Primary Battery File

National Archives, Washington D.C.

Record Group 77

Correspondence of the Chief of Engineers

Entry 103

File, Fort, Battery:

29426

Ft. Columbia

Btty Murphy

DEFENSES MOUTH COLUMBIA RIVER,
OREG. AND WASH.
COLUMBIA RIVER BELOW WILLAMETTE,
OREG. AND WASH.
WILLAMETTE AND YAMHILL RIVERS, OREGON.
COWLITZ RIVER, WASHINGTON.

United States Engineer Office,
P. O. DRAWER, 50,
PORTLAND, OREGON.

April 10, 1899

'99 Def.102.

Brig. Gen. John M. Wilson,
Chief of Engineers, U.S.A.,
Washington, D.C.

General:-

In compliance with your instructions of Jan. 5, 1899 (E D 29426), I have the honor to submit herewith plans and estimates for two emplacements for 6-inch B.L. Rifles on U.S.Disappearing Carriages, L. F.,Model 1898, at Chinook Point, Washington.

This battery and the 15 pdr. battery have been placed as shown only after a great deal of study. A number of other arrangements have been tried but the objections in all other locations seemed greater than here. For instance the 6-inch guns might have been placed between 8-inch emplacements 2 & 3, but the great excavation necessary to enable the guns to cover the desired field of fire would be too expensive. If located on the left flank of 8-inch No. 3, the fire of the latter would be interfered with and the expense would again be very great because rock is encountered near the surface.

Study of the vicinity maps, one on the scale of 1 inch to 100 ft. and the other on a scale of 1 inch to 20 ft., will show the difficulty of satisfactorily covering the desired field of

fire elsewhere with reasonable economy of construction.

The design of the emplacements is that of the Board of Engineers with the addition of a storage battery room and latrine.

Owing to the formation of the site it was deemed best to provide a rear passage as shown on the plans and allow the roadway and necessary level space in rear of the battery to be at the level of the loading platforms.

The interior crest of this battery is at elevation 65.0; that of 8-inch emplacements Nos. 1 and 2, 500 feet in rear, being at elevation 105.0 feet. A projectile fired from the latter to reach the nearest 12 ft. depth available for an enemy (distant about 1000 yds.) would pass 25 feet above the crest of this battery (which is believed to be sufficient) the distance between the batteries being the maximum possible. The platforms of 6-inch battery are at the elevation necessary to give the guns a 3° depression allowing the shot to strike where the low water depth is 4 feet.

To get the standard protection for the left emplacement the thickness of the concrete parapet has been increased 7 ft. (from 10 ft. to 17 ft.) as shown on the drawings. To have thrown the battery 20 ft. farther back would greatly increase the excavation for this battery and still more that for the 15-pdr. battery. It may be thought that both batteries are too near the edge of the bluff, but as a slope of 2 on 3 in this material stands all kinds of weather, and the base of the bluff where exposed to the water is rock, they are believed to be perfectly safe. It is intended to put rails into the concrete foundation to guard as thoroughly

as possible against cracks from unequal settlement.

A room has been designated relocator room which will have all necessary communications with this battery and the 15-pdr. battery alongside. The storage battery will also supply the electric lights for both.

The fields of fire of these guns are shown on Coast Survey Chart submitted with my letter of March 27, 1899, regarding distribution of armament at Point Adams, Oregon.

The estimated cost of the two 6-inch emplacements is $78,324.13 as per detailed estimate herewith, or say $78,500.00

A very large amount of excavation is required, and for best economy should be begun as soon as the ground is dry enough.

Very respectfully,

Your obedient servant,

W. T. Patrick.

Major, Corps of Engineers, U.S.A.

Enclosures:

1 estimate (herewith)

3 Tracings)
1 Tracing - vicinity map, scale 1" to 100') Separate package.
1 Tracing - vicinity map, scale 1" to 20')
1 Tracing - plans for two 6-inch emplacements)

Through Col. S.M.Mansfield,

Corps of Engineers, U.S.A.,

Division Engineer, Pacific Division.

OFFICE, CHIEF OF ENGINEERS
APR 20 29426 1899
1
WAR DEPARTMENT.

Def
450

Portland, Ogn.,

April 10, 1899.

