Conceptual Design Report

NUCLEAR MATERIALS STORAGE FACILITY RENOVATION

Part VII - Estimate Data

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CONCEPTUAL DESIGN REPORT

LA-UR96-1

FOR

LINE ITEM PROJECT

NUCLEAR MATERIALS STORAGE FACILITY RENOVATION

AT THE

LOS ALAMOS NATIONAL LABORATORY

Project Identification Number 11818
Technical Area 55
Building PF-41

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DESIGN/BUILD ACQUISITION STRATEGY

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I. DETAILED CONSTRUCTION ANALYSIS

I

SUPPORTING INFORMATION

BASIS AND ASSUMPTIONS

Estimate Basis & Assumptions

1. The estimate is based on the Conceptual Design Report prepared by LANLFSS Division (Facility Project Delivery Group-FSS-6) and ICF Kaiser Engineers.
2. The estimate was prepared using burdened Laboratory rates in the Total Estimated Cost (TEC) and burdened rates in the Other Project Cost (OPC). The burdened rates were furnished by FSS-6 & NMT team members.
3. The estimate assumes that the facilities modification portion of the project will be performed under a contract with a general contractor and his subcontractors selected as a result of competitive bidding. Utility, tie-ins, as well as selected work, may be performed by Johnson Controls, Inc., the on-site maintenance contractor.
4. The estimate assumes that design of the facilities modifications will be performed by a fixed price A/E with oversight performed by the FSS-6.
5. The Work Breakdown Structure (WBS) I is in accordance with DOE guidance. The last two digits reflect the CSI division number.
6. The contractor mark up rates shown in the COSTPRO project factors file were furnished by FSS-6.
7. The labor rates used for facilities modifications are Federal Register Labor Craft rates published by FSS-6. Rates include fringe benefit, tax and insurance, and foreman burden costs.
8. The labor hours and material costs shown in the COSTPRO take-off extension file for facility modifications are from the Means Construction Cost Data. The SFE material and labor cost shown in the COSTPRO take-off extension are from manhour estimates and vendor quotes assembled by ICF Kaiser Engineers and the Laboratory.
9. The estimate assumes that all work will be performed during regular hours with no overtime.
10. Lost time due to labor disputes, safety, security related condition, or unusual weather conditions have been excluded from the estimate.
11. The estimate assumes minimal interference from Laboratory operations during construction.
12. The facilities A/E cost of services estimate was calculated separately using the Architectural/Engineering Estimating Lotus Spreadsheet published by FSS-6.
13. Engineering, Design, & Inspection (ED&I) costs were also developed separately from COSTPRO using the ED&I Estimating Lotus Spreadsheet published by FSS-6. Title I,

II, and IIIA/E costs extracted from the A/E cost of services spreadsheet for Facilities & SFE along with manhour estimates for design oversight, construction management, and project management from FSS-6 were used to complete the ED&I spreadsheet.

14. A contingency and risk analysis was prepared for each major WBS using the Risk and Contingency Analysis Lotus Spreadsheet published by FSS-6. The contingencies calculated by the spreadsheet were input into the COSTPRO project factors file. This estimate includes contingency revisions recommended by the internal cost review team.
15. An escalation analysis was prepared for each major WBS using the Escalation by WBS Lotus spreadsheet published by FSS-6. The escalations calculated by the spreadsheet were input into the COSTPRO project factors file. Escalation rates were taken from DRI Rev: '95 Jan., rates were issues by FSS-6 on 4/18/95.
16. General conditions including bond for the facilities construction contract were calculated using the Field Overhead Expenses Lotus Spreadsheet published by FSS-6. Summary costs extracted from this spreadsheet were input into the COSTPRO take-off extension file.
17. Laboratory Procurement Burden Determination Lotus Spreadsheet published by FSS-6. Burdens were calculated on the escalated contract amounts for the facilities construction contract, the facilities A/E contract, and the SFE material and services purchase orders.
18. OPCs were developed using the Other Project Cost Lotus Spreadsheet published by FSS-6. This spreadsheet was completed with input from FSS-6.
19. Total Estimated Cost and Total Project Cost were developed by using the Project Summary Lotus Spreadsheet published by FSS-6. The information required for input to this spreadsheet was extracted from the COSTPRO general summary report and the Other Project Cost Spreadsheet summary report.
20. A Project Estimating System Flow Chart follows which graphically depicts how the FSS-6 Lotus spreadsheets and the COSTPRO estimating software interact to produce the TEC and the TPC reports.
21. Construction will take place within an excluded area of TA-55 to minimize security requirements. Temporary security provisions, such as security guards during construction, will be provided by the user and are not included in the project's cost estimate. A temporary PIDAS system to be used for the duration if construction will be constructed and costs for this system are included in the construction estimate. Special security considerations have been identified for the project and construction work has been assumed to be completed by uncleared personnel with minimal special security requirements and also minimal interference from ongoing laboratory operations.
22. The design concept described in the CDR as well as the layouts shown on the associated drawings accurately define the scope of the project at the current stage of development.

23. No allowance has been made in the CDR estimate for cost impacts due to changes in scope, schedule, or technical requirements from current definitions established in the CDR.
24. Additional costs associated with NQA-I requirements for the safety class systems identified in the draft PHA, have been included in the estimate.
25. Costs for bridge crane reflects an average of 3 quotes $(\$1,100,000 + \$820,000 + \$500,000)/3 = \$806,667$. \$807,000 was used in the estimate.
26. The temporary PIDAS system included in the CDR reflects the recommendation of a recently completed value engineering study which examined a number of alternative, interim security measures including the use of cleared escorts.
27. Costs are included in this estimate for a facility monitoring system (FMS) and the development on software interfaces for the NDA equipment and the material accountability and safeguards system (MASS). Refer to Part I, Section 1.12 "Instrument & Process Controls" for a discussion of these systems.

PROJECT ESTIMATING SYSTEM FLOW CHART

ESTIMATE COST TRACKING EXAMPLES

Two cost tracking examples follow for those not familiar with the Laboratory's estimating system. The first example takes a selected construction take-off item in Section I, Detailed Construction Cost for Conventional Acquisition Strategy of Part VII-Estimate Data of the CDR and tracks it from the original point of entry in the COSTPRO computer estimating system to Section A, Total Project Cost Summary Report of the CDR. The second example tracks a Design and Management cost element from Section H, A&E Cost of Services Analysis through Section G, Engineering, Design & Inspection Analysis to Section A, Total Project Cost Summary Report of the CDR.

Example 1, Construction Cost Element

The COSTPRO documentation included in Section I, Detailed Construction Analysis for Conventional Acquisition Strategy of Part VII of the CDR is divided into three separate sections. The sections include Project Factors File Listing, General Cost Summary, and the Take-off Extension. They are presented in that order.

Begin the example on page 27 of the Take-off Extension with items 742 and 743, Work Breakdown Structure C3A06, Wood and Plastics. These items are described as "Base Cabinets" and "Counter Top". The project architect estimated there will be 12 linear feet of base cabinets and counter top that will be produced and installed by a millwork shop under a subcontract to the general contractor. These records indicate that it will take carpenters (trade ID 73) .75 hours per linear foot to install the base cabinet and .350 hours per linear foot to install the counter top. The carpenter's labor rate is \$25.69 per hour. The result is a total labor cost of \$339.00 to install the base cabinet and counter top which is shown in the "Labor Rate Ext'd Cost" column. The project architect has also estimated the base cabinet will cost \$85.00 per linear foot to fabricate in a millwork shop and the counter top will cost \$8.30 per linear foot to fabricate in a millwork shop. The result is a total direct material cost of \$1,120.00 for the 12 linear feet of base cabinets and counter top which is shown in the "Material Rate Ext'd Cost" column. The sum of the labor and material cost associated with the cabinets and counter top is \$1,459.00 which is shown in the "Item Direct Cost" column. All items in the Take-off Extension file are extended in the same manner. These cost move forward to the General Cost Summary.

Continue the example by turning to page 2 of the General Cost Summary. The General Cost Summary is the basis for the DOE Total Estimated Cost. The General Cost Summary report totals the direct costs for all the items listed in the Take-off Extension and groups them by Work Breakdown Structure. Contractor markups, escalation, and contingency are applied to the total direct cost for each WBS. Percentages for contractor markups, escalation, and contingency are taken from the project factors file. An exception is items that have a "1" shown under "Category Direct Cost" column. They represent project costs that are performed by either LANL personnel or outside consultants which do not get a markup by the general contractor as they are not part of his contract. These costs were calculated separately from the COSTPRO Take-off Extension by using the ED&I Lotus Spreadsheet published by FSS-6. They were entered into the Project Factors File Listing in either the Project Management (PM) column or the ED&I column, whichever was appropriate. Escalation for these items is shown as 0.0% because the FSS-6 spreadsheet calculates the appropriate escalation and includes it in the costs shown in the ED&I Summary Report. A copy of the ED&I Summary is included in example 2 for reference and verification of the costs shown in the General Cost Summary for COSTPRO.

