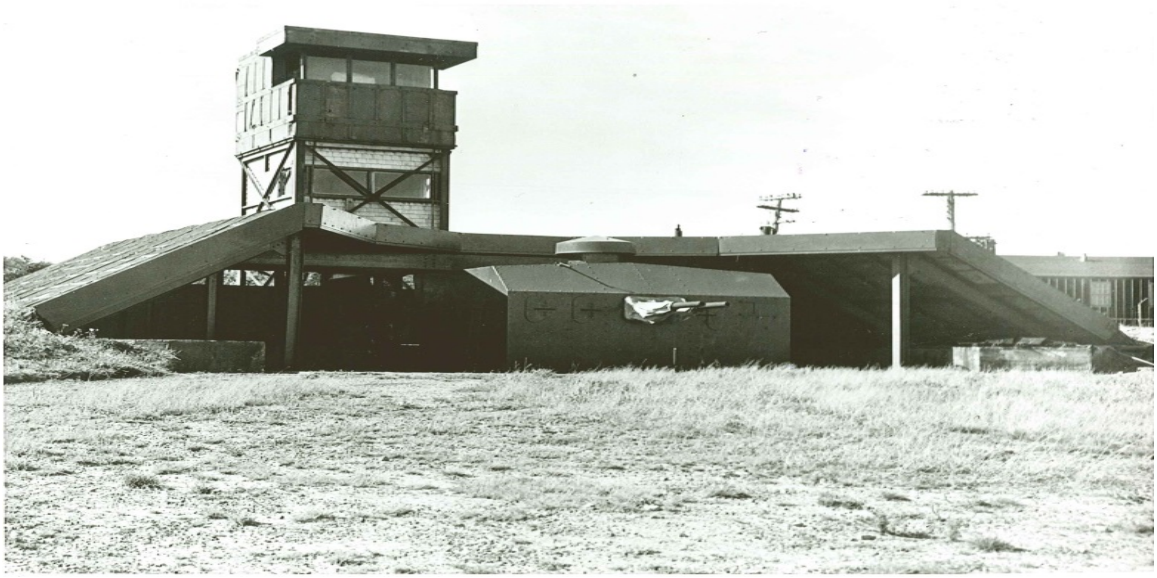
THE SYDNEY HARBOUR FORTIFICATIONS, CAPE BRETON, NOVA SCOTIA



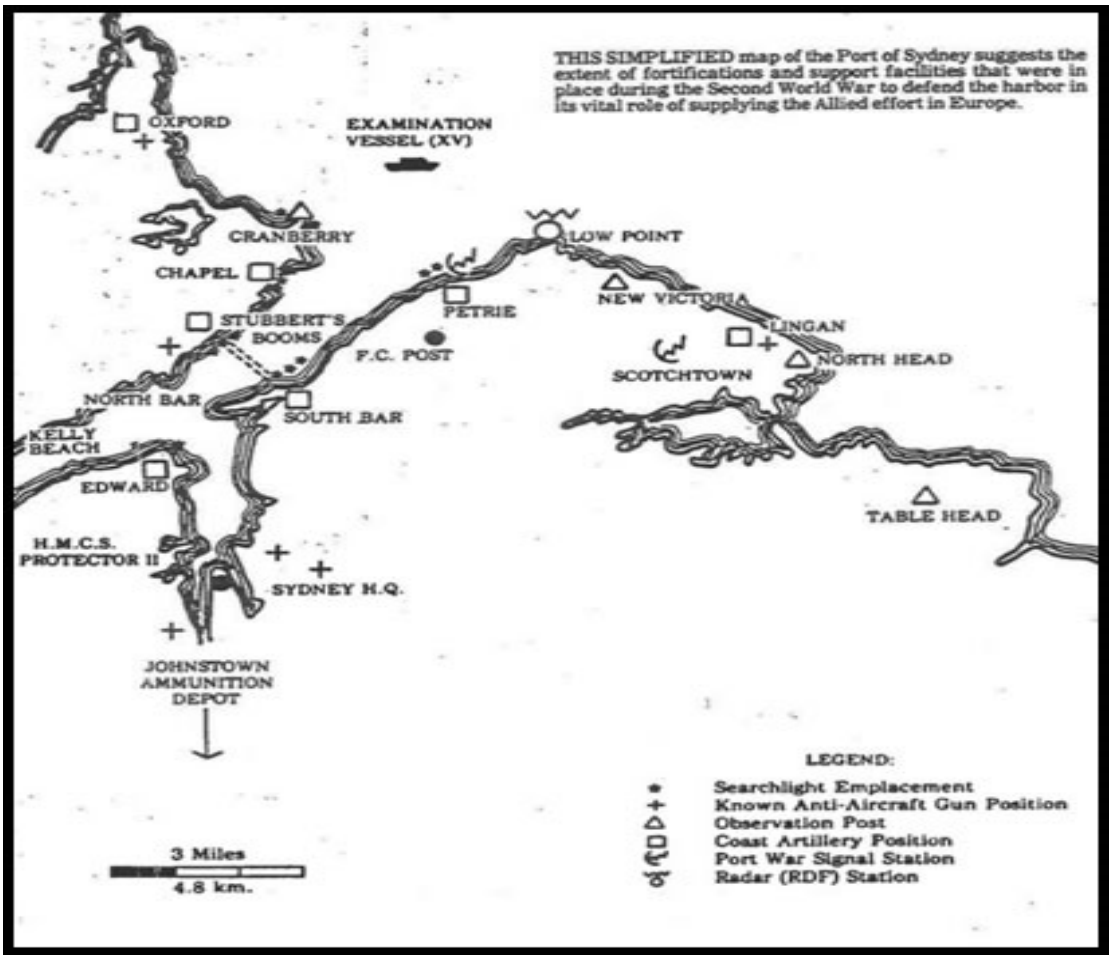


TABLE OF CONTENTS

In view of all this naval activity it is hardly surprising that the Canadian government invested large amounts of money in building a network of fortifications surrounding Sydney harbour. Lingan Battery was constructed in 1940 by J.P. Porter and Sons at a cost of approximately $200,000 (including land and services). Petrie Battery was built by E.G.M. Cape and Company in 1939-40 at a cost of $105,000.Stubberts and South Bar Batteries were built in 1942 by M.R. Chappell, a local company, at a cost of $112,000.The Fire Command Post at Kilkenny was built in 1951-2 by M.R. Chappell for $97,000, plus another $10,000 for later work. Chapel Point was built by E.G.M. Cape in 1940 at a cost of $150,000, and Oxford Battery was built in 1943 by E.G.M. Cape at a cost of $1.2 million.39

Anti-submarine nets were installed in July 1940. The work was done under private contract and the nets were supplemented by extensive rock and gravel fills extending toward the shore from either end. The next year anti-torpedo nets were laid directly behind and parallel to the anti-submarine nets in order to give complete protection to the port, which by that time had become an important convoy assembly point.40

These fortifications were intended to protect the mines, the steel plant, the naval ships resting at the Point Edward naval base and, of course, the ships gathering into convoys. Eight fortifications were built, ranging from Glace Bay around the harbour to Alder Point and their guns had a range of up to twenty-one miles. Hundreds of men served in these installations, and the last--Fort Petrie at New Victoria--did not officially close until 1956.

Sydney harbour has played a significant, though generally forgotten, role in the coastal defences of Atlantic Canada for many years. Because of the low priority given to defence expenditures by successive Canadian governments since the Second World War, despite the emphasis placed on developing a powerful submarine force by the Soviet Union throughout the Cold War years, coastal defence facilities were particularly ignored. Thus, the fortifications ringing Sydney harbour were stripped and allowed to deteriorate, to the point where they now are in ruins and constitute a growing danger to anyone trespassing on the sites, sad though somewhat romantic reminders of a more heroic past. Happily, however, a group of local citizens has been formed with a view to preserving and restoring at least one of them, the Chapel Point site in Sydney Mines, in an effort to remind people of Sydney harbour's important contribution to our naval and military history.

Like the Fortress of Louisbourg, these sites speak not only of Cape Breton's local history but of its strategic role in guarding the Gulf entrance to Canada and particularly its essential contribution to the two greatest conflicts in the history of mankind Like Louisbourg, they remind us that great global struggles can and have come very close to home. Unlike Louisbourg, they remind us of a conflict, World War II, that may seem more relevant both because of the issues at stake and because so many who participated in it are still with us.

NOTES

• Brian Douglas Tennyson is Professor of History and Director of the Centre for International Studies at the University College of Cape Breton in Sydney, Nova Scotia. His most recent publication is *Canada and the Caribbean Aspects of a Relationship* (1991).

1. C. Bruce Fergusson (ed.), *Uniacke's Sketches of Cape Breton and Other Papers* (Halifax, 1958), reprinted in Brian Douglas Tennyson (ed.), *Impressions of Cape Breton* (Sydney, 1986), 56.

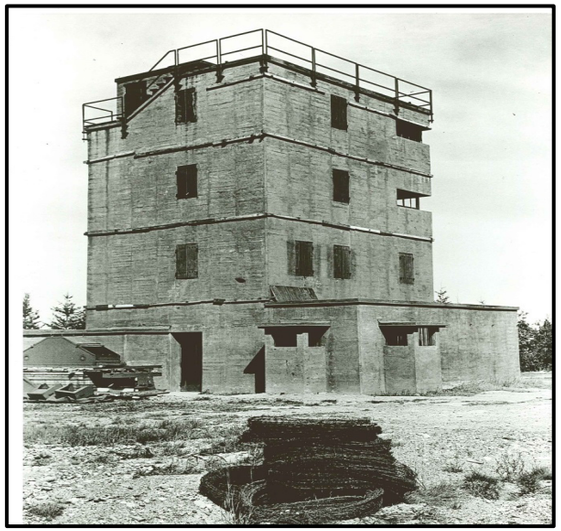
2. Public Archives of Nova Scotia (hereafter PANS), Map Collection, REO S.4, Edward Walker, "Sketch of the Harbour of Sydney," 30 November 1848.

1. FORT OXFORD BATTERY

ALDER POINT

NORTH SYDNEY

FORT OXFORD BATTERY: SELECT PICTURES.



FORT OXFORD TOWER:
STRUCTURE 'A' (CIRCA 1942)
SHEET #6

FORT OXFORD: TOWER OVERLOOKING
TUNNELS LINKING GUNSITES (CIRCA 1989)
SHEET #1

FORT OXFORD 9.2' GUN:
GUN SITE #1 AND 2 (CIRCA 1942)
SHEET #1

FORT OXFORD: TUNNEL LINKING TO GUNSITE
(CIRCA 1989)

FORT OXFORD: UNDERGROUND PLOTTING ROOM
(CIRCA 1989)
SHEET #10

FORT OXFORD: TUNNEL LINKING TO GUNSITE
(CIRCA 1989)

OXFORD SITE
SCALE 1" = 100'
DRN. L. POLEGATO
SHEET # 1

NOTE: GUNSITES 1, 2, 3.
ARE IDENTICAL

WOODED AREA.

STRUCTURE "A" WATCH TOWER.

STRUCTURE "B"

B'

≈ 740'

≈ 810'

FIELDS AND WOODED AREA

PATH

≈ 450'

≈ 650'

FIELDS, WOODED AREA.

STRUCTURES "C"

C_1

C_2

C_3

C_4

C_5

A

A'

GUNSITE #3

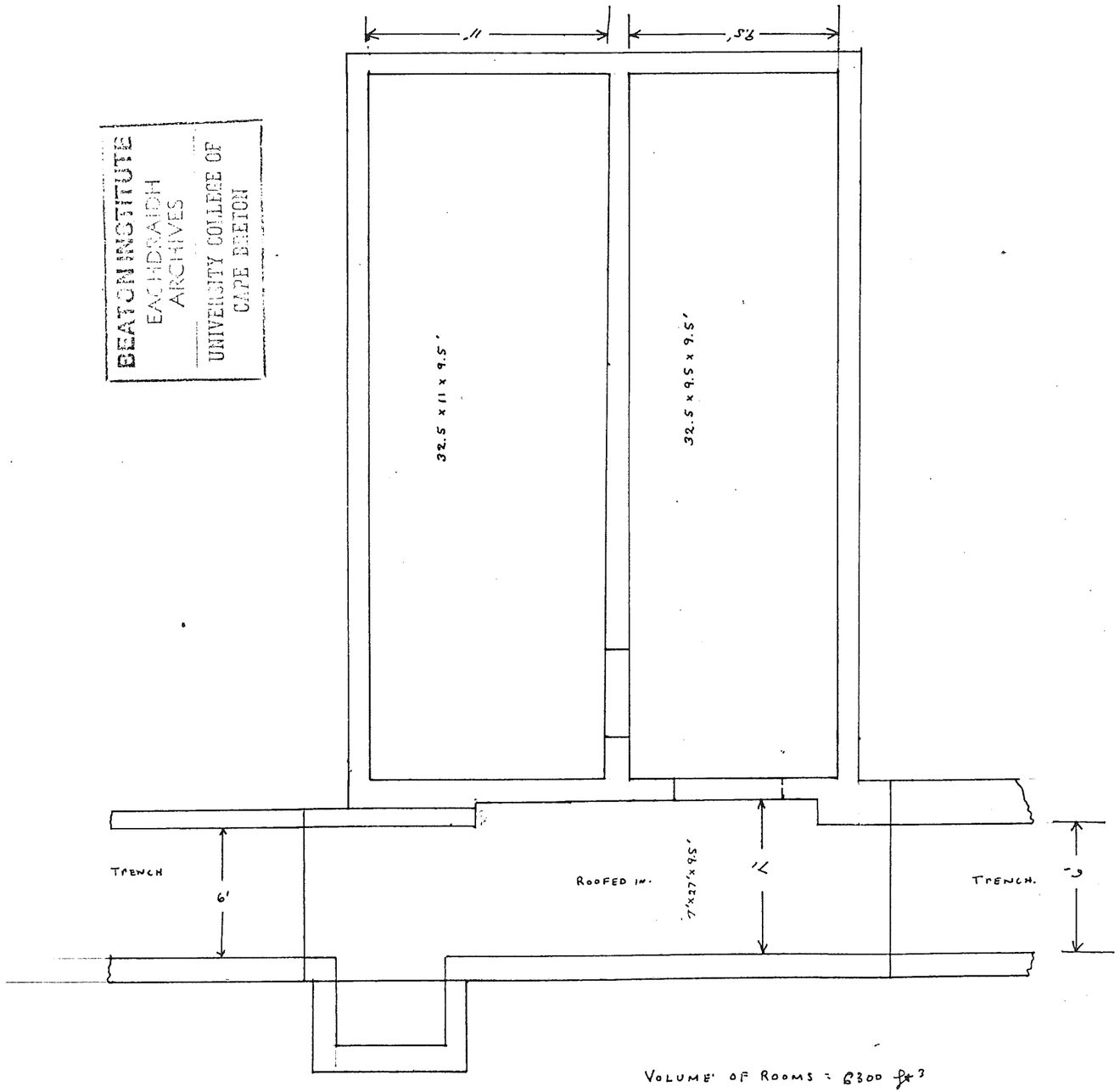
GUNSITE #2

GUNSITE #1

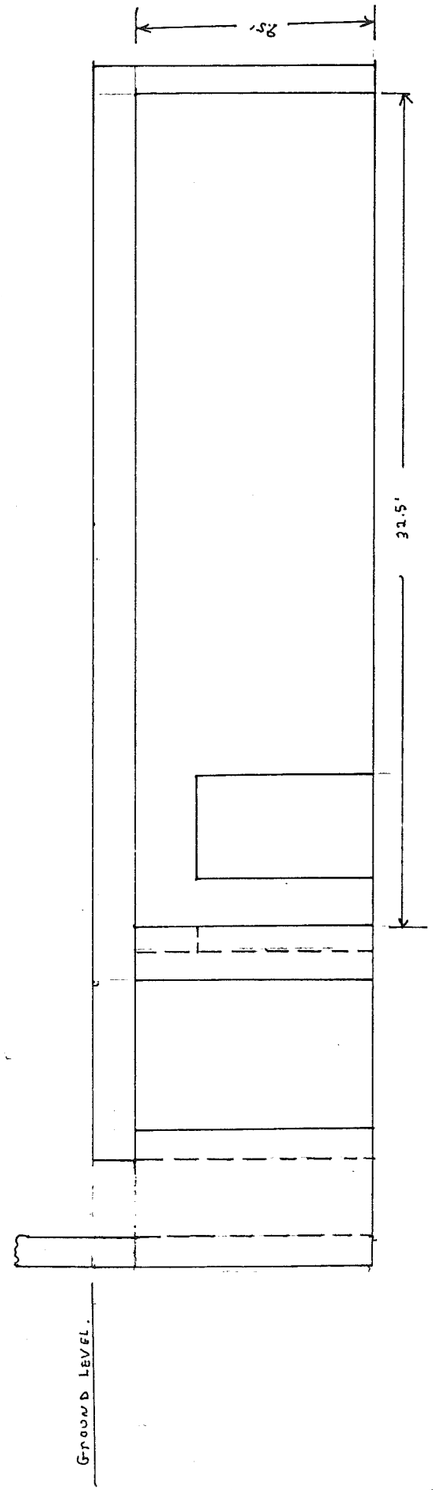
ROAD.

TO SYDNEY MINES

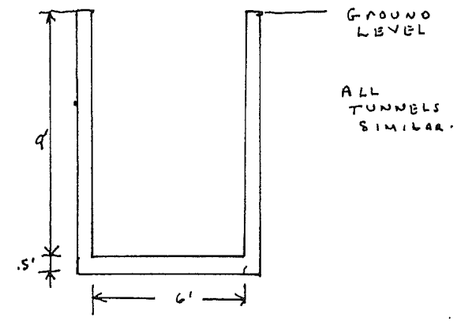
TO ALDER POINT.



VOLUME OF ROOMS = 8300 ft³
VOLUME OF COVERED TUNNEL = 1400 ft³
VOLUME OF 6 STRUCTURES 37,800 ft³
VOLUME OF 6 COVERED TUNNELLS = 8400 ft.
TOTAL = 46,200 ft³.



SECTION A-A

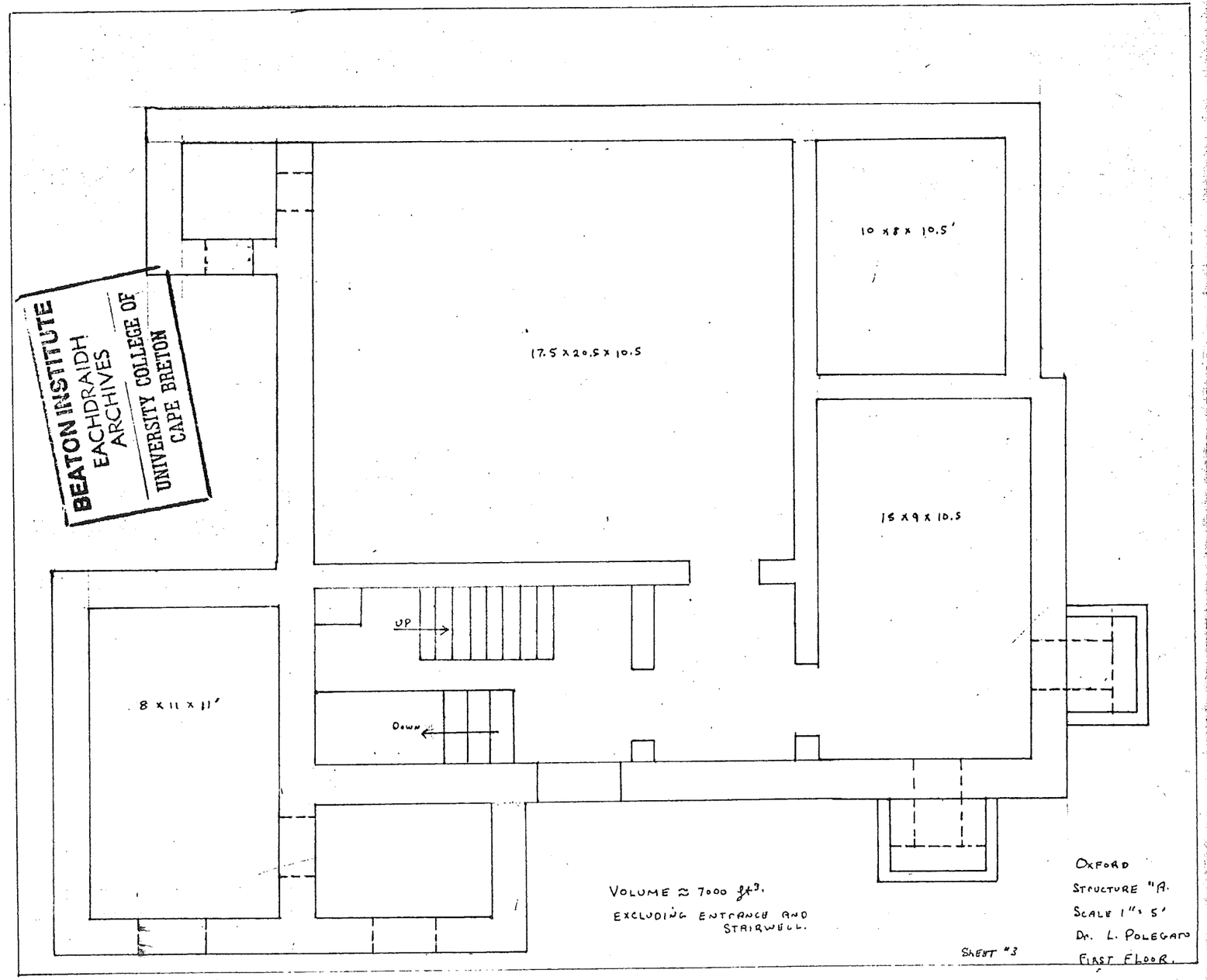


ALL TUNNELS SIMILAR.

OLFORD
SHEET 2
SCALE 1" = 6'
DRN. L. POLEGATO

STRUCTURES C, C, C₂ C, C₄ C₅
CROSS SECTION OF TRENCHES.

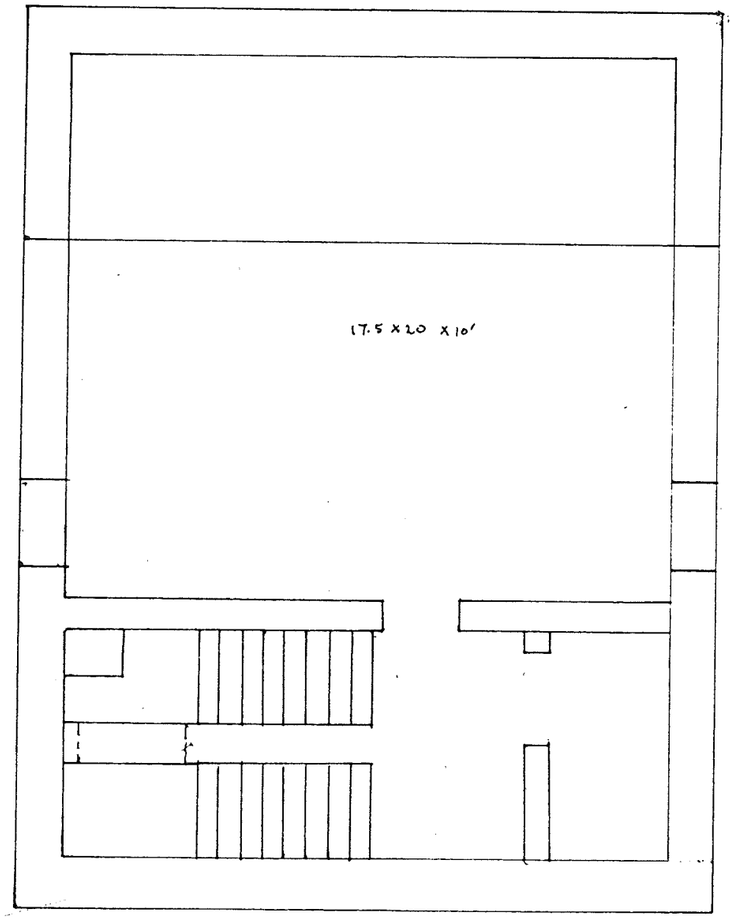
SHEET 2



VOLUME ≈ 7000 ft³.
EXCLUDING ENTRANCE AND STAIRWELL.

OXFORD
STRUCTURE "A"
SCALE 1" = 5'
DR. L. POLEGATO
FIRST FLOOR.

SHEET #3

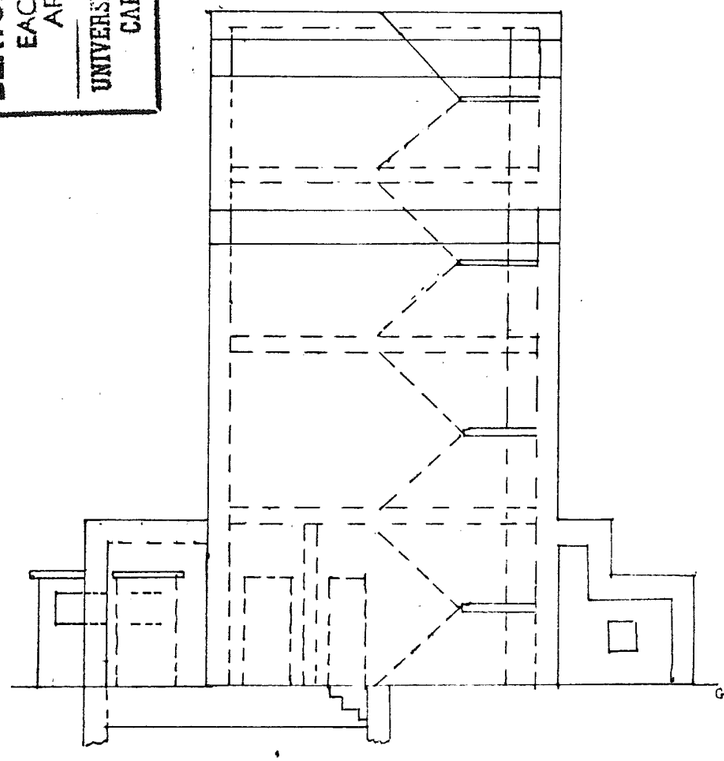


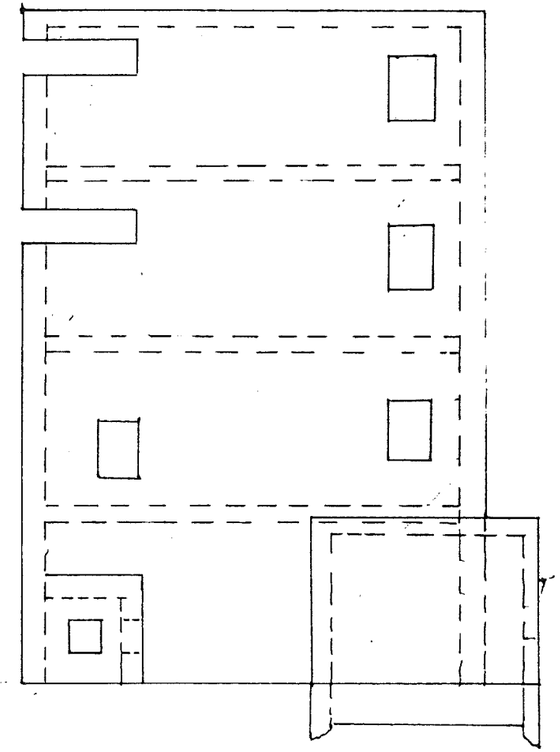
VOLUME / FLOOR
EXCLUDING STAIRWAY AND LANDING 3400 ft³.
+ 300
≈ 3700 ft³ / FLOOR.

TOTAL ≈ 11,100 ft³.

NOTE : PLAN VIEW OF FLOORS 2, 3 AND 4.
4TH FLOOR HAS STAIRWAY LEADING TO ROOF EXTERNAL TO BUILDING. (SEE SHEET 6)

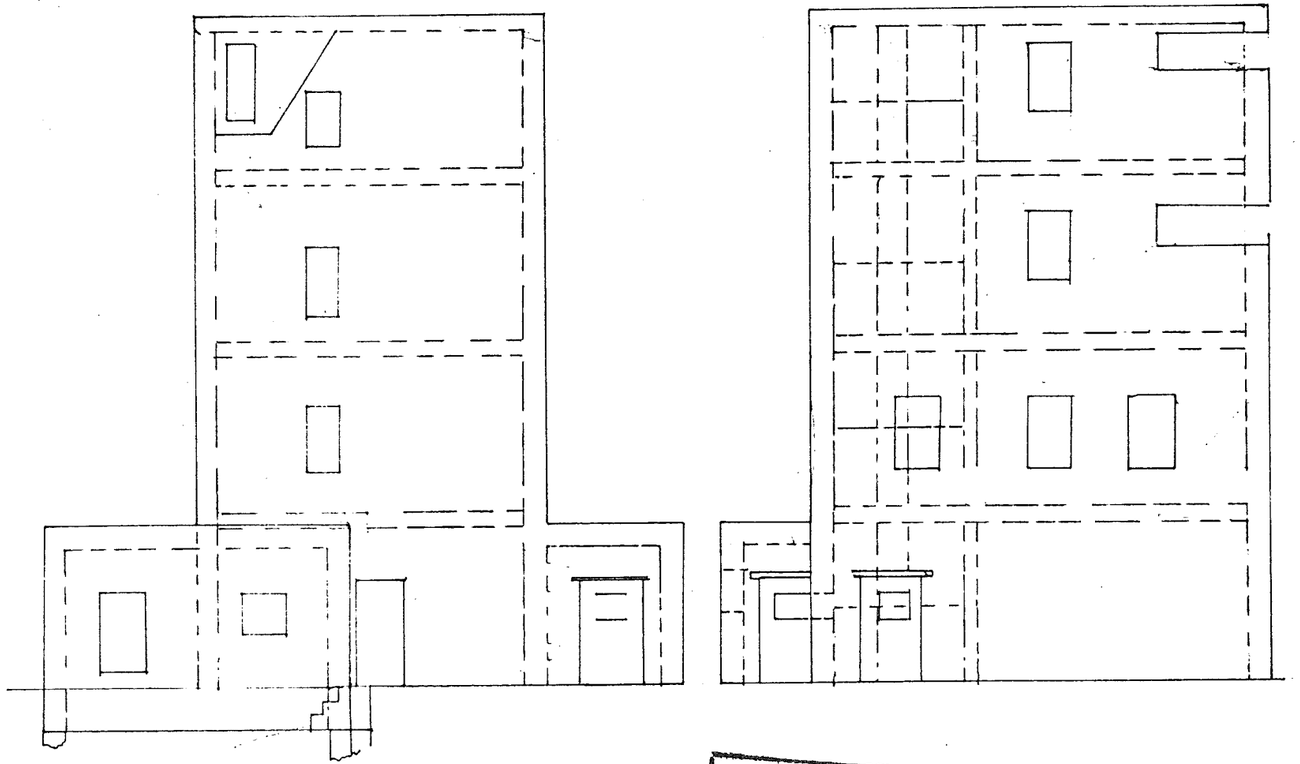
OXFORD
STRUCTURE A.
SCALE 1" = 5'
DR. L. POLEGATO
SHEET 4



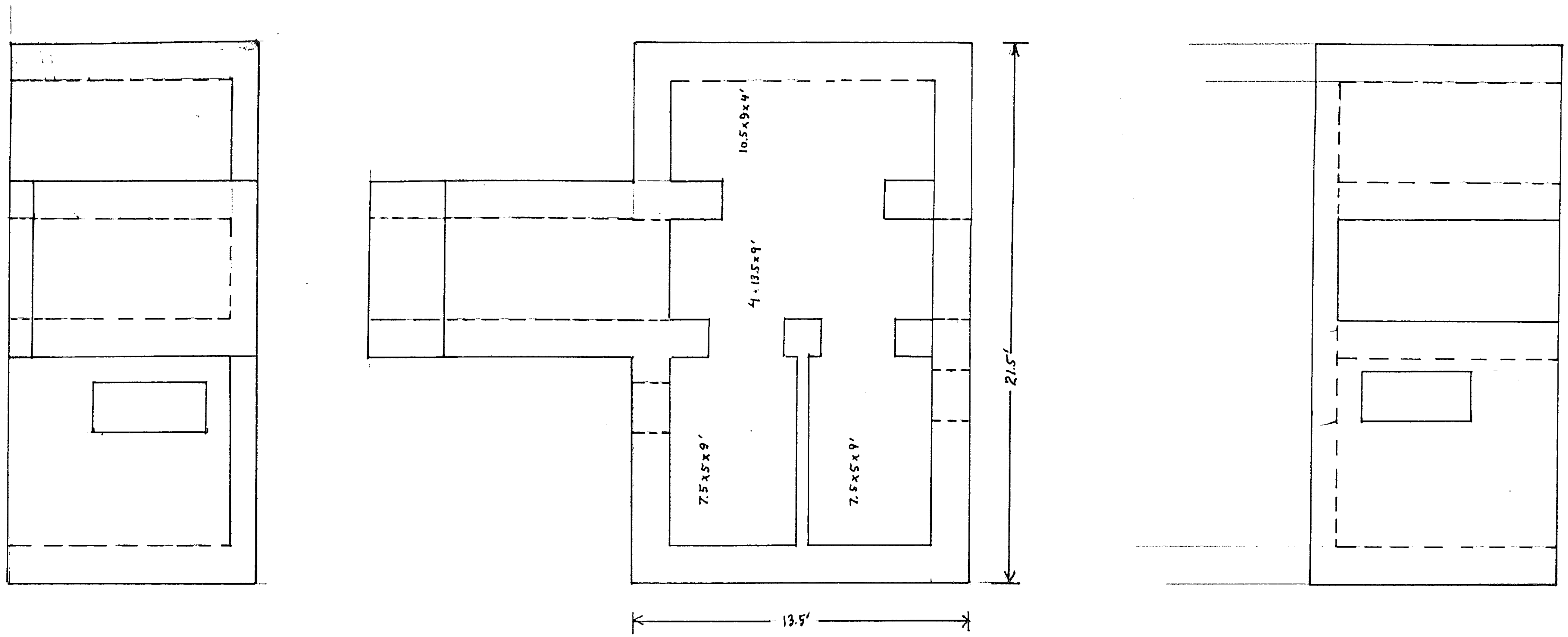


PARTIAL FRONT, RIGHT SIDE VIEWS.

OXFORD
STRUCTURE "A"
SCALE 1" = 10'
DRN. L. POLEGATO
SHEET # 5

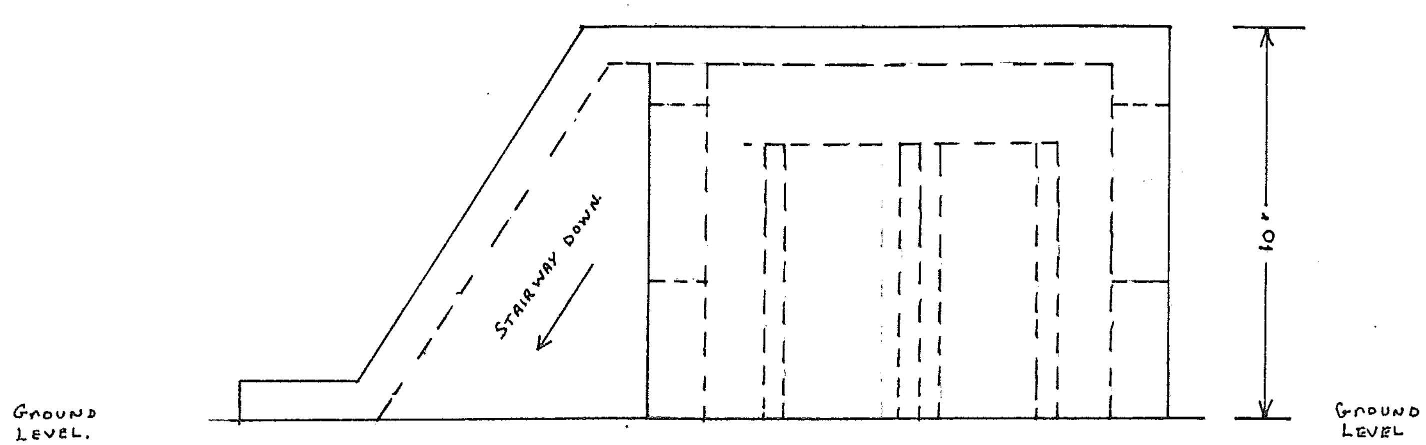


OXFORD:
STRUCTURE "A"
SCALE 1"=10'
DRW. L. POLEGATO
SHEET #6.

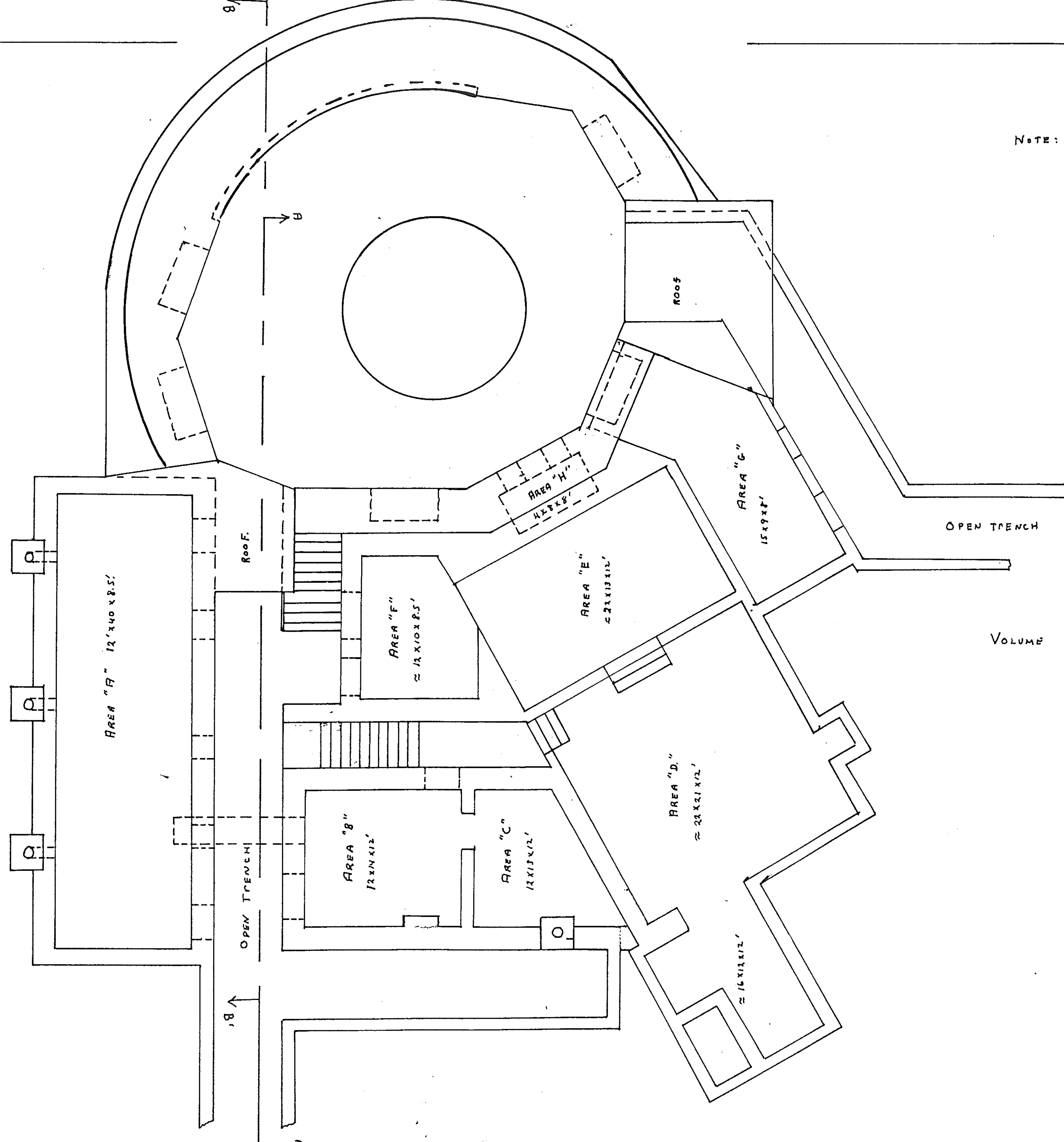


Volume = 1540 ft^3

Note: This structure is above ground.



