

# City of Portsmouth, New Hampshire **Department of Public Works**

## **Issued for Construction - NOVEMBER 2021**

# **Sheet Index**

#### <u>Civil</u>

Cover Sheet

L101 Site Plan

EL100 Electrical Legend and Details EL101 Electrical Site Plan Revised EL102-103 Electrical Details EL104 **Electrical Schedules** 

Prepared For:

### **City of Portsmouth Department of Public Works 680 Peverly Hill Road Portsmouth, New Hampshire 03801**

Prepared By:



CIVIL/ENVIRONMENTAL/STRUCTURAL

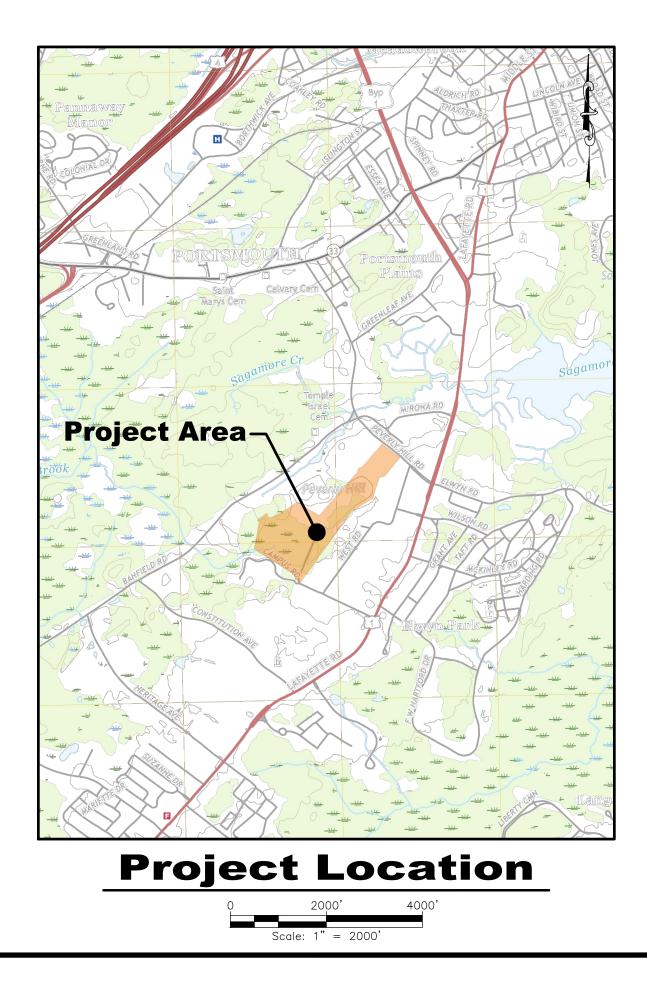
Portsmouth, NHManchester, NH Portland, ME 603/431-6196 603/627-0708 207/541-4223

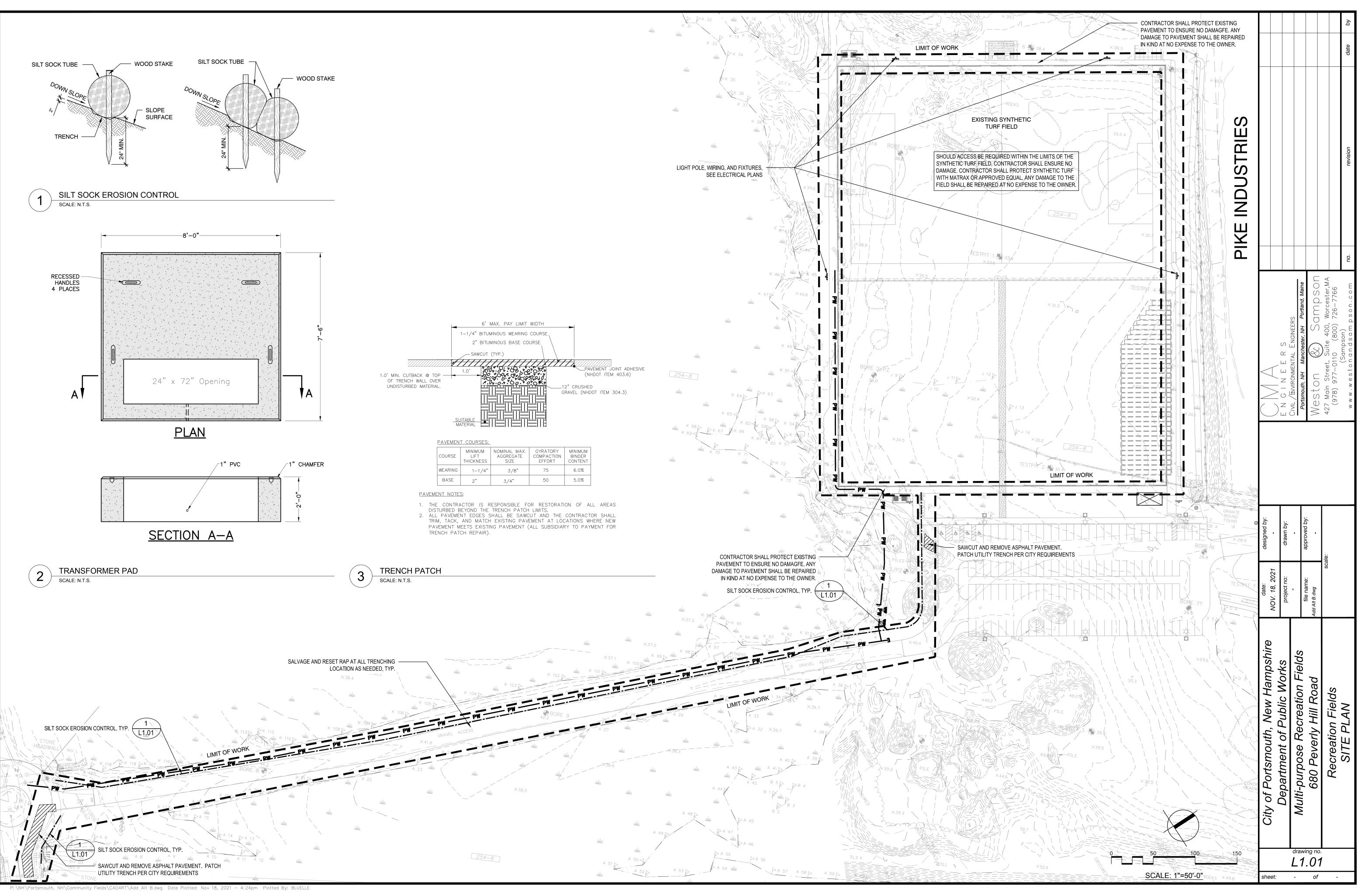
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#### GENERAL ELECTRICAL NOTES

