

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS
(Gun and Mortar Batteries)

COAST DEFENSES OF THE COLUMBIA.....
FORT. COLUMBIA, WASHINGTON.....
BATTERY... JULES ORD.....
No. of guns None Caliber Carriage None

Form 1 Corrected to June 30, 1921.

Battery commenced	Dec. 1896	Sources of electric current	Central Power Plant.
Battery completed	July 1898		
Date of transfer	July 16, 1898	Max. kw. required for lights	4.1 kw.
Material of construction	Concrete	Max. kw. required for motors	None. Not in use.
Portland or Rosendale cement	Portland		
Cost to date of transfer	\$137,298.79		
Connected to water supply	Yes	Present condition of battery	Poor.
Connected to sewer	Yes	Rooms wet or dry	Dry.
Type of latrine	Syphon		
Type of data transmission	None	How ventilated	6" dia. shafts, conical top ventilators. No ventilating doors.
Trunnion elevation in battery	#1&2, 106.20'	Remarks-	The three 8" guns for this battery have been dismantled and shipped away for use elsewhere and the carriages have been sold. Battery re-wired in 1910. No. 3 emplacement, magazine room and corridor remodelled and used for switchboard room.
Datum plane	#3 146.13'		
	M.L.L.W.		

ARMAMENT- NONE

Emplacement or mortar No	Guns or Mortars					Carriages				
	Cal.	length	model	Serial No.	Manufacturer mounted	Type	model	Serial No.	Manufacturer	Motor
1	8"	278.5"	1888	MI. 20	Wateryliet Arsenal	Engr. Dept	Dis. I. F. 1896	1	P. M. Tool Co.	None
2	8"	278.5"	do.	23	do.	do.	do. 1896	10	do.	do.
3	8"	278.5"	1888	MI 44	do.	C. A. C.	do. 1896	32	Lake E. Engr. Wks.	do.
4										
5			Guns shipped away.							
6										
7										
8										

HOISTS.

Emplacement Number	Type	Delivery	Motor							Date of transfer	Remodeled for long points
			Serial No.	Maker	H. P.	Volts	RPM	Type of control			
1	Ray-R.	back	131397	G. E. Co.	3 1/2	110	1060	Rheostat	March 1908	No	
3	do.	do.	131565	do.	3 1/2	110	1060	do.	do.	No	

Hoist in emplacement #3 removed and stored.

SUPERSEDED - See Form 1, Sept 30, 1924

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS
(Gun and Mortar Batteries)

COAST DEFENSES OF...THE COLUMBIA.....
FORT...COLUMBIA, WASHINGTON.....
BATTERY...JULES ORD.....
No. of guns None Caliber Carriage none

Form 1 Corrected to Sept. 30, 1926.

Battery commenced	Dec. 1896	Sources of electric current	Central Power Plant.
Battery completed	July 1898		
Date of transfer	July 16, 1898	Max. kw. required for lights	4.1 kw.
Material of construction	Concrete	Max. kw. required for motors	None. Not in use.
Portland or Rosendale cement	Portland		
Cost to date of transfer	\$137,298.79	Present condition of battery	Poor.
Connected to water supply	Yes	Rooms wet or dry	Wet.
Connected to sewer	Yes		
Type of latrine	Syphon	How ventilated	6" dia. shafts, conical top ventilators.
Type of data transmission	None		No ventilating doors.
Truncheon elevation in battery	#1&2, 106.20'	Remarks-	The three 8" guns for this battery have been dismantled and shipped away for use elsewhere and the carriages have been sold. Battery rewired in 1910. No.3 emplacement, magazine room and corridor remodeled and used for switchboard room.
Datum plane	#3 146.13' M.L.L.W.		

ARMAMENT

Emplacement or mortar No	Guns or Mortars						Carriages				
	Cal.	length	model	Serial No.	Manufacturer	mounted	Type	model	Serial No.	Manufacturer	Motor
1	8"	278.5"	1888	M1	20	Watervliet Arsenal	Engr.Dept.	Dis.L.F.1896	1	P.M.Pool Co.	None
2	8"	278.5"	do		23	do	do	do 1896	10	do	do
3	8"	278.5"	1888	M11	44	do	C.A.C.	do 1896	32	Lake E.Engr.Wks.	do
4	Guns removed and shipped away.						Carriages removed and sold.				
5											
6											
7											
8											

HOISTS.

Emplacement Number	Type	Delivery	Motor						Date of transfer	Remodeled for long points
			Serial No.	Maker	H.P.	Volts	RPM	Type of control		
1/2										

The hoists and motors for the three emplacements have been removed and sold by salvage officer.

REPORT OF COMPLETED WORKS-SEACOAST FORTIFICATIONS
(Battery Plan)

COAST DEFENSES OF THE COLUMBIA
FORT COLUMBIA
BATTERY JULES ORD

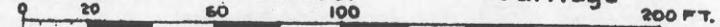
Form 7

Corrected to

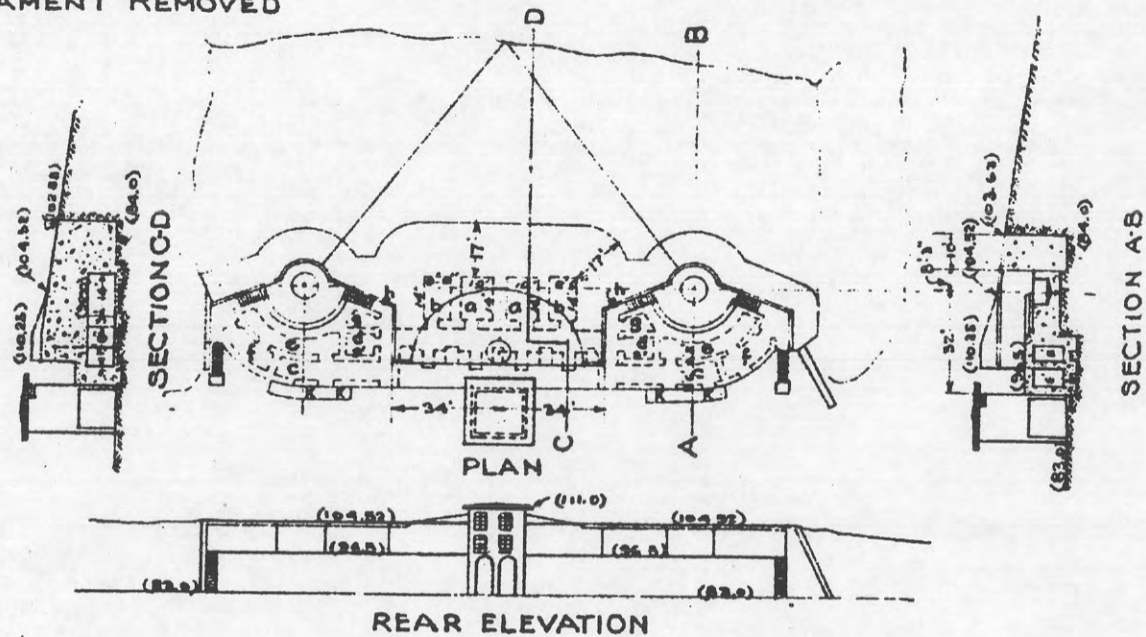
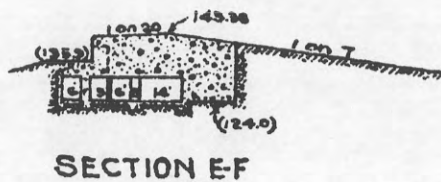
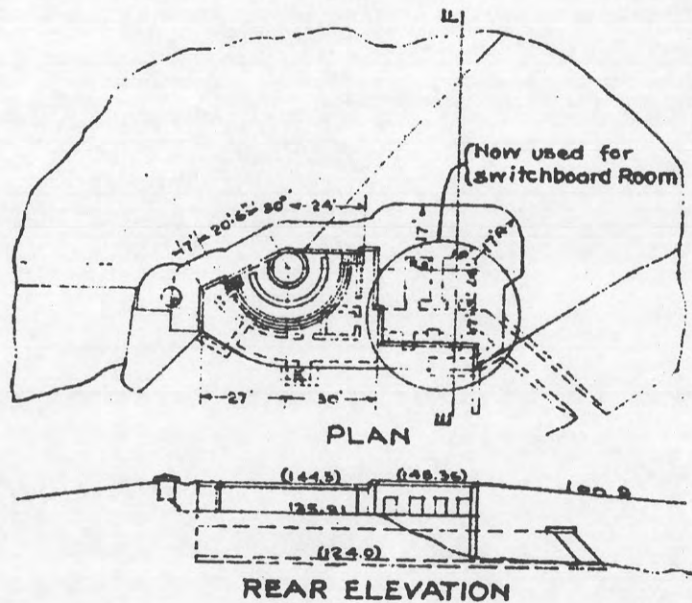
No. of Guns

Caliber

Carriage



ARMAMENT REMOVED



LEGEND

- | | |
|--------------------------|----------------------|
| a - Powder Room | f - Guard Room |
| b - Shell Room | g - Latrine |
| c - Shot Room | h - Telephone Recess |
| d - Tool Room | K - Cranes |
| e - Storage Battery Room | |

Note: Plane of Reference-Mean Lower Low Water.

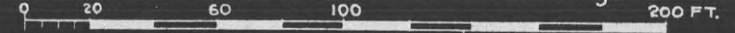
REPORT OF COMPLETED WORKS-SEACOAST FORTIFICATIONS
(Battery Plan)

COAST DEFENSES OF THE COLUMBIA
FORT COLUMBIA
BATTERY JULES ORD

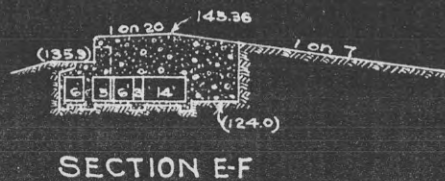
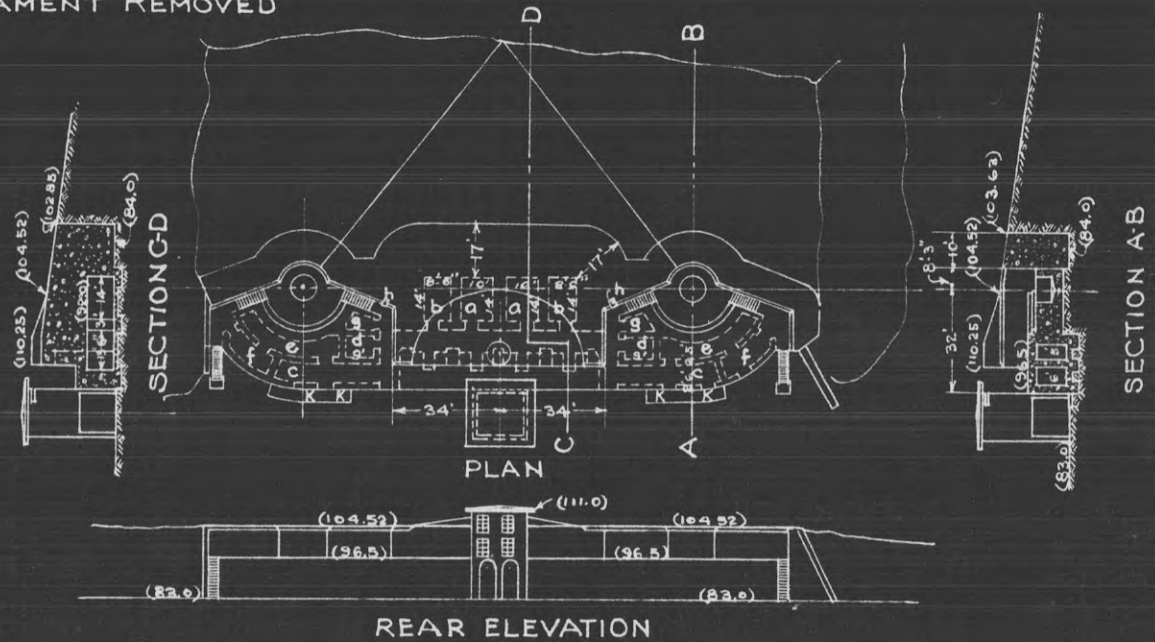
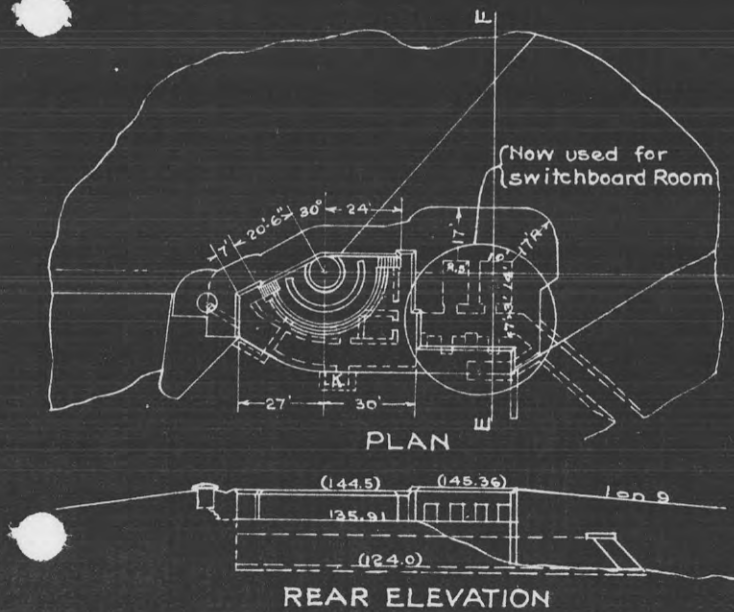
Form 7

Corrected to

No. of Guns Caliber Carriage



ARMAMENT REMOVED



LEGEND

- | | |
|--------------------------|----------------------|
| a - Powder Room | f - Guard Room |
| b - Shell Room | g - Latrine |
| c - Shot Room | h - Telephone Recess |
| d - Tool Room | K - Cranes |
| e - Storage Battery Room | |

Note: Plane of Reference-Mean Lower Low Water.

COAST DEFENSES OF Columbia.

FORT Columbia BATTERY Ord No. of GUNS: 3 CALIBER: 8"

	EMPLACEMENT NUMBER 1	EMPLACEMENT NUMBER 2	EMPLACEMENT NUMBER 3	EMPLACEMENT NUMBER 4
1-a Azimuth.	284°11'29"	307°04'30"	298°11'36"	
b Distance.	34246.46 ft.	124.21 ft.	514.47 ft	
2-a Model of Gun	1888 M I	1888 M I	1888 M II	
b " " Carriage	L.F.1896	L.F.1896	L.F.1896	
c Type of " "	Dis.	Dis.	Dis.	
3- Elevations of				
a Gun trunnions (in battery)	106.20	106.20	146.13	
b Interior crest.	104.52	104.52	144.47	
c Loading platform.	96.5	96.5	136.3	
4- Angle of depression.	0°00'	0°00'	4°00'	
5- Limiting azimuths of field of fire as determined by:				
a Construction of emplacement	326 41	326 15	299 42	94 53
b Interference by adjacent emplacements	326 41	326 15	299 42	94 53
c Interference of other obstacles external to emplacement.	345 0	358 0	299 42	94 53
d Position of Ordnance stops.	326 41	326 15	299 42	94 53

NOTES

1. Azimuth and distance of emplacement No. 2 are given with reference to No. 1, of No. 3, with reference to No. 2, etc. Azimuth and distance of No. 1 are given with reference to Canby Light
 3. Above plane of M. L. L. W.
 - 5-c Nature of obstacles: High ground in rear of Battery Orenshaw, (unimportant portion of field of fire.)
 - 2-c Use one of following abbreviations or designations: Dis, Nondis, Alt, gun-III, Turret, Casemate, Ped., B.P
- Co-ordinates Gun No. 1: S. 8395.96, E. 33201.32 (Origin- Canby Light)

Frank B

E. William Neary

1900

AT. Stevens
Oct. 31, 1900

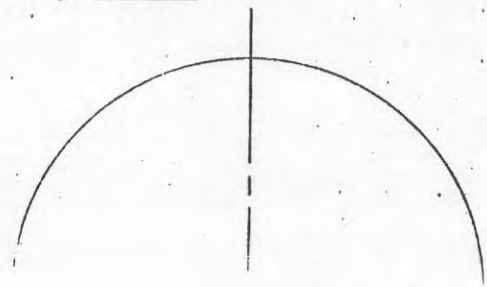
Fort Columbia, Washington.
Traversing Circle.

for
8-inch Experimental Disappearing Carriage.

Scale $\frac{1}{4}$ -inch = 1 foot.

Anchor bolts are set in accordance with "Platform Plate", furnished by the Ordnance Department. Holes in Traversing Circle are not in accordance with Plate above referred to. Discrepancy is shown on this drawing. Anchor bolts being shown thus \odot , and holes in casting thus \circ .

Oct 1900



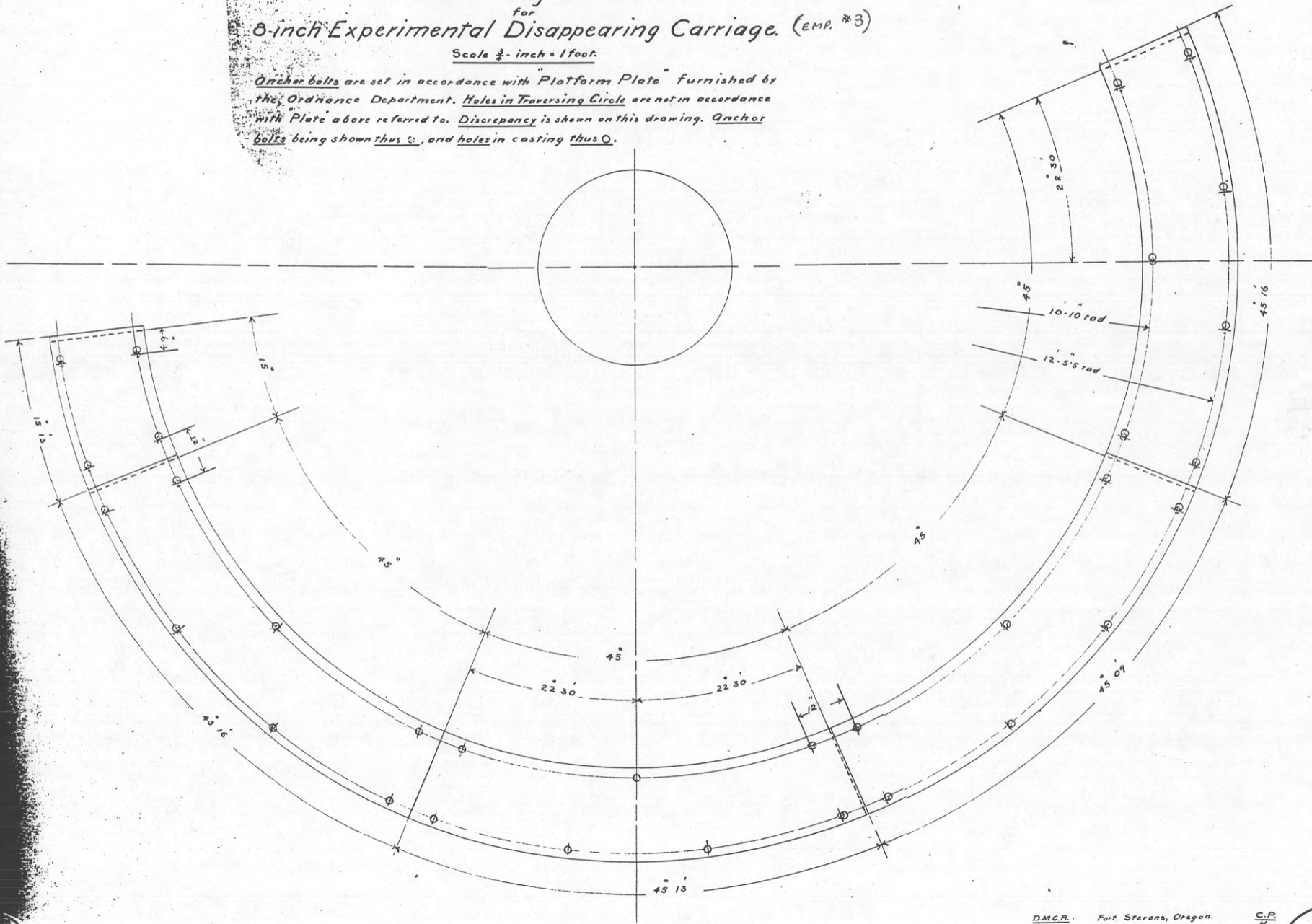
Fort Columbia, Washington.

Traversing Circle.

for
8-inch Experimental Disappearing Carriage. (EMP. #3)

Scale $\frac{1}{2}$ -inch = 1 foot.

Anchor bolts are set in accordance with "Platform Plate" furnished by the Ordnance Department. Holes in Traversing Circle are not in accordance with Plate above referred to. Discrepancy is shown on this drawing. Anchor bolts being shown thus \odot , and holes in casting thus \circ .



Obsolete

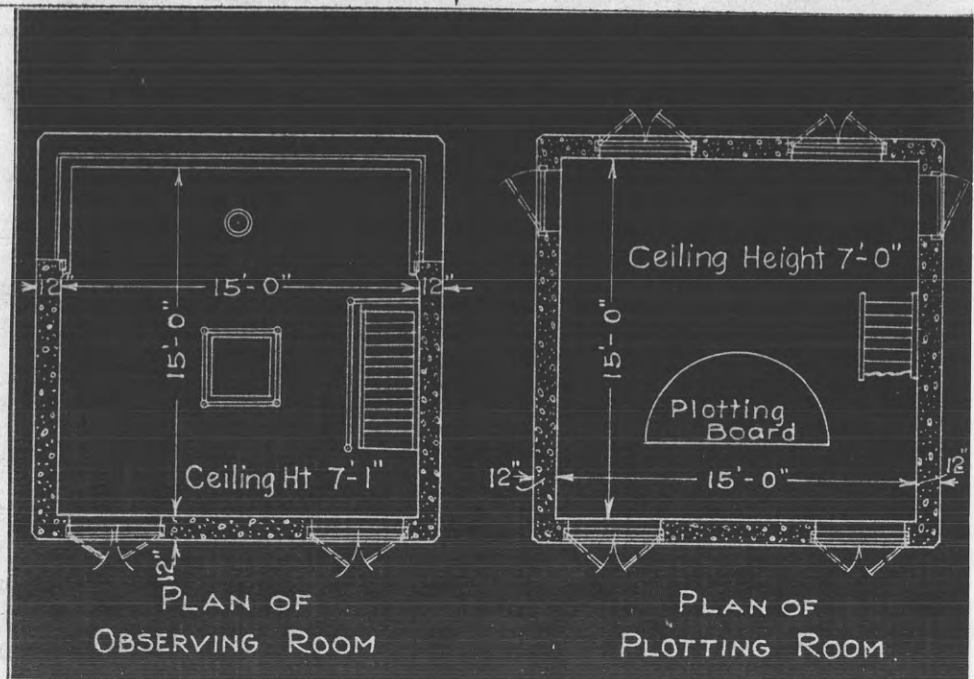
REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS.
(Fire control or Torpedo Structures)

COAST DEFENSES OF THE COLUMBIA.....
FORT. COLUMBIA, WASHINGTON.....
STRUCTURE..B! MURPHY (OLD B.C. ORD).....

Form 2.

Corrected to June 30, 1921.

<p>Location</p> <p>Date of transfer</p> <p>Cost to that date</p> <p>Type of construction (a) Roof (b) Remainder of bldg</p> <p>How concealed</p> <p>How protected</p> <p>Height above concealment</p> <p>Height above protection</p> <p>Conspicuous at.....yards</p> <p>Source of electric current</p> <p>Kilowatts required</p> <p>Type of lighting fixtures</p> <p>How heated</p> <p>Connected to water mains</p> <p>Connected to sewer</p> <p>Type of latrine</p> <p>Permanent or temporary installation</p> <p>Present condition</p> <p>Reference of site</p> <p>Reference of instrumental axis</p> <p>Type of observing inst.</p> <p>Type of plotting board</p> <p>Type and capacity of crane</p> <p>Max. dimensions of reel handled</p>	<p>In old Battery Ord</p> <p>November 20, 1911</p> <p>\$3,096.16</p> <p>In battery</p> <p>Reinforced concrete</p> <p>Reinforced concrete</p> <p>Behind battery to slot</p> <p>Behind battery to slot</p> <p>3'</p> <p>3'</p> <p>About 3 miles</p> <p>Central Power Plant</p> <p>.3 kw.</p> <p>Commercial, ceiling</p> <p>None</p> <p>No</p> <p>No</p> <p>None</p> <p>Permanent</p> <p>Good</p> <p>107.50' above M.L.L.W.</p> <p>109.08' " M.L.L.W.</p> <p>Swasey D. P. F. #220, type A-II and observing telescope</p> <p>Whistler Hearn in Bat.</p> <p>Murphy plotting room #41 model 1904.</p>	<p>Type of data transmission</p> <p>Date of transfer</p> <p>Cost of data transmission equipment</p> <p>For tide stations give description of tide gauge</p> <p>For datum points give Forts from which visible</p> <p>For dormitories give stations served</p> <p>For cable hut give S. C. type</p>	<p>B' Murphy → (P) (BC)</p>
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Obsolete

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS.
(Fire control or Torpedo Structures)

COAST DEFENSES OF THE COLUMBIA
FORT. COLUMBIA, WASHINGTON.....
STRUCTURE. NEW SWITCHBOARD ROOM. in Empl. #3...
BATTERY JULES ORD.

Form 2.

Corrected to June 30, 1921.

Location	No. 3 emplacement Battery Jules Ord, magazine room and corridor. Feb. 5, 1921.
Date of transfer	Feb. 5, 1921.
Cost to that date	\$3,615.94
Type of construction	In battery.
(a) Roof	Concrete.
(b) Remainder of bld	Concrete.
How concealed	Earth fill in front of battery.
How protected	Concrete roof & wall with earth fill to the front.
Height above concealment	None.
Height above protection	None.
Conspicuous at.....yards	Conspicuous from above only.
Source of electric current	Central Power Plant.
Kilowatts required	1.8.
Type of lighting fixtures	Commercial.
How heated	Stove.
Connected to water mains	Yes.
Connected to sewer	Yes.
Type of latrine	Syphon.
Permanent or temporary installation	Permanent.
Present condition	Good.
Reference of site	Floor about 124' above M.L.L
Reference of instrumental axis	
Type of observing inst.	
Type of plotting board	
Type and capacity of crane	
Max. dimensions of reel handled	

Type of data transmission

Date of transfer

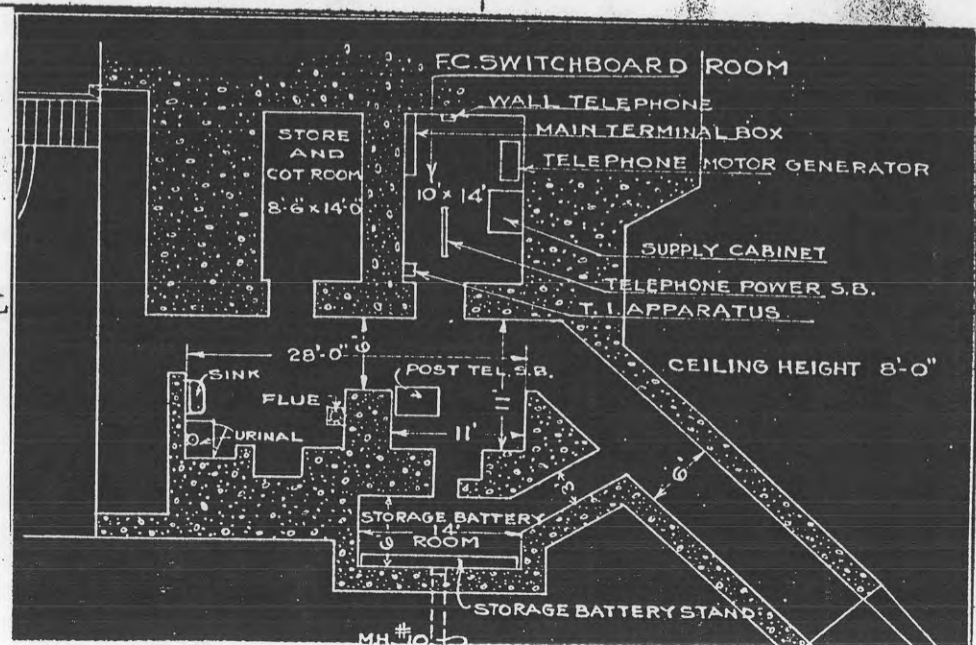
Cost of data transmission equipment

For tide stations give description of tide gauge

For datum points give Forts from which visible

For dormitories give stations served

For cable hut give S. C. type



REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS
(Gun and Mortar Batteries)

COAST DEFENSES OF THE COLUMBIA
FORT... COLUMBIA, WASHINGTON
* BATTERY WILLIAM MURPHY
No. of guns 2 Caliber 6" Carriage Dis. L.F.

