

## 19. Construction Schedules and Completion Dates

### Reasons For Urgency

One of the points stressed most strenuously in all discussions leading to award of contracts for construction of missile bases at Larson was the extremely tight time schedule required to assure delivery of structures to the Air Force when needed. Not only was timing of projects at Larson a matter of primary importance to National Defense, but the requirement for mobilization of a large force of technicians in this isolated Central Washington Area to staff Air Force Associate Contractors' work forces made it necessary that access to areas be available to the Associate Contractors on the dates designated. Failure to provide access due to construction lag could result in the waste of a great deal of money due to the presence of non-effective personnel on Associate Contractors' payrolls. Since most Air Force work was performed on cost plus fixed fee contracts, such a loss could adversely affect funding of the entire ICBM program. Further, the entire production of Titan I Missiles and the concept of National preparedness had been predicated on the availability of the Sites by the required completion dates and timely completion of the Corps construction mission was the basic factor in the attainment of this goal.

### Compliance with Schedules

Contractors for construction of On-Base Support Facilities under Contracts ENG-3599, 3622, and 3624 maintained schedules throughout and only minor problems were encountered in assuring turn-over of facilities when required.

In construction of the missile launching facilities under Contract No. DA-45-164-ENG-3552, the successful bidder, MacDonald-Scott & Associates, started well and was ahead of schedule until Fall of 1960 when actual progress dropped below the schedule. Slippage was principally due to the many changes in the

original contract and was basically beyond the control of the contractor. The contractor asked for permission to submit a new schedule. Permission to submit the schedule for consideration was granted, but the new schedule submitted and the justification for same did not adequately support the request and the new schedule was necessarily denied. Project Engineers and the Area Construction Branch maintained close surveillance of all contractor activities to assure that there was an application of maximum effort in the structures required for early occupancy by Air Force Associate Contractors. In March 1961, a status of Joint Occupancy by Corps and Air Force contractors began in certain structures. Detailed planning by the Area Office and the SATAF was required to minimize the impact of joint occupancy. Actual scheduling of work in the individual structures was performed at the complex level by the Complex Management Group. Such groups were composed of the Corps of Engineers' Project Engineer, the SATAF Complex Commander, and The Martin Company's Site Integrator, who represented the interests of all Air Force Associate Contractors. Through close cooperation of all persons in these groups, schedules for work were laid out two weeks in advance to assure availability of the work areas to the agencies having the most urgent requirement.

#### Effectiveness of Joint Occupancy

Attached at the end of this chapter are charts indicating for each complex the contractual completion dates, actual dates of substantial completion, and dates on which final acceptance was made by the SATAF through signature of the Forms 290. It may be noted that in some structures actual completion was attained after the specified dates. However, intelligent use of joint occupancy made it possible for Associates to perform their work when required. In some

instances rescheduling of Associate or construction contractor tasks was required. By this means little or no delay in actual accomplishment of required tests was occasioned. While joint occupancy presented certain problems, actual difficulties were far less than those anticipated and the system proved to be an effective method for accomplishment of a construction program as complex as the one encountered at Larson.

#### Liquidated Damages

Although final contract dates on several structures were not met by the construction contractor, no liquidated damages were deducted from monthly progress payments to the Prime Contractor. Changes in the plans were made which will justify some time extensions in the final resolution of claims. It is expected, however, that allowable time extensions will not be sufficient to eliminate entirely the deduction of liquidated damages from the Contractor's earnings.

#### PLS and Installed Equipment Testing

Through use of lessons learned at earlier bases and by employment of key personnel who had worked on testing at such bases, many of the problems encountered on earlier Titan I construction jobs were eliminated. Detailed plans were drawn up far in advance of tests and by close adherence to plans and through full coordination with Associate Contractors there was little or no interference with other work. Testing was completed effectively and safely ahead of schedule. Representatives of the Air Force and of the appropriate Associate Contractors were represented at all tests and the buy-off after test was completed with few problems.