FISK, Major W.L.

Corps of Engineers.

[illegible] & estimate ($78,325.) for
[illegible]placements for 6-inch B.L.
[illegible]les on U.S.dis.carriages, mod-
1898, at CHINOOK POINT, Wash.;
(E.O.#29426). Estimated cost, as
[illegible] detailed est, $78,324.13,
[illegible] say $78,500

4 enclos. (Nos 3-5, tracings) E.O.
2 add'l incls (tracing) 4th endorsement

Rec'd in Engr Office, Portland, Or. May 22 99
Rec'd in Engr Office, Portland, Or. June 22 99
In Map Files:-
Incls. 9-8, Dr. 92, Sh. 10 & 10
" 9+10, " " 10
RECD. IN OFFICE CHIEF OF ENGRS. JUL
incs. 2-10 accg.
RECD. BACK, IN OFFICE CHIEF OF ENGRS. JUN 10 1899
incs. 2-5 and 5 add'l incs. accg

First Endorsement.

U.S.ENGINEER Office,
Pacific Division,
San Francisco, Cal.,
APRIL 14, 1899.

Respectfully forwarded; Recommended.

Colonel of Engrs., U.S.A.,
Division Engineer.

2nd Endorsement.

Office Chief of Engineers,
U. S. Army.

May 5, 1899.

Respectfully returned.

The Department is exceedingly anxious to provide emplacements for all carriages already provided by the Ordnance Department, and unless available construction funds are economized to the utmost it will not be practicable to attain this end. While the conditions at Chinook Point are not favorable to economical results, it is nevertheless believed that a considerable reduction in the estimate can be effected by a slight change in the location of the battery and in a reduction of the quantity of concrete. An examination of the estimates will show that the principal features affecting the cost are

1. The high unit cost of concrete.
2. The increased amount of concrete over the type plans.
3. The unusually large amount of excavation.

The last two items are the result of an apparent effort to place the battery as far to the front of and as much below the 8-inch emplacements as possible. Inasmuch as the fire from all batteries will be generally to the right front and the occasions for firing the 8-inch guns with maximum depression directly over the 6-inch battery will be exceedingly rare, it would seem that there could be but little, if any, objections to moving the battery to the rear and to raising it at the same time. There are returned herewith three tracings of a study made in this office showing sections of the battery on the assumption of its being moved back 50 feet and raised 15 feet. Upon these sections are projected the trajectories of the 8-inch guns with a clearance of from 17 to 21 feet for ranges from 2,000 to 3,000 yards and a clearance of 12 feet for a range of 1,000 yards. It is not believed that there will be any practical increased discomfort from the blast in the location shown, and the following gains will be effected thereby:

1. A saving of about half the excavation, which is about equal to the fill.
2. The saving of the extr
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3. A safer site for the b
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3. The unusually large amount of excavation.

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1. A saving of about half the excavation, which is about equal to the fill.

2. The saving of the extra concrete in front of the left emplacement.

3. A safer site for the battery away from the edge of the bluff.

4. A partial removal of the high rear slope, which would act as a parados to catch and explode shells clearing the crest. In order to clear the mining casemate it will be necessary to shift the battery laterally also about 40 or 50 feet. From the data presented there seems to be no good reason why the above mentioned change in location might not be followed with all its resulting advantages. With a further view of reducing the quantities of cut and fill, attention is invited to sheet 1 of the study showing a tentative rearrangement of the battery with magazines between the guns. A blue print of a two-gun 6-inch battery at Rock Point, Md., on this design is also transmitted herewith. By adopting this arrangement the front of the battery is reduced and material saved. The removal of the battery to the rear will also allow of a reduction of concrete in front of the magazines and the substitution of an equivalent cover in earth.

It is suggested that it would be an advantage to leave the passage in rear of the loading platforms partially uncovered to secure better light and ventilation for the rooms under the loading platform.

In view of the firm character of the foundation soil, it would seem that a thickness of two feet for the floors is more than necessary.

Major Fisk will please give consideration to the foregoing remarks

and submit revised plans and estimates with return of all papers, except the blue print, to this office.

By order of the
Acting Chief of Engineers:

Joseph E. Kuhn
Captain, Corps of Engineers.

