

The Database of Cost References by Group—PDF#8

Prepared by Heuston Consulting, Inc., July 2009

Coldwarweaponsystemcosts.com

FACILITIES (Military and Commercial)

F1 – Individual Aircraft Shelter

Cost \$15,000 to \$20,000, Individual Unit, Depending on ground preparation.
Discussion – are of a standard design – 100 ft long and 48 ft. wide with a height to the top of a semi circular arch of 24 ft.
Shelters consist of a double corrugated steel arch covered with 18 in of high strength concrete giving a total thickness of 24 – 25 in.
To protect an aircraft only against near misses and blast effects.
Source – Aviation Week, December 7, 1970, p 25.
Recorded – December 18, 1970.

F2 – Runway Tie Ups

Cost -- \$175,000 per hour
Discussion –
Source – American Aviation, June 9, 1969, p 47.
Recorded – September 30, 1969.

F3 – Off Shore Airport Construction

Cost – for one type would be as high as \$1,4 million per acre.
Discussion – for construction in shallow, protected fringe water areas, runway space for \$18,000 - \$200,000 per acre. Been used already for runway expansion at San Francisco International Airport, extends shore line with fill dirt.
Dike and Polder
Based on method used in the Netherlands building a dike to create dry land polders. Lake Michigan proposal utilizes this concept. The cost about \$30,000 per acre in shallow water areas.
Pike – min. of 4435,000 per acre. LaGuardia using this method. Multiple level construction of piles -- \$1.4 mil./acre.
Floating -- \$1.3 million.
Source – Aviation Week, November 17, 1969, p 41.
Recorded – January 28, 1970.

F4 – Dallas Fort Worth Regional Airport.

Cost – Rising costs will push price to \$601 million.
Discussion – and ultimate cost may be as much as \$1 billion. Land alone, which had been expected to cost \$21 million to \$25 million, now projected to climb to \$35 million or higher.
Land purchased for country's largest air carrier terminal now totals about 9,700 acres of planned 18,000 acres, and has cost about \$17.9 million.
Source – American Aviation, February 17, 1969, p 29.

Recorded – April 17, 1969.

F5 – NIKE Battery Site

Cost – about \$1,400,000

Discussion – about \$1,400,000

But in exception cases terrain features may cause the cost to rise as high as \$2,100,000.

4 batteries to a battalion, we can conclude that the \$175 million appropriation (authorized in Slices IX to XI) will meet the bulk of the need but that some follow up money will be needed in future slices.

Source – Common Funding in NATO, RAND RM-5282-PR, June 67, p 47.

Recorded – September 4, 1968.

F6 – Aircraft Shelters

Cost -- \$15,000 to \$20,000 a piece

Discussion – The bomb proof shelter frames generally resemble rounded Quonset huts. Made of deeply fluted, 10 gauge steel plates, they are painstakingly joined together by hand, using 17,000 nuts and bolts.

Air Force construction men said that the first shelter frame took two weeks to erect, but that the time was being cut in half.

23' high, 70' deep, and 47 ft across, just wide enough to accommodate the wingspread of the Phantom F-4 jets.

Made by Wonder Trussless Buildings, Inc., Chicago.

Source – Weekly News, OSAF, 2 August 1968, NY Times, July 28, 1968.

Recorded – August 29, 1968.

F7 – March Air Force Base, COC

Cost -- \$8 million

Discussion – 43,000 sq ft., 600 ft. of cover, diesel powerplant

Source – RAND RM-2790-PR, Dept of Cover for Superhard Installations-Effectiveness and Costs, August 1961. p 38.

Recorded – March 27, 1964.

F8 – NORAD COC Construction

Cost – about \$23 million

Discussion – about 900 ft of cover

150-180,000 sq. ft.

Diesel powerplant

Source – RAND RM-2790-PR, Depth of Cover for Superhard Installations – Effectiveness and Cost, August 1961, p 38.

Recorded – March 27, 1964.

F9 – Launch Pad

Cost -- \$121.6 million

Discussion – Cost of 8 launch pads including standard umbilical towers=24.0 mil, with utilities.

