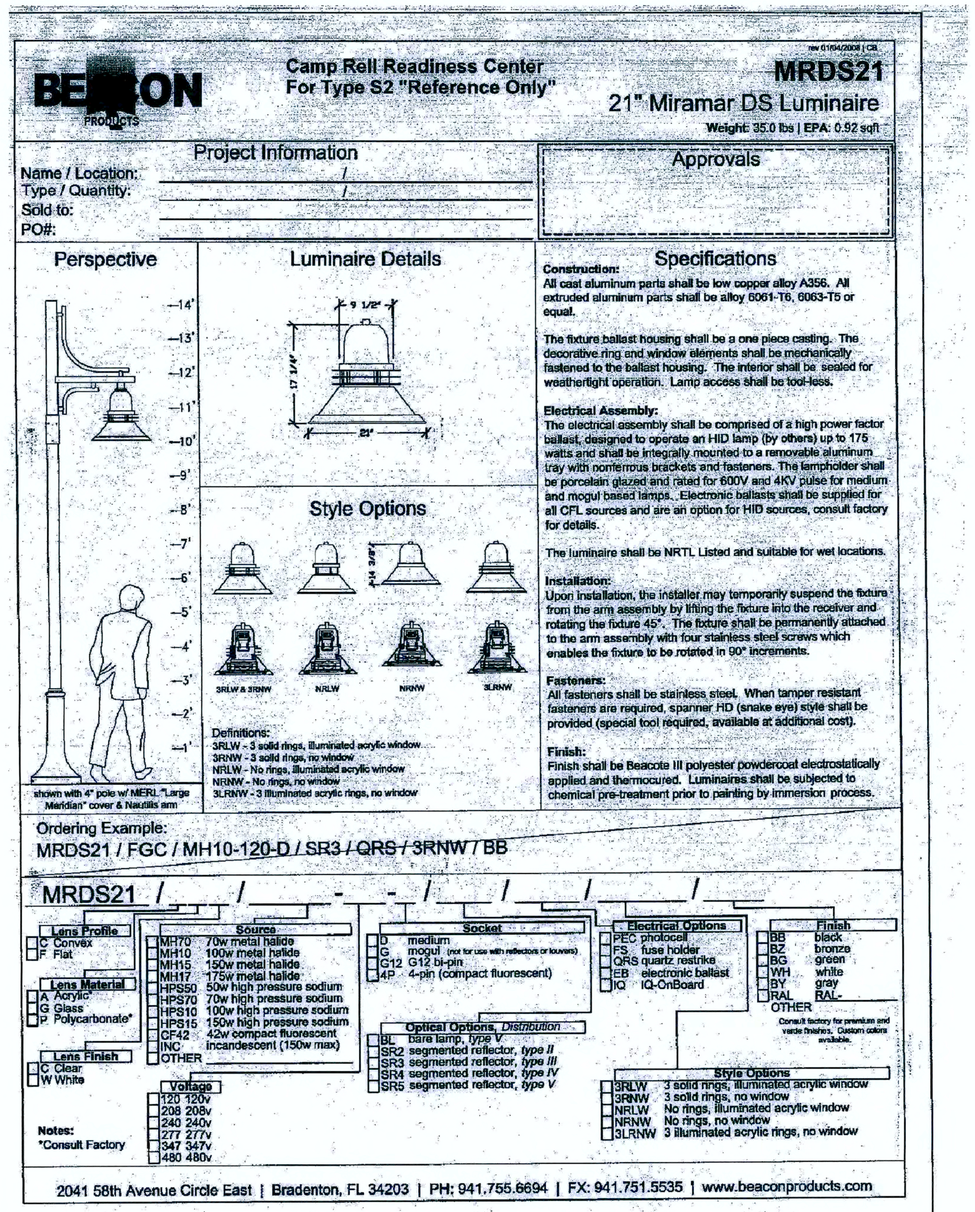
REQUIREMENTS : PRIMARY ZONE

1. THE PRIMARY ZONE IS RESTRICTED TO THE AREA SHOWN ABOVE AND WILL CONTAIN (1) 4" G.S. CONDUITS.
2. THE CONDUIT SWEEPS INTO THE FOUNDATION SHALL BE GALVANIZED STEEL, 90 Deg BEND AND 36" RADIUS.
3. THE CONDUITS SHOULD EXTEND A MINIMUM OF 1" TO A MAXIMUM OF 3" ABOVE THE TOP OF THE FOUNDATION AND SHALL HAVE THREADED ENDS.
4. EACH CONDUIT SHALL BE PROVIDED WITH A GROUNDING TYPE CHAFE BUSHING AND SHALL BE PLUGGED UNTIL THE PRIMARY CABLES ARE INSTALLED.