WBS C3A06, entitled "Woods and Plastics" is the fifth line item down from the top of the page 2 of the General Cost Summary. The total direct cost is \$1,459.00 and is shown in the "Category Direct Cost" column. This agrees with the amount shown for this item in the Take-off Extension. The contractor markups are applied to the total labor and material for this WBS which yields a value of \$488. This cost is shown in the "Category Cntrct Markup" column. Escalation at 11.48% is applied to the sum of these numbers which yields a value of \$224.00. This cost is shown in the "Escal" column. The subtotal of the direct cost, contractor markup, and escalation is \$2,171.00 which is shown in the "Subtotal"

column. Contingency at 20.0% is applied to the subtotal and yields a value of \$434.00 which is shown in the "Cont" column. The sum of the subtotal and the contingency is \$2,605.00 and is shown in the "Category Total Cost" column. The General Cost Summary totals all the columns mentioned above beginning with "Category Direct Cost" through "Category Total Cost" and prints the totals on the third page of the summary.

As stated previously, the COSTPRO General Cost Summary report is the basis for the DOE TEC. Please note that the Project Total Cost of \$45,291,574 shown on page 3 of the COSTPRO General Cost Summary report does agree with line E, "Total Estimated Construction Cost (TEC)" of the Total Project Cost Summary spreadsheet.

Certain "Project Total Cost" information displayed in the General Cost Summary report of COSTPRO was extracted from the report and entered directly in the Total Project Cost Summary spreadsheet. Contingency of \$7,840,870.00, which is shown in the total cost line under the "Cont" column on page 3, was entered directly into line D, "Contingency" of the Total Project Cost Summary spreadsheet.

Other cost information was extracted from the General Cost Summary report of COSTPRO, rolled up into major DOE reporting categories (WBS), and entered into the Total Project Cost Summary spreadsheet. Table 1 shows a list of all the sub elements that comprise major category WBS C3A, "Building & Site Modifications", as they appear on page 2 of the General Cost Summary report. The table also shows the subtotal of the direct cost, the contractor markup, and the escalation associated with each sub element as they appear in the General Cost Summary report. Included in the list is our example category C3A06, "Wood and Plastics". The sum of all the subtotals listed in Table 1, \$7,332,410, was entered directly into the Total Project Cost Summary spreadsheet under Section B, "Construction Cost" on line 1, WBS C3A. All categories and costs shown in Section B of the Total Project Cost Summary spreadsheet were extracted from the COSTPRO General Cost Summary report in exactly the same fashion as our example. Copies of the COSTPRO pages and the Total Project Cost Summary spreadsheet referred to in the above discussion follow Table 1. Items that are the focus of discussion have been highlighted or marked in some manner to assist the reviewer in following the example.

TABLE 1

WBS	CATEGORY TITLE	SUBTOTAL	TOTAL
C3A	BUILDING & SITE MODIFICATIONS		
C3A02	BASEMENT EXCAVATION	\$63,094	
C3A03	STRUCTURAL CONCRETE	\$1,286,419	
C3A04	STRUCTURAL MASONRY	\$22,638	
C3A05	METALS	\$445,671	
C3A06	WOODS & PLASTICS	\$2,171	
C3A07	ROOFING & SIDING	\$71,007	
C3A08	DOORS & WINDOWS	\$288,912	
C3A09	FINISHES	\$945,139	
C3A10	SPECIALTIES	\$20,251	
C3A15	MECHANICAL SYSTEMS	\$2,680,806	
C3A16	ELECTRICAL SYSTEMS	\$928,402	
	TOTAL ENTERED IN TPC SUMMARY		\$7,322,410

(Items with *#* have been adjusted by Job Factor and/or Equip Factor)

Job	Work Brkdn Structure	J A			Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		7rd ID	b F	c t			Factor	Rate	Ext'd Cost				
58	C3A06				WOOD AND PLASTICS								
12	C3A06	73	0	2	BASE CABINETS	12.0 LF	0.750	25.69	231.	85.00 1020.	0.00 0.	0.	1251.
13	C3A06	73	0	2	COUNTER TOP	12.0 LF	0.350	25.69	108.	8.30 100.	0.00 0.	0.	207.
	C3A06				Category Direct Cost				339.	1120.	0.	0.	1459.
51	C3A07				ROOFING AND SIDING								
50	C3A07	77	0	2	SINGLE PLY ROOFING	8250.0 SF	0.210	21.14	36625.	1.30 10725.	0.00 0.	0.	47350.
51	C3A07	77	0	2	SINGLE PLY ROOFING	64.0 SF	0.210	21.14	284.	1.30 83.	0.00 0.	0.	367.
	C3A07				Category Direct Cost				36909.	10808.	0.	0.	47717.
55	C3A08				DOORS WINDOWS AND GLASS								
56	C3A08	73	0	2	DOUBLE DOOR HARDWARE	8.0 EA	1.100	25.69	226.	225.00 1800.	0.00 0.	0.	2026.
58	C3A08	85	0	2	ALARMED VAULT DOOR CLASS V (SINGLE)	7.0 EA	58.000	32.28	13106.	12278.00 85946.	0.00 0.	0.	99052.
59	C3A08	85	0	2	CLASS V VAULT DOUBLE /INCL SHIPPING	2.0 EA	64.000	32.28	4132.	18603.00 37206.	0.00 0.	0.	41338.
70	C3A08	85	0	2	SECURITY WINDOWS	4.0 EA	17.300	32.28	2234.	2350.00 9400.	0.00 0.	0.	11634.

Character string	Brkdn Category Title	Rates				Category Direct Cost	Category Contract Markup	Escal	PM	Project Markups			Category Total Cost
		Escal	PM	ED&I	Cont					Subtotal	ED&I	Cont	
A02	BASEMENT EXCAVATION	0.1148	0.0000	0.0000	0.2000	424031.	141984.	64979	0	630994.	0	126199	757193.
A03	STRUCTURAL CONCRETE	0.1148	0.0000	0.0000	0.2000	864539.	289407.	132473	0	1286419.	0	257284	1543703.
A04	STRUCTURAL MASONRY	0.1148	0.0000	0.0000	0.2000	17485.	2822.	2331	0	22638.	0	4528	27166.
A05	METALS	0.1148	0.0000	0.0000	0.2000	259474.	100283.	45894	0	445671.	0	89134	534805.
A06	WOODS AND PLASTICS	0.1148	0.0000	0.0000	0.2000	1459.	488.	224	0	2171.	0	434	2605.
A07	ROOFING AND SIDING	0.1148	0.0000	0.0000	0.2000	47717.	15978.	7312	0	71007.	0	14201	85208.
A08	DOORS AND WINDOWS	0.1148	0.0000	0.0000	0.2000	194150.	65010.	29752	0	268912.	0	57782	346694.
A09	FINISHES	0.1148	0.0000	0.0000	0.2000	635212.	212598.	97329	0	945139.	0	189028	1134167.
A10	SPECIALITIES	0.1148	0.0000	0.0000	0.2000	15641.	2525.	2085	0	20251.	0	4050	24301.
A15	MECHANICAL SYSTEMS	0.1422	0.0000	0.0000	0.2000	1762440.	584615.	333751	0	2680806.	0	536161	3216967.
A16	ELECTRICAL SYSTEMS	0.1365	0.0000	0.0000	0.2000	608985.	207911.	111506	0	928402.	0	185680	1114082.
B02	UTILITY BLDG SITE WORK & GRADING	0.1148	0.0000	0.0000	0.1800	4574.	1532.	701	0	6807.	0	1225	8032.
B03	UTIL BLDG STRUCTURAL CONCRETE	0.1148	0.0000	0.0000	0.2000	8740.	1411.	1165	0	11316.	0	2263	13579.
B04	UTIL BLDG STRUCTURAL MASONRY	0.1148	0.0000	0.0000	0.2000	11827.	1909.	1577	0	15313.	0	3063	18376.
B05	UTIL BLDG METALS	0.1148	0.0000	0.0000	0.2000	4935.	1653.	756	0	7344.	0	1469	8813.
B08	UTIL BLDG DOORS & WINDOWS	0.1148	0.0000	0.0000	0.2000	1655.	267.	221	0	2143.	0	429	2572.
B09	UTIL BLDG FINISHES	0.1148	0.0000	0.0000	0.2000	1248.	417.	191	0	1856.	0	371	2227.
B16	UTIL BLDG ELECT. SYSTEMS	0.1148	0.0000	0.0000	0.2000	17246.	5775.	2643	0	25664.	0	5133	30797.
C05	MECH. PENTHOUSE METALS	0.1148	0.0000	0.0000	0.2000	33783.	11312.	5177	0	50272.	0	10054	60326.
C08	MECH. PENTHOUSE DOORS & WINDOWS	0.1148	0.0000	0.0000	0.2000	893.	299.	137	0	1329.	0	266	1595.
D15	NATURAL GAS PIPING OUTSIDE OF BUILDING	0.1171	0.0000	0.0000	0.2000	11477.	3844.	1794	0	17115.	0	3423	20538.
E15	FIRE PROTECTION OUTSIDE OF BUILDING	0.1171	0.0000	0.0000	0.2000	41435.	13874.	6477	0	61786.	0	12357	74143.
F15	RAD/ACID WASTE LINE OUTSIDE OF BLDG.	0.1171	0.0000	0.0000	0.2000	5166.	1730.	808	0	7704.	0	1541	9245.
G15	WATER PIPING OUTSIDE OF BUILDING	0.1171	0.0000	0.0000	0.2000	4427.	1482.	692	0	6601.	0	1320	7921.