- DRAWINGS ARE DIAGRAMMATIC ONLY. THE <u>EXACT LOCATION</u>, MOUNTING HEIGHTS, SIZE OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
- 2. WORK SHALL CONFORM TO THE NEW HAMPSHIRE ELECTRICAL CODE AND NEW HAMPSHIRE BUILDING CODE AND REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION.
- 3. THE WORD "CONTRACTOR" AS USED IN THE "ELECTRICAL WORK" SHALL MEAN THE ELECTRICAL SUBCONTRACTOR.
- 4. CONTRACTOR SHALL PAY FOR ALL PERMITS, INSURANCE AND TESTS, AND SHALL PROVIDE LABOR AND MATERIAL TO COMPLETE THE ELECTRICAL WORK SHOWN.
- 5. CONTRACTOR SHALL PAY ELECTRIC UTILITY COMPANY BACKCHARGES AND PROVIDE COORDINATION WITH SAME.
- 6. EXCEPT AS OTHERWISE NOTED, THE ELECTRICAL WORK SHALL INCLUDE PANELBOARDS, CIRCUIT BREAKERS, FEEDERS, WIRING, RACEWAYS, LIGHTING FIXTURES, DEVICES, SAFETY SWITCHES, MOUNTING AND WIRING, TRANSFORMERS AND CONNECTIONS NECESSARY TO OPERATE ALL EQUIPMENT.
- 7. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY LIGHTING AND POWER AND PAY ALL ENERGY CHARGES.
- 8. DURING CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL KEEP HIS PORTION OF THE WORK NEAT, CLEAN AND ORDERLY.
- 9. ALL SYSTEMS SHALL BE TESTED FOR SHORT CIRCUIT AND GROUNDS PRIOR TO ENERGIZING AND ANY DEFECTS SHALL BE CORRECTED.
- 10. ALL CUTTING AND PATCHING REQUIRED FOR ELECTRICAL WORK SHALL BE INCLUDED AS PART OF THIS SECTION.
- 11. COMPLETE SHOP DRAWINGS SHALL BE SUBMITTED FOR ELECTRICAL EQUIPMENT. WHERE SPECIFIED, ELECTRICAL EQUIPMENT IS SUBSTITUTED. THE ELECTRICAL CONTRACTOR SHALL SUBMIT COMPLETE SPECIFICATIONS ON THE SUBSTITUTE AS WELL AS THE ITEM ORIGINALLY SPECIFIED.
- 12. MATERIALS SHALL BE SPECIFICATION GRADE AND UL LISTED.
- 13. WHERE MATERIAL IS CALLED OUT IN THE LEGEND BY MANUFACTURER. TYPE OR CATALOG NUMBER. SUCH DESIGNATIONS ARE TO ESTABLISH STANDARDS OR DESIRED QUALITY. ACCEPTANCE OR REJECTIONS OF PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER.
- 14. WORK SHALL BE COORDINATED WITH THAT OF OTHER TRADES TO ELIMINATE INTERFERENCES.
- 15. ELECTRICAL WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF WHICH SYSTEM IS PUT INTO SERVICE UNLESS OTHERWISE SPECIFIED.
- 16. WORK SHALL BE GROUNDED IN ACCORDANCE WITH CODE REQUIREMENTS. COMPLETE EQUIPMENT (INSULATED GREEN WIRE) GROUNDING SYSTEM SHALL BE INSTALLED.
- 17. WIRE SHALL BE TYPE "THHN/THWN" INSULATED FOR 600 VOLTS, MINIMUM SIZE #12 AWG COPPER UNLESS SPECIFICALLY NOTED OTHERWISE.
- 18. WIRING METHODS:

NIC NOT IN CONTRACT

- A. EXTERIOR BELOW GRADE DIRECT BURIED WIRING SHALL BE IN SCHEDULE 80 PVC.
- B. EXTERIOR BELOW GRADE CONCRETE ENCASED WIRING SHALL BE IN SCHEDULE 40 PVC
- C. EXTERIOR ABOVE GROUND WIRING SHALL BE IN RIGID STEEL CONDUIT D. INTERIOR WIRING SHALL BE IN RIGID STEEL CONDUIT.
- 19. PANELBOARDS SHALL BE DEAD FRONT, THERMAL MAGNETIC BOLT-ON CIRCUIT BREAKER TYPE, DESIGNED FOR SURFACE MOUNTING AS INDICATED ON PLAN, AND HAVING CONNECTIONS TO 480/277 VOLT, 3-PHASE, 4-WIRE AND 120/208 VOLT, 3 PHASE, 4 WIRE SERVICE. ALL BUS BARS SHALL BE COPPER. CABINETS SHALL BE MADE OF CODE GAUGE GALVANIZED SHEET STEEL, WITH A MINIMUM OF 4 INCH GUTTERS, DOOR IN DOOR CONSTRUCTION, LOCKED DOOR, AND FLUSH HINGES. TYPEWRITTEN INDEX SHALL BE MOUNTED ON DOOR INSIDE TRANSPARENT COVER INDICATING LOAD SERVED. PANELS SHALL INCLUDE SEPARATE EQUIPMENT GROUND BUS.
- 20. CONDUIT RUNS AS SHOWN ON THE PLANS ARE DIAGRAMMATIC ONLY; EXACT LOCATION AND METHOD OF SUPPORT SHALL BE DETERMINED IN THE FIELD.
- 21. CONTRACTOR SHALL CHECK EXISTING CONDITIONS TO DETERMINE EXACT EXTENT OF WORK TO BE PERFORMED PRIOR TO BIDDING. DIMENSIONS RELEVANT TO EXISTING WORK SHALL BE VERIFIED IN THE FIELD.