Form 1 Corrected to June 30, 1921.

Battery commenced	April, 1899	Sources of electric current	Central Power Plant or Reserve Plants in battery.
Battery completed	June, 1900	Max. kw. required for lights	3.5 kw.
Date of transfer	6/29/1900	Max. kw. required for motors	None (hand operated).
Material of construction	Concrete	Present condition of battery	Good.
Portland or Rosendale cement	Portland	Rooms wet or dry	Dry.
Cost to date of transfer	\$58,623.82	How ventilated	6" dia. shafts with conical top ventilators; no ventilating doors.
Connected to water supply	Yes	Remarks-	* Battery Murphy eliminated from H.D. Project, H.D. of Col.; Armament and equipment to be disposed of. (See 400.93 (Col. River) 137794 B25 8/24/25
Connected to sewer	Yes		
Type of latrine	Syphon		
Type of data transmission	None		
Trumion elevation in battery	#1, 81.56'		
Datum plane	#2, 81.51'		
	M.L.L.W.		

ARMAMENT.

Emplacement or mortar No	Guns or Mortars				Carriages						
	Cal.	length	model	Serial No.	Manufacturer	mounted	Type	model	Serial No.	Manufacturer	Motor
1	6"	277.85"	1897M	15	Watervliet A.	C.A.C.	Dis.	L.F.1898	9	Watervliet A.	None
2	6"	277.85"	1897M	24	Watervliet A.	C.A.C.	Dis.	L.F.1898	10	Watervliet A.	None
3											
4											
5											
6											
7											
8											

HOISTS.

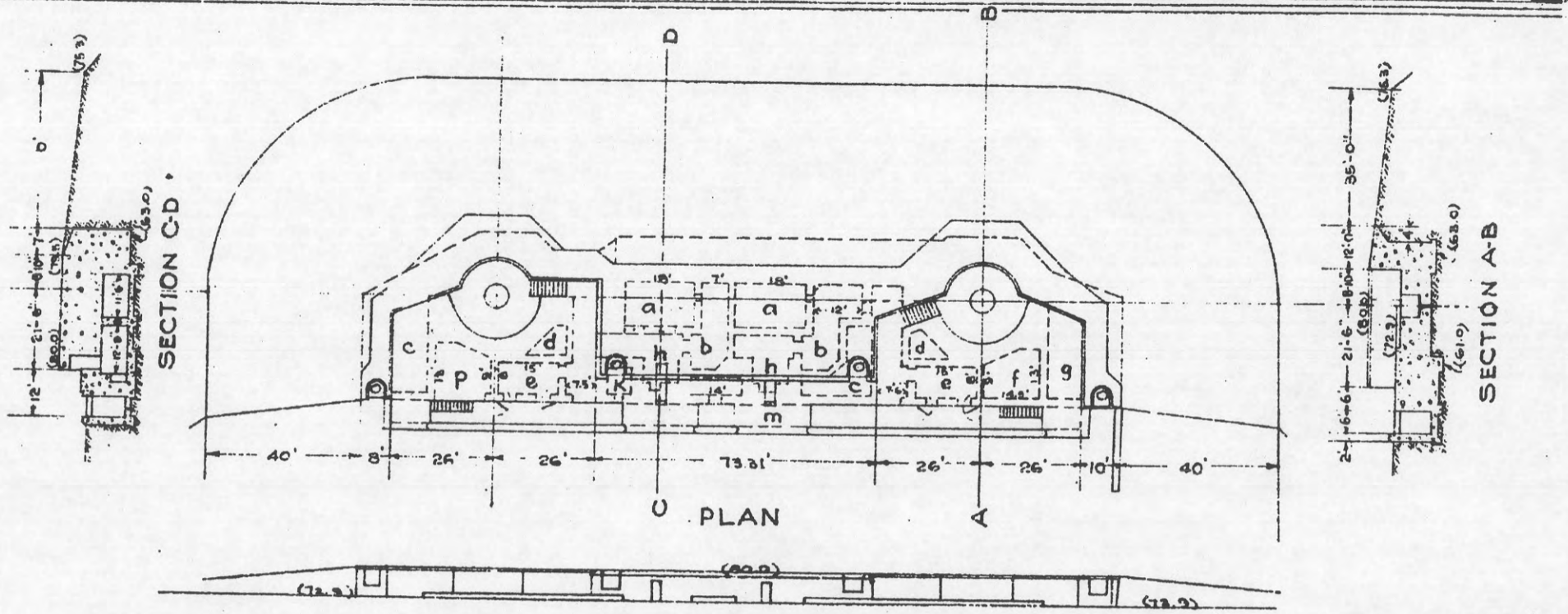
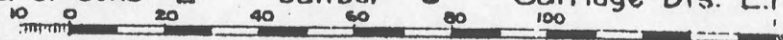
Emplacement Number	Type	Delivery	Motor					Date of transfer	Remodeled for long points
			Serial No.	Maker	H.P.	Volts	RPM		
1/2	Hodges	back	Hand operated						

REPORT OF COMPLETED WORKS-SEACOAST FORTIFICATIONS
(Battery Plan)

COAST DEFENSES OF THE COLUMBIA
FORT COLUMBIA
BATTERY WILLIAM MURPHY
No. of Guns 2 Caliber 6" Carriage "Dis." L.F.

Form 7

Corrected to



PLAN

REAR ELEVATION

LEGEND

- | | |
|-----------------|-----------------------|
| a - Magazine | g - Guard Room |
| b - Shell Room | h - Hoist |
| c - Engine Room | K - Latrine |
| d - Oil Room | m - Passage Way |
| e - Shot Room | o - Observing Station |
| f - Store Room | p - Plotting Room |

Note: Plane of Reference - Mean Lower Low Water.

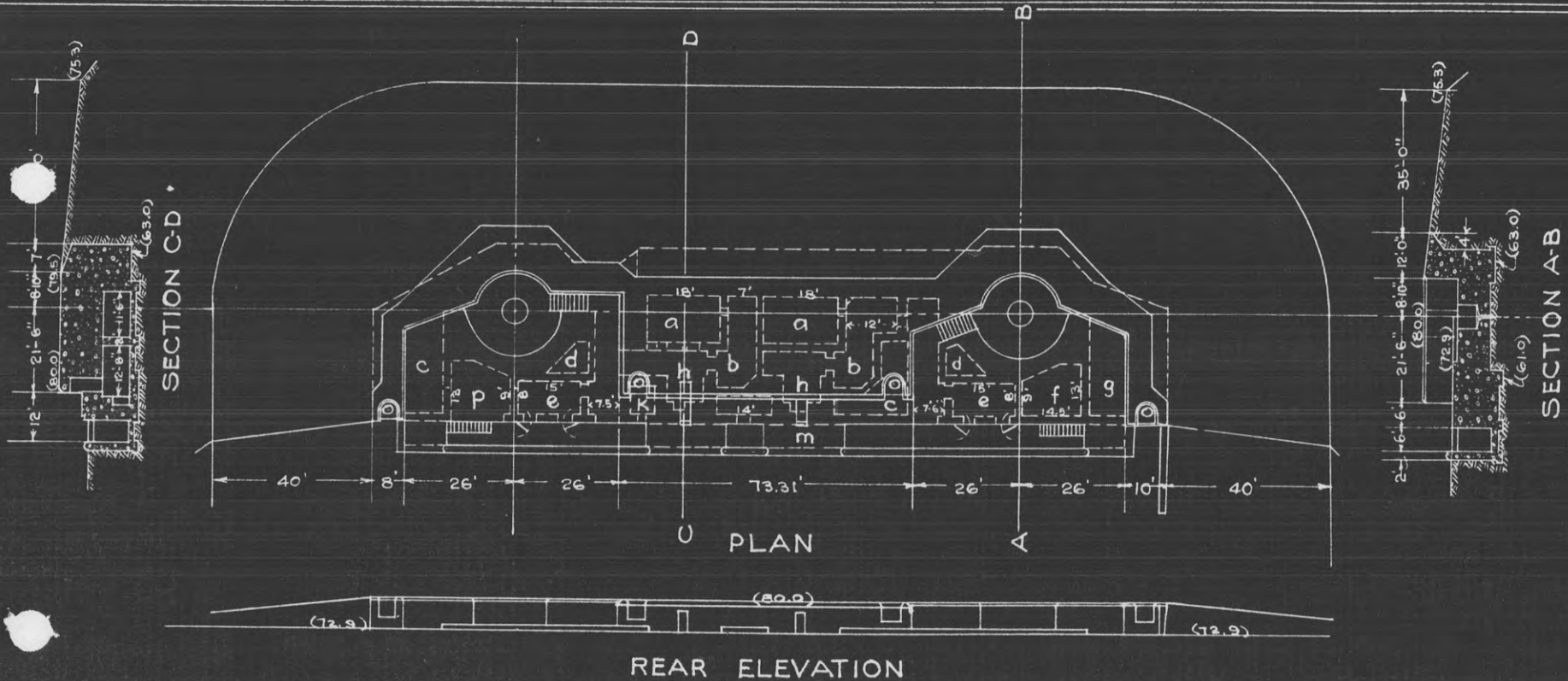
REPORT OF COMPLETED WORKS-SEACOAST FORTIFICATIONS
(Battery Plan)

COAST DEFENSES OF THE COLUMBIA
FORT COLUMBIA
BATTERY WILLIAM MURPHY

Form 7

Corrected to

No. of Guns 2 Caliber 6" Carriage "Dis." "L.F." 150ft.



LEGEND

- | | |
|-----------------|-----------------------|
| a - Magazine | g - Guard Room |
| b - Shell Room | h - Hoist |
| c - Engine Room | K - Latrine |
| d - Oil Room | m - Passage Way |
| e - Shot Room | o - Observing Station |
| f - Store Room | p - Plotting Room |

Note: Plane of Reference - Mean Lower Low Water.

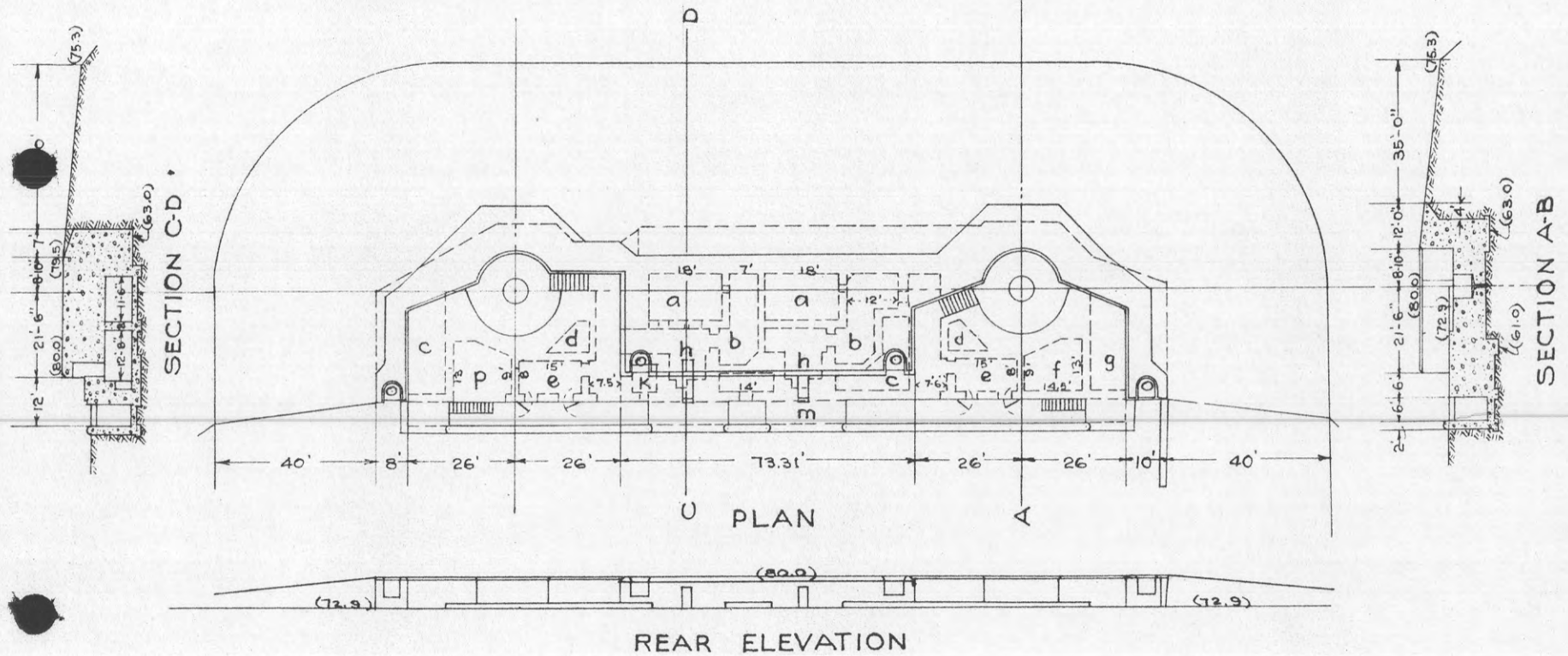
REPORT OF COMPLETED WORKS-SEACOAST FORTIFICATIONS
 (Battery Plan)

COAST DEFENSES OF THE COLUMBIA
 FORT COLUMBIA
 BATTERY WILLIAM MURPHY

Form 7

Corrected to

No. of Guns 2 Caliber 6" Carriage "Dis." "L.F." 150ft.



LEGEND

- | | |
|-----------------|-----------------------|
| a - Magazine | g - Guard Room |
| b - Shell Room | h - Hoist |
| c - Engine Room | K - Latrine |
| d - Oil Room | m - Passage Way |
| e - Shot Room | o - Observing Station |
| f - Store Room | p - Plotting Room |

Note: Plane of Reference - Mean Lower Low Water.

COAST DEFENSES OF

Columbia.

FOOT Columbia BATTERY

Murphy

NO. OF GUNS: 2 CALIBER: 6"

	EMPLACEMENT NUMBER 1		EMPLACEMENT NUMBER 2.		EMPLACEMENT NUMBER 3		EMPLACEMENT NUMBER 4	
	From	To	From	To	From	To	From	To
1-a. Azimuth	284° 57' 03"		297° 03' 40"					
b. Distance	34212.52 ft.		125.31 ft.					
2-a. Model of Gun	1897 M I		1897 M I					
b. " " Carriage	L.F. 1898		L.F. 1898					
c. Type of " "	Dis.		Dis.					
3- Elevations of								
a. Gun trunnions (in battery)	81.56		81.51					
b. Interior crest.	79.90		79.92					
c. Loading platform	72.90		72.90					
4- Angle of depression	5° 28'		5° 28'					
5- Limiting azimuths of field of fire as determined by:								
a. Construction of emplacement:	0 1	0 1	0 1	0 1	0 1	0 1	0 1	0 1
	303 50		286 10		109 53			
b. Interference by adjacent emplacements	303 50		286 10		109 53			
	110 25		286 10		109 53			
c. Interference of other obstacles external to emplacement	303 50		286 10		109 53			
	303 50		286 10		109 53			
d. Position of Ordnance stops	110 23		109 53					

NOTES.

1. Azimuth and distance of emplacement No 2 are given with reference to No 1, of No 3, with reference to No 2, etc. Azimuth and distance of No 4 are given with reference to Canby Light
3. Above plane of M. L. L. W.
- 5-c. Nature of obstacles: None.

2-c Use one of following abbreviations or designations: Dis, Nondis, Alt gun-ht, Turret, Casemate, Ped, BP

Co-ordinates Gun No. 1: S. 8826.50, E. 33055.34 (Origin- Canby Light).

B. P. of plant was furnished in compliance with Cir. Letter
G. of E. Feb. 15, 1917, (E.D. 104641).

Obsolete

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS
(Electric Plants)

COAST DEFENSES OF THE COLUMBIA.....
FORT... COLUMBIA, WASHINGTON.....
POWER FOR BATTERY WILLIAM MURPHY.....

Form 5.

Corrected to June 30, 1921.

	Serial No.	Type	Size	Mfr.	Date of transfer	Cost	Con- dition	RPM	Belt or Direct Drive	Radiator for Engine No.	Fuel	Switchboard		
												Mater- ial.	No. of Panels	
Boiler No. 1	None													
No. 2	-													
No. 3	-													
Line No. 1	2825	H-A Oil	7 h.p.	D.L. Vargne	Oct. 29, 1900		Out of Commission				Gas.			
No. 2	1519	H-A Oil	7 h.p.	do. Co.	Oct. 29, 1900						Gas.			
No. 3	-													
Generator														
No. 1	20089	1B-FH	4½ kw	125V Gen. E. Co.	Oct. 29, 1900		Good		Belt					
No. 2	20386	1B-FH	4½ kw	125V do.	Oct. 29, 1900		Good		Belt					
No. 3	-													
Radiator														
No. 1	Circulating tanks													
No. 2	-													
No. 3	-													
Motor Generator	None													
No. 1	-													
No. 2	-													
No. 3	-													
Switchboard	---	Combina-	48"x48"	--	Oct. 29, 1900							Marble	2	
Charge Battery	None	tion												
Transformer	None													
No. 1	-													
No. 2	-													
No. 3	-													
Auxiliaries	None													
No. 1	-													
No. 2	-													
No. 3	-													

About \$4,100.

DISTRIBUTION OF KW.

This plant is used as a reserve.

*Power plants removed and sold by Artillery, May 11, 1923.
Electric power for the battery is now furnished from Central Power Plant.
Sources of electric current Cancel "or Reserve Plants in battery.*

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS

HARBOR DEFENSES OF THE COLUMBIA
FORT COLUMBIA, WASHINGTON.

~~CONFIDENTIAL~~

Part I Corrected to 30 April 1945.

Battery: 246 No. of Guns: 2
Caliber: 6" Carriage: Barbette M-4.

140036
EXACTIC DIVISION
USARMC
USARMC
USARMC

Control Approval Symbol SPEKM-1

GENERAL

Battery commenced: 28 October 1942.
Battery completed: Not completed.
Date of transfer: 2 February 1945.
Cost to date of transfer: \$220,168.76
Materials of construction: Reinforced concrete.
Battery is of new construction.
Trunion elevation in battery is 82.07 feet.
Datum plane: Mean Sea Level.
Battery Directrix: S45° W.
Local co-ordinates: Gun No. 1 South 2,886.45 yds.
East 11,040.00 yds.
Gun No. 2 South 2,935.95 yds.
East 11,089.50 yds.

The origin of the local co-ordinate system being the Cape Disappointment Lighthouse at Fort Canby, Washington.

UTILITIES

WATER SUPPLY

Source: Fort Columbia has its own complete water system, the source of which is from a small stream within the Reservation.
Alternate source: None.
Size of main: This battery is served through a 1" main connecting to a 2" main of the Fort Columbia distribution system.

SEWER

Sewage disposal: Sewage from the battery casemate is carried away by the drainage system of the battery. Traps were installed on the drainage system to prevent gases from backing up into the casemate. All drainage from the battery is carried thru a 6" main direct to the river.

Latrine: Is a room 8'-0" x 12'-0" within the battery casemate. The facilities include 3 toilets, 3 urinals, 2 lavatories and one drinking fountain.

ELECTRIC POWER

Source of: Diesel driven electric generators. Procured and installed by the Ordnance Dept.
Characteristics: Voltage of 440 A.C., 3 phase.
Number of units and capacity: 3 of 125 K.W.
Max. K.W. required for utilities: 35.
Max. K.W. required for non-battle conditions: 80.
Commercial power provided: Yes. Capacity: 50 KW.
Auxiliary power unit provided: No.
Type of lighting fixtures:
Plotting & spotting rooms: Fluorescent.
Balance of casemate ceiling lights: Vapolet globes with vapor and explosion proof switches, circuit boxes, etc.

Dehumidifying Unit: None
Rooms are dry.

Ventilation: A ventilation shaft is provided to the water cooler room and draws the air from the power room, latrine, spotting room and plotting room through wall openings.

How heated: Electrically heated hot air is provided by blower type system to the latrine and plotting & spotting rooms. No heat is provided for the other rooms of the casemate. The maximum capacity of the heating system is 14,000 watts.

DATA TRANSMISSION

Type: Telephones furnished and installed by the Signal Corps.

ED Form A-162-A
16 Sept. 1943.

~~CONFIDENTIAL~~

DECLASSIFIED
DOD Dir. 5200.9, Sept. 27, 1958
NCWN by *[Signature]* date 5-20-72

Incl. #1

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS

HARBOR DEFENSES OF THE COLUMBIA
FORT COLUMBIA, WASHINGTON.

Part I Corrected to 30 April 1945.

~~CONFIDENTIAL~~

Battery: 246 No. of Guns: 2
Caliber: 6" Carriage: Barbette M-4.

Control Approval Symbol SPEKM-1

GENERAL

Battery commenced: 28 October 1942.
Battery completed: Not completed.
Date of transfer: 2 February 1945.
Cost to date of transfer: \$220,168.76
Materials of construction: Reinforced concrete.
Battery is of new construction.
Trunion elevation in battery is 82.07 feet.
Datum plane: Mean Sea Level.
Battery Directrix: S45° W.
Local co-ordinates: Gun No. 1 South 2,886.45 yds.
East 11,040.00 yds.
Gun No. 2 South 2,935.95 yds.
East 11,089.50 yds.

The origin of the local co-ordinate system being the Cape Disappointment Lighthouse at Fort Canby, Washington.

UTILITIES

WATER SUPPLY

Source: Fort Columbia has its own complete water system, the source of which is from a small stream within the Reservation.
Alternate source: None.
Size of main: This battery is served through a 1" main connecting to a 2" main of the Fort Columbia distribution system.

SEWER

Sewage disposal: Sewage from the battery casemate is carried away by the drainage system of the battery. Traps were installed on the drainage system to prevent gases from backing up into the casemate. All drainage from the battery is carried thru a 6" main direct to the river.

Latrine: Is a room 8'-0" x 12'-0" within the battery casemate. The facilities include 3 toilets, 3 urinals, 2 lavatories and one drinking fountain.

140036

ELECTRIC POWER

Source of: Diesel driven electric generators.
Procured and installed by the Ordnance Dept.
Characteristics: Voltage of 440 A.C., 3 phase.
Number of units and capacity: 3 of 125 K.W.
Max. K.W. required for utilities: 35.
Max. K.W. required for non-battle conditions: 80.
Commercial power provided: Yes. Capacity: 50 KW.
Auxiliary power unit provided: No.
Type of lighting fixtures:
Plotting & spotting rooms: Fluorescent.
Balance of casemate ceiling lights: Vapolet globes with vapor and explosion proof switches, circuit boxes, etc.

Dehumidifying Unit: None
Rooms are dry.

Ventilation: A ventilation shaft is provided to the water cooler room and draws the air from the power room, latrine, spotting room and plotting room through wall openings.

How heated: Electrically heated hot air is provided by blower type system to the latrine and plotting & spotting rooms. No heat is provided for the other rooms of the casemate. The maximum capacity of the heating system is 14,000 watts.

DATA TRANSMISSION

Type: Telephones furnished and installed by the Signal Corps.

ED Form A-162-A
16 Sept. 1943.

~~CONFIDENTIAL~~

DECLASSIFIED
DOD Dir. 5200.9, Sept. 27, 1958
NCWN by *[Signature]* date 5-20-70

Incl. # 1

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS

HARBOR DEFENSES OF THE COLUMBIA
FORT COLUMBIA, WASHINGTON.

Part I Corrected to 30 April 1945.

CONFIDENTIAL

Battery: 246 No. of Guns: 2
Caliber: 6" Carriage: Barbette M-4.

REMARKS

This battery and its facilities were constructed by Government forces. The construction was authorized by Dir. Cons. No. FS-283 and was designated Job No. Ft. Columbia FS-1. Completed supplemental work directives also covered by this report are as follows:
Dir. No. PD-T-474, Job No. Fort Stevens - 5
Dir. Cons. No. FS-1555, Job No. The Columbia FS-5
Dir. Cons. No. FS-1587, Job No. The Columbia FS-7.
Construction work was started on 28 October 1942 and the battery was transferred to troops on 2 February 1945 with the following incomplete items: Autodyne installations; Elevating mechanisms; Installation of gun tubes and Electrical wiring and connections within the shields. Construction detail plans are on file at the District Engineer's office of the Portland, Oregon District, Portland, Oregon and at the Post Engineer's office at Fort Stevens, Oregon.

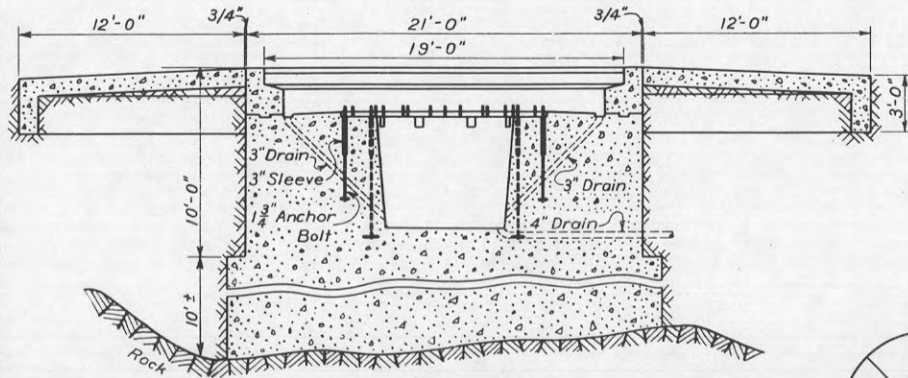
140036

ARMAMENT

Emplace- ment No.	GUNS					CARRIAGES					
	Cal.	Length	Model	Serial No.	Manufacturer	Mounted	Type	Model	Serial No.	Manufacturer	Motor
1							Barbette	M4	17	Wellman Eng. Co. Akron, Ohio	10 H.P. 70V, DC
2							Barbette	M4	18	Wellman Eng. Co. Akron, Ohio	10 H.P. 70V, DC

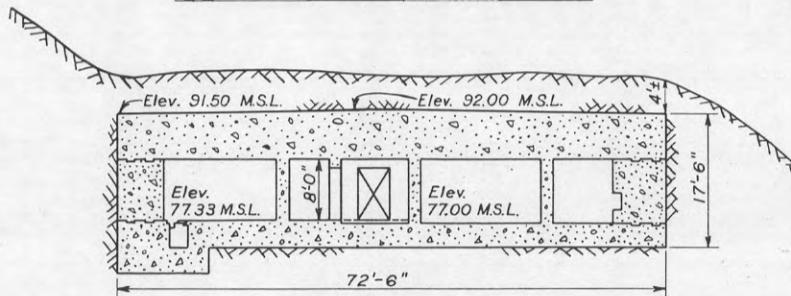
CONFIDENTIAL

ED Form A-162-A
16 Sept. 1943.