Character ring	Brkdown Category Title	Rates				Category Direct Cost	Category Direct Markup	Escal	PM	Project Markups			Category Total Cost
		Escal	PM	ED&I	Cont					Subtotal	ED&I	Cont	
02	BASEMENT EXCAVATION	0.1148	0.0000	0.0000	0.2000	426031.	141984.	64979	0	630994.	0	126199	757193.
03	STRUCTURAL CONCRETE	0.1148	0.0000	0.0000	0.2000	864539.	289407.	132473	0	1286419.	0	257284	1543703.
04	STRUCTURAL MASONRY	0.1148	0.0000	0.0000	0.2000	17485.	2822.	2331	0	22638.	0	4528	27166.
05	METALS	0.1148	0.0000	0.0000	0.2000	299494.	100283.	45894	0	445671.	0	89134	534805.
06	WOODS AND PLASTICS	0.1148	0.0000	0.0000	0.2000	1459.	488.	224	0	2171.	0	434	2605.
07	ROOFING AND SIDING	0.1148	0.0000	0.0000	0.2000	47717.	15978.	7312	0	71007.	0	14201	85208.
08	DOORS AND WINDOWS	0.1148	0.0000	0.0000	0.2000	194150.	65010.	29752	0	288912.	0	57782	346694.
09	FINISHES	0.1148	0.0000	0.0000	0.2000	635212.	212598.	97329	0	945139.	0	189028	1134167.
10	SPECIALITIES	0.1148	0.0000	0.0000	0.2000	15641.	2525.	2085	0	20251.	0	4050	24301.
15	MECHANICAL SYSTEMS	0.1422	0.0000	0.0000	0.2000	1762440.	584415.	333751	0	2680806.	0	536161	3216967.
16	ELECTRICAL SYSTEMS	0.1365	0.0000	0.0000	0.2000	608985.	207911.	111506	0	928402.	0	185688	1114082.
102	UTILITY BLDG SITE WORK & GRADING	0.1148	0.0000	0.0000	0.1800	4574.	1532.	701	0	6807.	0	1225	8032.
103	UTIL BLDG STRUCTURAL CONCRETE	0.1148	0.0000	0.0000	0.2000	8740.	1411.	1165	0	11316.	0	2243	13579.
104	UTIL BLDG STRUCTURAL MASONRY	0.1148	0.0000	0.0000	0.2000	11827.	1909.	1577	0	15313.	0	3063	18376.
105	UTIL BLDG METALS	0.1148	0.0000	0.0000	0.2000	4935.	1653.	756	0	7344.	0	1469	8813.
108	UTIL BLDG DOORS & WINDOWS	0.1148	0.0000	0.0000	0.2000	1655.	267.	221	0	2143.	0	429	2572.
109	UTIL BLDG FINISHES	0.1148	0.0000	0.0000	0.2000	1248.	417.	191	0	1856.	0	371	2227.
114	UTIL BLDG ELECT. SYSTEMS	0.1148	0.0000	0.0000	0.2000	17246.	5775.	2643	0	25664.	0	5133	30797.
205	MECH. PENTHOUSE, METALS	0.1148	0.0000	0.0000	0.2000	33783.	11312.	5177	0	50272.	0	10054	60326.
208	MECH. PENTHOUSE DOORS & WINDOWS	0.1148	0.0000	0.0000	0.2000	893.	299.	137	0	1329.	0	266	1595.
315	NATURAL GAS PIPING OUTSIDE OF BUILDING	0.1171	0.0000	0.0000	0.2000	11477.	3844.	1794	0	17115.	0	3423	20538.
315	FIRE PROTECTION OUTSIDE OF BUILDING	0.1171	0.0000	0.0000	0.2000	41435.	13874.	6477	0	61786.	0	12357	74143.
315	RADIOACTIVE WASTE LINE OUTSIDE OF BLDG.	0.1171	0.0000	0.0000	0.2000	5164.	1730.	808	0	7704.	0	1541	9245.
315	WATER PIPING OUTSIDE OF BUILDING	0.1171	0.0000	0.0000	0.2000	4427.	1462.	692	0	6601.	0	1320	7921.

racter ring	Brkdw Category Title	Rates				Category Direct Cost	Category Contract Markup	Project Markups				Category Total Cost	
		Esc1	PM	ED&I	Cont			Esc1	PM	Subtotal	ED&I		Cont
	SECURITY SYSTEMS EQUIPMENT	0.1450	0.0000	0.0000	0.2000	816025.	90143.	131394	0	1037562.	0	207512	1245074.
11	FACILITY MONITORING CONTROL SYS EQUIP	0.1450	0.0000	0.0000	0.2500	972758.	325721.	188279	0	1486758.	0	371690	1858448.
15	FACILITY MONITORING CONTROL SYS MECH	0.1450	0.0000	0.0000	0.2500	73678.	24671.	14261	0	112610.	0	28153	140763.
16	FACILITY MONITORING CONTROL SYS ELEC	0.1450	0.0000	0.0000	0.2500	171436.	57404.	33182	0	262022.	0	65506	327528.
13	MATERIAL HANDLING MATERIAL STORAGE VAULT	0.1450	0.0000	0.0000	0.2000	4600000.	339745.	716263	0	5656008.	0	1131202	6787210.
11	SPEC FAC EQUIPMENT STRG ARRAY HARDWARE	0.1450	0.0000	0.0000	0.2500	5556490.	1860550.	1075471	0	8492511.	0	2123128	10615639.
12	SPEC FAC EQUIPMENT STRG ARRAY COOLING	0.1450	0.0000	0.0000	0.2500	290533.	23777.	45575	0	359805.	0	89971	449856.
14	SPEC FAC EQUIPMENT STRG ALARM SYSTEMS	0.1450	0.0000	0.0000	0.2500	15000.	1108.	2336	0	18444.	0	4611	23055.
15	SPEC FAC EQUIPMENT STRG MECH SYSTEMS	0.1450	0.0000	0.0000	0.2500	50353.	3719.	7840	0	61912.	0	15478	77390.
						=====	=====	=====	=====	=====	=====	=====	=====
Project Total Cost						19522492.	4819417.	3376070	2802154	30520133.	6930571	7840870	45291574.