22. PROVIDE AS-BUILT "CADD" DRAWINGS AT THE COMPLETION OF THE PROJECT.

#### ABBREVIATIONS

			-
А	AMPERE	NTS	NOT TO SCALE
AF	AMPERE FRAME	PNL	PANELBOARD
AC	ALTERNATING CURRENT	PH	PHASE
AT	AMPERE TRIP	FL	FLOOR
ATS	AUTOMATIC TRANSFER SWITCH	FLA	FULL LOAD AMPERE
BKR	BREAKER	GC	GENERAL CONTRACTOR
С	CONDUIT	GFI	GROUND FAULT INTERRUPTER
CKT	CIRCUIT	GND	GROUND
СВ	CIRCUIT BREAKER	IG	ISOLATED GROUND
EC	ELECTRICAL CONTRACTOR		
EMT	ELECTRIC METALLIC TUBING	JB	JUNCTION BOX
KW	KILOWATT	KVA	KILOVOLT AMPERES
МСВ	MAIN CIRCUIT BREAKER	PVC	POLYVINYL CHLORIDE CONDUIT
MLO	MAIN LUGS ONLY	RSC	RIGID GALVANIZED STEEL CONDUIT
MC	MECHANICAL CONTRACTOR	XFMR	TRANSFORMER
MTD	MOUNTED	V	VOLTS
MTG	MOUNTING	•	
NMC	NON-METALLIC CONDUIT	W	WATTS OR WIRE
NA	NOT APPLICABLE	WP	WEATHERPROOF

### ELECTRICAL SYMBOL LIST

#### RECEPTACLES

₽	DUPLEX CONVENI OTHER MOUNTING REFER TO RECEP
	DUPLEX RECEPTA

### RACEWAY AND WIRING

PP-1,3	-HOMERUN TO PAN AWG CONDUCTORS 3/4"C UNLESS NOTE SHALL BE INCLUDE OTHERWISEHOME CONDUCTORS (ONE CONDUIT.
·	EX. UNDERGROUN NEW UNDERGROU
М	ISCELLANE
נז 	JUNCTION BOX WI

J	JUNCTION BOX W
С	CONTACTOR
	ELECTRIC UTILITY
Ţ	GROUND - SYSTE
s <sub>TM</sub>	DIGITAL TIMER SW

#### POWER DISTRIBUTION EQUIPMENT

HAND HOLE	

#### LIGHTING

C1	$\otimes$	
	F1	

HH

IIENCE OUTLET RATED 20A, 125V, U-SLOT GROUNDED TYPE. ALL G HEIGHTS SHALL BE AS NOTED ADJACENT TO THE SYMBOL. PTACLE ABBREVIATIONS FOR SPECIAL PURPOSE RECEPTACLES

ACLE WITH INTERGRAL GROUND FAULT INTERRUPTER

VELBOARD, NUMBER OF SLASH MARKS INDICATES NUMBER OF #12 RS IN MINIMUM 3/4" CONDUIT. NO SLASH MARKS INDICATE 2#12 & 1#12G, ED OTHERWISE. - GREEN GROUND CONDUCTOR IS NOT INDICATED BUT ED IN EACH RACEWAY. SIZE SHALL BE #12 UNLESS INDICATED IERUNS TO PANELBOARDS SHALL HAVE A MAXIMUM OF THREE PHASE NE PER PHASE) PLUS NEUTRAL AND GROUND CONDUCTOR IN EACH

ND ELECTRIC LINE JND ELECTRIC LINE

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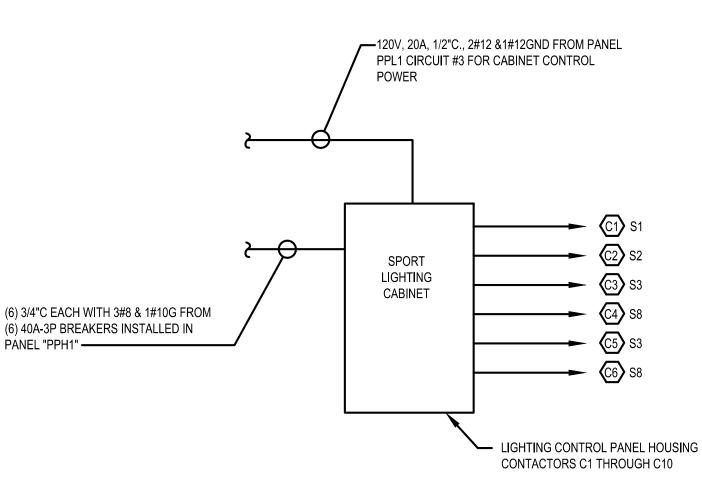
ITH BLANK COVERPLATE, SIZE AS REQUIRED BY N.E.C.