#### Final Turnover

All complexes were completed ahead of schedule. Final inspection of the last items at Complex 1-A was made on 20 February 1962. The complex was released at

that time to the Air Force with all testing complete and with a small number of unaccomplished items on a punch list. At Complex 1-B this status was reached on 1 March 1962, and at Complex 1-C on 20 March 1962. Substantially final completion of work at Larson may be considered as having been attained on 20 March 1962, more than three weeks ahead of the contract completion date and approximately six weeks ahead of the Air Force Need Date. On 11 April 1962, the final date of the contract, all punch list items indicated on Forms 290 had been completed.

In recognition of the accomplishment of the Larson Area Office, a telegram from Lt. General Walter K. Wilson, U. S. Army, Chief of Engineers, was received congratulating the Area Engineer and the entire Area Staff on this accomplishment. A copy of this telegram is attached at the end of this chapter. Colonel C. H. Whitesell, Director, Titan I Construction Directorate, CEBMCO, wrote a letter to Mr. R. E. MacDonald, President of the MacDonald Construction Company, Joint Venture of MacDonald-Scott & Associates, congratulating Mr. MacDonald and his firm on the timely and effective completion of the difficult task.

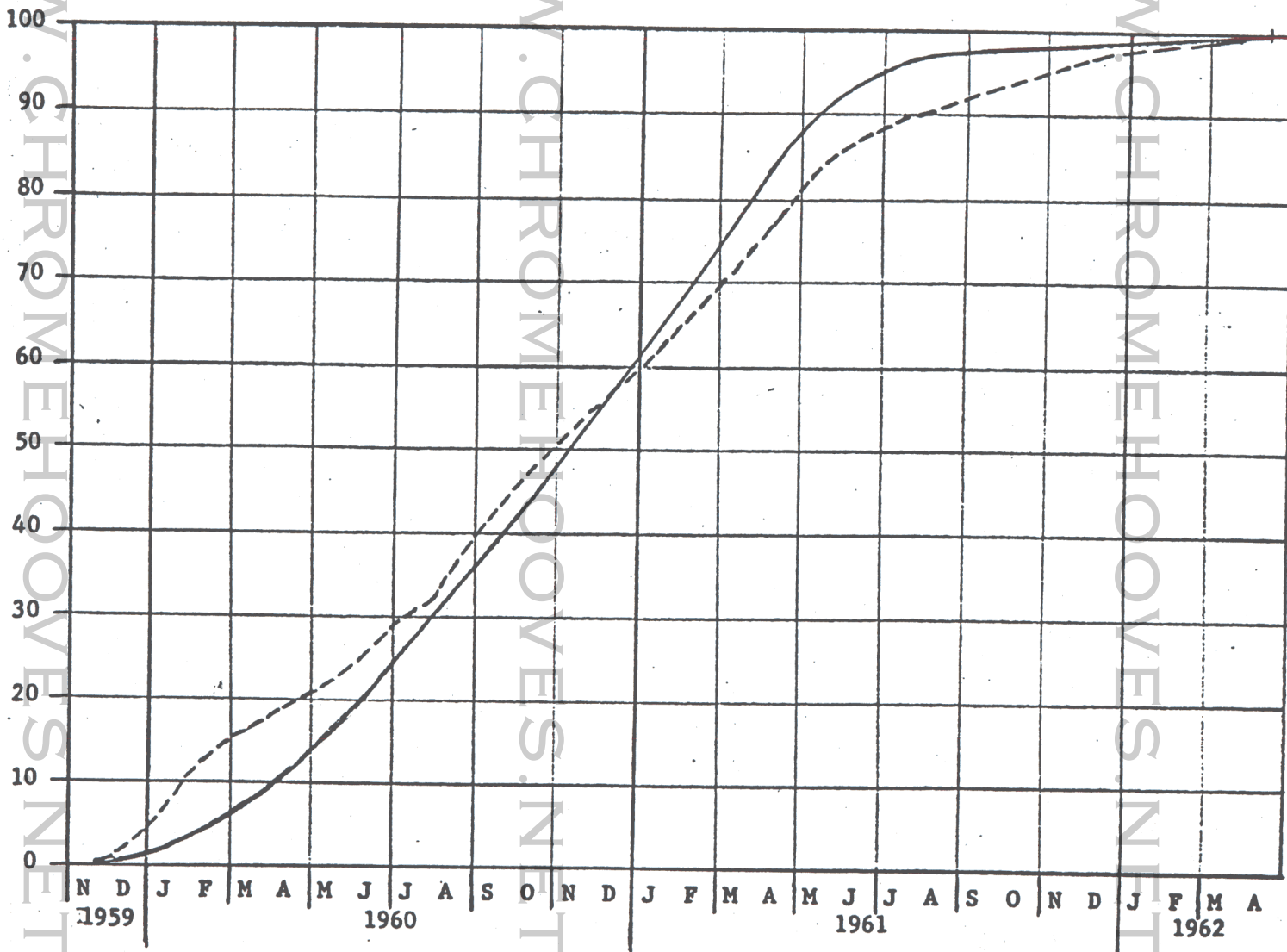
CONSTRUCTION PROGRESS

CONTRACT ENG-3552

LEGEND

- SCHEDULED
- - - ACTUAL

CHART I  
19-5  
PERCENT COMPLETE



CONTRACT COMPLETION DATE - 11 April 1962  
ACTUAL COMPLETION DATE - 20 March 1962



COMPLEX 1-A

<u>FACILITY</u>	<u>Contract Com- pletion Date</u>	<u>Date Facility Was Considered Substantially Complete</u>	<u>Date Facility Accepted By Air Force On ENG 290</u>
Missile Silos	16 Feb 62	26 Aug 61	13 Oct 61
Equipment Terminals	12 Jun 61	21 Sep 61	13 Oct 61