University of California
Los Alamos National Laboratory
TOTAL PROJECT CONSTRUCTION COST (TPC) SUMMARY
CONVENTIONAL ACQUISITION STRATEGY

PROJECT TITLE: NMSF CONCEPTUAL DESIGN REPORT

JOB NUMBER: 11318

DATE: 06/29/91

ITEM DESCRIPTION				SUBTOTAL	TOTAL COST
BURDENED TPC SUMMARY					
A. Design and Management Costs				(@ 31.6% % of ECC+SFE)	
1. Facility ED&I				\$5,159,266	\$8,808,933
WBS	Category				
A. B1F01	Title I	(@ 6.4% of ECC)	\$1,769,456		
B. B2F01	Title II	(@ 6.2% of ECC)	\$1,727,675		
C. B3F01	Title III	(@ 6.0% of ECC)	\$1,662,133		
2. Special Facilities EDM				\$847,413	
WBS	Category				
A. B1S01	Title I	(@ 1.0% of SFE)	\$332,070		
B. B2S01	Title II	(@ 2.2% of SFE)	\$384,394		
C. B3S01	Title III	(@ 0.7% of SFE)	\$130,949		
3. Project Management				\$2,802,154	
WBS	Category				
A. A1F01	Project Management	(@ 5.4% of ECC+ED&I+SFE)	\$1,686,110		
B. A2F01	Construction Management	(@ 3.6% of ECC+ED&I+SFE)	\$1,116,044		
B. Construction Cost (ECC+SFE)					\$27,717,979
WBS	Category				
1. C3A	Building & Site (ECC)				
A. Modifications				\$7,322,410	
2. Other Structures (ECC)				\$122,044	
WBS	Category				
A. C3B	Utility Building		\$70,443.00		
B. C3C	Mech. Penthouse		\$51,601.00		
3. Special Facilities Equipment (SFE)				\$17,487,712	
WBS	Category				
A. E2O	Security Systems Equipment		\$1,037,562.00		
B. E2L	NDA Equipment		\$5,656,008.00		
C. E2C	Facility Monitoring System (Controls & Monitors)		\$1,861,390.00		
D. E2S	Storage Equipment		\$8,932,752.00		
WBS	Category				
4. C5	Utilities			\$93,206	
5. C1C	Demolition			\$761,074	
6. C1B	Special Security Construction			\$638,345	
7. C2	Site work			\$34,600	
8. C0C11	Field Overhead & Expenses			\$1,260,598	
WBS	Category				
C. B4M01 Laboratory Procurement Burden					\$923,892
1. Construction Contract	(\$24,185,098)	(3.25%)	\$791,112		
2. A/E Design Contracts	(\$2,227,235)	(3.25%)	\$110,888		
3. SFE Design Contract	(\$445,714)	(3.25%)	\$22,092		
SUBTOTAL					\$37,450,704
D. Contingency					\$7,840,870
E. Total Estimated Construction Costs (TEC)					\$45,291,574
F. Other Project Costs (OPC)				(@ 25.1% of TEC)	\$11,361,099
G. Total Project Costs (TPC)					\$56,652,673

Example 2, Design and Management Element

In Section H, A&E Cost of Services, there are two cost of services estimates. The first estimate is for Special Facilities Equipment design and the second estimate is for Facilities design. In the second example, we will track the cost of Title I, Facility design from the cost of services estimate to the Total Project Cost Summary spreadsheet. As in example 1, copies of the spreadsheet pages and the Total Project Cost Summary spreadsheet referred to in the discussion below follow the written text. Items that are the focus of the discussion have been highlighted or marked in some manner to assist the reviewer in following the example.

Begin the example by turning to the Summary page for the second cost of services estimate which is for facility design and engineering services. The total Title I design and engineering services cost is shown to be \$1,570,195.05. This cost as well as the cost of Titles II and III services was calculated by the AE Cost of Services spreadsheet which follows the Summary. The \$1,570,195 figure is entered directly into the Engineering, Design and Inspection (ED&I) spreadsheet as is the other title design cost.

Continue the example by turning to Section G, ED&I of Part VII of the CDR. The ED&I spreadsheet calculates the escalated cost of AE title design services for facilities and special facilities equipment (SFE), the Laboratory's design oversight cost for both facilities and SFE design, the Laboratory's Project Management cost, and the Laboratory's Construction Management cost. On the second page of the ED&I spreadsheet the reviewer will find the sum of \$1,570,195 shown in the unescalated cost table for Title I A&E design under the FY97 column. The spreadsheet automatically calculates the escalated value for Title I services, \$1,681,944, and displays that number in the escalated cost table which is on the same page. The escalated cost is automatically carried forward to the ED&I Summary.

The reviewer should refer to the ED&I Summary which is the first page of the Section G. The ED&I Summary displays the escalated Titles I, II, and III costs for Facilities AE design, SFE AE design, LANL Facilities AE design oversight, LANL SFE AE design oversight, total Facilities ED&I, and total SFE ED&I as well as Project Management and Construction Management cost. Please note that the cost for Facilities A&E Title I services is shown to be \$1,681,944. The sum of Facilities A&E Title I services, \$1,681,944, and LANL Facilities Title I oversight, \$87,514, is the total Title I ED&I which is shown to be \$1,769,458 in the ED&I Summary report. This cost was entered directly into the Total Project Cost Summary spreadsheet under Section A, "Design and Management Cost" on line 1A, WBS B1F01. All the costs categories shown in Section A of the Total Project Cost Summary spreadsheet were taken from the ED&I Summary.

This concludes the estimate cost tracking example.

SUMMARY

Title: Nuclear Materials Storage Facility PF-41 TA-55
 LJ No.: 11818
 Prepared By: ICF KAISER ENGINEERS

Date: 16-Jun-95

TITLE I

* DIRECT LABOR		\$1,229,449.03
SUPPORT STAFF		\$14,004.17
FIXED FEE (10.00%)		\$124,345.32
REIMBURSABLES		\$105,308.00
REPRODUCTION	\$28,178.00	
TRAVEL	\$11,130.00	
OTHER REIMBURSABLES	\$86,000.00	
GENERAL & ADMIN CHARGE ON REIMBURSABLES,	7.00%	\$7,371.56
SUBTOTAL		\$1,480,478.08
NEW MEXICO GROSS RECEIPTS TAX,	6.060%	\$89,716.97

TOTAL TITLE I, 46.10%

\$1,570,195.05

TITLE II

** DIRECT LABOR		\$1,082,575.17
SUPPORT STAFF		\$13,135.41
FIXED FEE (10.00%)		\$109,571.06
REIMBURSABLES		\$117,700.00
REPRODUCTION	\$76,570.00	
TRAVEL	\$11,130.00	
OTHER REIMBURSABLES	\$30,000.00	
GENERAL & ADMIN CHARGE ON REIMBURSABLES,	7.00%	\$8,239.00
SUBTOTAL		\$1,331,220.64
NEW MEXICO GROSS RECEIPTS TAX,	6.060%	\$80,671.97

TOTAL TITLE II, 41.45%

\$1,411,892.61

TITLE III

*** DIRECT LABOR		\$325,270.73
SUPPORT STAFF		\$27,340.54
FIXED FEE (10.00%)		\$35,261.13
REIMBURSABLES		\$11,130.00
TRAVEL	\$11,130.00	
OTHER REIMBURSABLES	\$0.00	
GENERAL & ADMIN CHARGE ON REIMBURSABLES,	7.00%	\$779.10
SUBTOTAL		\$399,781.49
NEW MEXICO GROSS RECEIPTS TAX,	6.060%	\$24,226.76

TOTAL TITLE III, 12.45%

\$424,008.25

TOTAL I, II & III, 12.45%

\$3,406,095.92

* NUMBER WAS DERIVED BY TAKING THE TITLE I LABOR COST BY DISCIP FROM DESIGN MANHOUR SUMMARY AND ADDING 161% FOR A/E OVERHEAD.

** NUMBER WAS DERIVED BY TAKING THE TITLE II LABOR COST BY DISCIP FROM DESIGN MANHOUR SUMMARY AND ADDING 161% FOR A/E OVERHEAD.

*** NUMBER WAS DERIVED BY TAKING THE TITLE III LABOR COST BY DISCIP FROM DESIGN MANHOUR SUMMARY AND ADDING 161% FOR A/E OVERHEAD.

