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British Columbia
V6Z 0B9
Bid Fax: (604) 775-9381

SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address
**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution
Public Works and Government Services Canada -
Pacific Region
800 Burrard Street, Room 219
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V6Z 0B9

Title - Sujet Exterior Lighting Additions	
Solicitation No. - N° de l'invitation EZ899-161037/B	Amendment No. - N° modif. 003
Client Reference No. - N° de référence du client	Date 2015-10-23
GETS Reference No. - N° de référence de SEAG PW-\$PWY-032-7627	
File No. - N° de dossier PWY-5-38174 (032)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2015-10-30	Time Zone Fuseau horaire Pacific Daylight Saving Time PDT
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Large, Kathy(pwy)	Buyer Id - Id de l'acheteur pwy032
Telephone No. - N° de téléphone (604) 666-2891 ()	FAX No. - N° de FAX (604) 775-6633
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Parks Canada - Fort Rodd Hill National Historic Site - Victoria, BC	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

Solicitation No. - N° de l'invitation

EZ899-161037/B

Amd. No. - N° de la modif.

003

Buyer ID - Id de l'acheteur

pw032

Client Ref. No. - N° de réf. du client

File No. - N° du dossier

CCC No./N° CCC - FMS No/ N° VME

PWY-5-38174

Les documents français seront disponibles sur demande.

Please find Amendment #3 herein.

All other terms and conditions remain unchanged.

The following changes in the tender documents are effective immediately. This addendum will form part of the contract documents.

DRAWINGS

.1 Drawings E101 thru E106 and E300

- (1) **Add** : the following General Notes to read:
- “1. To reduce construction impacts on site, all trenching to be done using a mini-excavator with a small narrow trenching bucket (approx 12 inch width). Note that in one area, only hand digging will be permitted. Refer to Appendix ‘B’ in the specifications.
 2. For all areas that trenching is required, Contractor is to allow for ground penetrating radar (GPR) scanning of the entire trench routing to ensure that existing site services will not be damaged during excavation activities. Any existing site services damaged during construction shall be repaired by the Contractor at no cost to Departmental Representative.”

.2 Drawings E101 – Refer also to the attached ESK1-E101

- (2) **Revise** : location of type ‘L10’ luminaire currently indicated to be installed on the roof of Belmont Battery Bldg. Install at the edge of the “rough” on east side of Belmont Battery glacis using a 4’ high, hot dipped galvanized steel HSS post c/w mounting brackets as noted in Luminaire Schedule on Dwg. E200. Exact routing of u/g conduit to lighting control panel #6 to be confirmed on site.

.3 Drawings E102 – Refer also to the attached ESK1-E102

- (3) **Add** : keynote #1 to read:
“Very archaeologically sensitive area. Refer also to Appendix ‘B’ in the specifications. No machine digging; only hand digging is allowed in this area. Review the results of archaeological testing and pre-construction coring with Departmental Representative prior to any trenching. Distance of luminaires from the wall may need to be reduced to 2m depending on the results of testing.”
- (4) **Move** : one type ‘L3’ luminaire as noted in ESK1-E102 at entrance to Lower Battery area.
- (5) **Delete**: one type ‘L3’ luminaire as noted in ESK1-E102 at entrance to Lower Battery Area.
- (6) **Revise**: note for photo #6 to read:
“Remove the wooden cabinet enclosing the exiting panelboard and receptacle. Replace the existing panelboard with a new 8-cct. Stab-lok load centre c/w sufficient circuit breakers to re-feed existing circuits and new lighting circuit. Provide a new lockable stainless steel cabinet to enclose the new load centre,
-

existing receptacle, new lighting control panel #3 and programmable switches for lighting zone #6.”

- (7) **Revise:** routing of conduits from Casement Barracks electrical room to type ‘C2A’ and ‘L3’ luminaires. Refer also to photos #1 and #2. Instead of drilling into the historic fabric of red brick wall as shown in photo #1, route the conduits from the wall of the electrical room down into u/g and out of the electrical room using existing gap area in the concrete floor.
- (8) **Add :** to the note pointing to surface mount conduit in photo #5 to read:
“Avoid drilling into historic fabric of wooden post. Fabricate a non-invasive clamp to fit to the post and use to support the conduit. Paint to match the post.”

.4 Drawings E103 – Refer also to the attached ESK1-E103

- (9) **Add :** keynote #7 to read:
“Replace existing flood light with new type ‘K1’ luminaire. Do not walk on the adjacent lower roof due to poor condition of the roof. See also photo #2. A boom truck will be required.”
- (10) **Revise :** routing for u/g conduit connecting two type ‘L4’ luminaires in dimming zone #17 as shown in ESK1-E103.
- (11) **Add :** keynote #8 to read:
“Tree with rocks around it. U/g conduits to be installed as far as possible from tree roots.”
- (12) **Add :** keynote #9 to read:
“Heavily-treed area with mature Garry Oak trees. All u/g conduits to be installed as far as possible from tree roots.”

.5 Drawings E104 – Refer also to the attached ESK1-E104

- (13) **Revise:** location of the pole for two type ‘L10’ luminaires as shown in ESK1-E104.

.6 Drawings E105 – Refer also to the attached ESK1-E105

- (14) **Add :** keynote #5 to read:
“There are existing plants and an irrigation line in the centre of the island in the parking lot. Install new u/g conduits at one side of the island as close as possible to the curb to avoid plant roots and irrigation line.”
 - (15) **Add :** keynote #6 to read:
“Treed area and bushes. Coordinate with Departmental Representative re routing of u/g conduits in this area. Make allowance for conduit routings other than the
-

straight line shown on the dwgs to avoid any damage to existing plants and tree roots.”

- (16) **Add** : keynote #7 to read:
“Existing BCH pole and cobra head luminaire. Contact BC Hydro for removal of existing cobra head luminaire. Make necessary allowances and pay to BC Hydro.”
- (17) **Revise** : routing of u/g conduit from pole #8 to pole #7 to avoid tree roots in the area.
- (18) **Add** : keynote #8 to read:
“There are existing water pipes and valves in this area. Protect existing services when installing u/g conduit.”

.7 Drawings E106 – Refer also to the attached ESK1-E106

- (19) **Change** : location of in-ground solar lights from side of Causeway to the middle as noted on ESK1-E106 to avoid washout damage.

.8 Drawings E205

- (20) **Change** : the width for luminaire protective enclosure from 215mm to 275mm in all the details.

.9 Drawings E300 – Refer also to the attached ESK1-E300

- (21) **Revise** : type of wiring installation around the Caretaker’s House from underground to surface mounted. All wiring installation to be done using liquid tight flexible conduit.

.10 Drawings E301 – Refer also to the attached ESK1-E301

- (22) **Revise** : Revise type of bracket and mounting detail for type ‘C’ luminaire in detail 1. Instead of an angle bracket fixed to the concrete floor, use a flat bracket and fix onto the metal railing spindles the same way as bracket for type ‘D’ luminaires. All brackets to be powder coat painted red to match railings. In addition, color of mounting arm for type ‘D’ luminaires will be confirmed by Departmental Representative.

.11 Drawings E301

- (23) **Add** : the following note #11 for detail 4 to read:
“A standard portable power distribution unit such as those used in film industry will be acceptable in lieu of the unit shown in the detail if it meets the requirements as noted.”
-

SPECIFICATIONS

.1 Section 01 11 00 – Summary of Work

(24) **Revise** : 1.4.5 to read:

“Store materials and equipment only where directed by the Departmental Representative. For construction material, two lay-down areas will be available to the Contractor: Parking lot and shop compound that is located east of parking lot and north of Lower Battery. Coordinate with the Departmental Representative.”

.2 Section 01 11 55 – General Instructions

(25) **Add** : “1.34 Archaeological Mitigation

1. On behalf of Parks Canada, Terrestrial Archaeology has performed an archaeological assessment of this project to evaluate archaeological impact of any new ground disturbance within the site. The archaeological assessment report that includes detail and specific mitigation measures for all the areas that ground will be disturbed due to construction activities is included in Appendix ‘B’ of these specifications. Note that all requirements including but not limited to mitigation measures noted in the report are **mandatory** and shall be followed by the Contractor.”

.3 Section 01 35 33 – Health and Safety Requirements

(26) **Add**: “1.30 Health Hazards – Plants

1. There are two plants that may be encountered during construction activities at Fort Rodd Hill NHS which are considered health hazard: singing nettle (*Urtica Dioica*) and Daphne (Spurge) Laurel (*Daphne Laureola*)
 1. Health and safety: Develop and implement safe work procedures for the handling of singing nettle (*Urtica Dioica*) and Daphne (Spurge) Laurel (*Daphne Laureola*)
 2. Environmental: Develop and implement appropriate removal and disposal procedures for Daphne laurel (*Daphne laureola*) plants that are removed during excavation / light installation. These plants must be removed off site and disposed at a facility that accepts this invasive species. Do not compost.
 3. Work must be conducted to limit the removal of stinging nettle (*Urtica Dioica*). Patches of stinging nettles, mature canes and young sprouts in particular should not be removed / handled unless at the direction of Parks Canada.
 4. Information related to the above noted plants can be found in Worksafe BC website:
-

<http://www.google.ca/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CBwQFjAAahUKEwjowaXV4NblAhVBqh4KHTiQBx4&url=http%3A%2F%2Fwww.worksafebc.com%2Fpublications%2Fhealth%2Fbulletins%2Ftoxic%2Fplants%2Fassets%2Fpdf%2Ftp0601.pdf&usq=AFQjCNF1EbgIBXZfbDCdj54SlhqtZBT-A>

[http://www.google.ca/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CBwQFjAAahUKEwiSz4GK4NblAhWBJh4KHQGABwU&url=http%3A%2F%2Fwww.victoria.ca%2Fassets%2FDepartments%2FParks~Rec~Culture%2FPar%2FDocuments%2Finvasive-species-spurge-daphne.pdf&usq=AFQjCNEvwBWXL1Hbj3pOLCFc1z4-MHJOAA."](http://www.google.ca/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CBwQFjAAahUKEwiSz4GK4NblAhWBJh4KHQGABwU&url=http%3A%2F%2Fwww.victoria.ca%2Fassets%2FDepartments%2FParks~Rec~Culture%2FPar%2FDocuments%2Finvasive-species-spurge-daphne.pdf&usq=AFQjCNEvwBWXL1Hbj3pOLCFc1z4-MHJOAA.)