Propellant Terminals	17 Feb 62	27 Oct 61	23 Feb 62
Control Center	25 Aug 61	22 Jun 61	5 Oct 61
Antenna Silos	1 Jun 61	1 Aug 61	5 Oct 61
Powerhouse	25 Aug 61	9 Oct 61	9 Nov 61
Portal Silo	25 Aug 61	30 Sep 61	13 Oct 61
Antenna Terminal	11 May 61	1 Jul 61	5 Oct 61
Orientation Targets	11 May 61	22 Jun 61	15 Sep 61
Access And Site Roads	20 Aug 61	30 Aug 61	5 Sep 61
Security Fence	25 Mar 61	22 Jun 61	5 Oct 61
Sewage, Stabilization And Remainder Of Work	9 Feb 62	19 Sep 61	13 Oct 61
Tunnel Junction No. 10	25 Aug 61	15 Jul 61	26 Jan 62
Tunnels, Tunnel Junctions, Blast Locks and Launcher Air Filtration	30 Aug 61	9 Sep 61	26 Jan 62

	<u>Contract Com- pletion Date</u>	<u>Date Last Facil- ity Was Substan- tially Complete</u>	<u>Date Last Facil- ity Accepted By Air Force</u>
Entire Complex	17 Feb 62	27 Oct 61	23 Feb 62

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COMPLEX 1-B

FACILITY	Contract Completion Date	Date Facility Was Considered Substantially Complete	Date Facility Accepted By Air Force On ENG 290
Missile Silos	28 Mar 62	15 Sep 61	13 Oct 61
Equipment Terminals	11 Jul 61	15 Sep 61	13 Oct 61
Propellant Terminals	10 Mar 62	30 Nov 61	9 Mar 62
Control Center	25 Sep 61	30 Jun 61	5 Oct 61
Antenna Silos	1 Jul 61	31 Aug 61	13 Oct 61
Powerhouse	25 Sep 61	10 Oct 61	27 Nov 61
Portal Silo	25 Sep 61	29 Sep 61	13 Oct 61
Antenna Terminal	11 Jun 61	24 Jul 61	5 Oct 61
Orientation Targets	11 Jun 61	7 Jul 61	24 Aug 61
Access And Site Roads	9 Sep 61	22 Sep 61	13 Oct 61
Security Fence	25 Apr 61	30 Jun 61	5 Oct 61
Sewage, Stabilization And Remainder of Work	10 Mar 62	20 Sep 61	15 Dec 61
Tunnel Junction No. 10	25 Sep 61	28 Aug 61	26 Jan 62
Tunnels, Tunnel Junctions, Blast Locks And Launcher Air Filtration	15 Sep 61	6 Oct 61	26 Jan 62
	Contract Completion Date	Date Last Facility Was Substantially Complete	Date Last Facility Accepted By Air Force
Entire Complex	28 Mar 62	30 Nov 61	9 Mar 62