University of California
Los Alamos National Laboratory
FACILITY ENGINEERING, DESIGN & INSPECTION (ED&I) COSTS

JOB NUMBER: 11818.0
PROJECT TITLE: NMSF PF-41 TA-55 (CONVENTIONAL)
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 18-Jun-85

ESCALATION RATE	FY-->	BASE YEAR 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
ANNUAL			0.67%	3.00%	3.10%	3.10%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
FROM BASE YEAR			0.67%	3.90%	7.12%	10.44%	13.75%	17.16%	20.68%	24.30%	28.03%	31.67%

FACILITIES & DESIGN COSTS

UNESCALATED COST		TOTAL COST	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TOTAL DURATION/ COST
TITLE 1 -- WEEKS OF EFFORT	40.0	0	0	40	0	0	0	0	0	0	0	0	40
TITLE 2 -- WEEKS OF EFFORT	52.0	0	0	8	44	0	0	0	0	0	0	0	52
TITLE 3 -- WEEKS OF EFFORT	142.0	0	0	0	24	52	52	14	0	0	0	0	142
TITLE 1 -- DISTRIBUTED COST	\$1,570,195	\$0	\$0	\$1,570,195	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,570,195
TITLE 2 -- DISTRIBUTED COST	\$1,411,893	\$0	\$0	\$217,214	\$1,194,679	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,411,893
TITLE 3 -- DISTRIBUTED COST	\$424,008	\$0	\$0	\$0	\$71,853	\$155,271	\$155,271	\$41,804	\$0	\$0	\$0	\$0	\$424,008
TOTAL UNESCALATED COST BY YEAR			\$0	\$0	\$1,787,409	\$1,266,342	\$155,271	\$155,271	\$41,804	\$0	\$0	\$0	\$3,406,099

ESCALATED COST	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TOTAL COST
TITLE 1 -- DISTRIBUTED COST	\$1,570,199	\$0	\$1,551,944	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,551,944
TITLE 2 -- DISTRIBUTED COST	\$1,411,893	\$0	\$232,673	\$1,318,373	\$0	\$0	\$0	\$0	\$0	\$0	\$1,552,046
TITLE 3 -- DISTRIBUTED COST	\$424,008	\$0	\$0	\$79,143	\$176,821	\$181,920	\$50,446	\$0	\$0	\$0	\$488,132
TOTAL ESCALATED COST BY YEAR	\$0	\$0	\$1,914,617	\$1,398,516	\$176,821	\$181,920	\$50,446	\$0	\$0	\$0	\$3,722,122

A/E DESIGN OVERSIGHT

TITLE: STAFF PLAN (HRS)[illegible]

University of California
Los Alamos National Laboratory
ENGINEERING, DESIGN & INSPECTION (ED&I) SUMMARY

OB NUMBER: 11818
 OBJECT TITLE: MSF PF-41 TA-55 (CONVENTIONAL)
 ESTIMATOR: ICF KAISER ENGINEERS
 DATE: 16-Jun-95

Item Description	Item Total Cost
<hr/>	
DESIGN COSTS	\$4,465,357
Facilities	\$3,722,122
Title 1	\$1,681,944
Title 2	\$1,552,046
Title 3	\$488,132
Special Facilities	\$743,235
Title 1	\$311,718
Title 2	\$331,478
Title 3	\$100,039
ED&I	\$1,541,322
Facilities	\$1,437,144
Title 1	\$87,514
Title 2	\$175,629
Title 3	\$1,174,001
Special Facilities	\$104,178
Title 1	\$20,352
Title 2	\$52,915
Title 3	\$30,910
TOTAL ED&I	\$6,006,678
Facilities	\$5,159,266
Title 1	\$1,769,458
Title 2	\$1,727,675
Title 3	\$1,662,133
Special Facilities	\$847,412
Title 1	\$332,070
Title 2	\$384,394
Title 3	\$130,949
PROJECT MANAGEMENT	\$2,802,154
Facilities	\$2,802,154
Project Management	\$1,686,109.77
Construction Management	\$1,116,044.24
Special Facilities	\$0

University of California
Los Alamos National Laboratory
TOTAL PROJECT CONSTRUCTION COST (TPC) SUMMARY
CONVENTIONAL ACQUISITION STRATEGY

PROJECT TITLE: NMSF CONCEPTUAL DESIGN REPORT

JOB NUMBER: 11848

DATE: 06/20/95

ITEM DESCRIPTION				SUBTOTAL	TOTAL COST
BURDENED TPC SUMMARY					
A. Design and Management Costs					\$6,809,833
1. Facility ED&I				\$5,159,266	
WBS	Category				
A. B1F01	Title I	(@ 6.4% of ECC)	\$1,769,458		
B. B2F01	Title II	(@ 6.2% of ECC)	\$1,727,675		
C. B3F01	Title III	(@ 6.0% of ECC)	\$1,662,133		
2. Special Facilities ED&I				\$847,413	
WBS	Category				
A. B1S01	Title I	(@ 1.9% of SFE)	\$332,070		
B. B2S01	Title II	(@ 2.2% of SFE)	\$384,394		
C. B3S01	Title III	(@ 0.7% of SFE)	\$130,949		
3. Project Management				\$2,802,154	
WBS	Category				
A. A1F01	Project Management	(@ 6.4% of ECC+ED&I+SFE)	\$1,666,110		
B. A2F01	Construction Management	(@ 3.6% of ECC+ED&I+SFE)	\$1,136,044		
B. Construction Cost (ECC+SFE)					\$27,717,979
WBS	Category				
1. C3A Building & Site (ECC)					
A. Modifications				\$7,322,410	
2. Other Structures (ECC)				\$122,044	
WBS	Category				
A. C3B	Utility Building		\$70,443.00		
B. C3C	Mech. Penthouse		\$51,601.00		
3. Special Facilities Equipment (SFE)				\$17,487,712	
WBS	Category				
A. E2O	Security Systems Equipment		\$1,037,562.00		
B. E2L	NDA Equipment		\$5,656,008.00		
C. E2C	Facility Monitoring System (Controls & Monitors)		\$1,861,380.00		
D. E2S	Storage Equipment		\$6,932,752.00		
WBS	Category				
4. C5	Utilities			\$93,206	
5. C1C	Demolition			\$781,074	
6. C1S	Special Security Construction			\$638,345	
7. C2	Site work			\$34,600	
8. C0C11	Field Overhead & Expenses			\$1,260,588	
WBS	Category				
C. B&M01 Laboratory Procurement Burden					\$823,892
1. Construction Contract	(\$24,165,095)	(3.25%)	\$791,112		
2. A/E Design Contracts	(\$2,227,235)	(3.25%)	\$110,698		
3. SFE Design Contract	(\$445,714)	(3.25%)	\$22,062		
SUBTOTAL					\$37,450,704
D. Contingency					\$7,840,670
E. Total Estimated Construction Costs (TEC)					\$45,291,574
F. Other Project Costs (OPC)				(@ 25.1% of TEC)	\$11,361,099
G. Total Project Costs (TPC)					\$56,652,673

TEC & TPC SUMMARIES

University of California
Los Alamos National Laboratory
TOTAL PROJECT CONSTRUCTION COST (TPC) SUMMARY
CONVENTIONAL ACQUISITION STRATEGY

PROJECT TITLE: NMSF CONCEPTUAL DESIGN REPORT

JOB NUMBER: 11818

DATE: 07/13/95

ITEM DESCRIPTION				SUBTOTAL	TOTAL COST
BURDENED TPC SUMMARY					
A. Design and Management Costs					\$6,808,833
1. Facility ED&I				\$5,159,286	
WBS	Category				
A. B1F01	Title I	(@ 6.4% of ECC)	\$1,769,458		
B. B2F01	Title II	(@ 6.2% of ECC)	\$1,727,675		
C. B3F01	Title III	(@ 6.0% of ECC)	\$1,662,133		
2. Special Facilities ED&I				\$847,413	
WBS	Category				
A. B1S01	Title I	(@ 1.8% of SFE)	\$332,070		
B. B2S01	Title II	(@ 2.2% of SFE)	\$384,394		
C. B3S01	Title III	(@ 0.7% of SFE)	\$130,949		
3. Project Management				\$2,802,154	
WBS	Category				
A. A1F01	Project Management	(@ 5.4% of ECC+ED&I+SFE)	\$1,886,110		
B. A2F01	Construction Management	(@ 3.6% of ECC+ED&I+SFE)	\$1,116,044		
B. Construction Cost (ECC+SFE)					\$27,717,879
WBS	Category				
1. C3A	Building & Site (ECC)				
A. Modifications				\$7,322,410	
2. Other Structures (ECC)				\$122,044	
WBS	Category				
A. C3B	Utility Building		\$70,443.00		
B. C3C	Mech. Penthouse		\$51,601.00		
3. Special Facilities Equipment (SFE)				\$17,487,712	
WBS	Category				
A. E2O	Security Systems Equipment		\$1,037,562.00		
B. E2L	NOA Equipment		\$5,856,008.00		
C. E2C	Facility Monitoring System (Controls & Monitors)		\$1,861,390.00		
D. E2S	Storage Equipment		\$8,932,752.00		
WBS	Category				
4. C5	Utilities (ECC)			\$93,206	
5. C1C	Demolition (ECC)			\$761,074	
6. C1S	Special Security Construction (ECC)			\$636,345	
7. C2	Sitework (ECC)			\$34,600	
8. C0011	Field Overhead & Expenses (ECC)			\$1,260,588	
WBS	Category				
C. B4M01 Laboratory Procurement Burden					\$923,892
1. Construction Contract	(\$24,185,098)	(3.25%)	\$791,112		
2. A/E Design Contracts	(\$2,227,235)	(3.25%)	\$110,688		
3. SFE Design Contract	(\$445,714)	(3.25%)	\$22,082		
SUBTOTAL				\$37,450,704	
D. Contingency					\$7,840,870
E. Total Estimated Construction Costs (TEC)					\$45,291,574
F. Other Project Costs (OPC)				(@ 25.1% of TEC)	\$11,361,089
G. Total Project Costs (TPC)					\$56,652,673