.4 Section 26 27 16 – Electrical Cabinets and Enclosures

- (27) **Add:** 2.1.9 to read:
“All surfaces of the lighting control kiosk, top and sides, shall be covered with vehicle quality digital print vinyl graphic wrap with gloss laminate coating. Departmental Representative will provide graphics to be used for wrapping.”

.5 Section 26 50 00 – Lighting

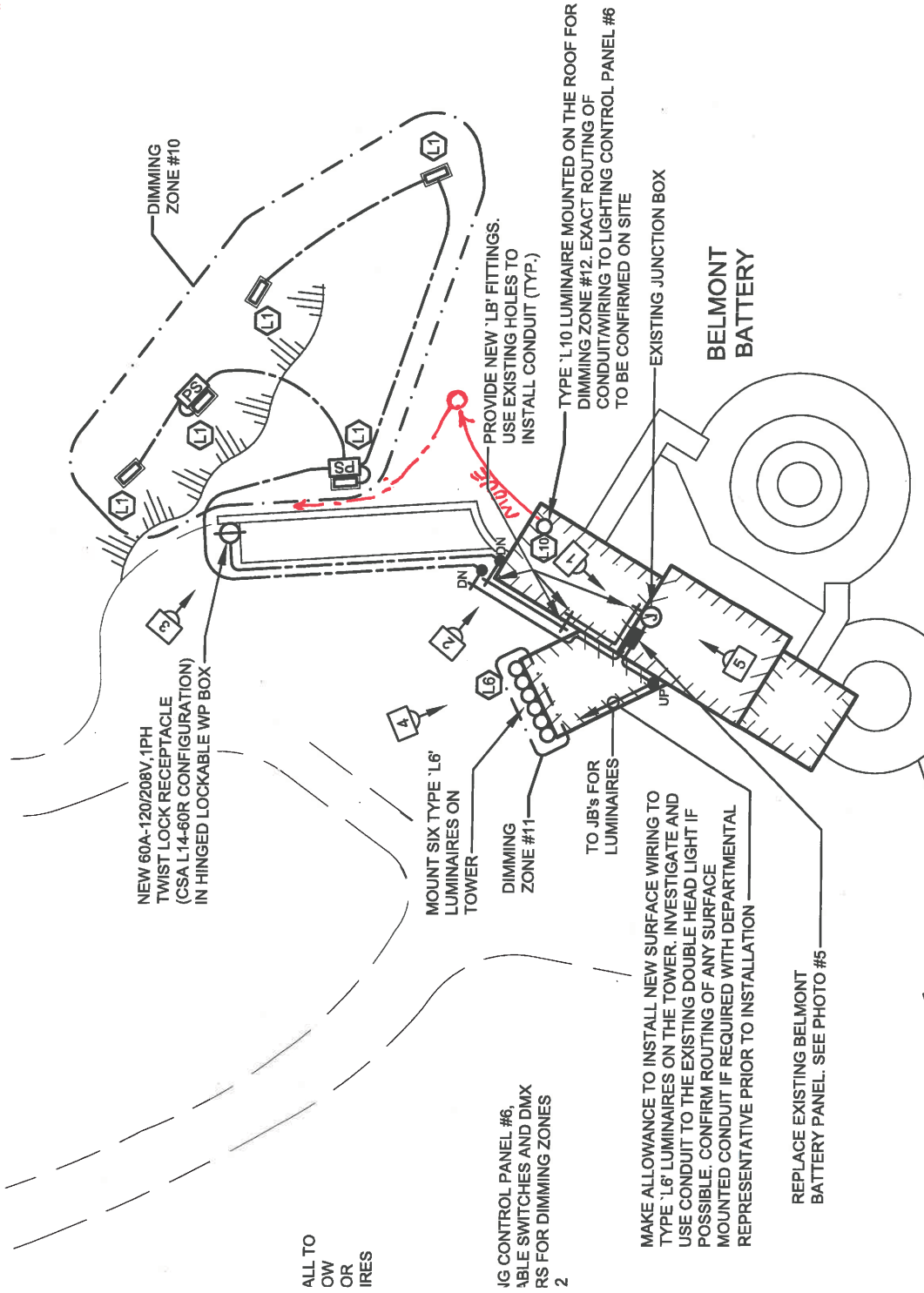
- (28) **Add:** 3.1.8 to read:
“Prior to any installation and after the contractor has reviewed all areas where luminaires will be installed, arrange a meeting with Departmental Representative and confirm the exact location for all luminaires mounted on the ground.”

.6 Appendix ‘B’

- (29) **Add :** Attached Appendix ‘B’ – Archaeological Assessment and Mitigation
Fort Rodd Hill NHS – Exterior Lighting Additions

END OF ADDENDUM No. 1

ESK1-E10.1



ALL TO
OW
OR
IRES

JG CONTROL PANEL #6,
DIMMABLE SWITCHES AND DIMX
RS FOR DIMMING ZONES

2

MAKE ALLOWANCE TO INSTALL NEW SURFACE WIRING TO
TYPE 'L6' LUMINAIRES ON THE TOWER. INVESTIGATE AND
USE CONDUIT TO THE EXISTING DOUBLE HEAD LIGHT IF
POSSIBLE. CONFIRM ROUTING OF ANY SURFACE
MOUNTED CONDUIT IF REQUIRED WITH DEPARTMENTAL
REPRESENTATIVE PRIOR TO INSTALLATION

REPLACE EXISTING BELMONT
BATTERY PANEL. SEE PHOTO #5

ESK1-E102



LECT. RM.

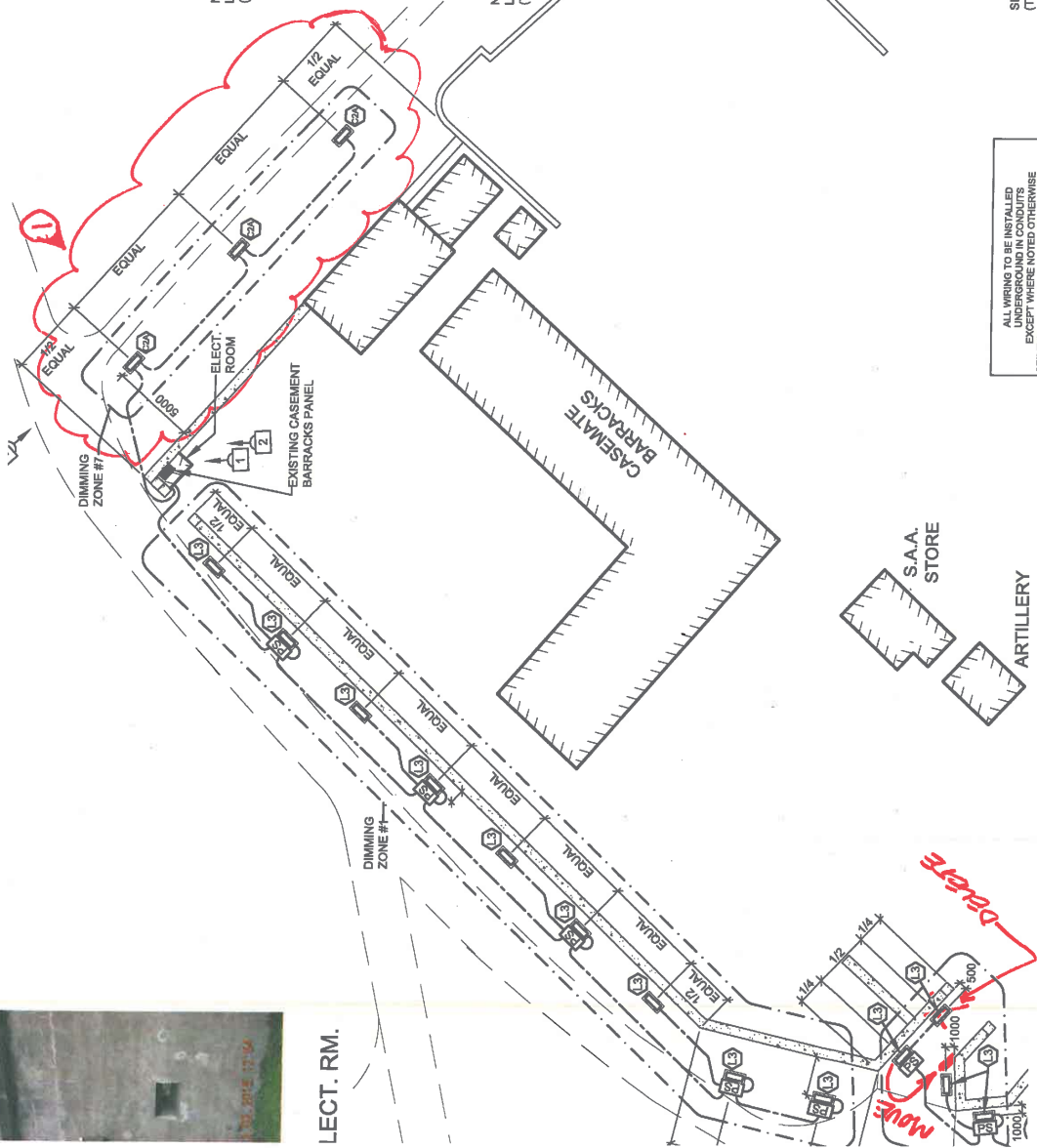


PHOTO #3 - BARRACKS ENTRANCE



PHOTO #4 - GUARD HOUSE ENTRANCE



NEW TYPE 'C2A' LUMINAIRE (TYPICAL)