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COMPLEX 1-C

<u>FACILITY</u>	<u>Contract Com- pletion Date</u>	<u>Date Facility Was Considered Substantially Complete</u>	<u>Date Facility Accepted By Air Force On ENG 290</u>
Missile Silos	11 Apr 62	14 Oct 61	13 Feb 62
Equipment Terminals	11 Aug 61	13 Oct 61	13 Feb 62
Propellant Terminals	10 Apr 62	16 Mar 62	28 Mar 62
Control Center	25 Oct 61	19 Jul 61	13 Feb 62
Antenna Silos	1 Aug 61	2 Sep 61	13 Feb 62
Powerhouse	20 Oct 61	18 Dec 61	13 Feb 62
Portal Silo	25 Oct 61	24 Oct 61	13 Feb 62
Antenna Terminal	11 Jul 61	3 Aug 61	13 Feb 62
Orientation Targets	11 Jul 61	16 Aug 61	15 Sep 61
Access And Site Roads	30 Sep 61	12 Oct 61	3 Jan 62
Security Fence	25 May 61	19 Jul 61	9 Nov 61
Sewage, Stabilization And Remainder of Work	9 Apr 62	12 Oct 61	15 Dec 61
Tunnel Junction No. 10	25 Oct 61	30 Aug 61	28 Mar 62
Tunnels, Tunnel Junctions, Blast Locks And Launcher Air Filtration	30 Sep 61	16 Mar 62	28 Mar 62
	<u>Contract Com- pletion Date</u>	<u>Date Last Facil- ity Was Substan- tially Complete</u>	<u>Date Last Facil- ity Accepted By Air Force</u>
Entire Complex	11 Apr 62	16 Mar 62	28 Mar 62

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RR RJWZHK

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FM COFENGRS DA WASHDC

TO RJWZHK/AREA ENGINEER LARSON AFB MOSES LAKE WASH

INFO RUWPWT/COCEBMCO LOSA ATTN DIR TITAN I

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BT

UNCLAS FROM ENGCE 3997 SIGNED WILSON

CONGRATULATIONS TO YOU AND YOUR STAFF ON THE SUCCESSFUL COM-  
PLETION AND TURNOVER OF LARSON MB TO THE AIR FORCE SIX WEEKS PRIOR  
TO THE AF DIRECTED COMPLETION DAE. THE COMBINED EFFORTS OF ALL  
CONCERNED HAVE MADE A SIGNIFICANT CONTRIBUTION TO OUR NATIONAL DE-  
FENSE EFFORT AND THE SECURITY OF OUR NATION.

BT

CFN 3997

28/2354Z RUEPDA

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A True Copy:



JOHN E. GLAB

Lt. Col., CE

Exec. Officer

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U. S. ARMY, CORPS OF ENGINEERS  
BALLISTIC MISSILE CONSTRUCTION OFFICE  
5651 WEST 96th STREET  
LOS ANGELES 45, CALIFORNIA

ENCMA-TA-3

16 Apr 1962

Mr. R. E. MacDonald  
MacDonald-Scott & Associates  
1310 South Grand Avenue  
St. Louis, Missouri

Dear Mr. MacDonald:

The preservation of our free world in the current state of international affairs continues to challenge the resourcefulness and integrity of all of us. The essential completion of your ICBM contract on the date which was set nearly two years ago is an accomplishment for which you can have great pride.

I am personally pleased with the accomplishment which you and your organization have performed for I am well aware of the numerous problems which plagued you throughout the entire project. It was done under the concept of concurrent design development, and construction has been a most difficult task. It has required great engineering and construction knowledge and a willingness to cooperate far exceeding that found on a normal construction project. This contribution to the national defense effort is important to the preservation of world peace.

On behalf of the government and my staff, I thank you for your cooperation, effort and accomplishment.