Cost of 8 Saturn type gantry's @ ¾ Sat. gantry, cost each = 24.0 million
 Electronics – sets plus additional mobile equipment = 7.0 (2.5 m for added equ.)
 Pneumatics and Hydraulics = 1.0 million
 Four blockhouses complete = 8.0 million w/utilities
 1,200 ft of rails for gantry to pad @ #1,000/ft (For 8 pads) = 9.6 million
 Cabling (\$4.0 million for each of 4 blockhouses) = 16.00 million
 Propellant Loading Systems (8) = 32.0 million
 Total = 121.6 million

Launch Site Ground Environment Fixed Cost Items

Balance of Integration Building = 12.5 million
 Misc. Structures (Gas compressor bldg, ready room, storage & support = .9 mill.
 Misc. Facilities (docks and harbors, harbor prep., site prep, data reduct = 14.0 mil
 GSE Installation, Checkout, and Initial Spares = 50.8 million
 Total = 78.2

Source – RAND RM-2855-SSD, The Integrated Transfer Launch System for Large Boosters, December 1961, p 19.

Recorded – May 18, 1964.

F10 – Integrate Transfer Launch Installations

Cost -- \$44.2 million
 Discussion – Cost of vertical assembly area = 10.0 mil (ind. Util)
 Electronics (4 sets at integ. Building = 4.5 mil
 Pneumatics & Hydraulics (integ. Bldg) = .2 mil
 Two launch pads complete minus gantry but including
 Service type towers = 8.5 mil
 One blockhouse complete = 2.0 mil
 Transfer table and rails = 5.3 mil
 Cabling for integ. Bldg & blockhouse = 5.7 mil
 Propellant Loading System (2) = 8.0 mil

Source – RAND RM-2855-SSD, The Integrated Transfer Launch System for Large Boosters, December 1961, p 19.

Recorded – May 18, 1964,

F11 – Earth Orbital Launch Facility for planetary exploration

Cost -- \$861 million
 Discussion – Boeing told NASA MSFC
 Take 4 years to build
 The company would make use of Apollo and manned orbiting research laboratory (MORL) facilities for launching manned planetary expeditions.
 Source – Aviation Week, December 13, 1965, p 23.
 Recorded – January 19, 1966.

F12 – Brewster Flat, Washington, COMSAT Fixed Earth Station

Cost -- \$909,382 for construction

Discussion – Vern W. Johnson & Sons, Inc. of Spokane, Wash. Was selected in November to build the facility with completion due by June 30 of this year. The new stations (Andover, Brewster, and Paumalu) will be capable of monitoring their own signals, receive the 3,700 to 4,200 mc band, and transmit in the 5,925 to 6,425 mc band.

There is room for 5 antenna systems at the 310 acre Brewster Flat Site.

Source – Missiles & Rockets, January 31, 1966, p 54.

Recorded – February 14, 1966.

F13 – Paumalu, Oahu Fixed Earth Station

Cost -- \$948,362 for construction

Discussion – J. P. Finan general Construction of Honolulu

Source -- Missiles & Rockets, January 31, 1966, p 54

Recorded – February 14, 1966.

F14 – Voyager Clean rooms

Cost -- \$2 million more than one conforming to current industry standards

Discussion – Class 100 clean room.

Laminar flow type with air flow from ceiling to floor

Not more than 100 particles, 0.3 microns or smaller in a cubic foot of air.

Source – Aviation Week, December 6, 1965, p 63.

Recorded – December 28, 1965.

F15 – Coral Excavation, Johnson Island

Cost – 75 Cents per cubic yard in place

Discussion – 587,000 cu yds of material in place for increased acreage

12 ft above mean lower low water

Material = live coral heads surrounded by coral debris, coral sand, and coral silt.

Thin strata of hard coral were expected at depths of 15 to 19 ft below mean low water.

Worked by a cutterhead pipeline dredge.

Source – The Military Engineer, July-August 1962, p 256.

Recorded – February 7, 1966.

F16 – ILC, Initial Launch Capability for the MOL

Cost -- \$28 million

Discussion – Estimated cost of ILC, an all purpose facility that will also handle Titan III-D is \$28 million.

Will take about 30 months.

Source – Missiles & Rockets, January 10, 1966, p 36.

Recorded – February 9, 1966.