NEW TYPE 'L3' LUMINAIRE (TYPICAL)

NEW TYPE 'L8' LUMINAIRE (TYPICAL)

SURFACE MTD. CONDUIT

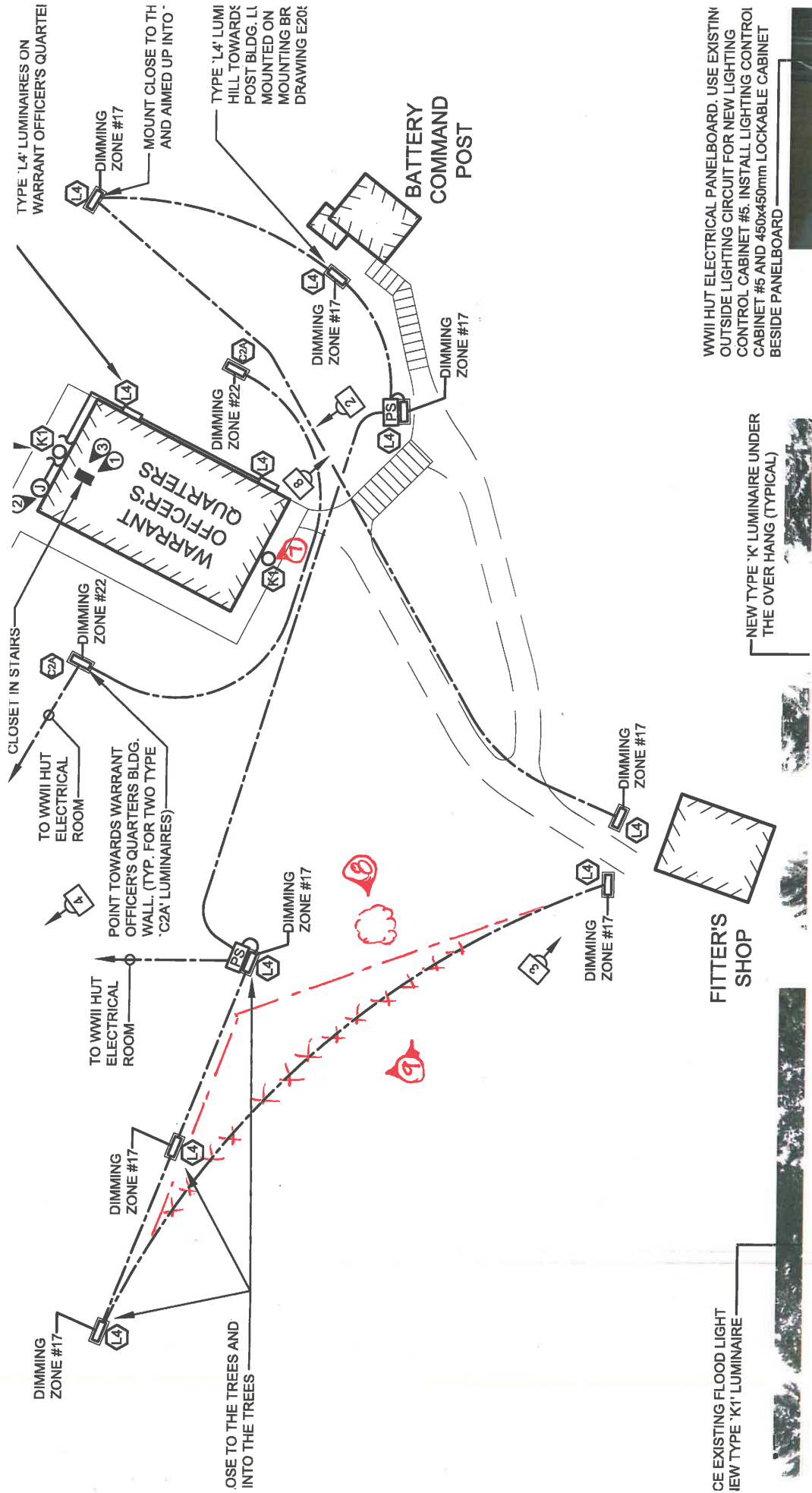
SEE DETAIL E208 (TYPICAL)