Y BILLING METER

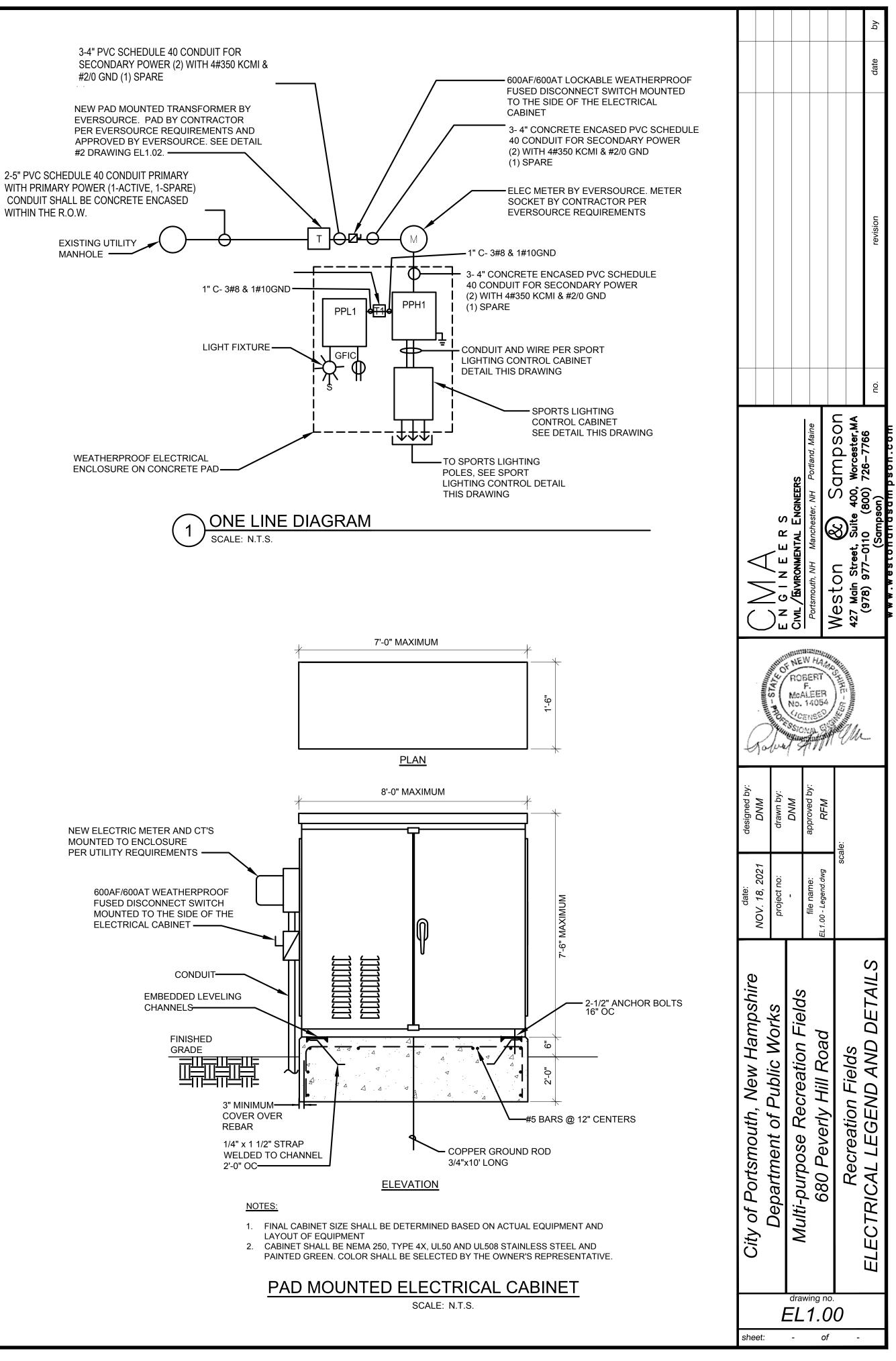
EM AND/OR EQUIPMENT

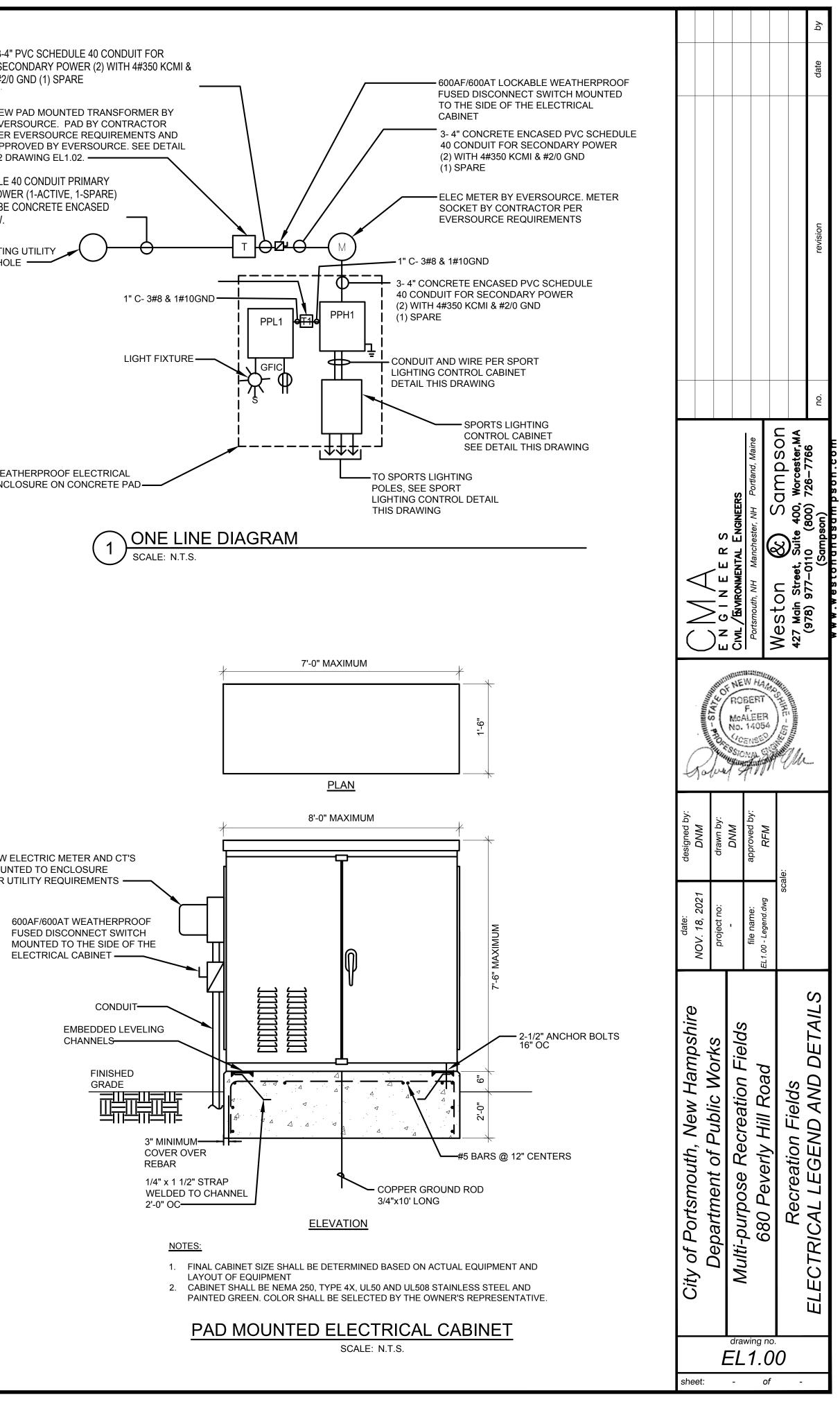
WITCH