Sincerely yours,

/s/

C. H. WHITESELL  
Colonel, Corps of Engineers  
Director  
Titan I Construction Directorate

A true copy:

*John E. Glab*  
\_\_\_\_\_  
JOHN E. GLAB  
Lt. Col., CE  
Exec. Officer

19-10



U. S. ARMY, CORPS OF ENGINEERS  
BALLISTIC MISSILE CONSTRUCTION OFFICE  
3651 WEST 96TH STREET  
LOS ANGELES 45, CALIFORNIA

MAIL ADDRESS  
A. F. UNIT POST OFFICE  
LOS ANGELES 45, CALIFORNIA

IN REPLY REFER TO: ENGMA-VE

26 February 1962

SUBJECT: Letter of Appreciation

TO: Area Engineer, Larson  
U. S. Army, Corps of Engineers  
Ballistic Missile Construction Office  
Larson Air Force Base, Washington

1. As I leave this Command, I wish to express my gratitude and thanks to you, and the personnel of your Office, for the way you have accomplished the vital task of constructing the ICBM facilities at Larson Air Force Base. There have been no easy tasks within CEBMCO. However, your position of Area Engineer was one of the most important, the most demanding, and the most difficult. Your achievements speak well for the fine team you have headed and the able way they have performed.

2. We all know that it is the people out in the field, the ones on the firing line as it were, whose accomplishments determine the success of any effort. We at Headquarters are well aware of the difficulties you have faced and successfully surmounted. We recognize that each of our Areas has made a tremendous contribution to the urgent ICBM program. Each of our Area Engineers is to be congratulated, both for his personal efforts and for the way he built and directed a competent and effective organization in the face of unprecedented handicaps.

3. I want to thank you for your tireless efforts and unflagging support. I realize these went far beyond the ordinary. Please extend my personal thanks and my gratitude to all of your personnel for the part they played in helping to achieve the goals demanded by

ENGMA-VE

SUBJECT: Letter of Appreciation

26 February 1962

our critical mission. Through their skill and talent, their hard work, and their high standards, they have made your Base an important contribution to construction history.

4. With great appreciation for your work, and with a hearty "Well done!" for your success, I extend my sincere best wishes for the future.



T. J. HAYES

Colonel, Corps of Engineers  
Commanding

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PART III

CONTRACT ADMINISTRATION

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20. HISTORY OF EACH CONSTRUCTION CONTRACT

This portion contains a brief history of each construction contract with original and final contract cost exclusive of unsettled claims, the total number of modifications and claims exceeding \$100,000 each together with their description and comments concerning their settlement. The information provided concerning the modifications is current as of 1 May 1962.

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CONTRACT NUMBER DA-45-164-ENG-3552

WS-107 A-2 TECHNICAL FACILITIES  
MISSILE LAUNCH COMPLEXES

General Information:

**Date of Contract:** 20 November 1959

**Contractor:** MacDonald-Scott & Associates, a  
joint venture of; MacDonal Construction  
Co., The Scott Co., Paul Hardeman Co.,  
C. H. Leavell Co., F. E. Young Construction  
Co., and Morrison-Knudsen Co., Inc.

**Notice to Proceed:** 21 November 1959

**Original Contract Amount:** \$31,600,722 for three sites.

**Modifications:** To 1 May 1962 of 427 Change Orders proposed;  
53 have been cancelled, 374 have been com-  
bined into 339 modifications and none  
remain open.

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Of these 339 modifications, the following resulted in increases in the contract amount over \$100,000.

<u>Modification Number</u>	<u>Amount</u>	<u>Modification Number</u>	<u>Amount</u>
54	\$ 377,764	253	\$ 158,500
55	210,000	255	209,448
56	1,256,500	301	699,552
58	123,315	311	164,538
61	225,000	317	1,050,000
72	106,068	318	1,300,000
125	169,994	319	117,858
132	1,249,444	324	150,000
149	168,200	327	125,200
154	257,790	328	103,500
188	107,340	331	103,750
205	229,287	332	138,000
206	199,099	334	172,494
208	139,581		
226	254,539		
228	804,000		
233	125,490		
242	355,610		
243	107,443		
246	200,485		

Final Contract Amount (exclusive of unsettled claims): \$46,691,905

SUMMARY OF MODIFICATIONS OVER \$100,000

Modification No: 54  
Date: 23 October 1961  
Description: Miscellaneous Changes  
Amount: \$377,764