29426
1
Inclo. 2 accompg.
Inclos. 3-5, 3 addl. tracings, & blue print of 29420 in sep. roll.
2

Through Col. S. M. MANSFIELD,
Corps of Engineers,
Division Engineer, Pacific Division.

RECD. U. S. ENGR. OFFICE, PAC. DIV. MAY 10 1899

3rd. *Endorsement.*

U. S. Engineer Office,
Pacific Division,
San Francisco, Cal.
MAY 10,1899.

Respectfully transmitted:

S. M. Mansfield
Colonel of Engrs., U.S.A.,
Division Engineer.

4th Indorsement.
U.S. Engineer Office,
Portland, Oregon, June 1, 1899.

Respectfully returned to the Chief of Engineers, U.S.Army.

The plans of battery for two 6-inch guns on disappearing carriages herewith have been revised in accordance with the 2d indorsement, except that the location has been shifted 75 ft. laterally instead of 50 ft. in order to avoid the danger of filling the casemate entrance with earth that might be thrown over by a shell exploding in the parapet.

The estimate for this battery is now $56,324.75, to which should be added $1260.00 for grading down and sodding the conspicuous yellow side slope of the railroad cut immediately in front of it, making total estimated cost $57,584.75, or say $57,600.00.

The advantages of locating the battery where it now is, with its interior crest at [illegible](80'.0), were fully appreciated before the original plans were forwarded, but in view of the strong objections of the Department (see E.D.16402/6) to placing the entrance to the mining casemate 400 ft. in front of and about 66 ft. below the interior crest of the 8-inch battery, or at el. (39'.0), it was feared the elevation of (65'.0) for interior crest would find still less favor.

As the Department does not approve my suggestion of duplicate oil engine electric plants, one of the

rooms will be used for storage battery and the other as a store or guard room.

In this particular case the estimated cost of wiring in buried conduits, which storage battery will require, (deduced from work already done) is $783.00; the duplicate oil engine plan would entirely eliminate this item which would make it actually considerably the cheaper, in addition to its other advantages.

W. L. Fisk.

Major, Corps of Engineers.

450/7
Incl. 1 (estimate) accomp'g
Inclos. 2-4 (E.D. Tracings) study, accomp'g, sep.
Inclos. 6-8 (Tracings D.M.C.R./ 116, 117, 118) accomp'g. sep.
Two add'l inclos. Tracings D.M.C.R./ 116½ & 122, sep.

Through Col. S. M. Mansfield
Corps of Engineers, U.S.A.
Divison Engineer, pacific div.

RECD. U. S. ENGR. OFFICE, PAC. DIV. June 5 99

RECD. OFFICE CHIEF OF ENGRS. JUN 10 1899

5th *Endorsement.*

U. S. Engineer Office,
Pacific Division,
San Francisco, Cal.
JUNE 5, 1899.

Respectfully forwarded:

S. M. Mansfield

Colonel of Engineers, U. S. A.
Division Engineer

6th *indorsement.*

Office Chief of Engineers,
U. S. ARMY.

June 14, 1899.

Respectfully returned.

The revised plans are approved.

Under date of February 23, 1899, a provisional allotment of $19,000 was made for the construction of these emplacements. The sum of $38,600 additional is hereby allotted from the appropriation for "Gun and Mortar Batteries", for construction of gun and mortar batteries, Act of July 7, 1898, to be applied to the completion of the same emplacements.

In view of Major Fisk's statement relative to the economy and advantage of a duplicate oil engine plant in the case of this battery, he is hereby authorized to provide a duplicate oil engine plant, omitting the storage battery and underground conduit.

These papers to be returned.

By command of Brig. Gen. Wilson:

Joseph E. Kuhn

29426
1

Captain, Corps of Engineers.

Inclo. 2 accompg.
Inclos. 3-10 in sep. roll.

Through Col. S. M. MANSFIELD,
Corps of Engineers,
Division Engineer, Pacific Division.

RECD. U. S. ENGR. OFFICE, PAC. DIV. June 20 99

7th Endorsement.

U. S. Engineer Office,
Pacific Division,
San Francisco, Cal.
June 26, 99.

Respectfully transmitted

M. Mansfield
Colonel of Engineers U. S. A.
Division Engineer

8th indorsement.