REQUIREMENTS : SECONDARY ZONE

1. THE SECONDARY ZONE IS RESTRICTED TO THE AREA SHOWN ABOVE AND MAY CONTAIN A 4" GALVANIZED STEEL OR MINIMUM SCHEDULE 40 PVC CONDUITS.
2. EACH CONDUIT SWEEP INTO THE FOUNDATION SHALL HAVE A 90 Deg BEND AND 36" RADIUS.
3. THE CONDUITS SHOULD EXTEND A MINIMUM OF 1" TO A MAXIMUM OF 3" ABOVE THE TOP OF THE FOUNDATION. METAL CONDUITS SHALL HAVE THREADED ENDS.
4. METAL CONDUIT SHALL BE PROVIDED WITH A GROUNDING TYPE CHAFE BUSHING AND EACH CONDUIT SHALL BE PLUGGED UNTIL THE SECONDARY CABLES ARE INSTALLED.

13 GENERAL NOTES
NTS



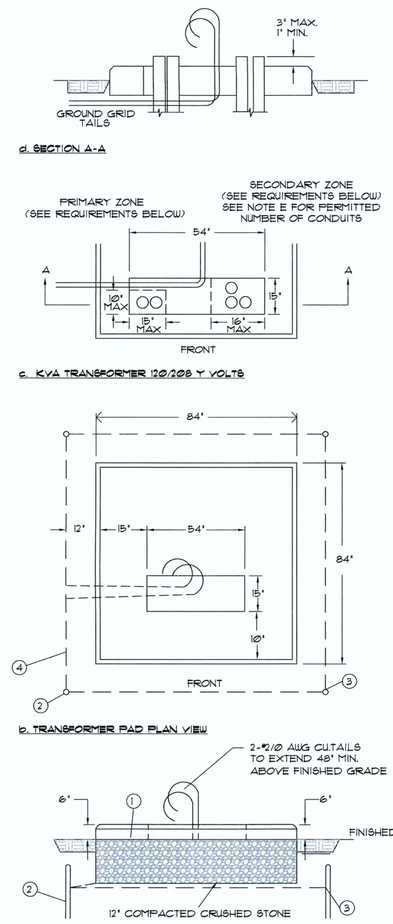
9 TYPICAL LIGHTING FUIXTURE
NTS

NOTE:

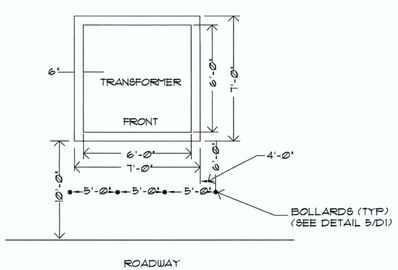
1. TRANSFORMER PHYSICAL SIZE BASED ON SQUARE D MANUFACTURER. ACTUAL PAD SIZE MAY VARY BASED ON TRANSFORMER MANUFACTURER. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADDITIONAL COST IF USED DIFFERENT TRANSFORMER, TRANSFORMER MAKE AND MODEL SHALL BE MANUFACTURER CL4P APPROVED.

LIST OF MATERIALS

ITEM	QTY.	DESCRIPTION
1	1	FOUNDATION
2	4	COPPER BONDED GROUND ROD 3/4" x 10'
3	4	CONNECTOR GROUND 2/0 WIRE - 3/4" ROD
4	-	WIRE #2/0 STRAND BARE COPPER



2 PADMOUNTED TRANSFORMER GROUNDING/BONDING DETAILS
NTS



1 TYPICAL PAD MOUNTED TRANSFORMER BOLLARD LOCATION
NTS

GENERAL:

CONTRACTOR RESPONSIBLE TO LOCATE ALL EXISTING UTILITIES IN PROJECT AREA. CONTRACTOR TO CONTACT:
- CALL BEFORE YOU DIG @ 811

Architect/Engineer

STATE OF CONNECTICUT BENJAMIN J. NEUMAN 26274 LICENSED PROFESSIONAL ENGINEER

REVISION

Mark	Date	Description
1	8/17/16	ADDENDUM #1

Drawn by: GWA
App'd by: EST
Scale: AS NOTED
File as:
North

STATE OF CONNECTICUT
MILITARY DEPARTMENT
Facilities Management Office
360 Broad Street, Hartford, CT 06105
860.493.3725 Fax 860.524.4931

Project
UTILITY DUCTBANK INSTALLATION
CAMP NIANTIC, CONNECTICUT

Drawing Title
DETAIL SHEET

Date
20 JULY 2016

Drawing No.
D2

TRACKING No.
NI-1202

DRAWN BY: GWA

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