Oxford.
Structure "B"
Scale 1" = 5'
Dr. L. Polegato
Sheet # 7.



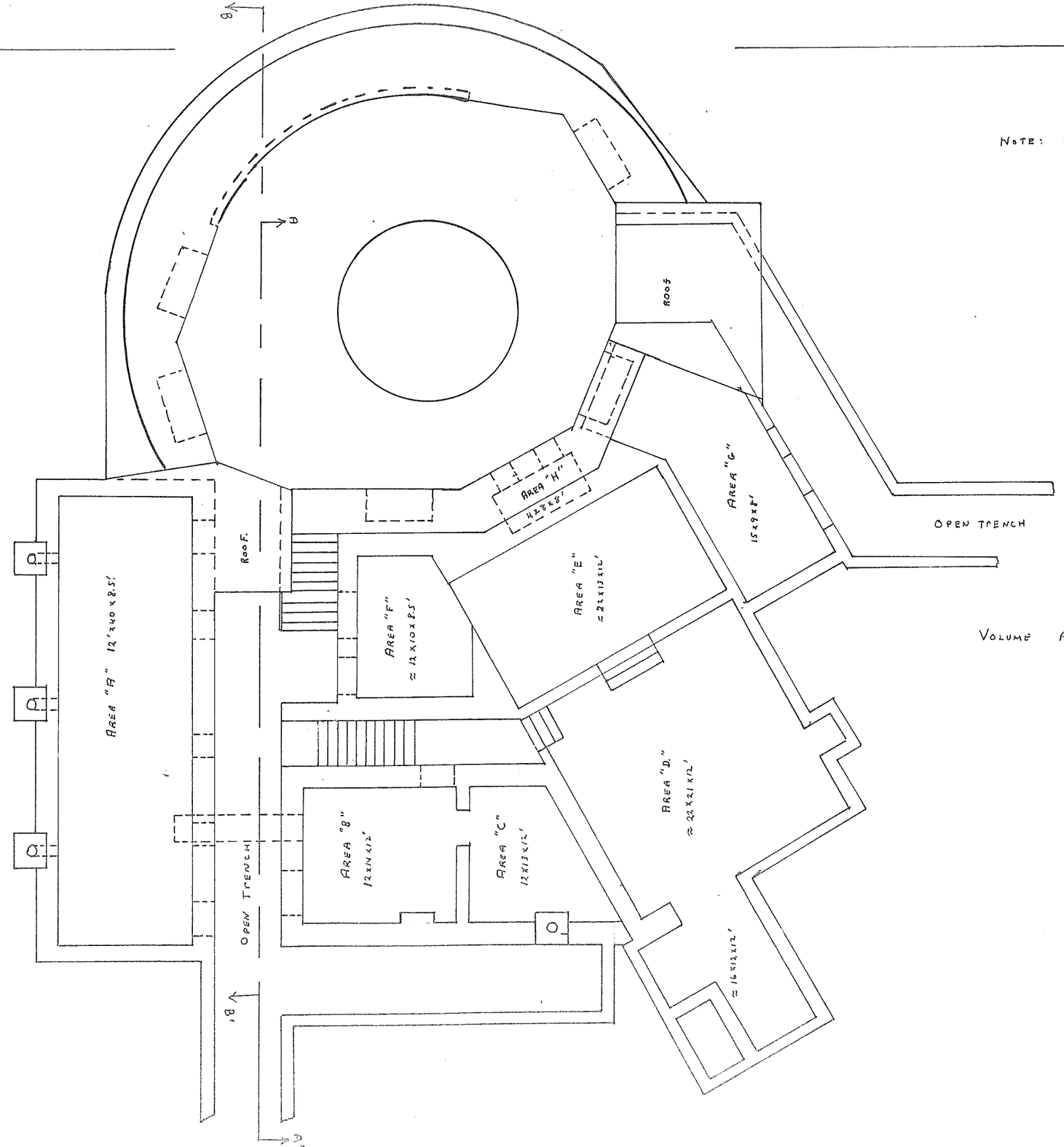
NOTE: THERE ARE 8 GUNSITES
ALL IDENTICAL
EACH HAS A VOLUME OF ≈ 18,000 ft^3

VOLUME AREA
A ≈ 4100
B ≈ 1730
C ≈ 1400
D ≈ 3550
E ≈ 3640
F 1000
G ≈ 2240
H ≈ 250

TOTAL ≈ 18000 ft^3

OXFORD
GUNSITE # 1, 2, 3.
SCALE 1" : 10'
DRN. L. POLEGATO
SHEET # 8

NOTE: THERE ARE 8 GUNSITES
ALL IDENTICAL
EACH HAS A VOLUME OF ≈ 18,000 ft³

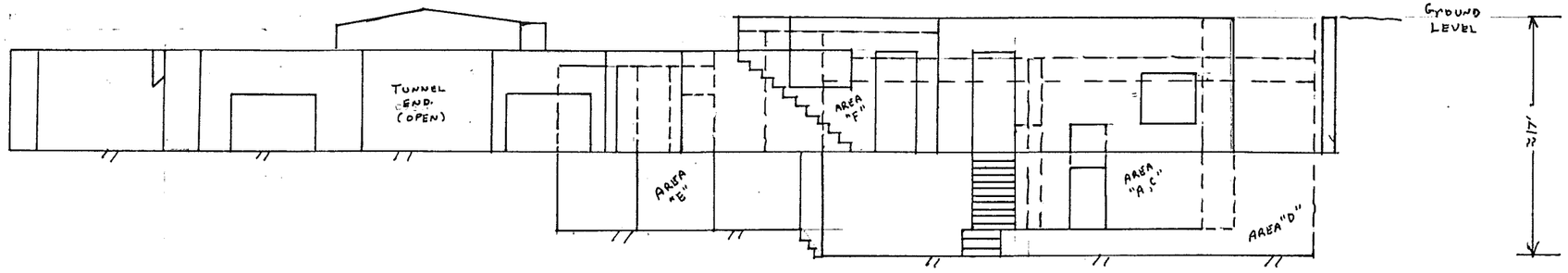


VOLUME AREA A ≈ 4100
B ≈ 1730
C ≈ 1400
D ≈ 3550
E ≈ 3640
F 1000
G ≈ 2240
H ≈ 1250

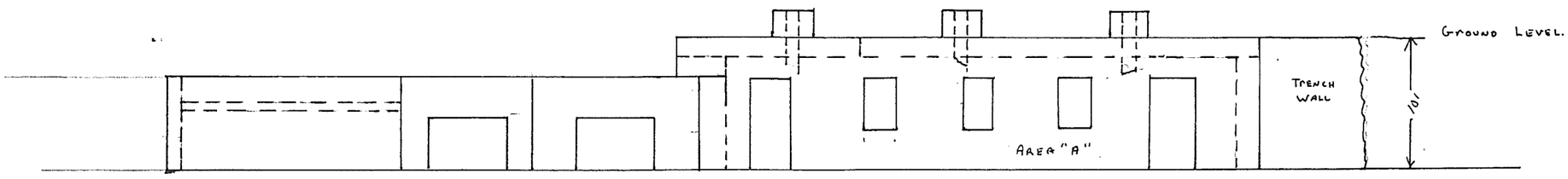
TOTAL ≈ 18000 ft³

OXFORD
GUNSITE # 1, 2, 3.
SCALE 1" = 10'
DRN. L. POLEGATO
SHEET # 9

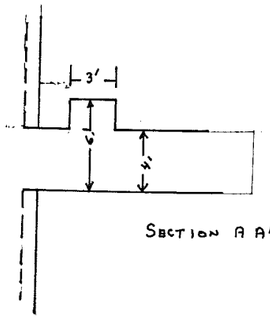
SECTION A-A' (PARTIAL).



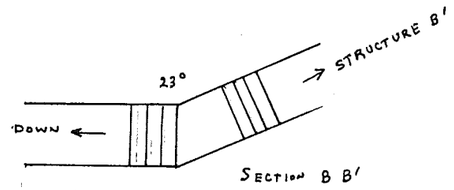
SECTION BB'



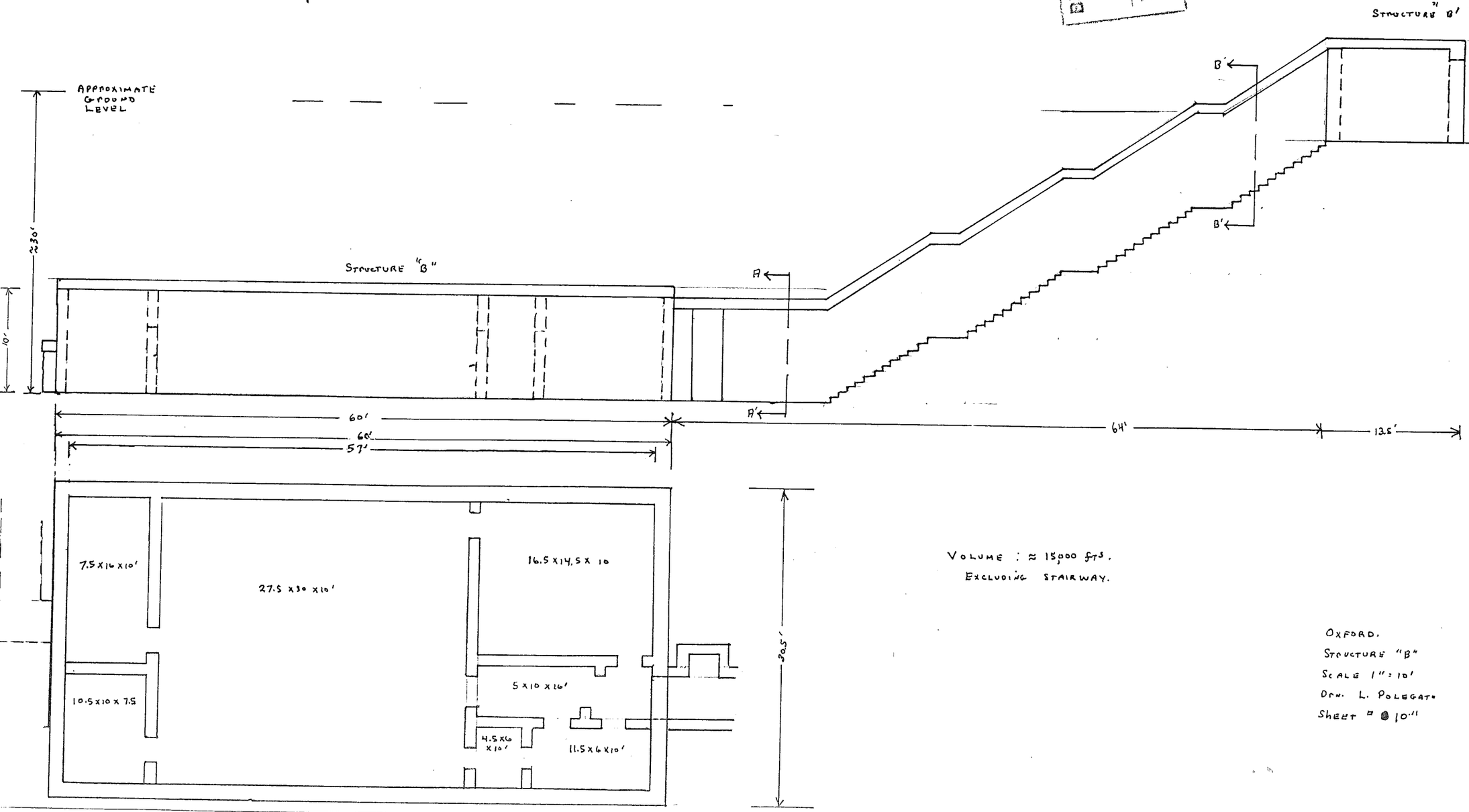
OXFORD
SCALE 1" = 10'
DR. L. POLEGATO
SHEET # 9
GUN SITE 1, 2, 3,
SECTIONAL (PARTIAL) VIEWS



SECTION A A'



SECTION B B'



VOLUME : ≈ 15,000 ft³.
EXCLUDING STAIRWAY.

OXFORD.
STRUCTURE "B"
SCALE 1" = 10'
DRN. L. POLEGATO
SHEET # 10-11

2. FORT CRANBERRY BATTERY

SYDNEY MINES

Ford Cranberry

Owner - Cecil Pyke; 6 MacKeen St, Sydney Mines

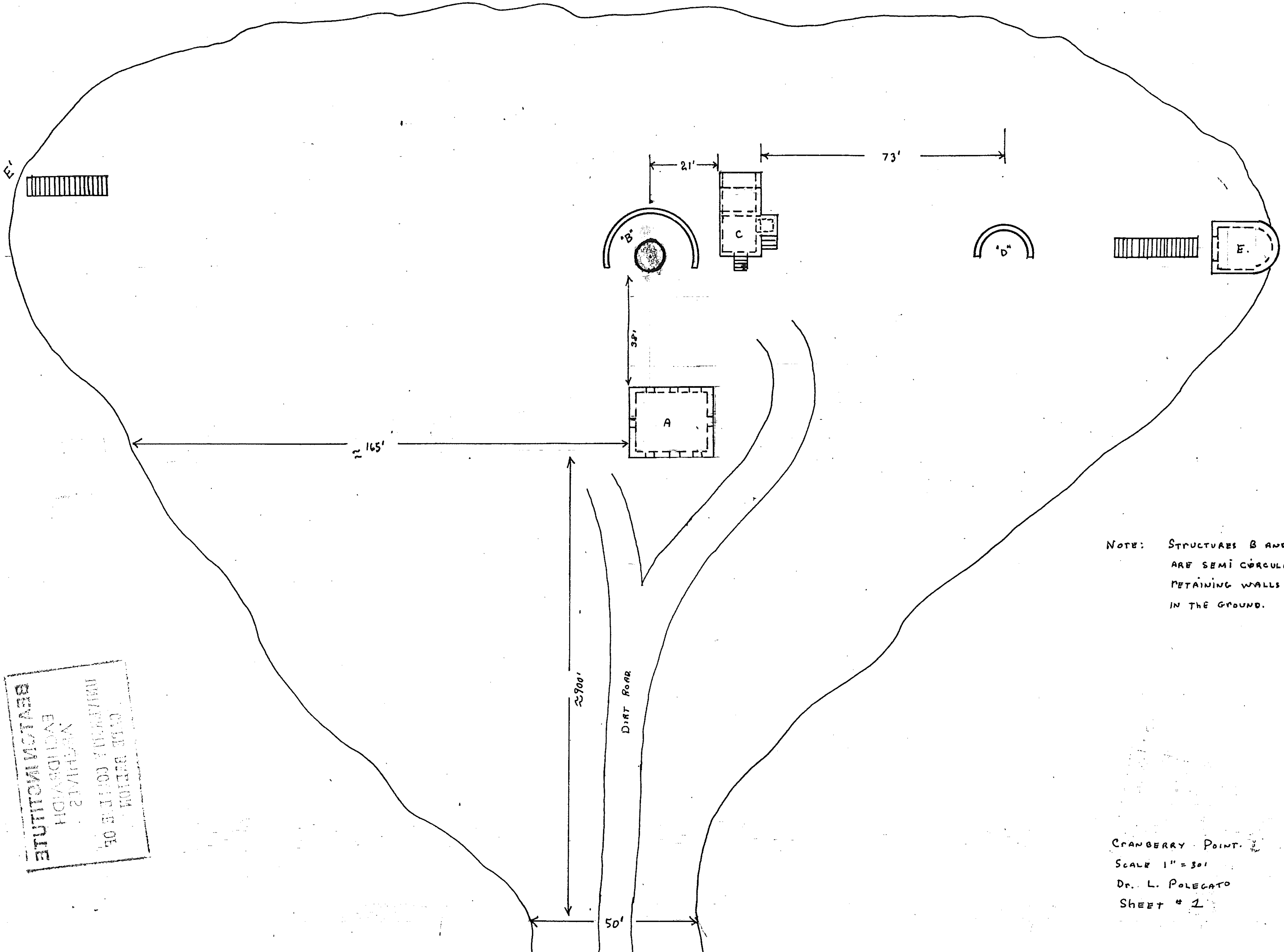
Location - 1.9 miles from Main St to bottom of Peck St.

Access - As you travel along Main St, Sydney Mines turn right off Main to Peck St (toward mine). Continue for 1.9 miles to the bottom of Peck St. The site is 1.3 miles from Nexco Office on Peck St. At the bottom of the street there is a dirt road enclosed by a gate owned by Alice Pyke, resident of a nearby house. The dirt road extends along a peninsular shaped piece of land to the structure

Amt of Water - The site is dry

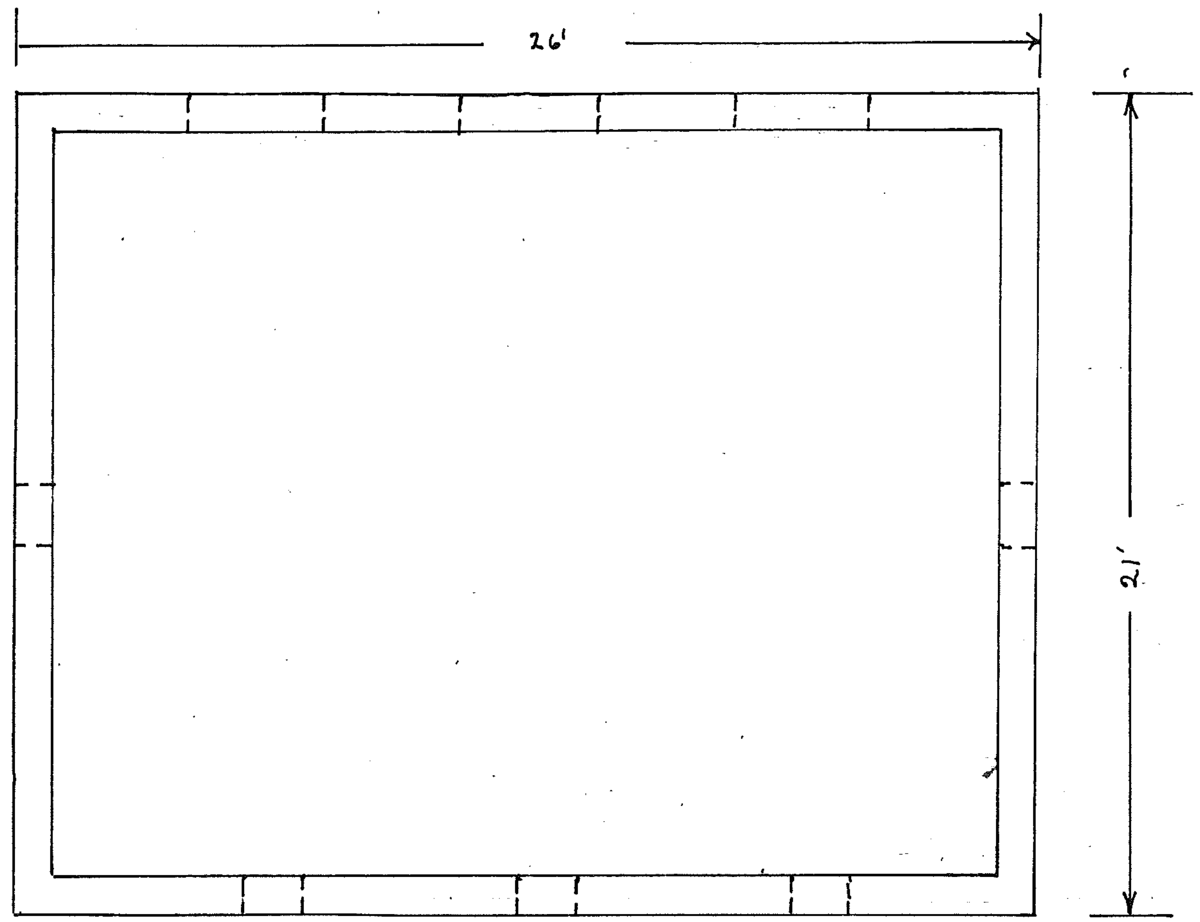
Temperature - Inside 62°
Outside 66°

General Condition - The concrete is not chipped bad and the area itself is free of debris.



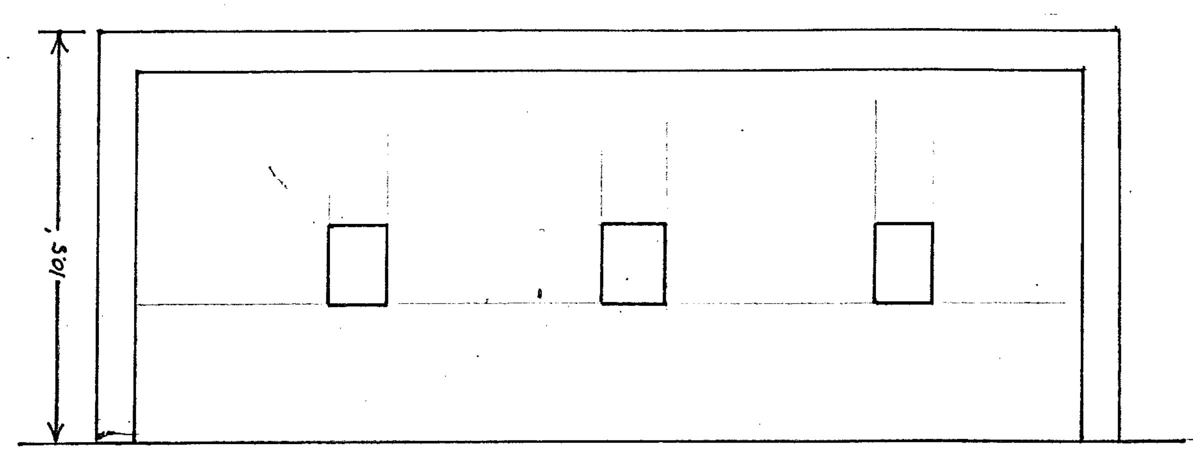
Note: Structures B and D are semi circular retaining walls imbedded in the ground.

Cranberry Point.
Scale 1" = 30'
Dr. L. Polegato
Sheet # 1

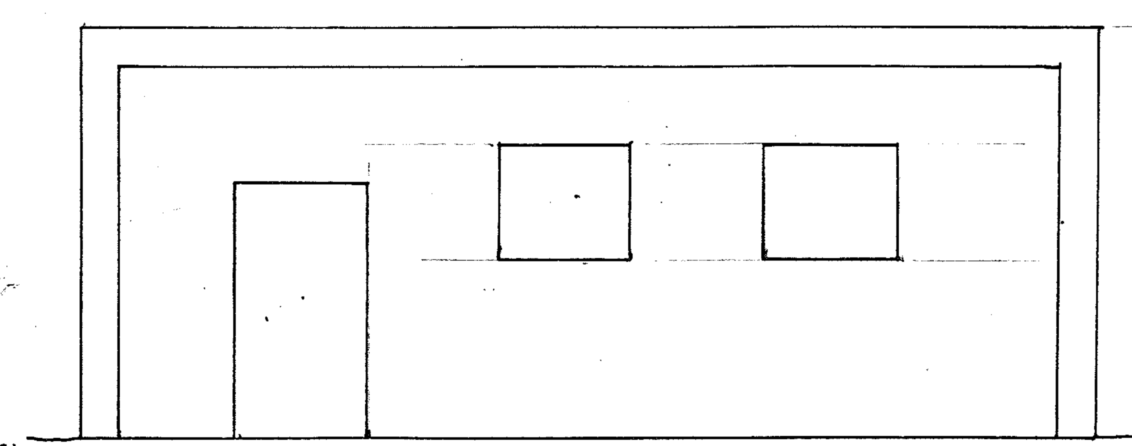


Volume ≈ 5300 ft^3

Cranberry Point
Building "A"
Scale 1" = 5'
Dr. L. Polegato
Sheet # 2.



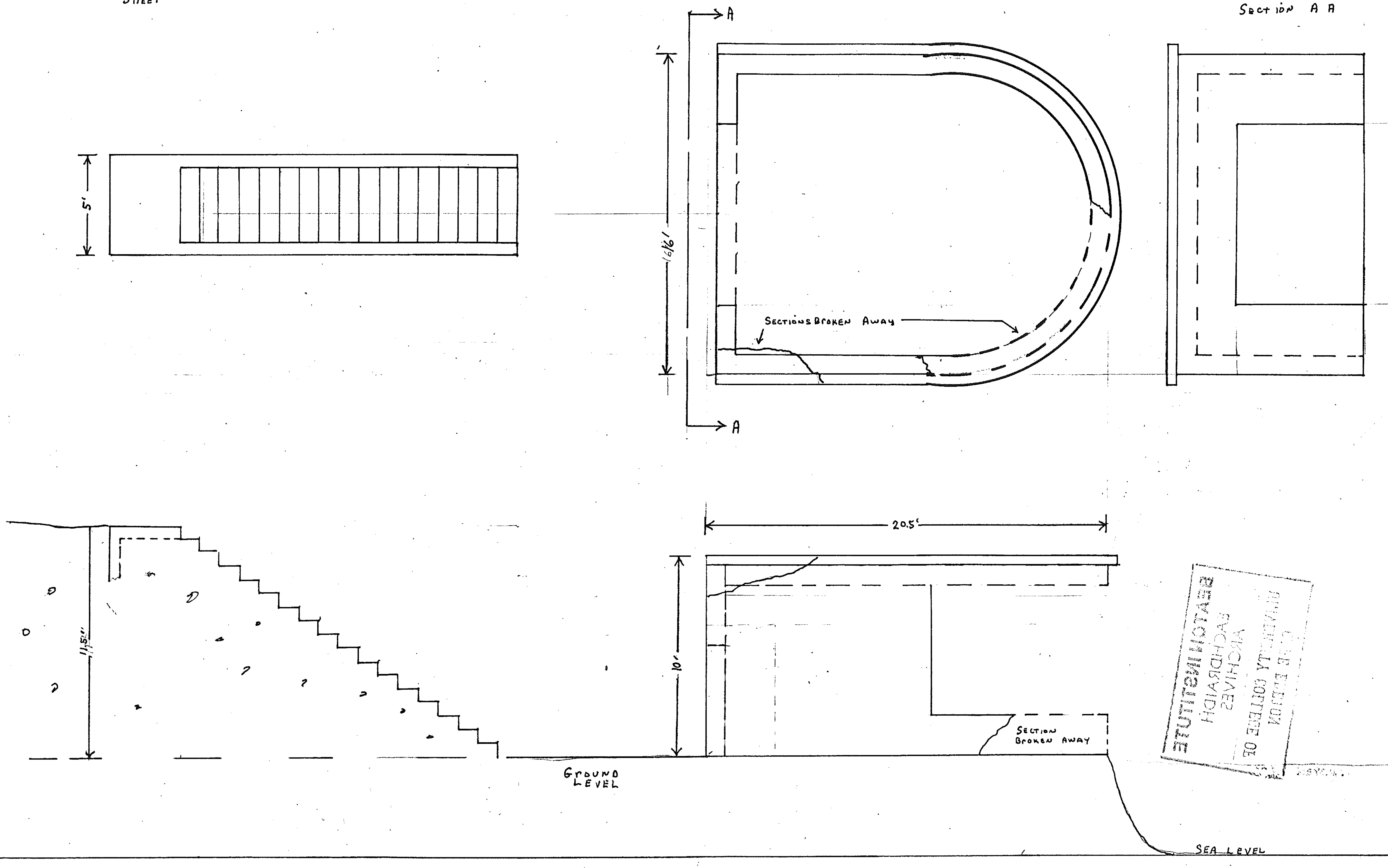
Ground Level

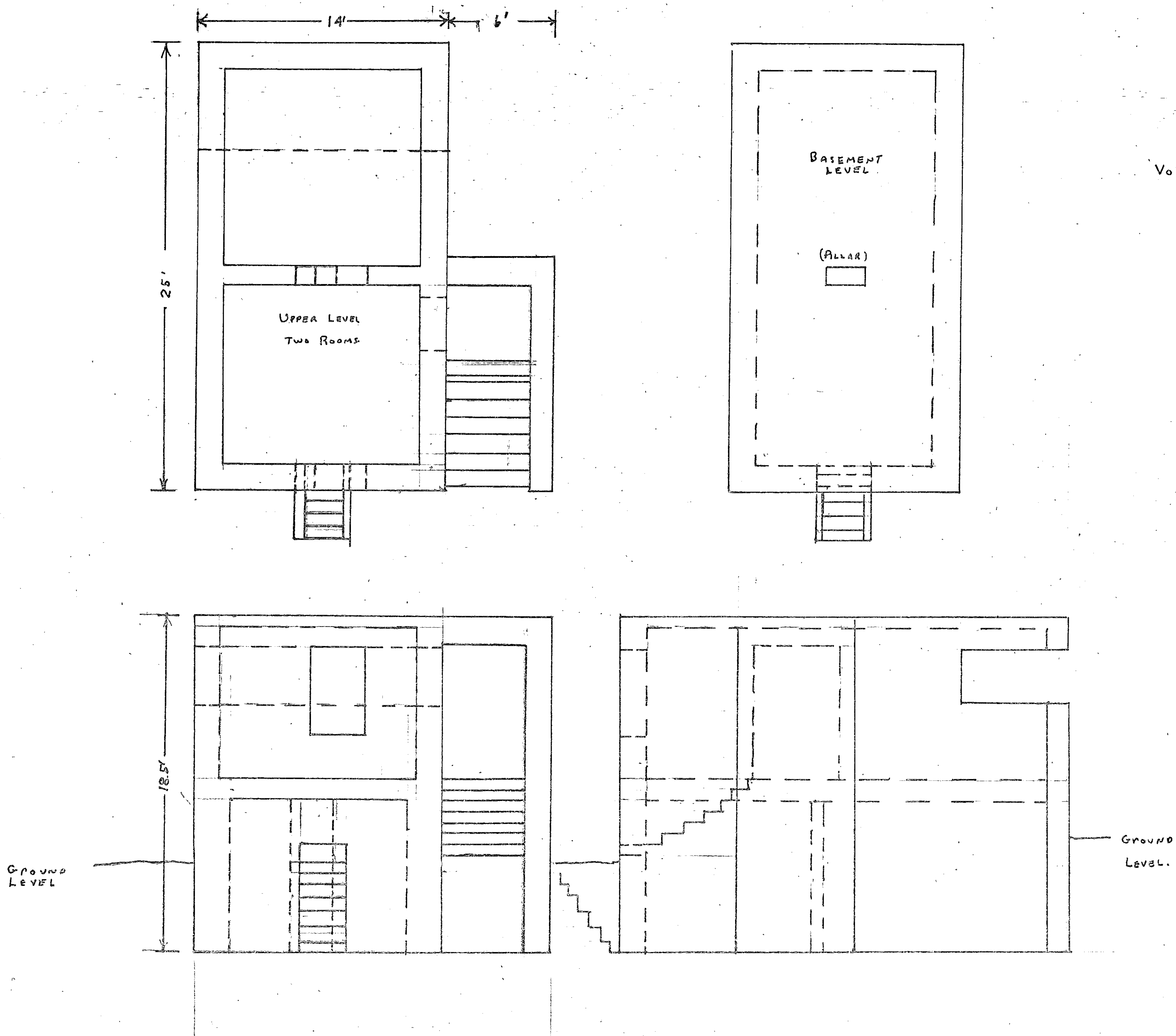


Rear View

Cranberry Point.
Building "E"
Scale 1" = 5'
Dr. L. Polegato
Sheet # 3.

Note: There were originally two of these structures. But one is completely colapsed. Only the stairs remain.





Volume. Upper Level ≈ 2050 ft^3
Lower Level ≈ 1875 ft^3
3925 ft^3

(Excluding Entrance way.)

Cranberry Point.
Scale 1" = 6'
Dr. L. Polegato
Sheet # A.

3. FORT CHAPEL POINT BATTERY

SYDNEY MINES

OCEAN

COASTLINE ALL CLIFFS

E_2

E_3

E_1

LOCHMANS BEACH

SECTION "C"
ALL UNDERGROUND

B'

"B"

"D"
COMPLETELY
UNDERGROUND

"D"

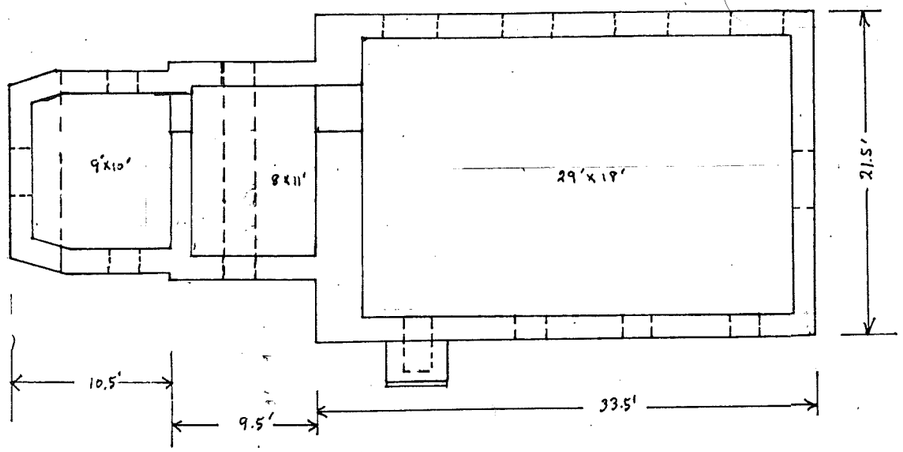
CONCRETE
PAD 15'x15' FLAT.

"A"

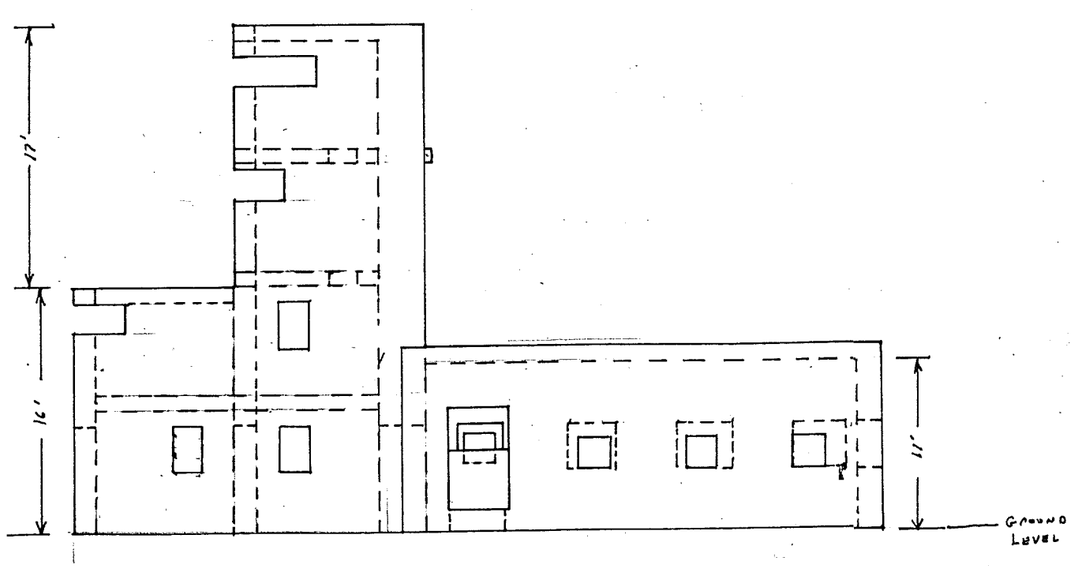
CHAPEL
SCALE 1"=50'
DRW. L. POLEGATO
SHEET #1

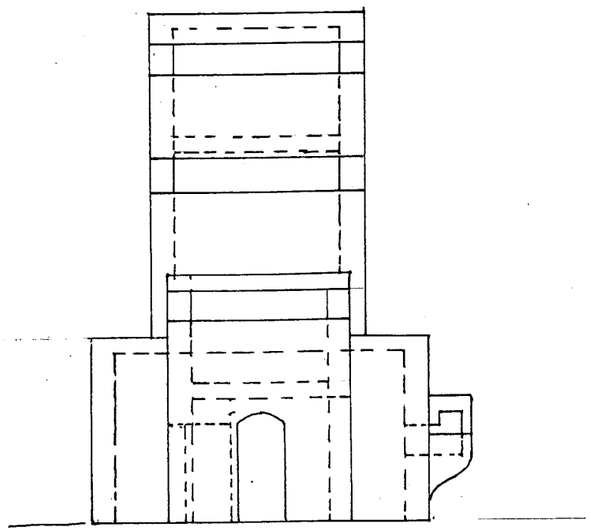
LOCKMAN'S LANE.

→ TO SYDNEY MINES.