Modification No: 55  
Date: 1 August 1961  
Description: Redesign of PLS Piping  
Amount: \$210,000

Modification No: 56  
Date: 3 August 1961  
Description: Changes to PLS Pipe Supports - LOX Cribs,  
Missile Silos and Propellant Terminals  
Amount: \$1,256,500

Modification No: 58  
Date: 30 August 1961  
Description: Missile Silo Doors  
Amount: \$123,315

Modification No: 61  
Date: 9 June 1961  
Description: Changes to PLS Piping Tunnel Supports  
Amount: \$225,000

**Modification No:** 72  
**Date:** 14 March 1962  
**Description:** Bench Testing Safety Valves  
**Amount:** \$106,068

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**Modification No:** 125  
**Date:** 10 August 1961  
**Description:** Reinforce Blast Locks  
**Amount:** \$169,994

**Modification No:** 132  
**Date:** 12 February 1962  
**Description:** Revised PLS Testing Specifications  
**Amount:** \$1,249,444

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**Modification No:** 149  
**Date:** 20 June 1961  
**Description:** General Revision No. 2  
**Amount:** \$168,200

**Modification No:** 154  
**Date:** 28 July 1961  
**Description:** Additional Flex Hose Supports  
**Amount:** \$257,790

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Modification No: 188  
Date: 31 January 1962  
Description: Manufacturers' Representatives  
Amount: 107,340

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Modification No: 205  
Date: 28 February 1962  
Description: Antenna Silo Corrections  
Amount: \$229,287

Modification No: 206  
Date: 3 April 1962  
Description: Pickling Fuel and Lubricating Oil Pipe  
Lines for Diesel Engines  
Amount: \$199,099

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Modification No: 208  
Date: 21 February 1962  
Description: Cleaning & Preparation of PLS Equipment  
Amount: \$139,581

Modification No: 226  
Date: 20 February 1962  
Description: Haul Government Furnished Liquids to Sites  
Amount: \$254,539

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**Modification No:** 228  
**Date:** 30 October 1961  
**Description:** Powerhouse Changes  
**Amount:** \$804,000

**Modification No:** 233  
**Date:** 16 October 1961  
**Description:** Flexible Hose Revision  
**Amount:** \$125,490

**Modification No:** 242  
**Date:** 28 February 1962  
**Description:** Reclean CompuDyne Valves  
**Amount:** \$355,610

**Modification No:** 243  
**Date:** 29 November 1961  
**Description:** RP-1 Fuel System Pipe Welding Procedures  
**Amount:** \$107,443

**Modification No:** 246  
**Date:** 22 March 1962  
**Description:** Additional Flexible Hoses in Equipment  
Terminal  
**Amount:** \$200,485

**Modification No:** 253  
**Date:** 22 March 1962  
**Description:** Revisions to Blast Locks  
**Amount:** \$158,500

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**Modification No:** 255  
**Date:** 28 February 1962  
**Description:** Bolted Anchorage for Powerhouse Pipe Support  
**Amount:** \$209,448

**Modification No:** 301  
**Date:** 20 April 1962  
**Description:** Water Problems 1-C  
**Amount:** \$699,552

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**Modification No:** 311  
**Date:** 24 April 1962  
**Description:** Blowdown of RP-1 Fuel System  
**Amount:** \$164,538

**Modification No:** 317  
**Date:** 30 April 1962  
**Description:** Overbreak Claim  
**Amount:** \$1,050,000

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**Modification No:** 318  
**Date:** 30 April 1962  
**Description:** D. W. Close Claim  
**Amount:** \$1,300,000

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**Modification No:** 319  
**Date:** 30 April 1962  
**Description:** Weber Showcase & Fixture Co. Claim  
**Amount:** \$117,858

**Modification No:** 324  
**Date:** 30 April 1962  
**Description:** Murphy Bros. Claim  
**Amount:** \$150,000

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**Modification No:** 327  
**Date:** 30 April 1962  
**Description:** Replacement of Sugared Pipe  
**Amount:** \$125,200

**Modification No:** 328  
**Date:** 30 April 1962  
**Description:** Sam Fox Sheet Metal Claim  
**Amount:** \$103,500

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**Modification No:**

**331**

**Date:**

**30 April 1962**

**Description:**

**Meehleis Steel Co. Claim**

**Amount:**

**\$103,750**

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Summary of Claims:

As of 8 March 1962, the Contractor had presented a total of 228 claims. Of these, 59 were settled as Change Orders in the amount of \$1,673,769; 35 were approved in principle; 31 were combined or withdrawn; 8 were denied by the Contracting Officer and were appealed; and 95 were either active or potential.