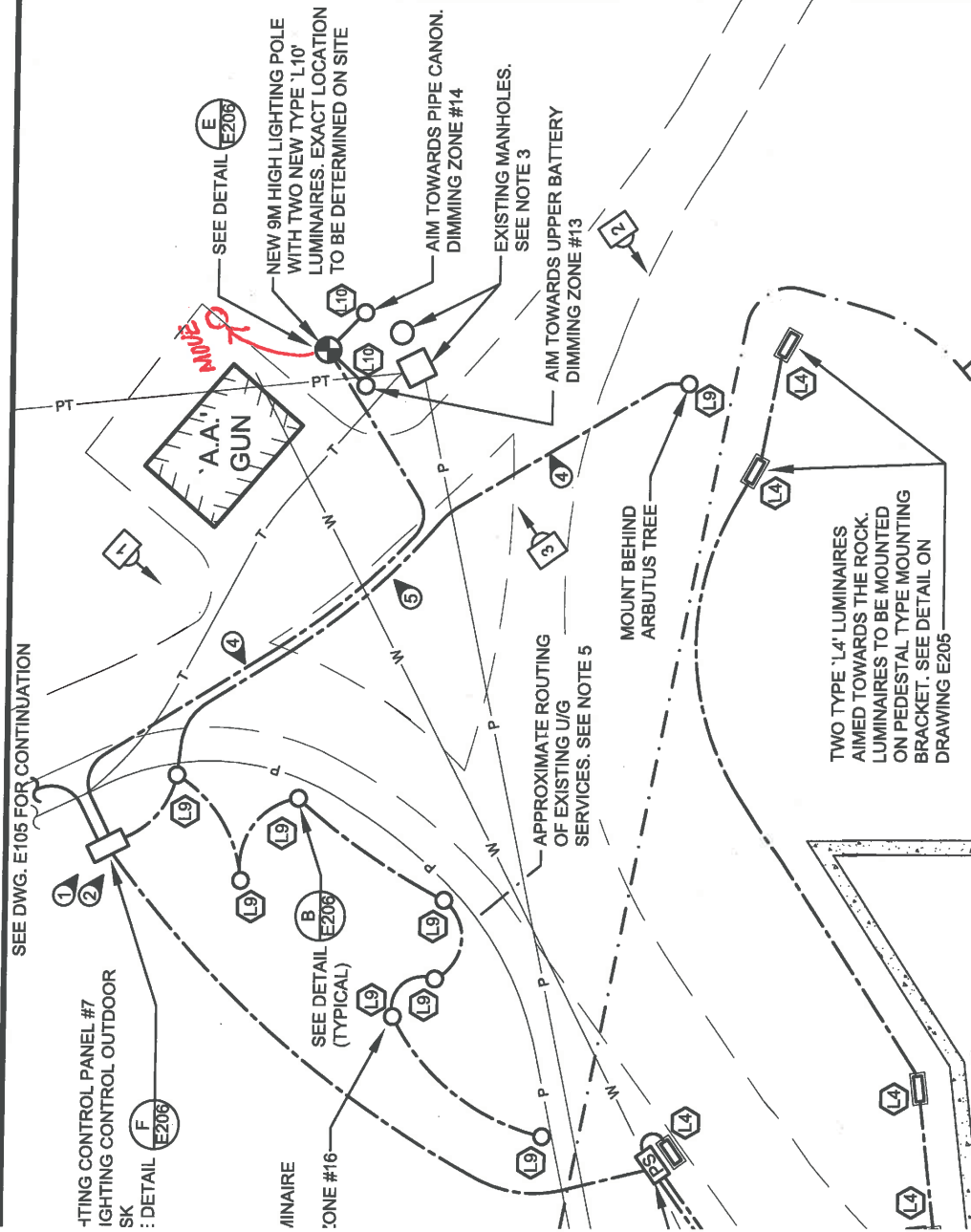
'L8' FITTING

'L7' FITTING

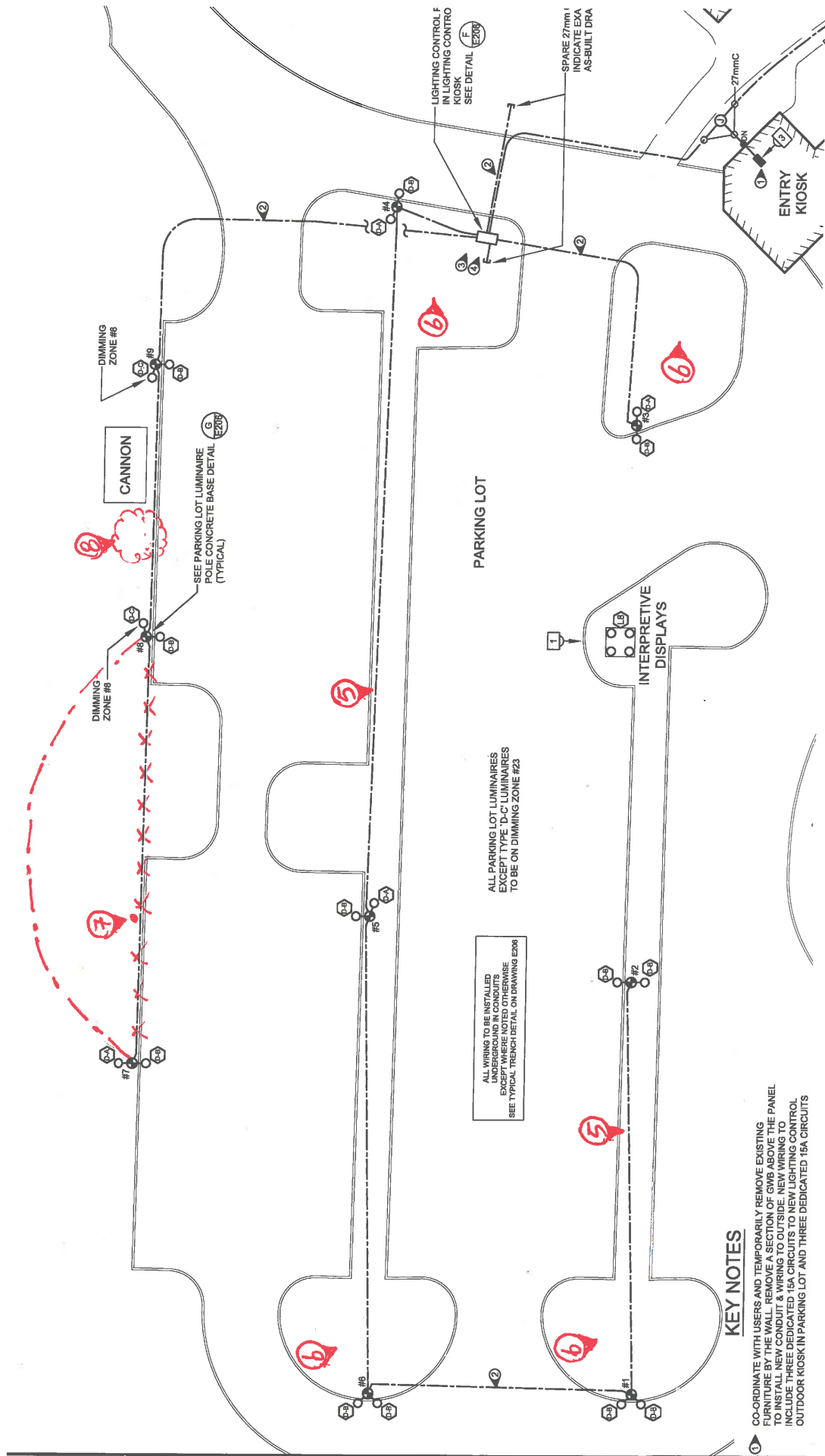
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ESK1-E103





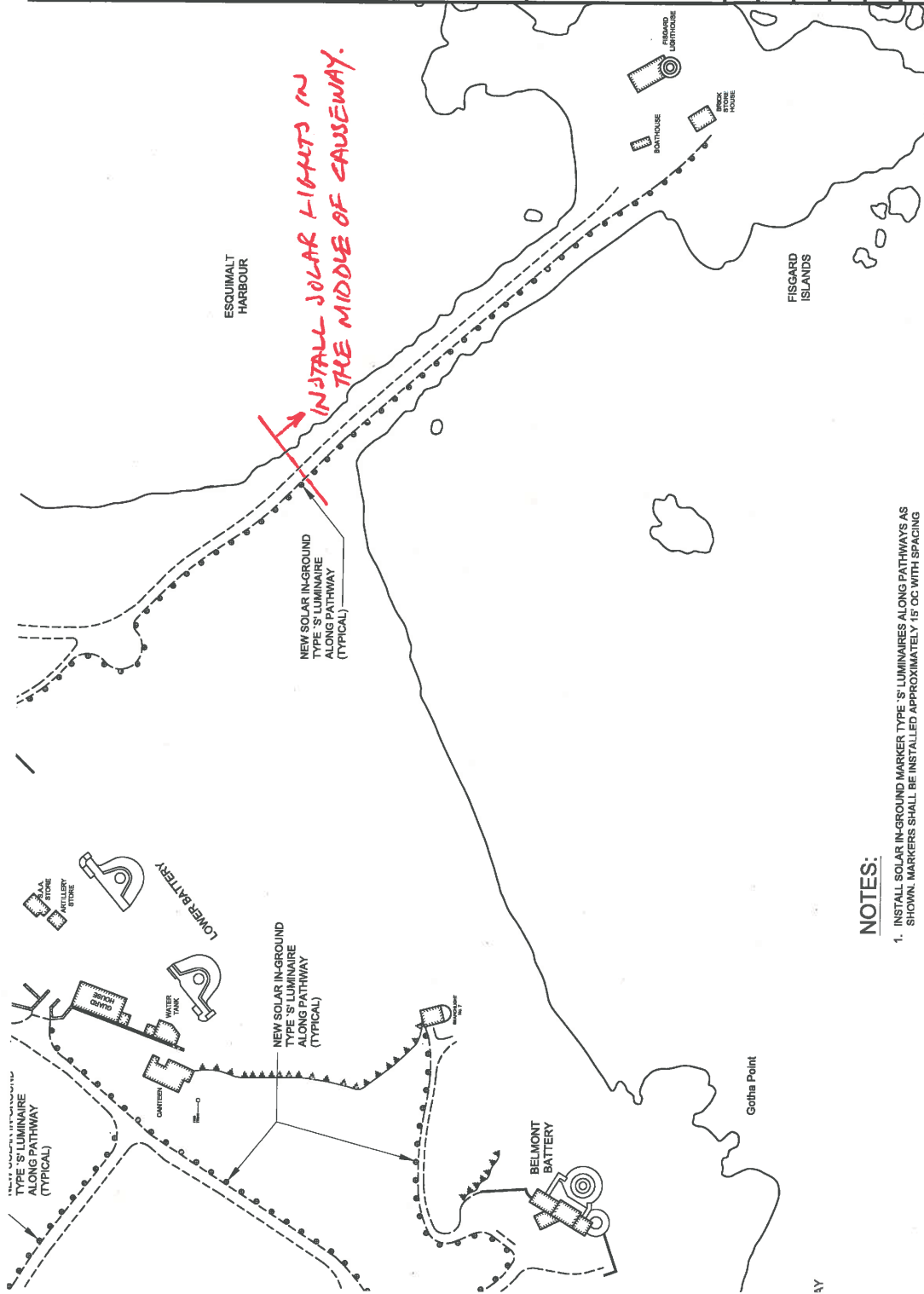
ESK1-E105



KEY NOTES

- CO-ORDINATE WITH USERS AND TEMPORARILY REMOVE EXISTING FURNITURE BY THE WALL. REMOVE A SECTION OF THE WALL TO INSTALL NEW CONDUIT & WIRING TO OUTSIDE NEW WIRING TO INCLUDE THREE DEDICATED 15A CIRCUITS TO NEW LIGHTING CONTROL OUTDOOR KIOSK IN PARKING LOT AND THREE DEDICATED 15A CIRCUITS











ESK1-EID6



NOTES:

1. INSTALL SOLAR IN-GROUND MARKER TYPE 'S' LUMINAIRES ALONG PATHWAYS AS SHOWN. MARKERS SHALL BE INSTALLED APPROXIMATELY 15' OC WITH SPACING