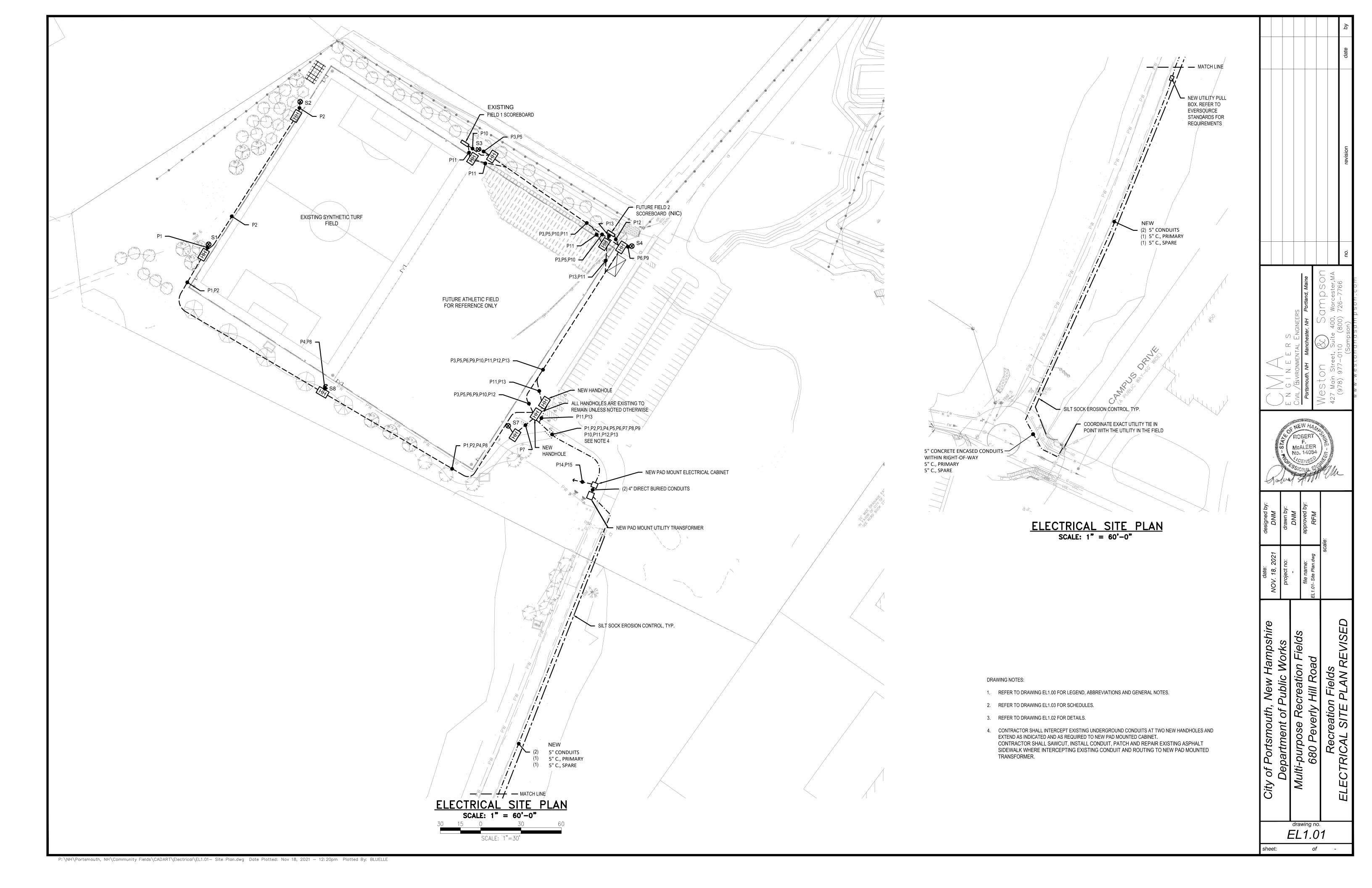
SPORTS LIGHT POLE - 'F1' INDICATES POLE NUMBER 'C1' INDICATES CONTACTOR OR CONTRACTORS CONTROLLING POLE MOUNTED FIXTURES