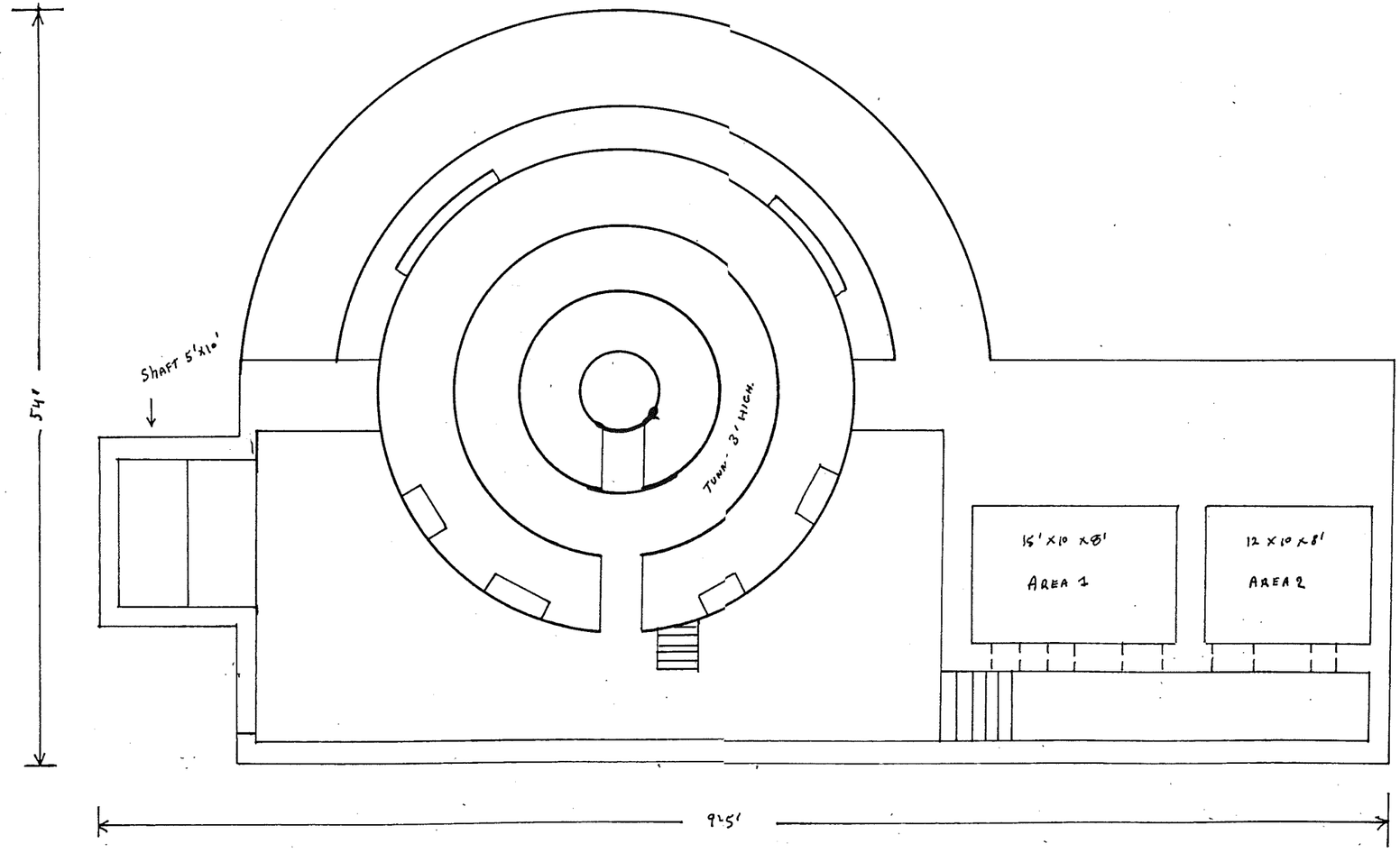
VOLUME : MAIN ROOM ≈ 5700 ft³
TOWER ≈ 2500 ft³
FRONT ≈ 1300 ft³

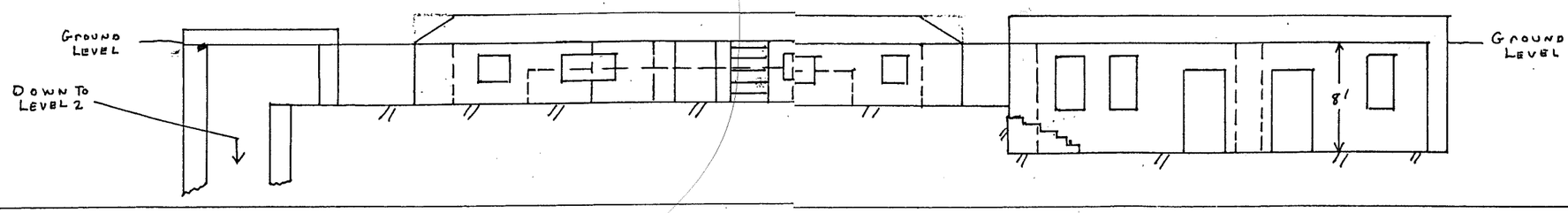




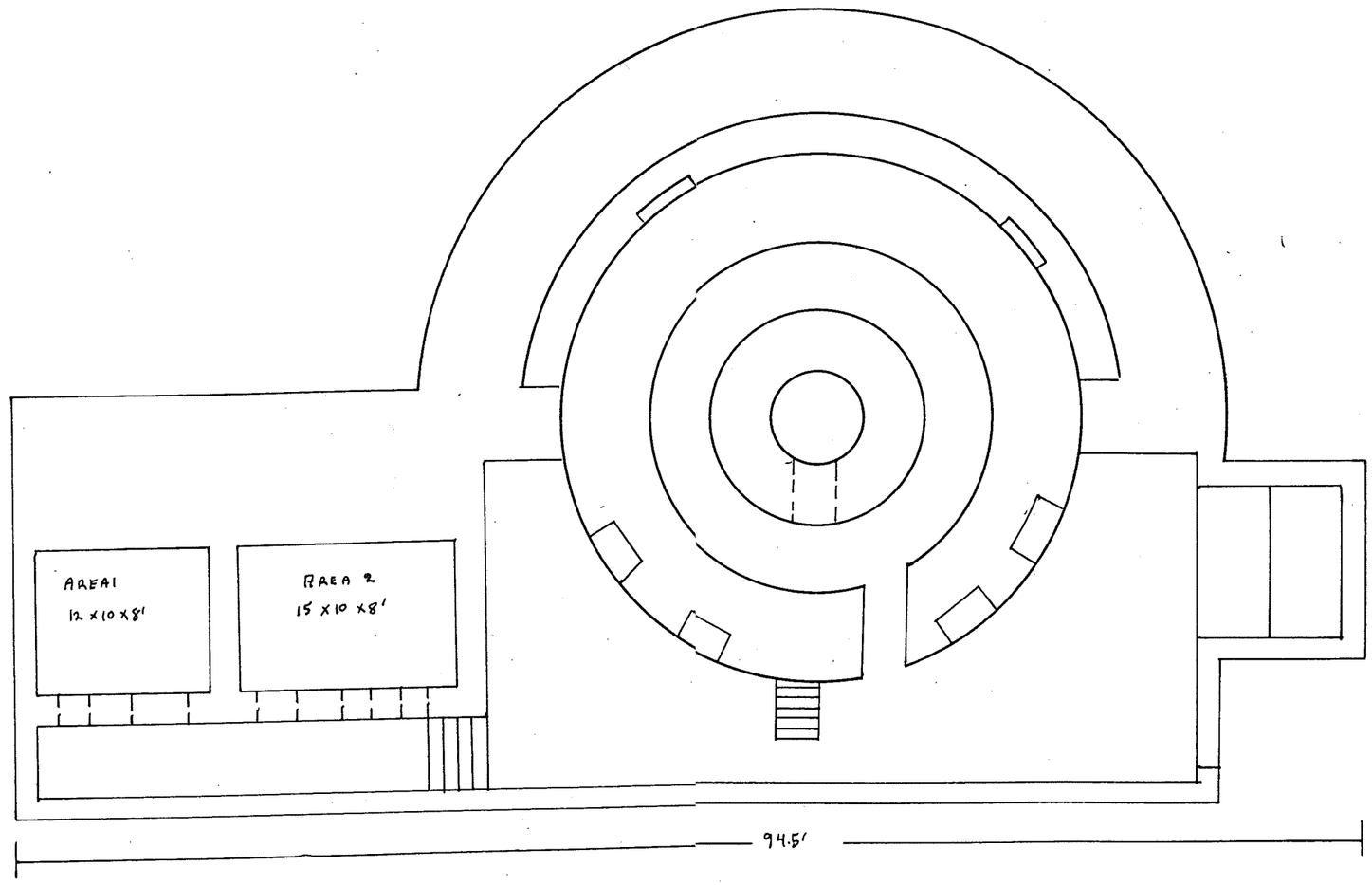
CHAPEL
SCALE 1"=10'
DRN. L. POLEGATO
STRUCTURE "A"
SHEET #. 2

VOLUME OF AREA 1 AND 2 = 2160 FT³

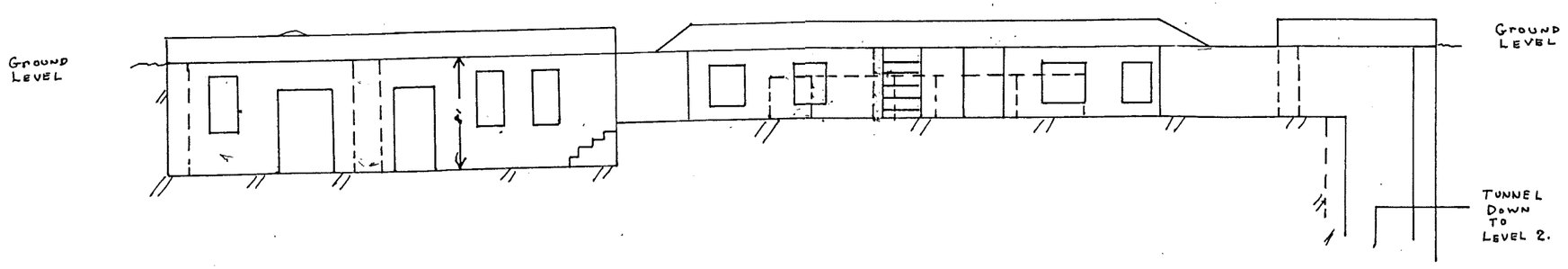




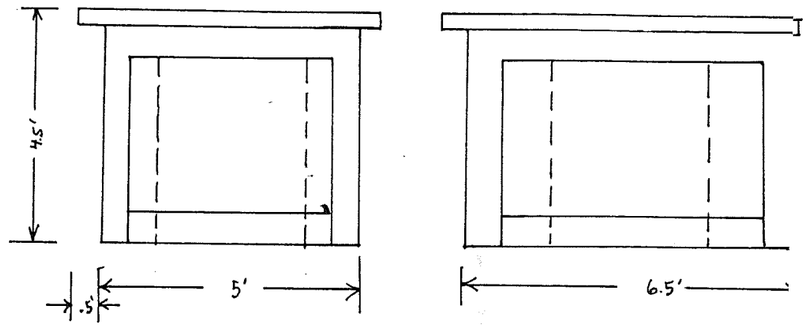
CHAPEL
SCALE 1" = 10'
DR. L. POLEGATO
SHEET #3
BUILDING B.



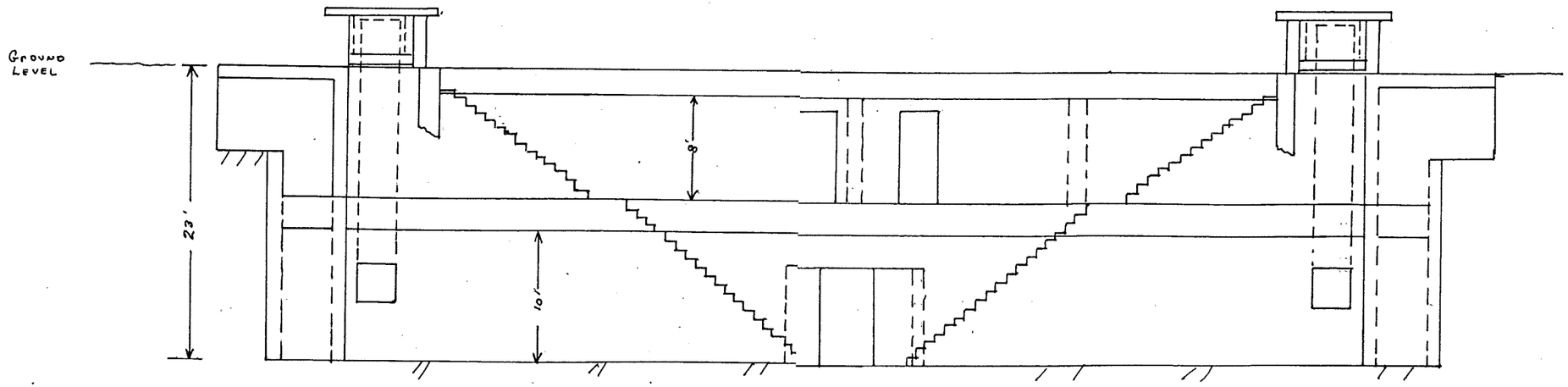
VOLUME OF
AREAS 1 AND 2
= 2160 ft³



CHAPEL
SCALE 1" = 10'
DR. L. POLEGATO
SHEET # 4
BUILDING B1



STRUCTURES " "
SCALE 1" = 3'
FRONT AND SIDE VIEWS
OF VENTING STRUCTURE.
VENT TUNNEL 3'x3' EXTENDS
DOWN TO THE LOWER LEVEL.



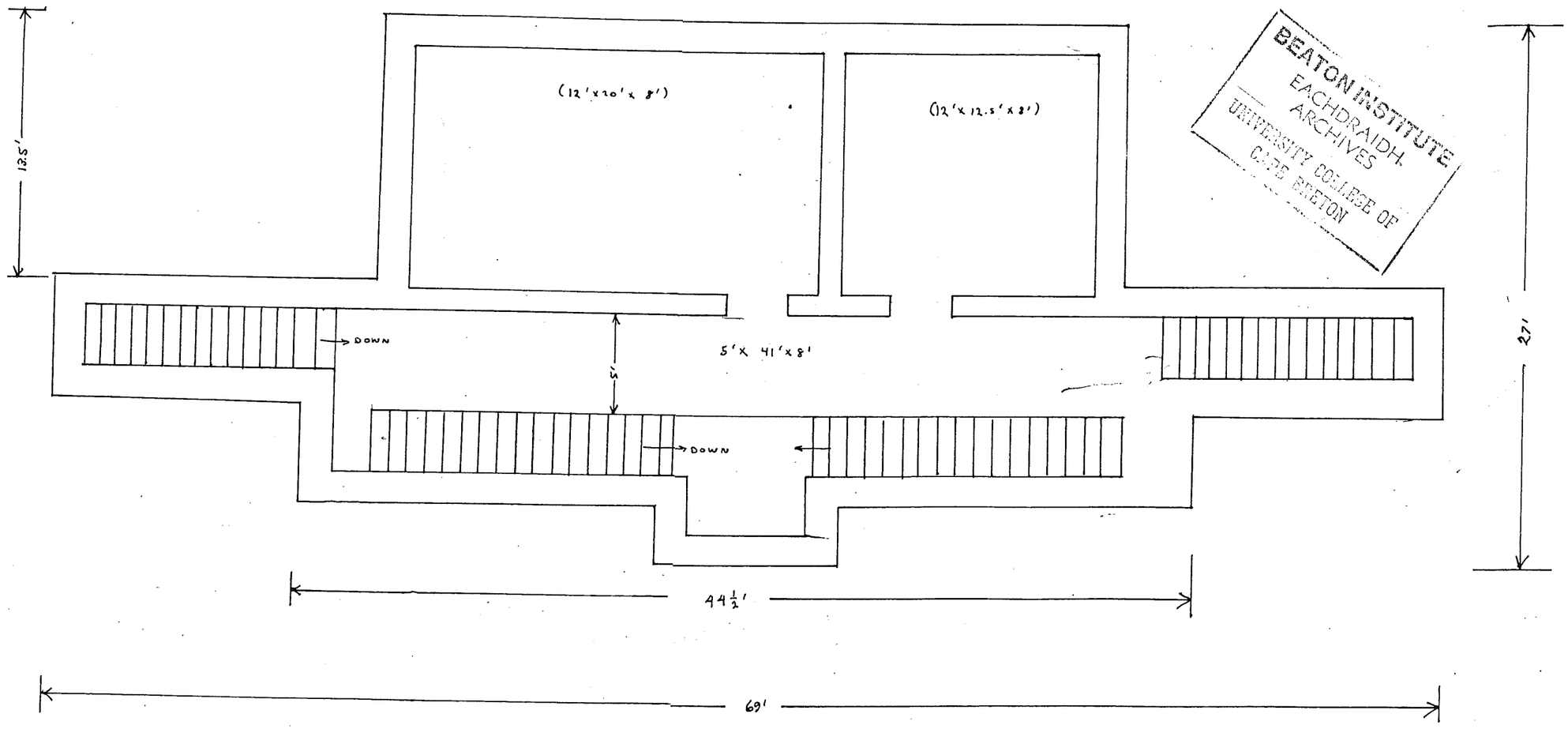
NOTE : SECOND LEVEL IS
SET BACK 29'
FROM STAIRWAY
DOWN A GRADUALLY
SLOPING TUNNEL
(SEE SHEET #)

CHAPEL
SCALE 1" = 10'
DR. L. POLEGATO
SHEET # 5
ELEVATION VIEW, BUILDING "C"

VOLUME OF ROOMS 1200
1920
3120 ft³

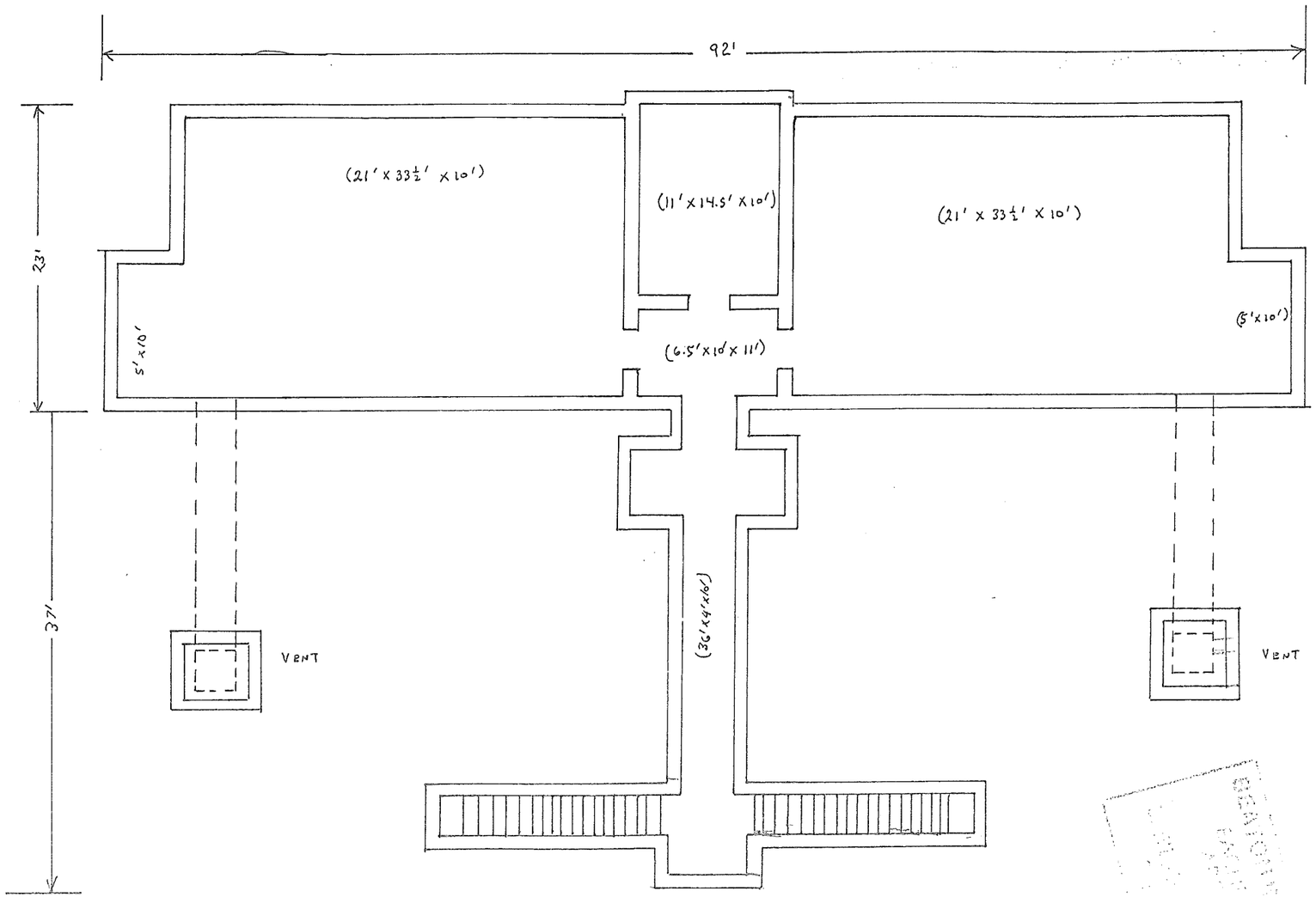
VOLUME OF LANDING 1640 ft³

NOTE: THIS LEVEL IS COMPLETELY UNDERGROUND AND COVERED WITH A CONCRETE ROOF.



CHAPEL.
SCALE 1" = 6'
DR. L. POLEGATO
SHEET "B 6

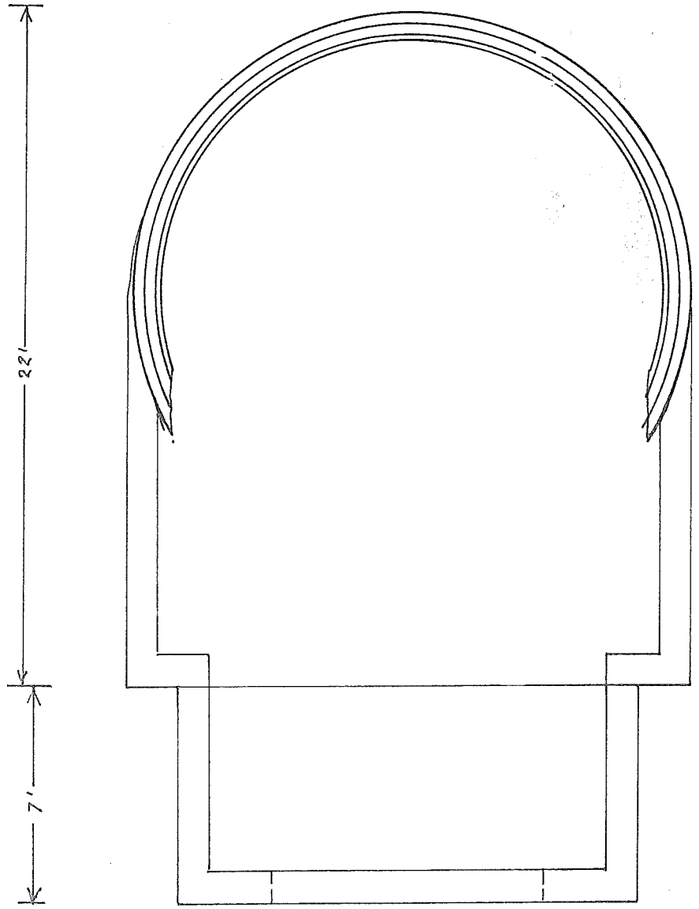
FIRST FLOOR, BUILDING "C"



VOLUME (ROOMS) 17,370 ft³

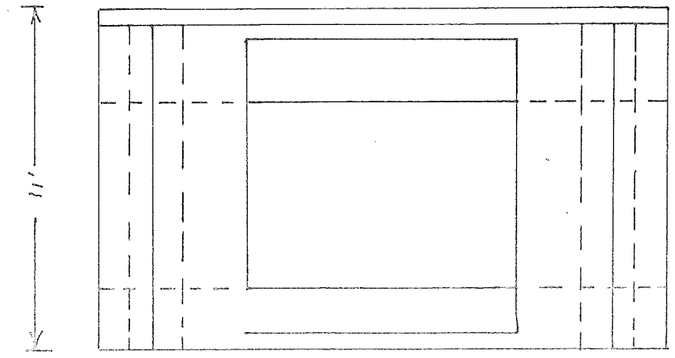
VOLUME (HALL) ≈ 1840 ft³

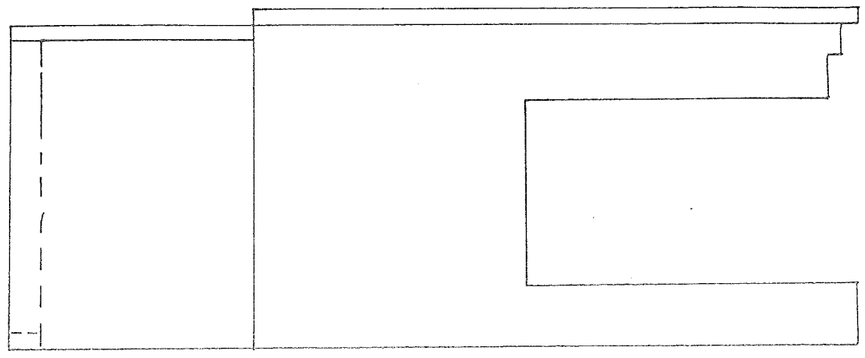
CHAPEL
SCALE 1" = 10'
DR. L. POLEGATO
SHEET 4 & 7
SECOND FLOOR BUILDING "C"



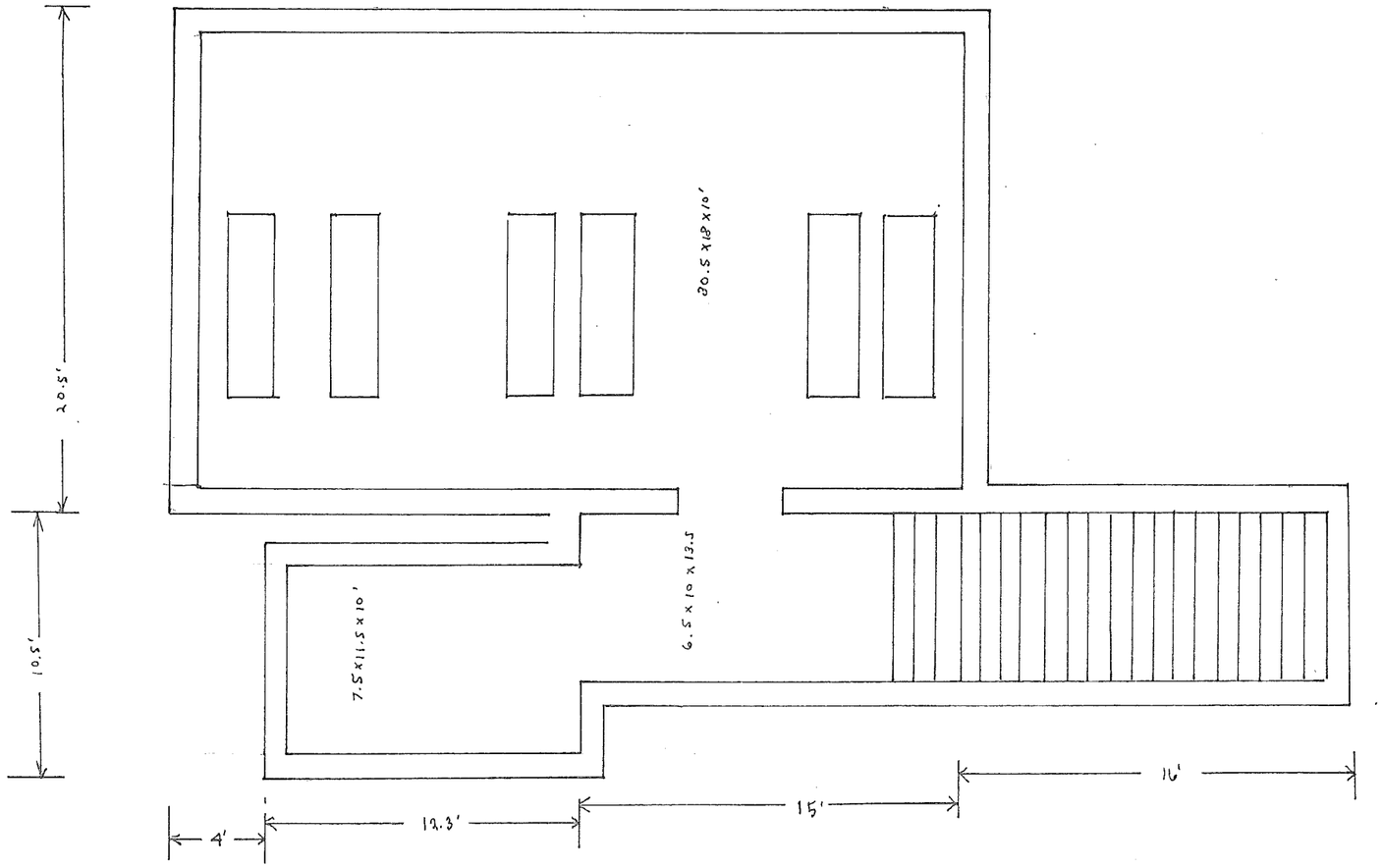
NOTE:

THERE ARE THREE
OF THESE AT CHAPEL
ALL IDENTICAL, OPEN FRONT
AND REAR
VOLUME EACH ≈ 4100 ft³.



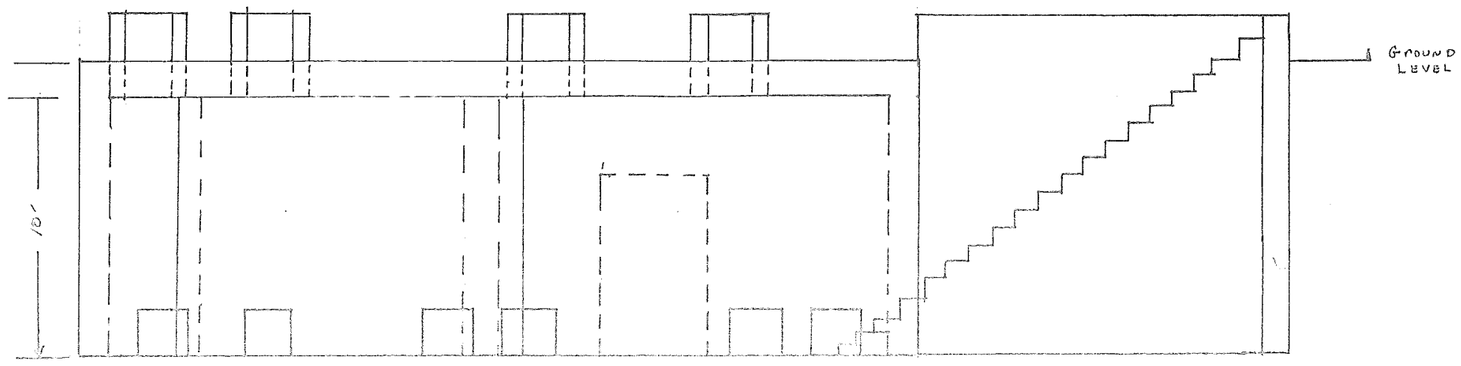


CHAPEL
SCALE 1"=5'
DRW. L. POLGATO
SHEET # 9
STRUCTURES E1, E2, E3



VOLUME ≈ 7300 ft³ (EXCLUDING STAIRWAY

AREA IS COMPLETELY UNDERGROUND



CHAPEL
SCALE 1" = 6'
DRW. L. POLEGATO
STRUCTURE "D"
SHEET # 8

4. FORT STUBBERT BATTERY

NORTH SYDNEY

Fort Stubbard

Owner - Thomas A. Hartigan, Centerville,
North Sydney 794-3498

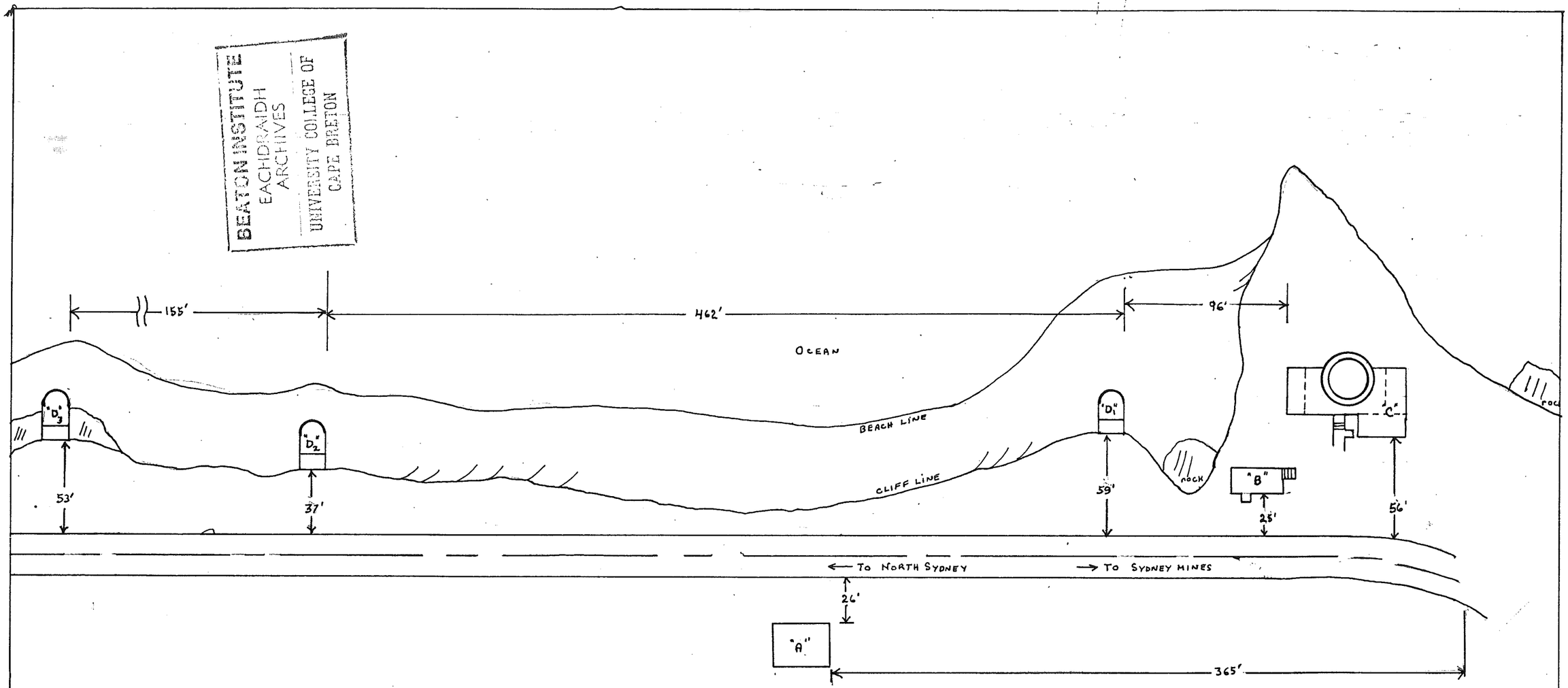
Location - Fort Stubbard is located on
Shore Rd.; 1.8 miles from St.
Elizabeth's Hospital in North
Sydney; as you travel from
North Sydney in the direction
toward Sydney Mines.

Access - Fort Stubbard is easily accessible. By
referring to the overall view drawn
of the site you will find that the
main structure is less than 75' from
Shore Rd. There is a small area
for parking a few cars in front of
the gunmount directly of the Shore Rd

Amt of water - This site was completely dry wh
we conducted our research

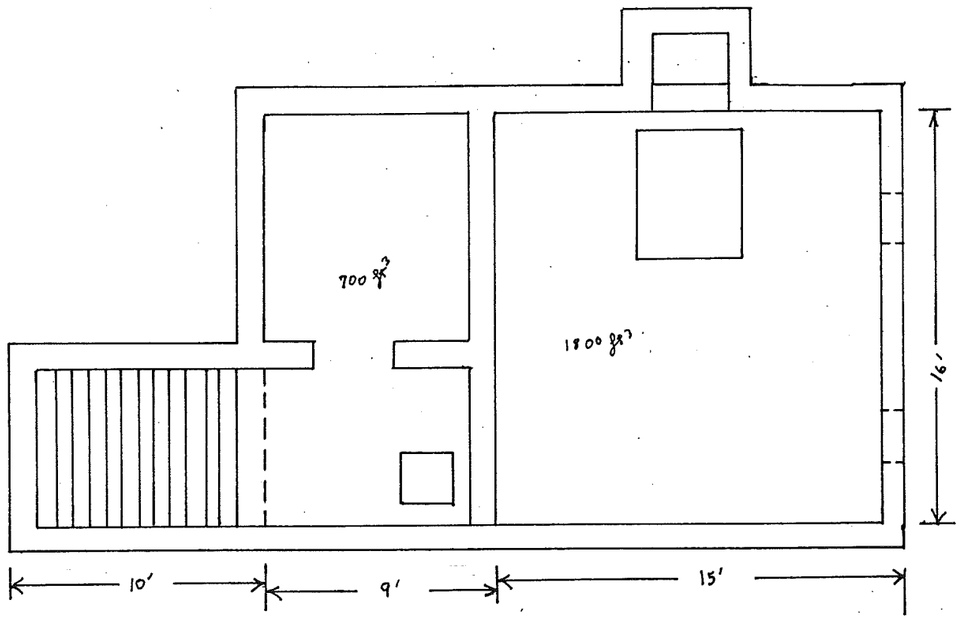
Temperature: Inside — 60°
Outside — 72°

General Condition - Fort Stubbard's structures are
in good condition. The concrete is not badly
chipped and the buildings are stable except
for two collapsed searchlight post. Very little
debris is in evidence and the grass ~~is~~
around the structure is kept cut.