University of California
Los Alamos National Laboratory
TOTAL PROJECT COST (TPC) SUMMARY

PROJECT TITLE: NMSF TA-55 PF-41
JOB NUMBER: 11818
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 10-Jul-95

Item Description	Item Total Cost
Total Estimated Construction Cost	\$45,291,574
Other Project Costs	\$11,361,098
R&D Necessary to Complete Project	\$4,821,517
Conceptual Planning Costs	\$3,159,744
Decontamination & Decommissioning	\$0
Environmental Documentation	\$136,732
Safety Documentation	\$619,443
Other Project Related Costs	\$240,150
Acceptance and Turnover	\$2,383,512
Total Project Cost (TPC)	\$56,652,672

CONTINGENCY ANALYSIS (SFE)

University of California
Los Alamos National Laboratory
CONTINGENCY RATE AND ALLOWANCE SUMMARY

PROJECT TITLE: MHSF PF-41 TA-55

JOB NUMBER:

11818 DATE:

ESTIMATOR: ICF KAISER ENGINEERS

WBS	Contingency
Item Element of Cost	Rate

Allowance

E20 OTHER SECURITY EQUP.	20.00%
E2511 STORAGE ARRAY HARDWARE	25.00%
E2512 STORAGE ARRAY COOLING	25.00%
E2513 STORAGE ARRAY SHIPPING	20.00%
E2514 ALARM SYSTEMS	25.00%

Z

11

University of California
Los Alamos National Laboratory
RISK AND CONTINGENCY ANALYSIS

PROJECT TITLE: NMSF PF-41 TA-55
JOB NUMBER:
ESTIMATOR: ICF KAMEN ENGINEERS

DATE: 25-May-85

NORMAL MAXIMUM ESTIMATE
CONTINGENCY RATES

ENTER
ESTIMATE TYPE

Feasibility 35%
Conceptual 25%
Title I 20%
Title II 15%
Construction 10%

Conceptual

COLUMN HEADING LEGEND

RW = Relative Weight (0=Not Applicable; 5=Important)
CL = Confidence Level (1=Low Risk; 5=High Risk)
WS = Weighted Score

WORKBREAKDOWN ITEM/DESCRIPTION	E20 OTHER SECURITY EQUIP.			E2911 STORAGE ARRAY HARDWARE			E2912 STORAGE ARRAY COOLING			E2913 STORAGE ARRAY SHIPPING			E2914 ALARM SYSTEMS			WS
	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	
DESIGN ELEMENTS																
DESIGN ELEMENTS																
Site Selection/Conditions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Complexity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Specification Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Specification Complexity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CONSTRUCTION ELEMENTS																
Site Conditions	4	3	12	5	4	20	5	4	20	4	3	12	5	4	20	20
Type of Construction	4	4	16	5	5	25	5	5	25	4	4	16	5	5	25	25
Design Completeness/Complexity	5	3	15	5	5	25	5	5	25	5	3	15	5	5	25	25
Material Conditions	5	4	20	5	5	25	5	5	25	5	4	20	5	5	25	25
Method of Accomplishment (e.g. FPI, SSS, SBA, etc)	5	5	25	5	5	25	5	5	25	5	5	25	5	5	25	25
Life Safety/Security Requirements	4	4	16	4	4	16	4	4	16	4	4	16	4	4	16	16
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STANDARD EQUIPMENT ELEMENTS																
Specification Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quantity Accuracy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Price Accuracy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SPECIAL FACILITIES/EQUIPMENT ELEMENTS																
Requester's Specifications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maturity of Technology	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PROJECT MANAGEMENT ELEMENTS																
Project Complexity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Project Schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quality Assurance/Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	27	29	104	26	24	136	28	28	136	27	23	104	29	28	136	

University of Georgia
Los Alamos National Laboratory
RISK AND CONTINGENCY ANALYSIS

PROJECT TITLE: NNSF PF-41 TA-35
JOB NUMBER: 00000000
ESTIMATOR: KCF KAISER ENGINEERS

DATE: 25-May-85

NORMAL MAXIMUM ESTIMATE
CONTINGENCY RATES

ENTER
ESTIMATE TYPE

Feasibility	35%	} Conceptual
Conceptual	25%	
Final	20%	
Construction	10%	

COLUMN HEADING LEGEND

RW = Relative Weight (0=Not Applicable; 5=Important)
CL = Confidence Level (1=Low Risk; 5=High Risk)
WS = Weighted Score

WORKBREAKDOWN (ITEM DESCRIPTION) -->	E20 OTHER SECURITY EQUIP.			E2911 STORAGE ARRAY HARDWARE			E2912 STORAGE ARRAY COOLING			E2913 STORAGE ARRAY SHIPPING			E2914 ALARM SYSTEMS		
	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS
DESIGN ELEMENTS															
TOTAL POSSIBLE SCORE (total relative weights x 5)		135			145			145			135			145	
SCORE RATIO (weighted score total/total possible score)	104 /	135 =	0.770	130 /	145 =	0.938	130 /	145 =	0.938	104 /	135 =	0.770	130 /	145 =	0.938
BASE CONTINGENCY RATE (Score Ratio X Normal Max. Contingency)	0.770 x	25% =	19.3%	0.938 x	25% =	23.4%	0.938 x	25% =	23.4%	0.770 x	25% =	19.3%	0.938 x	25% =	23.4%
BASE CONTINGENCY RATE			19.3%			23.4%			23.4%			19.3%			23.4%
OTHER CONSIDERATIONS															
Quality Assurance Level II, III (+0 to 10%) (Quality Assurance Level IV = no addition)			0.0%			0.0%			0.0%			0.0%			0.0%
Underground Lines not clearly defined, (+0 to 5%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Environmental Considerations (describe) (+0 to 10%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Other Special Requirements (describe) (+ 10)			0.0%			0.0%			0.0%			0.0%			0.0%
* Design Uncertainty (explain) (+ 10)			0.0%			0.0%			0.0%			0.0%			0.0%
* Construction Uncertainty (explain) (+ 5)			0.0%			1.0%			1.0%			0.0%			1.0%
TOTAL ITEM CONTINGENCY RATE			19.3%			24.4%			24.4%			19.3%			24.4%
ROUND TO			20.0%			25.0%			25.0%			20.0%			25.0%
ESTIMATED CONSTRUCTION COST -->			\$0.00			\$0.00			\$0.00			\$0.00			\$0.00
ITEM CONTINGENCY ALLOWANCE			\$0.00			\$0.00			\$0.00			\$0.00			\$0.00

* NOTES & EXPLANATIONS

CONTINGENCY ANALYSIS (FACILITY)

University of California
Los Alamos National Laboratory
CONTINGENCY RATE AND ALLOWANCE SUMMARY

PROJECT TITLE: NWSF PF-41 TA-55

JOB NUMBER:

11818 DATE:

ESTIMATOR: ICF KAISER ENGINEERS

WBS

. . . Contingency

Item Element of Cost

Rate

Allowance

A	PROJ/CONST. MANAGEMENT	20.00%
B1F	ED&I FAC TITLE I	20.00%
B2F	ED&I FAC TITLE II	20.00%
B3F	ED&I FAC TITLE III	20.00%
B1S	ED&I SFE TITLE I	25.00%
B2S	ED&I SFE TITLE II	25.00%
B3S	ED&I SFE TITLE III	25.00%
C1C	DEMOLITION	18.00%
C1S	SPEC. SECURITY CONST.	25.00%
C3A	BLDG. MOOS	20.00%
C3B	MECH BLDG.	20.00%
C5	UTILITIES	20.00%
C3B02	MECH. BLDG. SITE WORK	18.00%
E2C	SFE CONTROLS	25.00%
E2L	SFE	20.00%

Z

::

PROJECT TITLE: NMSF PF-43 TA-86
 JOB NUMBER: 11818
 ESTIMATOR: ICF KASER ENGINEERS

University of California
 Los Alamos National Laboratory
 RISK AND CONTINGENCY ANALYSIS

DATE: 25-May-85

NORMAL MAXIMUM ESTIMATE
 CONTINGENCY RATES

ENTER
 ESTIMATE TYPE

Feasibility 35%
 Conceptual 25%
 Title I 30%
 Title II 15%
 Construction 10%

Conceptual

COLUMN HEADING LEGEND

RW = Relative Weight (0=Not Applicable; 5=Important)
 CL = Confidence Level (1=Low Risk; 5=High Risk)
 WS = Weighted Score