F17 – Integrated Transfer Launch Complex

Cost -- \$25 million in addition to ILC costs of \$28 million.

Discussion – The single launch pad of the ILC will, in effect, be the core of the Titan III ITL complex at Cape Kennedy.

ITL becoming operational in about 1969 or 1970.
Source – Missiles & Rockets, January 10, 1966, p 36.
Recorded – February 9, 1966.

F18 – Dulles International Airport

Cost -- \$115 million
Discussion – Arrivals and departures totaled 740 on November 20, 1963, during President Kennedy's funeral.
Source -- Aviation Week, November 2, 1964.
Recorded – October 2, 1964.

F19 – Checkout Equipment

Cost -- \$250 million to \$300 million
Discussion – Thomas – total run-out cost for the checkout equipment
Thomas – how would you breakdown your manufacturing cost as between hardware and salary costs?
Shea – In the checkout area, \$101 million of a \$153 million total. Our estimate for this fiscal year, \$54 million worth of engineering services and \$45 million worth of hardware.
Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 361
Recorded – October 31, 1963.

F20 – Building Rental – NASA – Office Space – Cape Canaveral

Cost -- \$1 - \$1.50 per sq ft. normal rate, \$4.5 at Launch Operations Center, Cocoa Beach, FL
Total annual cost \$175,233, approximately, \$4.5 per sq. ft
Heat, lights, water, complete minus furniture and maintenance.
Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 361
Recorded – October 31, 1963.

F21 – Life Science Research Center

Cost -- \$4.6 million in the space authorization bill.
Nothing more than a space school of medicine, already been done at Houston.
This facility would rather duplicate work being done by the Air Force School of Aviation in San Antonio and the Navy School of Aviation, Pensacola.
Provide facilities to conduct research and development in the fields of biotechnology, biomedical research and support, and exobiology.
Laboratory space, offices, and requisite support functions and systems are included in the request to permit research in these fields and the required system, subsystems, and cellular subdivisions thereof
3 major facilities.
2 stories high with a full basement
2 smaller units will provide 21,000 sq ft of floor space
3rd will add approximately 64,000 sq ft of additional floor space including about 6,000 of office space. Total 106,000 sq ft.
Cost does not include request for funds for portable equipment.

Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 179
Recorded – October 25, 1963.

F22 – Wind Tunnel – Langley – NASA

Cost -- \$7,957,000 (construction)

Discussion – Navy -- \$6.1 million for their duplication facility

Building it for 2 years

Speeds up to Mach 20.

Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 176

Recorded – October 25, 1963.

F23 – Office Space – NASA – Huntsville

Cost -- \$2.82 per sq. ft.

Discussion included – Heat, light, water, and maintenance

264,076 sq. ft.

\$745,500.

Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 259

Recorded – October 28, 1963.

F24 – Bridges and Roads – Wallops Station – NASA

Cost -- \$1.5 million

Discussion – 6,478 acres total

2,230 acres occupied by the main base, 108 acres by the mainland area

3,000 acres by the island and 1,140 acres is marshland

All NASA owned

Plant value as of June 30, 1962, was \$52,133,000.

Source – House Appropriations Committee Hearing, 88th Congress, Part 3, p 275

Recorded – October 29, 1963.

F25 – Federal Hospitals – Inpatient Day of Operating Federal Hospitals

Cost -- \$22.51 per day

Discussion – Air Force \$30.06 FY 62.

Veterans Administration -- \$26.55

Freedmen’s Hospital, Washington, \$34.33.

Source – DoD 64, House Hearings Subc. of Appropriations Committee, 88th
Congress, 1st Session, Part 4, p 250

Recorded – November 15, 1963.

F26 – Administrative Management Building – Construction – Ames Research Center

Cost – NASA –

A. Land Acquisition

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B. Site Development & Utility install

\$121,000

Site improvement

13,000

Roads, walks, & parking

68,000

Utility connection

8,000

Elect. Distribution

32,000

C. Facility construction & Modif.		1,182,000
Office area (47,100 sq ft @ \$19.50/sq ft)	\$913,000	
Basement areas (17,600 sq ft @ \$15/sq ft)	\$264,000	
D. Equipment, instr., & support		--
E. Design and engineering services	72,000	
Total estimated cost		\$1,375,000

Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 508
Recorded – November 1, 1963.