On 8 March 1962, the Contractor withdrew and consolidated the 95 active or potential claims previously asserted and submitted a new list of 85 claims, of which 22 represented subcontractor items.

To date, 46 have been settled as Change Orders; 13 have been combined or withdrawn; 8 are in appeal status; 8 have yet to be submitted; and the following 10 are currently being considered:

a. .29-106 Water Leakage at 1-C (1961) in the amount of \$1,347,683 was submitted on 6 March 1962 and is being considered by the Contracting Officer, with approval in part.

b. .29-58 and 112 Claim for Tunnel Settlement in the amount of \$378,496 was submitted on 19 April 1962 and is under consideration by the Area Office.

c. .29-17 and 23 Claim for 1960 Water Costs and Additional Water-proofing Costs at Complex 1-C in the amount of \$229,097 was submitted on 19 April 1962 and is under consideration by the Area Office.

d. .29-241 Claim for Miscellaneous Mechanical Matters in the amount of \$306,098 was submitted on 25 April 1962 and is under consideration by the Area Office.

e. .29-235 Rework, Recleaning and Reinspection of Items Previously Accepted by the Government in the amount of \$69,057 was submitted on 18 April

1962 and is under consideration by the Area Office.

f. .29-238 Claims from Lockheed Aircraft Service, Inc. in the amount of \$107,237 was submitted on 18 April 1962 and is under consideration by the Area Office.

g. .29-239 Claims for Ree-Son Corporation in the amount of \$105,378 was submitted on 26 April 1962 and is under consideration by the Area Office.

h. .29-235 Claims from Anaconda in the amount of \$60,527 was submitted on 18 April 1962 and is under consideration by the Area Office.

i. .29-230 Claims from Eaton Metal Products in the amount of \$1,272,843 was submitted on 3 April 1962 and is under consideration by the Area Office.

j. .29-240 Claims for Additional Costs Not Allowed by the Government while Settling 157 Modifications Prior to 12-1-61, Which 157 Mods Were Protested Accordingly in the amount of \$2,005,548 was submitted on 25 April 1962 and is under consideration by the Area Office.

The 8 claims denied by the Contracting Officer and appealed to the Corps of Engineers Board of Contract Appeals are as follows:

a. .29-3 Field Erection of Water Chillers (ENGBCA No. 2118) in the amount of \$11,700 was received on 10 September 1960.

b. .29-38 Entry Portal Hydraulic Power Unit and Accumulator Bank (ENGBCA 2104) in the amount of \$26,879 was received on 23 June 1961.

c. .29-39 Cable Tray Covers (ENGBCA No. 2115) in the amount of \$109,006 was received on 17 February 1961 and is to be withdrawn by the Contractor.

d. .29-49 Red-Lead Painting of Tunnel Junctions (ENGBCA No. 2116)

in the amount of \$44,448 was received on 8 March 1961.

e. .29-51 Angles for Elevator Threshold (ENGBCA No. 2114) in the amount of \$2,707 was received on 9 March 1961.

f. .29-64 Outersupport of LOX Storage Tanks (ENGBCA No. 2103) in the amount of \$238,354 was received on 12 May 1961.

g. .29-69 Electrical Installation Drawings (ENGBCA No. 2113) in the amount of \$29,089 was received on 16 March 1961 and is to be withdrawn by the Contractor.

h. .29-75 Painting of Unistruts (ENGBCA No. 2117) in the amount of \$179,652 was received on 12 June 1961.