WORKBREAKDOWN ITEM/DESCRIPTION -->	A PROJECT MGMT. MANAGEMENT			B1F EDM/FAC TITLE I			B2F EDM/FAC TITLE II			B3F EDM/FAC TITLE III			B1B EDM/FAC TITLE I			WS
	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	
DESIGN ELEMENTS																
Site Selection/Conditions	0	0	0	4	4	16	4	4	16	4	4	16	5	5	25	25
Design Completeness	0	0	0	4	4	16	4	4	16	4	4	16	5	5	25	25
Design Complexity	0	0	0	4	4	16	4	4	16	4	4	16	5	5	25	25
Design Schedule	0	0	0	4	4	16	4	4	16	4	4	16	5	5	25	25
Specification Completeness	0	0	0	4	4	16	4	4	16	4	4	16	5	5	25	25
Specification Complexity	0	0	0	4	4	16	0	0	0	4	4	16	5	5	25	25
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CONSTRUCTION ELEMENTS																
Site Conditions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Type of Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Completeness/Complexity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Market Conditions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment (e.g. FPI, OSS, SBA, etc.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Life Safety/Security Requirements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STANDARD EQUIPMENT ELEMENTS																
Specification Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quantity Accuracy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Price Accuracy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SPECIAL FACILITIES/EQUIPMENT ELEMENTS																
Requester's Specifications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maturity of Technology	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PROJECT MANAGEMENT ELEMENTS																
Project Complexity	4	4	16	0	0	0	0	0	0	0	0	0	0	0	0	0
Project Schedule	4	4	16	0	0	0	0	0	0	0	0	0	0	0	0	0
Quality Assurance/Control	4	4	16	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	12	12	48	24	24	96	24	24	96	24	24	96	30	30	90	100

University of California
Los Alamos National Laboratory
RISK AND CONTINGENCY ANALYSIS

PROJECT TITLE: NMSF PF-41 TA-85
JOB NUMBER: 11818
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 25-May-93

NORMAL MAXIMUM ESTIMATE
CONTINGENCY RATES

ENTER
ESTIMATE TYPE

Feasibility	35%	} Conceptual
Conceptual	25%	
Title I	20%	
Title II	15%	
Construction	10%	

COLUMN/HEADING LEGEND

RW = Relative Weight (0=Not Applicable; 5=Important)
CL = Confidence Level (1=Low Risk; 5=High Risk)
WS = Weighted Score

WORKBREAKDOWN ITEM/DESCRIPTION -->	A PROJ/CONST. MANAGEMENT			B1F [EDM FAC TITLE I]			B2F [EDM FAC TITLE II]			B3F [EDM FAC TITLE III]			B4B [EDM GFE TITLE I]		
	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS
DESIGN ELEMENTS															
TOTAL POSSIBLE SCORE (total relative weights x 5)	80			120			115			120			150		
SCORE RATIO (weighted score total/total possible score)	48 / 80 =		0.600	98 / 120 =		0.800	82 / 115 =		0.700	86 / 120 =		0.700	100 / 150 =		1.000
BASE CONTINGENCY RATE (Score Ratio X Normal Max. Contingency)	0.600 x 25% =		20.0%	0.800 x 25% =		20.0%	0.700 x 25% =		20.0%	0.700 x 25% =		20.0%	1.000 x 25% =		25.0%
BASE CONTINGENCY RATE			20.0%			20.0%			20.0%			20.0%			25.0%
OTHER CONSIDERATIONS															
Quality Assurance Level I, II, III; (+0 to 10%) (Quality Assurance Level IV = no addition)			0.0%			0.0%			0.0%			0.0%			0.0%
Underground Lines not clearly defined; (+0 to 5%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Environmental Considerations (describe) (+0 to 10%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Other Special Requirements (describe) (+ %)			0.0%			0.0%			0.0%			0.0%			0.0%
* Design Uncertainty (explain) (+ %)			0.0%			0.0%			0.0%			0.0%			0.0%
* Construction Uncertainty (explain) (+ %)			0.0%			0.0%			0.0%			0.0%			0.0%
TOTAL ITEM CONTINGENCY RATE			20.0%			20.0%			20.0%			20.0%			25.0%
ROUND TO			20.0%			20.0%			20.0%			20.0%			25.0%
ESTIMATED CONSTRUCTION COST -->	\$0.00			\$0.00			\$0.00			\$0.00			\$0.00		
ITEM CONTINGENCY ALLOWANCE	\$0.00			\$0.00			\$0.00			\$0.00			\$0.00		

* NOTES & EXPLANATIONS

University of California
Los Alamos National Laboratory
RISK AND CONTINGENCY ANALYSIS

PROJECT TITLE: NWSF FF-41 TA-55
JOB NUMBER: 11818
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 25-May-85

NORMAL MAXIMUM ESTIMATE
CONTINGENCY RATES

ENTER
ESTIMATE TYPE

Feasibility 35%
Conceptual 25% }
Title I 20% } Conceptual
Title II 15% }
Construction 10% }

COLUMN HEADINGS LEGEND

RW = Relative Weight (0=Not Applicable; 5=Important)
CL = Confidence Level (1=Low Risk; 5=High Risk)
WS = Weighted Score

WORKBREAKDOWN ITEM DESCRIPTION -->	1925 EDM SFS TITLE II			1935 EDM SFS TITLE II			CIC DEMOLITION			CIS SPEC. SECURITY CONST.			CSA BLDG. MODS			WS
	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	
DESIGN ELEMENTS																
DESIGN ELEMENTS																
Site Selection/Conditions	5	5	25	5	5	25	0	0	0	0	0	0	0	0	0	0
Design Completeness	5	5	25	5	5	25	0	0	0	0	0	0	0	0	0	0
Design Complexity	5	5	25	5	5	25	0	0	0	0	0	0	0	0	0	0
Design Schedule	5	5	25	5	5	25	0	0	0	0	0	0	0	0	0	0
Specification Completeness	5	5	25	5	5	25	0	0	0	0	0	0	0	0	0	0
Specification Complexity	4	5	20	5	5	25	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CONSTRUCTION ELEMENTS																
Site Conditions	0	0	0	0	0	0	3	3	9	4	4	16	4	4	16	16
Type of Construction	0	0	0	0	0	0	3	3	9	4	4	16	4	4	16	12
Design Completeness/Complexity	0	0	0	0	0	0	3	3	9	4	4	16	5	4	20	20
Material Conditions	0	0	0	0	0	0	4	4	16	4	4	16	4	4	16	16
Method of Accomplishment (e.g. FPI, SPS, SPA, etc)	0	0	0	0	0	0	4	4	16	4	4	16	5	4	20	20
Life Safety/Security Requirements	0	0	0	0	0	0	4	4	16	4	4	16	5	4	20	20
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STANDARD EQUIPMENT ELEMENTS																
Specification Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quantity Accuracy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Price Accuracy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SPECIAL FACILITIES/EQUIPMENT ELEMENTS																
Requester's Specifications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maturity of Technology	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PROJECT MANAGEMENT ELEMENTS																
Project Complexity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Project Schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quality Assurance/Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	20	20	145	30	30	150	21	21	75	24	24	96	27	23	104	

PROJECT TITLE: NWSF PF-41 TA-55
 JOB NUMBER: 11618
 ESTIMATOR: LCP KASPER ENGINEERS

University of Kentucky
 Los Alamos National Laboratory
 RISK AND CONTINGENCY ANALYSIS

DATE: 25-May-85

NORMAL MAXIMUM ESTIMATE
 CONTINGENCY RATES

ENTER
 ESTIMATE TYPE

Feasibility 35%
 Conceptual 25%
 Title I 20%
 Title II 15%
 Construction 10%
 Conceptual

COLUMN HEADING LEGEND

RW = Relative Weight (0=Not Applicable; 5=Important)
 CL = Confidence Level (1=Low Risk; 5=High Risk)
 WS = Weighted Score