F27 – Life Sciences Research Laboratory – Ames Research Center – NASA

Cost – \$4,800,000

Discussion –

A Land Acquisition		--
B. Site Development & Utility Install		\$300,000
Site prep & landscaping	15,000	
Roads, walks, and parking	58,000	
Utility connections	27,000	
Substation breakers, transf, & switch.	34,000	
Emergency generator	40,000	
Electrical Distribution	126,000	
C. Facility construction & modif.		2,940,000
Building (106,000 sq ft @\$22.90)	2,425,000	
Special ventilation & fans	140,000	
Special lab. Plumbing	260,000	
Special air conditioning for Isolated labs	50,000	
Special electrical systems	65,000	
D. Equipment instrumentation & sup. syst.	1,400,000	
Specialized built in equipment		
Radioactive material handling		
Storage, disposal, and protect. Equip	270,000	
Decontamination equipment	10,000	
Radioisotope receiving storage		
And dispensing equipment	75,000	
Electron microscope equip.	40,000	
Shielding & equip for radiation wk	20,000	
E. Design & engineering services		240,000
Total		4,800,000

Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 512
Recorded – November 1, 1963.

F28 – Satellite Attitude Test Facility Construction – Ames Research Center – NASA

Cost -- \$1,230,000

Discussion – similar details as F27. Contact us for additional details.

Source – Same Source as F27, p 515.

Recorded – November 1, 1963.

F29 – Space Environment Research Facility

Cost -- \$3,600,000

Discussion – similar details as F27. Contact us for additional details.

Source – Same as F27, p 517.

F30 – Structural Dynamics Laboratory – Ames Research Center – NASA

Cost -- \$1,644,000

Discussion – similar details as F27. Contact us for additional details.

Source – Same as F27, p 521.

F31 – Utility Installations – New Area, Launch Operations Center – NASA

Cost – as follows

Discussion –

Primary roads – 3.5 miles at Banana River causeway northward = \$630,000

Power transmission lines and substation – 13,200 linear feet of 6-way direct (\$10/linear ft.) = \$132,000

26,400 linear ft. of 24-way direct (\$42/linear ft) = \$1,108,000

Area improvements

30 sq. miles of shoreline @\$40,000/sq mile = \$1,200,000

5 sq. miles of interior land @\$30,000/sq mile = \$150,000

Facility – water pumping station (20/sq. ft) = \$60,000

Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 565

Recorded – November 4, 1963.

F32 – Central Instrumentation – Launch Operations Center – NASA

Cost -- \$31,508,000

Discussion – see details on page 558

\$50/sq ft, due primarily to humidity control, temperature and lighting.

94,000 sq ft in largest building, 7,800 in the others.

Source – House Appropriations Committee Hearing, 88th Congress, Part 3, p 557.

Recorded – November 4, 1963.

F33 – Land at Electronics Research Center

Cost -- \$3,000 per acre

Discussion –

Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 703

Recorded – November 4, 1963.

F34 – Range Instrumentation Site – NASA

Cost -- \$4,823,000

Discussion – similar details as F27. Contact us for additional details.

Source – Same as F27, p 591.

F35 – Vertical Assembly Building – NASA

Cost -- \$104 million

Discussion – Holmes – 45 stories, 524 ft high, 524 wide, and 524 deep.

Source – Senate Aero & space Sciences Committee Hearings, 88th Congress, 1st Session, Part 1, p 568.
Recorded – November 5, 1963.

F36 – Shelter Development – OCD

Cost -- \$25 per space.

Pittman – 10 sq ft per space, or \$25 per person. That is big enough for a person to lie down touching the next person.

Ostertag – to produce 10 million shelter spaces at an average cost of \$17.

Pittman – The ventilation is about 12, incorporation in new construction is \$25, and the structural medication is \$22.

Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 1024.

Recorded – November 5, 1963.

F37 – Broadcast Station Protection – OCD

Cost -- \$5.600

Discussion – Durkee -- \$20 per sq ft to protect operating personnel

Physical barrier shielding.

Source – House Appropriations Committee Hearings, 88th Congress, Part 3 p 970

Recorded – November 5, 1963.