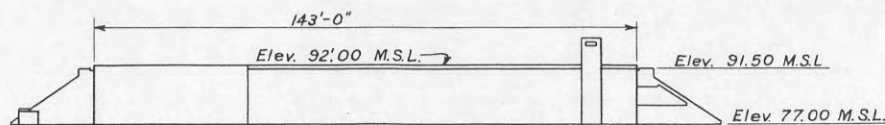
SECTION B-B

SCALE IN FEET
0 5 10 15 20



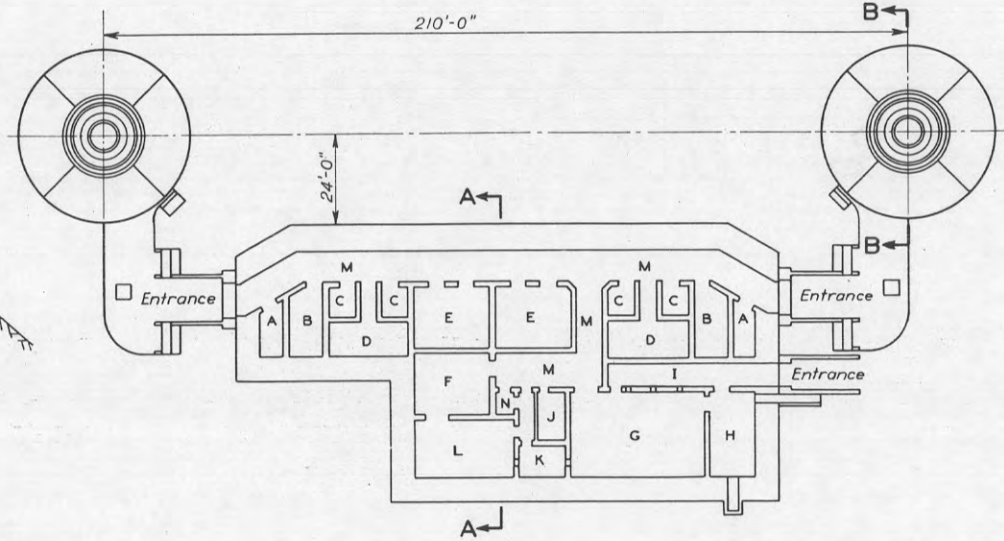
SECTION A-A

SCALE IN FEET
0 10 20 30 40 50



REAR ELEVATION

SCALE IN FEET
0 20 40 60 80 100



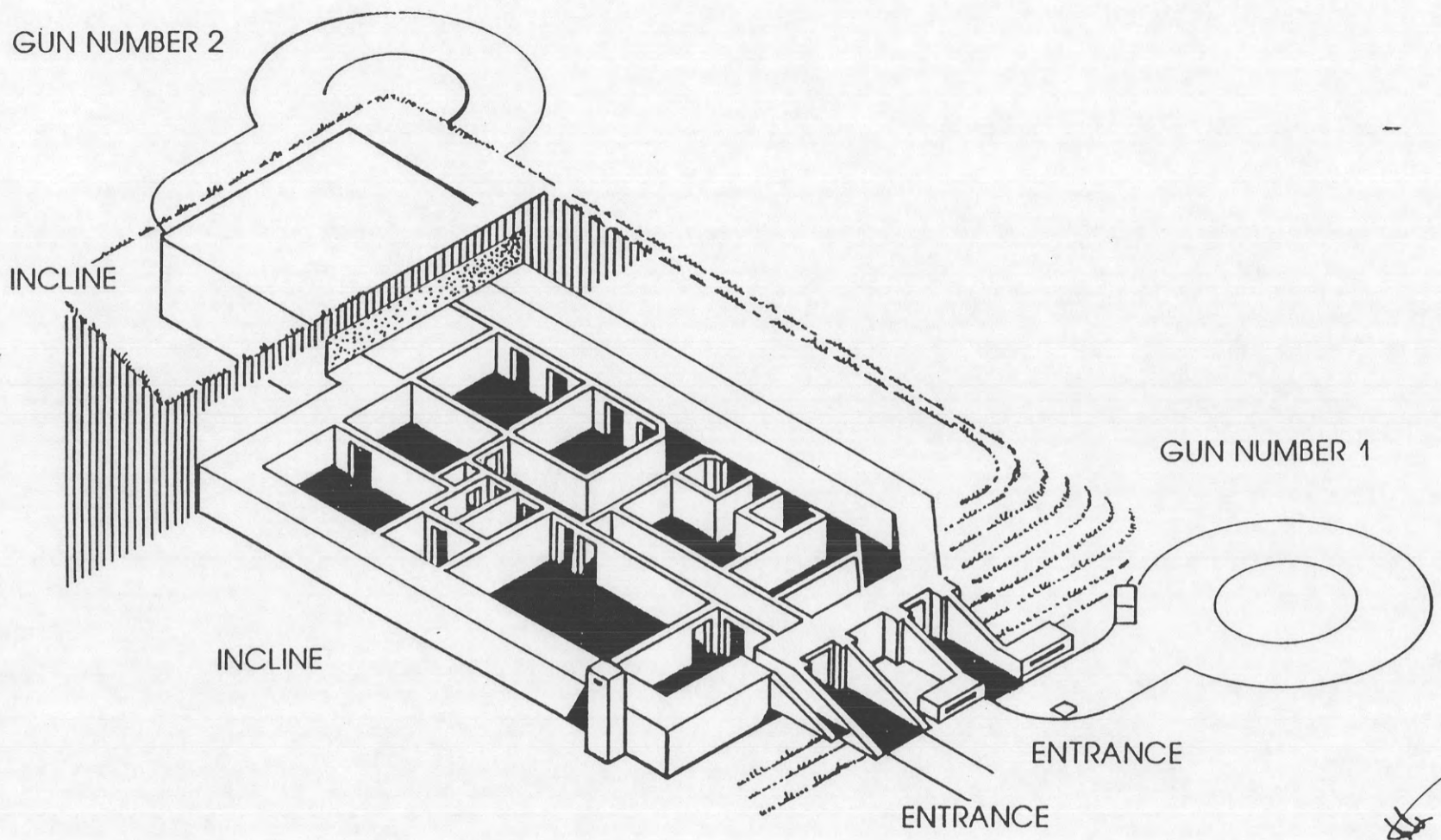
PLAN

SCALE IN FEET
0 20 40 60 80 100

- A - STOREROOM
- B - AIR COMP. & MOTOR GEN. ROOM
- C - SHELL ROOM, 7' x 8'
- D - SHELL ROOM, 9' x 21'
- E - POWDER ROOM, 16' x 20'
- F - PLOTTING ROOM, 16' x 20'
- G - POWER ROOM, 22' x 35'
- H - WATER COOLER ROOM, 12' x 22'
- I - EXHAUST GALLERY, 6' x 44'
- J - CWS ROOM, 8'-0" x 12'-6"
- K - LATRINE, 8' x 12'
- L - SWITCHBOARD ROOM, 15' x 27'
- M - CORRIDOR
- N - AIR LOCK

~~CONFIDENTIAL~~

140036

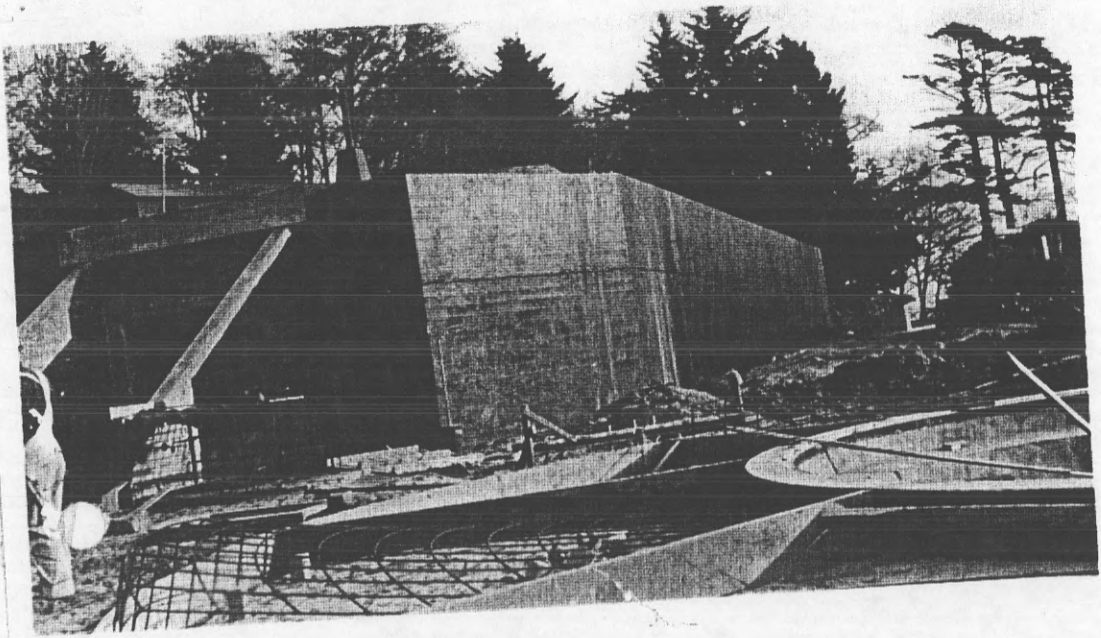


SIDE-ENTRANCE, OR FOLDED, BATTERY
BATTERY NUMBER 246

FORT COLUMBIA, WASHINGTON

Figure 7

gwb
1993



OFFICE DIVISION ENGINEER
PACIFIC DIVISION
SEP 21 1950 5:11 AM

14700

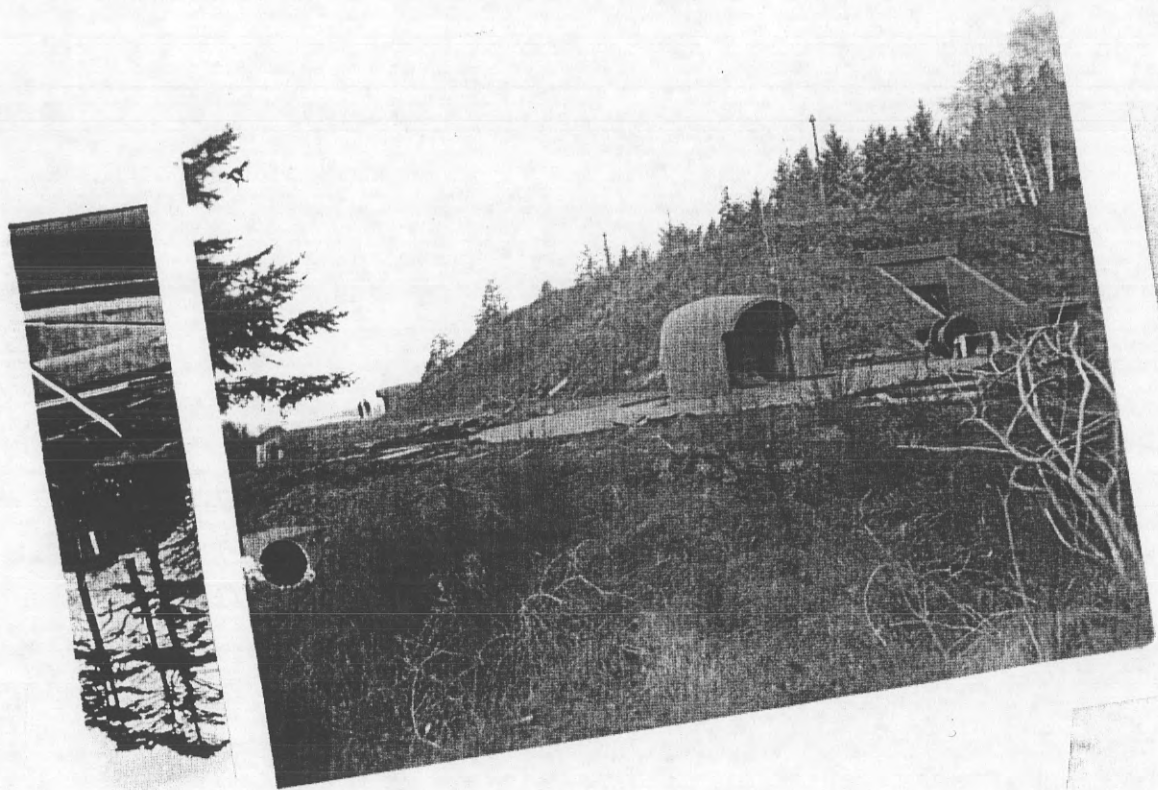
~~CONFIDENTIAL~~

As of 1 Feb. 1945

BATTERY 246

Harbor Defenses of The Columbia
Fort Columbia, Washington

CLASSIFIED
NND 735036
F.A.P.
F.A.P.

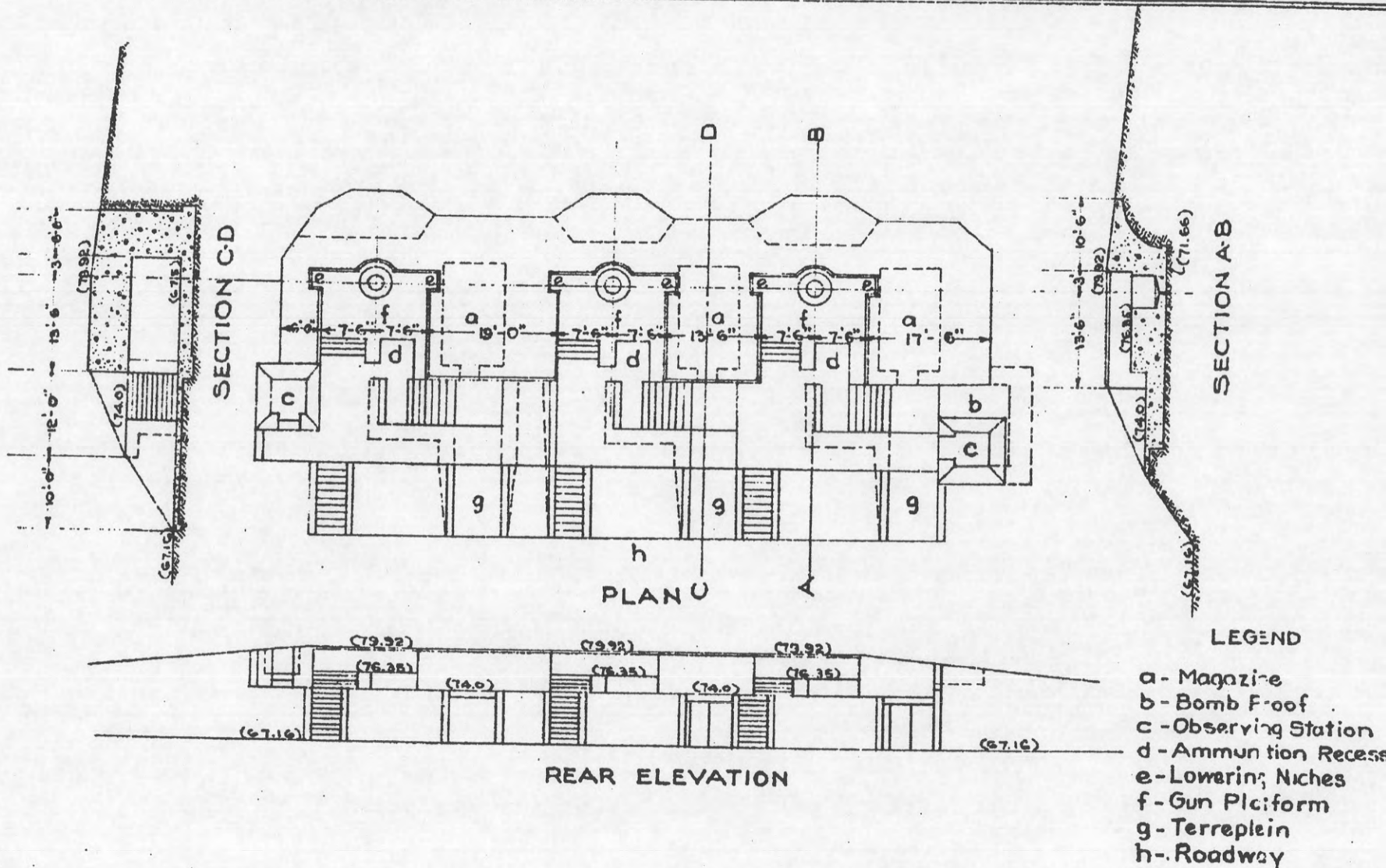
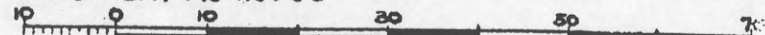


REPORT OF COMPLETED WORKS-SEACOAST FORTIFICATIONS
(Battery Plan)

COAST DEFENSES OF THE COLUMBIA
FORT COLUMBIA
BATTERY FRANK CRENSHAW
Armament Removed

Form 7.

Corrected to

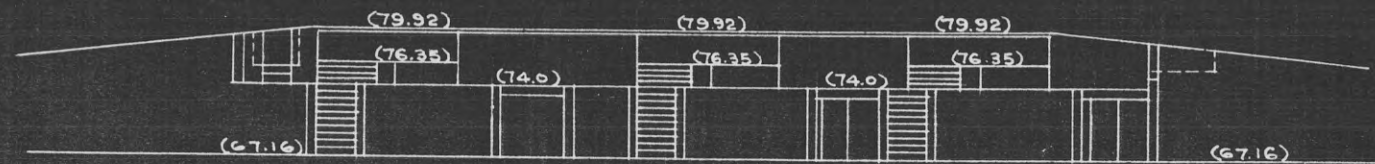
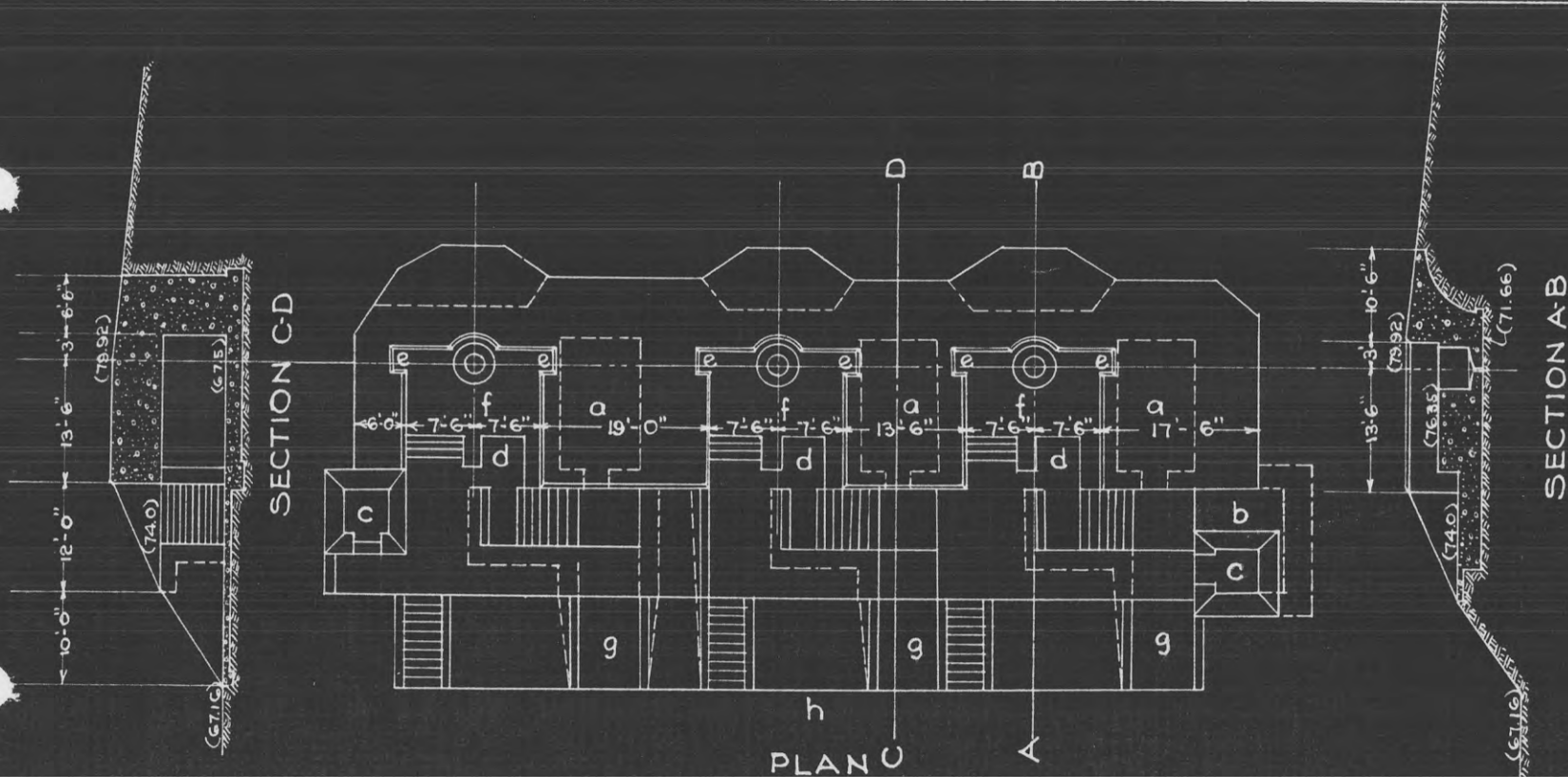


REPORT OF COMPLETED WORKS—SEACOAST FORTIFICATIONS
(Battery Plan)

COAST DEFENSES OF THE COLUMBIA
FORT COLUMBIA
BATTERY FRANK CRENSHAW
Armament Removed

Form 7.

Corrected to



- LEGEND
- a - Magazine
 - b - Bomb Proof
 - c - Observing Station
 - d - Ammunition Recess
 - e - Lowering Niches
 - f - Gun Platform
 - g - Terreplein
 - h - Roadway

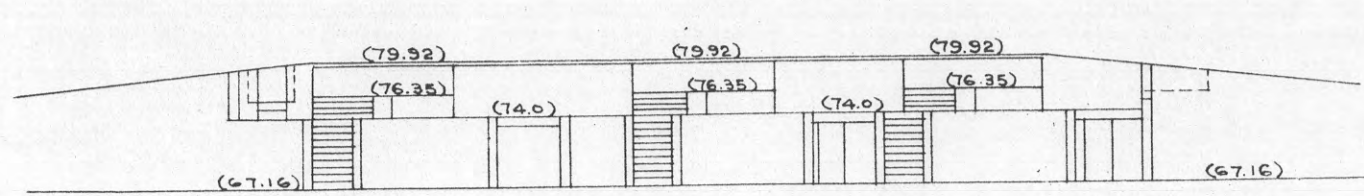
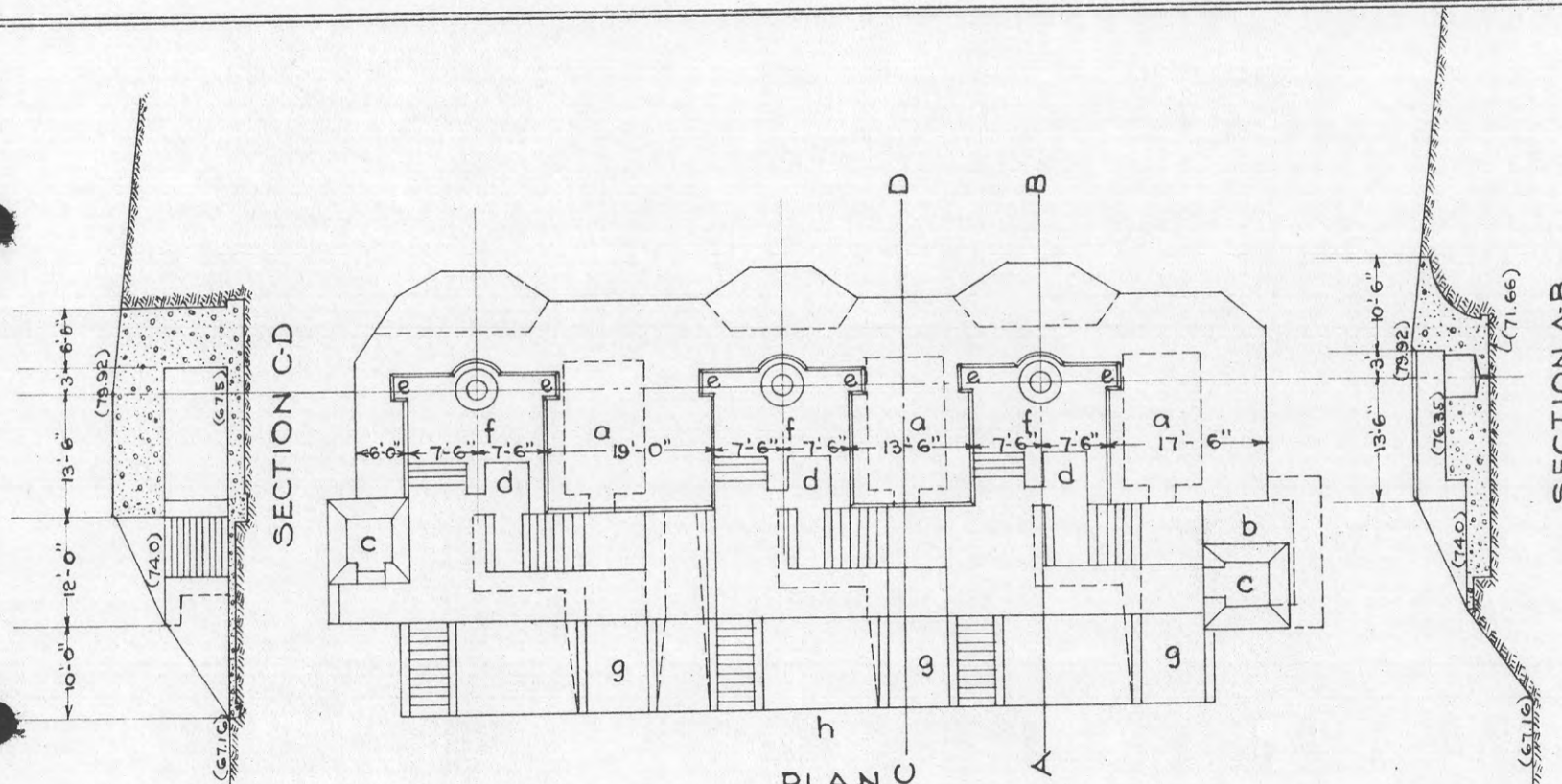
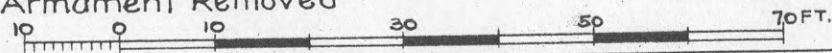
REAR ELEVATION

REPORT OF COMPLETED WORKS-SEACOAST FORTIFICATIONS
(Battery Plan)

COAST DEFENSES OF THE COLUMBIA
FORT COLUMBIA
BATTERY FRANK CRENSHAW
Armament Removed

Form 7.