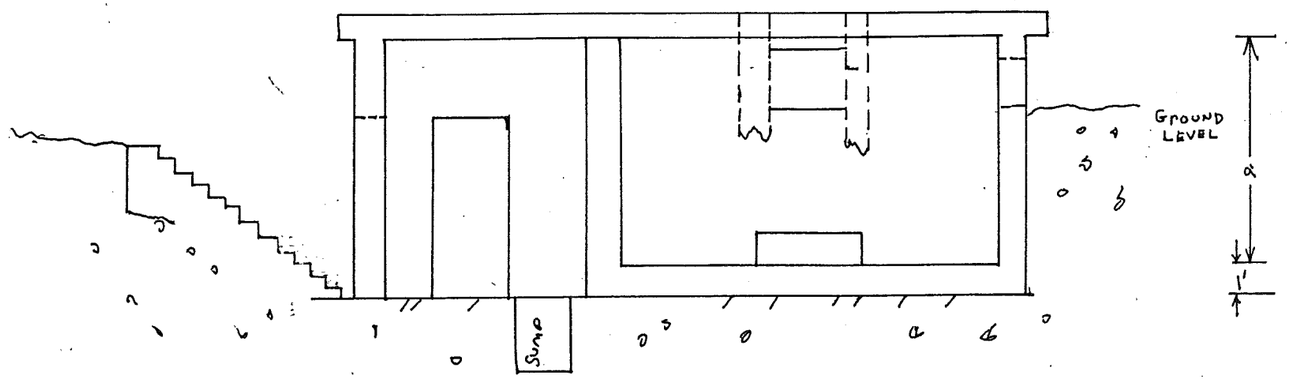


NOTE: D_1 D_2 D_3 ARE SIMILAR.
CLIFF IS + ELEVATION

STUBBARD'S BATTERY
SCALE 1" = 60'
DR. L. POLEGATO
SHEET "1"

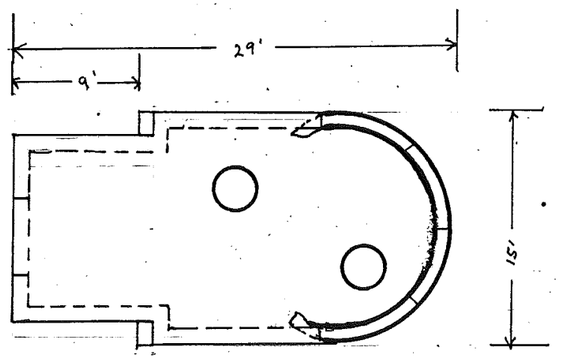


WALLS 1' CONCRETE
METAL SHUTTERED DOOR, WINDOWS
VOLUME ≈ 2500 ft³

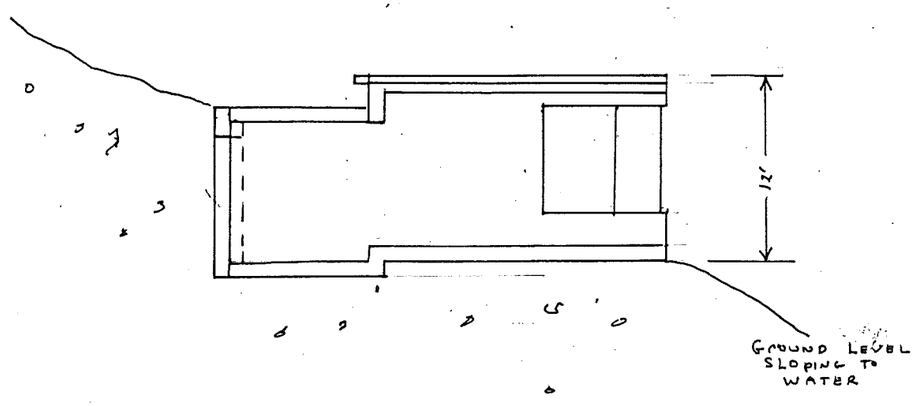


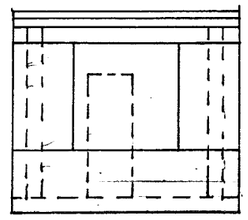
STUBBARD BATTERY
BUILDING "B"
SCALE 1" = 6'
DR. L. POLEGATO

SHEET "2"

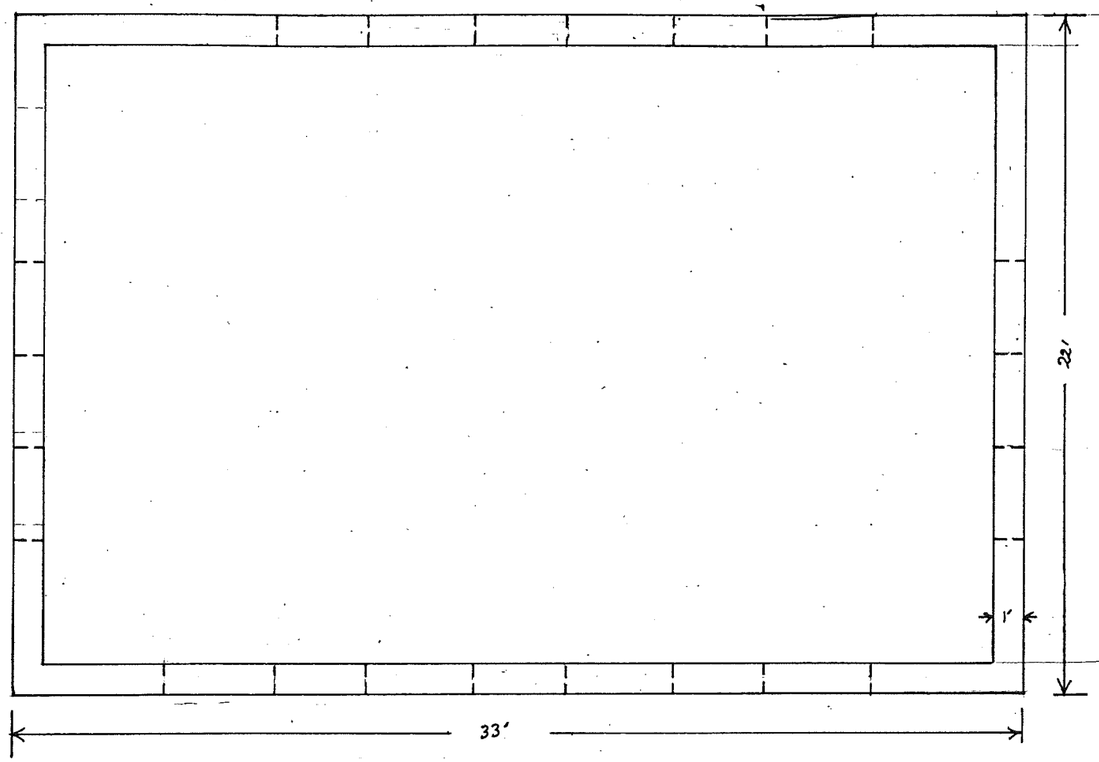


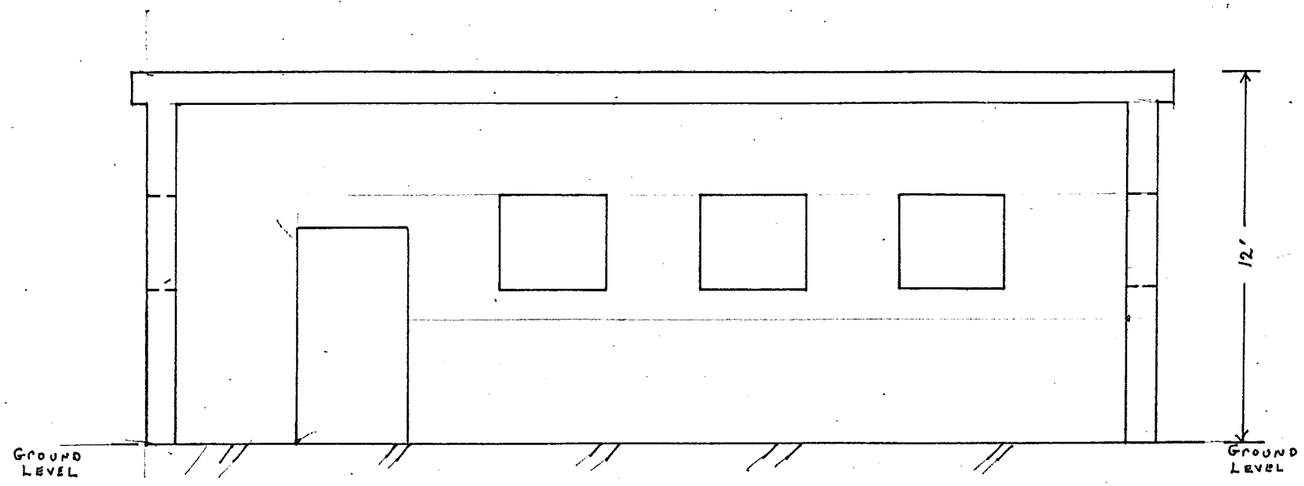
THERE ARE THREE OF THESE
BUILDINGS AT STUBBARD BATTERY.
ALL IDENTICAL
VOLUME ≈ 2750 ft³
VOLUME OF ALL THREE ≈ 8200 ft²





STUBBARD BATTERY
BUILDINGS D_1, D_2, D_3
SCALE 1" = 10'
DR. L. POLECAT
SHEET # 3



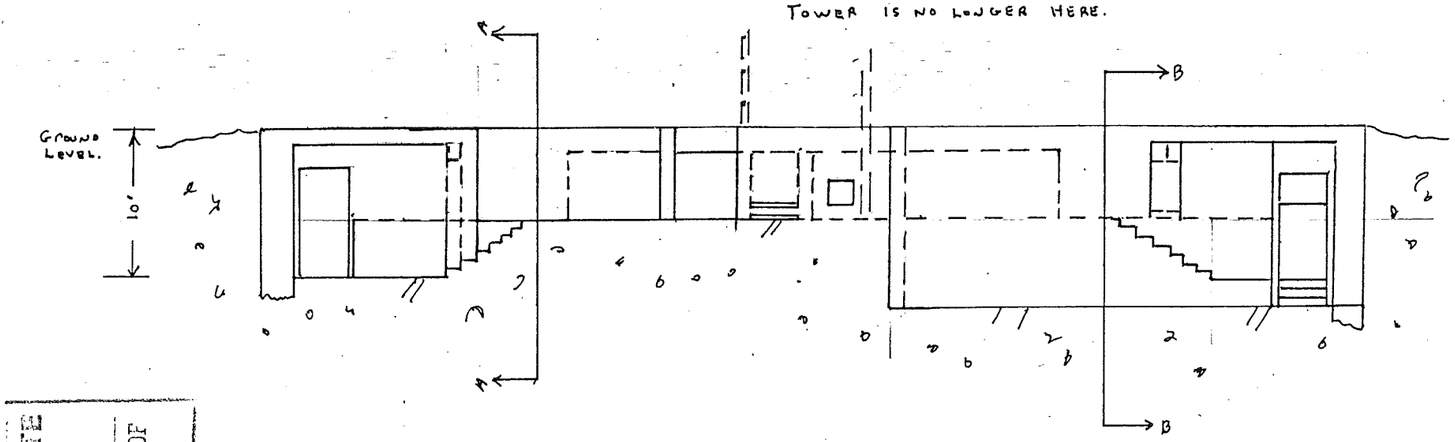


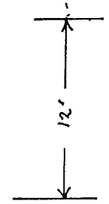
VOLUME ≈ 6450 ft³

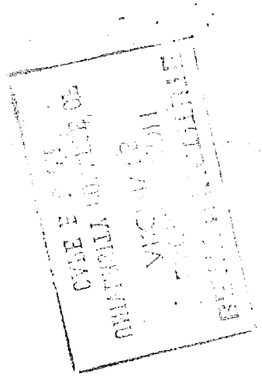
BUILDING IS COMPLETELY ABOVE GROUND.

STUBBARD BATTERY
BUILDING "A"
SCALE 1" = 5'
DR. L. POLEGATO
SHEET "9"

TOWER IS NO LONGER HERE.

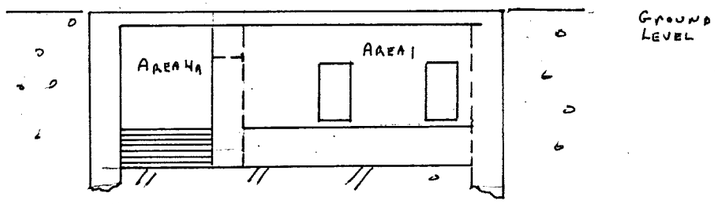




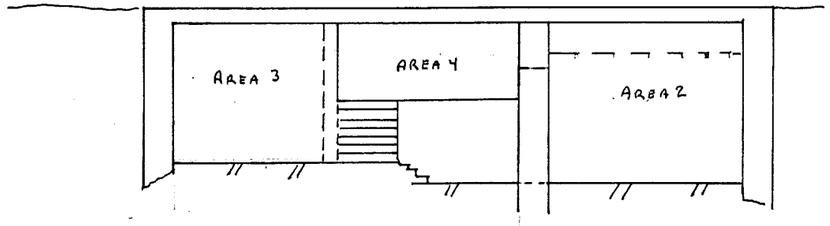


NOTE. NO METAL ROOF,
NO TOWER
AT THIS SITE

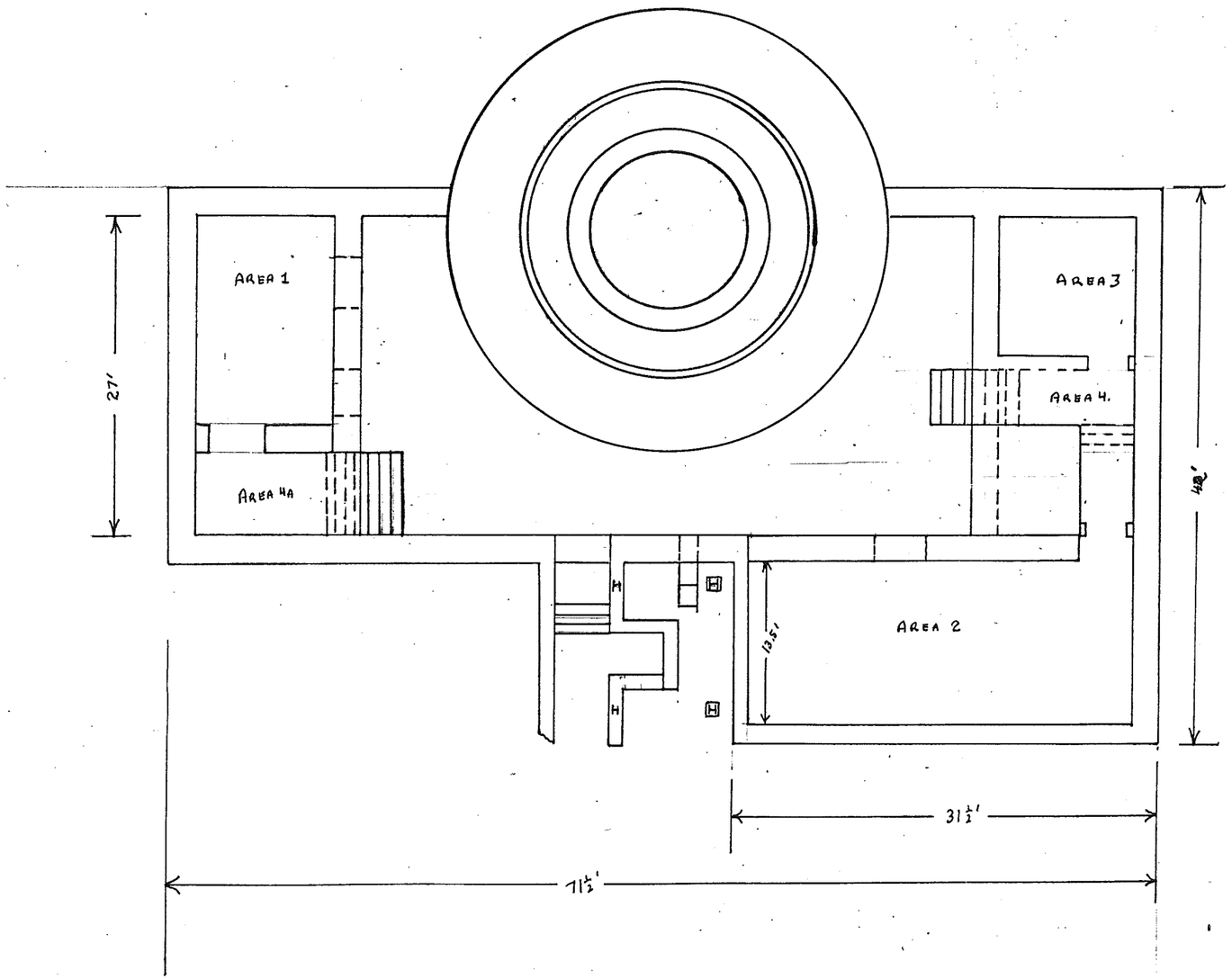
SECTION A A



SECTION B B.



STUBBARD BATTERY
BUILDING "C"
SCALE 1" = 10'
Dr. L. POLEGATO
SHEET "6"



VOLUMES

AREA 1 ≈ 1350 ft³
AREA 2 ≈ 3400 ft³
AREA 3 ≈ 900 ft³
AREA 4, 4A, are STAIRWAYS AND LANDINGS

STUBBARD BATTERY
BUILDING "C"
SCALE 1" = 10'
DR. L. POLEGATO
SHEET " 5"

5. SOUTH BAR BATTERY SYDNEY

South Bar Battery

Owner: Government of Canada

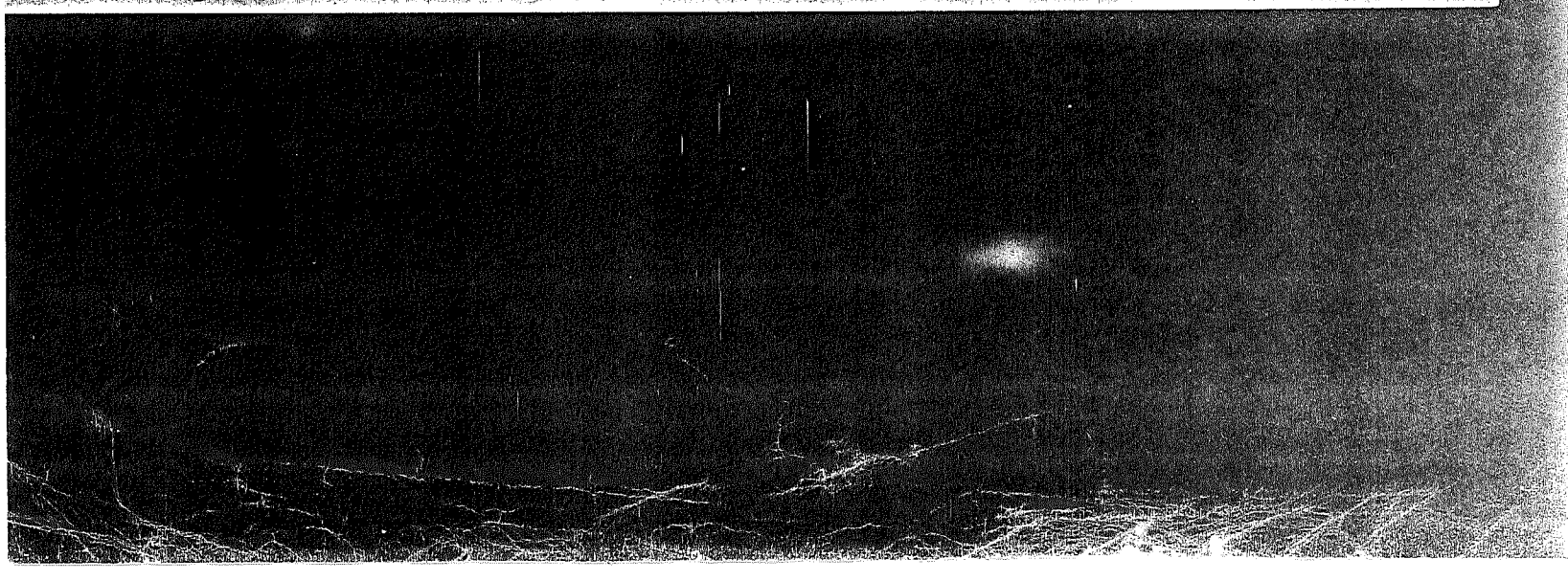
Location: South Bar, by the South Bar Sandbar. The road to the site is 1.6 miles from the South Bar School in the direction of New Waterford.

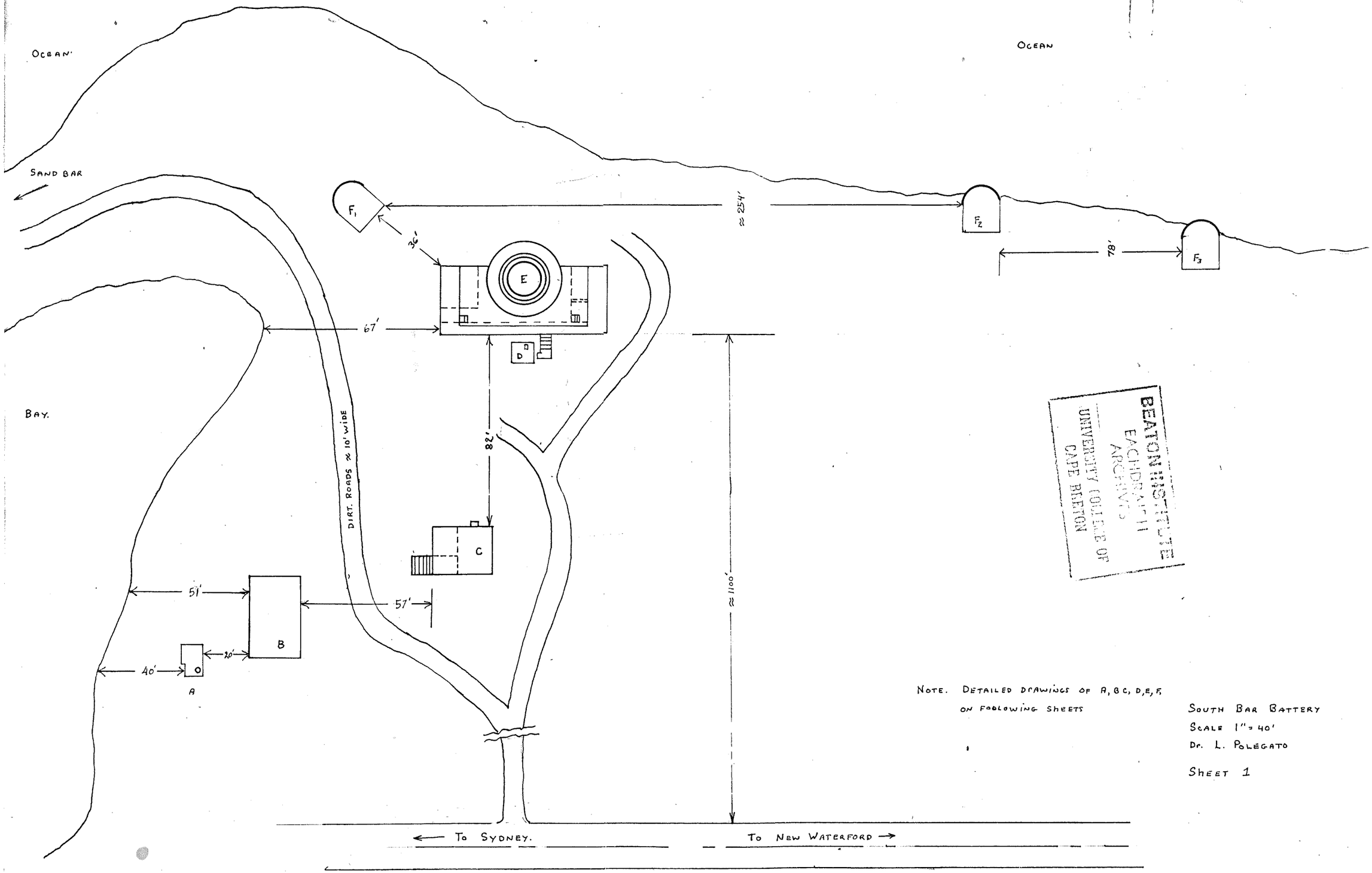
Access: There is one access road, a dirt road about 1100 feet long. It is in fairly good condition, but there are a few bad potholes in it.

General Condition: The buildings are in very good condition; in fact, most of the doors and window closings remain. The concrete is in good condition and there is not much debris around. The roof is still on the guardroom and the watchtower still stands although most of the steps to the top are rusted away.

Temperature: Above ground level structures - 65°
Below ground level structures - 62°

Water: This site is very dry.

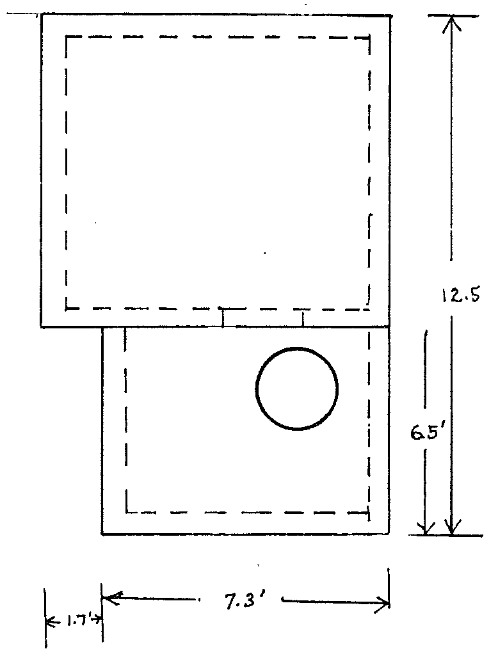




NOTE. DETAILED DRAWINGS OF A, B C, D, E, F
ON FOLLOWING SHEETS

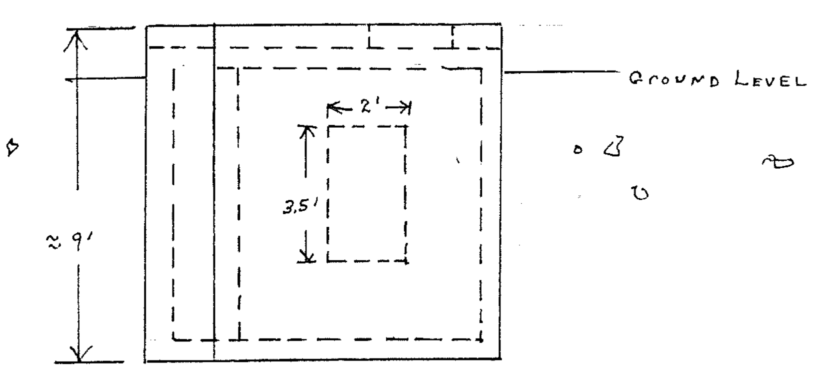
SOUTH BAR BATTERY
SCALE 1" = 40'
Dr. L. POLEGATO

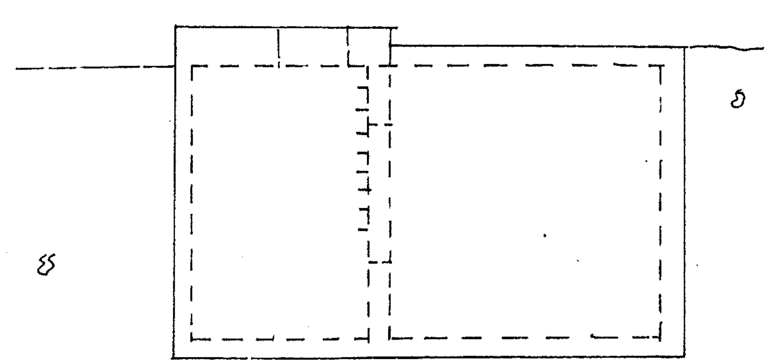
SHEET 1



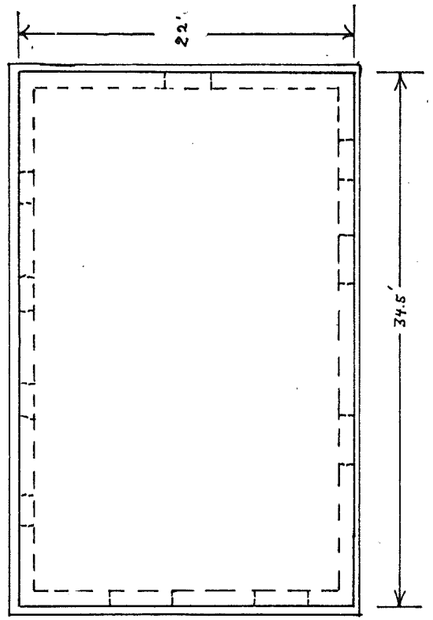
Building "A"

Volume: 252
368
620 ft³



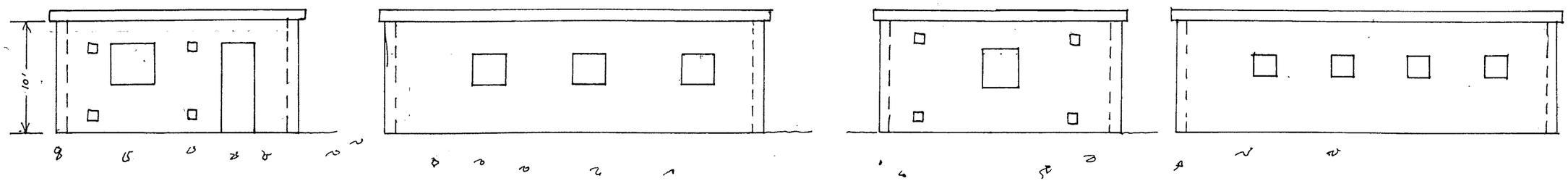


South Bar Battery
Building "A"
Scale 1" = 5'
Drwn L. Polegato
Sheet 2

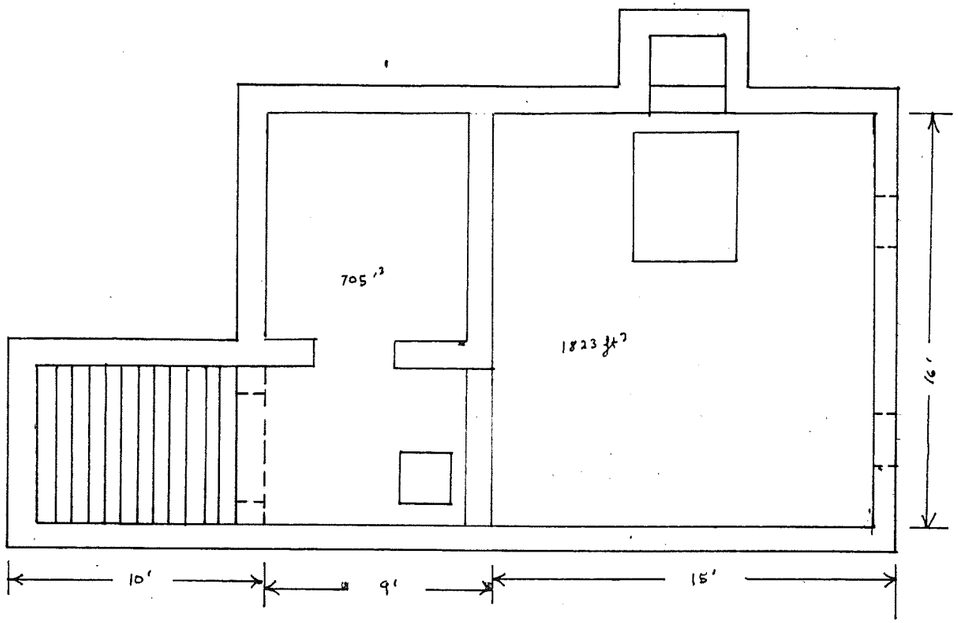


WALLS 1' CONCRETE
WINDOWS AND DOOR
ARE METAL SHUTTERED

VOLUME = 6500 ft3.



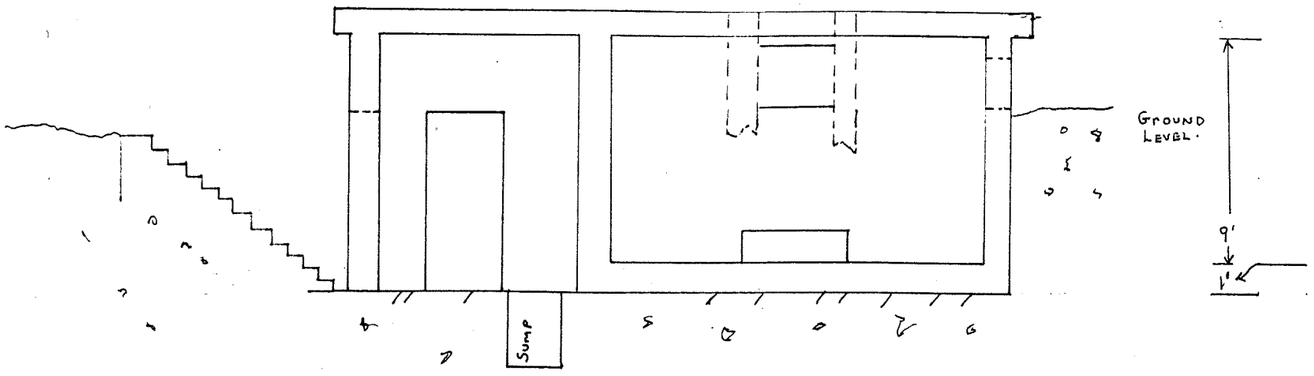
SOUTH BAR BATTERY
BUILDING "B"
SCALE 1" = 10'
DR. L. POLEGATO
SHEET # 3



WALLS 1' CONCRETE

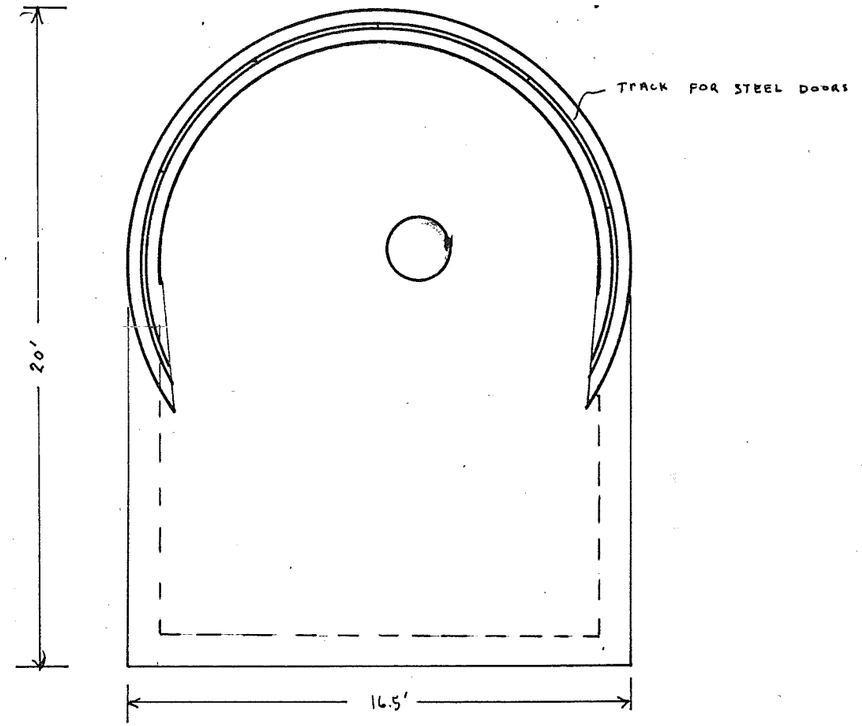
METAL SHUTTERED DOOR, WINDOWS.

VOLUME 705
1823
2528
≈ 2530 ft³.



SOUTH BAR BATTERY
BUILDING "C"
SCALE 1" = 6'
DR. L. POLEGATO

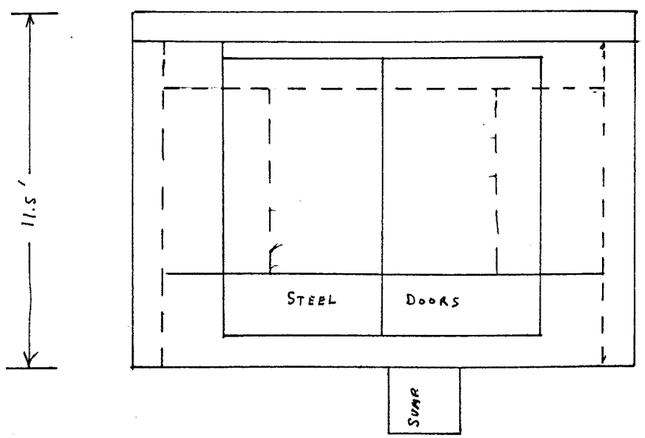
SHEET #4

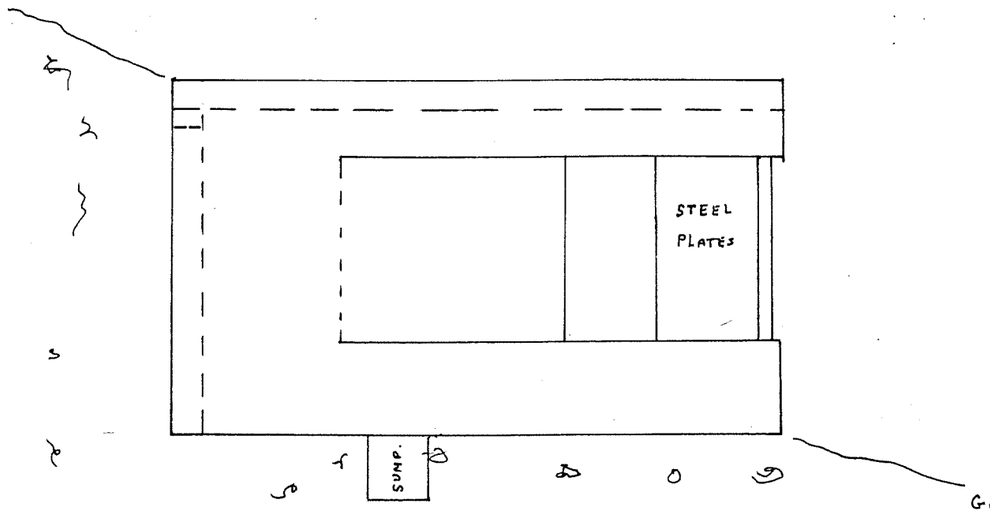


THERE ARE 3 EDIFICES ALONG THE COAST LINE (F_1 F_2 F_3 on Sheet 1) THAT ARE IDENTICAL. THEY HAVE STEEL DOORS ON ROLLERS FACING THE HARBOUR AND 2 STEEL DOOR IN THE REAR.

VOLUME ≈ 4100 ft^3

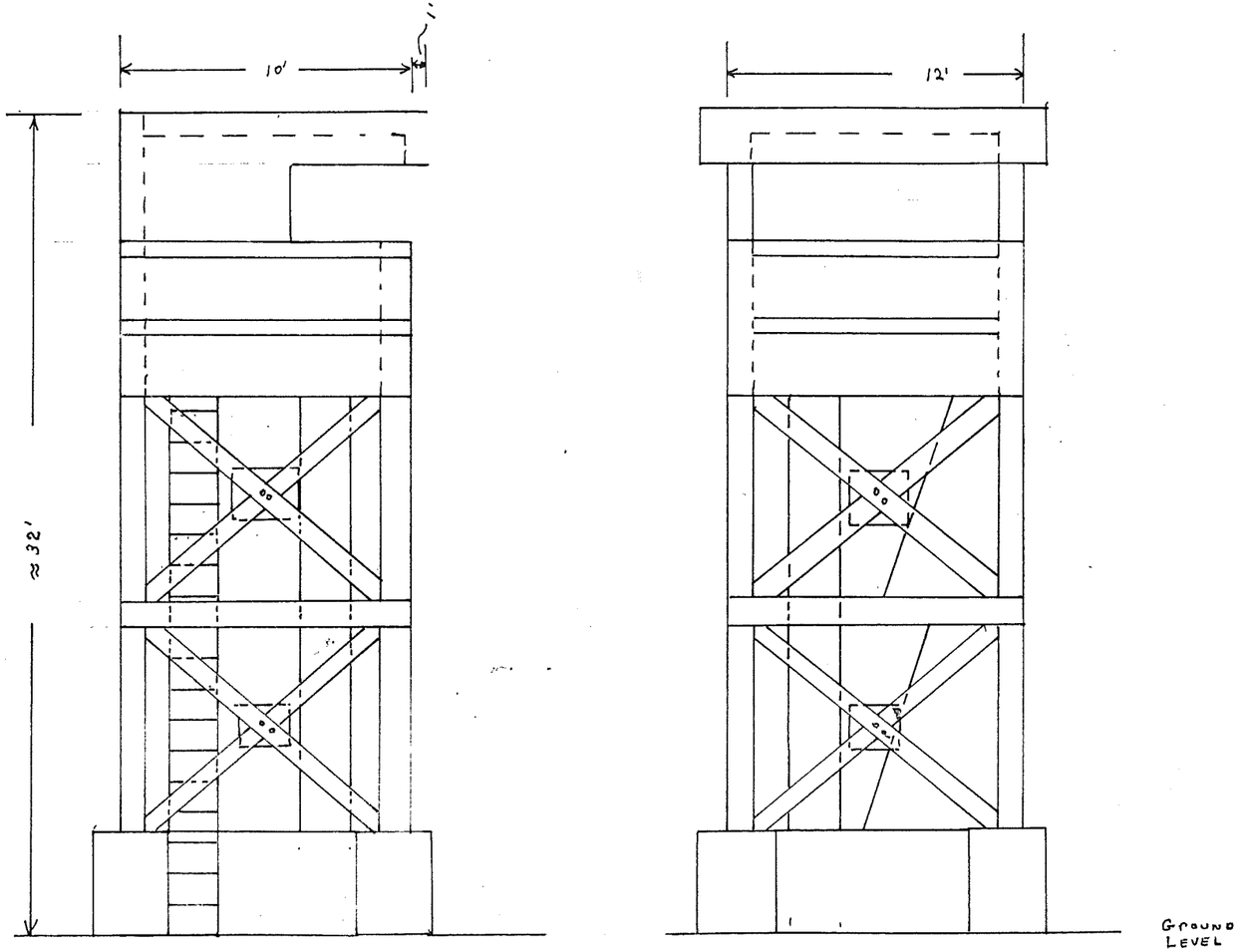
VOLUME OF F_1 F_2 F_3 ≈ 12,000 ft^3.