F38 – Fallout Shelter – General – GSA

Cost – Average \$40/person

Discussion – Newman, Ga, \$119/person

Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 890

Recorded – November 5, 1963.

F40 – Fallout Shelter – Fresno, Calif., GSA

Cost -- \$135,100

Discussion – 82 cents per sq ft.

Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 886

Recorded – November 5, 1963.

F41 – Emergency Hospitals – Dept of Health, Education, & Welfare.

Cost -- \$45,000

Discussion – Ferrazzano – the training hospital = \$10,000

200 beds in completed hospital, fewer beds in training hospital

Total inventory of medicines = \$60 million

200 Army cots, 3 operating room suites, each containing a table, a light, and an anesthesia machine, & x-ray. Needs food, fuel, and transportation.

1,100 sq ft, 7,000 cu ft, stocked up about 6 ft.

Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 835
And p 839.

Recorded – November 5, 1963.

F42 – Barge Lock and Channel Construction – Port Canaveral -- NASA
 Cost -- \$1 million – NASA -- \$5 million – Corp. of Engineering
 Discussion – Col. Petrone -- \$1 million estimate is for changing a 54 ft lock to 90 ft so we can get through the largest vehicle.
 Also lock operations building and deepening existing channel from 10 ft to 12 ft.
 Source – House Appropriations Committee Hearing, 88th Congress, Part 3, p 556.
 Recorded – November 4, 1963.

F43 – South Pole Weather Station
 Cost -- \$18 to \$20 million
 Discussion – Thomas – operated by National Sciences Foundation and the Navy.
 Source – House Appropriations Committee Hearing, 88th Congress, Part 3, p 377.

F44 – Missile Shelter – Excavation
 Cost – Unit price – as follows
 Discussion –

	Unit	Labor	Material	Total
a. Power Shovel and hand Trimming	CY			1.00
b. to 5,000	CY			.90
5,000-10,000	CY			.70
10,000-20,000	CY			.60
20,000-30,000	CY			.50
30,000-100,000	CY			.45
Over 100,000	CY			.40

Source – Advanced Minuteman Facilities, AMF, August 21, 1961, p 4-4
 Recorded – August 18, 1964.

F45 – Aircraft Shelter – NATO
 Cost -- \$100,000 each
 Discussion – an earth covered steel shell with an armor plated door.
 Source – Aviation Week, February 10, 1964, p 21.
 Recorded – May 14, 1964.

F46 – High Power VHF Troposcatter Facilities
 Cost -- \$175,000 -- \$245,000 per each
 Discussion – FAA estimate
 Similar to the one being installed in Hawaii.
 If outfitted for both VHF and UHF
 These figures include installation costs in the contiguous 48 states, but do not cover land or access road construction expenses.
 Also, the agency emphasizes that the figures are based on moderate quantity production procurement.
 Source – Aviation Week, October 25, 1965, p 87.
 Recorded – November 26, 1965.

F47 – Albuquerque, N.M., Jet Terminal
 Cost -- \$2.5 million

Discussion – structure has 160,000 sq ft on three levels or about 5 times area of present terminal.

To be dedicated November 13.

Source – Aviation Week, November 1, 1965, p 33.

Recorded – November 26, 1965.

F48 – COMSAT Ground Station

Cost -- \$500,000, including normal technical services involved in installation and Operations.

Discussion – The ground terminal. Consisting of an unusual horn antenna, avionic equipment van and mobile antenna pedestal.

Page Communications Engineering, Inc., subsidy of Northrop.

Typical ground terminals now under development are expected to be priced from about \$1 million to \$5 million, depending on the degree of complexity.

The horn antenna, the heart of the system, is called a “Casshorn” by Page.

Cassegrainian feed.

Source – Aviation Week, June 7, 1965, p 48.

Recorded – July 20, 1965.

F49 – Advanced Wind Tunnel called Tripletee (TTT)

Cost -- \$1.4 million for design

Discussion – Defense Department recently authorized

For true temperature tunnel which is expected to fill the gap between Mach 8 and Mach 12.

To be built at Arnold Engineering Development Center

About \$60 million facility from Aetron

\$39 million building

\$21 million for power

Source – Aviation Week, July 12, 1965, p 58

Recorded – August 31, 1965.