Corrected to



REAR ELEVATION

LEGEND

- a - Magazine
- b - Bomb Proof
- c - Observing Station
- d - Ammunition Recess
- e - Lowering Niches
- f - Gun Platform
- g - Terreplein
- h - Roadway

COAST DEFENSES OF Columbia.

FOR T Columbia BATTERY Crenshaw NO. OF GUNS: 3 CALIBER: 5" 15-pdr.

	EMPLACEMENT NUMBER 1.		EMPLACEMENT NUMBER 2.		EMPLACEMENT NUMBER 3.		EMPLACEMENT NUMBER 4.	
	From.	To.	From.	To.	From.	To.	From.	To.
1-a. Azimuth:	294°57'17"	280°38'40"	280°13'36"					
b. Distance:	34446.81 ft.	28.86 ft.	34.02 ft.					
2-a. Model of Gun:	1898 MI	1898 MI	1898 MI					
b. " " Carriage:	Driggs-Seabury Driggs-Seabury Driggs-Seabury							
c. Type of " ":	Nondis. Nondis. Nondis.							
3- Elevations of:								
a. Gun trunnions (in battery)	80.51	80.51	80.52					
b. Interior crest.	79.85	79.85	79.85					
c. Loading platform.	76.35	76.35	76.35					
4- Angle of depression.	5°00'	5°00'	5°00'					
5- Limiting azimuths of field of fire as determined by:	From 0° 1'	To 0° 1'	From 0° 1'	To 0° 1'	From 0° 1'	To 0° 1'	From 0° 1'	To 0° 1'
a. Construction of emplacement.	280 30	100 30	280 30	100 30	280 30	100 30		
b. Interference by adjacent emplacements.	280 30	87 30	267 30	85 30	265 30	85 30		
c. Interference of other obstacles external to emplacement.	280 30	100 30	280 30	100 30	280 30	100 30		
d. Position of Ordnance stops.	no stops		no stops		no stops		no stops	

NOTES.

1. Azimuth and distance of emplacement No. 2 are given with reference to No. 1, of No. 3, with reference to No. 2, etc. Azimuth and distance of No. 1, are given with reference to Candy Light
3. Above plane of M. I. L. W.
- 5-c. Nature of obstacles: None.

2-c Use one of following abbreviations or designations: Dis, Nondis, Alt.

gun-lift, Turret, Casemate, Ped, B P

Co-ordinates Gun No. 1: S. 8889.21, E. 33280.15 (Origin- Candy Light).

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS.
(Fire control or Torpedo Structures)

COAST DEFENSES OF THE COLUMBIA
FORT. COLUMBIA, WASHINGTON.
STRUCTURE ~~OLD MINING CASEMATE (1901)~~
Switchboard Room

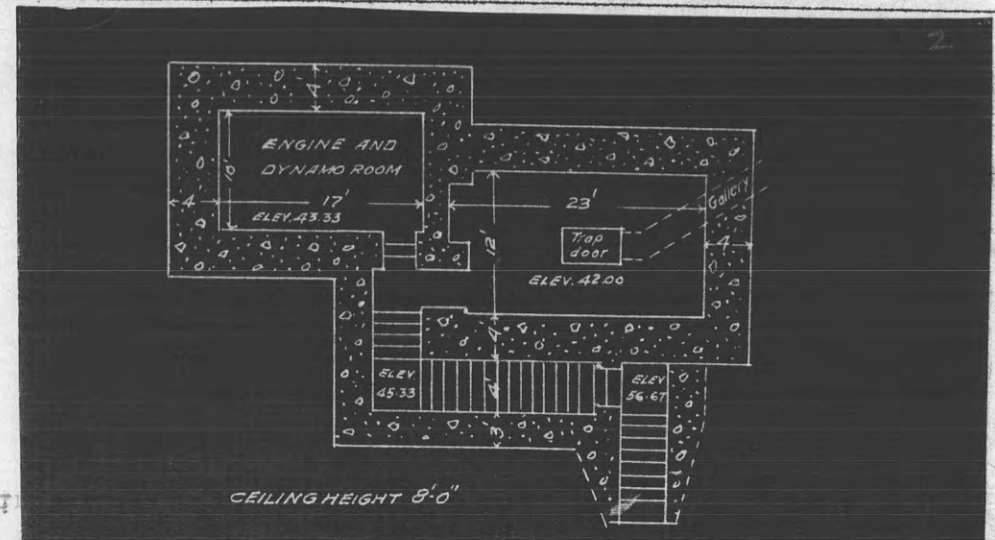
Form 2. Corrected to June 30, 1921.

Location	100' W. of Emp. #1 of Battery Murphy.	Type of data transmission	Over.
Date of transfer	April 30, 1901.	Date of transfer	
Cost to that date	\$7,885.00	Cost of data transmission equipment	
Type of construction	Manhole.	For tide stations give description of tide gauge	
(a) Roof	Concrete.	For datum points give Forts from which visible	
(b) Remainder of bl.	Concrete.	For dormitories give stations served	
How concealed	Underground.	For cable hut give S. C. type	
How protected	Underground.		Used by Coast Artillery as emergency store room

Height above concealment None.
 Height above protection None.
 Conspicuous at.....yards Top of manhole visible from above only.
 Source of electric current None.
 Kilowatts required None.
 Type of lighting fixtures None.
 How heated None.
 Connected to water mains No.
 Connected to sewer No.
 Type of latrine None.
 Permanent or temporary installation Permanent; replaced with new structure in 1911.
 Present condition Good but damp.

Superintended

Reference of site About 65' above M.L.L.W.
 Reference of instrumental axis
 Type of observing inst.
 Type of plotting board
 Type and capacity of crane
 Max. dimensions of reel handled



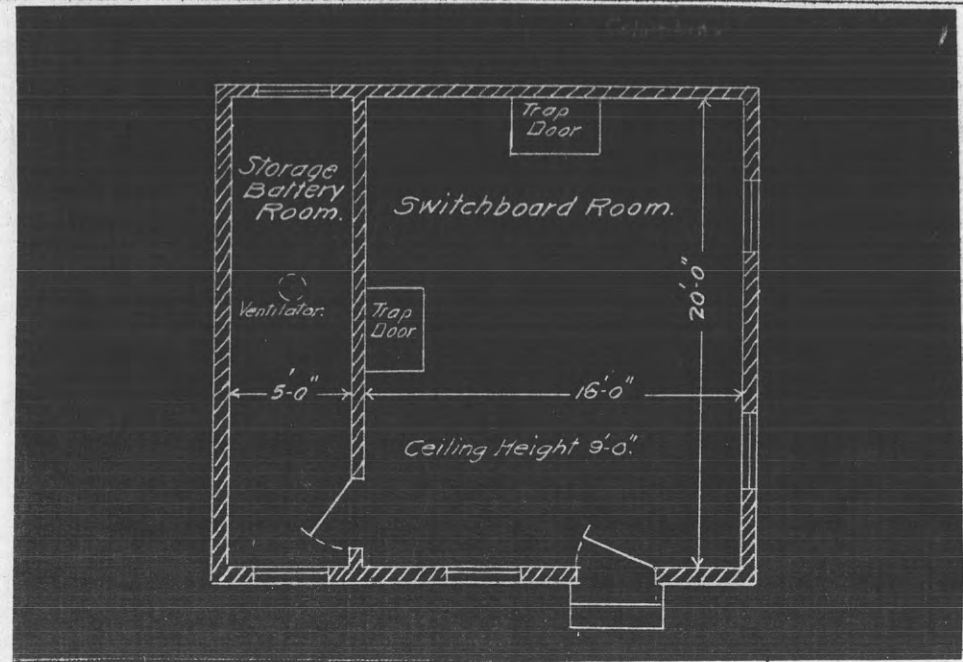
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REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS.
(Fire control or Torpedo Structures)

COAST DEFENSES OF THE COLUMBIA
FORT. COLUMBIA, WASHINGTON.
STRUCTURE..OLD SWITCHBOARD ROOM.....

Form 2. Corrected to June 30, 1921.

Location	60' east of Central Power Plant.	Type of data transmission	
Date of transfer	Mar. 30, 1911	Date of transfer	
Cost to that date	\$3,430.00	Cost of data transmission equipment	
Type of construction	Sewell type	For tide stations give description of tide gauge	
(a) Roof	Wood, asphalt, paper & gna	For datum points give Forts from which visible	
(b) Remainder of bld	Expanded metal, lath & plaster.	For dormitories give stations served	
How concealed	Behind hill and trees.	For cable hut give S. C. type	
How protected	Behind hill.		
Height above concealment	None.		
Height above protection	None.		
Conspicuous at.....yards	Visible only at site.		
Source of electric current	Central Power Plant.		
Kilowatts required	0.4 kw.		
Type of lighting fixtures	Common electric ceiling & wall fixtures.		
How heated	Stove.		
Connected to water mains	Yes.		
Connected to sewer	Yes.		
Type of latrine	Syphon.		
Permanent or temporary installation	Permanent; replaced with new switchboard room.		
Present condition	Good.		
Reference of site	About 123' above M.L.L.W.		
Reference of instrumental axis			
Type of observing inst.			
Type of plotting board			
Type and capacity of crane			
Max. dimensions of reel handled			



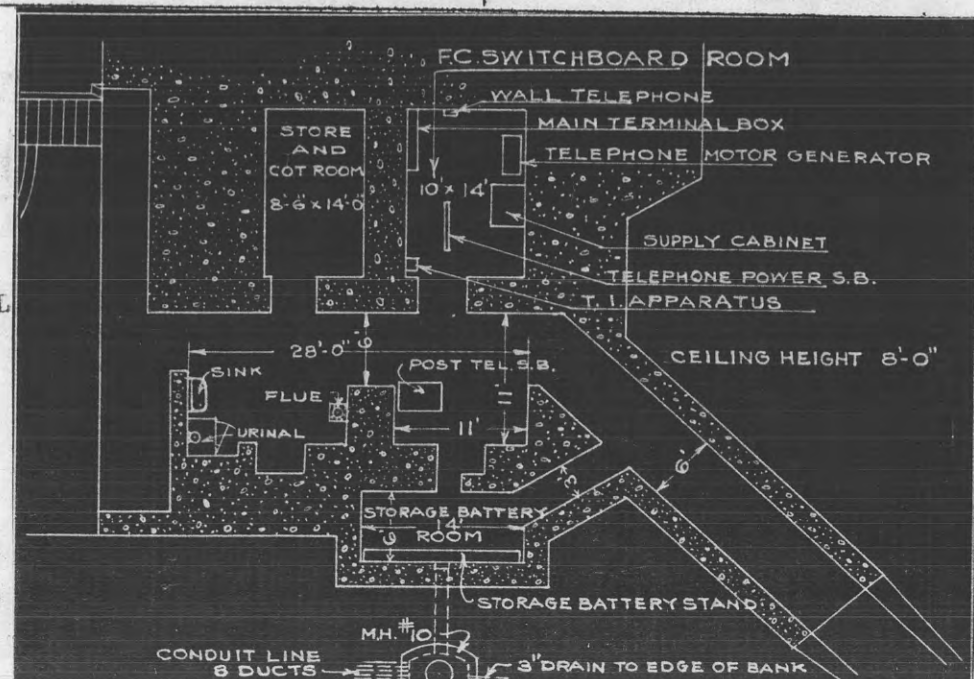
Obsolete

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS.
(Fire control or Torpedo Structures)

COAST DEFENSES OF THE COLUMBIA
FORT. COLUMBIA, WASHINGTON.
STRUCTURE. NEW SWITCHBOARD ROOM. in Empl. #3.
BATTERY JULES ORD.

Form 2. Corrected to June 30, 1921.

Location	No. 3 emplacement Battery Jules Ord, magazine room and corridor. Feb. 5, 1921.	Type of data transmission	
Date of transfer		Date of transfer	
Cost to that date	\$3,615.94	Cost of data transmission equipment	
Type of construction	In battery.	For tide stations give description of tide gauge	
(a) Roof	Concrete.	For datum points give Forts from which visible	
(b) Remainder of bld	Concrete.	For dormitories give stations served	
How concealed	Earth fill in front of battery.	For cable hut give S. C. type	
How protected	Concrete roof & wall with earth fill to the front.		
Height above concealment	None.		
Height above protection	None.		
Conspicuous at.....yards	Conspicuous from above only.		
Source of electric current	Central Power Plant.		
Kilowatts required	1.8.		
Type of lighting fixtures	Commercial.		
How heated	Stove.		
Connected to water mains	Yes.		
Connected to sewer	Yes.		
Type of latrine	Syphon.		
Permanent or temporary installation	Permanent.		
Present condition	Good.		
Reference of site	Floor about 124' above M.L.L.		
Reference of instrumental axis			
Type of observing inst.			
Type of plotting board			
Type and capacity of crane			
Max. dimensions of reel handled			



CONFIDENTIAL

Part II Corrected to 20 June 1944

Control Approval Symbol SPECM-1

99532

STRUCTURE:

Location: The Switchboard Room is located within the U.S. Military Reservation of Fort Columbia, Harbor Defenses of The Columbia, Wash.
General: This supplemental project of gasproofing the Switchboard Room at Fort Columbia consisted of constructing an addition to house the collective protectors, construction of a small access tunnel, installation of the collective protectors and of remodeling the openings of the original structure so the collective protectors would be affective. All new equipment, the piping and all exterior concrete surfaces were painted.

Date of transfer: Of the supplemental work was 23 May 1944.

Cost to date of transfer: Of the supplemental work was \$2,674.27; the cost of the collective protector assemblies not being included.

Type of construction: This addition and access tunnel are constructed of reinforced concrete of a 1:2:4 mix. Of the addition, the floor is 8" in thickness, the walls 10" and the ceiling 12". The interior partitions are constructed of structural, hollow clay tile, and the interior dimensions are 11'-6" x 10'-6" with a ceiling height of 8'-0". The floor of the access tunnel is 5" in thickness; the walls are 10" and the ceiling is 12". The tunnel dimensions are 4'-0" in width, 8'-3" to 8'-7" in height and is 50'-0" in length.

Concealment: The addition and access tunnel were covered with earth and then planted with brush and seeded. The exposed portion of the access tunnel was painted to conform to the surrounding vegetation. The army has now covered the tunnel entrance with camouflage netting.

UTILITIES:

Electric power: Power for this addition and the equipment was obtained by extending the circuits of the original structure.

Characteristics: 110 volts, AC, single phase.

Kilowatts required for this addition is approximately 1.0.

Type of lighting fixtures: Are incandescent lamps in porcelain lamp receptacles.

Other utilities: No other utilities were provided in this addition; the utilities of the original structure being available.

EQUIPMENT:

Two Protector M-1A1 Collective Assemblies were installed in this project. The collective protectors, special fittings and the extra cannisters were received by requisition on the Chief of Engineers. All the piping, pipe fittings and the gasproof and other doors were purchased locally.

REMARKS:

This supplemental work was constructed with funds having Advise No. 5-(CAC)-115 P 270 A 1204-24. Construction work was accomplished by Government forces and was started 1 January 1943 but was not completed until 27 March 1944 due to delayed delivery of the collective protectors. The work was designated Job Number Ft. Columbia FS-2 by Directive Consecutive Number FS-444. For construction details see drawings numbered DMCR 1069A and DMCR 1069B.

Incl 1

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HARBOR DEFENSES OF THE COLUMBIA
SWITCHBOARD ROOM GASPROOFING
FORT COLUMBIA, WASHINGTON

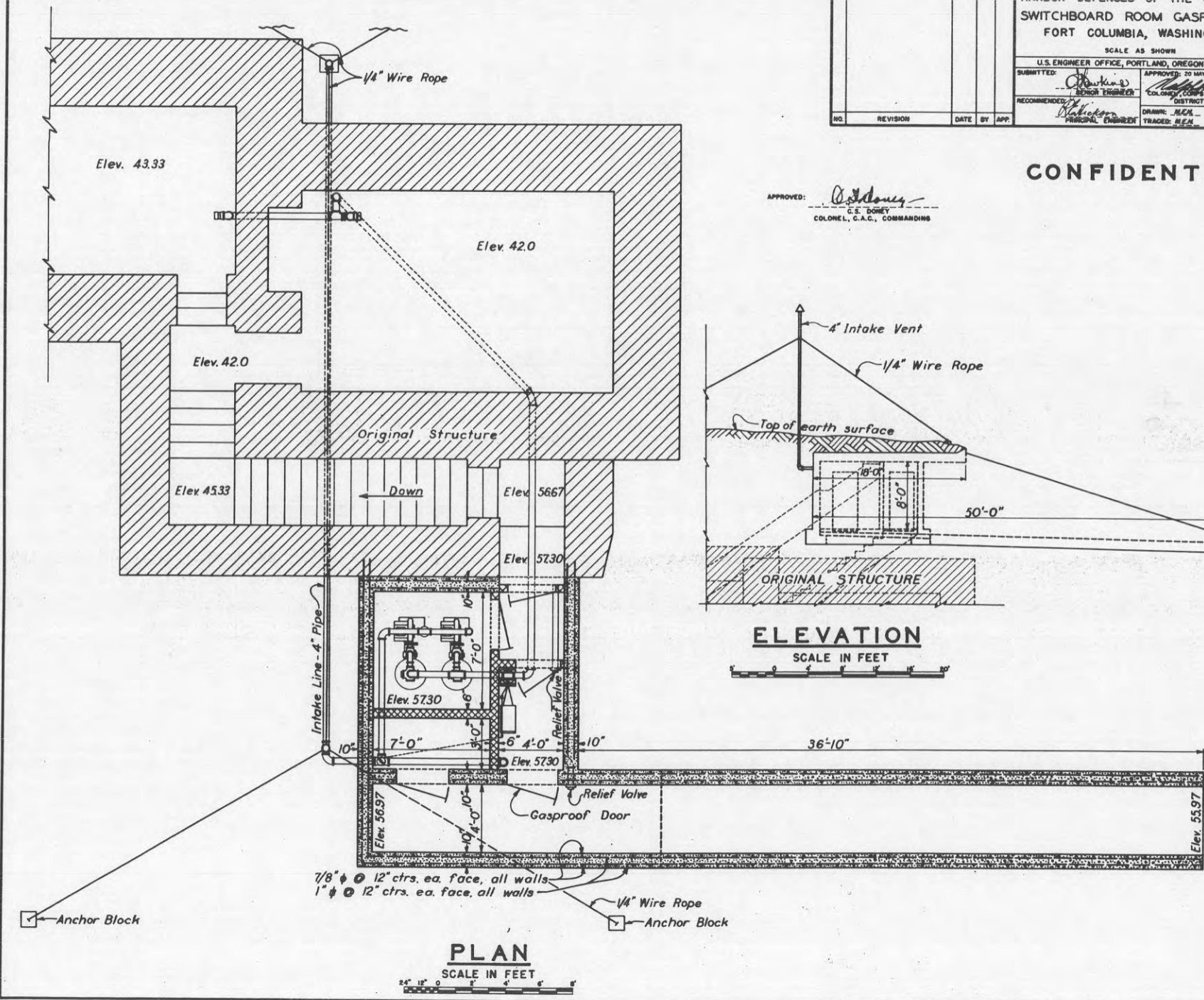
SCALE AS SHOWN

U.S. ENGINEER OFFICE, PORTLAND, OREGON, DISTRICT

SUBMITTED: <i>[Signature]</i>	APPROVED: 20 MAY 1924
RECOMMENDED: <i>[Signature]</i>	COLONEL, CORPS OF ENGINEERS
ORIGINAL ENGINEER	DISTRICT ENGINEER
DATE: MAY 1924	TRACED: M.E.N. CHECKED: _____

CONFIDENTIAL

APPROVED: *[Signature]*
C.S. DOWDY
COLONEL, G.A.C., COMMANDING

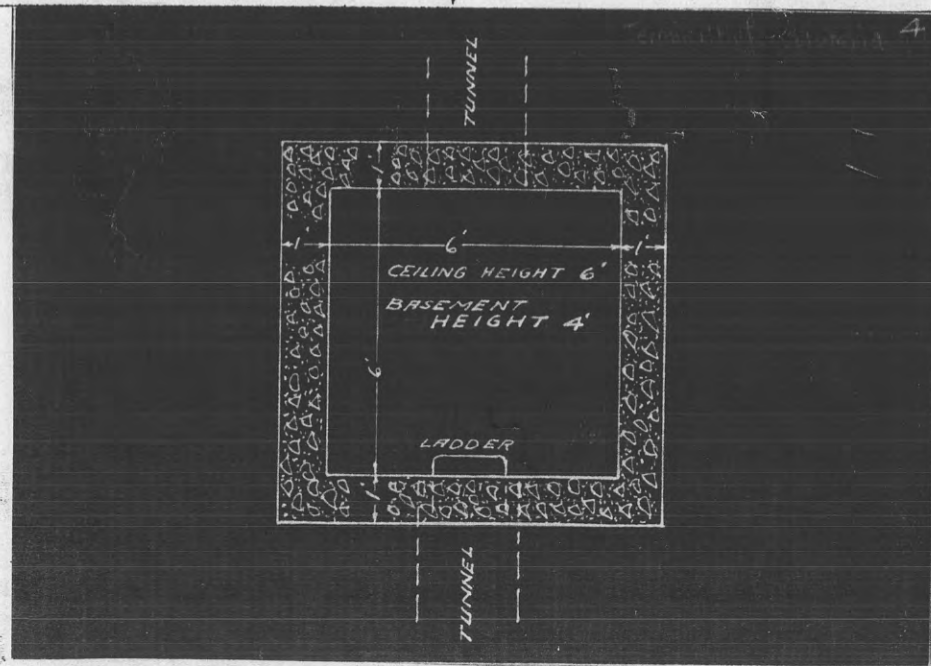


REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS.
(Fire control or Torpedo Structures)

COAST DEFENSES OF THE COLUMBIA
FORT. COLUMBIA, WASHINGTON
STRUCTURE... TERMINAL HUT

Form 2. Corrected to June 30, 1921.

Location	100' S.W. of mining case- mate Chinook Point, edge of water.	Type of data transmission	
Date of transfer	March 30, 1911	Date of transfer	
Cost to that date	\$2,469.36, including cost of tunnel	Cost of data transmission equipment	
Type of construction	Manhole	For tide stations give descrip- tion of tide gauge	
(a) Roof	Concrete	For datum points give Forts from which visible	
(b) Remainder of blc	Concrete	For dormitories give stations served	
How concealed	Built in face of rock bluff	For cable hut give S. C. type	Manhole
How protected	Partially by rock bluff		
Height above concealment	5 1/2' above rock in front.		
Height above protection	5 1/2' " " " "		
Conspicuous at...yards	400		
Source of electric current	None		
Kilowatts required	None		
Type of lighting fixtures	None		
How heated	None		
Connected to water mains	No		
Connected to sewer	No		
Type of latrine	None		
Permanent or temporary installation	Permanent		
Present condition	Good		
Reference of site	About 11' above M.L.L.W.		
Reference of instrumental axis			
Type of observing inst.			
Type of plotting board			
Type and capacity of crane			
Max. dimensions of reel handled			



SUPPLEMENTARY REPORT.

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS
(Searchlights)

COAST DEFENSES OF THE COLUMBIA.
FORT COLUMBIA, WASHINGTON.
SEARCHLIGHT NO.

Form 4.

Corrected to June 30, 1921. Size 30" Portable or fixed. Semi-Portable.

PROJECTOR :

Location: In storehouse.

Manufacturer: General Electric Co.

Type of projector: E.C.F.

Form of projector:

Serial No. of projector ...: 283.

Type of lamp: H.F.

Model of lamp:

Serial No. of lamp: 356.

Electric or hand control...: Electric.

Material of mirror: Glass.

Date received in district : 1898.

From whom received: Willets Point, N.Y.

Age of mirror: Not known.

Condition of mirror: Fair.

Date last repaired: None.

Switchboard, serial No....: None.

INSTALLATION

General character: This searchlight is now obsolete and the disposition of same is with the Artillery in accordance with circular letter, O. C. of E., July 15, 1920, 400.7-F (See 2nd Ind. O. C. of E., April 15, 1921, 400.F(Col. R)Fl, Reqn. 4010).

Date transferred to troops

Cost to that date

Shelter

Materials of construction

Interior of dimensions

Height and type of tower :

Means by which projector is placed in operating position

Reference axis of projector or in operating position:

Kind of protection in operating position

Concealment of day shelter from approach channel :

Dates & cost of extensive remodeling or reconstruction

CABLE #

Power plant to searchlight:

Type

Length and size

In conduits or in air

Controller to light Type

Length and size

In conduit or in air

Aux. controller to light Length and size

In conduit or in air

POWER PLANT

Location

Maximum demand KW

Type and size

CONTROLLERS

Location

Type: E.C.B.

Form

Serial No.

How protected or concealed

SUPPLEMENTARY REPORT.

Obsolete

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS
(Electric Plants)

COAST DEFENSES OF THE COLUMBIA.....
FORT. COLUMBIA, WASHINGTON.....
POWER FOR Semi-Portable 30" light.....

Form 5.

Corrected to June 30, 1921.

	Serial No.	Type	Size	Mfr.	Date of transfer	Cost	Con- dition	RPM	Belt or Direct Drive	Radiator for Engine No.	Fuel	Switchboard		
												Mater- ial.	No. of Panels	
Boiler No. 1														
No. 2														
No. 3														
E. No. 1	2749	H.A.	25hp.	DeLaVergne Refrig. Mfg.Co.	Aug. 1914	Not known	Good	1050	Belt		Kerosene			
No. 2														
No. 3														
Generator	Removed													
No. 1														
No. 2														
No. 3														
Radiator	Two cooling tanks.													
No. 1														
No. 2														
No. 3														
Motor Generator														
No. 1														
No. 2														
No. 3														
Switchboard	-	-	30"x60"	-	Aug. 1914	Not known	Good					Marble	1	
Storage Battery														
Transformer														
No. 1														
No. 2														
No. 3														
Auxiliaries														
No. 1														
No. 2														
No. 3														

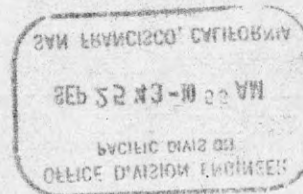
DISTRIBUTION OF KW.

This plant is now obsolete and the disposition of same is with the Artillery in accordance with circular letter O. C. of E., July 15, 1920, 400.7-F (See 2nd Ind. O. C. of E., April 15, 1921, 400.F(Col.R)Fl, Reqn. 4010).

CONFIDENTIAL

Form 4. *600,914 (Col. River) CM 64038*
Corrected to 28 July 1943

64038



INSTALLATION:

General Character : This supplemental work consisted of moving
: Searchlights Nos. 5 and 6 to more desirable
: points of locations. New Searchlight shelters,
: a new controller booth and a new power house
: were constructed. All the old equipment was
: reinstalled in the new buildings.

Location : The new installations were all constructed
: within the U.S. Military Reservation of Fort
: Columbia, Washington.

Date transferred to troops : of supplemental work: 26 July 1943.

Cost to date of transfer : of supplemental work: \$13,173.83.

(See Plans Attached)

SHELTERS & LIGHTS:

Shelters : The shelters are constructed of reinforced
: concrete of a 1:2:4 mix. The sliding doors
: are constructed of wood and are metal clad.
: The doors are hand operated and are hung on
: barn door hangers from a number 31 trolley
: track. The shelters are constructed on the
: ground of the hillside and do not have any
: supporting tower. The interior dimensions
: are 17'-0" x 12'-0" with a ceiling height of
: 12'-0".