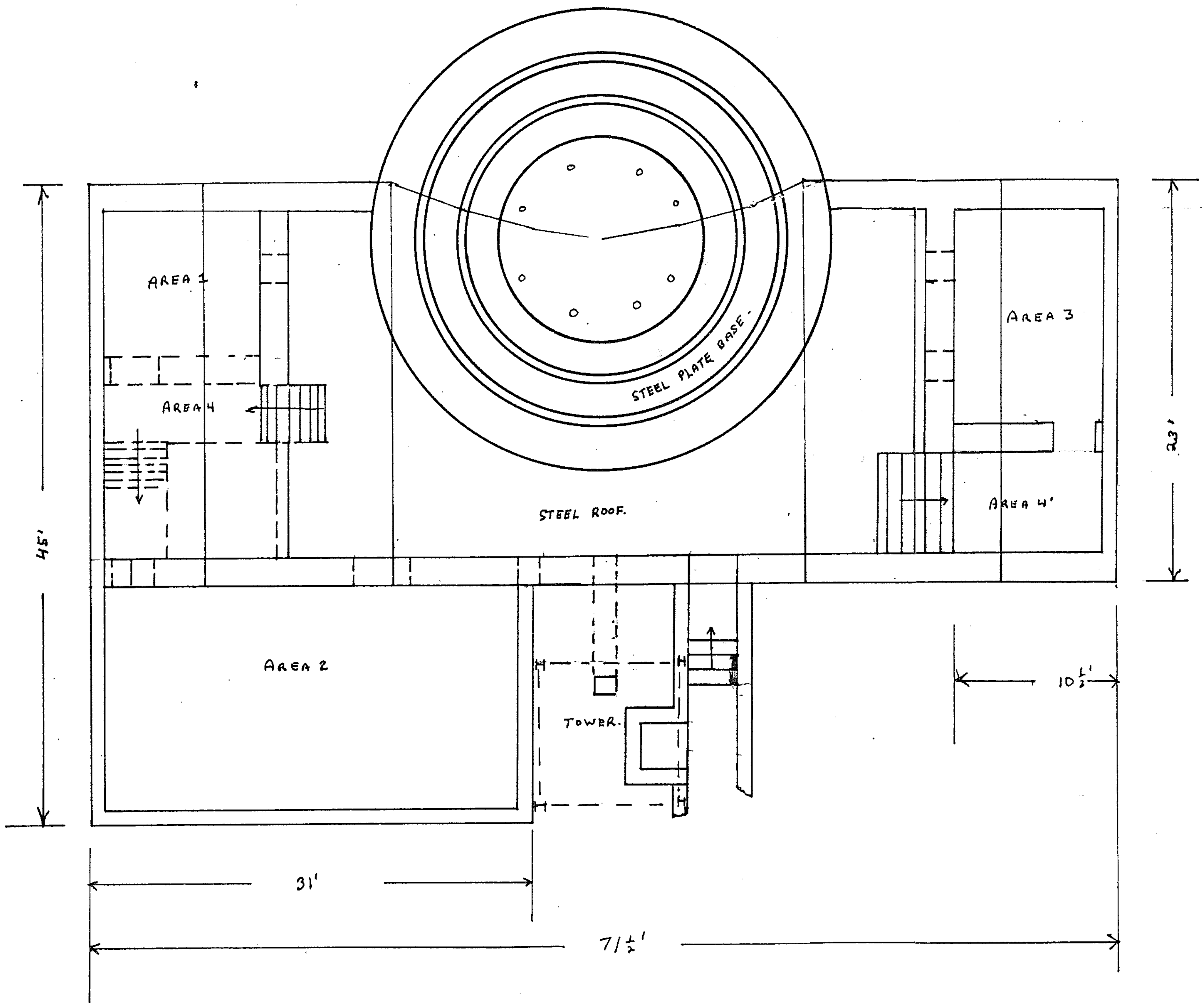
GROUND SLOPES AWAY TO SHORE

SOUTH BAR BATTERY
BUILDINGS F_1, F_2, F_3,
SCALE 1" = 5'
DR. L. POLEGATO
SHEET # 5.



TOWER. VOLUME ≈ 950 ft³

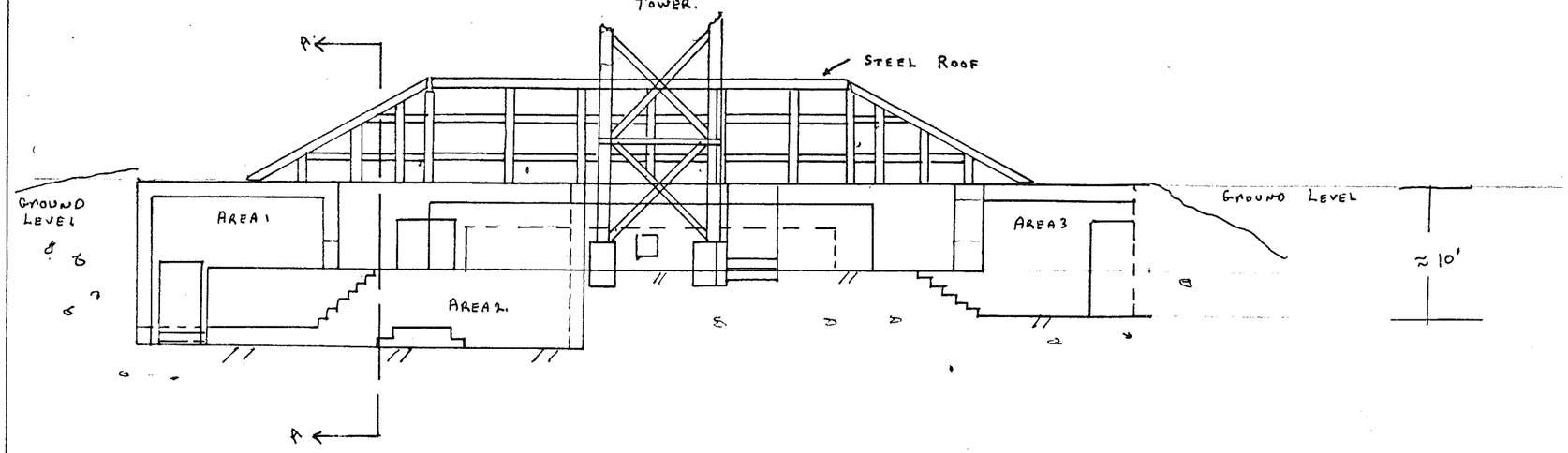
SOUTH BAR BATTERY
BUILDING "D" (TOWER.
SCALE 1" = 6'
DR. L. POLEGATO
SHEET # 6.

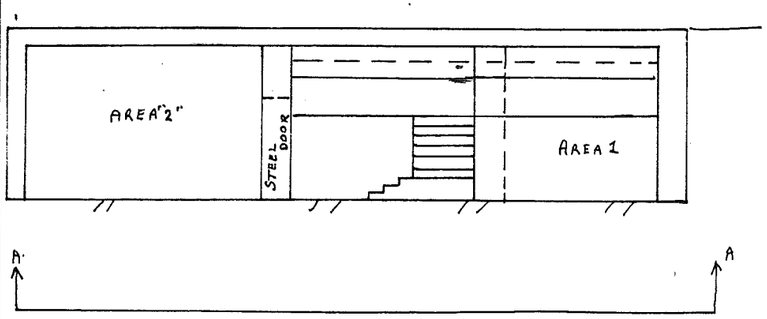


VOLUME

AREA 1 ≈ 1000 ft^3
AREA 2 ≈ 3300 ft^3
AREA 3 ≈ 1050 ft^3
AREA 4, 4' = stairways + LANDINGS

SOUTH BAR BATTERY
BUILDING "E" PLAN VIEW.
SCALE 1" = 10'
Dr. L. POLEGATO
SHEET # 7



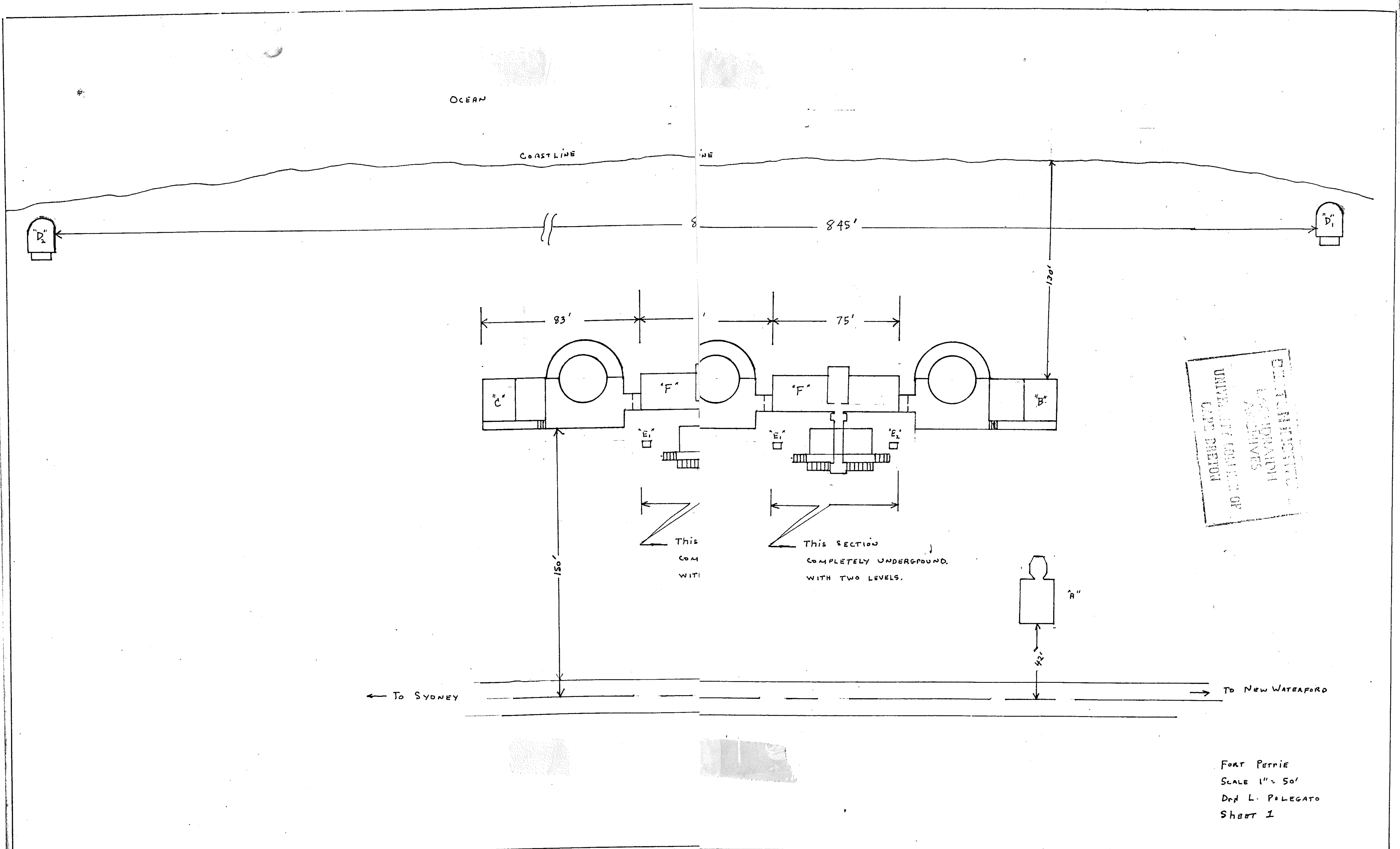


NOTE: This structure has a steel framed roof over the center section. The roof is made of concrete blocks about 4" x 2' x 1' supported by a steel frame. The rear wall is also still intact with similar construction. This wall is about 7' higher than the structure. The tower is also similarly constructed (Sheet 6)

SOUTH BAR BATTERY
BUILDING "E"
SCALE 1" = 10'
DR. L. POLEGATO
SHEET N 8

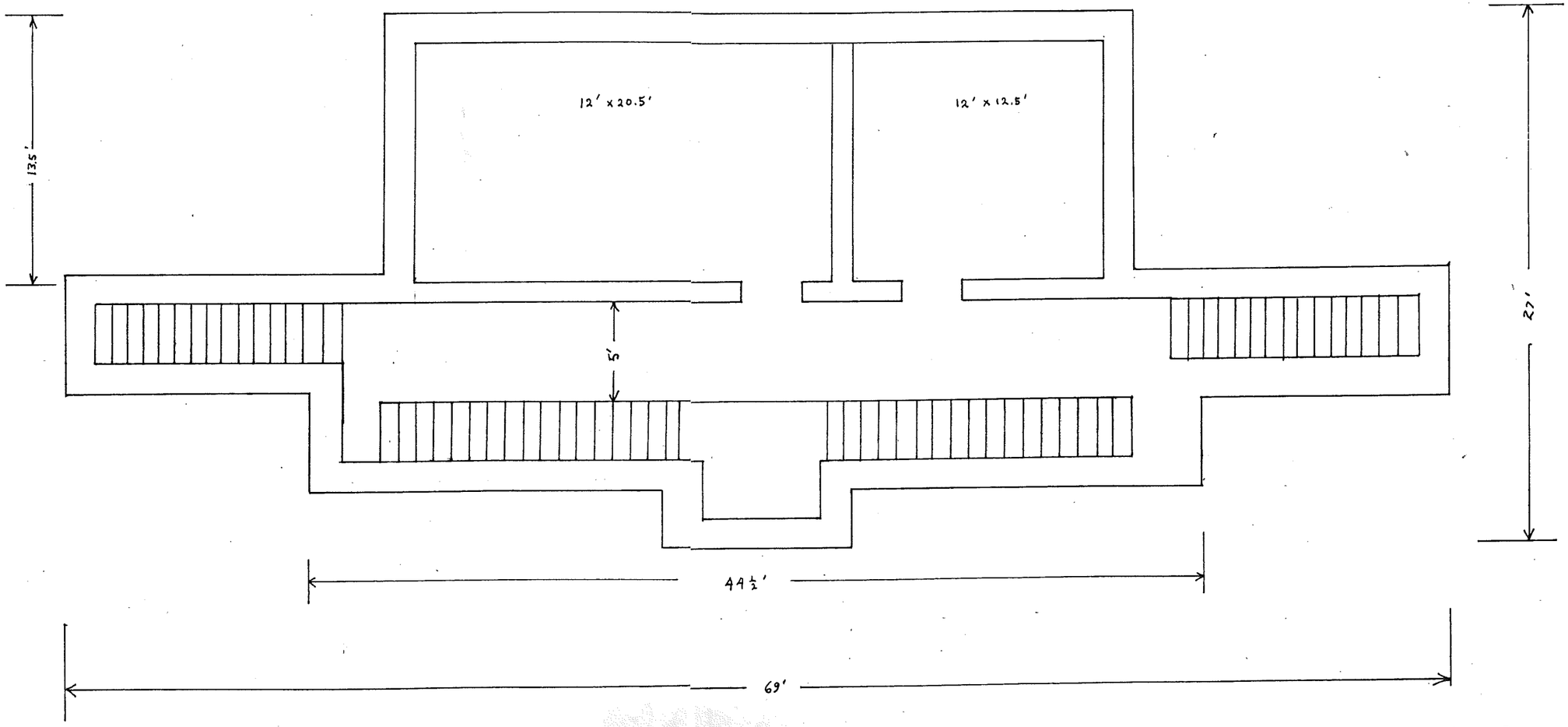
6. FORT PETRIE

NEW VICTORIA



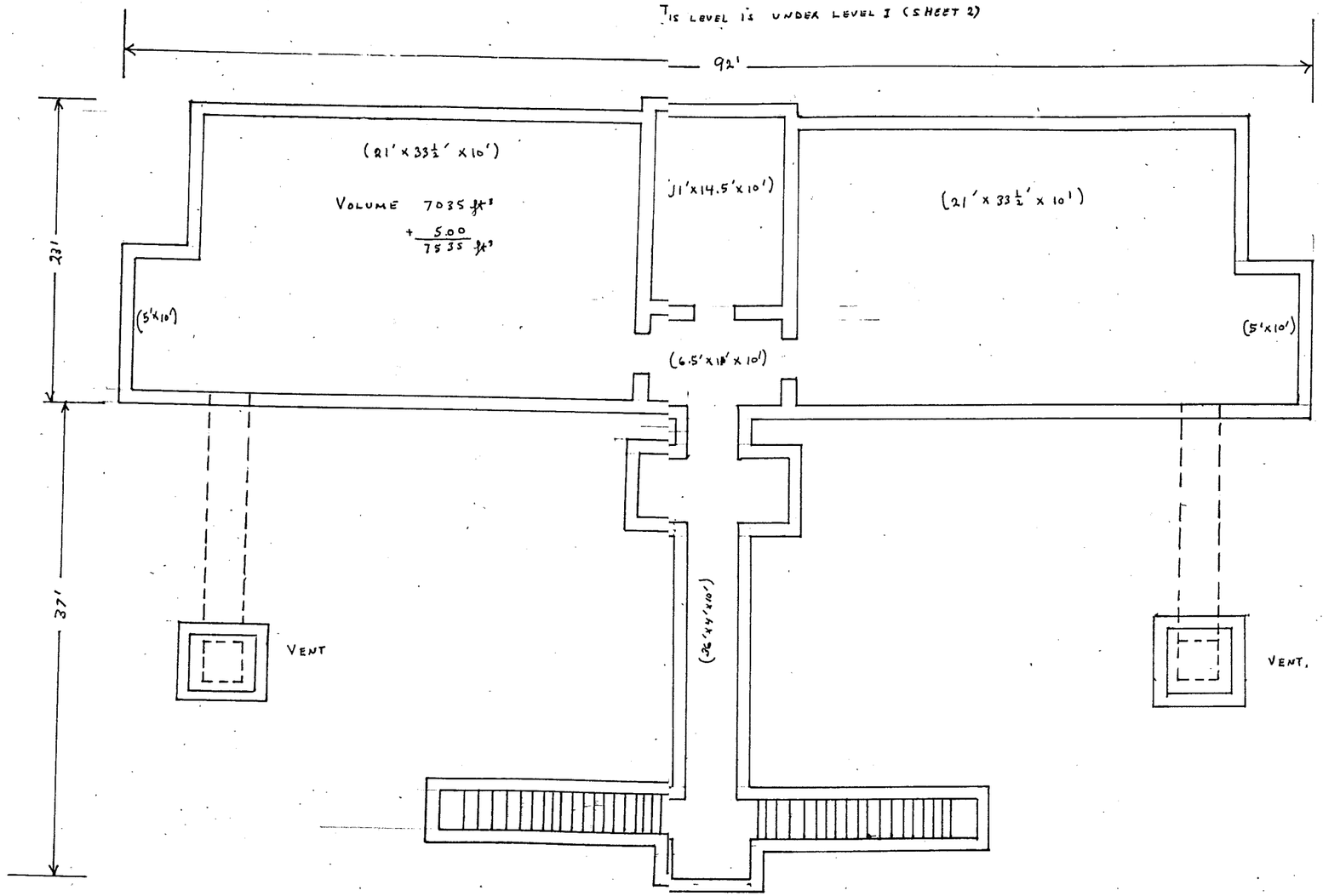
NOTE: THIS FLOOR IS TOTALLY UNDERGROUND. AN CCOVERED WITH CONCRETE

VOLUMES (ROOMS) 3120 ft³
" " (LANDING) 1640 ft³



FORT PETTIE.
SCALE 1" = 6"
DAN L. POLEGATO
SHEET 2.

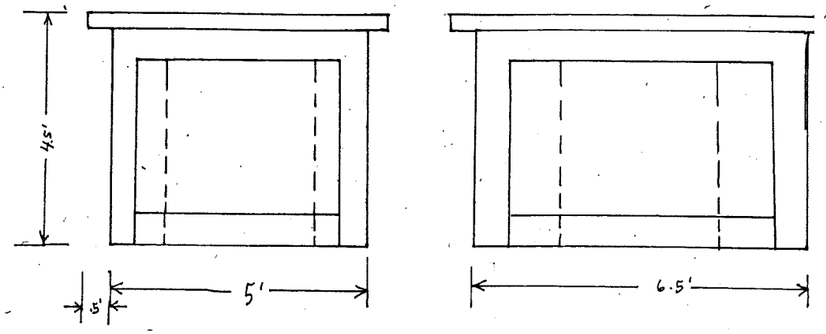
FIRST FLOOR BUILDING "F"



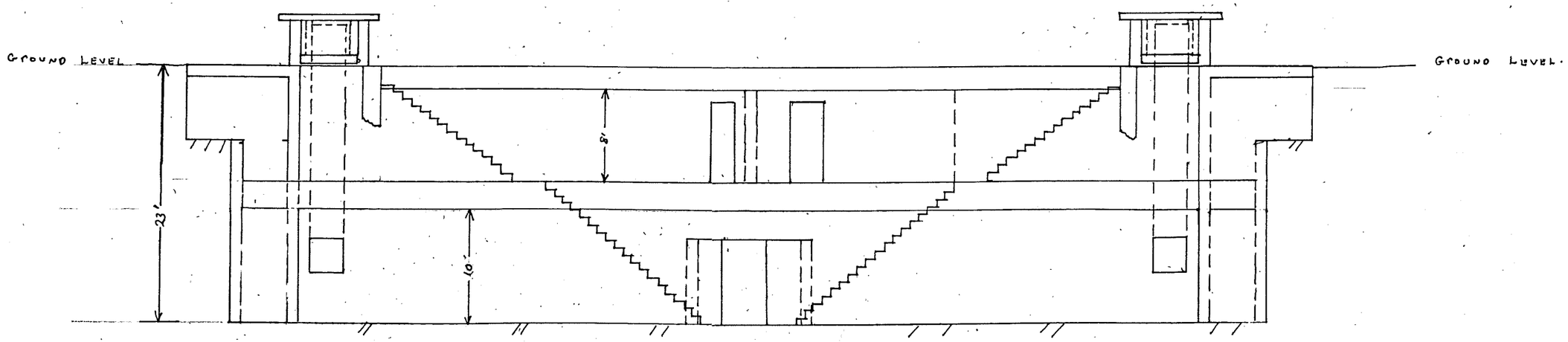
VOLUME OF ROOMS 7535
7535
2300
17,370 ft³

VOLUME OF HALL ≈ 1840 ft³

FORT PETRIE
SCALE 1" = 10'
DRN L. POLEGATO
SHEET #3.
SECOND FLOOR BUILDING "F"



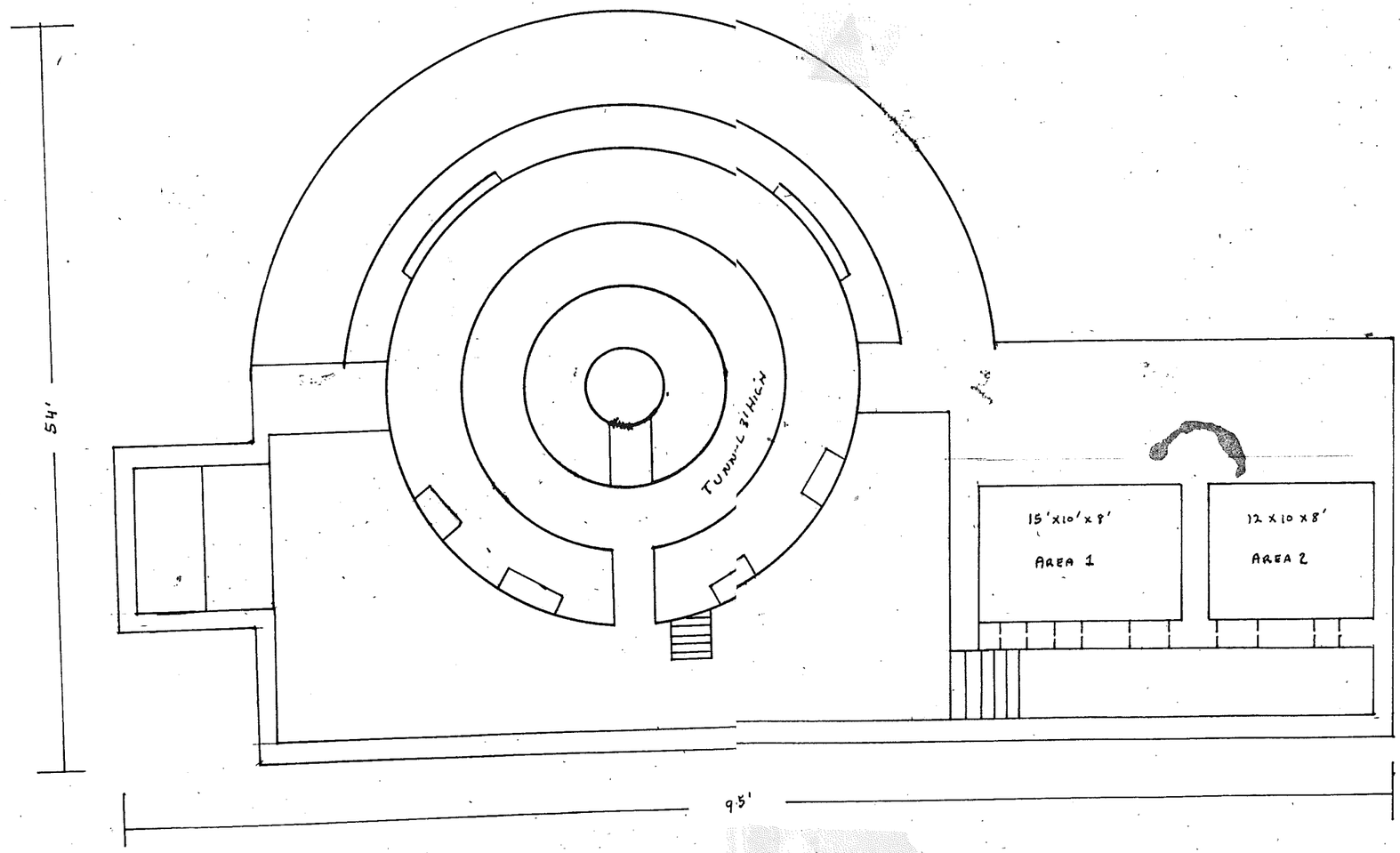
STRUCTURES "E"
SCALE 1"=3'
FRONT AND SIDE VIEW
OF VENTILATOR STRUCTURES.
TUNNEL FROM "E" GOES DOWN
TO LEVEL 2. TUNNEL IS 3'x3'

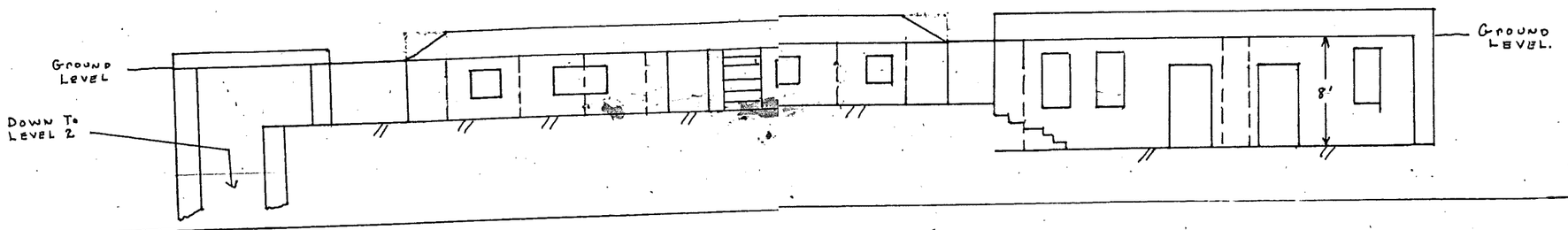


NOTE: SECOND LEVEL IS SET BACK 29' FROM STAIRWAY DOWN. A GRADUALLY SLOPING TUNNEL. (SEE SHEET #3.

FORT. PETRIE
SALE 1"=10'
DRN. L. POLEGATO
SHEET 4
ELEVATION VIEW, BUILDING F

VOLUMES AREA 1 = 1200 ft³
AREA 2 960 ft³





FORT PETRIE
SCALE 1" = 10'
DRN. L. POLEGATO
SHEET "A5
STRUCTURE "B."

VOLUME: AREAS 1, 2
= 2160 ft³

AREA 1
12 x 10 x 8'

AREA 2
15' x 10' x 8'

54'

91.5'

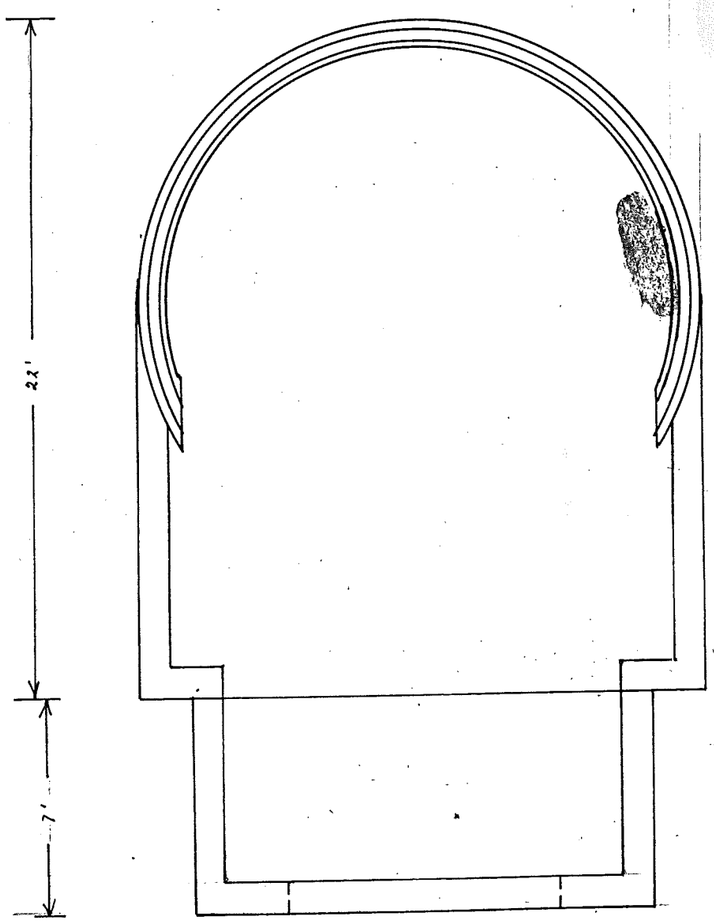
GROUND LEVEL

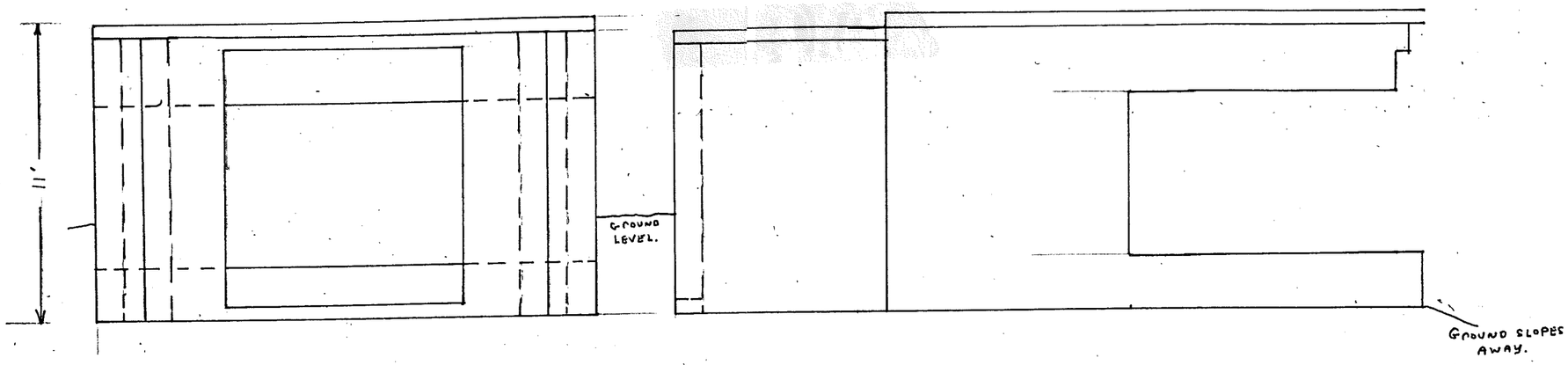
GROUND LEVEL

DOWN TO LEVEL 2

BEATON INSTITUTE
EACHDAIDH
ARCHIVES
UNIVERSITY COLLEGE OF
CAPE BRETON

FORT PETRIE
SCALE 1" = 10'
DRN. L. POLEGATO
SHEET NO. 6
STRUCTURE C





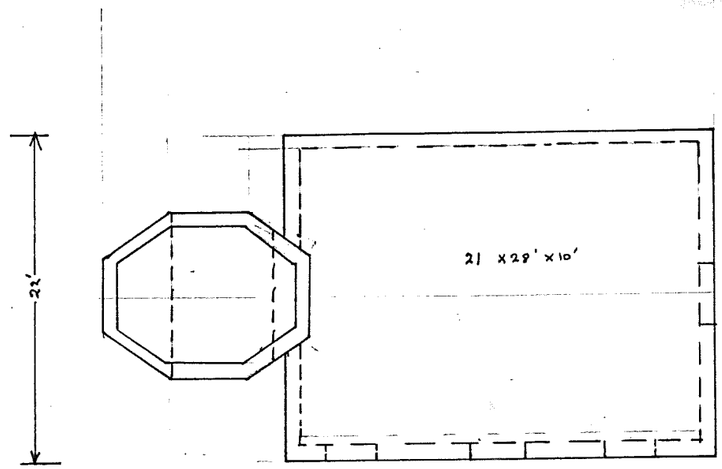
NOTE:

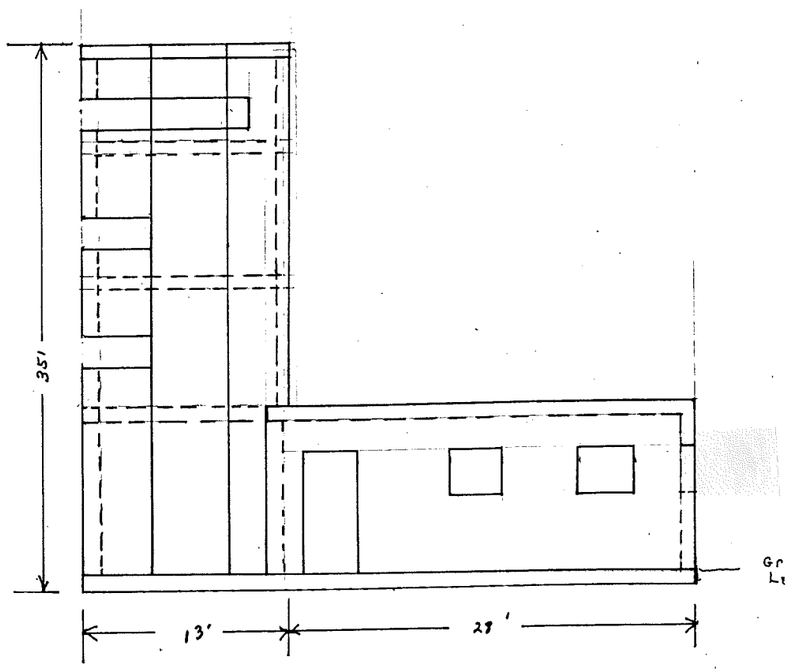
THERE ARE TWO STRUCTURES AT FT. PETTIE IDENTICAL.

VOLUME EACH ≈ 4100 ft³.

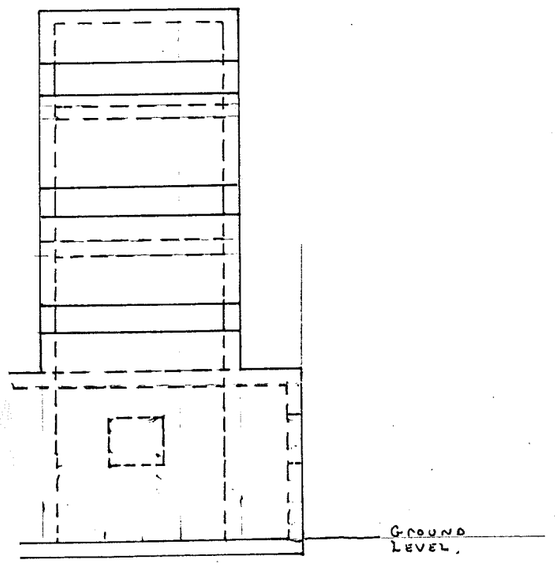
FRONT, (FACING OCEAN) ARE OPEN, AND REAR IS ALSO OPEN.

FORT PETTIE
SCALE 1" = 5'
DRN L. POLEGATO
SHEET # 67
STRUCTURE D_1, D_2





VOLUME ≈ 10500 ft³



BEATON INSTITUTE
EACHDRAIDH
ARCHIVES
UNIVERSITY COLLEGE OF
CAPE BRETON

FORT PETTIE
SCALE 1" = 10'
DRN. L. POLEGATO
SHEET 8
STRUCTURE "A"

7. LOW POINT

NEW WATERFORD

Low Point

Owner: Maurice Currie, Mt. Carmel Ave., New Waterford.