F50 – MOL Control Center

Cost -- \$5.55 million

Discussion – at AF Satellite Test Center, Sunnyvale

Low bidder Oakland Construction Co., Salt Lake City, Utah

Source – Aerospace Technical, April 8, 1968, p 3.

Recorded – May 3, 1968.

F51 – Cam Ranh Bay Airfield

Cost -- \$25 million

Discussion – Some unofficial cost estimates of the entire Cam Ranh Bay complex Including depot, port and airfield, run as high as approximately, \$100 million

Source – Aviation Week, March 14, 1966, p 78

Recorded – March 23, 1966.

F52 – Launch Facilities at J. F. Kennedy Space Center, NASA

Cost – as follows

Discussion – Construction Items

Launch Complex 39	Program Cost Estimate	Actual or Current Con. Cost
Vertical Assembly Bldg.	99,403,000	89,667,000
Arming Tower	13,000,000	11,587,000
Instrumentation Bldg	644,600	530,000
Pad A	25,081,400	23,580,000
3 Launch Umbil. Towers	89,325,000	85,368,000
Manned Space Facilities		
Operations & Checkout Bldg	9,992,000	8,499,000
Weight & Balance Bldg	1,367,400	1,324,000
Gemini Mission Sup Bldg	1,795,000	1,851,000

Source – NASA Authorizations for FY66, Hearings Committee Aeronautics & Space Science, 89th Congress, 1st Session, March 1965, Part 2, p 876.

Recorded – March 22, 1966.

F53 – Atlas Sites

Cost -- \$69 million apiece.

Discussion – Chairman -- I just noticed story the other day with a question raised by Senator Monroney as to what is going to be done with these Atlas sites all over the country. He pointed out they cost, I think, \$69 million apiece and I can't figure out what is going to happen to them.

Source – NASA, Authorizations for FY66, Hearings Committee Aeronautics & Space Science, 89th Congress, 1st Session, March 1965, Part 1, p 37.

Recorded – March 22, 1966.

F54 – Launch Control Building for Launching Rockets at Wallops Island

Cost -- \$605,000

Discussion –

Source – Part 2, NASA Authorization FY66, Hearings Committee on Aeronautics & Space Science, 89th Congress, 1st Session, March 1965, p 707

Recorded – March 21, 1966.

F55 – Assembly Building with 3 Separate Bays

Cost -- \$443,000

Discussion –

Source – Part 2, NASA Authorization FY66, Hearings Committee on Aeronautics & Space Science, 89th Congress, 1st Session, March 1965, p 703.

Recorded – March 21, 1966.

F56 – System Engineering Facility

Cost -- \$2,749,000

Discussion – 58,000 sq ft designed to house these technical groups in a contiguous area.

Source – Part 2, NASA Authorization FY66, Hearings Committee on Aeronautics & Space Science, 89th Congress, 1st Session, March 1965, p 702.

Recorded – March 21, 1966.

F57 – Initial Launch Capability Installation at WTR

Cost -- \$18 million

Discussion – new capability & growth potential for other important military programs, while providing for manned MOL missions.

In addition to the 7-segment Titan III configuration for the MOL, the ILC will accommodate any other versions of the titan III family utilizing the 120-in solid strap-ons.

The ILC will consist of one pad where the vehicle will be built up on the pad.

Source – Missiles & Rockets, May 30, 1966, p 58.

Recorded – June 21, 1966.

F58 – Satellite Receiving Terminal

Cost -- \$130,000

Discussion – located at or near the 650 existing commercial and educational television stations.

They could operation unattended.

Source – Aviation Week, April 10, 1967, p 33.

Recorded – May 3, 1967.

F59 – WTR for MOL

Cost -- \$114 million

Discussion – including roughly \$80 million for GSE and at least \$4 million for acquisition of the Sudden Ranch property adjacent to the Vandenberg site.

Source – Missiles & Rockets, April 18, 1966, p 14.

Recorded – April 11, 1967.

F60 – Complex 39 Facilities

Cost – as follows in millions

Discussion – Vehicle Assembly Building

Construction = \$97.9, Foundation = \$8.6, Cranes = \$2.2

Mobile Launchers

Service Area = \$27.0, Launcher Construction = \$12.3, Mechanical Electrical Installation = \$12.0, Ground Support Equipment = \$10.0, Erection Areas = \$1.3, Engineering Development = \$22.6 - \$15.3.