U. S. ENGINEER OFFICE,
Portland, Oreg. June 23 1899

Respectfully returned to the Chief of Engineers, U. S. A., the necessary record having been made.

W. L. Fisk
Major Corps of Engineers.

450/7
Inclo 1. accomp'y.
Inclos 2-4 & 6-10 (tracings) accomp'y. in sep. roll.

Through Col. S. M. Mansfield
Corps of Engineers
Div. Engr. Pac. Div.

RECD. U. S. ENGR. OFFICE PAC. DIV. June 26. 99

9th Endorsement.

U. S. Engineer Office,
Pacific Division,
San Francisco, Cal.
JUNE 26, 1899.

Respectfully forwarded:

M. Mansfield
Colonel of Engineers, U. S. A.
Division Engineer

RECD. OFFICE CHIEF OF ENGRS. JUL 1 1899

Estimate for two Emplacements for 6-inch R. F. R., on Disappearing Carriages, Model 1898, at Chinook Point, Wash.

14,332	cubic yards excavation @ 50¢	$7,166.00
5,190	cubic yards concrete @ $9.00	46,710.00
18,350	square feet plastering @ 4¢	734.00
7,800	square feet floor and steps @ 17¢	1,326.00
1,750	cubic yards refill @ 35¢	612.50
27,900	square feet slope protection @ 4¢	1,116.00
35,510	lbs. steel I-beams @ 6¢	2,130.60
30	tons old rails in foundation @ $25.00	750.00
310	lin. ft. overhead carrier @ $1.50	465.00
12	Triplex Blocks (500 lbs) @ $30.00	360.00
2	double doors at lifts @ $10.00	20.00
20	single doors @ $25.00	500.00
4	double doors @ $40.00	160.00
110	lin.ft.sewer pipe,6", ventilation, @ 37¢	40.70
75	lin.ft. sewer pipe, 8", ventilation, @ 50¢	37.50
115	lin.ft. sewer pipe, 4", ventilation, @ 30¢	34.50
70	lin.ft. sewer pipe, 3", ventilation, @ 25¢	17.50
470	lin.ft. sewer pipe,12", drainage, @ $1.10	517.00
390	lin.ft. sewer piper, 8", drainage, @ 75¢	292.50
250	lin.ft. sewer pipe, 6", drainage, @ 65¢	162.50
400	lin.ft. sewer pipe, 4", drainage, @ 37¢	148.00
1,140	lin.ft. drain tile, 4", drainage, @ 16¢	182.40
350	lin.ft. galv. pipe, 2", water supply, @ 24¢	84.00
350	lin.ft. galv. pipe, 1", water supply, @ 15¢	52.50
70	lin.ft. galv. pipe, 2", drainage, @ 18¢	12.60
340	lin.ft. galv. pipe, 1-1/2 ",speaking tubes,@ 13¢	44.20
590	lin.ft. galv. pipe, 1", telephone wires, @10¢	59.00
18	mouth pieces for speaking tubes, @ $1.25	22.50
260	square yards asphalt water proofing @ $1.70	442.00
60	lin.ft. stanchions, 250 lbs. @ 10¢	25.00
100	lbs. Chain @ 10¢	10.00
1,150	lbs. ladders @ 10¢	115.00
4	shot cranes @ $45.00	180.00
4	shot crane anchors @ $10.00	40.00
41	incandescent lights @ $3.00	123.00
1,000	lin.ft. underground conduits,including wiring from Electric Light Station to emplacements,@87¢	870.00
1	Storage Battery,	2,000.00
24	Anchor bolts, 915 lbs. @ 15¢	137.25
32	Lamp closet slides @ $2.00	64.00
2	Chain hoists @ $450.00	900.00
2	Electric motors for hoists @ $225.00	450.00
2	fans with motors for ventilation @ $130.00	260.00
370	cubic yards crushed rock for drains @ $1.50	555.00
	Repairs to floating plant,	500.00
	Repairs to rolling stock,	400.00
	Cost of moving mess-house,including 3 smaller houses,	375.00
		$71,203.75
	10 per cent for contingencies,	7,120.38
	Total	$78,324.13