Means by which projector is
placed in operating position : The fronts of the shelters are opened by a
: series of sliding doors. The projectors are
: stationary on the floors of the shelters.

*Map File
No. 92-98-57*

CONFIDENTIAL

CONFIDENTIAL

Form 4. Corrected to 28 July 1943

Reference axis of projectors in :
operating position : The axis of projector No. 5 is at elevation 71.35 and the axis of
: projector No. 6 is at elevation 79.15; the datum plane of reference
: being Mean Sea Level. The co-ordinates of the two projectors are
: as follows:
: Projector No. 5 South 2,554.69 Yards
: East 10,827.48 Yards
: Projector No. 6 South 2,584.11 Yards
: East 10,851.25 Yards
: The origin of the co-ordinate system for This Harbor Defense is
: Canby Light, located on Cape Disappointment at Fort Canby, Washington.
:
Concealment : These shelters are located on a hillside and have brush and trees
: for a background when seen from the approach channel or open sea.
: The shelters are painted to conform to the surrounding vegetation
: and the roofs are covered with sod and other foliage.
:
POWER HOUSE:
Type of construction : The power house is located on the hillside a short distance from
: the searchlights. (See attached plot plan for position relative to
: the searchlights.) This building is constructed of reinforced con-
: crete of a 1:2:4 mix. The interior dimensions are 20'-0" x 30'-0"
: with a ceiling height of 10'-0". The windows are of a wooden sash
: and the doors are fabricated of steel. The building is located
: among trees and is painted to conform to the surrounding vegetation.
:
Cable installation : The power cables from the power house to the searchlights are the
: same cables as previously used. These cables are laid to a depth
: of approximately 2 feet.
:
Water Supply : Water for the power plant is supplied by a 630 foot line of 3/4"
: galvanized iron pipe which is connected to a 6" main of the Fort
: Columbia system.

64038

CONFIDENTIAL

CONFIDENTIAL

Form 4. Corrected to 28 July 1943

CONTROLLER BOOTHS:
Location : The controller for searchlight number 6 was not moved and it is
: located in the M1/4 station. See the attached plot plan for locations
: relative to the searchlights.
:
Type of construction : Controller booth for searchlight number 5 is a concrete structure
: with a manhole type entrance. The interior dimensions are 6'-8" x
: 6'-8" with a ceiling height of 7'-0".
:
C ealment. : The controller booth for searchlight number 5 is located on the hill-
: side and has brush and trees for a background when seen from the
: approach channel or open sea. The booth is set into the ground with
: only the portion around the observation windows exposed. The roof is
: covered with earth and sod and the exposed part of the station is paint-
: ed to conform to the surrounding vegetation.
:
Cable Installation : The controller cables from the controller booths to the searchlights
: are the same as previously used. These cables were laid to a depth of
: approximately 2 feet.
:
REMARKS : This supplemental work of re-locating Searchlights Nos. 5 & 6 was
: accomplished with funds allotted by the Chief of Engineers under P/A
: CAC-115 P 276 A 1204-23. The work was performed by Government forces;
: construction was started 26 November 1942 and was completed 1 March 1943.
: The projectors, mirrors, switchboard, controllers, control cables, power
: cables and the power plants are all the same as used previously. For
: construction details and the job layout see the attached detailed plans
: which are a part of this completion report.

64038

CONFIDENTIAL

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS

(Electric Plants)

(CENTRAL POWER PLANT)

Form 5.

Corrected to June 30, 1921.

COAST DEFENSES OF THE COLUMBIA
 FORT... COLUMBIA, WASHINGTON.
 POWER FOR SEARCHLIGHT NO. 9, FORTIFICATIONS
 & POST LIGHTING.

	Serial No.	Type	Size	Mfr.	Date of transfer	Cost	Con- dition	RPM	Belt or Direct Drive	Radiator for Engine No.	Fuel	Switchboard	
												Mater- ial.	No. of Panels
Boiler No. 1	None.												
No. 2													
No. 3													
Line No. 1	5372	GM12-A2	43/54h.p.	Gen.E.Co.	Feb. 10, 1911	Exclusive of structure: remodeling old structure to accommodate 3-25 kw sets, and installation, \$16,115.	Good	560					
No. 2	10965	GM12A23	43/54h.p.	Gen.E.Co.	Apr. 13, 1916		Good	560			Gas.	110 DC 2	Yes
No. 3	14360	GM12A28	43/54h.p.	Gen.E.Co.	Feb. 7, 1919		Good	560			Gas.	110 DC 2	Yes
Generator													
No. 1	183184	M.P.C.	25kw 115V	Gen.E.Co.	Feb. 10, 1911		Good			Dir.			
No. 2	448814	M.P.C.	25kw 115V	Gen.E.Co.	Apr. 13, 1916		Good			Dir.			
No. 3	679063	M.P.C.	25kw 115V	Gen.E.Co.	Feb. 7, 1919		Good			Dir.			
Radiator													
No. 1	---	Auto.	--	Rome-Turn.	Feb. 10, 1911		Good				5372		
No. 2	10306	FF54B3	--	Gen.E.Co.	Apr. 13, 1916		Good				10965		
No. 3	14754	FF54B3	--	Gen.E.Co.	Feb. 7, 1919		Good				14360		
Motor Generator													
No. 1	None												
No. 2													
No. 3													
Switchboard	22-218-355	Combin- nation	90" x 82"	Walker E.Co.	---		Good					Marble	
rage Battery	None												
Transformer	None												
No. 1													
No. 2													
No. 3													
Auxiliaries	None												
No. 1													
No. 2													
No. 3													

DISTRIBUTION OF KW.

Fortification	Lights,	9.7
Switchboard room	Power,	1.0
Searchlight No. 9	Power,	16.5
Dismantled batteries	Lights,	5.0
Post lighting		13.2
	Total	45.4

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS
(Searchlights)

COAST DEFENSES OF THE COLUMBIA.
FORT COLUMBIA, WASHINGTON.
SEARCHLIGHT NO. 9. *No. 5* ①

Form 4.

Corrected to June 25, 1922 size 60" Portable or fixed. **FIXED.**

PROJECTOR	: About 1200' north of Cen- : tral power plant; 1900'	: INSTALLATION	:
Location	: N.E. of Battery Murphy.	: General character	: In shelter.
Manufacturer	: General Electric Co.	: Date transferred to	: troops
Type of projector	: E.C.	: Cost to that date	: April 15, 1922.
Form of projector	: Form N-5.	: Shelter	: \$1200.00 shelter.
Serial No. of projector ...	: 9441	: Materials of construction	: Concrete base, wood frame, cor. iron.
Type of lamp	: Mark V.	: Interior of dimensions	: 10' x 17' x 11' 7" high.
Model of lamp	: Model 8.	: Height and type of tower :	: None.
Serial No. of lamp	: 428	: Means by which projector :	
Electric or hand control...	: Electric.	: is placed in operating :	
Material of mirror	: Glass.	: position	: Opening sliding doors.
Date received in district :	: November 10, 1919.	: Reference axis of project-	
From whom received	: General Electric Co.	: or in operating position:	: 491.50' above M.L.L.W.
Age of mirror	: Not known.	: Kind of protection in :	
Condition of mirror	: One small crack.	: operating position	: Corrugated iron roof.
Date last repaired	: None.	: Concealment of day shelter	
Switchboard, serial No....	: None.	: from approach channel :	: Trees and hill in rear.
		: Dates & cost of extensive:	
		: remodeling or reconstruc-	
		: tion	: None.
		: POWER PLANT	
		: Location	: Central Power Plant.
		: Maximum demand KW	: 16.5 kw.
		: Type and size	: 3-25 kw sets, 115V.
		: CONTROLLERS	
		: Location	: In old F' / 5.
		: Type	: E.C.
		: Form	: N-2
		: Serial No. ..	: 12236
		: How protected or con-	: Concrete wall & earth
		: cealed	: fill with tank steel
			: roof.

CABLE #

Power plant to searchlight:
Type

"A" L.C.
Length and size

1433' 4/0
In conduits or in air

Conduit.
Controller to light

"C" L.C.
Type

674' 11 conductor.
Length and size

In conduit or in air

Conduit.
Aux. controller to light ..

Length and size

In conduit or in air

See O.C.E. 470.31 A - 1912

Mirror S/L #9 - Has 18" crack. Not yet affecting beam.

Superseded

See Form 4 corrected to 28 July 43

① See 470.31 A - 2302, 12/13/38
changed from #9 to #5

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS
(Searchlights)

COAST DEFENSES OF THE COLUMBIA.
FORT COLUMBIA, WASHINGTON.
SEARCHLIGHT NO. 10. → No. 6 ①

Form 4.

Corrected to June 25, 1922. size 60" Portable or fixed. FIXED.

PROJECTOR

Location: On river bank, Chinook Point, Wash.
Manufacturer: General Electric Co.
Type of projector: E.C.
Form of projector: Form N-10.
Serial No. of projector ...: 19554
Type of lamp: Mark V.
Model of lamp: Model 8.
Serial No. of lamp: 299
Electric or hand control...: Electric.
Material of mirror: Glass.
Date received in district : July 12, 1920.
From whom received: General Electric Co.
Age of mirror: 1 year.
Condition of mirror: Good.
Date last repaired: None.
Switchboard, serial No....: 205118

INSTALLATION

General character: In shelter.
Date transferred to: April 15, 1922.
troops: \$645.00 structure.
Cost to that date: Shelter
Concrete base, wood frame,
Materials of construction cor. iron.
Interior of dimensions 10' x 17' x 11' 7".
Height and type of tower : None.
Means by which projector :
is placed in operating : Opening sliding doors.
position: Reference axis of project-
or in operating position: 39.77' above M.L.L.W.
Kind of protection in :
operating position: Corrugated iron roof.
Concealment of day shelter : Trees & shrubbery.
from approach channel : E. N. & W.
Dates & cost of extensive :
remodeling or reconstruc- :
tion: None.

CABLE #

Power plant to searchlight:
Type: "A" L.C.
Length and size: 281' 3/0 and 2/0.
In conduits or in air: Conduit.
Controller to light: CL. R&L.
Type: 2735' 11 conductor.
Length and size: Conduit.
In conduit or in air: Aux. controller to light
Length and size: None.
In conduit or in air

POWER PLANT

Location: About 250' E. of shelter.
Maximum demand KW: 16.5 kw.
Type and size: GM 12 1-25 kw. set, 115V.

CONTROLLERS

Location: In M₁, about 1750'
Ely. of shelter.
Type: E.C.
Form: Form N-12.
Serial No.: 400402
How protected or con- :
cealed: In station M₂.

Superseded

See Form 4 corrected to 28 July 43

① See 675.1 (9th C.A.) 1:-
New designation No. 6

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS
(Electric Plants)

COAST DEFENSES OF THE COLUMBIA.....
FORT. COLUMBIA, WASHINGTON.....
POWER FOR Power Plant for.....
Searchlight No. 10. → No. 6 ①

Form 5.

Corrected to June 25, 1922.

	Serial No.	Type	Size	Mfr.	Date of transfer	Cost	Con- dition	RPM	Belt or Direct Drive	Radiator for Engine No.	Fuel	Switchboard		
												Mater- ial.	No. of Panels	
Boiler No. 1	None													
No. 2	-												See 675.1	(4th C.A.) 1
No. 3	-												Volts Wire	Used for OM Power
Engine No. 1	17780	GM12-A2	43/54 H.P.	Gen.E.Co.	Apr.15/22		Good	560			Gas	110DC. 2		No
No. 2	-													
No. 3	-													
Generator														
No. 1	924290	M.O.P.	25kw115V	Gen.E.Co.	Apr.15/22		Good	560	dir.					
No. 2	-													
No. 3	-													
Radiator														
No. 1	17287	F.F. 54		Gen.E.Co.	Apr.15/22		Good			17780				
No. 2	-													
No. 3	-													
Motor Generator														
No. 1	None													
No. 2	-													
No. 3	-													
Switchboard	202293	B	20"x82"	Walker E.Co.	Apr.15/22									
Storage Battery														
Transformer														
No. 1														
No. 2														
No. 3														
Auxiliaries	None													
No. 1														
No. 2														
No. 3														

Structure \$2500.00

Asbestos wood

DISTRIBUTION OF KW. Power 16.5
Lights 0.5
total 17.0 kw.

① See 675.1 (4th C.A.) 1 :-
New designation No. 6

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS.
(Fire control or Torpedo Structures)

COAST DEFENSES OF THE COLUMBIA.....
FORT. COLUMBIA, WASHINGTON.....
STRUCTURE M/2 also CONTROLLER FOR SEARCH.....
LIGHT NO. 10.

Form 2. Corrected to June 30, 1921.

Location On Scarborough Hill, 1200' N.E. of Battery Murphy

Date of transfer March 30, 1911

Cost to that date \$2,025.00

Type of construction
(a) Roof Wood, asphalt, paper & gravel
(b) Remainder of building Reinforced concrete, wood finish inside

How concealed Shrubbery, trees & hill in rear, earth fill to slot Earth fill to slot

How protected Earth fill to slot

Height above concealment 3' above ground

Height above protection 3'

Conspicuous at.....yards Conspicuous about 3 miles

Source of electric current Central Power Plant.

Kilowatts required 0.5 kw.

Type of lighting fixtures Ceiling fixtures commercial

How heated Stove

Connected to water mains No

Connected to sewer No

Type of latrine None

Permanent or temporary installation Permanent

Present condition Good

Reference of site 326' above M.L.L.W.

Reference of instrumental axis 328.97' above M.L.L.W.

Type of observing inst. Lewis D.P.F. Model 1907 #38, and observing telescope

Type of plotting board Submarine mine model 1906 #48

Type and capacity of crane

Max. dimensions of reel handled

Type of data transmission

Date of transfer

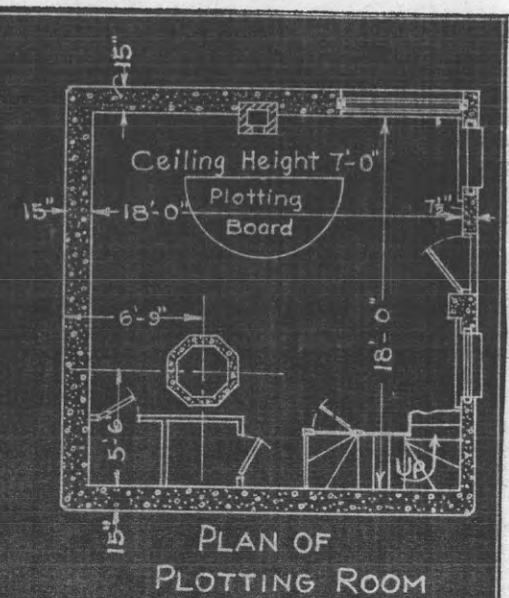
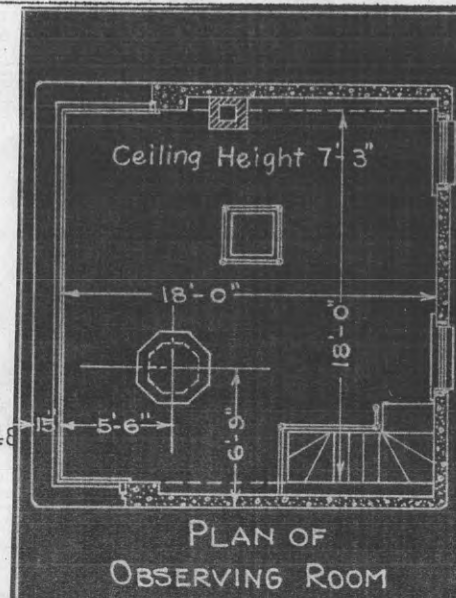
Cost of data transmission equipment

For tide stations give description of tide gauge

For datum points give Ports from which visible

For dormitories give stations served

For cable hut give S. C. type



No. 10 (M)

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS.
(Fire control or Torpedo Structures)

COAST DEFENSES OF THE COLUMBIA.....
FORT. COLUMBIA, WASHINGTON.....
STRUCTURE... ~~OLD F. 5. CONTROLLER BOOTH FOR~~.....
SEARCHLIGHT NO. 9.

Form 2. Corrected to June 30, 1921.

B555 #245
No. 3

Location On Scarborough Hill, 1200' N.E. of Battery Murphy.

Date of transfer November 29, 1900.

Cost to that date \$1,666.00

Type of construction
(a) Roof Steel, 3/16" tank.
(b) Remainder of building Concrete.

How concealed Shrubbery, trees & hill in rear, earth fill to slot.
Earth fill to slot.

How protected

Height above concealment 3-1/2' above ground.

Height above protection 3-1/2'

Conspicuous at.....yards Conspicuous at about 2 mi.

Source of electric current Central Power Plant.

Kilowatts required .2 kw.

Type of lighting fixtures Commercial.

How heated None.

Connected to water mains No.

Connected to sewer No.

Type of latrine None.

Permanent or temporary installation Permanent.

Present condition Good.

Reference of site 326.00' above M.L.L.W.

Reference of instrumental axis 327.96' above M.L.L.W.

Type of observing inst. Swasey, D.P.F. type "A-11"

Type of plotting board #200.
None.

Type and capacity of crane

Max. dimensions of reel handled

Type of data transmission

Date of transfer

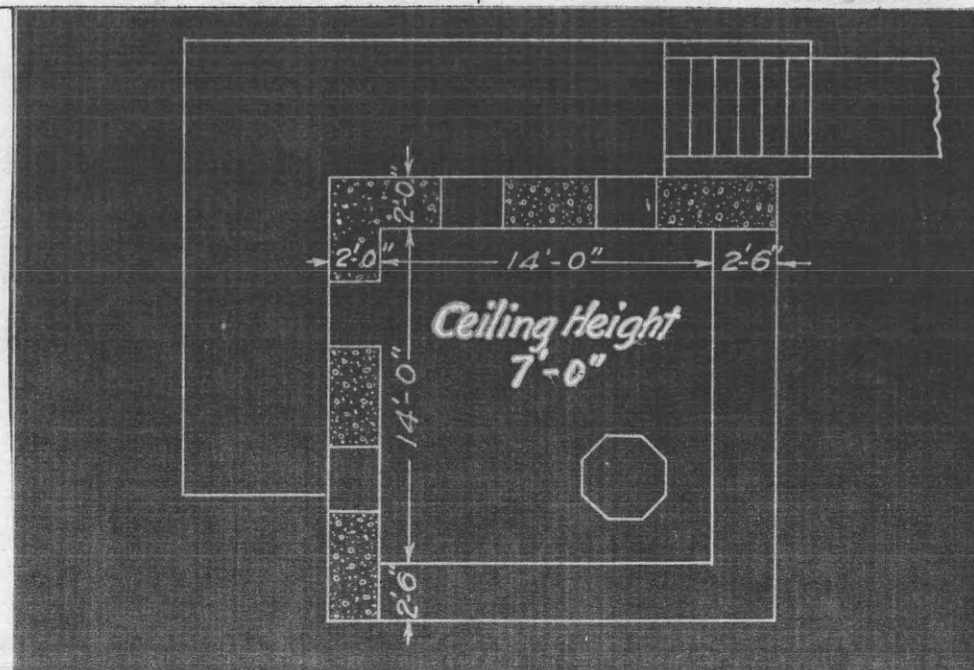
Cost of data transmission equipment

For tide stations give description of tide gauge

For datum points give Forts from which visible

For dormitories give stations served

For cable hut give S. C. type



RESTRICTED

SEARCHLIGHTS NOS. 11 and 12

SIZE: 60". Portable Lights - Permanent Positions
(Supplemental Work)

Part IV

Corrected to 1 December 1945

INSTALLATION:

Location by co-ordinates:

Projector No. 11 South 2,554.69 Yards.
East 10,827.48 Yards.
Projector No. 12 South 2,584.11 Yards.
East 10,851.25 Yards.

The origin of the co-ordinate system for this Harbor Defense is the Cape Disappointment Lighthouse located at Fort Canby, Washington.

Location - Site Description: Is within, and on the westerly side of the U.S. Military Reservation of Fort Columbia, Washington.

General Character: This supplemental work consisted of replacing the fixed type searchlights with portable type searchlights. The portable lights were installed in the shelters which housed the fixed type lights; the portable lights rest on their jacks astride the pits which were below the fixed lights. The generators for the fixed type lights were removed from the power house and the portable generators installed in their place. Concrete foundations were prepared for the portable generators to take the weight off of the tires. The power house exhaust system was also remodeled to accommodate the portable generators. A new controller booth was constructed to house the controllers for both searchlights. The new searchlights, generators, and controllers were furnished by the Army and the work of making the changes was performed by the Corps of Engineers. The old removed equipment is in the custody of the U.S. Engineer Dept. and is to be sold as surplus

property or shipped to the Dept. of Commerce, Office of Surplus Property.

Date of transfer of this supplemental work:
30 November 1945.

Cost to date of transfer of this supplemental work: \$2,945.03.

Shelters:

Materials of construction: The same shelters were used for the portable type lights as for the fixed lights, which were removed. The shelters are constructed of reinforced concrete of a 1:2:4 mix. The sliding doors are constructed of wood and are metal clad. The doors are hand operated and are hung on barn door hangers from a number 31 trolley track.

Interior dimensions: 17'-0" x 12'-0" with a ceiling height of 12'-0".

Substructure: Shelters are constructed on the ground.

Means by which projector is placed in operating position: The fronts of the shelters are opened by a series of sliding doors. The projectors, resting on their jacks, are stationary within the shelters.

Reference axis of projectors in operating position:

Projector No. 11, Elevation 70.73 ft.

Projector No. 12, Elevation 78.53 ft.

The datum plane of reference is Mean Sea Level.

Control Approval Symbol SPEKM-1

ED Form No. A-162D
16 Sept. 1943**RESTRICTED**

RESTRICTED

Part IV

Corrected to 1 December 1945

Concealment of shelters: These shelters are located on a hillside and have brush and trees for a background when seen for the approach channel or open sea. The shelters are painted to conform to the surrounding vegetation and the roofs are covered with sod and other foliage.

POWER PLANTS:

Location: The shelters, housing the generators, is located on the hillside a short distance from the searchlights. (See the plot plan for position relative to the searchlights.) The generators, for the fixed type searchlights, were removed from the power house and the portable generators were installed in their place. This power house is constructed of reinforced concrete and its interior dimensions are 20'-0" x 30'-0" with a ceiling height of 10'-0". The only alteration made at the power house was in remodeling the foundations for the generators and providing a different exhaust system. The building is located among trees and is painted to conform to the surrounding vegetation.

Maximum demand on each generator: 16.5 KW.

Type and size of generators: Two G.E. generators for 60" portable searchlights. Generator for S.L. No. 11 is a Model 1942A and the generator for S.L. No. 12 is a Model 1942A.

CONTROLLERS:

Location: The controllers are located within a new

controller booth which was constructed approximately 200 ft., northerly, along the hillside from the searchlights. See the plot plan for location relative to the searchlights.

Controller Booth: The new controller booth is constructed of reinforced concrete of a 1:2:4 mix. The interior dimensions are 6'-0" x 12'-0" with a ceiling height of 7'-0". Controllers for both lights are in the same booth. The old controller booths have been abandoned.

	<u>For S.L. No. 11</u>	<u>For S.L. No. 12</u>
Type:	Anti-aircraft	Anti-aircraft
Form:	For Portable S.L.	For Portable S.L.
Serial No:	G.E. #50025	G.E. #50101
	C. of E. #6743	C. of E. 6749

Concealment: The controller booth is covered with earth embankment, leaving only the windows and part of the front exposed. The exposed portion is painted to conform to the surrounding vegetation.

PROJECTORS:

Manufacturer: General Electric, Schenectady, New York.

Type of projector: Anti-aircraft.

Form of projector: For portable type light.

Serial Nos. of projectors:

Projector No. 11: G.E. #48115
C. of E. #6473

Projector No. 12: G.E. #48095
C. of E. #6463

- 2 -
RESTRICTED

RESTRICTED

Part IV Corrected to 1 December 1945

Type of lamp: Arc.
 Model of projectors: Projector No. 11 is a 1942.
 Projector No. 12 is a 1942.
 Serial Nos. of lamps: None given.
 Control: Electric and remote.
 Date received in this Harbor Defense: 21 May 1945.
 From whom received: A.S.F. Depot, Utah.

MIRRORS:

Type: Metal.
 Date received in this Harbor Defense: 21 May 1945.
 Present condition: Good.
 Date last repaired: No repairs to date.

SWITCHBOARDS:

Serial Nos: There is no separate switchboard for
 these portable lights.

CABLES:Power Plant to Searchlights

Type: Single conductor; lead covered.
 Length and size:
 To light No. 11 is 490 feet of No. 3/0.
 To light No. 12 is 445 feet of No. 3/0.
 Installed in entrenched conduit.

Controllers to Lights

Type: Lead covered controller cable.
 Length and size:
 To light No. 11 is 505 feet of 11 conductor
 of No. 16 wires.
 To light No. 12 is 450 feet of 11 conductor
 of No. 16 wires.
 Installation: 315 ft. of each line is entrenched

and the balance of each line is entrenched
 in conduit.

Auxiliary Controller to Light
 There is no auxiliary controller.

REMARKS:

This supplemental work of replacing the fixed type searchlights with portable lights was accomplished with Government forces using funds having Advise Nos. 508-2015 P 270 A 212/51204(FC) and 608-3810 P 270 A 212/61204(FC). The work was part of the project designated Job No. The Columbia FS-9 by Directive Consecutive No. FS-1620; was started on 20 April 1945 and was completed on 15 October 1945. For construction details see drawings numbered DMCR 1196 and DMCR 1192.

Note here: That Searchlights Nos. 11 and 12 were previously known as Searchlights Nos. 5 and 6, respectively.