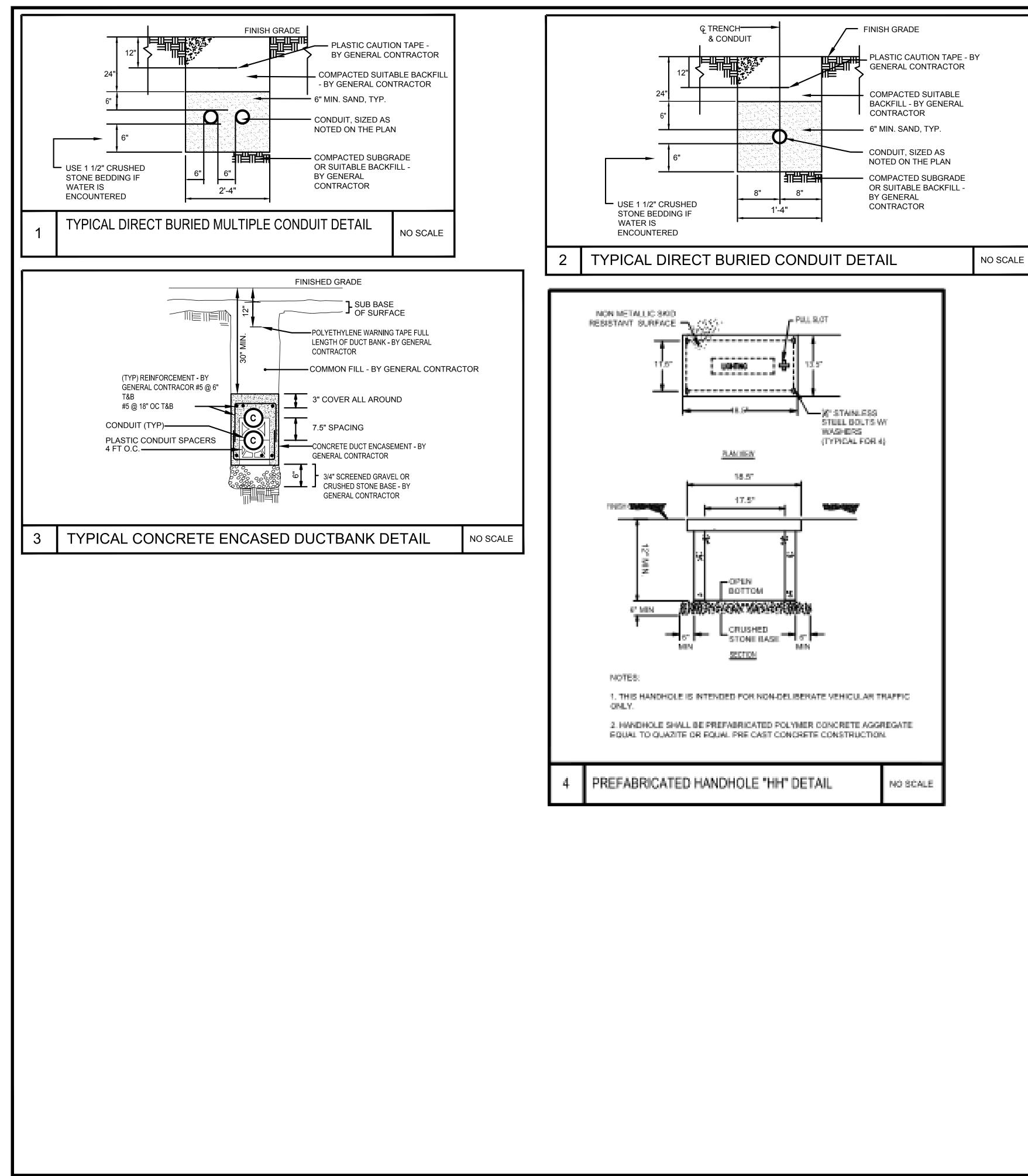


FOOTBALL FIELD SPORTS LIGHTING CONTROL DIAGRAM SCALE: N.T.S.