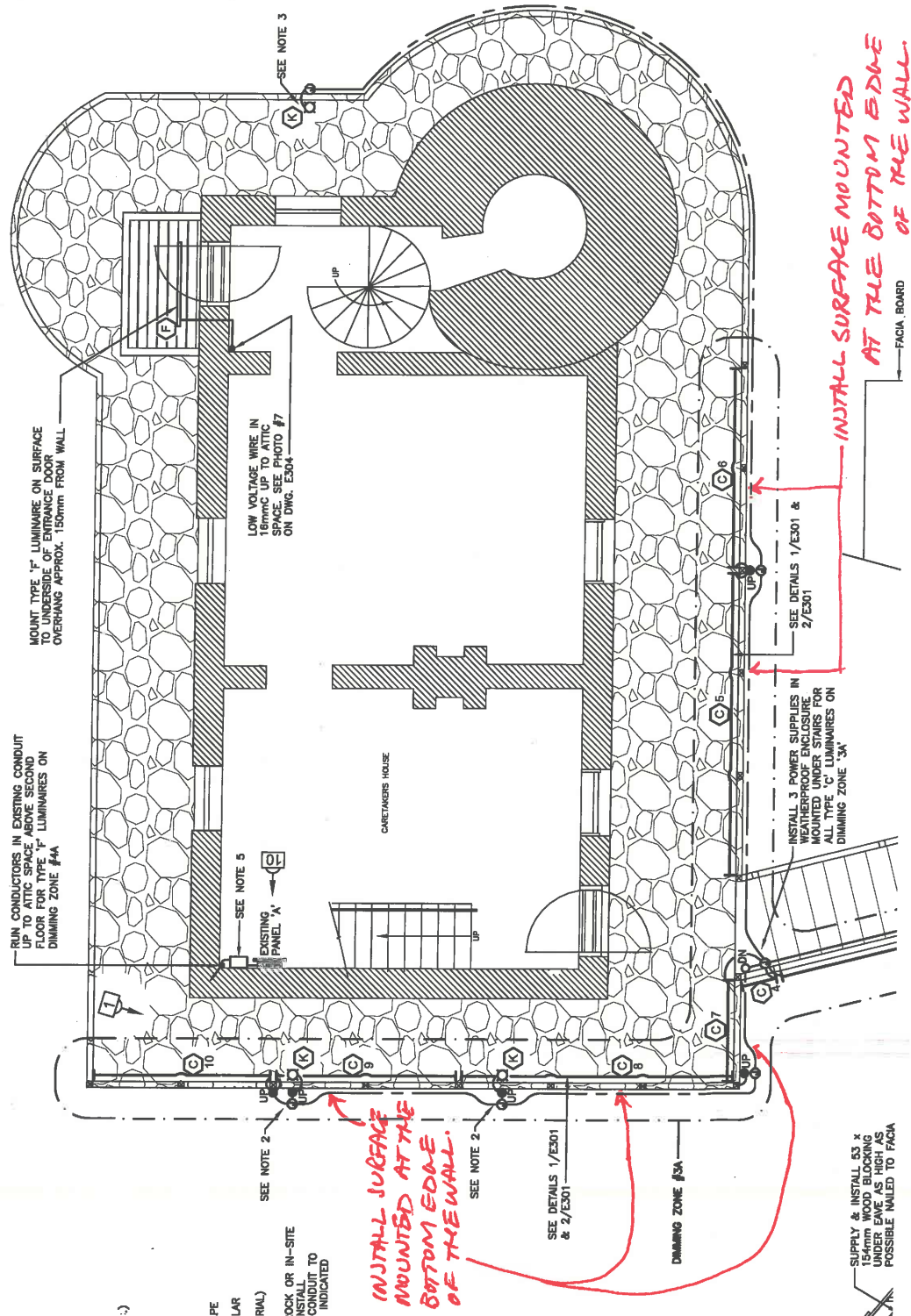
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Revised/Revised					
Client/client					
PARKS CANADA					
Project title/Titre du projet					
EXTERIOR LIGHTING ADDITIONS					
FORT RODD HILL NATIONAL HISTORIC SITE VICTORIA, BC					
Consultant Signature Box Only					
N/A					
Designed by/Concept par					
M. DEZFOOLI					
Drawn by/Dessiné par					
T. JEREB					
PM/SC Project Manager/Administrateur de Projets TFSC					
TOM DUNPHY					
PM/SC Regional Manager/Administrateur régional/Service d'architecture et de génie, TFSC					
PREETIPAL PAUL					
Drawing title/Titre du dessin					

	CONTINUOUS FLEXIBLE LED LIGHTING
	LINEAR LED LUMINAIRE
	SPOT OR FLOOD LIGHT
	SURFACE MOUNTED LUMINAIRE
	JUNCTION BOX
	60A-2P 120/208, 1PH, TWIST-LOCK RECEPTACLE
	DUPLEX GFCI RECEPTACLE
	PANELBOARD
	DISCONNECT SWITCH
	MEANS WEATHERPROOF DEVICE

1. PROVIDE NEW LIGHTING CONTROL PANEL #2 AND 45x40x40mm LOCKA CABLE FOR PROGRAMMABLE SWITCHES. POWER SUPPLY FOR BOATHOUSE, BRICK STOREHOUSE AND HANDRAIL LIGHTING. SEE S305 DIAGRAM FOR DIMMING ZONE #1A, #2A, #3A, & #7A ON DWG. E305
2. TYPE 'K' LUMINAIRE ON DIMMING ZONE #7A. MOUNT LUMINAIRE ON T RAILING.
3. TYPE 'K' LUMINAIRE ON DIMMING ZONE #7A. EXACT MOUNTING LOCATI ON TO BE DETERMINED ON SITE.
4. PROVIDE 60A/2P BRANCH CIRCUIT BREAKER IN EXISTING PANEL 'B' F NEW TWISTLOCK RECEPTACLE IN BRICK STOREHOUSE BUILDING.
5. PROVIDE NEW LIGHTING CONTROL CABINET #110 AND PROGRAMMABLE SWITCHES FOR TYPE 'F' LUMINAIRES ON DIMMING ZONE #4A AND COI TO SPARE 15A/1P BREAKER IN PANEL 'A'. SEE ALSO BLOCK DIAGRAM DIMMING ZONE #4A ON DWG. E305. RUN CIRCUIT CONDUCTORS IN E3 CONDUIT FROM PANEL 'A' TO ATTC SPACE.
6. ALL CONDUIT AND WIRE INSIDE THE CARETAKERS HOUSE IS TO BE CONCEALED, EXCEPT WHERE SHOWN SURFACE MOUNTED. PRIOR TO RUGH-IN, CONFIRM LOCATION OF ALL SURFACE MOUNTED CONDUITS WITH THE DEPARTMENTAL REPRESENTATIVE.
7. CONTRACTOR IS TO CONFIRM AND COORDINATE LENGTH OF EACH SEC OF LUMINAIRE TYPE 'C' WITH SUPPLIER PRIOR TO ORDERING.
8. REPAIR ANY DAMAGE CAUSED BY THIS CONTRACTOR OR ITS SUBTRADE HISTORIC BUILDING AND INFRASTRUCTURE TO THE SATISFACTION OF THE DEPARTMENTAL REPRESENTATIVE.
9. PRIOR TO ROUGH-IN, REVIEW MOUNTING LOCATION FOR CABINET FOR 'C' LUMINAIRE POWER SUPPLIES AND 60A RECEPTACLE INSIDE BRICK STOREHOUSE WITH DEPARTMENTAL REPRESENTATIVE. LOCATE AS DIRECT

APPROX. LENGTHS REQUIRED FOR TYPE 'C' LUMINAIRES:					
C1	5020mm	C5	4300mm	C9	2800mm
C2	2200mm	C6	3000mm	C10	2700mm
C3	5000mm	C7	1700mm	C11	4500mm
C4	800mm	C8	4200mm	C12	3300mm
				C13	3700mm

(SEE DWG. E30)

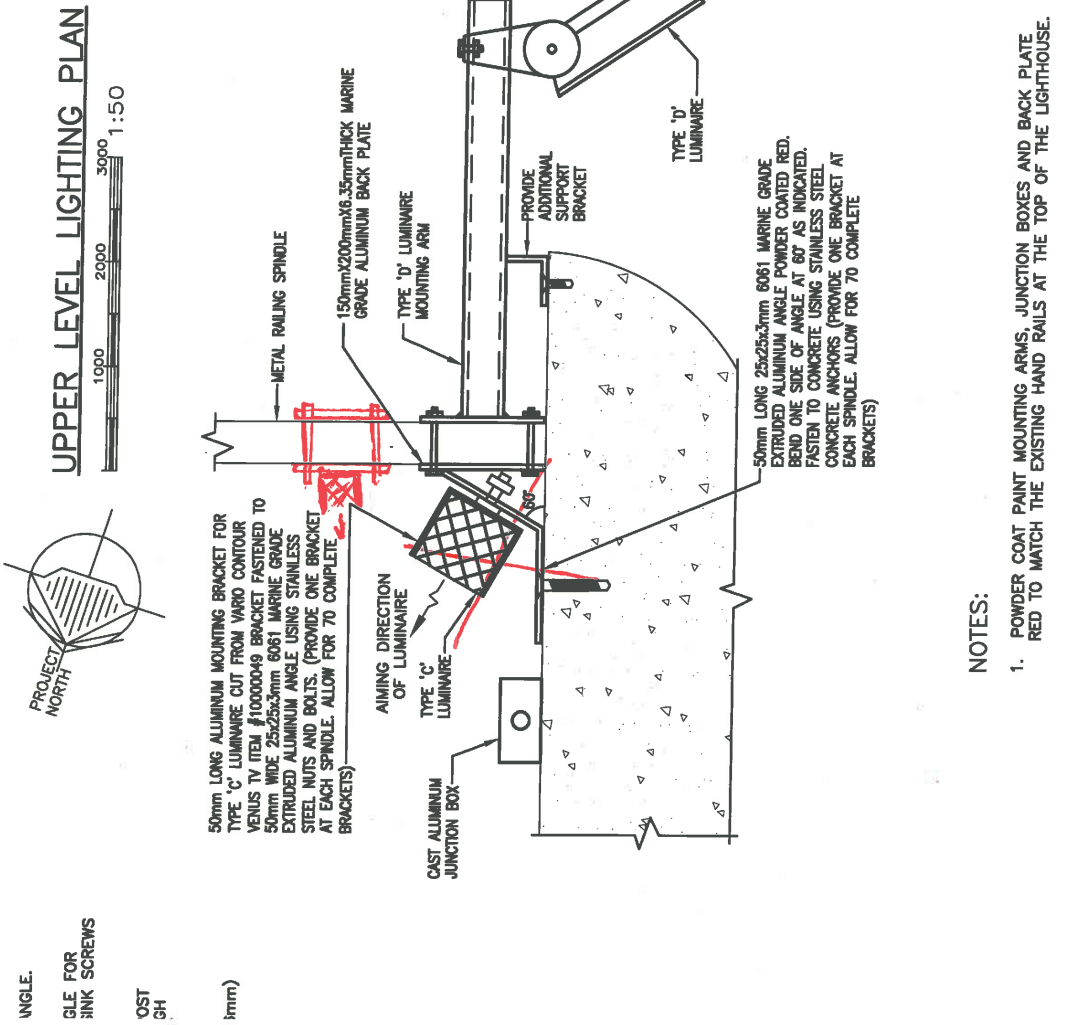
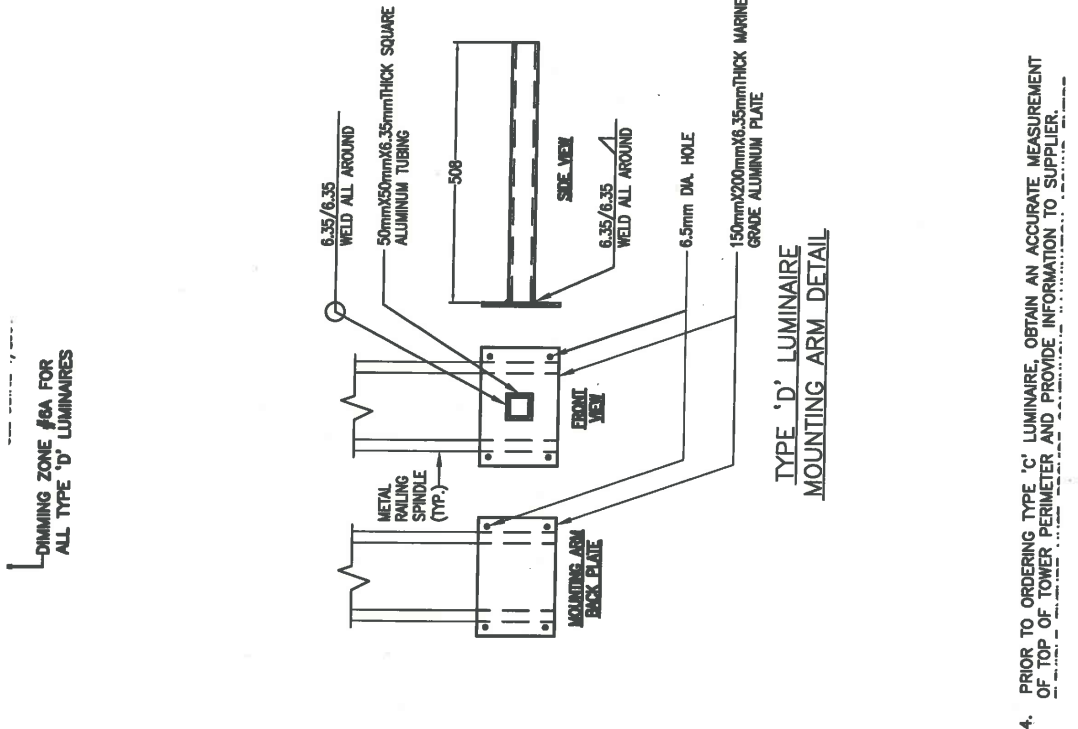