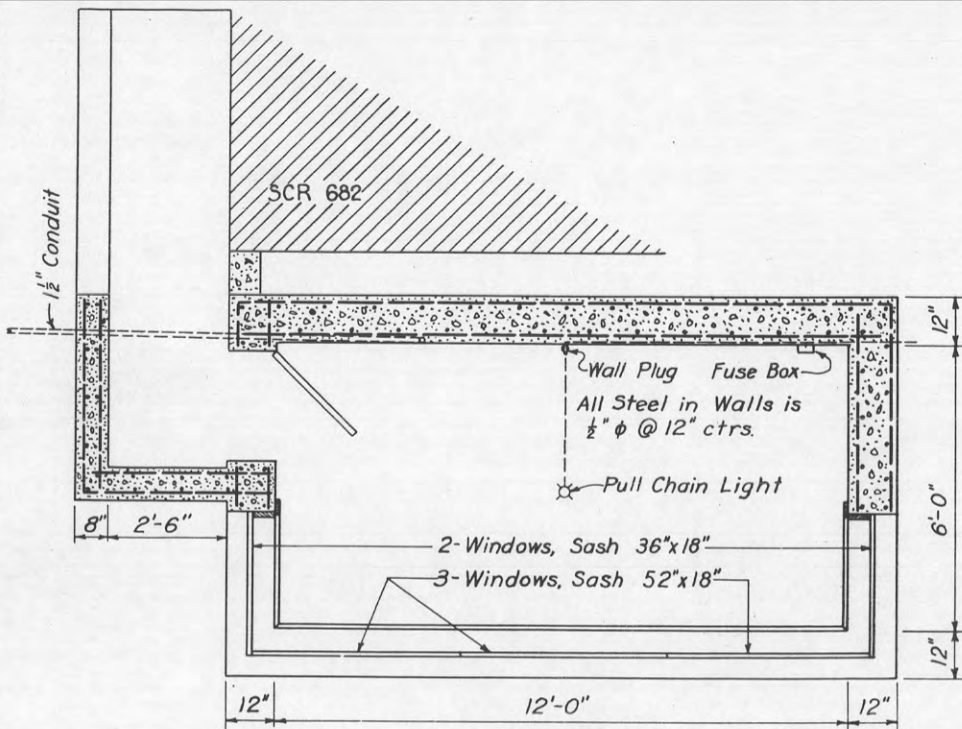
RESTRICTED

HARBOR DEFENSES OF THE COLUMBIA
 SEARCHLIGHT CONTROLLER BOOTHS
 FOR SEARCHLIGHTS 5 & 6, 11 & 12
 FORT CANBY, AND FORT COLUMBIA, WASHINGTON
 SCALE

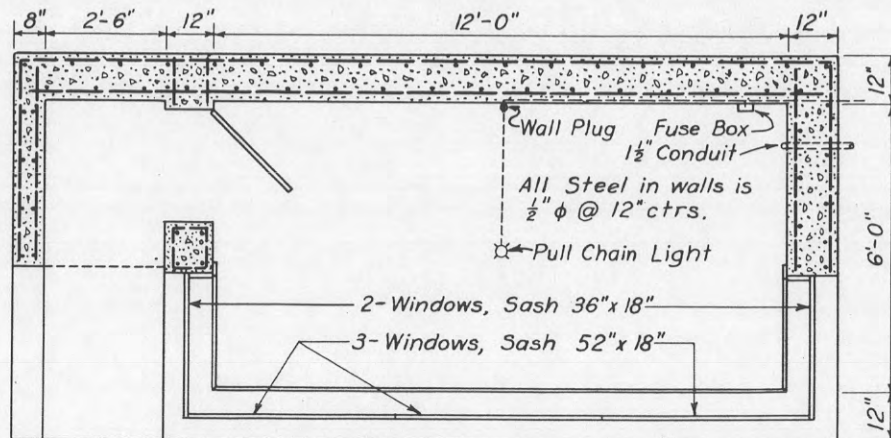


U.S. ENGINEER OFFICE, PORTLAND, OREGON, DISTRICT

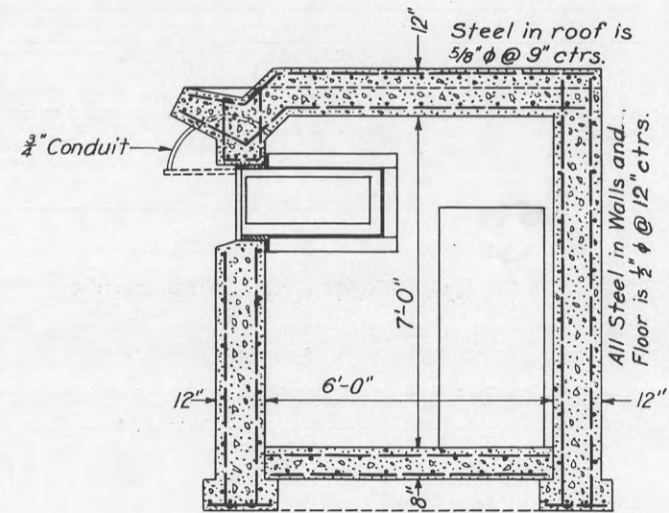
SUBMITTED BY: <i>W. H. ...</i> SENIOR ENGINEER	APPROVED: 21 JAN. 1948 <i>W. H. ...</i> COLONEL, CORPS OF ENGINEERS DISTRICT ENGINEER
RECOMMENDED BY: <i>W. H. ...</i> HEAD ENGINEER	DRAWN BY: M.E.H. DATE 8-48 TRACED BY: M.E.H.



PLAN
 CONTROLLER BOOTH FOR
 SEARCHLIGHTS 5 & 6



PLAN
 CONTROLLER BOOTH FOR
 SEARCHLIGHTS 11 & 12



SECTION

APPROVED: *C. S. Doney*
 C. S. DONEY
 COLONEL, C.A.C., COMMANDING

SECRET

FORM 2.

Corrected to March 20, 1943

WATER & SEWER: :None provided at this station.
:
REFERENCE :Origin of co-ordinates for instrument
:axis is Canby Light located on Cape
:Disappointment, Fort Canby, Washington.
:Co-ordinates are as follows:
: S. 2,450.50 yards
: E. 11,279.50
:
INSTRUMENTS:
:
Type of observing
instrument. :ML, DPF Instrument furnished by
:Ordnance Department.
:
DATA TRANSMISSION:
:
Type of :Telephones furnished and installed
:by Signal Corps.
:
REMARKS: :This station was constructed by
:Government forces and was completed on
:November 30, 1942; was constructed with
:funds from P/A CAC-252 P 34 A 1204-23,
:For construction details see attached
:detailed plan which is part of this
:completion report.

SECRET

FORM 2.

Corrected to March 20, 1943

WATER & SEWER: :None provided at this station.
:
REFERENCE :Origin of co-ordinates for instrument
:axis is Canby Light located on Cape
:Disappointment, Fort Canby, Washington.
:Co-ordinates are as follows:
: S. 2,450.50 yards
: E. 11,279.50
:
INSTRUMENTS:
Type of observing
instrument. :M1, DPF Instrument furnished by
:Ordnance Department.
:
DATA TRANSMISSION:
Type of :Telephones furnished and installed
:by Signal Corps.
:
REMARKS: :This station was constructed by
:Government forces and was completed on
:November 30, 1942; was constructed with
:funds from P/A CAC-252 P 34 A 1204-23,
:For construction details see attached
:detailed plan which is part of this
:completion report.

SECRET

FORM 2.

Corrected to March 20, 1943

STRUCTURE:

Location : On Scarborough Hill within the U.S.
: Military Reservation of Fort Columbia,
: Washington.

Date of transfer : March 31, 1943

Cost to date of transfer : \$2,078.87

Type of construction : The entire structure is constructed
: of reinforced concrete of a 1:2:4
: mix. The interior dimensions are:
: 12'-4" x 12'-0" x a height of 7'-0".
: The concrete of the roof and the walls
: is 12" in thickness. The building has
: a manhole type entrance. This is a
: permanent structure.

How concealed : The structure is covered with earth
: and vegetation leaving only the windows
: and part of the front exposed. The
: exposed part is painted to conform
: with the immediate surroundings.

ELECTRIC CURRENT:

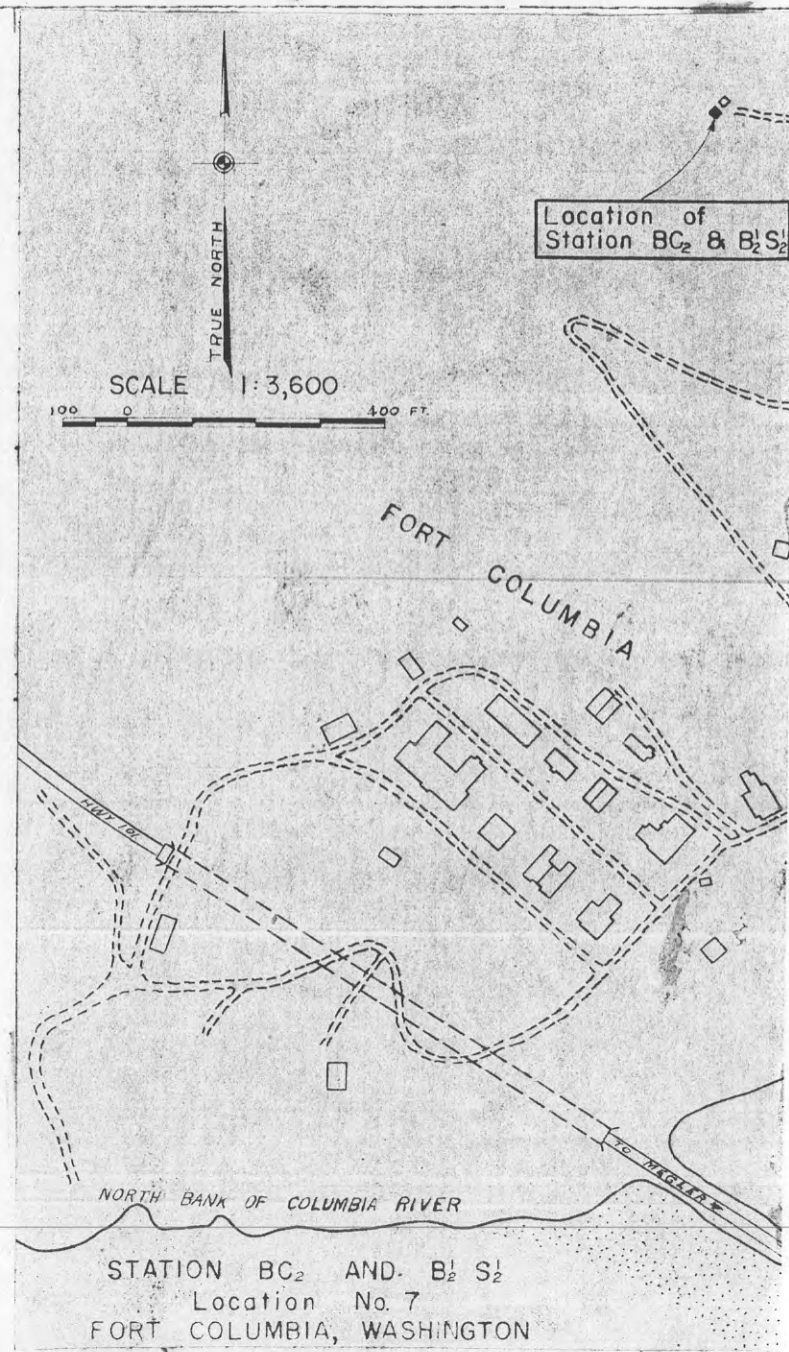
Source of : Commercial power through the reserve.
: This power is purchased from PUD No. 2
: of Pacific County, Washington.

Kilowatts required : 0.50

Type of lighting fixture : Receptacle with incandescent lamp.

HEAT : No heating facilities were provided;
: however a plug-in receptacle is pro-
: vided that an electric type heater
: may be used.

43375



SECRET

Manhole type structure

SECRET

FORM 2.

Corrected to March 20, 1943

STRUCTURE:

Location : On Scarborough Hill within the U.S.
: Military Reservation of Fort Columbia,
: Washington.

Date of transfer : March 31, 1943

Cost to date of transfer : \$2,078.87

Type of construction : The entire structure is constructed
: of reinforced concrete of a 1:2:4
: mix. The interior dimensions are:
: 12'-4" x 12'-0" x a height of 7'-0".
: The concrete of the roof and the walls
: is 12" in thickness. The building has
: a manhole type entrance. This is a
: permanent structure.

How concealed : The structure is covered with earth
: and vegetation leaving only the windows
: and part of the front exposed. The
: exposed part is painted to conform
: with the immediate surroundings.

ELECTRIC CURRENT:

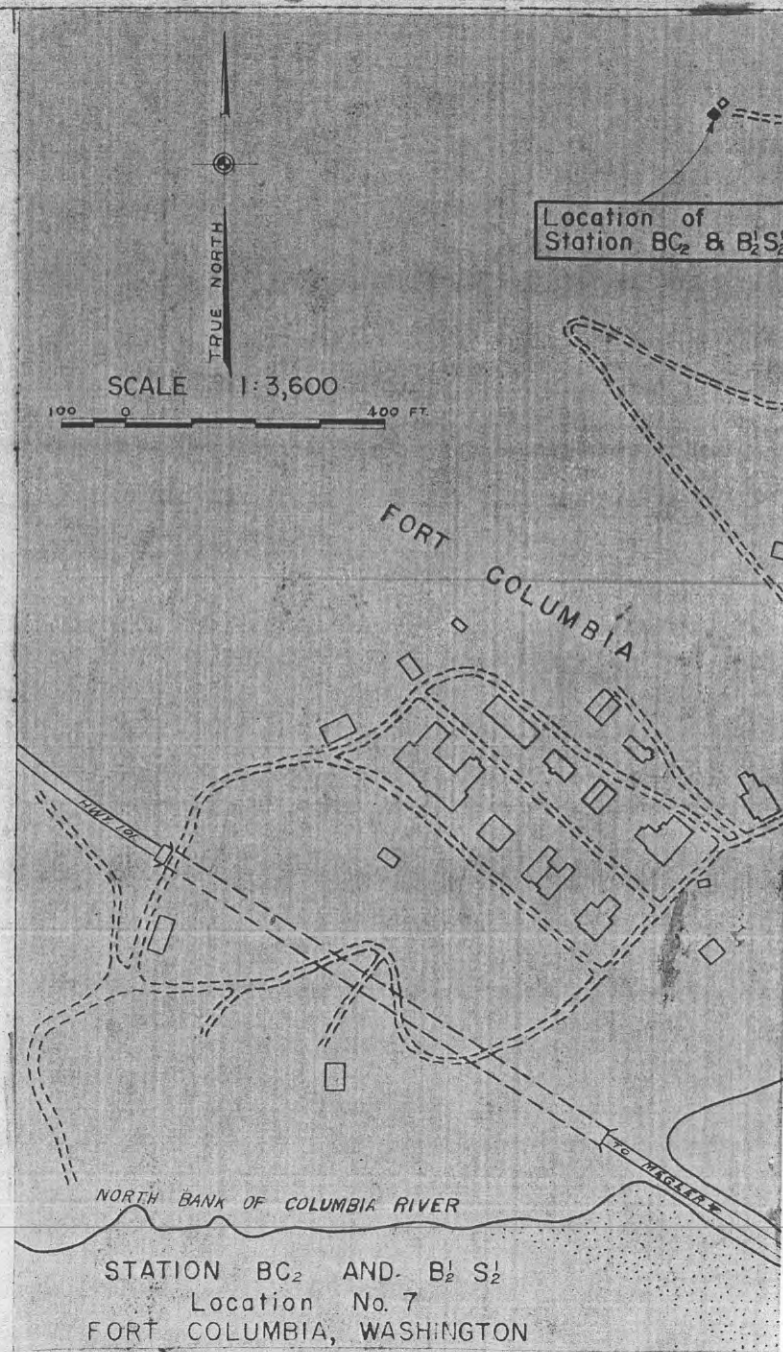
Source of : Commercial power through the reserve.
: This power is purchased from PUD No. 2
: of Pacific County, Washington.

Kilowatts required : 0.50

Type of lighting fixture : Receptacle with incandescent lamp.

HEAT : No heating facilities were provided;
: however a plug-in receptacle is pro-
: vided that an electric type heater
: may be used.

43375



Manhole type structure

SECRET

obsolete

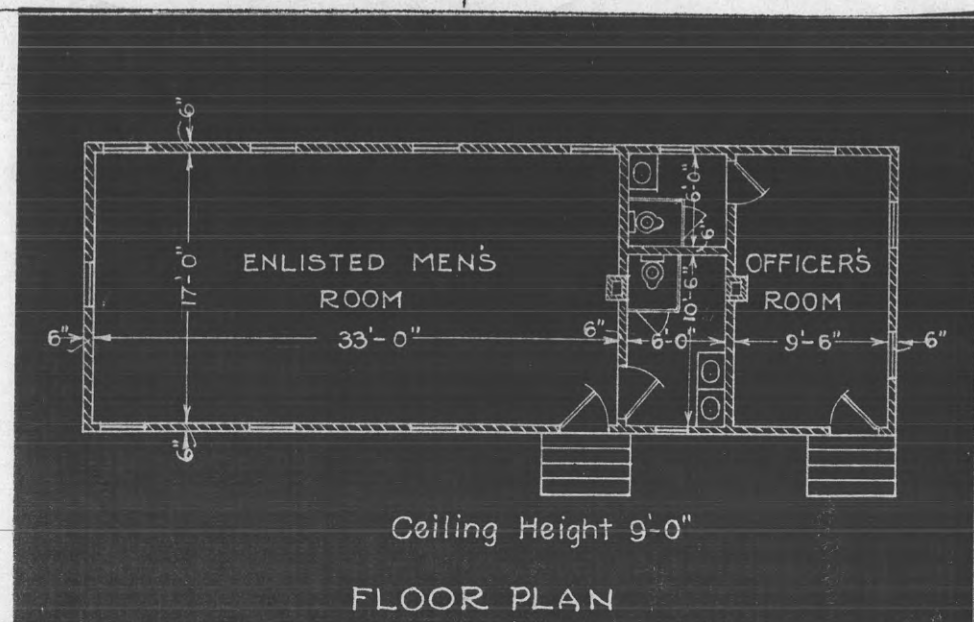
REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS.
(Fire control or Torpedo Structures)

COAST DEFENSES OF THE COLUMBIA
FORT. COLUMBIA, WASHINGTON
STRUCTURE DORMITORY FOR M'/2 and OLD F'/5

Form 2.

Corrected to June 30, 1921.

Location	On Scarborough Hill in rear of F'/5 and M'/2.	Type of data transmission	
Date of transfer	March 30, 1911	Date of transfer	
Cost to that date	\$2,290.00	Cost of data transmission equipment	
Type of construction	Sewell type	For tide stations give description of tide gauge	
(a) Roof	Wood, asphalt, paper & gravel	For datum points give Forts from which visible	
(b) Remainder of building	Wood, expanded metal & plaster	For dormitories give stations served	
How concealed	Trees & brush in front; hill to rear.	For cable hut give S. C. type	Old F'/5 and M'/2
How protected	None		
Height above concealment	None		
Height above protection			
Conspicuous at.....yards	Visible at site only		
Source of electric current	Central Power Plant		
Kilowatts required	1.1 kw.		
Type of lighting fixtures	Commercial ceiling fixtures		
How heated	Stoves		
Connected to water mains	Yes		
Connected to sewer	Yes		
Type of latrine	Syphon		
Permanent or temporary installation	Permanent		
Present condition	Good About		
Reference of site	About 336' above M.L.L.W.		
Reference of instrumental axis			
Type of observing inst.			
Type of plotting board			
Type and capacity of crane			
Max. dimensions of reel handled			



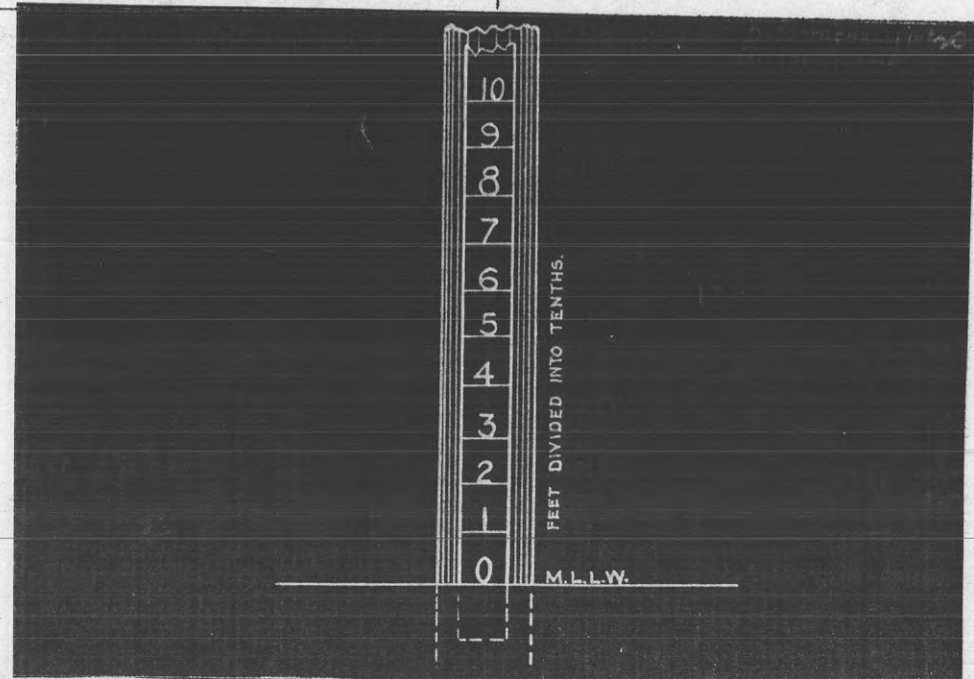
Obsolete

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS.
(Fire control or Torpedo Structures)

COAST DEFENSES OF THE COLUMBIA
FORT. COLUMBIA, WASHINGTON.
STRUCTURE... TIDE GAUGE ON AT DESDEMONA LIGHT
STATION

Form 2. Corrected to June 30, 1921.

<p>Location</p> <p>Date of transfer</p> <p>Cost to that date</p> <p>Type of construction</p> <p>(a) Roof</p> <p>(b) Remainder of bld</p> <p>How concealed</p> <p>How protected</p> <p>Height above concealment</p> <p>Height above protection</p> <p>Conspicuous at.....yards</p> <p>Source of electric current</p> <p>Kilowatts required</p> <p>Type of lighting fixtures</p> <p>How heated</p> <p>Connected to water mains</p> <p>Connected to sewer</p> <p>Type of latrine</p> <p>Permanent or temporary installation</p> <p>Present condition</p> <p>Reference of site</p> <p>Reference of instrumental axis</p> <p>Type of observing inst.</p> <p>Type of plotting board</p> <p>Type and capacity of crane</p> <p>Max. dimensions of reel handled</p>	<p>On pile at Desdemona Sands Light.</p> <p>August, 1905.</p> <p>\$15.</p> <p>No house.</p> <p>Not concealed.</p> <p>Not protected.</p> <p>Gauge is gone; gauge in tide station on W.M. dock now used.</p> <p>M.L.L.W.</p>	<p>Type of data transmission</p> <p>Date of transfer</p> <p>Cost of data transmission equipment</p> <p>For tide stations give description of tide gauge</p> <p>For datum points give Forts from which visible</p> <p>For dormitories give stations served</p> <p>For cable hut give S. C. type</p>	<p>Staff gauge on pile for Fort Columbia.</p>
--	--	--	---



obsolete

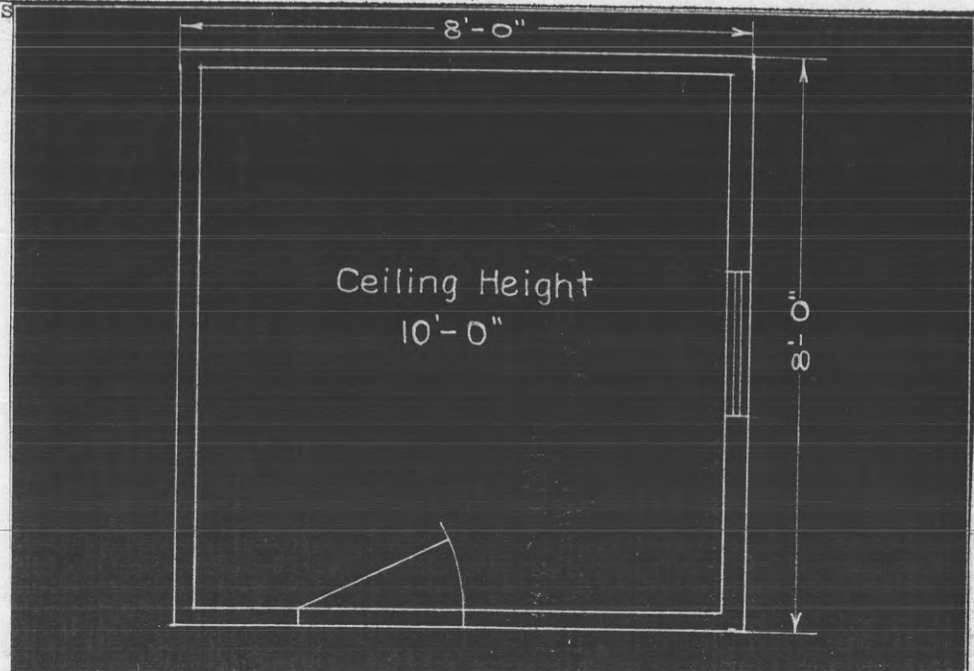
REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS.
(Fire control or Torpedo Structures)

COAST DEFENSES OF THE COLUMBIA.....
FORT. COLUMBIA, WASHINGTON.....
STRUCTURE... TIDE STATION.....

Form 2.

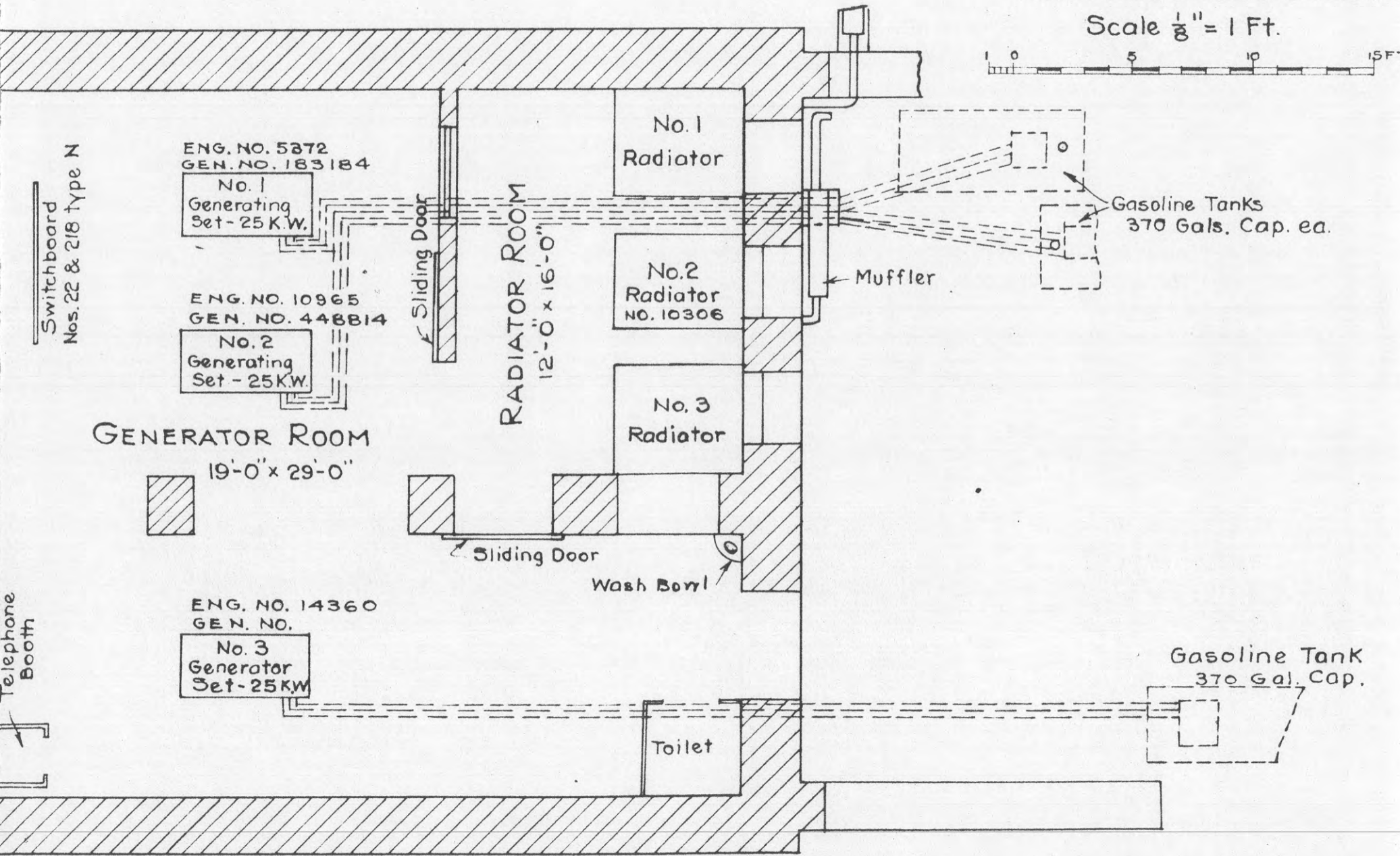
Corrected to June 30, 1921.