Mobile Service Structure

Construction = \$15.9, Switching System = \$0.2

Mobile Transporter = \$12.3

Roadbeds

Pad A Crawlerway = \$24.6, Pad B Crawlerway = \$19.6, RR System = \$2.9
RR Spur = \$0.3.

Source – Aviation Week, June 20, 1966, p 85.
Recorded – March 31, 1967.

F61 – ELDO Equatorial Launch site

Cost – total cost over a five year period would be \$48.2 million
Discussion – Australian base range facilities near Darwin
The comparative figure for the French Guiana ELDO site would be \$59.8 million
Operational costs would be \$1.3 million per year less than in French Guiana.
Source – Aviation Week, June 27, 1966, p 73.
Recorded – July 21, 1966.

F62 – WTR MOL Building Program

Cost -- \$114 million
Discussion – including roughly \$80 million for ground support equipment and at least \$4 million for acquisition of the Sudden Ranch property adjacent to the Vandenberg site.
Source – Missiles & Rockets, April 18, 1966, p 14.

F63 – Minuteman Launcher Silos and Control Center

Cost -- \$46,585,000
Discussion – 50 silos and five control centers
Contract bid by Morrison Knudsen Co., Boise, Idaho
Also mentioned that 150 silos and 15 control centers cost for 3 squadrons = \$60 m
Source – Engineering News Record, February 25, 1965, p 25
Recorded – March 2, 1965.

F64 – Saturn Launch Complex No. 34 -- NASA

Cost -- \$1,310,000
A. = 0. B = 0.
Discussion – C. Facilities construction & modification \$830,000
Retractable work platform \$250,000
Modification of inserts on 2 platforms 14,000
Retro-handling rigs 18,000
White room 65,000
Work platform modifications 20,000
Blockhouse additions 68,000
Prop. Concrete foundation, supps,
Propel, line supps, ducts, & power cable 345,000
Cabling 50,000
D. Equipment 338,000
E. Design 142,000
Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 585
Recorded – November 4, 1965.

F65 – Launch Complex No. 37 –NASA

Cost -- \$3,435,000

A. = 0, B. = 0.

Discussion – C. Facilities construction & modification		\$866,000
Modification & inserts on 3 platforms	\$21,000	
Retro. Handling rigs	18,000	
White room	65,000	
Silo gate modification	75,000	
Blockhouse modification	42,000	
Prop. Concrete foundation supp, prop. line		
Supports, ducts, power cablestrap.	345,000	
Cabling	300,000	
D. Equipment, inst., & support systems		2,304,000
Installation of checkout equipment	150,000	
Communication System	354,000	
Prop. tank system	500,000	
Prop. control network	350,000	
Prop. piping, valves, and storage cont. lines	950,000	
E. Design & Eng. Service		265,000

Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 587
Recorded – November 4, 1963.

F66 – Advanced Saturn Launch Complex No. 39, Launch Operations Center – NASA

Cost – FY 64, = \$217,219,000, FY 63, = \$167,850,000

Discussion – A. Land = 0,

B. Site Development FY 64 = \$6,600,000

C. Facilities 66,333,000

 Ordn (10,00 sq ft @ \$70/sq ft = 700,000

 Ops Support Bldg (3; 20,000 sq ft @ \$12.50 /sq ft) = 750,000

 Inst. Facil. (4,000 sq ft @ \$30/sq ft) 120,000

 Data Link terminal & Repeater Bldgs

 (2,800 sq ft @ \$32.15 /sq ft) 90,000

D. Equip. Instr., & Sup. Syst. = 125,046,000

E. Design & Eng. Services = 19,180,000

F. TOTAL = 217,219,000

Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 574

Recorded – November 4, 1963.

F67 – Launch Complex – AMR – NASA

Cost -- \$50 million for Complex 34, \$70 million for Complex 37

Discussion – Original Saturn complex.

Launch Complex 39 will be close to \$500 million

Source – House Appropriations Committee Hearings, 88th Congress, Part 3, p 208

Recorded – October 25, 1963.