ESK1-E301

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Revision/		
Revision		
Client/client		

Project title/Title	EX	F
	NAT	

Consultant Signc	N/A
Designed by/Cor	M. DEZFOOLI
Drawn by/Dessir	T. JEREB
PWGSC Project 1	
TOM DUNPHY	
PWGSC, Regional V	
Gestonnare région	
PREFTIPAI DA	



NOTES:

1. POWDER COAT PAINT MOUNTING ARMS, JUNCTION BOXES AND BACK PLATE RED TO MATCH THE EXISTING HAND RAILS AT THE TOP OF THE LIGHTHOUSE.
4. PRIOR TO ORDERING TYPE 'C' LUMINAIRE, OBTAIN AN ACCURATE MEASUREMENT OF TOP OF TOWER PERIMETER AND PROVIDE INFORMATION TO SUPPLIER.

APPENDIX 'B'

Archaeological Assessment and Mitigation

Fort Rodd Hill NHS – Exterior Lighting Additions

1.0 Project Background

Terrestrial Archaeology has received tender ready plans outlining the Exterior Lighting additions at Fort Rodd Hill NHS. In general, the light installations involved in this project will require significant amounts of trenching throughout the site. These trenches will measure approximately 30 to 45cm deep and 30cm wide. The typical pit for the solar lighting will be 12 inches wide and approximately 6 inches deep. At least 150 solar light installs are planned throughout the project area. The trenching will be by narrow bucket backhoe.

A number of archaeological sites are known throughout Fort Rodd Hill NHS. The boundaries of the Pre-contact sites that are in conflict with the lighting installation proposal have not to date been clearly demarcated. Numerous construction projects over the years, however, have shown some of the site boundaries to extend well into and around the historic military era buildings and features. The following requirements for the general project related trenching and for specific sites are offered below in **Section 3.0**.

2.0 Objective

To acquire archaeological services from a professional archaeological consultant (the Consultant) to carry out archaeological mitigation testing at the locations indicated below where the proposed lighting installation may directly affect known archaeological sites **before the commencement of construction**. At each site, units are to be excavated within the right-of-way. The units are to be placed so as to define the site area, to enhance the understanding of the components and features present in the site, and to mitigate the impact of the construction.

To also perform archaeological monitoring of the lighting trenching and solar light installations during the construction in the presence of a local First Nations representative. It is a requirement in B.C. that a First Nations representative from one or both of the nearby First Nation reserves must be on site during construction trenching/archaeological monitoring. Fort Rodd Hill managers can arrange for a local FN representative if the successful contractor does not have an appropriate relationship with the local bands.

3.0 Site Mitigation Requirements

3.1 Administrative Access Road

A short stretch of trenching will be done (approximately 60m) between the Staff Residence/Garage near the Administration Building (Dwg E100). Trenching and the replacement of two power poles will be required.

3.1.1 Site 1611T

Recorded as a small shell midden, this site is located on the south side of the access road with the possibility of extending into the project area.

Mitigation: Preconstruction Testing

Site 1611T was identified as a small buried pocket shell midden, located 30m SW of the Parks Administration Building parking lot, 7m south of the access road. The site was discovered as part of an impact assessment for a waterline installation. All tests will be located within the project right of way on the north side of the access road.

In the area of the site within the trenching ROW, 5 -shovel tests are required, excavated until culturally sterile deposits are reached. Previous site testing revealed the midden recorded

cultural deposits between 0-10cm below surface. If midden deposits are encountered in the right of way testing, some of the 5 tests can be used to define the site boundaries.

Mitigation: Construction monitoring

Archaeological monitoring of the electrical trenching in the site area is required during construction.

3.2 Parking Lot

Extensive trenching (over 300m) will take place in the Parking lot area (Dwg E105). This will tie into existing Entry Kiosk Bldg and link up to the main paved walkway lighting system going south from this point.

Previous archaeological assessments conducted for utility installations over the last 30 years have shown a general scatter of historic remains with no distinct patterning. The original entrance road to the area entered the site at this location.

Mitigation: Construction Monitoring

Due to the general scatter of military era archaeological artifacts and features throughout this area, monitoring is required of construction trenching.

3.3 Upper Battery

Extensive trenching (approximately 200m) is required to light up the Upper Battery entrance area and the A.A. Gun exhibit location and involves the placement of numerous lighting fixtures (Dwg E104). A new 9m high lighting pole will be installed northeast of the AA Gun exhibit.

There are no known discrete archaeological sites in this area. Proximity to the Upper Battery however, makes the presence of numerous structural and artifact features highly likely in this area. A First Nations burial site, (**1709T**) is located 25m north of the Upper Battery Entrance area on the hillside but is outside of the project area.

Mitigation: Preconstruction coring

Due to the general scatter of military era archaeological artifacts and features throughout the site, and the nearby location of a First Nations burial **site 1709T**, archaeological soil coring is required. It is estimated that approximately 40 cores are required along the proposed right of way. Shovel tests (n=5) will be required if cultural remains are encountered to define the spatial extent of the cultural deposits.

Mitigation: Construction Monitoring

Due to the general scatter of military era archaeological artifacts and features throughout the area, and the nearby location of a First Nations burial, archaeological monitoring is required.

3.3 WWII Hut/Warrant Officer's Quarters area

Approximately 185m of trenching required in the WWII hut/Warrant Officer's Quarters area (Dwg E103). This will involve the installation of several light fixtures with connecting trenches.

There are no known discrete archaeological sites in this area. Proximity to the nearby historic structures however, guarantees the presence of numerous structural and artifact features in this area. This has been borne out by the presence of nearby **Site 15T**, a multi component historic refuse and First Nations lithic scatter located south of the Fitter's shop. Although outside of the construction zone, the presence of this artifact scatter south of the construction zone indicates further archaeological features will likely be found throughout the project area as well.

Mitigation: Preconstruction coring

Due to the general scatter of military era archaeological artifacts and features throughout the area, and the nearby location of a First Nations and historic **site 15T**, archaeological soil coring is required. It is estimated that approximately 40 cores are required along the proposed right of way. Shovel tests (n=5) will be required if cultural remains are encountered to define the spatial extent of the cultural deposits.

Mitigation: Construction Monitoring

Due to the general scatter of military era archaeological artifacts and features throughout the area, and the nearby location of a First Nations and historic **site 15T**, archaeological monitoring is required.

3.4 Lower Battery and Canteen

The Lower battery and Canteen area will have approximately 160m of trenching required for the lighting installation (Dwg E102). Some of the work here will utilize the historic buildings for carrying the wiring as much as possible to minimize ground disturbance. Proximity to the historic structures at this location however, guarantees the presence of numerous structural and artifact features in this area.

Nearby First Nations shell midden sites **12T**, **13T** and **1708T** indicate a strong First Nations presence here as well. The boundaries of these shell middens are not entirely known as they have been discovered primarily through construction project mitigations and have had no definitive efforts to determine their boundaries. Past archaeological assessments for this area has shown extensive historic archaeological remains related to the military occupation. Extensive shell midden deposits are known for the northwest (front) area of the Battery outside the battery entrance as well as east of the east wall.