Location	Quartermaster wharf	Type of data transmission	
Date of transfer	May, 1908.	Date of transfer	
Cost to that date	\$200	Cost of data transmission equipment	
Type of construction		For tide stations give description of tide gauge	Disc type as per 3rd supplement to Mimeo. No. 62.
(a) Roof	Shingle	For datum points give Forts from which visible	
(b) Remainder of building	Wood	For dormitories give stations served	
How concealed	None	For cable hut give S. C. type	
How protected	None		
Height above concealment			
Height above protection			
Conspicuous at.....yards	About 2 miles		
Source of electric current	Central Power Plant		
Kilowatts required	.1 kw.		
Type of lighting fixtures	Commercial ceiling fixtures		
How heated	None		
Connected to water mains	No		
Connected to sewer	No		
Type of latrine	None		
Permanent or temporary installation	Permanent		
Present condition	Out of commission		
Reference of site	M.L.L.W.; floor about 23' above M.L.L.W.		
Reference of instrumental axis			
Type of observing inst.			
Type of plotting board			
Type and capacity of crane			
Max. dimensions of reel handled			



FORT COLUMBIA, WASHINGTON
CENTRAL POWER PLANT.

Scale $\frac{1}{8}'' = 1 \text{ Ft.}$



United States Engineer Office

FORT STEVENS, OREGON

August 25, 1911.

799 Def

U.S. ENGINEER OFFICE
AUG 26 1911
PORTLAND, OREGON

18

Major J. F. McIndoe,
Corps of Engineers, U.S.A.,
Portland, Oregon.

Major:

In reference to circular letter, Defense 799/16 relating to reserve power plant installation in this district, I have the honor to report as follows:

The condition, efficiency, etc., of the present power plants are given in tabulated form on enclosed sheets, with the exception of two Hornsby-Akroyd oil engines located in the Mining Casemates at Fort Stevens and Fort Columbia.

These sets supply current for the mine field only. Provisions have also been made for the following 25 k. w. generating sets which have not been supplied:

- Fort Columbia - Central Power Plant
- 1 set to furnish current for S. L. #10. (A)
- 1 set as reserve.
- Fort Stevens - S.L. Power Plant #3 & 4.
- 1 set to furnish current for S. L. #4.

The estimate for all work required in connection with the alteration of present power houses or construction of new, and the installation of reserve sets, except for the purchase of the generating sets, gasoline tanks, and switch-

Location	Designation	No.		Boiler		Engine		Generator		
		of	Fuel	H.P.	Description	H.P.	RPM	Description	K.W.	Volts
Canby, Wash.	Central Power Plant	1	Gasoline			560	4-cycle, 4-cylinder, vertical type.	25	115 ⁽²²⁰⁾	Multipolar, direct current, direct connected.
Canby, Wash.	S.L. Power Plant #6 & 7	2	Gasoline			560	4-cycle, 4-cylinder, vertical type.	25	115	Multipolar, direct current, direct connected.
Canby, Wash.	S.L. Power Plant #8	1	Gasoline			560	4-cycle, 4-cylinder, vertical type.	25	115	Multipolar, direct current, direct connected.
Columbia, Wash.	Central Power Plant	1	Gasoline			560	4-cycle, 4-cylinder, vertical type.	25	115	Multipolar, direct current, direct connected.
Columbia, Wash.	Battery William Murphy Power Plant.	2	Elaine Coal Oil	7	Hornsby-Akroyd				110	Direct current, bi-polar, compound wound, belted generator.
Columbia, Wash.	30" S.L. Power Plant	1	Coal	20	Vertical, fire tube. <i>Lidgerwood Mfg Co.</i>	18	450: Single cylinder, 6-1/2" bore x 5" stroke.	10	110	4-pole, compound wound.
Columbia, Wash.	36" S.L. Power Plant	1	Gasoline			600	4-cycle, 3-cylinder, 6"x6".	9.6	74	Multipolar, differentially wound, separately excited.
Stevens, Oregon	Central Power Plant	2	Oil	100	Horizontal, water tube.	70	305: Horizontal, single cylinder, non-condensing.	50	220 No load. 250 Full load.	Multipolar, compound wound, direct connected.
Stevens, Oregon.	Battery David Russell Power Plant.	2	Gasoline			560	4-cycle, 4-cylinder, vertical type.	25	115 ⁽²²⁰⁾	Multipolar, direct current, direct connected.
Stevens, Oregon.	30" S.L. Power Plant	1	Coal	20	Vertical, fire tube. <i>Lidgerwood Mfg Co.</i>	18	450: Single cylinder, 6-1/2" bore x 5" stroke.	10	110	4-pole, compound wound.
Stevens, Oregon.	36" S.L. Power Plant	1	Gasoline			600	4-cycle, 3-cylinder, 6"x6".	9.6	74	Multipolar, differentially wound, separately excited.
Stevens, Oregon.	S.L. Power Plant #1 & 2	2	Gasoline			560	4-cycle, 4-cylinder, vertical type.	25	115	Multipolar, direct current, direct connected.
Stevens, Oregon.	S.L. Power Plant #3 & 4	1	Gasoline			560	4-cycle, 4-cylinder, vertical type.	25	115	Multipolar, direct current, direct connected.

	U.S. ENGINEER OFFICE AUG 23 1911 PORTLAND, OREGON.
--	--

Efficiency.	General condition & upkeep	Probable Useful Life.	Current supplied for Light and Power in Batteries, Buildings, etc.	Transferred to Artillery.	Remarks
current,	Not tested.	Instal- led.	10 yrs. Bat. O'Flyng #1 & 2, Bat. Allen #1,2,3, Stas. F ₁ , B ₅ , Dormitory, Swchbd Rm, Cent. Power Plant, No post lighting.	No	Plant installed but not in use.
current,	Not tested.	Not instal- led.	10 yrs. Power Plant #6 & 7, 36" S.L. #6 (30" temporary installation) and 60" Searchlight #7. ^{36"} S.L. #6.	--	Set allotted, shipment not made ^{planned to be made.} (2472/245)
current,	Not tested.	Instal- led.	10 yrs. Power Plant #8 and (30" Searchlight temporary installation)	No	Plant installed but not in use.
current,	Excel- -lent.	Good	10 yrs. Bat. Jules Ord #1,2,3 & shot hoists; Stas. F ₅ , M ₂ , B.C.(Ord), dormitory and Swchboard.	2-10-'11	
polar, ited gen- erator. ound.	Good	Good	5 yrs. Battery William Murphy and Bat. Frank Crenshaw. ^{to be intended for these two batteries.}	10-29-'00	Plant amply large for all known light and power requirements. (This is a duplicate plant which is now being ^{run} in parallel.)
	Fair	Poor	3 yrs. Power Plant and 30" searchlight No. 261	3----'01	Boiler in poor shape.
entially excited.	Good	Good	8 yrs. 36" Searchlight, Portable Outfit No. 25.	1----'08	
and nnected.	Excel- -lent.	Good	10 yrs. Batteries Mishler, Walker, Lewis, Pratt, Freeman, Smur, Clark, Mining Casemate, Gun Cotton Storage magazine, B.C. Stas. Lewis, Walker, Mishler and Clark, and all fire control stations except those located in vicinity of Bat. Russell	12-15-'10	Plant designed for additional set.
t current, d.	Excel- -lent	Good	10 yrs. Lights and power for Battery Russell, Dist. Signal Station, Dormitory, C, B ₁ , B ₂ , F ₂ , F ₃ , F ₄	3-30-'11	
wound.	Good	Good	5 yrs. Lights, ^{for} power plant and 30" searchlight #283.	3----'01	Searchlight mounted on car, track connecting with Columbia River jetty tracks.
entially excited.	Good	Good	8 yrs. 36" searchlight, portable outfit No. 24.	1----'08	
t' current, d.	Excel- -lent.	Good	10 yrs. Power plant #1 & 2 and 60" searchlights Nos. 1 and 2.	6-28-'11	
t current, d.	Not tested.	Instal- led.	10 yrs. Power Plant #3 & 4, 1-60" searchlight No. 3, ^{60"} and Torpedo Loading Room.	No	Searchlight #4 and generating set not supplied. Plant installed but not in use.

Obsolete

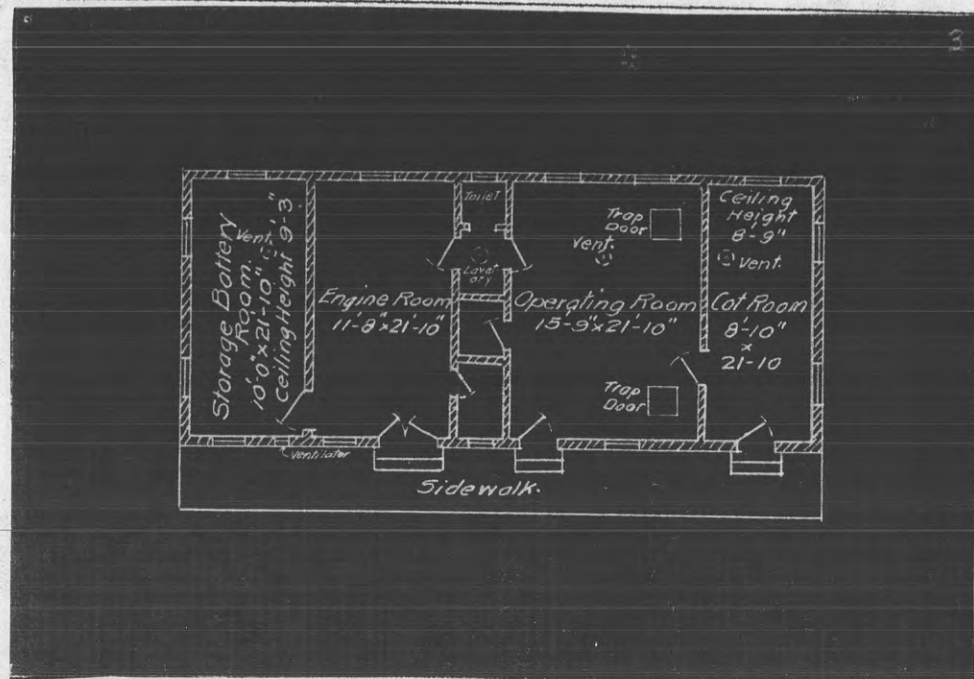
REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS.
(Fire control or Torpedo Structures)

COAST DEFENSES OF... THE COLUMBIA...
FORT. COLUMBIA, WASHINGTON...
STRUCTURE... OLD MINING CASEMATE (1911)...
(Abandoned)

Form 2. Corrected to June 30, 1921.

Location	Behind Rock Knoll, Chinoook Point.	Type of data transmission	
Date of transfer	March 30, 1911.	Date of transfer	
Cost to that date	\$5,005.00	Cost of data transmission equipment	
Type of construction	Sewell type.	For tide stations give description of tide gauge	
(a) Roof	Wood, asphalt, paper & gravel	For datum points give Forts from which visible	
(b) Remainder of building	Wood, plaster & expanded metal	For dormitories give stations served	
How concealed	Behind rock knoll.	For cable hut give S. C. type	
How protected	Rock knoll.		
Height above concealment	None.		
Height above protection	None.		
Conspicuous at.....yards	Visible from above and rear only.		
Source of electric current	Central Power Plant.		
Kilowatts required	1.0 kw.		
Type of lighting fixtures	Ceiling & wall, common commercial.		
How heated	Stove.		
Connected to water mains	Yes.		
Connected to sewer	Yes.		
Type of latrine	Syphon.		
Permanent or temporary installation	Permanent; replaced with new structure in 1921.		
Present condition	About 14' above M.L.L.W.		
Reference of site			
Reference of instrumental axis			
Type of observing inst.			
Type of plotting board			
Type and capacity of crane			
Max. dimensions of reel handled			

See Form 2, corrected to June 30, 1921, Structure, New Mining Casemate (1921)



REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS.
(Fire control or Torpedo Structures)

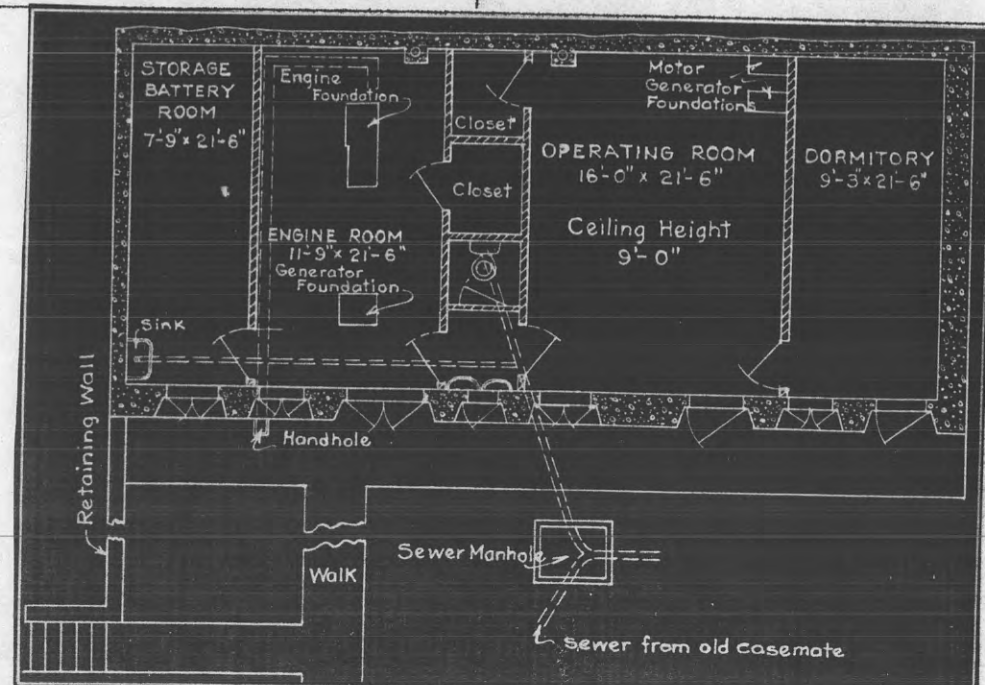
COAST DEFENSES OF THE COLUMBIA
FORT. COLUMBIA, WASHINGTON
STRUCTURE. NEW MINING CASEMATE. (1921)

Form 2.

Corrected to June 30, 1921.

Location	Behind rock knoll, Chino-nook Point.
Date of transfer	February 5, 1921.
Cost to that date	\$17,213.79.
Type of construction	Bombproof.
(a) Roof	Reinforced concrete.
(b) Remainder of building	Plain concrete.
How concealed	Dug into rear of rock knoll, with earth cover.
How protected	Rock knoll in front & on sides; reinforced concrete roof with earth cover.
Height above concealment	None.
Height above protection	None.
Conspicuous at.....yards	Rear visible from above; also about 500 yds from rear.
Source of electric current	Central Power Plant.
Kilowatts required	1.2 kw.
Type of lighting fixtures	E.D. Standard.
How heated	Stoves.
Connected to water mains	Yes.
Connected to sewer	Yes.
Type of latrine	Syphon.
Permanent or temporary installation	Permanent.
Present condition	Good.
Reference of site	About 14' above M.L.L.W.
Reference of instrumental axis	
Type of observing inst.	
Type of plotting board	
Type and capacity of crane	
Max. dimensions of reel handled	

Type of data transmission	
Date of transfer	
Cost of data transmission equipment	
For tide stations give description of tide gauge	
For datum points give Forts from which visible	
For dormitories give stations served	
For cable hut give S. C. type	



Superseded
See Supplemental Form 2 corrected to
5/10/43

SECRET

44125

Form 2.

Corrected to May 10, 1943

STRUCTURE:

Location : Within U.S. Military Reservation of
: Fort Columbia, Washington.
:
Date of transfer : March 31, 1943.
:
Cost to date of transfer . . . : Of supplemental work: \$29,957.12.
: *Original cost \$17,213.79*
Construction work : This supplemental work consisted of
: gasproofing and bombproofing of the
: Mine Casemate at Fort Columbia, Wash.
:
Gasproofing : To house the gasproofing equip ment,
: air locks etc. an addition with access
: tunnels were constructed to the origin-
: al Mine Casemate. This addition was
: constructed of reinforced concrete of
: a 1:2:4 mix. The interior dimensions
: are 10'-0" x 50'-0" x a ceiling height
: of 10'-0". The interior walls are 12"
: thick, the exterior walls are 3'-0"
: thick and the roof is 5'-0" thick. Air
: intakes, ventilators etc. are provided
: for the gasproofing system. The gas-
: proof doors are fabricated of steel.
: The access tunnels are constructed of
: reinforced concrete of a 1:2:4 mix, are
: 4'-0" wide and have a clearance of
: 7'-0"; the walls and roof are 12" in
: thickness. Grill gates are used to
: close the tunnels.



*Info. by TT PADPO 10-61 Dated 3 Oct 44
Electric ltr, grinders, drills & other electrical equipment
installed by troops. Load requirements as follows:
Light equip etc 4 KW x 2.5 KW Gasproofing equip on ltr equipment
on #210 circuit 4.5 KW*

Page Card 11

SECRET

Card 1

SECRET

Form 2.

Corrected to May 10, 1943

Bombproofing : In addition to the 5 foot reinforced concrete roofs of the addition
: and the original structure an embankment of earth was placed over
: the entire structure. This embankment is 10 feet in depth over the
: roofs. On this embankment was placed a burster course of concrete.
: This burster course is 2 feet in thickness and extends over the
: entire area covered by the casemate. On this burster course was
: placed 3 feet more of earth embankment for concealment advantages.
:
Concealment : The entire structure is covered with earth embankment, the slopes of
: which were finished off in irregular plan. The embankment was plant-
: ed with grass, sod and brush to conform to the surrounding area.
:
ELECTRIC CURRENT:
Source of : Power for lighting of the addition was obtained by extending the cir-
: cuits of the original structure. Commercial power for Fort Columbia
: is purchased from P.U.D. No. 2 of Pacific County, Washington.
:
Kilowatts required : For the additional lighting amounts to 1.8 kw.
:
Type of lighting fixtures . . . : Are incandescent lamps in porcelain lamp receptacles.
:
HEAT, WATER & SEWER : No additional facilities were provided in connection with this supple-
: mental work.
:
REMARKS : This supplemental work on the Mine Casemate was accomplished by Govern-
: ment forces with funds from P/A, Eng.-341 P 14 A 1204-12 and from P/A,
: Eng.-184 P 14 A 1205-N. Construction work was started November 1, 1941
: and was completed, in-so-far as the Engineer work is concerned, on
: January 31, 1943. For construction details see plans DMCR 938.1, 938.2
: and 960.

SECRET

MINE CASEMATE

FORT COLUMBIA, WASH.

MAY, 1942

SCALE: 1/16"=1'-0"

U. S. ENGINEER OFFICE, PORTLAND, OREGON, DISTRICT

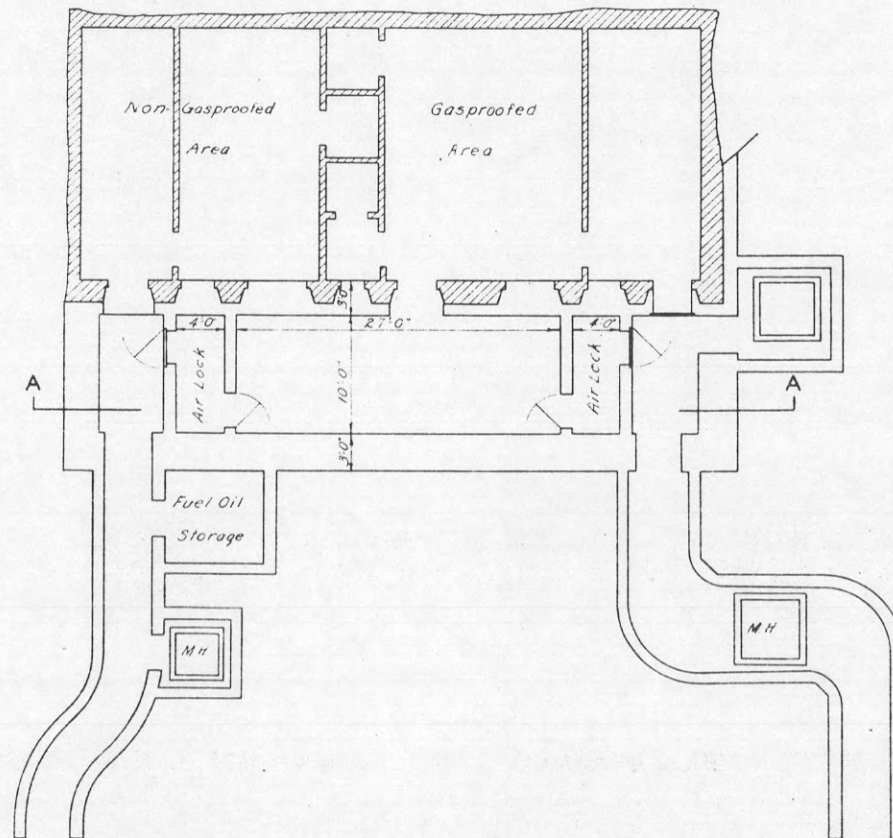
Submitted: *W. H. ...*
Senior Engineer

Approved: *W. H. ...*
May 20, 1942
LT Col., Corps of Engineers

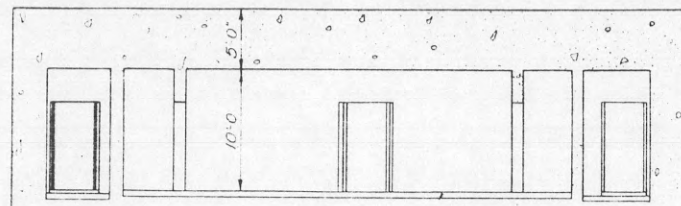
Recommended: *W. H. ...*
Principal Engineer

Drawn W.F.H.
Traced W.F.H.

FOR DETAILED PLANS SEE DMCB 9381-9382-960



PLAN



SECTION A-A

SECRET

SECRET

Part II Corrected to 15 October 1944

SECRET

119662

Control Approval Symbol SPEKM-1

GENERAL:

This is a supplemental report to cover the improvements to the river end of the cable gallery to the Mine Casemate at Fort Columbia. The old gallery ended on the river shore at an elevation of $\frac{1}{4}$ 4 feet, M.L.L.W. which is at a little less than half tide; therefore the mine cables laid on the river shore rocks, several hours each tide, in full view and exposed to possible sabotage. The improvement consisted of constructing a protective concrete apron, over the cables, to an elevation below M.L.L.W.

STRUCTURE:

Location: This work was on the river end of the cable gallery entrance to the Mine Casemate which is located in the Military Reservation of Fort Columbia, Harbor Defenses of The Columbia, Washington.

Date of transfer: Of this supplemental work, 22 September 1944.

Cost to date of transfer: Of the supplemental work, \$2,197.80.

Type of construction: The protective apron and the manhole, providing access into the apron, are constructed of reinforced concrete of a 1:2:4 mix. For construction details and dimensions see drawing numbered DMCR-1182.1.

REMARKS:

This work was constructed with funds having Advise No. 508-1341 P 220 A 0905-25 (GF). The work was accomplished by Government forces; was started 17 July 1944 and was completed 19 Aug. 1944. This construction was designated Project No. 3153 by the W.D.C. For construction details see drawing numbered DMCR-1182.1.