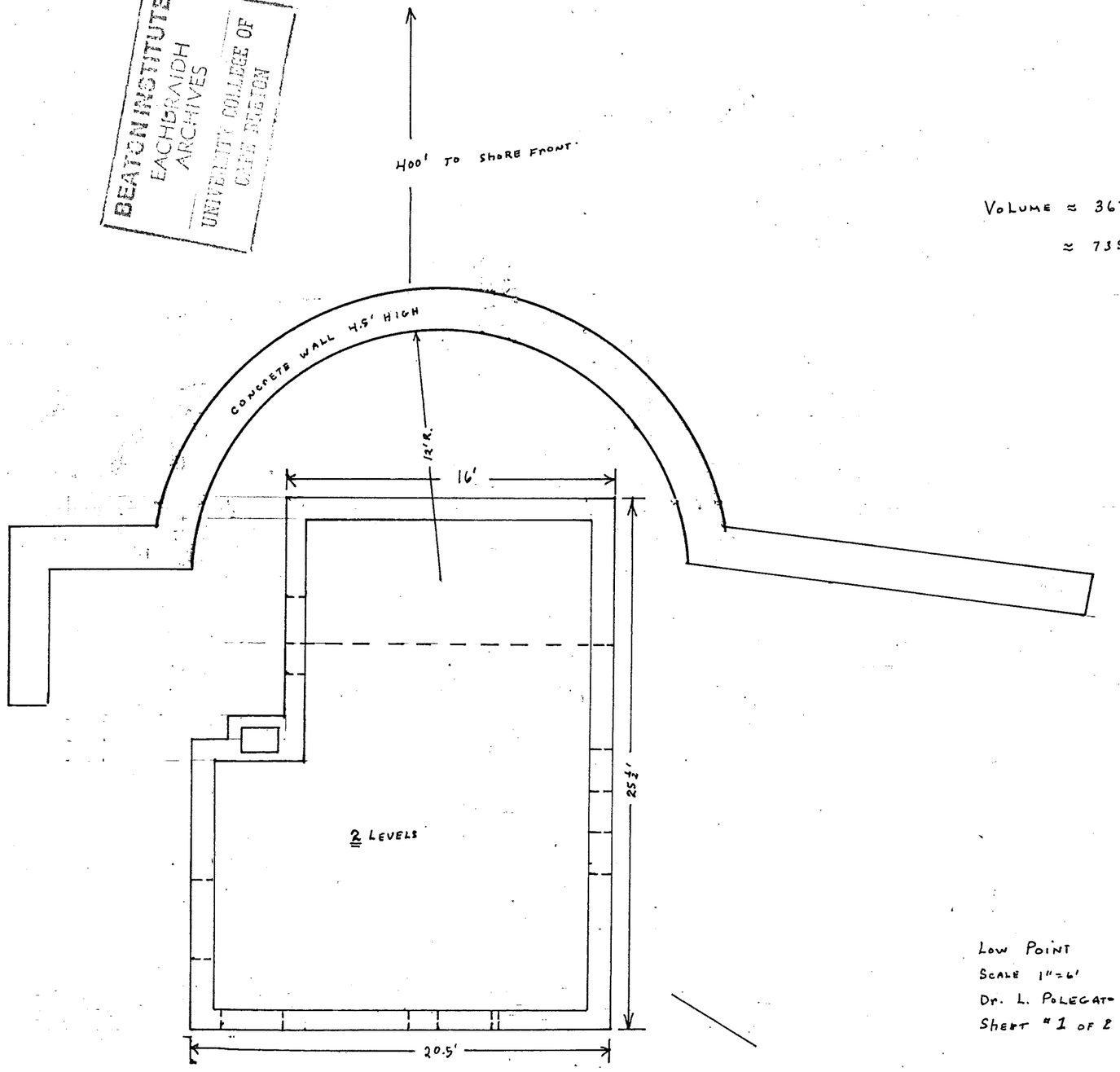
Location: On the outskirts of New Waterford if approaching from New Victoria. It is on the left not far from the highway and can be seen from the road.

Access: The building is reached by driving on a dirt road which is in very poor condition with many potholes and ruts.

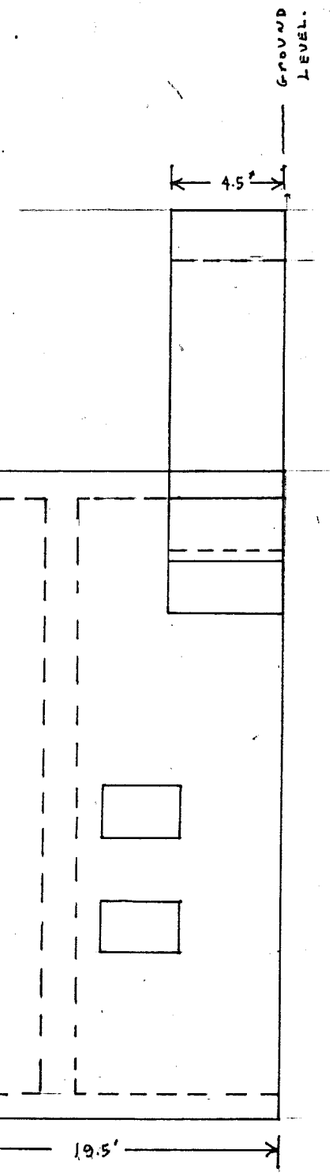
Water: The building was dry.

General condition: The building itself is in very bad condition. There are chunks out of the concrete in many places. Also, there is no way to reach the second floor of the building. There is some dirt and garbage and quite a bit of rusted metal scrap in and around the building.

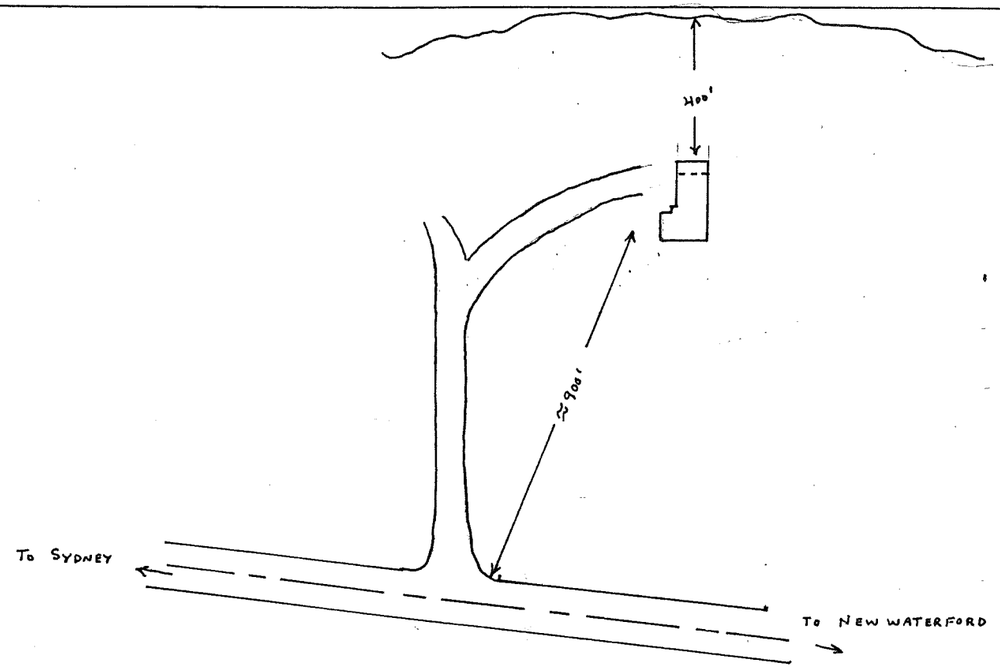
Temperature: Above ground level structures - 66°
No below ground level structures



VOLUME ≈ 3675 ft³ / floor.
≈ 7350 ft³.

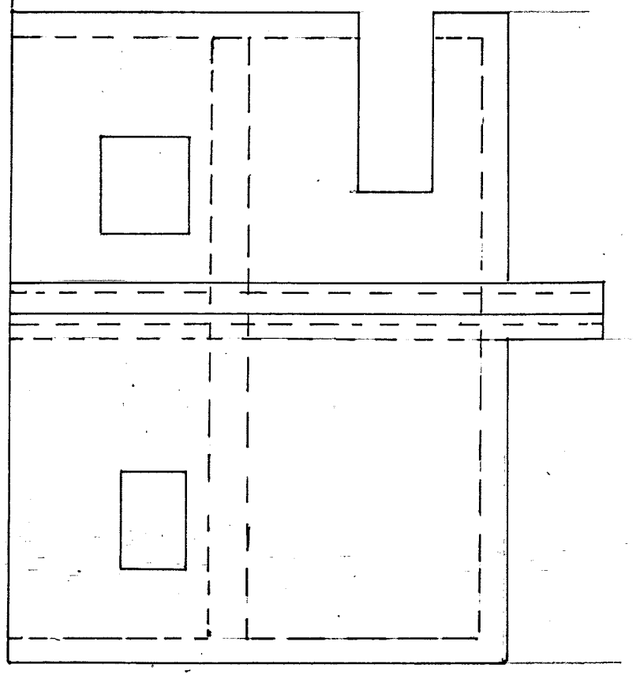


Low Point
Scale 1"=6'
Dr. L. Polegato
Sheet #1 of 2

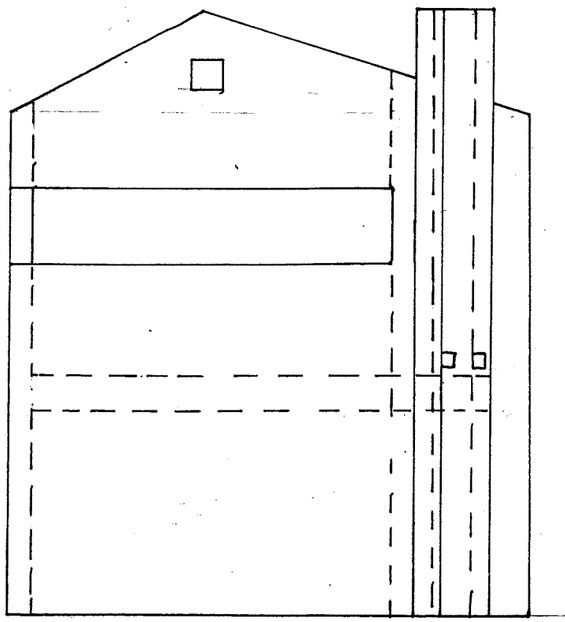


Low Point
Scale 1"=6'
Dr. L. Polegato
Sheet 2 of 2.

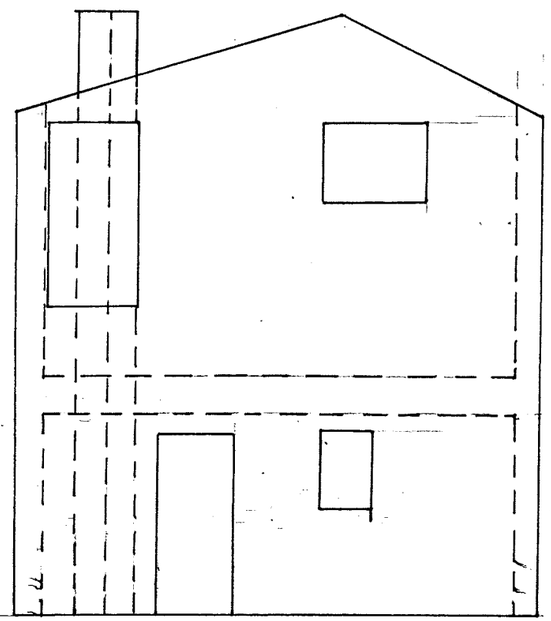
Ground Level.



Right side view.



Front View facing water.



8. LINGAN BATTERY

GARDINER MINES

Hingan Battery

Owner: Dewco

Location: This site is located 3.6 miles down the Hingan highway from the turn-off at Gardiner Mines. It is directly across from the No. 26 mine.

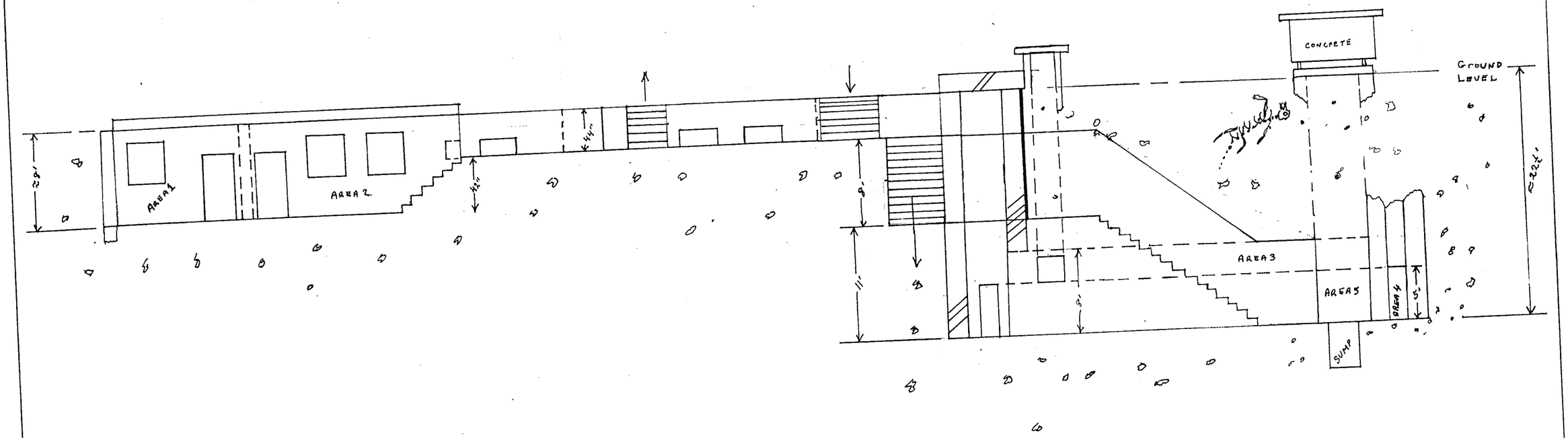
Access: The site is immediately beside the highway. There is no road to it and a car can't be driven up next to it because there is a large ditch all along the highway.

Water: The underground portion of the site is very wet. Water runs down the walls and in the tunnel there are several inches of water.

General Condition: There are some chips out of the concrete, but most of it is still in fairly good condition. In a few spots, the steel reinforcements show through. There is some dirt and garbage in the buildings.

Temperature: Above ground level structures - 66°
Below ground level structures - 57°

NOTE: ALL WALL THICKNESSES ARE 1, 2, THICK. FLOOR THICKNESSES ARE NOT SHOWN BUT USUAL MILITARY CONSTRUCTION CAN BE EXPECTED.



SECTION 1-1
#2 GUNSITE, LINGAN
1" = 10'
L. POLEGATO

VOLUMES OF ENCLOSED AREAS.

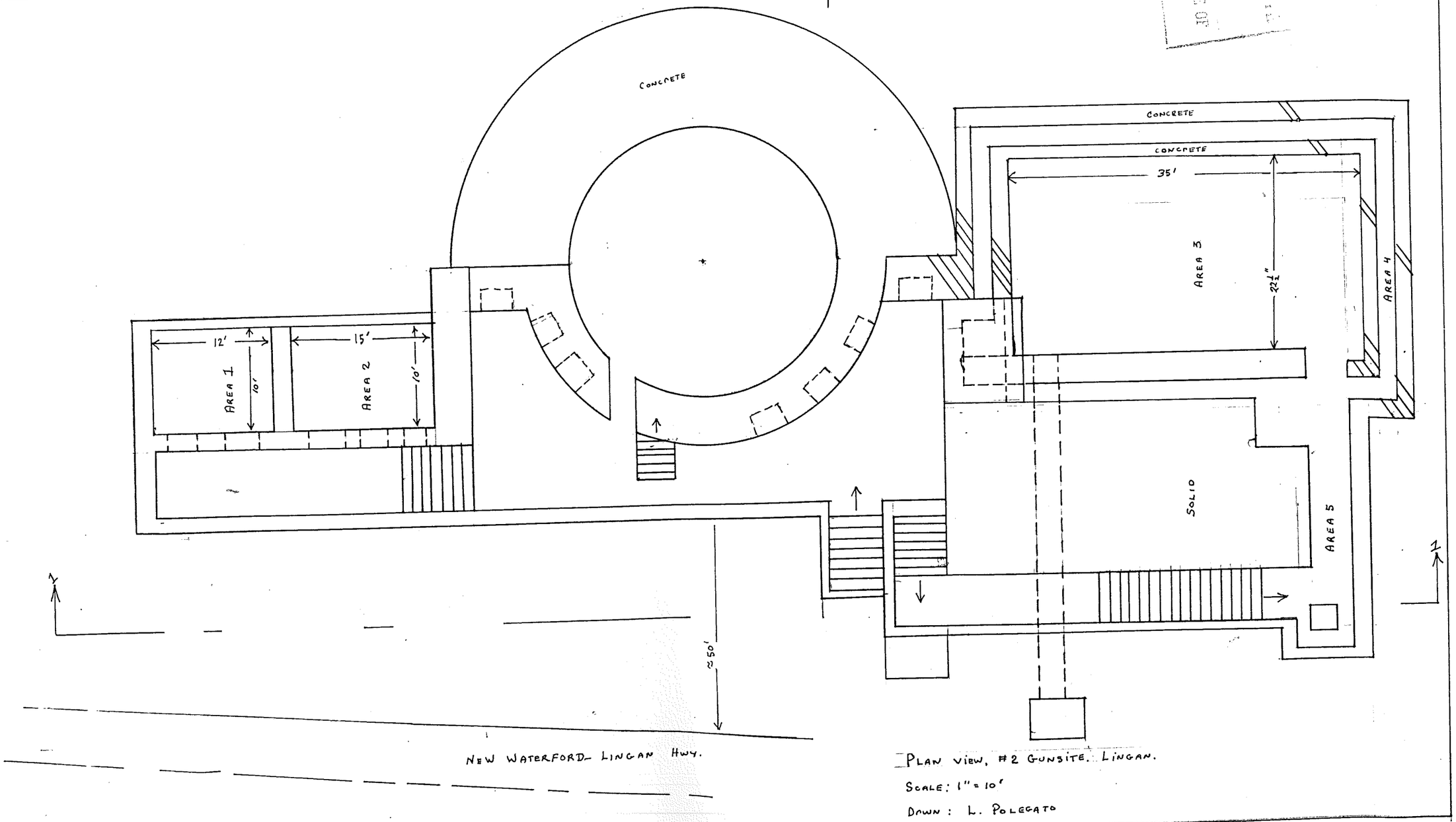
AREA 1 = 960 ft³

AREA 2 = 1200 ft³

AREA 3 ≈ 6300 ft³

AREA 4 ≈ 1240 ft³

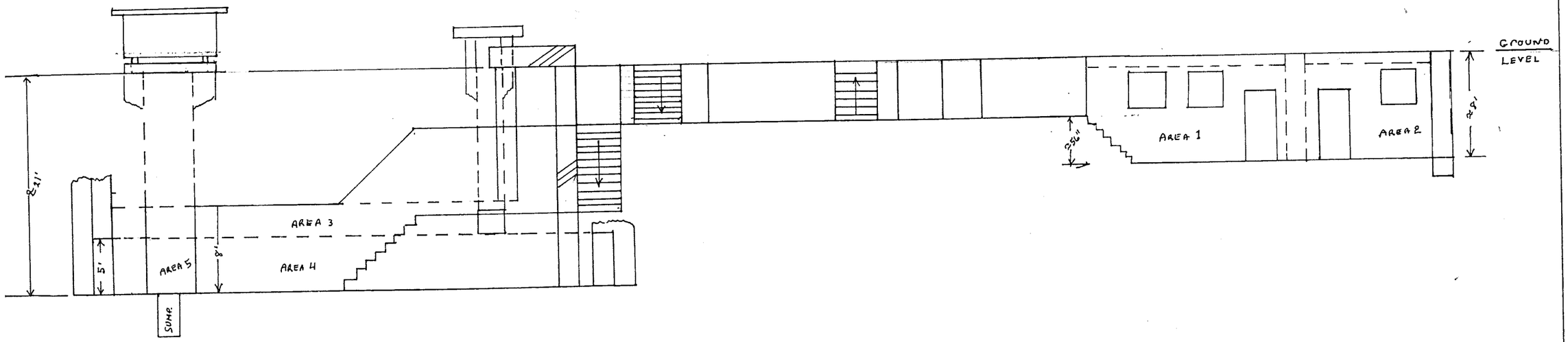
AREA 5 ≈ STAIRWAY, HALL AREA.



PLAN VIEW, #2 GUNSITE. LINGAN.

SCALE: 1" = 10'

DRAWN: L. POLEGATO



NOTE: ALL WALLS 1 OR 2' THICK
MEASUREMENTS FOR FOUNDATIONS
UNAVAILABLE.

PLAN VIEW #1 ONSITE.
SCALE 1" = 10'
Dr. L. POLEGATO.

AREA VOLUMES (ENCLOSED)
AREA 1 = 960 ft^3
AREA 2 = 1200 ft^3
AREA 3 = 6300 ft^3
AREA 4 = 1240 ft^3
AREA 5 = STAIRWAYS, HALL AREAS.

≈ 470' TO SHORELINE

AREA 4 (TUNNEL) 2'x5'x12'

AREA 3 = 22½ x 35'

AREA 5

AREA 2 = 15x10'

AREA 1 = 12x10'

≈ 20'

NEW WATERFORD, LINGAN HWY.

PLAN VIEW #1 GUNSITE LINGAN
SCALE: 1" = 10'
DRAWN: L. POLEGATO

9. NORTH HEAD

GARDINER MINES

AND

NEW WATERFORD

North Head Structure

Owner - Mercer

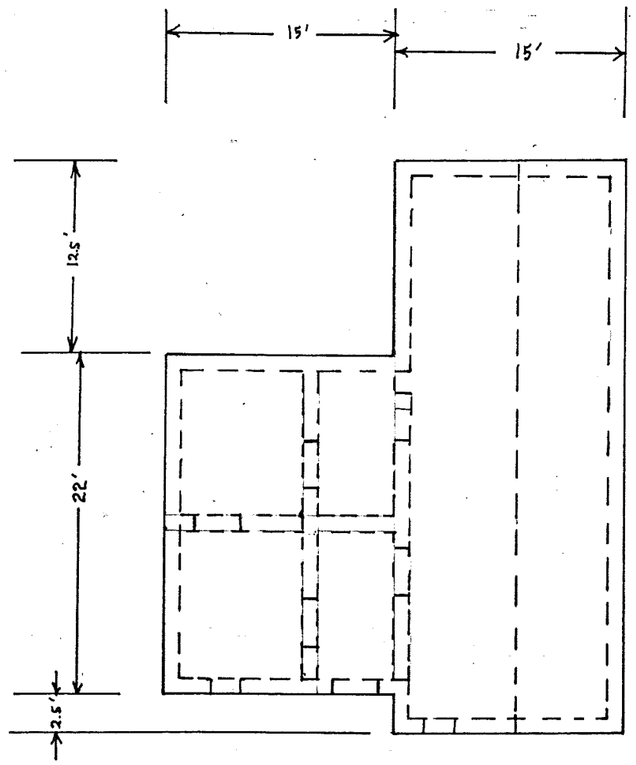
Location - Three quarters of a mile from Lingan Rd. back toward shore

Access - As you travel from Gardiner Mines to New Waterford; turn right when you reach the flashing lights at the intersection of Lingan Rd. Travel along Lingan Rd 3.2 miles turning off the driveway to a big white house is a road that is not accessible with an ordinary vehicle. By walking you have to follow this deserted road three quarters of a mile

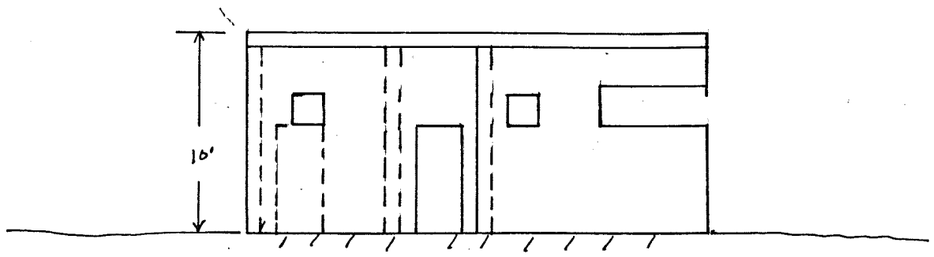
Amt of Water - This single one-level structure was dry

Temperature - Above ground 66° (no underground structure)

General Condition - This single structure has no debris around it and the concrete is in good condition



Observation Post. Located
on tip of North Hea. Solitary
Building
Volume ≈ 6400 ft³.



Forward Observation Post.
North Head Point.

Scale 1" = 10'
Dr. L. Polegato

DRAFT

Do not cite.

Roger Sarty
3-1821 Walkley Rd
Ottawa, K1H 6X9

A STRUCTURAL AND NARRATIVE HISTORY OF CHAPEL POINT BATTERY, SYDNEY MINES, NS, 1861-1950

Chapel Point has the longest military associations of any of Sydney's surviving fortifications. The present works were erected during the Second World War directly over a substantial battery that had been built in the 1860s, and which was the site of extemporized defences during the First World War. A memorial to Sydney's military history since the time of Confederation, the fortifications on Chapel Point also evoke important themes in the story of Canadian defence and of Canadian participation in alliance warfare.

Confederation of Britain's disparate North American colonies in 1867 was immediately precipitated by fears of conquest by the United States that had been aroused by the American Civil War. The outbreak of that conflict in 1861 had further fuelled efforts already begun by the British government in the late 1850s to encourage the colonies to improve their vestigial militia organizations for more effective self defence. Among the persistent lobbyists for better defence by whatever means possible was the General Mining Association which was profoundly worried about its exposed coal works at Sydney. Whether as a result of the mining association's earlier efforts or in direct response to the beginning of hostilities in the United States,

Trollope <commanding in NS?> had arranged for the British War Office to despatch six 32-pounder smooth-bore guns to Sydney Mines in the latter part of 1861.1 The guns had been promptly mounted behind a hastily erected, low earthwork at Chapel Point. However, these were older 32-pounders of 42 hundredweight that lacked the range needed to cover the mouth of Sydney harbour. Fortunately, more powerful 32-pounders of 56 hundredweight became available at Halifax in 1862 when six guns of this type were dismantled at Fort Ogilvie in Point Pleasant Park to make way for the very latest rifled artillery.2

Trollope's successor, Major-General Charles Hastings Doyle, immediately despatched the heavy 32-pounders to Chapel Point, and had the Royal Engineers strengthen the earthworks. Initially there was good progress. By early 1863, positions had been built across the point for the six heavy 32-pounders, with stone and iron racers on the ground to carry their traversing carriages; two of the light 32-pounders had been retained on their simple wooden platforms to cover possible landing places in Lloyd Cove.

Completion of the work and the mounting of the heavy guns was delayed however, because the Nova Scotia government claimed it could not cover its share of the cost of the battery during

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1 J. Mackay Hitsman, Safeguarding Canada 1763-1871 (Toronto: University of Toronto Press, 1968), 166

2 For this and the following two paragraphs see the printed correspondence in Nova Scotia, Legislative Council, Journal of Proceedings, 1864, appendix 39; also 'Plan of Chapel Point Battery,' 26 Feb. 1863, V1/250-1863 Sydney, NAC, National Map Collection, 0034-14

the 1863 season as a result of heavy expenditure for expansion of the militia throughout the colony. (In a nice balancing of Imperial, local and private interests, the responsibility for the battery was divided among the British and Nova Scotia governments and the General Mining Association.) The heavy 32-poounders were probably mounted in 1864 or 1865. Since at least 1863 a company of garrison artillery volunteers, raised by the General Mining Assopciaton, had been training under a Royal Artillery sergeant, who, in the employ of the Nova Scotia government, also kept watch over the the battery.

Doyle had urged that still stronger defences should be provided at Sydney. He wanted two additional guns, of a more modern and heavier type than the 32 pounders, for the Chapel Point battery (space for them had been left on the harbourward face of the earthworks), a second battery on the far side of the harbour, and an ironclad Royal Navy coast defence vessel permanently on station at the port. These projects were frustrated by the Imperial government's steadfast insistence that Sydney's defence, beyond the general protection provided by the Royal Navy's seagoing squadrons, was purely a local matter, and the Nova Scotia government's unwillingness to do more than it had already done.

Avoidance of obligations in Cape Breton was part and parcel of a larger British effort to trim cripplingly expensive overseas military commitments. This drive for economy, together with a desire to escape from possible embroilments with the United

States that had nearly brought about war in 1861-5, was the principle reason why Britain so strongly supported union of the North American colonies. A larger federation could better shoulder the responsibility for self defence. Thus the achievement of Ckonfederation in 1867 was soon followed by the withdrawal of all British army garrisons from Canada, save for 1500-2000 troops that defended the Royal NAvy base at Halifax, in 1871. Already in 1868 the new Dominion government had repaced the distinctive militia systems in Nova Scotia and New Brunswick with one modelled on the volunteer organization that had been developed in the former colonies of Canada East and Canada West. Volunteer units, such as the garrison artillery company at Sydney Mines, had existed in Nova Scotia, but beginning in 1862 the Maritime colony had tried the interesting experienmt of calling out for training all men between the ages of 16 and 60. The new, or reorganized, volunteer units raised under the Dominion Militia Act comprised fewer than 6000 men, as compared to the 45,000 who had trained in 1866. During the changeover from the colonial to dominion regime, the Sydney Mines garrison artillery company disappeared, and the Chapel Point battery was left to the elements.

With the passing of the Civil War crises and the subsequent improvement in Anglo-American relations, the new Dominion government was in fact largely uninterested in defence. The Anglo-Russian crisis of 1878, when the Russians prepared to arm fast steam merchant ships to mount raids in Canadian waters,

provided a sharp reminder that powers other than the United States could pose a serious threat. An alarmed dominion government wasnow prepared to do something to protect east coast ports, and a special British Colonial Defence Committee, made up of represenatatives from the Admiralty, and Colonial and War Offices agreed, that action was urgently necessary. The British committee recommended substantial defences for Sydney -- three batteries (one of them at Chapel Point) each with four of the latest, heavy rifled guns -- in view of the fact that the increasing dependence of warships on steam power made the coal stocks a tempting prize. The cost of that project, however, would have been L14,200.3 far beyond what the Canadian government was willing to pay. Major-General Edward Selby-Smyth, an officer who had been lent by the British army to command to the Canadian militia, pressed for an alternative scheme utilizing smoothbores improved by the insertion of a rifled sleeve. These conversions were much cheaper than new rifled guns, but the British authorities rejected them as insufficiently powerful to counter modern warships. This impasse, and the peaceful resolution of the Russian crisis, ultimately killed the proposals for Sydney.

Repairs to Chapel Point Battery ordered by the department of militia at the height of the crisis appear never to have been carried out. They would have been extensive and costly, and in any event the department's efforts to raise a new garrison

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3 Milne to Colonial Office, 18 May 1878 forwarding 'Report onDefences of the principal Canadian Atlantic Ports,' Colonial office Misc 35F, May 1878, PRO, CO 7-1

artillery company to man the works failed. 'Like Victoria, Vancouver Island,' Selby Smyth reported, 'I believe the population of Sydney are in receipt of good wages and have constant emplyment, and therefore, except in case of actual hostilities -- when too late -- could they only be relied on to turn out....'[4]

During the next 20 years, various Canadian officer and Imperial officers on loan to or visiting Canada recommended the provision of modern shore batteries or local naval defences in view of the port's strategic location and important coal resources. A new reason for protecting the port was the landing of undersea telegraphic cables at Lloyd Cove; in wartime these would be a precious asset for military communications and a high priority target for enemy raids. However, the Canadian government was not disposed to take action, no doubt remembering the steep price tag of the 1878 proposals, and regarding coast defence as still being largely a British responsibility that could except in dire emergency be left almost entirely to the Royal Navy squadron and Imperial army garrison at Halifax. By 1899 Chapel Point battery was in a ruined state with the guns dismounted and half-buried.[5]

The British garrison staff at Halifax made the most serious study yet of the defence of the Sydney area in 1904. British

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4 Report of the Department of Militia and Defence, 1878, xxvi

5 Stone, 'Report on Sydney Harbour,' 9 Oct. 1899, 'Intelligence Reports, NAC, RG 9IIC2, vol. 4

mobilization and defence planning had become more thorough and earnest as a result of the South African War of 1899-1902, and then the Russo-Japanese War of 1904-5, which had demonstrated the speedy pace and destructiveness of conflict in the age of fast communications and high-power weapons. Among the particular concerns was the great damage secret agents or swift raiding warships could do to 'vital points,' especially the coastal communications facilities upon which effective deployment of the British fleet now heavily depended. The focus of the British study was protection of the Lloud Cove cables and of the new transatlantic wireless station at Glace Bay, with British troops from Halifax and Canadian militia who would establish temporary defences in the event of a crisis.6

British strategic policy was undergoing an upheaval at this time. In late 1904 to early 1906 the Royal Navy and the Imperial army garrison withdrew from Halifax as part of a reorganization to concentrate forces against potential European enemies. The Canadian government took over the Halifax fortress, and kept up the establishment with over 1000 regular Canadian troops. When in 1912 to early 1914 the Canadian garrison staff revised the Halifax mobilization plans, they also reviewed the plan for Sydney in light of equipment and troops available.7

These plans came into force when war broke out with the Central Powers in early August 1914. Initially, on 31 July after

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6 DHist 340.003(D13)

7 DHJist 340.003(D15)

the British govenment had called for precautionary measures, a company of the Royal Canadian Regiment, the regular infantry unit in the Halifax garrison, had gone to Sydney. Over the next few days sighting reports (all proved to be false) of German cruisers to the south of Newfoundland fuelled alarm about an impending raid on Cape Breton.8 Within hours of Britain's declaration of war at midnight 4-5 August substantial reinforcements from the non-permanent active militia were en route to Sydney. Among them were some 66 personnel of the PEI Heavy Brigade, Canadian Garrison Artillery, who emplaced two 4.7-inch guns on field carriages at Chapel Point.9 This was the only artillery in the Sydney area. Also in the Sydney Mines-North Sydney vicinity were 120 infantry. The remaining defences included about 150 infantry at Glace Bay and 200 in Sydney.10

During October 1914, under the instructions from a senior regular artillery officer from Halifax, the guns were moved (still within the vicinity of Chapel Point) and protected by earthwork positions. The surviving evidence as to the guns'

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8 'War Diary... 6th Division,' 30 July-4 Aug. 1914, NSC 1047-2-1, RG 24, vol. 3966; R.C. Fetherstonhaugh, The Royal CAnadian Regiment, 1883-1933 (Np.: The Royal Canadian Regiment, 1936 (reprint, Fredericton, NB, 1981)), 198-9

9 Adjutant General to OfficerCommanding 6th Division, telegram H.21, 4 Aug. 1914, HQC 1509 pt 1, NAC, RG 24, vol. 2510; 'War Dairy ... 6th Division,' 4-6 Aug. 1914, NSC 1047-2-1, NAC, RG 24, vol. 3966; strength return, PEI Heavy Brigade, Sydney Mines, 22 Aug. 1914, HQ 54-21-4-1 pt 2, NAC, RG 24, vol. 451

10 Strength returns, 22 Aug. 1914, HQ 54-21-4-1 pt 2, NAC, RG 24, vol. 451

precise location is ambiguous; they may have been within the ruins of the 1860s battery or somewhat further inland. In any case, they still faced in a northerly direction to cover the seaward approaches to the cable landing at Lloyds Cove. After the guns were moved a wooden barracks hut was built nearby for the battery personnel.11

The guns were removed and the detachment broken up in October 1915. By this time the Royal Navy had swept the German raiding cruisers from the seas, and the guns were needed for training camps for the instruction of units for Canada's expanding army corps on the western front in Europe.12

A year later the strategic situation changed abruptly. Unable to break through the Royal Navy's supremacy in surface warships, Germany had turned to a new form of maritime warfare: an offensive by U-boats against the merchant shipping that supplied the British Isles. The British Admiralty's confidence that the U-boats could reach lightly protected Canadian waters only by making an improbable one-way suicide mission, or by making risky and difficult arrangements to sail a disguised merchant vessel with additional fuel stocks to replenish the boats at sea or in isolated coves on the Canadian coast were shattered in early October 1916. The combat submarine U-53 ostentatiously appeared in the port of Providence, Rhode Island

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11 GOC 6th Division to chief of the general staff, 1 Sept. 1915, HQC 1723 pt 1, NAC, vol. 2533

12 GOC 6th Division to Secretary to the Militia Council, 23 Oct. 1915, HQ 54-21-11-60 pt 1, NAC, RG 24, vol 847

in the still-netural United States, and then without refuelling put back to sea, sank five Allied merchant ships and successfully returned home. Among other precautionary measures, the Canadian militia returned a 4.7-inch gun on a mobile mounting to Sydney Mines with a small manning detachment from the regular Royal Canadian Garrison Artillery at Halifax. No specific information as to the gun's location has come to light, but it would be reasonable to assume it went back into the prepared position at Chapel Point.13

When plans for the further strengthening of Sydney's defences were carried out beginning in the spring of 1917, however, the 4.7-inch gun was moved out to Cranberry Head. A second mobile 4.7-inch was emplaced across the harbour at Petrie Point. Meanwhile construction began of concrete positions at Cranberry and Petrie, each for a single 4.7-inch on a coast defence pedestal mounting, and these were installed during the summer of 1917 alongside the 4.7-inch on field mountings. The coast defence mountings, because they allowed rapid traverse of the gun, were vastly superior to the field mountings for engaging moving ships. During the summer of 1917, as well, the navy installed a wire anti-submarine net across the inner harbour between the North and South bars.

The purpose of these preparations was rather different from that of the measures taken in 1914-15. The intent of the earlier

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13 GOC MD 6 to chief of the general stafff, 29 Nov. 1916, HQS 1624 pt 1, NAC, RG 24, vol. 2523

defences had been primarily to secure the communications facilities on shore against a stealthy raid. The fear in 1917 was that a U-boat, which could operate more boldly than a surface vessel, might make a more determined attempt, whether by suddenly surfacing to bombard shore installations or shipping in port with its deck guns, or penetrating right into the harbour while submerged for torpedo attacks on shipping. The initial ambitious plans for the defence of Sydney made during the winter of 1916-17 had envisioned the erection of concrete artillery positions at Chapel Point. The switch to Cranberry Head may have reflected a desire to push the few guns that were actually installed as far to seaward as possible in hopes of warding off a submarine before it had any opportunity of entering the harbour.