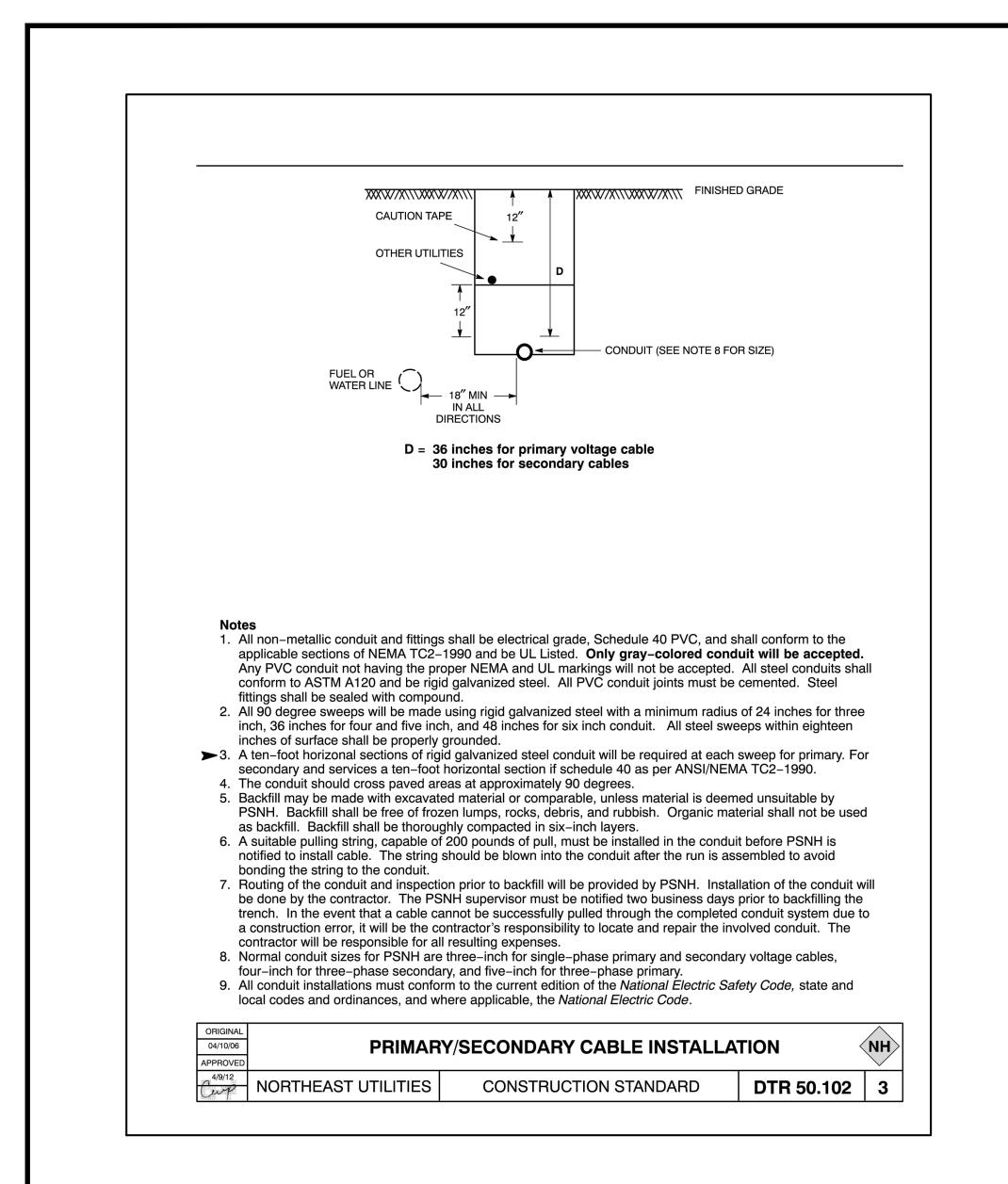


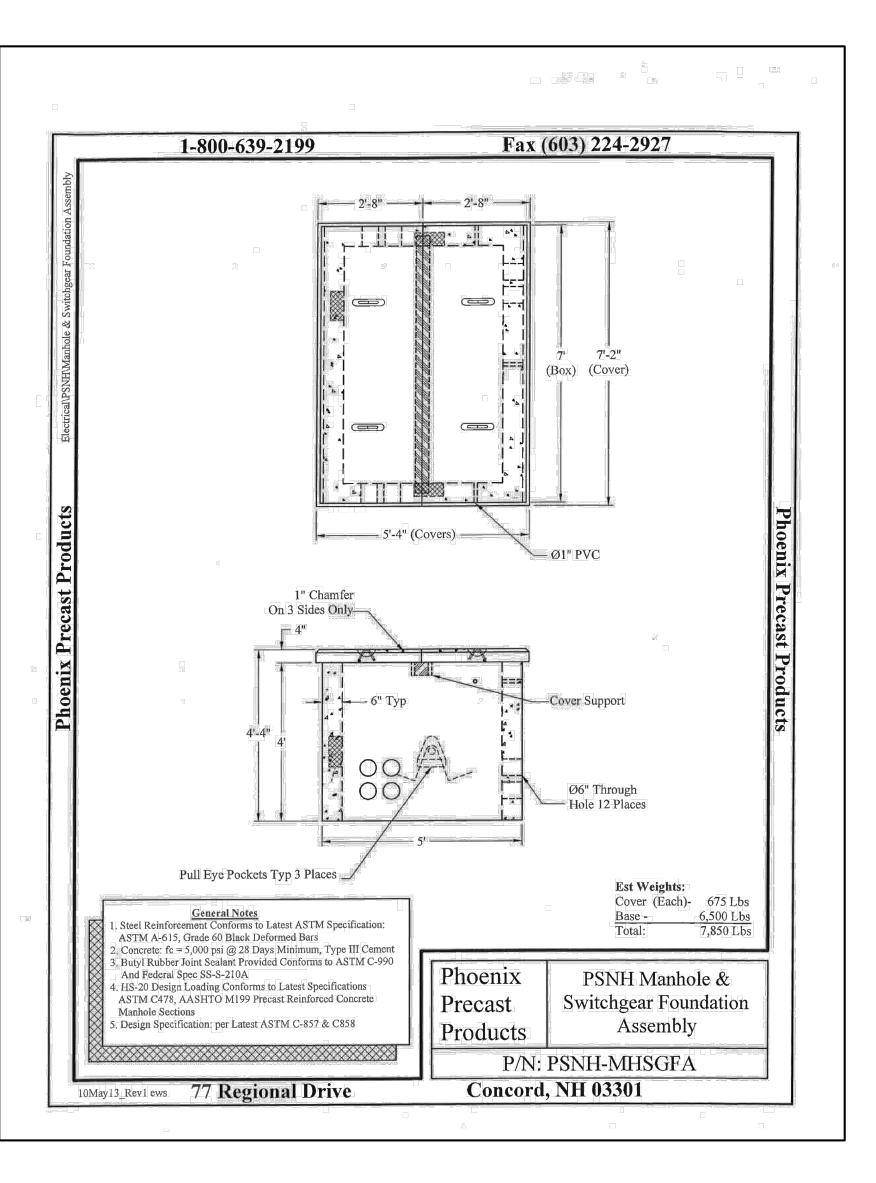






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City of Portsmouth, New Hampshire	Department of Public Works	Multi-nurnose Recreation Fields		оои гечепу піп киаи		Recreation Fields	FI FCTRICAL DETAILS	
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City of Portsmouth, New Hampshire	Department of Public Works	Multi-nurnose Recreation Fields		oou reveriy hiii koad	     	Recreation Fields	ELECTRICAL DETAILS
		dra	wing		3		