ESA

ED Form A-162B
16 Sept. 1943

SECRET

WAR DEPARTMENT

CORPS OF ENGINEERS, U.S. ARMY

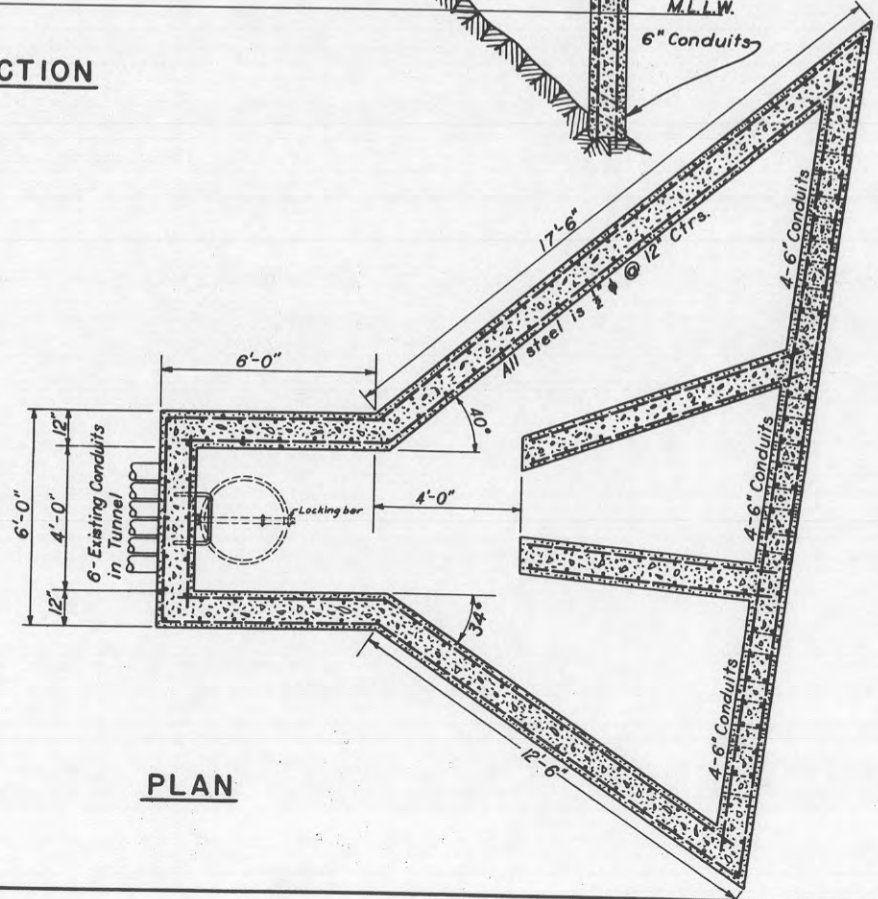
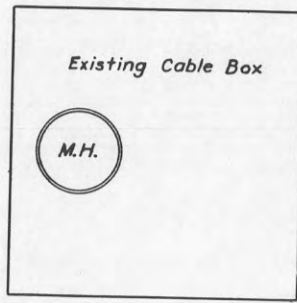
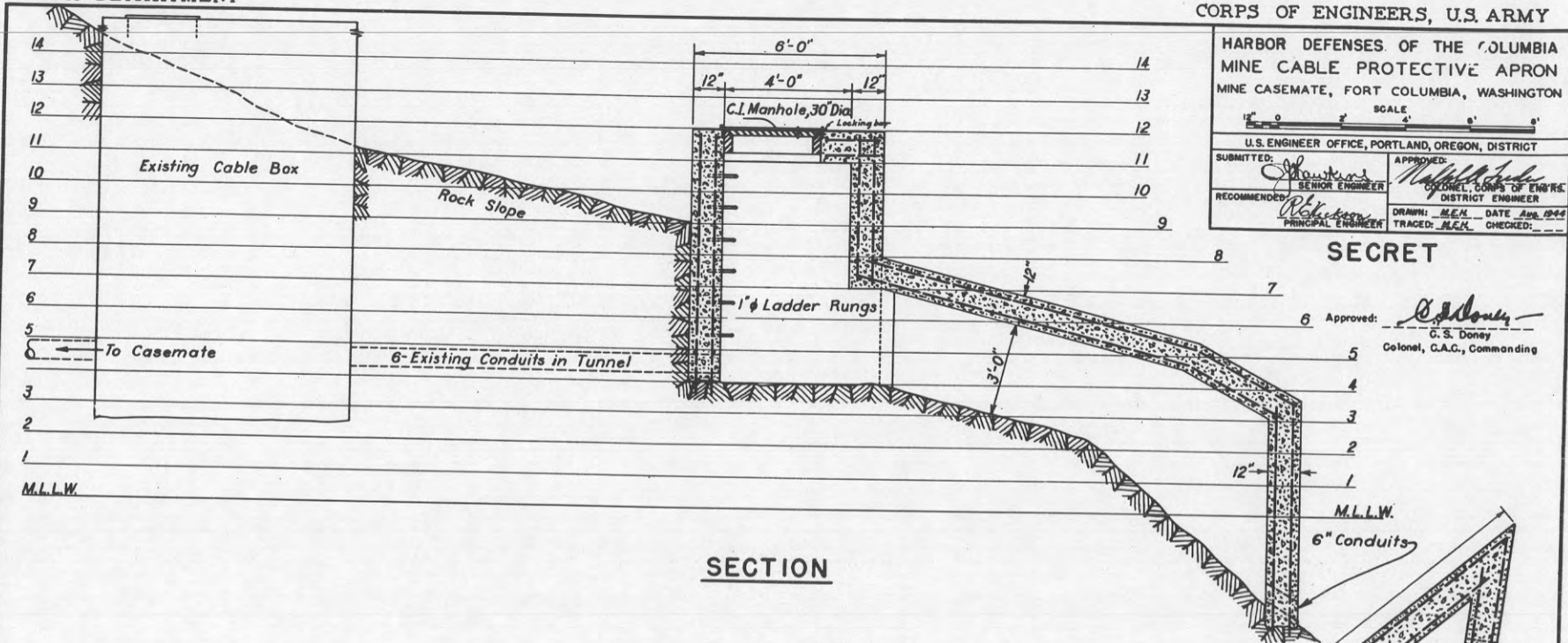
HARBOR DEFENSES OF THE COLUMBIA
MINE CABLE PROTECTIVE APRON
MINE CASEMATE, FORT COLUMBIA, WASHINGTON

SCALE
0 2 4 6 8

U.S. ENGINEER OFFICE, PORTLAND, OREGON, DISTRICT
SUBMITTED: *[Signature]*
RECOMMENDED: *[Signature]*
APPROVED: *[Signature]*
SENIOR ENGINEER
COLONEL, CORPS OF ENGINEERS
DISTRICT ENGINEER
DRAWN: *[Signature]* DATE: *Apr 1944*
TRACED: *[Signature]* CHECKED: *[Signature]*

SECRET

Approved: *[Signature]*
G. S. Doney
Colonel, C.A.C., Commanding



Part II

Corrected to 1 September 1945

CONFIDENTIAL

Control Approval Symbol SPEKM-1

STRUCTURE:

General: This supplemental report is made to cover the construction of a second addition to the Mine Casemate; this second addition is a mine Plotting Room. Enough of the earth embankment was removed from over/and in front of the casemate to permit the construction of the plotting room as an addition to the casemate. In view of the possibility of a switch board room being built on, as still yet another addition, the reinforcing of the footings, walls, and roof of the plotting room were left protruding to act as dowels; also on the roof a 12" ledge was left on which to rest the roof of a future construction. After completion of the addition the earth embankment was replaced to its original shape.

Location: Is within the U.S. Military Reservation of Fort Columbia, Washington.

Date of transfer: Of this supplemental project, 28 July 1945.

Cost to date of transfer: Of this supplement project, was \$14,698.79.

Type of construction:

Roof: Is constructed of reinforced concrete of a 1:2:4 mix and is 4'-0" in thickness.

Remainder of addition: Is constructed of reinforced concrete of 1:2:4 mix. The walls are 3'-0" and the floor is 10" in thickness. The walls are set on reinforced concrete footings 7'-0" wide by 1'-6" thick. The interior dimensions of this plotting room are 20'-0" x 23'-6" with a ceiling height of 10'-0". The

gasproofing of this room was accomplished by extending the decontamination system from the original structure.

Concealment: The entire structure is covered with earth embankment, the slopes of which were finished off in irregular plan. The embankment was planted with grass, sod and brush to conform to the surrounding area.

UTILITIES:Electric power:

Source: Power for the addition was obtained by extending the circuits of the original structure. Commercial power for Fort Columbia is purchased from P.U.D. No. 2 of Pacific County, Washington.

Characteristics: Voltage of 110 or 220 Ac, 3 phase.

Kilowatts required: For the additional installations, 5.0 KW.

Type of lighting fixtures: Four fixtures of 4-48" fluorescent lights.

Heat: Heat for the plotting room is provided by 2, 2000 watt, 220 volt, electric, wall-type heaters.

Water and sewer: No additional facilities were provided in connection with this supplemental work.

ED Form A-162B
16 Sept. 1943

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS

HARBOR DEFENSES OF THE COLUMBIA,
FORT COLUMBIA, WASHINGTON.
MINE CASEMATE (Supplemental Report
For Addition of a PLOTTING ROOM)

Part II

Corrected to 1 September 1945

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INSTRUMENTS & EQUIPMENT:

Type of plotting board: Submarine Mine Plotting
Board M9F.

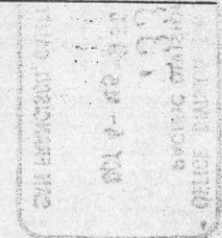
DATA TRANSMISSION:

Type: By telephones, furnished and installed
the Signal Corps.

REMARKS:

This supplemental work on the Mine Casemate was accomplished by Government forces with funds having advise numbers of 508-2015 P 270 A 212/51204 (SM) and 608-3810 P 270 A 212/61204 (SM). Construction work was started on 12 January 1945 and was completed on 16 July 1945. The work was designated Job No. Ft. Columbia FS-4 by Directive Consecutive Number FS-1594. For construction detail plans see plans numbered DMCR-1188.1 and DMCR-1188.2.

ED Form A-162B
16 Sept. 1943



Harbor Defenses of the Columbia
Fort Columbia, Washington
DEFENSES OF THE COLUMBIA

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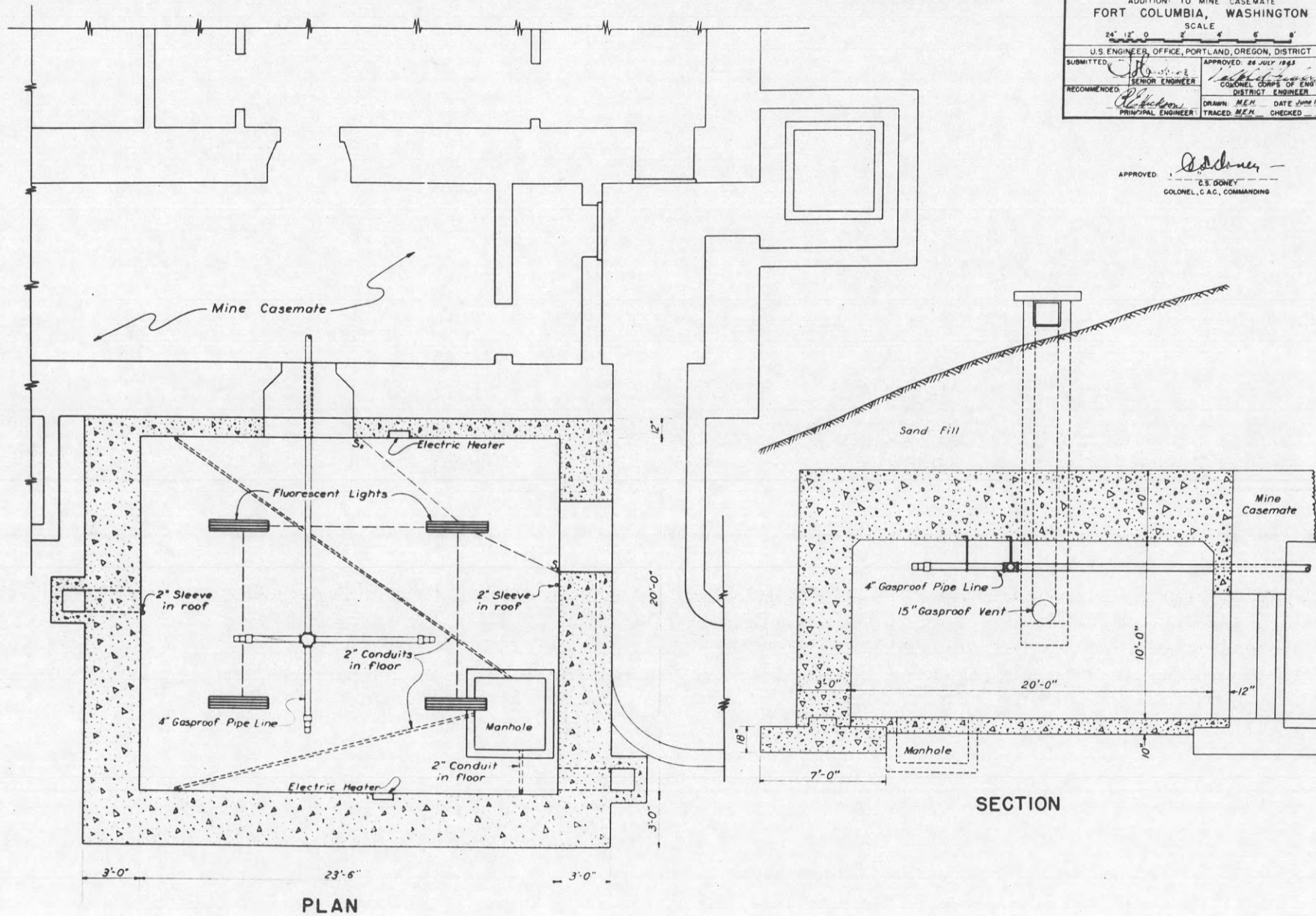
CORPS OF ENGINEERS, U.S. ARMY
 HARBOR DEFENSES OF THE COLUMBIA
 MINE PLOTTING ROOM
 ADDITION TO MINE CASEMATE
 FORT COLUMBIA, WASHINGTON

SCALE
 24" 12" 0' 6" 3"

U.S. ENGINEER, OFFICE, PORTLAND, OREGON, DISTRICT

SUBMITTED	APPROVED: 24 JULY 1945
RECOMMENDED	COLONEL CORPS OF ENGINEERS
SENIOR ENGINEER	DISTRICT ENGINEER
PRINCIPAL ENGINEER	DATE June 1945
	TRACED, M.E.M. CHECKED

APPROVED: *G.S. Doney*
 G.S. DONEY
 COLONEL, C.A.C., COMMANDING

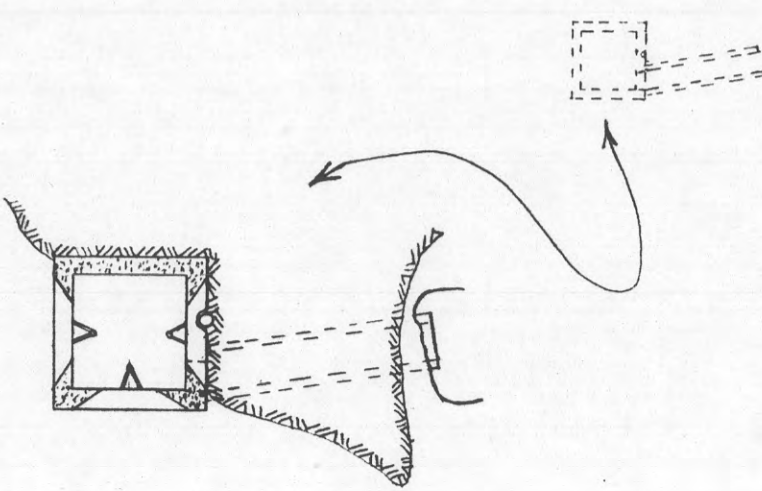
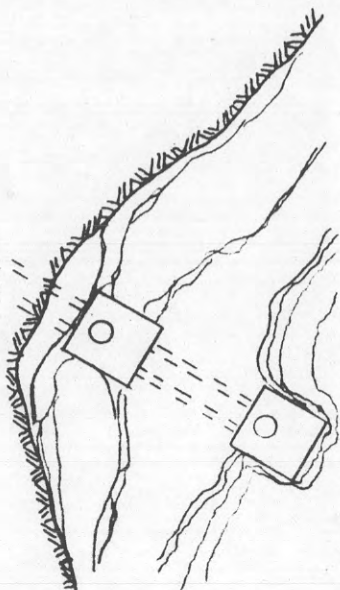
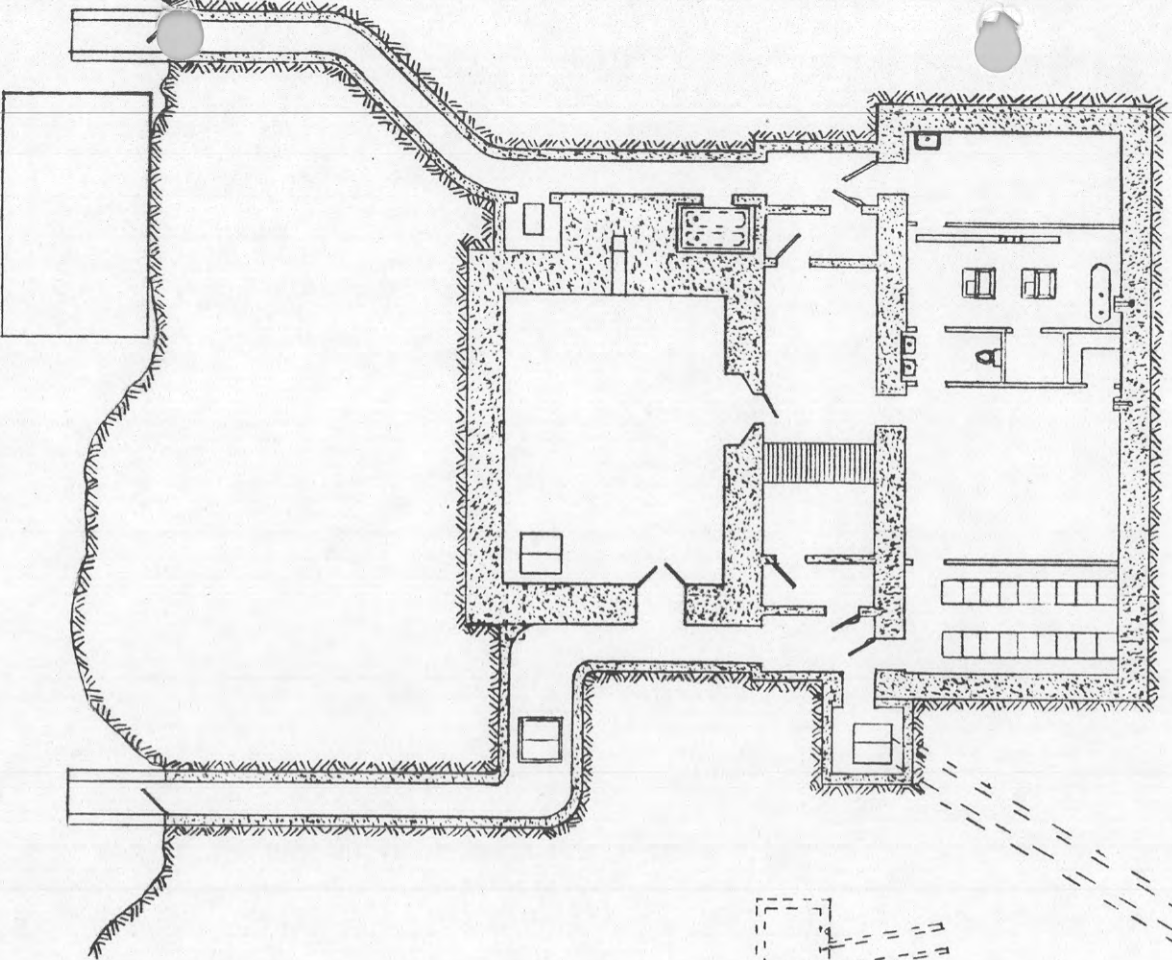


New Mine Casemate - Ft. Columbia

General Plan View

Approx. Scales: 1" = 20'; General Plan

1" = 10'; Pill box Detail, April 1994 L. Guidry



640 (Col. River) CM 42722
REPORT OF COMPLETED WORKS—SEACOAST FORTIFICATIONS
(Fire Control Structures)

SECRET

HARBOR DEFENSES OF THE COLUMBIA
FORT COLUMBIA, WASHINGTON
M 1/4 STATION ADDITION (Plotting Room)

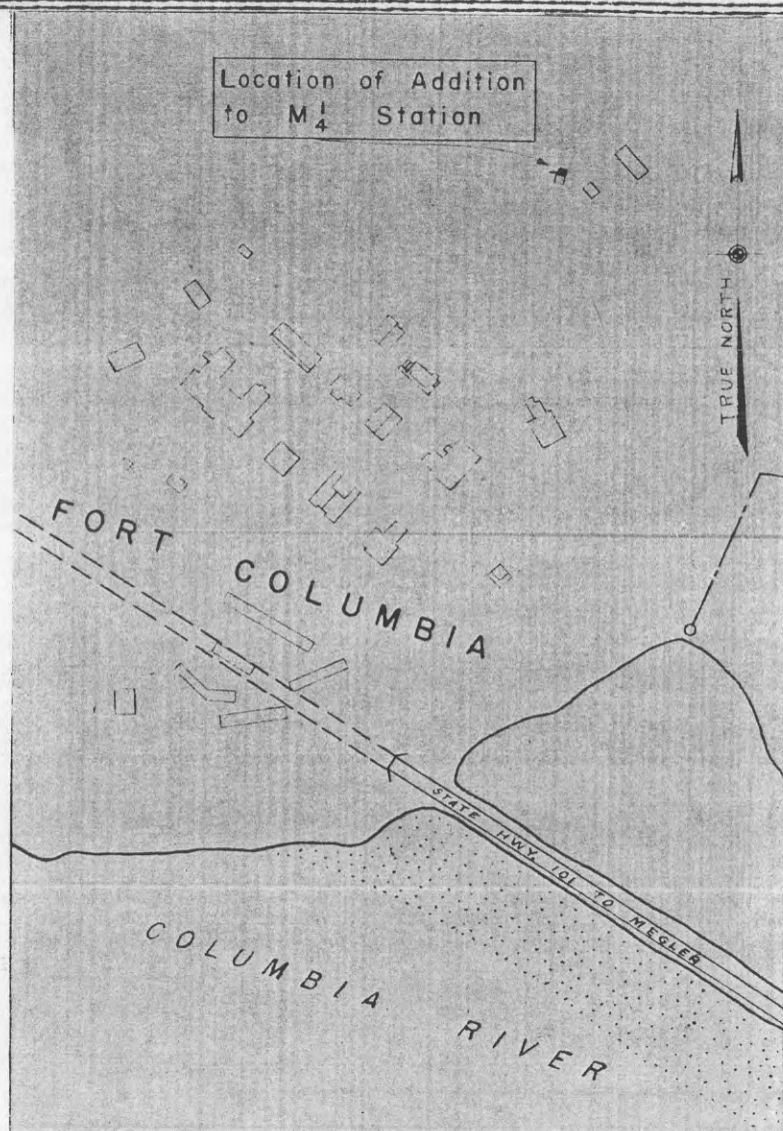
Form 2.

Corrected to February 20, 1943.

M4 - M4 - PM4

STRUCTURE:

Location : At Fort Columbia, Washington
Date of transfer : March 31, 1943
Cost to date of transfer : \$3,189.46
Type of construction:
(a) Roof : 12" of reinforced concrete supported
: by two 16"x12" reinforced concrete
: beams. Concrete mix of 1:2:4.
(b) Remainder of Addition : Reinforced concrete of 1:2:4 mix. In-
: side dimensions of 13'-0"x15'-0"x a
: ceiling height of 8'-3". Has a tunnel
: access of reinforced concrete, the
: tunnel being 3'-6" in width, 7'-0" in
: height and 26'-0" in length. The in-
: terior of the room is lined with a
: false wall of lumber and firtex having
: a wooden trim.
How concealed : The entire addition is covered with
: approximately 3 ft. of earth which is
: planted with vegetation.
Conspicuous at : The addition is entirely covered with
: earth and vegetation and is not con-
: spicuous at any distance.
ELECTRIC CURRENT:
Source of : Commercial power thru the Fort.
Kilowatts required : 1.0 Kilowatt.
Type of lighting fixtures : 200 watt incandescent bulbs.
HEAT : This addition is heated by facilities
: provided in the adjoining room of the
: original structure.
WATER & SEWER : No water nor sewage facilities, other
: than those of the original structure,
: were required for this construction.



HARBOR DEFENSES OF THE COLUMBIA
FORT COLUMBIA, WASH.
ADDITION TO M 1/4 STATION

JANUARY, 1943
SCALE: 1:3600

-1- SECRET

See Proj Card 40

REPORT OF COMPLETED WORKS--SEACOAST FORTIFICATIONS
(Fire Control Structures)

SECRET

HARBOR DEFENSES OF THE COLUMBIA
FORT COLUMBIA, WASHINGTON
M 1/4 STATION ADDITION (Plotting Room)

Form 2.

Corrected to February 20, 1943

EQUIPMENT

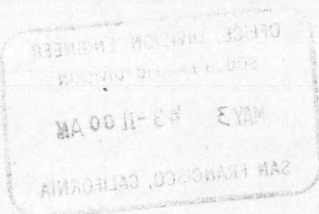
Type of plotting board : 1906 Submarine plotting board not
: installed by Engr. Dept.

DATA TRANSMISSION:

Type of : Telephones installed by Signal Corps

PRESENT CONDITION : Excellent.

REMARKS : The construction of this addition was
: supplemental to the original M 1/4
: Station. The addition is to be used
: as a plotting room only; was const-
: ructed by Government forces and com-
: pleted October 5, 1942. The station
: is located within the U.S. Military
: Res. of Fort Columbia and the pur-
: chase of additional grounds was not
: necessary. The work was authorized
: by letter and Sub Procurement
: Authority Serial Number CAC 252 dated
: April 22, 1942. For construction de-
: tails see attached detailed drawing
: which is part of this completion re-
: port.



SECRET

WAR DEPARTMENT

CORPS OF ENGINEERS, U.S. ARMY

HARBOR DEFENSES OF THE COLUMBIA
ADDITION TO M₁ STATION

AT FORT COLUMBIA, WASH.

JANUARY 1943

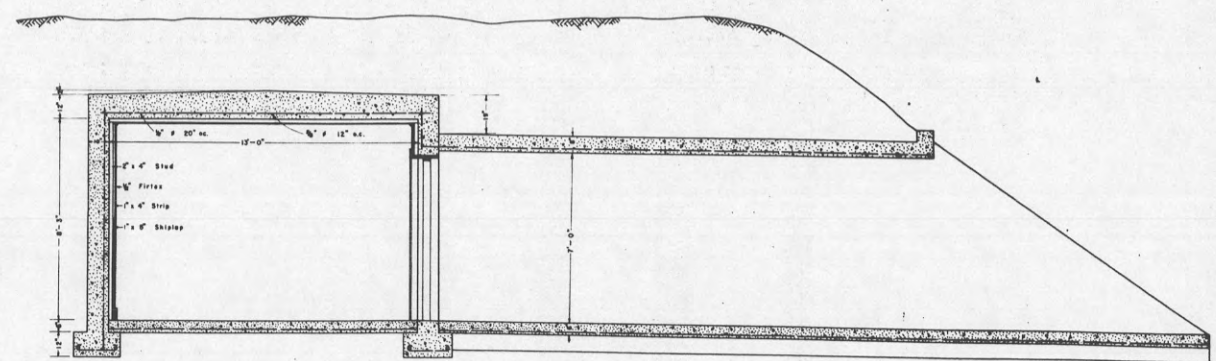
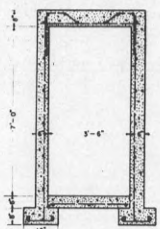
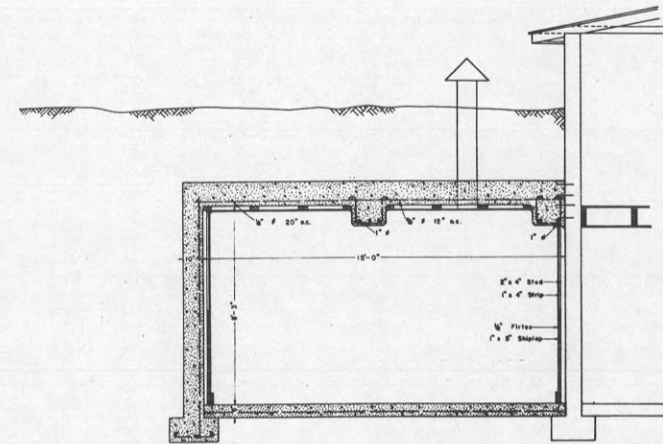
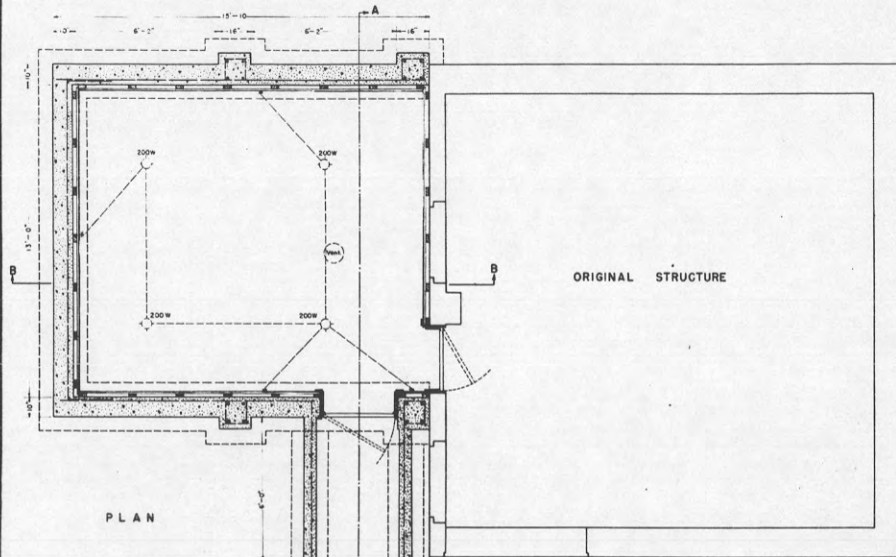
SCALE 1/8"=1'

U.S. ENGINEER OFFICE, PORTLAND, OREGON, DISTRICT

Drawn: [Signature]
Checked: [Signature]
Submitted: [Signature] SENIOR ENGINEER APPROVED: [Signature] COLONEL, CORPS OF ENGINEERS
Recommended: [Signature] PRINCIPAL ENGINEER

SECRET

CONFIDENTIAL



SECTION A-A