During the summer of 1917 the strategic importance of the port increased far more dramatically than anyone could have imagined even a few months before. With soaring losses of merchant shipping to U-boats, the Admiralty, in desperation, reverted to the ancient technique of sailing the vessels in protected convoys. Sydney, well located near the short Great Circle route from North America to Europe became the assembly harbour for slow-speed merchantmen from all Canadian ports and United States ports north of Norfolk, Virginia. As a result, further defences were installed during the summer and fall of 1918. The field mountings for the 4.7-inch at Petrie and Cranberry Head were replaced by improvised pedestal coast defnce mountings set in concrete positions, while two 6-inch coast

defence guns from Halifax were mounted in concrete emplacements at Low Point and Table Head. All of these works were manned by artillery detachments from Halifax.14

Even the concrete works erected in 1917 and 1918, however, were of an essentially temporary nature. The whole of the garrison was withdrawn, and the defences dismantled a few months after the armistice of November 1918. Just as this work was being completed in November 1919, British Admiral-of-the-Fleet Viscount Jellicoe visited Canada to advise the government on naval policy. His comprehensive report, which drew on a large body of information gathered by the Canadian military and naval staffs, included recommendations for the fixed defences of harbours. He placed Sydney after the west coast ports (Japan was then considered to be the most likely future enemy) and Halifax in priority, and judged that whereas Halifax might attract a raid by an armoured ship, the Cape Breton port would at most be attacked by a lighter, unarmoured vessel. The harbour itself could be adequately protected by a field of controlled mines just inside the headlands, under the cover of a pair of 4.7-inch guns and searchlights on each side. However, he agreed with wartime assessments of the Canadian staffs and Major-General Jackson about the importance and vulnerability of the mine workings on the adjacent coasts.

> The colliery pit heads from Cranberry Point on the north side of Sydney harbour to Glace Bay about 12 miles to the southeastward, are very conspicuous from the sea and

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14 Sarty, 'Silent Sentry,' 310-313

> would make excellent targets for bombardment. Practically the whole of the home produced coal and steel supplies of eastern Canada depend on these mines, and if they were disable, very serious dislocation of industry would result.
>
> The destruction of the large Trans-Atlantic Wireless Station at Glace Bay, which is conspicuous, would also be a very serious matter.

To counter such a bombardment Jellicoe recommended a heavier version of the wartime defences: a total of six of the most modern 6-inch guns mounted in pairs at Cranberry Head, Flat Point and Table Head.15

Jellicoe's proposals for a large Canadian navy, the early organization of coast defence air force and harbour defences were a dead letter from the moment they were drafted. The prevailing public mood, in the wake of the bloodletting of 1914-18, was for retrenchment in defence, and the political leadership was entirely sympathetic not least because of the enormous debt that resulted from war expenditure. Canada disarmed to a greater extent than any other industrialized nation during the early 1920s. The effects of somewhat increased expenditures during the late 1920s were quickly erased by still deeper cuts during the Great Depression in the early 1930s. Nevertheless, growing international tensions forced the services to consider modernization and expansion of Canada's now entirely obsolete and utterly inadequate harbour defences. Priority was for the west coast, however, because war with Japan was the most immediate

---

15 'Report of Admiral of the Fleet Viscount Jellicoe of Scapa on Naval Mission to the Dominion of Canada (November-December 1919),' vol. II, 47-8 <this is the confidential print of the whole of Jellicoe's report, copy in DHist library>

danger, and Great Britain's Royal NAvy, which was still the principal strategic defence for the CAnadian Atlantic coast, could offer virtuallu no support on the Pacific. In any event, the Militia's general staff hoped to be able to restrict an east coast programme to Jellicoe's modest proposals for a minimal modernization of the Halifax defences, the limited scheme already described for Sydney and a lesser one for Saint John, New Brunswick.

These hopes for economy were dashed in the late 1930s when reconstruction of the harbour fortifications got underway. William Lyon Mackenzie King's Liberal government initiated this programme in the summer of 1936 as part of a limited rearmament effort in response to the accelerating collapse of international order in Europe as well as in the Far East. Because of the bitter and politicallu divisive legacu of the heavu casualties suffered bu the Canadian Corps on the western front during the First World War, the government directed that the services should concentrate on the protection of Canada's own shores rather than the preparation of forces for despatch overseas. The militia, having had no substantial experience with the latest coast artillery armament and techniques, invited a British expert, Major B.D. Court Treatt, Royal Artillery, to assist in designing the programme. Treatt's detailed recommendations, completed in December 1936, formed the basis for the development of Canadian coast artillery defences until the end of the Second World War.

As Treatt and the Canadian staffs worked in the fall of

1936, it became clear that the threat to the Atlantic coast was not markedly less than that to the west coast. War with Hitler's Germany was looking as likely as war with Japan. Although small, Germany's renascent navy included powerful, fast warships that had been designed to evade the British fleet and carry out distant raiding operations, and a new generation of U-boats. Canadian waters, as experience in the First World War had shown, were a top priority for German long-range strikes. In these circumstances it now seemed that Sydney would be very nearly as desirable a target as Halifax. Scales of attack for both ports included bombardment by a single 8-inch-gun cruiser or a merchant cruiser mounting 6-inch guns, shore bombardment or attacks on shipping by one or two submarines, and attempts to rush the harbours by disguised armed merchant ships, or by small motor torpedo boats of the type that might be carried in larger vessels. In addition there might be bombing by up to ten ship-carried aircraft, or transatlantic raids by bomb-carrying Zeppelin dirigibles. There was also the danger of sabotage by agents or a landing by as many as 250 men, the number that might be available in the classes of vessels Germany was likely to employ in raiding operations.

Major Treatt's report on Sydney, which drew on analysis provided by the Canadian staffs, is worth quoting at length.

ASSUMED REASONS FOR THE DEFENCE OF SYDNEY

There are two reasons for the defence of SYDNEY, the steel factory and its coal mines, and the fact that it is a convoy assembly port.

1. The Steel Industry.

The steel industry of SYDNEY is of the utmost importance. The annual production is in the neighbourhood of 400,000 tons, representing about 35% of the total CANADIAN production. Steps are being taken to install a new furnace which will increase the natures of steel produced.

At present about 50% of the steel is used in CANADA and it is not too much to say that, in time of war, an interruption in the SYDNEY steel supply would completely dislocate the Eastern CANADIAN munitions industry.The whole of the steel production is now centred at the North end of SYDNEY.

Of the coal required for the steel factories, 90% comes from the immediate neighbourhood of SYDNEY. ...

The power for the operation of the steel works and of the mines, is supplied by a grid of 3 main power plants near GLACE BAY, NEW WATERFORD and SYDNEY MINES respectively. ...

2. SYDNEY as a Convoy Assembly Port.

In war Sydney will be, during the summer, the main Atlantic convoy assembly port for CANADA and will handle the whole of the ST. LAWRENCE traffic. The main convoy assembly anchorage is normally the SOUTH ARM and SYDNEY RIVER. The WEST ARM is also available, if required.

Linked with the actual convoy assembly, is the shipping carrying exported steel from SYDNEY and a certain mount of sea-carriage of SYDNEY coal to other CANADIAN ports.

3. Enemy Objectives.

The main objectives are likely to be -

(i) The convoy assembly anchorage inside SYDNEY BARS.

(ii) The wharves of SYDNEY.

(iii) The BESCO steel works at SYDNEY.

(iv) The main pit-heads from MACRAE POINT to LITTLE BRAS D'OR SOUTH SIDE.

(v) The power plants and (by sabotage) the power cables. ...

It would appear, both from the point of view of the steel industry and from that of convoy assembly, that the

> efficient defence of SYDNEY is of paramount importance to CANADA. Indeed it is doubtful if even the two Naval ports ESQUIMALT and HALIFAX -- in the absence of any considerable Naval forces based on them <major warships immobilized in port for repairs or refuelling were the most tempting target for raiding forces> -- take precedence. 16

This document is of some interest for it is among the first, in both British and Canadian military archives, to predict that full-scale convoy of north Atlantic shipping would again be necessary in a future war with Germany.

Treatt and the Canadian staffs agreed that Halifax and Sydney should both receive a full suite of modern coast artillery defences. In the case of Sydney this included two 'counter-bombardment' batteries, one of three 9.2-inch guns in the vicinity of Oxford Point, and a second, with three lighter but faster firing 6-inch guns, near Lingan. All of these weapons were to have the latest high angle mounts that, by allowing a maximum firing elevation of 35 degrees for the 9.2-inch and 45-degrees for the 6-inch, nearly doubled the ranges to 29,000 yards and 21,000 yards respectively. Together the two batteries would be able to keep a modern cruiser beyond effective gun range on a front of nearly fifty miles, from St. Ann's Bay in the west to Mira Bay on the east. However, with the purely visual (ie., telescopic) fire control instruments available in the 1930s, long-range armament could operate effectively only by day and in

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16 Treatt, 'Sydney,' 14 Dec. 1936, HQS 1723 pt 6, NAC, RG 24, vol. 2535. The analysis in the following pages is derived from this 17-page, closely typed report; see also the 'consolidated summary' of the Canadian Joint Staff Committee's review of the Treatt report, 2 Sept. 1937, HQS 5199C pt 2, NAC, Rg 24, vol. 2694, which essentially gave blanket approval.

clear conditions: hence the danger of an attempt to rush into the harbour under cover of darkness or murky weather by fast-moving surfaced submarines, motor torpedo boats or armed merchant vessels whose torpedo armament could inflict an enormous amount of damage at short range. To guard against this form of attack Treatt recommended that the harbour should be ringed by gun batteries, which would also be equipped with a total of fifteen of the latest high-power searchlights. These works included batteries at Chapel Point and Petrie Point, close to the entrance, and Edward Point within the harbour. The three were to be armed with older, low-angle mount 6-inch and 4.7-inch equipments available in Canada that were still efficient for the relatively short range 'close defence' role. In addition, there were to be two small 'quick-fire' batteries, one on each side of the harbour seaward of the North Bar-South Bar line, the projected location of the anti-submarine nets. One was to mount a pair of the older 12-pounder guns that could fire at a rate of 20 rounds per minute, and the other with the newest twin-barrelled 6-pounder duplex that could pour out 70 rounds per minute. The purpose of these two works was to create a 'killing zone' of high-volume fire that would be especially useful in stopping fast craft that attempted to destroy or skim over top the anti-submarine boom.

All of the fortifications were to be permanent structures of reinforced concrete set into the ground to afford the best protection against bombardment. The defences were not intended

to be an extemporized response to the immediate international crisis, but rather to provide long-term security in a world in which the only constant appeared to be the emergence of aggressive states armed with ever more powerful long-range sea and air weapons. Modern technology -- and the decline of British naval supremacy -- was rapidly eroding Canada's traditional security in geogrаphical isolation from the political hotbeds of Europe and Asia.

The selection of Chapel Point for a substantial harbour entrance battery needs some explanation. The site is nearly a mile-and-a-half in from Sydney's western headland, and the terrain of that headland limited the arc on which the guns could fire seaward. However, the Petrie Point battery, whose geogrаphical orientation was seaward, would be able to cover virtually the whole of the outer approach, and particularly the vicinity of the western headland. The value of a battery on Chapel Point was that its guns could bear directly across the harbour entrance, including the 'dead' water under Petrie Point.17 What was more, guns at the Chapel site could, unlike those at Petrie, also sweep around to fire down into the harbour. This was of particular importance to Treatt who was worried about the security of the inner harbour against rush attacks. Some two

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17 Coast guns mounted on a height of land could not be depressed sufficiently to fire into the waters immediately below the site and to some hundreds of yards out from the shore. Such areas, that were within the range of a battery's armament but could not be covered because of geography or the technical limitations of the guns, were known as 'dead' zones.

miles across at its narrowest point, the main harbour was too wide for the short-range quick-fire batteries planned for the North Bar-South Bar area to give fully effective coverage, and the Edward Point battery site was too far back to give them adequate support. Chapel, however, would be well placed to catch vessels attempting a rush broadside-on (a ship's most vulnerable profile) and keep them under fire as they pushed in towards the anti-submarine nets.

It was Chapel's immediate command of the harbour entrance that made it the logical choice for the important task of supporting the navy's examination service. Because of the danger from merchant vessels with hidden armaments (a favourite form of German sea raider), or loaded with explosives to create a floating bomb that once in port could be detonated to demolish shipping and harbour facilities, it was essential that every entering vessel be stopped to establish its bona fides. The task fell to small, unarmed craft who needed instant gunfire support from a designated shore battery in the event a merchant ship refused to follow instructions or showed hostile intent. It was also the duty of the 'examination battery' both to protect and keep a watch on ships that were detained outside the port either for further investigation or because they had arrived at night or other times when the harbour was closed to incoming vessels for security reasons. Chapel was ideally located for this role.

The best gun for the close defence was the powerful 6-inch. Treatt insisted that nothing less would allow Petrie Point to

fulfill its responsibilities for seaward fire at relatively long ranges. Canada was very short of 6-inch, but had larger numbers of the lighter, somewhat faster firing 4.7-inch, and Treatt allowed that that gun would be adequate for Chapel because its primary role was close range fire into the harbour entrance. Indeed, for the delicate work of placing warning rounds across the bows of possibly friendly vessels that had violated examination procedures, or shooting into the harbour, the lighter round was a positive advantage because an error or ricochet would result in less damage.

Making plans for the defence of Sydney and other ports were one thing, but carrying them out quite another. The harbour fortifications were in fact only a part of the coast defence programme that the services proposed in 1936-7. Economical and effective as fortifications were for the permanent protection of an important locality they afforded no protection beyond the range of their static weapons. Indeed, the most useful role of fortifications was to provide secure operating bases from which to project mobile forces -- warships and aircraft -- to safeguard shipping at sea and intercept enemy forces before they could approach vital targets. Never having forgotten the danger and embarrassment that had resulted from the paucity of suitable warships and aircraft in 1918, the Canadian services were [illegible] to make good these deficiencies, and it was very [illegible] and air programmes that accounted for the largest [illegible] for rearmament.

Those funds were limited. The services wanted the government to nearly quadruple defence spending to some $70millions a year, but for political reasons Cabinet allowed a total of only $35 millions in FY 1937-8 and 1938-9. What was more, the government, determined to avoid any suggestion that it was preparing to despatch another generation of young Canadians to die in the trenches, imposed the greatest share of the estimates trimming on the militia. The money remaining was enough to start construction of fortifications on one coast only. That had to be the west coast. In the event of war on the Pacific, Canada would be utterly dependent upon American protection. Friendly as relations were with the United States, the government and the services were deeply concerned that if CAnada was not able to defend at least its own territorial waters and ports, the American forces might feel compelled to move in to British Columbia -- whose safety was vital to the security of both Alaska and the north-western continental states -- thereby undermining Canadian sovereignty. Thus, while construction of new forts at Esquimalt, Vancouver and Prince Rupert rushed ahead in 1937-9, there was no money for the Maritimes.

Further difficulties resulted from the unavailability of modern coast artillery armament. Manufacture of this highly specialized and complex equipment in Canada was not feasible, with the sole exception of searchlights, and the Americans had nothing to spare. There was no choice but to wait for deliveries from Britain which would be delayed by the enormous burden on her

armaments industry until 1940 at the earliest for the first items and 1944 or later for many others.

The militia staff responded with the stopgap 'interim plan,' which utilized reserve militia and navy armament, all of it dating from the turn of the century and mounted on low-angle carriages. The best of this equipment was shipped to the new forts building in British Columbia in the spring of 1938. Nothing suitable was left for Sydney's planned counter-bombardment batteries at Oxford and Lingan; in any event there was no prospect of funds becoming available for the construction of the extensive works required at those sites until 1940-1 at the earliest. Armament earmarked for Sydney included the 4.7-inch for Chapel Point, and also for the Edward Point close defence battery, and 6-inch naval guns for Petrie Point. These last were less effective than the 6-inch army types of Petrie's 'ultimate' armament because the mountings could not be fully adapted to coast artillery fire control equipment. Only two pairs of old single-barrelled 6-pounder quick-fire guns were available for the quick-fire batteries.18

Although there were no funds available to mount this equipment, it was still essential to make an early start in

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18 'Proposed Interim Allotment of Existing Armament, and Method of Procurement ...', amended to 8 Nov. 1937, forwarded by chief of the general staff to prime minister, 1 Dec. 1937, HQS 5199C pt 2, NAC, RG 24, vol. 2694. The intention in this early draft of the interim plan was to mount two 6-inch naval guns to Edward Point, but this was changed to 4.7-inch as a result of subsequent changes in allocations to other ports; this is recorded in late pencilled amendments on the table cited above.

providing trained garrison units. Prior to the mid-1930s, professional, 'permanent force' units had had the primary responsibility for coast artillery both in Britain and in Canada, which closely followed British army organization. Reserve coast artillery units (of the Territorial Army in Britain, and the 'non-permanent active militia' in Canada) were responsible mainly for augmenting the regular units. Now, as a result of experience during the First World War which had demonstrated the urgent requirement for as many professional artillerymen as possible for the field armies, the relationship between the regular and part-time coast artillery was reversed. Primary responsibility for manning the fortifications was turned over to the reservists who were to receive training and expert assistance from small cadres of regular personnel. Thus, during 1937 and 1938 training for the existing non-permanent coast artillery units at Halifax and Esquimalt was intensified while non-permanent field artillery units at new defended ports were converted. Effective 15 June 1938 the 16th Field Brigade, Royal Canadian Artillery of north-east Nova Scotia and Cape Breton became the 16th Coast Brigade, Royal Canadian Artillery. At the same time, its constituent units, the 6th (Sydney) Field Battery, the 36th Field Battery (Howitzer) of Sydney Mines, and the 86th Field Battery of Antigonish were all reorganized as 'Heavy' batteries to man, respectively, the planned works on the east and west sides of

Sydney harbour and at the Canso Straits.19 From mid June through early August a permanent force instructor from Halifax was on the circuit between Sydney, Sydney Mines and Antigonish running basic coast artillery courses for the personnel. Immediately after, in August, some 117 officers and men from the units went to Sandwich Battery at Halifax for 15 days' training and firing practice with the armament there.20 In mid September the district staff in Halifax shipped one of the 6-inch naval guns designated for Petrie Point to Sydney, where it was set up in a specially constructed shed near the armouries in the vicinity of the Exhibition grounds, to allow continued training.21

At this time, Hitler's moves to annex Czechoslovakia's Sudetenland brought Britain and German to the brink of war. The government quickly authorized emergency expenditure to mount the interim armament in temporary positions at the designated battery sites, as the military had long been urging. With the resolution of the crisis after British prime minister Neville Chamberlain

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19 DHist, <'Sketch History' series>, '6th Independent Field Battery, RCA and 15th Harbour Defence Troop, RCA. Organization,' 26 March 1959

20 Macdonald for Dobbie, Royal Canadian School of Artillery (Coast Defence and Anti-Aircraft), Halifax to Headquarters, Military District No. 6, 11 Jan. 1939, DHist 321.009(D259)

21 Chief of the general staff to quarter-master general, 8 June 1938, director of engineer services to district officer commanding military district no. 6 <DOC MD 6>, 13 July 1938, DOC MD 6 to Secretary, Department of National Defence, 20 Sept. 1938, HQS 5902 pt 5, NAC, RG 24, vol. 2742; Blake to Vince, 3 Dec. 1938, Vince to Blake, 14 Dec. 1938, DHist 345.009(D89) pt 1

flew to Munich to meet with Hitler, the government promptly withdrew the funding. Nevertheless, some progress had been made, most notably in the placement of contracts with local steel plants to manufacture the hold-down rings and bolts needed to fix the gun mountings onto concrete platforms that could be poured within a matter of days.

In the wake of the crisis, the military was able to persuade the government greatly to increase estimates for FY 1939-40. The total authorized, $60 millions of which $54 millions would be available for the programmes recommended by the services, was impressive by Canadian standards. Still, this figure fell far short of what the military chiefs advised was now necessary: $70 millions as a bare minimum, plus additional virtually open ended allotments for the procurement of weapons and equipment by whatever means possible. Once again the militia bore the brunt of the trimming, including the whole of $650,000 the chief of the general staff strongly urged for the fortification of Saint John, New Brunswick and Sydney. News from Britain that three 7.5-inch naval guns were available for delivery in 1940 won back some funds to purchase three of these weapons and build works for them. They were allocated to Saint John, however, because that port's approaches were more open and vulnerable to attack than Sydney's.22

In the end, there was only a small beginning at Sydney. At

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22 Master general of ordnance to chief of the general staff, 24 July 1939, HQS 5199-C pt 5, NAC, RG 24, vol. 2695

the end of March 1939, utilizing the last of the FY 1938-9 funds not yet expended, the permanent force establishment at Halifax moved a single 4.7-inch gun to Chapel Point. Here, with help from the 36th Heavy Battery and local labour, it was erected by early April on a concrete platform fitted with one of the recently manufactured hold-down sets. In the following weeks a wooden shed was built over the gun to protect the equipment from vandalism and to allow the men of the 36th Battery to train under cover. This modest installation was the first of the new coast artillery batteries on the Atlantic coast, and the only new position to be put into something approaching operational condition before the outbreak of hostilities in Europe.23 A much larger defence project, the construction of an RCAF aerodrome east of Sydney (now the Sydney Airport), had been underway since 1938, but it was still some two years from completion.

The call to arms came at 0145 on the morning of 26 August 1939 when district headquarters at Halifax received a telegram from Ottawa ordering a partial manning of the defences at the 'Precautionary Stage' of apprehended war. After a pre-dawn conference by the district staff, Major W.H. Dobbie, DSO, the senior permanent force coast artilleryman who had been assigned under the mobilization plans to the Sydney and Canso defences, departed for Cape Breton to supervise the preparation of emergency positions for the interim armament. Shortly after noon

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23 Correspondence 28 March-9 Aug. 1939, DHist 345.009(D89) pt 1

a truck loaded with 55 rounds of 4.7-inch ammunition left Halifax and arrived at Chapel Point at 0500 on 27 August where it was unloaded into the gun shed by volunteers from the 36th Battery who had come out for duty the day before.24 Work was pressed forward at all of the Sydney sites, but proceeded most quickly at Chapel, where concrete was poured for the second gun platform to the north of the existing position on 31 August.25 This second platform was on the site of the permanent emplacements and, as we will see, had to be demolished to make way for them.

German forces invaded Poland on 1 September, and the Canadian government responded by calling out on 'active service' all coast defence units, including the 16th Coast Brigade, RCA, and the two-division field army. On 3 September, when Britain declared war, the government authorized the coast defences to adopt what were essentially wartime rules of engagement: freedom to fire on German forces that approached CAnada's shores. By 7 September Chapel's second gun had been mounted, as had a depression range finder, which was installed upon a concrete pedestal between the two gun positions. The depression range finder was a small, simple instrument that, by triangulation from the angle at which the telescope had to be depressed to bear upon a target on the water, calculated the range. At this time, or soon after, the range finder pedestal was enclosed in a square

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24 Anderson, 'Mobilization MD No. 6,' nd, MD 6 war diary, Sept. 1939, Appendix CLXVII, NAC, RG 24, vol. 13972

25 DOC MD 6 to Secretary, DND, 31 Aug. 1939, HQS 6756 pt 2, NAC, RG 24, vol. 2775

wooden building, with a view slit running across the whole width of the seaward walls and part-way along the adjacent side so that the instrument could bear through the arc on which the guns trained. This building, known as the Battery Command Post, was the operations and communications hub of the fort. It was here that the officers of the battery received information and instructions from senior authorities, and directed the fire of the guns. A telephone line, connecting Chapel to fortress headquarters in the Lyceum Building in Sydney, had been installed by 7 September.26

The armament was by no means fully efficient during these early days of the war. The sights for the gun mountings had not yet been received, and it is not clear when the cables that fed data directly from the depression range finder to dials on the guns were installed.27

Meagre as the coast artillery resources were, they were the mainstay of Sydney's defences. At the beginning of September the RCAF's No 8 (General Purpose) Squadron, a unit equipped for civil rather than military operations, arrived with five Northrup Delta floatplanes, none yet fitted with bombs. The local naval forces comprised two small RCMP patrol craft, manned by policemen of the marine division who had entered the naval reserve, whose main

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26 DOC MD 6 to Secretary, DND, telegram 65, 7 Sept. 1939, MD 6 war diary, Sept. 1939, appendix LXXV, NAC, RG 24, vol. 13972; same to same, telegram 71, 7 Sept. 1939, HQS 7362 pt 1, NAC, RG 24, reel C-8340; plan at Annex A

27 DOC MD 6 to Secretary DND, telegram 109, 10 Sept. 1939, HQS 7362 pt 1, NAC, RG 24, reel C-8340

armament was improvised depth charges -- steel drums filled with blasting powder that had been obtained from the mines. These little craft established the examination service at the harbour mouth on 6 September, and immediately held co-operation exercises with Chapel Point Battery. It was probably from this time that RCN signallers were stationed at the Battery Command Post.28

Canada was not formally at war until 10 September, after William Lyon Mackenzie King had recalled and consulted Parliament. He had always promised that Canada would never again be bound by a British declaration of war; that the dominion's own 'Parliament will decide.' However, the manner in which Canada had mobilized during the preceding two weeks in lockstep with Britain demonstrated the extent to which King had concluded that he was morally bound to support the mother country in the face of Hitler's aggressive dictatorship.

One of Petrie's 6-inch was ready on 10 September, and the battery was fully operational by the 18th. By the 21st the little 6-pounder QFs at North Bar and South Bar were in action, and installation of the 4.7-inch at Edward Point, which had been delayed by the need to clear the densely wooded site, was well advanced.29 Emergency searchlight defences took somewhat longer to arrange. During the Munich crisis in the fall of 1938,

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28 Goolden, naval officer in charge, Sydney to officer commanding Atlantic Coast, 8 Sept. 1939, file 36-1-8 pt 1, NAC, RG 24, vol. 11,063

29 DOC MD 6 to Secretary DND, telegram 109, HQS 7362 pt 1, NAC, RG 24, reel C-8340

the militia had been able to buy eleven commercial searchlights for the east coast.30 Of these, nine -- three 36-inch and six 18-inch -- were allocated to Sydney, but none was equipped with engine and generator power plants.31 While this equipment was being purchased 'off the shelf' from industry, the 3rd Fortress (Electrical and Mechanical) Company, Royal Canadian Engineers, of Glace Bay was rushed to Halifax, where they arrived by morning of 1 September, to assist the understrength units there man the fortress searchlights and gain experience in this new role.32 During October 1939, the power plants arrived and the 3rd Fortress Company returned from Halifax to install them: on 23 October all nine lights were reported ready for action.33 Two 36-inch were at Petrie Point, and the third at Chapel. These were quite powerful, with a range on a clear night of about 4500 yards, some 1500 yards better than the 36-inch (90 centimetre) lights at Halifax, all of which dated from the First World War or before. Their purpose was to periodically search the harbour entrance to guard against the stealthy approach of vessels, and

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30 'REport from Engineer Services Branch on situation existing at 23rd Aug., 1939,' HQS 3498 pt 13, NAC, RG 24, vol 2647

31 Smith to DOC MD 6, 25 Aug. 1939, Macdonald to Anson, 31 Aug. 1939, DHist 345.009(D36)

32 A.J. Kerry and W.A. McDill, History of the Corps of Royal Canadian Engineers, Vol. II: 1936-1946 (Ottawa: Military Engineers Association of Canada, 1966), 16; Anderson to director of military operations and intelligence, 2 Sept. 1939, HQS 7362 pt 1, NAC, RG 24, reel C-8340

33 'Interim Plan, Progress Report,' 14 Oct. 1939, HQS 3498 pt 6, NAC, RG 24, vol. 2648; 3rd Fortress (E&M) Company, RCE, war diary, pt 1, 23 Oct 1939, NAC, RG 24, vol. 14852

to be ready to track targets for the guns at Petrie and Chapel. The 18-inch lights had a range of only about 1000 yards. Three were mounted at North Bar and three at South Bar, and exposed on fixed bearings across the harbour to create an illuminated zone in which to catch an attacker with fire from the 6-pounders and the other guns.34

At Chapel the temporary searchlight position was perched on the cliff-top well to the north (say 350 feet) of the northernmost existing, permanent searchlight emplacements. With the completion of the works during the fall, the light was mounted in a box-like wooden building whose seaward wall would have opened with wide shutters. The power plant, a 'second hand' 40 horsepower, four cylinder Fairbanks-Morse marine diesel driving a 25 kilowatt, 125 volt, 200 ampere Thompson generator, was in a second wooden building, immediately to the rear. This had a concrete floor, essential to give the equipment a solid, level footing.35 The sketch plan at annex 'A' gives the fullest available evidence as to the location of the power house. It would be worth searching the area for traces of the concrete floor and, if they survive, to place an interpretive marker there.

By the end of October 1939, a small ammunition magazine had

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34 Boak to Secretary, DND, 23 Dec. 1938, DHist 345.009(D36) reports on tests of the lights carried out at Halifax shortly after they were purchased.

35 MacDonald to district engineering officer MD 6, 1 July 1940, Dobbie to MD 6, 24 July 1940, DHist 345.009(D37) pt 3; Blackson to same, 15 April 1940, DHist 345.009(D89) pt 2

been completed to the rear of the gun positions, immediately to the north of the existing Battery Command Post.36 The structure was of galvanized metal, entirely covered in earth and sod for protection; the floor was of concrete.37 Photographic evidence shows that the magazine was standing after 1945. There may still be an earth mound there, and if so it should be marked for visitors.

Work was also underway by the end of October to erect the rest of the battery buildings.38 These included a shelter for the duty gun's crew immediately behind the no. 2 gun emplacement, a shed for the artillery equipment on the site of the existing Battery Command Post, and a group of four large barracks buildings about 200 yards west of the gun positions. All were of wood construction, with 'rubberoid' roofing material over the exterior walls as well as the roofs.39 The barracks were eagerly awaited. Already in late September the district commander in Nova Scotia had warned headquarters about the high rate of sickness among the Halifax and Sydney garrisons because of the

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36 Headquarters Defended Port of Sydney war diary, Oct. 1939, Appendix 4, 'Dispositions as at Noon 30th October 1939,' NAC, RG 24, vol. 13878, pt 2

37 Blackson to district engineering officer MD 6, 15 April 1940, DHist 345.009(D89) pt 2

38 Headquarters Defended Port of Sydney war diary, Oct. 1939, Appendix 4, 'Dispositions as at Noon 30th October 1939,' NAC, RG 24, vol. 13878, pt 2

39 Chapel Point Fort Record Book, Part II, Section A, NAC, RG 24, vol. 13148; Blackson to district engineering officer MD 6, 15 April 1940, DHist 345.009(D89) pt 2

poor living conditions.40 As soon as the frame of the first of the buildings at Chapel Point had been boarded in during the early part of November, the personnel -- who now included four officers and 76 other ranks of the 36th Heavy Battery and a small detachment from the 3rd Fortress Company -- moved in from their tent camp.41 Work on the fort buildings was completed in February 1940; at that time the site would have been as it is shown in the plan at Annex A.42

Meanwhile, preparations for construction of permanent works were being rushed forward. The outbreak of war with Germany had created a crush of demand on construction resources to build the army, air force and naval facilities on the Atlantic coast that had been so long delayed. In the case of coastal fortifications priority went to works for which the 'ultimate' armament was already available or would soon be delivered. That was so at Chapel Point, and nearly so at Petrie, whose interim 6-inch naval guns had mounting pedestals that were similar to those for the ultimate army type 6-inch. These two forts, moreover, were Sydney's primary gun defence. Although in September 1939 NDHQ had changed the allocation of the first 6-inch high-angle

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40 DOC MD 6 to Secretary DND, telegram 248, 21 Sept. 1939, HQS 7362 pt 2, NAC, RG 24, reel C-8340

41 Headquarters Defended Port of Sydney war diary, Nov. 1939, appendix 2, 'Disposition as at 1200 hrs 15 Nov. 1939,' NAC, RG 24, vol. 13878 pt 3

42 Headquarters Defended Port of Sydney war diary, Feb. 1940, appendix C, progress report, 11 Feb. 1940, NAC, RG 24, vol. 13878 pt 6

equipments on order in Britain from Esquimalt to Fort Lingan, it would be some time before they arrived and could be installed.

The directorate of engineer services in Ottawa had drawings ready for Petrie, the more important site because of its seaward command and heavier guns, as early as October 1939. By that time as well, the authorities at headquarters had decided that the Chapel Point works would be based on the same plans. Although the relevant correspondence has not survived, the reasons are clear. The drawings, like almost all of the designs for new batteries in Canada, were probably standard British 'type' plans, modified in details only for adaptation to the site. Modern type plans for smaller 4.7-inch gun positions were likely not available because the weapon was no longer a standard one in British coast artillery service. As we have seen, the selection of that gun for Chapel had been a compromise dictated largely by what was available in Canada. At any rate, the base rings and hold-down bolts for the 4.7-inch mounting pedestals were identical to those of 6-inch guns, and there is evidence that headquarters wanted to keep open the option of mounting the more powerful gun once deliveries of additional armament from Britain made it available.43

Comparison of the design for Petrie and Chapel with Vancouver's Stanley Park 6-inch close defence battery, which had been constructed less than three years before in 1937-8, shows that the plans for Sydney were the very latest available. The

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43 OMG to DOC 6, 23 Aug. 1940, DHist 345.009(D89) pt 3

simple, modest structure of Stanley Park battery harkened back to the First World War and before.44 Petrie and Chapel, by contrast, featured the hallmarks of new British designs. These included well protected gun crew shelters and workshops for the artillery tools and equipment that were constructed as an integral part of the concrete works for the gun position. Most importantly, protection of the magazines had been greatly improved with a four-and-a-half foot thick concrete 'burster' set atop three feet of packed sand, which in turn covered the two-and-a-half-foot thick roof of the ammunition store rooms.45 The 'burster' and the intervening layer of sand would diffuse the detonation of a hit on the battery. To further strengthen the structure, access to the magazines was not direct, as it had been in earlier works, but through a tunnel at the base of the staircase from the surface. For this reason, and because the magazine was more deeply buried than in previous designs, there were also escape shafts for the magazine crew.

As work at Petrie began in December 1939, the type plans were redrafted for the Chapel site. These were put out for a limited tender by invitation to Foundation Maritime, Acadia Construction, Brookfield Construction and Standard Paving Maritime of Halifax and E.G.M. Cape and Company of Montreal in

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44 Sketch plan of Stanley Park Battery, enclosed with Works officer, Vancouver Defences to DEO 11, 3 Dec. 1940, DHist 169.012 (D22) pt 3

45 16the Coast Brigade war diary, pt 8, 30 April 1940, NAC, RG 24, vol. 14353

the latter part of March 1940.46 Cape, which was already building Petrie, was awarded the contract, for $134,477., on 23 April 1940.47

To accommodate the enlarged works, the government acquired additional land towards the west of the original site, including the 'old cemetery' close behind the centre of the temporary battery. This raised the possibility that bodies might have to be removed and reinterred in the event excavation was necessary in the area. Although the age of the cemetery -- no one had been buried there in eighty years -- meant that there were no living immediate relatives in Sydney Mines who might object, and the Catholic Episcopal Corporation of Antigonish agreed to removal of the remains to another cemetery, the army was reluctant to do so. When, in the early months of 1940, the fixing of the precise location of the works placed the new Battery Command Post and searchlight engine room building among the graves, the directorate of engineer services shifted the structure from behind the centreline of the planned gun positions to the south, and redesigned it so the main entrance opened to the south rather than the north. The garrison built a fence around the cemetery to ensure it was not disturbed.48

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46 QMG to DOC 6, 18 Jan. 1940, DHist 345.009(D89) pt 1; QMG to DOC 6, 14 March 1940, same to same, telegram Engrs 379, 28 March 1940, same to same, 2 April 1940, DHist 345.009(D89) pt 2

47 QMG to DOC 6, 29 April 1940, DHist 345.009(D89) pt 2

48 DOC 6 to Secretary DND, 27 Oct. 1939, Mackenzie to DEO 6, 2 MAy 1940, DEO 6 to Mackenzie, 3 MAy 1940, QMG to DOC 6, 7 and 8 May 1940, DHist 345.009(D89) pt 2; QMG to DOC 6, 29 Sept. 1942,

The site of the planned permanent gun emplacements lay across the temporary battery command post and the northernmost temporary gun platform (no. 2). It was essential, however, to keep the battery's full armament in operation. Therefore, at the end of March and the beginning of April 1940, a new concrete temporary platform for number 2 gun was built 'about 200 feet north' of the original position; the gun itself was moved in early May.[49] This new temporary position was almost certainly the pad with mounting bolts that survives behind the underground engine room at the northern end of the battery. A new temporary battery command post was also constructed in early May.[50] Its concrete range finder pillar still stands about 50 yards north of the permanent battery command post building. The original no. 1 temporary gun platform, the one that had been built in the spring of 1939, was clear of the site of the planned permanent works. It was probably the concrete pad with mounting bolts that survives behind the southernmost (no. 1) permanent gun emplacement.

While the temporary works were being rearranged, construction began of the present access road to the battery from the west,

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Dobbie to MD 6, 6 Oct. 1942, DHist 345.009(D89) pt 4

49 16th Coast Brigade war diary, pt 7, 26 March, 4 April, 1 May 1940, NAC, RG 24, vol. 14353; see also QMG to DOC 6, 17 Feb. 1940, DOC 6 to Secretary DND, 29 Feb. 1940, QMG to DOC 6, 10 March 1940, DHist 345.009(D89) pt 2

50 DEO 6 to Wilkins, 2 May 1940, DHist 345.009(D89) pt 2

ie.,to the rear of the works.51 Previously, the entrance had been on the southern flank by way of the old public road that ran close by the shoreline.52 That road was unsafe because of sea erosion; indeed it appears to have fallen out of use prior to September 1939, when the army carried out extensive repairs.

Work on the permanent battery began during the last week of April 1940, as Cape and its sub-contractor for excavation, Kendall and Company of Montreal, completed Petrie and began to move equipment across the harbour.53 A total of 73 men were employed on the Chapel project, all but ten of whom were from the Sydney area. The district authorities reported that Cape was doing its best to meet the department's requirement that veterans of the First World War have priority for hiring but that because most of these 'returned soldiers' were too old for the heavy physical labour only eleven suitable for employment could be found. Therefore the company had hired the sons of veterans. Although Kendall employed its own two truck drivers from Montreal for the task of removing excavated material, the contract for trucking sand and gravel to the site was let locally.54 Nevertheless, the department received a complaint, evidently from

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51 16th Coast Brigade war diary, pt 7, 26 March 1940, NAC, RG 24, vol. 14353

52 DOC 6 to Secretary DND, 27 Oct. 1939, DHist 345.009(D89) pt 1

53 16th Coast Brigade war diary, pt 7, 24 April, 1 May 1940, NAC, RG 24, vol. 14353

54 DOC 6 to Secretary DND, 30 May 1940, DHist 345.009(D89) pt 3

Sydney Mines, about the employment of the two Montreal truckers.55

Excavation for the new installations proceeded quickly, because removal of the soft sandstone proved to be 'very easy.' By 10 May 1940, the end of the second week of work, 3200 cubic yards had been removed for the magazines, about half of the total excavation at this location, and another 1600 cubic yards at the site of the northernmost new searchlight emplacement (no. 11 in the Sydney defences), at the base of the southern promontory of Chapel Point.56

The latter was one of three searchlight positions planned for the fort. The others were no. 12, at the base of the northern promontory of the point, and no. 13, about 110 feet north of light no. 12. This requirement had been laid down in the Treatt report. No 13 light was to support the navy's examination service, while nos. 11 and 12 were to be 'fighting lights' that tracked targets for the battery's guns. The geography of Chapel Point left almost no choice but these three locations for the lights, but they were not easy positions to develop. To keep the lights below the line of fire from the guns above them, the emplacement floors had to be no higher than about 27 feet above sea level, meaning that up to 15 feet had to be removed from the sites, whose elevation was as much as 42 feet

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55 QMG to DEO 6, 23 May 1940, DHist 345.069(D15) pt 2

56 DEO 6, weekly progress report no. 2, 10 MAy 1940, DHist 345.069(D15)

and no less than 33 feet. What was more, it was necessary similarly to cut back much of the adjacent cliff faces to give the lights clear arcs of traverse. Initial hopes that the large amount of excavation would be reduced by siting the emplacements close to the cliff edge were dashed by the need to build back from areas that were being undermined by sea erosion.57

By the end of June, excavations were complete for the magazines, the two gun emplacements, and the gun crew shelters on the flank of each emplacement. The concrete foundation footings and walls of the magazines had been poured. Concrete work for no. 2 emplacement and gun crew shelter was well underway, and had been started for no. 1 emplacement. The main tunnel from the magazine and the two smaller tunnels to the escape shafts were nearly complete, as was the lower level of stairs from the main tunnel. Work was in hand on the drains around the footings of these structures, and the three main 6-inch tile drains from the footings to the cliff edge. The foundation of the combined Battery Command Post and engine room building had been dug, and the floor slab laid, but this work was behind schedule. Nothing had been done to prepare the sites of nos. 12 and 13 lights, possibly because the original surveys had underestimated the amount of excavation needed, and it was necessary to arrange for an increase in the amount of the contract price. The entire landward approach of the excavated battery site, from the

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57. DOC 6 to Secretary DND, 5 Feb. 1940. QMG to DOC 6, 13 Feb. 1940, each with enclosed plans. DHist 345.009(D89) pt

shoreline 500 feet north of the works round to the shoreline 300 yards southwest of the works (ie., beyond the site of the accommodation huts), had been enclosed by a wire mesh fence set in concrete piles. The total length of the fence was some 2800 feet. Judging by the fences that survive at other Second World War batteries, this would have been similar to a modern mesh fence, about ten feet high.