		CONDUIT &	: WIRING S	CHEDU	LE		
CONDUIT	FEEDER	FROM	ТО	FIXTURES	LOAD	VOLTAGE	REMARKS
P1	2"C., 3#6 & 1#8G	LIGHTING CONTROL PANEL CONTACTOR C1	FIXTURE S1	5	12.82A	480V	EXISTING CONDUIT
P2	2"C., 3#6 & 1#8G	LIGHTING CONTROL PANEL CONTACTOR C2	FIXTURE S2	5	12.82A	480V	EXISTING CONDUIT
P3	2"C., 3#6 & 1#8G	LIGHTING CONTROL PANEL CONTACTOR C3	FIXTURE S3	6	12.82A	480V	EXISTING CONDUIT
P4	2"C., 3#8 & 1#8G	LIGHTING CONTROL PANEL CONTACTOR C4	FIXTURE S8	6	12.82A	480V	EXISTING CONDUIT
P5	2"C., 3#8 & 1#8G	LIGHTING CONTROL PANEL CONTACTOR C5	FIXTURE S3	6	12.82A	480V	EXISTING CONDUIT
P6	2"C						EXISTING CONDUIT
P7	2"C						EXISTING CONDUIT
P8	2"C., 3#8 & 1#10G	LIGHTING CONTROL PANEL CONTACTOR C8	FIXTURE S8	6	12.82A	480V	EXISTING CONDUIT
P9	2"C						EXISTING CONDUIT
P10	2"C., 2#4 & 1#8G	PANEL PPL1	FIELD 1 SCOREBOARD	-	-	120V	EXISTING CONDUIT
P11	2"C., WITH PULLSTRING	COMMUNICATIONS	FIELD 1 SCOREBOARD	-	-	120V	EXISTING CONDUIT
P12	2"C	PANEL PPL1	FUTURE FIELD 2 SCOREBOARD	-	-	-	EXISTING CONDUIT
P13	2"C., WITH PULLSTRING	COMMUNICATIONS	FUTURE FIELD 2 SCOREBOARD	-	-	-	EXISTING CONDUIT
P14	4" WITH PULL STRING	POWER FUTURE CONCESSION STAND	FUTURE	-	-	480V	NEW CONDUIT STUBB OUT 5' BELOW GRADE FOR FUTURE
P15	4-2" WITH PULLSTRING	POWER FUTURE FIELD LIGHTING	FUTURE	-	-	480V	NEW CONDUIT STUBB OUT 5' BELOW GRADE FOR FUTURE

	PANE	LBOA	٩RD	SC	HEDU	LE	
	ANELBOARD NO.:PPL1 DCATION:ELECTRICAL ENCLOSURE	_				:120/208V, 3Ø,4W, 50 MCB S:100A	
M		_AIC: 10,0	000		TOTAL N	0. OF POLES: 12	
CKT. No.	DESCRIPTION OF LOAD	CIRCUIT BREAKERS			RS TRIP	DESCRIPTION OF LOAD	CKT. No.
1	ENCLOSURE RECEPTACLE	TRIP 20	PO 1	POLES		ENCLOSURE LIGHT	2
3	SPORTS LIGHTING CONTROL	20	1	1	20 20	FUTURE FIELD 2 SCORE BOARD	4
5	FIELD 1 SCORE BOARD	20	1	1	20	SPARE	6
7	SPARE	20	1	1	20	SPARE	8
9	SPACE					SPACE	10
11	SPACE -					SPACE -	12
	-					-	

\* PROVIDE PANELBOARD WITH A GROUND BUS

	PANEL	_B0/	\RD	SCH	IEDU	LE	
	ANELBOARD NO.: PPH1	•	SERVI ENTRAI RATE	NCE		ICE:277/480V, 3Ø, 4W, 600A MCI BARS:600A	3
М		_	AIC: 22,0	000	ΤΟΤΑ	L N0. OF POLES: 42	
СКТ.	CKT. DESCRIPTION OF LOAD		CIRCUIT I	BREAKER	S		CKT.
			POL	ES	TRIP	DESCRIPTION OF LOAD	No.
1	-	-	-	-	-	-	2
3	SPORT LIGHTING S1/C1	40	3	3	40	SPORT LIGHTING S2/C2	4
5	-	-	-	-	-	-	6
7	-	-	-	-	-	-	8
9	SPORT LIGHTING S3/C3	40	3	3	40	SPORT LIGHTINGS8/C4	10
11	-	-	-	-	-	-	12
13	-	-	-	-	-	-	14
15	SPORT LIGHTING S3/C5	40	3	3	40	SPORT LIGHTING S8/C8	16
17	-	-	-	-	-	-	18
19	-	-	-	-	-	-	20
21	FUTURE S4/C6	100	3	3	30	FUTURE S7/C7	22
23	-	-	-	-	-	-	24
25	-	-	-	-	-	-	26
27	FUTURE S4/C9	30	3	3	30	FUTURE S5/C10	28
29	-	-	-	-	-	-	30
31	-	-	-	-	-	-	32
33	PPL1 VIA TRANS	30	3	3	30	FUTURE S6/C11	34
35	-	-	-	-	-	-	36
37	-	-	-	-	-	-	38
39	FUTURE S7/C12	30	3	-	-	-	40
41	-	-	-	-	-	-	42

\* PROVIDE PANELBOARD WITH A GROUND BUS

City of Portsmouth, New Hampshire       date: Nov. 18, 2021       designed by DNM       designed by For Nov. 18, 2021       designed by DNM         Department of Public Works       project no: nonection       drawnby: DNM       drawnby: For Nov. 18, 2021       designed by DNM         Multi-purpose Recreation Fields       file name: RFM       approved by RFM       file name: RFM       approved by RFM       file name: RFM       designed by DNM         For Some Noverly Hill Road       extension Fields       file name: RFM       approved by RFM       file name: Remouth Mint       approved by RFM       file name: Remouth Mint       file name: Remouth Mi					date by
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City of Portsmouth, New Hampshire     date:       City of Portsmouth, New Hampshire     NOV. 18, 2021       Department of Public Works     Project no:       Multi-purpose Recreation Fields     File name:       680 Peverly Hill Road     FL1.04 - Schedules.dwg       Recreation Fields     EL1.04 - Schedules.dwg       ELECTRICAL SCHEDULES     Scale:	C C C	LAR WELLER		Re- HINE	and the second s
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