3.4.1 Site 12T\13T\1708T

These are two large First Nations shell midden sites representing small villages. An additional shell midden site (1708T) is located to the northeast of the Lower Battery. As these sites are generally contiguous along the eastern foreshore, they will be considered together for the purposes of this mitigation management. These sites extend inland and upslope for an unknown distance. Shell midden deposits have been encountered both on the north and east side of the Lower Battery and throughout and likely under the General Works Compound to the northeast. It may well be that shell midden sites **14T** (located to the west) and **1708T** (located upslope and further inland from site 13T), are all spatially and culturally related.

All of the proposed trenching and solar light installations in this area are of concern for their potential impacts to these sites and the general military era cultural resources. In areas that will have trenching outside the walls (such as north and east of the Casemate Barracks at the Lower Battery, between the east outside wall of the Lower Battery and the pedestrian pathway to the lighthouse, and internally between the Guard House and the Lower Battery), archaeological testing is required. Likewise for the locations of the solar light installations along the pathway in the area east of the casemate barracks (see below Section 3.6).

Mitigation: Preconstruction coring

Due to the general scatter of military era archaeological artifacts and features throughout the area, and the nearby location of First Nations midden sites, archaeological coring is required. It is estimated that approximately 40 cores are required along the proposed right of way. In each case, when cultural remains are encountered, shovel tests (n=5) will be required to define the spatial extent of the cultural deposits.

Mitigation: Construction Monitoring

Sites 12T\13T are located immediately east of the Lower Battery. The extent of this site is not well defined and portions of this site have been previously discovered north of the battery walls during an earlier waterline break. Construction monitoring is required for the proposed trenching within this area. Due to vicinity of Sites 12T\13T to new in-ground solar lights along the pathway and type 'C2A' luminaires northeast of Casement Barracks, only hand digging is allowed in this area.

3.5 Belmont Battery and Searchlight No.7

Approximately 55m of trenching will be required north of the Belmont Battery to facilitate lighting (Dwg E101). This will involve both trenching and the installation of solar lights. In addition, approximately 70m of trenching is required to link up Searchlight No. 7 with the Lower Battery and Canteen area discussed previously in Section 3.4.

Both the Belmont Battery and Searchlight No.7 areas will impact Pre Contact archaeological **Site 14T**. This is an extensive First Nations shell midden underlying a disturbed historic layer. The site was found during a utility line installation so the exact boundaries are unknown. It is highly likely that any trenching on this landform will encounter the site. Proximity to the Belmont Battery guarantees the presence of numerous structural and artifact features in this area.

3.5.1 Site 14T

This is a moderate sized First Nations shell midden site. The exact size of the site remains unknown at this time as additional testing was recommended to determine the site's spatial extents at the time of recording but never accomplished. The site was previously disturbed by utility line trenching in 1982. Sites **12, 13 and 1708T** located to the northeast of the Lower Battery, are generally contiguous and likely related to **Site 14T**.

Site 14T lies in the gully between the Belmont Battery and Searchlight No.7. It is unknown what the site boundaries are. Both the proposed trenching northeast of the Belmont Battery and between the Canteen and Searchlight No. 7 have the potential to impact **Site 14T**.

Mitigation: Preconstruction Testing/coring

The extent of this site is not well defined. Intensive coring is required for the proposed trenching in the site area to both determine the site boundaries and to locate artifact/feature locations with the ROW. It is estimated that this will require 30 cores divided between the two areas along the trenching right of way, i.e. 10 cores to be placed northeast of the Belmont Battery and 20 cores to be placed on the lower stretch between Searchlight No. 7 towards the Canteen. Shovel tests (n=5) will be required in each case if cultural remains are encountered to define the spatial extent of the cultural deposits.

Mitigation: Construction Monitoring

Construction monitoring is required for the proposed trenching within the site area.

3.6 Fisgard Lighthouse and causeway

Solar lighting will be installed along the pathway east of the Lower Battery to travel down the west side of the pathway to connect with the historic lighthouse buildings. Approximately 260m linear of distance will be used to install numerous of solar lighting receptacles. In addition, a short trench will be excavated in previously disturbed soils between two of the buildings.

Two known archaeological sites are at risk to this activity. First Nations midden **Sites 12T and 13T** are located east and south of the Lower Battery as discussed previously. In addition,

National Historic Site Fisgard Lighthouse (**Site 9T**) has been previously archaeologically investigated revealing an extensive layer of historic artifacts and features on Fisgard Island.

Mitigation: Preconstruction Testing/coring.

As previously discussed under Section 3.4 for the Lower Battery, the solar lighting installations will pass by the east wall of the Lower Battery within the bounds of **Sites 12/13T** after which it will descend the causeway to end at the buildings at the Fisgard Lighthouse. An additional 20 soil cores are required to determine whether there are intact shell midden deposits along the solar lighting right of way. Shovel tests (n=5) will be required in each case if cultural remains are encountered to define the spatial extent of the cultural deposits. An additional 10 cores will be required at the southern terminus of the solar lighting within the bounds of Fisgard Lighthouse NHS. Shovel tests (n=5) will be required in each case if cultural remains are encountered to define the spatial extent of the cultural deposits.

Mitigation: Construction Archaeological Monitoring

The proposed trenching between buildings at the Fisgard Lighthouse will take place in previously disturbed soils that have been previously archaeologically investigated and will require archaeological monitoring.

3.7 Pathway lighting-site wide

The overall core site area that has been slated for pathway lighting (as outlined in plan E106) is included in this Statement of Work as it has the potential to impact cultural resource at each light location. Plans call for the installation of at least 150 solar lights to be installed in individual pits measuring 12 inches wide by 6 inches deep.

Specifically, the pathway solar lighting as outlined in Dwg E106 extending from the parking lot to the Lower Battery and Belmont Battery will require archaeological monitoring. The solar pathway to Fisgard Island will be also illuminated but other than those areas outlined in Section 3.6, monitoring will not be required as the causeway is comprised of fill material.

Mitigation: Preconstruction Coring

If the solar lighting installation along the pathways are installed either within the gravel fill material of the pathways, then **coring** will **not** be required. These areas must be demonstrably within non-cultural fill material. **Otherwise**, it is required to place cores every 5m along the solar lighting right of way. Shovel tests (n=5) will be required in each case if cultural remains are encountered to define the spatial extent of the cultural deposits.

Mitigation: Construction Archaeological Monitoring

If the solar lighting installation along the pathways are installed either within the gravel fill material of the pathways, then **monitoring** will **not** be required. These areas must be demonstrably within non-cultural fill material. Otherwise, archaeological monitoring is required.

4.0 Consultant Responsibilities

Consultant responsibilities for the project shall include:

General Responsibilities

1. evaluation of the scientific, cultural and interpretive potential of the sites
2. a complete inventory and catalogue of artifacts and features, and all corresponding field documentation
3. final reporting which outlines all of the above as well as project results and recommendations

Liability Insurance / Safe Work

1. The Consultant will carry adequate insurance for the proposed project fieldwork; at minimum, the Consultant must possess or obtain Comprehensive General Liability insurance in an amount of \$2,000,000 inclusive per occurrence, insuring against bodily injury, personal injury and property damage including loss of use thereof. As well, the Consultant must also possess Automobile Liability insurance on all vehicles owned, operated, or licensed in the name of the Consultant in an amount not less than \$1,000,000, and "All Risk" valuable papers insurance.
2. Submission of a detailed health and safety plan for the proposed project. This will include emergency contact information and emergency procedures.

4.1 Archaeological Mitigation: General

1. All investigations and analyses must comply with the *Standards and Guidelines for the Conservation of Historic Places in Canada*, and more specifically *Parks Canada Guidelines for the Management of Archaeological Resources* and the *Parks Canada Cultural Resource Management Policy*.
2. Decisions made by the consultant will be consistent with professional standards and guidelines.
3. Human remains are not considered archaeological resources. Should human remains be encountered, all activities must be halted and the Departmental Representative and Field Unit Superintendent must be notified. The archaeologist must await further direction from the Departmental Representative and/ or Field Unit Superintendent.
4. All cemeteries, burial grounds, human remains, funerary objects, and grave markers found in the project area are subject to the *Management Directive 2.3.1: Human Remains, Cemeteries and Burial Grounds* (Parks Canada 2000). The directive applies to all human remains, and their associated sites and material culture, Aboriginal and non-Aboriginal alike.
5. All archaeological data and artifacts collected in the field are the property of the Crown. The artifacts and records are considered to be on loan to the consultant until the archaeological work and final archaeological report are completed, in accordance with the allotted time period specified in the contract. The consultant is legally responsible for all field data, artifacts, etc. while in the care of the consultant. Electronic data (maps, artifact catalogues, digital photo catalogues etc.) must be submitted in the format specified by Parks Canada. It is the consultant's responsibility to ensure that all data is submitted in the proper format.
6. Artifacts recovered from the field are subject to the *Management Directive 2.1.22 Collection Management System: Conservation Services, Guidelines for Archaeological Field Conservation* (Parks Canada 1991)
7. The consultant will be made aware that Parks Canada Agency is the owner of the site and has authority to give direction during this portion of the site investigation with respect to the proposed project. The consultant must also be aware that the work and recommendations of the consultant will be subject to the review of the Department Representative.
8. The consultant must advise, 48 hours in advance, the Departmental Representative of any adjustments in work location, work plan and method, implementation schedule, etc., during the course of the project.
9. The site must continuously be available for inspection by the Departmental Representative and/ or Field Unit Superintendent, who have authority to stop the work.
10. Consultants must have the approval of the Departmental Representative for any and all media releases, interviews, web site content or other media associated with the project. The Departmental Representative requires 24-72 hours notice prior to any form of media

being released to the public to consult with personnel from Parks Canada External Relations.