Under the construction schedule all work should have been completed on 6 August. It wasn't. A progress report for 3 August shows that at that time the upper level of the main entry way to the magazines, including the stairs and concrete rooms for the artillery stores and workshop, had not yet been built. Work on much of the structure of the gun emplacements, other than the gun floors and mounting bolts, was just underway, but it was being pressed as quickly as possible. Although concrete work for nos. 11 and 12 searchlight emplacements were substantially complete, the walls and roof of no. 13 had yet to be poured. There was still a good deal of structural work to be done on the battery command post and engine room building.58 In early August, the Kendall company crew removed the last remnants of the earthworks of the 1860s battery to give clear fields of fire from the new gun positions.59

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58 Boutilier, 'Weekly Progress Report no. 13,' 3 Aug. 1940, DHist 345.009 (D15); for details regarding the gun emplacements see 16th Coast Brigade war diary, pt 11, 30 July 1940 and pt 12, 2-5 Aug. 1940, NAC, RG24, vol. 14353

59 16th Coast Brigade war diary, pt 12, 6 Aug. 1940, NAC, RG 24, vol. 14353

The push to complete the gun emplacements continued during the next two weeks. Personnel of the 36th Battery moved number 1 gun from its temporary platform into the no. 1 emplacement on 13-15 August; they moved number 2 gun from the temporary emplacement north of the works into the new no. 2 emplacement on 20-1 August. By that time, all three searchlight emplacements were virtually complete, and the artillery stores and workshop at the main entrance to the magazine were well in hand.60

The contractor and subcontractors began to remove their heavy equipment from the site at the end of August, while completing finishing work.61 On 12 September, a board of officers formally accepted the new installations for the army.62 The surviving documents give no specific evidence as to why completion was five weeks late. The only important unexpected developments had been the additional excavation for the searchlights mentioned above and the need to pour an extra 78.6 cubic yards of concrete to deepen the semi-circular shields in front of the guns because of the slope of the terrain.63 The late completion, it would seem, was the cumulative result of

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60 16th Coast Brigade war diary,pt 12, 13-21 Aug. 1940, NAC, RG 24, vol. 14353

61 16th Coast Brigade war diary, pt 12, 30 Aug. 1940, pt 13, 4, 9, 18 Sept. 1940, NAC, RG 24, vol. 14353

62 Proceedings of Board of Officer, 12 Sept. 1940, DHist 345.009(D89) pt 4

63 Cape and Company to DND, 16 Aug. 1940, DHist 345.009(D89) pt 2

minor delays.

The battery garrison did not move the ammunition from the sod-covered temporary magazine into the new magazines until 21 October, awaiting news as to when ammunition hoists would be installed.64 Concrete shafts, from the magazine floor up to box-like structures on the inner flank of each gun emplacement, had been constructed, but NDHQ advised that there were difficulties in supplying the hoist equipment. Ammunition for the 4.7-inch guns was smaller than that for 6-inch guns, and was stored in boxes, so that it would not fit in the standard hoists for the larger weapon. Because of the lightness of 4.7-inch rounds as compared to the 6-inch, they were normally hand carried to the emplacement. Works for 4.7-inch built prior to 1918 when the weapon was still a standard coast gun were on a smaller scale than the structure at Chapel, with the magazine close to the ground surface and handy to the guns. It would thus be necessary to have 4.7-inch hoists specially designed and manufactured. Headquarters decided to go ahead with the project in November 1940, but gave it a low priority. There were, after all, adequate immediate supplies of ammunition in the ready-use lockers around the emplacement. Given the lightness of the rounds it would be practicable in the event of an action to hand carry additional ones out from the magazines and through the tunnel for lifting by the davit over the main entry shaft normally used to lower

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64 16th Coast Brigade war diary, pt 14, 21 Oct. 1940, NAC, RG 24, vol. 14353

supplies of fresh ammunition into the magazines.65 Hoists were, in fact, never installed.

Because the ammunition was boxed, it was unnecessary to build storage racks in the magazine. The boxes were simply stacked.66 The most volatile, and therefore dangerous, part of the ammunition were the cordite propelling charges: the explosive was encased only in a cloth bag, which was entirely consumed when the charge was detonated in the gun barrel. These charges were stored in the innermost part of the magazine in brick-walled rooms at either end of the structure. This was a strictly controlled environment, with no exposed metal or electrical outlets. Lighting was from lamp recesses through the brick walls, which were sealed with glass on the cartridge room side. Personnel who entered wore special cloth slippers and coveralls with no metal parts. The less volatile projectiles were stored in the outer chamber of the magazine.

After the transfer of the ammunition into the new magazines, the temporary sod covered one was used as an oil store, presumably for diesel fuel for the searchlight generator sets. This was intended to be only a short term arrangement until underground tanks were built, but there is no evidence they ever were.67

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65 Acting DOC6 to Secretary DND, 21 Oct. 1940, AMG to DOC 6, 30 Oct. and 12 Nov. 1940, DHist 345.009(D89) pt 4

66 QMG to DOC 6, 23 Aug. 1940, DHist 345.009(D89) pt 3

67 DEO 6 to Dickson, 18 Sept. 1940, deputy adjutant and quartermaster general, MD 6, same date, DHist 345.009(D89) pt 4

Modern searchlight equipment was installed in the new works during the third week of October by the 3rd Fortress Company, RCE.68 Each of the three light emplacements received a 60-inch, 800 million candle power, concentrated beam searchlight, with an effective range of 8000 yards or more. The equipment had been designed by General Electric for the United States forces and manufactured for the Canadian army at Canadian General Electric at Peterborough, Ontario under a contract that had been let in the spring of 1939. Three 4-cylinder, 40-horsepower Gardner diesels with Westinghouse 24.8 kilowatt generators were mounted on concrete beds in the permanent powerhouse, the large extension behind the battery command post tower.69 The powerhouse had a fourth bed for a spare engine-generator set that could be plugged in to replace any of the others in case of failure, but the fourth set was not provided until sometime later, after supplies to re-equip all of the defended port searchlight stations were available.70

The searchlight directing station was in the room with the view slit atop the forward extension of the battery command post tower. Beneath the view slit, three sets of 'distant control' equipment were set up. The operator followed the target through

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68 3rd Fortress Company war diary, pt 14, 15-21 Oct. 1940, NAC, RG 24,, vol. 14882

69 Chapel Fort Record Book, section 3, NAC, RG 24, vol. 13148

70 MacDonald to DEO 6, 30 Oct. 1940, DHist 345.009(D90) pt 1

binoculars mounted on the equipment, and by working elevation and traverse flywheels that triggered motors on the searchlight mounting, kept the beam on the target by remote control. A voice tube from the battery command post to the searchlight directing station immediately in front and below enabled the officer controlling the fire of the guns to give instructions directly to the searchlight officer. The new lights and control equipment were first tested in a successful run on the night of 21 October.71

By this time, the searchlights at Chapel and the other Sydney forts were operated by detachments from a new unit, the 9th Searchlight Battery, Royal Canadian Artillery. Modern searchlight equipment was much easier to use than the types that had been in service during the First World War, and therefore in the late 1930s the British army had transferred responsibility for the lights from the engineers to the artillery. This had the advantage of placing the operation of all coast artillery armament under the artillery, and allowing the engineers to concentrate on the technical and maintenance services for which their specialized training best suited them. Canada followed the British reorganization, and NDHQ had authorized the creation of the 9th Searchlight Battery for the Sydney defences in the spring of 1939, but war had broken out before it could be raised. For that reason, the 3rd Fortress Company, RCE had taken

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71 3rd Fortress Company war dairy, pt 14, 21 Oct. 1940, NAC, RG 24, vol. 14882

responsibility for the temporary lights that were installed at Sydney in the fall of 1939. In March and April 1940, when it was clear that the fifteen 60-inch lights slated for the port's 'ultimate' armament would be available within a matter of months, organization of the 9th searchlight Battery began with the transfer of key specialists from the 3rd Fortress Company and new recruiting.72 The new battery appears to have taken over the Chapel temporary light on 20 June 1940.73 In August, the 9th Searchlight Battery's detachment at Chapel comprised 1 officer and 25 other ranks74; by early December it had grown to 2 officers and 36 other ranks.75

While the searchlight equipment was being installed in October 1940, the battery command post was also fitted out. Much of the work appears to have been the completion of communications faculties by a crew from the Royal Canadian Corps of Signals.76 The adjoining rooms at the base of the searchlight directing station and the battery command post tower were a 'test pit' -- for the maintenance and repair of communications -- through which

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72 9th Searchlight Battery war diary, pt 1, April 1940, NAC, RG 24, vol. 14630; 3rd Fortress Company war diary, pts 7 and 8, March-April 1940, NAC, RG 24, vol. 14882

73 16th Coast Brigade war diary, pt 10, 20 June 1940, NAC, RG 24, vol. 14353

74 Situation Report no. 203, 11 Aug. 1940, DHist 321.009(D66) pt 1

75 Sitatuion Report no. 318, 3 Dec. 1940, Dhist 321.009(D66) pt 1

76 16th Coast Brigade war diary, pt 14, 25 Oct. 1940, NAC, RG 24, vol. 14353

passed the telephone cables from the fire command post across the harbour and to the other army installations in the Sydney Mines-North Sydney areas. In the words of one report, 'Practically all signal lines on Northside <of the Sydney defences> are concentrated in this room.'77 On 26 October army signalmen installed the antenna for the radio-telephone set by which the navy signallers communicated with the examination vessel, while armament specialists moved the depression range finder from the temporary command post. From this date the permanent battery command post came into operation,78 although there was further work on the electrical and communications systems during the following months.79

During the last ten days of December 1940 construction began of a new set of wooden barracks huts in the south-west corner of the fenced-in area. These were to house the company of infantry -- normally about 150 men -- that was responsible for the protection of Sydney's western headland, and the landward approaches to Chapel Point against enemy landing parties or saboteurs. Since mobilization in September 1939, the infantry unit had been quartered in a cramped Nova Scotia Steel and Coal Company building in Sydney Mines. The new barracks at Chapel Point, which included a large 'H' hut with two wings linked by a

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77 Dickson to DEO 6, 9 Nov. 1941, Dhist 345.009(D89) pt 4

78 16th Coast Brigade war diary, pt 14, 26 Oct. 1940, NAC, RG 24, vol. 14353

79 16th Coast Brigade war diary, pt 15, 25 Nov. 1940 and pt 16, 20 Dec. 1940, NAC, Rg 24, vol. 14353

central wash-house and two single wing buildings, were nearly completed by mid February 1941. They were occupied by a company of the New Brunswick Rangers, which had just arrived in the fortress to relieve the Pictou Highlanders. The infantry barracks formed virtually a separate compound within the fort area.80

Meanwhile a fundamental defect in the design of the combined battery command post and engine room buildings at both Chapel and Petrie had become apparent. The diesel-generator sets caused vibration in the range-finder pedestals which put the sensitive instruments out of adjustment; that aside, the noise and fumes from the engines scarcely made for a comfortable working environment in the command post and searchlight directing station. One indeed wonders why the design had been adopted at all, for it unnecessarily put together in a single exposed building much of the fort's most important and delicate machinery. In November 1940, only weeks after the power houses at Petrie and Chapel had begun to operate, Colonel Dobbie reported to district headquarters in Halifax that all efforts to dampen the vibration had failed and that separate power houses should be constructed.81 In January 1941 National Defence Headquarters authorized a total of $16,400 to cover the work at

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80 16th Coast Brigade war diary, pt 16, 20 Dec. 1940, NAC, RG 24, vol. 14353; Situation report 318, 3 Dec. 1940, Appendix A and B, Situation report 345, 30 Dec. 1940, Appendix B, Situation report 28, 28 Jan. 1941, Appendix A and B, Situation report 49, 18 Feb. 1941, Appendix A and B, DHist 321.009(D366) pt 1

81 Dobbie to MD 6, 29 Nov. 1940, DHist 321.009(D365) pt 1

both Petrie and Chapel. The designers in Ottawa proposed buildings that were partly set into the ground for protection, but the officers in Sydney, who best knew how bereft of natural cover the Petrie and Chapel sites were, successfully argued for structures that were completely dug in and that is how they were ultimately built. The military engineers at Sydney contracted the work themselves, hiring local labour as necessary.82 Because of competing demands throughout the fortress, construction did not begin until June and did not proceed quickly.83 It was only on 3 January 1942 that the four engine-generator sets were moved into the new underground power house at Chapel.84

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During the latter part of 1942 preparations got underway for rearmament of many of the close defence batteries at Canada's ports. Few records concerning the decision have survived, but

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82 QMG to DOC 6, 20 Jan. 1941, DOC 6 to Secretary DND, 13 Feb. 1941, QMG to DOC 6, 13 Mar. 1941, DHist 345.009(D89) pt 4

83 Dickson to DEO 6, 2 June 1941, Dickson to DEO 6, 26 Nov. 1941, DEO 6 to chief works officer, Sydney, nd., DHist 345.009(D89) pt 4; Lawrence to Headquarters Atlantic Command, nd <but received 4 Sept. 1941>, Appendix to Situation report, 9 Sept. 1941, DHist 321.009(D366) pt 3, reports the new Chapel and Petrie power houses as 97 and 93 percent complete respectively. The only evidence as to the reason for the delay in fully completing the work is the correspondence from Nov. 1941 cited immediately above concerning some difficulties about arrangements for venting exhaust. This appears to have been resolved without important changes in the structure. A likely possibility is that although structural work on the building was not unduly delayed, there were hold-ups in digging trenches and laying cable from the light emplacements to the new building.

84 SL Battery war diary, pt. 22, 3 Jan. 1942, NAC, RG

the reasons are self evident, for all of the works mounted guns that dated from the turn of the century. Although deliveries from Britain of modern twin-barrelled 6-pounders for the quick fire batteries was about to begin, and these weapons could deliver a very high volume of fire, they lacked range and weight of shell. A gun with these qualities and an impressive rate of fire was ready to hand from Canadian production of the Royal Navy's twin barrelled 4-inch for warships of both the British and Canadian fleets. This equipment could pour out up to thirty 35-pound shells a minute (triple the rate of the old 4.7-inch coast gun, and nearly five times that of the 6-inch) to a range of nearly 20,000 yards (double that of the old 4.7-inch and fifty percent better than the 6-inch).

The army ordered 24 of the naval guns in the fall of 1942<85> and Chapel Point Battery was among the first sites selected for the new equipment.86 The fort was, as we have seen, the only one at Sydney positioned to sweep the whole of Sydney harbour from the entrance right back to the inner port. The new guns would not only strengthen this coverage, but allow the dismantling of Point Edward Battery, an important economy.87 One of the 4-inch twin equipments arrived at Chapel Point at the end

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85 Director of artillery, memorandum, 29 Sept. 1942, HQS 3338 pt 7, NAC, RG 24, vol. 2580

86 Coast Defence Construction Committee minutes, 19 Jan.1943, pt. 2, DHist 322.009(D656)

87 Director of military operations and plans to chief of the general staff, 24 July 1943, DHist 193.009(D22)

of May 1943<88> and the second, apparently, in August.89 On 29 July the garrison shifted the two 4.7-inch out of the permanent emplacements back to the temporary ones so they could remain in action while the extensive reconstruction of the permanent positions needed to adapt them for the naval equipments were carried out.90 The old army 4.7-inch (and 6-inch) had been mounted atop five-foot high pedestals which, seated at the base of the emplacement gun pit, allowed much of the crew to shelter in the gun pit, safe from enemy fire. By contrast, the naval 4-inch twin was designed to be mounted directly onto the deck of a ship, and featured a large three-sided shield to protect the crew who served the guns from the deck. It was therefore necessary to fill in the gun pits of the emplacements as originally built to a depth of some six feet. The centre of the emplacement was to be built up with solid reinforced concrete construction to provide a firm base for the mounting, and a new one-foot thick concrete floor was to be built over top of the rest of the gun pit leaving space there for continued use as a crew shelter.91

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88 Sydney and Canso Defences situation report, week ending 29 May 1943, appendix B, DHist 321.009(D124) pt 3

89 This was the recollection, nearly three years later, of personnel who had served in the fort, reported by Letourneau to Officer Commanding 6 AME, 17 June 1946, Chapel Fort Record Book, NAC, RG 24, vol. 13148; harder evidence has not yet come to light.

90 Chapel Point fort record book, section G, NAC, RG 24, vol. 13148

91 'Alterations to exis. No. 3 (Six Inch) empl. to receive 4" QF Mk XVI* gun on H.A. Twin Mk XIX mtg,' drwing no. S-2118-37, 24 May 1943, DHist 345.009(D89) pt 4. This was the type design for Partridge Island, Saint John that was also used at Chapel and

In addition, the cartridge and shell recesses around the gun platform had to be dug out from their existing depth of three feet to four feet, three inches to accommodate the new ammunition. In contrast to the old 4.7-inch ammunition, which had featured separate, and separately stored projectiles and cloth bags of propellant -- each about two feet in length --, ammunition for the new 4-inch was 'fixed.' The propelling charge was enclosed in a brass case that was attached to the shell, the whole, at three-feet 10-inches overall length, looked much like a large cartridge for a rifle.

Just as preparations were underway in early August to rebuild the emplacements at Chapel, headquarters in Ottawa called a halt. Technical information from the navy suggested that there might be difficulties in marrying up standard army hold-down bolts and hardware with the naval mounting. Headquarters therefore ruled that work at Sydney should wait until the conversion of an emplacement at Partridge Island, Saint John, had been completed as a trial.92

As it happened this delay coincided with a major shift in home defence policy. The Allies had now definitely gone over to the offensive against the Axis powers, with the signal Soviet success at Stalingrad, and the victories of the western Allies in the Mediterranean; the 1st Canadian Infantry Division was among the western ground forces that landed in Sicily in July, the

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Petrie.

92 QMG to DOC 6, 13 Aug. 1943, DHist 345.009(D117)

first thrust into an axis homeland. Not only had the possibility of a significant attack against North AMerican territory greatly diminished, but personnel of Canada's home army were now needed to support the overseas offensive. Although the NAtional Resources Mobilization Act had served to replace a large number of the volunteer 'general service' personnel in the home forces with conscripts, there were still many 'GS' men on duty in Canada. Recruiting for additional GS personnel was bringing diminishing returns because of depletion of the overall manpower pool by the war effort; for this same reason it was not practicable to conscript further large numbers of home defence personnel to release GS men from units in Canada. The prime minister, of course, was as opposed as ever to the despatch of conscripts overseas.93

The sweeping reduction of the home forces during the fall of 1943 included the closure of Chapel Point Battery and Edward Point Battery, together with six forts at other east coast ports.94 Edward Point, as we have seen, was to have been dismantled anyway when Chapel was modernized. During the summer of 1943, the staff at headquarters in Ottawa had come to conclude that with the reduced enemy threat it was unnecessary to retain both Chapel and Petrie for the defence of the 'small entrance' to

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93 CGS to minister, 'Reduction in Operational Troops in Canada,' 30 Aug. 1943, file 'Army in Canada General,' NAC, MG 27IIIB11, vol. 38

94 Ns, 'Review of the Development of the Canadian Coast Artillery Plan 1937-1945,' 11 June 1946, DHist 321.009(D433)

Sydney harbour.95 The choice as to which of the two forts to close was left to the east coast authorities, and they selected Petrie for retention. Documents as to the specific reasons have not come to light but they can be deduced: Petrie had a greater command over the outer approaches and its 6-inch guns were more powerful than CHapel's 4.7-inch armament. Although Chapel would be the stronger work once its new 4-inch twin were installed it had already become clear that the project would not be completed for many months.

Chapel Point Battery was stricken from its operational role on 1 October 1943, at which time Petrie became the examination battery. A large maintenance detachment remained at Chapel to watch over the equipment,96 and the fort continued to serve as the headquarters of the 36th Coast Battery, the former engine in room in the Battery Command Post building having been converted into an administration area sometime after the generator equipment was removed in January 1942.97 The infantry barracks also continued in service. Although the infantry garrison at Sydney had been cut back from something over a battalion and a half to a reduced battalion, there was still a company stationed at Chapel.

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95 DMO&P to CGS, 24 July 1943, DHist 193.009(D22)

96 16th Coast Regiment war diary, pt 50, 1 Oct. 1943, NAC, RG 24, vol. 14355

97 16th Coast Regiment war diary, 1 Sept. 1944, pt 61, NAC, RG 24, vol. 14355; 'Plan showing installation of 2.75 KVA generator in old Orderly Room of B.O.P.,' 26 Oct. 1945, drawing no. S-2122-31, DHist 345.009(D117)

Meanwhile, during September, the decision to close Chapel had brought headquarters in Ottawa to rule that it should not be modernized, and that the 4-inch twin guns should be installed at Petrie instead.98 That ruling was revised early in January 1944, when headquarters informed Atlantic Command that both Chapel and Petrie would be re-equipped with the naval guns. The change was the result of a shift in focus at headquarters from immediate wartime requirements to long-term, post war planning.99 All other projects to install the 4-inch twins, save at Saint John, New Brunswick, had been cancelled as part of the coast defence cut- backs.100 The reason for continuing the Saint John project and expanding the programme at Sydney would seem to be that these were the only major strategic ports at which quick-fire coverage of the harbour entrance could be provided only by close defence batteries. At Halifax, Prince Rupert and Victoria-Esquimalt 6-inch high angle batteries could bear directly into the harbours and therefore fulfilled dual long-range and close defence roles; at Sydney Fort Lingan could not, and Saint John's defences included no long-range 6-inch guns.

In February 1944 work began again on reconstruction of Chapel's emplacements and of those at Petrie. By mid-March, the

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98 Coast Defence Construction Committee minutes, 30 Sept. 1943, DHist 322.009(D656)

99 Jenkins for CGS to GOCinC Atlantic Command, 3 Jan. 1944, DHist 321.009(D125) pt 3

100 CGS to minister, 'Reduction in Operational Troops in Canada,' 30 Aug. 1943, appendix D, file 'Army in Canada General,' NAC, MG 27IIIB11, vol. 38

ammunition recesses at Chapel had been enlarged and wood forms for the new concrete work in the gun pit had been put in place. Progress was 'very slow as there are only two men on the job and supply of materials is slow and erratic.' Headquarters in Ottawa called for greater speed101 and then almost immediately again stopped the project because of difficulties with the pilot installation at Saint John. The steel base plates that had been supplied to fix the mounting to the concrete would not support the mounting with sufficient rigidity to ensure that its low-slung, heavy structure could traverse freely under all conditions without scraping the emplacement floor. In the end the problem delayed further work for more than six months.102

Despite the glacial progress of the reconstruction project, the records suggest that Chapel remained the centre of considerable activity. Aside from presence of the infantry company and the headquarters of the 36th Coast Battery, the maintenance detachment worked the equipment regularly to keep it efficient and also participated in the installation of the first two 9.2-inch guns at Oxford Battery which arrived from Britain during the first half of 1944.103 Sydney Mines, which was the rail head closest to Oxford, served as the transhipment point for equipment for the new fort, and Chapel was handily situated to

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101 QMG to DOC 6, 4 April 1944, DHist 345.009(D117)

102 QMG to DOC 6, telegram Engineers F110, 12 April 1944, same to same, 18 April 1944, DHist 345.009(D117); Coast Defence Construction Committee minutes, 11 Oct. 1944, DHist 322.009(D656)

103 HQS 3338-25-1, NAC, RG 24, reel C-8272

support the project. It may be that the substantial maintenance detachment at Chapel was kept up as a nucleus of personnel for manning Oxford once it was completed.

Chapel Point became a much quieter place with a further round of coast defence cuts in the summer and fall of 1944. At the end of June and in early July 1944, the 4.7-inch guns on the old temporary positions were dismantled and shipped out of the fort.104 The infantry departed in August,105 and with effect from 1 September the 36th Coast Battery was disbanded, bringing to an end Chapel's role as a unit headquarters. Because the Axis surface fleets had been virtually swept from the seas, all 9.2-inch batteries in the country were closed down and Oxford was to go directly into maintenance once it was completed. That decision left the Stubbert's anti-motor-torpedo boat battery as the only active work on Sydney's 'Northside,' the area that came under the 36th Battery. The personnel were therefore consolidated under the 6th Coast Battery, now the only coast artillery unit at Sydney, and administration of the Northside detachments was transferred to Stubbert's. Most of the personnel from Chapel went to the Oxford maintenance detachment or to Stubbert's; files and office equipment were moved to Stubberts, while much of the barracks furniture and equipment were shipped out of the fort and many of the buildings were closed. Only a

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104 Defended Port of Sydney Situation Report, week ending 1 July 1944, Appendix A, DHist 321.009(D421)

105 Defended Port of Sydney Situation Report, week ending 19 Aug. 1944, Appendix B, DHist 321.009(D421)

handful of maintenance personnel remained at Chapel.106

Reconstruction of the emplacements began again in early November 1944, when the strengthened base plates for the 4-inch twin mountings were due for delivery. Work also began on a new phase of the project, the addition of the fourth story with the large view slit on the battery command post. This was to accommodate the more powerful range finder needed to match the long range of the new guns. For this purpose, a No 3 Height and Range Finder had been adapted from its original application as an anti-aircraft instrument.107 It was a 'coincidence' range-finder: a tube of about six feet in length with lenses at each extreme end of its seaward side and binocular lenses on the inner side for the observer. The observer saw a split image of the target until he had properly adjusted the controls; when the target image was aligned, the instrument showed the range.

The engineers completed the structure of the battery command post's additional story in January 1945. Work on the emplacements dragged on to completion on 20 July 1945. Meanwhile, the Sydney defences had been entirely shut down. At the end of January 1945, South Bar and Lingan Batteries had been removed from operations, leaving only Petrie and Stubberts which, following the defeat of Germany, stood down on 31 May. With

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106 Defended Port of Sydney Situation Report week ending 9 Sept. 1944, Appendix A, DHist 321.009(D421); 16th Coast Regiment war diary, Sept. 1944, pt 61, NAC, RG 24, vol. 14355

107 MGO to GOCinC Atlantic Command, 17 May 1944, DHist 345.009(D117)

effect from 15 August 1945, the 16th Coast Regiment, RCA, together with the other remaining coast artillery units on the east coast was reduced to nil strength. Charge of the forts passed to the Sydney detachment of the No. 6 Armament Maintenance Establishment, RCA, which had recently been organized as an interim organization to maintain the defence works in Nova Scotia slated for permanent retention while the wartime army demobilized and the peacetime regular and reserve forces were re-established.

These changes had little direct impact on Chapel, where modernization work continued. The 4-inch twin guns may have been mounted as early as August 1945; they were in place by June 1946<108> and were test fired in November of that year.109 Modifications planned for the magazines may have been carried out at this time as well. With the fixed 4-inch ammunition there was no longer a need for the separate cartridge stores, and therefore the brick partitions which isolated these areas were to be removed; certainly the brickwork no longer remains and unless vandals subsequently made an extraordinary effort, the job was likely done in 1946.110

All of the equipment for the improved fire control system was delivered to the fort and most of it was probably installed

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108 Letourneau to Officer Commanding No. 6 AME, 17 June 1946, Chapel Fort Record Book, NAC, RG 24, vol. 13148; Macdonald to GOC Eastern Command, 7 June 1946, DHist 323.009(D90)pt 1

109 Waterfield to DEO 6, 15 Nov. 1946, DHist 345.009(D117)

110 QMG to DOC 6, 13 April 1946, DHist 345.009(D117)

by early 1947.111 The coincidence range finder in the new fourth story of the battery command post was only one part of the system. A No 17 'director,' a tripod mounted telescopic instrument that gave extremely accurate bearings on targets, was placed on the third floor, beside the depression range finder, which was retained as a back-up to the director and coincidence range finder. Two naval instruments and a 'gun angles computer,' for calculating firing data and converting it for direct use by the guns, were also installed on the third floor.112 The corrected and converted data was transmitted to range and bearing dials on the gun mountings by a new 'magslip' system. Unlike the old depression range finder system that merely carried raw ranges direct from the instrument to the gun, the 'magslip' system featured three transmitting stations -- at the director, coincidence and depression range finders -- and had duplicate, widely separated sets of buried cables to the emplacements as a safeguard against damage to any section of the line.113 Power for the new transmission system came from a small engine-generator set in the north-east corner of the old engine room

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111 Defended Port of Sydney Situation Report, week ending 20 Jan. 1945, appendix A, and week ending 28 April 1945, appendix A, DHist 321.009(D421). Macdonald to GOC Eastern Command, 7 June 1946, DHist 323.009(D90)pt 1 states that the fire control arrangements were not complete by that date.

112 'Fire Control Layout Magslip Transmission System Chapel Battery...,' drawingno. 82074, 2Nov. 1944, amended to 27 April 1945, 'Chapel BAttery. Arrg't of equipment in battery command post,' drawing no. 82107, 8 June 1945, DHist 340.019(D14)

113 'CAble Layout Chapel Battery,' drawing no. SY-CH-1, 7 July 1947, DHist 340.019(D14)

wing adjoining the battery command post. An exhaust shaft was built out from the wall and still exists.114

Soon after the installation work at Chapel was completed, headquarters in Ottawa began a fundamental reassessment of coast artillery policy. The intention had been to preserve virtually the whole of the system of fortifications at the major ports -- Halifax, Sydney, Saint John, Victoria-Esquimalt, Vancouver and Prince Rupert -- that had been developed since 1937. The reconstruction projects at Chapel, Petrie and Partridge Island Saint John, were designed to correct the most serious shortcomings of the original system without making the enormous financial commitment necessary to rebuild the defences entirely for the latest heavy counter-bombardment guns, and sophisticated dual-purpose coast defence and anti-aircraft weapons that had been developed during the war in Britain and the United States. The low level of a potential threat to Canada's coasts, and the emergence of missile technology which held the potential of rendering many coast and anti-aircraft artillery weapons obsolete justified this cautious approach.115 '

However, the government's deep cuts in funding and manning levels for the army suggested that even this policy was far too

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114 'Plan showing installation of 2.75 KVA generator in old orderly room of BOP,' drawing no. S-2122-31, 26 Oct. 1945, DHist 345.009(D117)

115 For this and the following two paragraphs see Roger Sarty,'A Structural and Narrative History Fort McNab, 1939-1960,' (unpublished study commissioned by the Halifax Defence Complex, Environment Canada, 1988)

ambitious. The army's post-war plans had envisioned a force of over 50,000 regular personnel; by the beginning of 1947 it was clear that there would be considerably fewer than 20,000 regulars. In the case of the regular force coast artillery organization, only 303 personnel were on strength in January 1947 as compared to an establishment of 734. As a result practically every available man was employed in caretaking duties at the many, often isolated forts and there was no margin the most important tasks of training and technical development work to maintain up-to-date expertise.

There was considerable scope for economies. Deepening tensions with the USSR made it clear that the Soviets were the most likely future enemy, but their naval programme was centring on submarines rather than surface warships. Defence against submarines was primarily an air force and navy commitment. Because of progress with long-submerged endurance and fast underwater speed submarines, there was a real danger that enemy craft could evade forward naval and air defences to penetrate into North AMerican harbours for hit-and-run attacks, and so a requirement for coast artillery continued, but it was a reduced requirement. That aside, Allied intelligence estimates were that the war ravaged Soviet economy could not sustain the rapid mobilization needed to launch a major military offensive by surprise; the rule for Canadian planning was that until 1957 there would be twelve months' warning before the outbreak of a future war. That would leave ample time to repair and re-equip

coastal batteries: thus there was no need for the costly and manpower-intensive programme of maintaining forts in something close to a fighting state. The wooden barracks at battery sites, which were already deteriorating badly, could be dismantled, and all equipment and ammunition withdrawn to central warehouse depots where they could be properly maintained by few personnel.

The east coast regular force coast artillery establishment, now reorganized as the 49th Coast Battery, RCA, removed most of the fire control instruments from Chapel Point in July 1947. The heavy equipment -- the searchlights, generator sets and guns -- was taken out in February to April 1948. Stubberts, South Bar and Petrie were dismantled at the same time as was all equipment at Oxford and Lingan save the ammunition, heavy components of the gun mountings and the gun barrels; because of the great bulk of these last items it was more economical to maintain them on site under a minimal caretaking staff. Chapel, Petrie, Stubberts and South Bar all continued to have a war role under the army's mobilization plan. The equipment, together with the necessary documents for installation and maintenance, was stored in ordnance warehouses at Debert, NS, in labelled crates that could be quickly despatched back to the sites in the event of an apprehended conflict. Oxford, and the 9.2-inch batteries at Halifax and Esquimalt, were stricken from the mobilization plans because the threat they had been designed to counter -- bombardment by major enemy surface ships -- had all but disappeared; their armament was maintained pending arrangements

for disposal.116

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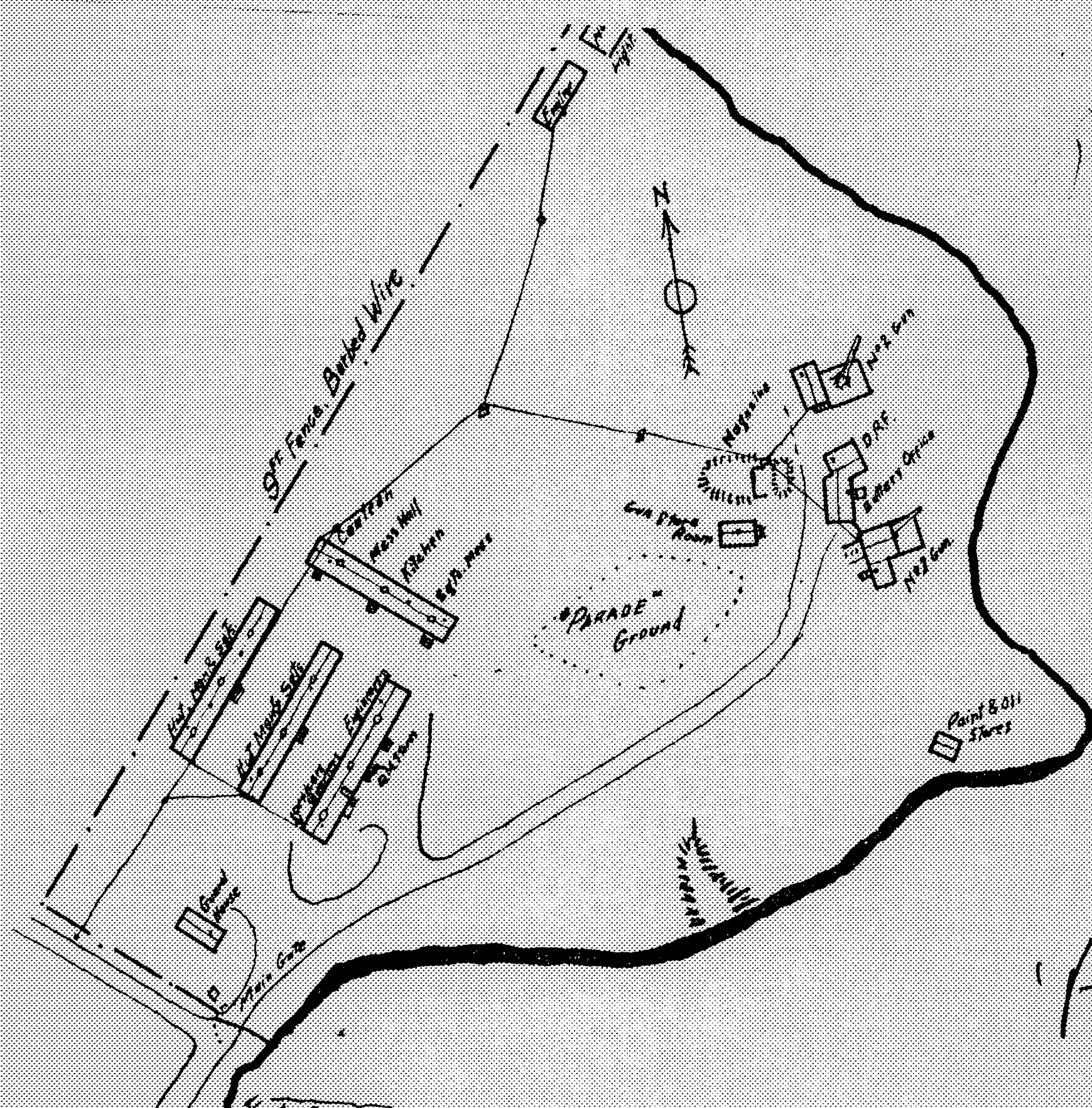
116 'Disposal of Equipment on Charge to Chapel Battery Armament Sub-District,' nd., Chapel Fort Record Book, NAC, RG 24, vol. 13148; 'Record of Coast Artillery Equipment in Storage, Chapel Battery...,' April 1948, DHist 340.019(D14); District Officer, Coast Artillery East Coast to Commander, Coast Artillery, East Coast, 19 March 1947, DHist 142.61B49009(D2) pt 1; 'Coast Defences Restricted Maintenance Policy - East Coast. Progress Report no 7/S Period Ending 30 April 1948,' DHist 142.61B49009(D3)



9 ft Fence, Barbed Wire
Engine
Light
N
Canteen
Mess Hall
Kitchen
Sgts. Mess
Magazine
No 2 Gun
D.R.F.
Battery Office
No 1 Gun
Gun Store Room
"PARADE" Ground
Engineers
Paint & Oil Stores
Guard House
Main Gate