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Summary of Costs:

The contract amount as of 1 May 1962 is composed of the following cost:

1. Original Contract Amount for 3 Sites:	\$31,600,722.00
2. Assigned Standardized Equipment Contracts:	4,347,005.01
3. Modifications 1 through 339, except Mod. 15:	5,091,183.00
4. Overrun of estimated quantities which have not yet been incorporated in a modification to the contract:	80,999.00
5. Outstanding claims 40, 46, 52, 55, 66, 72, 73, 74, 75, 76 and 77 estimated settlement:	5,551,000.00
TOTAL POTENTIAL COST	\$56,670,909.00

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CONTRACT NUMBER DA-45-164-ENG-3599

SUPPORT FACILITY FOR  
WS-107 A-2 TECHNICAL FACILITIES  
MISSILE LAUNCH COMPLEXES

**Date of Contract:** 9 September 1960

**Contractor:** Lewis Hopkins Company  
221 South Third Street  
Pasco, Washington

**Construction:** Re-Entry Facilities at  
Larson Air Force Base,  
Moses Lake, Washington

**Notice to Proceed:** 9 September 1960

**Original Contract Amount:** \$172,517.00

**Modifications:** A total of 3 Modifications were proposed:

1. No Cost
2. \$402.00
3. \$368.00

**Claims:** No claims were submitted by the Contractor

**Final Contract Amount:** \$173,287.82

**Final Earnings:** \$174,788.27 (Contains \$1500.45 for over  
and underruns.)

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CONTRACT NUMBER DA-45-164-ENG-3622

SUPPORT FACILITY FOR  
WS-107 A-2 TECHNICAL FACILITIES  
MISSILE LAUNCH COMPLEXES

Date of Contract 25 October 1960

Contractor: H. Halvorson, Inc.  
5218 E. Sharpe Avenue  
Spokane, Washington

Construction: Liquid Oxygen Facilities at  
Larson Air Force Base,  
Moses Lake, Washington

Notice to Proceed 25 October 1960

Original Contract Amount: \$377,638.00

Modifications: A total of 7 Modifications were proposed:

1. No Cost

2. \$ 82.00

3. \$413.00

4. No Cost

5. \$222.00 Credit

6. \$383.00

7. \$730.00

Claims: The Contractor submitted three claims,  
all of which were less than \$100,000.  
These claims were negotiated and  
Modifications No. 5, 7, and 10 were  
issued in the amounts of \$301, \$6,088,  
and \$3,262, respectively.

Final Contract Amount: \$388,675.00

CONTRACT NUMBER DA-45-164-ENG-3624

SUPPORT FACILITY FOR  
WS-107 A-2 TECHNICAL FACILITIES  
MISSILE LAUNCH COMPLEXES

**Date of Contract:** 1 November 1960

**Contractor** Elmer Visser, dba  
Quality Builders  
P. O. Box 1503  
Tacoma 1, Washington

**Construction:** Missile Assembly Building at  
Larson Air Force Base  
Moses Lake, Washington

**Notice to Proceed:** 1 November 1960

**Original Contract Amount:** \$414,200.00

**Modifications:** A total of 19 Modifications were issued:

1. No Cost	11. \$304
2. \$64	12. \$68
3. No Cost	13. No Cost
4. \$3,865	15. \$1,885
5. \$266	17. \$1,475
6. (\$206) Credit	18. \$222
7. No cost	19. \$4,934
8. \$576	20. \$17,700
9. \$391	22. \$15,823
10. \$61	

**Claims:** The Contractor submitted 14 claims, all of which were less than \$100,000. These claims, except one which was denied and will not be appealed, and one for \$12,090.61 which was denied and will be appealed, were negotiated as follows:

Mod 14 \$ 325  
Mod 16 \$ 988  
Mod 18 \$ 396 (One C.O. & Claim incl in Mod)  
Mod 19 \$ 2,272 (Two C.O.'s & Claim incl)  
Mod 20 \$ 477 (Six C.O.'s & Claim incl)  
Mod 21 \$20,625  
Mod 23 \$ 5,522  
Mod 24 \$17,052  
Mod 25 \$11,767  
Mod 26 \$ 8,510

**Final Contract Amount:**

**\$529,562.75 (No allowance for denied claim)**

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