4.2 Documentation:

The consultant must use the Parks Canada provenience system and conform at a minimum to the documentation standards outlined in *Parks Canada Recording Manual: Excavation and Surveys*.

1. The stratigraphy of all tests and excavation units must be documented with written descriptions and photographs. Information collected should include, but not necessarily be limited to, inclusions, colour, etc.
2. Significant features and/or artifacts must be documented, photographed and mapped in situ whenever possible.
3. Each location where archaeological work occurs must be photographed prior to and after excavation.
4. The consultant must record, catalogue, pack and deliver to professional archaeological standards all archaeological resources of heritage value including but not limited to field notes, drawings, elevations, maps and photographs according to Parks Canada's standards.
5. Site number and other relevant Parks Canada provenience information will be provided to the consultant by Parks Canada Terrestrial Archaeology at the beginning of the contract with start numbers and instructions on their use in cataloguing artifacts, maps, drawings, field notes, photographs, etc. The consultant must validate with Parks Canada Terrestrial Archaeology how they will use the Parks Canada provenience with the exact numbers they will use (i.e., operations, suboperations, lots, artifact catalogues, cataloging photographs, maps etc.). The consultant must present a plan outlining their use of Operation(s), Sub-operations and Lots to the Parks Canada Department Representative for approval. All errors that do not respect the provenience system and start numbers provided must be corrected by the consultant at their cost.
6. Photographs must be digital in jpg or tiff format and in high resolution to support 8x10", 300dpi or equivalent. Mapping information must be geo-referenced in a format that can be incorporated into ESRI ArchGIS. Maps and drawings must clearly illustrate the locations of all excavation units both positive and negative. The consultant will provide GPS locations for all test pits, excavation units, and any incidental finds.
7. All artifacts will be washed, bagged, and catalogued according to provenience, specifically by lot number. Artifacts recovered will be assessed and appropriate conservation methods adopted in the field to deter any deterioration of the artifact. The consultant will provide a detailed inventory of all artifacts recovered from all investigations. The inventory will include: provenience, object, function, material, diagnostic attributes, # of pieces. The format for submission of database information and mapping will be determined by the Department Representative for Parks Canada.
8. If electronic field recording is implemented a pdf of all notes should be submitted.

4.3 Prior to commencement of field work

1. The Principle Investigator of the archaeological consultant company must apply online for a Parks Canada Research and Collection Permit and abide by all terms and conditions specified in the permit. The application can be found at www.pc.gc.ca/apps/rps/RpsApplIns_e.asp. As the primary permit holder, the principal investigator, representing the consultant, and the consultant are responsible for all responsibilities identified in the general conditions and any special conditions identified within the permit. The archaeological consultant will follow Parks Canada "Guidelines for the Management of Archaeological Resources" rather than provincial standards.

2. The consultant must meet once with the Project Manager and other Parks Canada staff (including a terrestrial archaeology representative) as appropriate to ensure the project requirements are understood, identify any issues and establish a communication protocol for the duration of the project.
3. The consultant must review the archaeological background material provided to them by Parks Canada to facilitate a working knowledge of the site and the identification of archaeological resources encountered during the investigations.

5.0 Reporting

1. Letter of Clearance
Unless otherwise agreed to in writing, within fourteen (14) days after completion of the field work portion of the project the consultant must provide a letter to the Parks Canada project manager or Terrestrial archaeologist indicating summary of findings and recommendations as to any locations require further archaeological mitigation measures such as monitoring. This letter will serve as the preliminary or interim archaeological report.
2. Final Report
 1. Following the completion of the project the Consultant must produce a final report, to be submitted within ninety (90) days after the completion of the project. The report at a minimum must include:
 1. Introduction: stating the scope of the archaeological work undertaken.
 2. Historical Background: outlining the temporal phases of occupation for the study area.
 3. Method: describing documentary, field, laboratory, and analytical methods employed.
 4. Results: detailing the archaeological resources identified, including interpretation and analysis of the archaeological resources encountered in the study area.
 5. Interpretation: of stratigraphic sequence and temporal phasing for the archaeological deposits encountered as applicable to the project and associated discipline of archaeology.
 6. Interpretation: description of artifacts and archaeological resources collected in the field.
 7. Conclusions: what archaeological and/or cultural resources are present, the significance to be inferred from their presence and their locations.
 8. Mitigation measures: indicate if additional investigations required, monitoring or recording required to preserve sufficient record of the archaeological resources.
 2. The final report for the archaeological work is to be signed and submitted by the Principle Investigator, who was granted the Parks Canada Research and Collection Permit. The Final report will be reviewed and approved by Parks Canada.
 3. Three (3) bound originals of all final reports and one unbound, single-sided original of each final report, suitable for reproduction and distribution, will be submitted to the Parks Canada project manager.
 4. Unless otherwise specified, all final reports, including embedded images and tables, will also be submitted on a DVD-ROM or hard drive and must be:
 1. Attached to each paper copy report;
 2. Free of computer viruses;
 3. Formatted and accurately matched to the paper versions. Electronic versions that do not accurately match the paper versions will be rejected, and correction at no extra cost will be required;

4. Submitted in Adobe Acrobat format (pdf);
 5. When creating the Adobe Acrobat format (pdf), ensure that all fonts required by the document are embedded;
 6. Submit in high resolution;
 7. It is acceptable to submit the various sections of the report as appropriately labelled and organized separate files. However, a single, consolidated file must also be submitted;
 8. Compatible with standard Microsoft Windows fonts;
 9. Clearly labeled, including title, permit number, project name, site number, consultant group name, and the date;
 10. Provide a directory key or legend for the DVD-ROM both in the packaging and in an electronic file on the DVD-ROM itself;
 11. Organize/label the DVD-ROM files in a logical, user-friendly fashion; Test the DVD-ROM before submission.
3. Artifacts
 1. All artifacts and artifact catalogues are to be delivered to Parks Canada Terrestrial Archaeology within thirty (30) days (within five (5) days, if damp or wet) of the completion of final report. Artifacts are to be processed, inventoried and packaged using archival quality materials and according to the standards of Parks Canada.
4. Field Records
 1. A copy of all original records (i.e., field notes, photographs, drawings etc.), in both paper and digital format, are to be delivered to the Parks Canada Terrestrial Archaeology within thirty (30) days of the completion of the final report.
5. Maps
 1. Maps will be included in the final report. The Consultant will provide the collected mapping data set(s) in ESRI ArchInfo GIS format or a format compatible with ESRI ArchInfo GIS to Parks Canada within thirty (30) days of completion of the final report.

6.0 Role of Parks Canada Departmental Representative

1. Provide guidance and access to the consultant on Parks Canada Standards and Guidelines, existing databases, site forms, map data and relevant background reports.
2. Periodically review the archaeological investigations to ensure the consultant abides by Parks Canada Standards and Recommendations.
3. Review and provide comments on the consultant's interim and final report for the excavation.
4. Parks Canada will provide the next provenience and catalogue numbers for artifacts and photos to the consultant.

7.0 Consultant Deliverables

1. Deliverables to be submitted to the Parks Canada Departmental Representative:
 1. A copy of all original records (field notes, photographs, drawings, files) within 30 days of completion of the fieldwork.
 2. All artifacts, catalogued and shelf-ready, along with the catalogue.
 3. High resolution digital photographs and their catalogue.
 4. GPS and GIS files documenting the excavation and features
 5. A clean digital version of the final report, as well as three bound and one unbound, single-sided paper versions, will be submitted to the Parks Canada Departmental Representative.

6. A single page summary in plain English of the project and its results, suitable for public understanding and use, accompanied by a selection of photographs illustrating the project and the finds.

8.0 Intellectual Property

1. Principal Investigator under Contract with Parks Canada – Copyright, patents and all other intellectual property rights in anything first conceived, developed or reduced to practice by the Principal Investigator under contract in the performance of the work under contract shall vest in the Principal Investigator. The Principal Investigator will grant to Canada a non-exclusive, irrevocable, world wide, and royalty-free license to use, copy or translate the work for government purposes. Copyright in any translation of the work made by Canada shall vest in Canada.

9.0 Departmental Representative(s)

Bill Perry
Archaeologist
Archaeology and History Branch
Heritage Conservation and Commemoration Directorate
Parks Canada
1300 – 635 – 8th Ave SW, Calgary, AB, T2P 3M3
Bill.perry@pc.gc.ca
Telephone 403-221-7989

Brian Smith
Federal Infrastructure Investments Project Archaeologist
Archaeology and History Branch
Heritage Conservation and Commemoration Directorate
Parks Canada
BrianJ.Smith@pc.gc.ca
Telephone (204) 984-2962

10.0 References and Attachments

Parks Canada's Guidelines for the Management of Archaeological Resources, and
Parks Canada's Archaeological Recording Manual: Excavations and Surveys
<http://www.pc.gc.ca/eng/docs/pc/guide/fp-es/index.aspx>

Parks Canada's Cultural Resource Management (CRM) Policy
<http://www.pc.gc.ca/eng/docs/pc/poli/grc-crm/index.aspx>

Standards and Guidelines for the Conservation of Historic Places in Canada
<http://www.historicplaces.ca/en/pages/standards-normes.aspx>

Management Directive 2.3.1 HUMAN REMAINS CEMETERIES AND BURIAL GROUNDS

Management Directive 2.3.3 EXPLOSIVES: ARCHAEOLOGICAL DISCOVERY

Archaeological Impact Assessment, September 2015

End.