WORKBREAKDOWN ITEM DESCRIPTION -->	B2S ED&I SFE TITLE II			B3S ED&I SFE TITLE II			C1C DEMOLITION			C1S SPECL. SECURITY CONST.			C3A BLDG. MOODS		
	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS
DESIGN ELEMENTS															
TOTAL POSSIBLE SCORE (total relative weights x 5)	145			150			105			120			135		
SCORE RATIO (weighted score total/total possible score)	145 /	145 =	1.000	150 /	150 =	1.000	75 /	105 =	0.714	90 /	120 =	0.800	104 /	135 =	0.770
BASE CONTINGENCY RATE (Score Ratio X Normal Max. Contingency)	1.000 x	25% =	25.0%	1.000 x	25% =	25.0%	0.714 x	25% =	17.9%	0.800 x	25% =	20.0%	0.770 x	25% =	19.3%
BASE CONTINGENCY RATE			25.0%			25.0%			17.9%			20.0%			19.3%
OTHER CONSIDERATIONS															
Quality Assurance Level I, II, III (+0 to 10%) (Quality Assurance Level IV = no addition)			0.0%			0.0%			0.0%			0.0%			0.0%
Underground Lines not clearly defined, (+0 to 5%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Environmental Considerations (describe) (+0 to 10%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Other Special Requirements (describe) (+ 5%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Design Uncertainty (explain) (+ 5%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Construction Uncertainty (explain) (+ 5%)			0.0%			0.0%			0.0%			5.0%			0.0%
TOTAL ITEM CONTINGENCY RATE			25.0%			25.0%			17.9%			20.0%			19.3%
ROUND TO			25.0%			25.0%			18.0%			20.0%			20.0%
ESTIMATED CONSTRUCTION COST -->			\$0.00			\$0.00			\$0.00			\$0.00			\$0.00
ITEM CONTINGENCY ALLOWANCE			\$0.00			\$0.00			\$0.00			\$0.00			\$0.00

* NOTES & EXPLANATIONS

University of California
Los Alamos National Laboratory
RISK AND CONTINGENCY ANALYSIS

PROJECT TITLE: NNSF PF-41 TA-55
JOB NUMBER:
ESTIMATOR: KCF KAISER ENGINEERS

DATE: 25-May-85

NORMAL MAXIMUM ESTIMATE
CONTINGENCY RATES

ENTER
ESTIMATE TYPE

Feasibility 35%
Conceptual 55%
Title I 20%
Title II 15%
Construction 10%
Conceptual

COLUMN HEADING LEGEND

RW = Relative Weight (0 = Not Applicable; 6 = Important)
CL = Confidence Level (1 = Low Risk; 5 = High Risk)
WS = Weighted Score

WORK/BREAKDOWN ITEM DESCRIPTION -->	C30 MECH BLDG.			C5 UTILITIES			C3002 MECH. BLDG. SITE WORK			E2C SFE CONTROLS			E2L SFE			WS
	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	
DESIGN ELEMENTS																
DESIGN ELEMENTS																
Site Selection/Conditions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Complexity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Specification Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Specification Complexity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CONSTRUCTION ELEMENTS																
Site Conditions	4	4	16	4	4	16	4	4	16	4	4	16	4	4	16	12
Types of Construction	4	3	12	4	3	12	4	3	12	4	3	12	4	3	12	16
Design Completeness/Complexity	5	4	20	5	4	20	5	3	15	5	5	25	5	3	15	15
Material Conditions	4	4	16	4	4	16	4	4	16	4	4	16	4	4	16	20
Method of Accomplishment (e.g. FPI, GSA, etc)	5	4	20	5	4	20	5	3	15	5	5	25	5	5	25	25
Life Safety/Security Requirements	5	4	20	5	4	20	5	4	20	4	4	16	4	4	16	16
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STANDARD EQUIPMENT ELEMENTS																
Specification Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quantity Accuracy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Price Accuracy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SPECIAL FACILITIES/EQUIPMENT ELEMENTS																
Requester's Specifications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maturity of Technology	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PROJECT MANAGEMENT ELEMENTS																
Project Complexity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Project Schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quality Assurance/Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	27	23	104	27	23	104	23	21	82	28	29	126	27	23	104	

PROJECT TITLE: NMSF PF-41 TA-88
 JOB NUMBER: 44-00000
 ESTIMATOR: ICF KAISER ENGINEERS

University of
 Los Alamos National Laboratory
 RISK AND CONTINGENCY ANALYSIS

DATE: 25-May-85

NORMAL MAXIMUM ESTIMATE
 CONTINGENCY RATES

ENTER
 ESTIMATE TYPE

Feasibility	35%	Conceptual
Conceptual	25%	
Title I	20%	
Title II	15%	
Construction	10%	

COLUMN HEADING LEGEND

RW = Relative Weight (0=Not Applicable; 5=Important)
 CL = Confidence Level (1=Low Risk; 5=High Risk)
 WS = Weighted Score

WORKBREAKDOWN ITEM DESCRIPTION -->	C3B MECH BLDG.			C3 UTILITIES			C3B02 MECH. BLDG. SITE WORK			ERC SFE CONTROLS			EEL SFE		
	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS
DESIGN ELEMENTS															
TOTAL POSSIBLE SCORE (total relative weights x 5)		135			135			115			145			135	
SCORE RATIO (weighted score total/total possible score)	104 /	135 =	0.770	104 /	135 =	0.770	92 /	115 =	0.713	139 /	145 =	0.958	104 /	135 =	0.770
BASE CONTINGENCY RATE (Score Ratio X Normal Max. Contingency)	0.770 x	25% =	19.2%	0.770 x	25% =	19.2%	0.713 x	25% =	17.8%	0.958 x	25% =	23.4%	0.770 x	25% =	19.2%
BASE CONTINGENCY RATE			19.2%			19.2%			17.8%			23.4%			19.2%
OTHER CONSIDERATIONS															
Quality Assurance Level I, II, III (+0 to 10%) (Quality Assurance Level IV = no addition)			0.0%			0.0%			0.0%			0.0%			0.0%
Underground Lines not clearly defined, (+0 to 5%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Environmental Considerations (described) (+0 to 10%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Other Special Requirements (described) (+ %)			0.0%			0.0%			0.0%			0.0%			0.0%
* Design Uncertainty (explain) (+ %)			0.0%			0.0%			0.0%			1.0%			9.0%
* Construction Uncertainty (explain) (+ %)			0.0%			0.0%			0.0%			0.0%			0.0%
TOTAL ITEM CONTINGENCY RATE			19.2%			19.2%			17.8%			24.4%			19.2%
ROUND TO			20.0%			20.0%			18.0%			25.0%			20.0%
ESTIMATED CONSTRUCTION COST -->			\$0.00			\$0.00			\$0.00			\$0.00			\$0.00
ITEM CONTINGENCY ALLOWANCE			\$0.00			\$0.00			\$0.00			\$0.00			\$0.00

* NOTES & EXPLANATIONS

ESCALATION ANALYSIS

University of California
Los Alamos National Laboratory
ESCALATION SUMMARY BY WBS

PROJECT TITLE: NMSF PF-41 TA-55 (CONVENTIONAL)
JOB NUMBER: 11818
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 25-May-95

Current DRI Escalation Rates by Year

1995	1996	1997	1998	1999
0.87%	3.00%	3.10%	3.10%	3.00%

2000	2001	2002	2003	2004
3.00%	3.00%	3.00%	3.00%	3.00%

WBS ACTIVITY		ESCAL BASE DATE	ACTIVITY START DATE	END DATE	MID- POINT	ESCAL RATE
A1	PROJECT MANAGEMENT	Jun-95	Oct-96	Jan-2001	Nov-98	10.62%
A2	CONSTRUCTION MANAGEMENT	Jun-95	Jul-98	Apr-2001	Nov-99	13.93%
B1	TITLE I DESIGN	Jun-95	Oct-96	Jun-97	Feb-97	4.62%
B2	TITLE II DESIGN	Jun-95	Nov-97	Jul-98	Mar-98	8.14%
B3	TITLE III DESIGN	Jun-95	Jul-98	Apr-2001	Nov-99	13.93%
C1	DEMOLITION	Jun-95	Feb-99	Apr-2000	Sep-99	13.10%
C2	SITEWORK	Jun-95	Feb-99	May-99	Mar-99	11.71%
C3A	BLDG CONSTRUCTION	Jun-95	Feb-99	Apr-2000	Sep-99	11.48%
C3A15	MECHANICAL	Jun-95	Jun-99	Jul-2000	Dec-99	14.22%
C3A16	ELECTRICAL	Jun-95	Apr-99	Jun-2000	Nov-99	13.65%
C3A16F	FIRE PROTECTION	Jun-95	Jun-99	Dec-99	Sep-99	11.48%
C3B	UTILITY BLDG	Jun-95	Jun-99	Aug-2000	Jan-2000	11.48%
C3A	UTILITY	Jun-95	Feb-99	May-99	Mar-99	11.71%
E2	SFE	Jun-95	Feb-99	Jan-2001	Jan-2000	14.50%

**LABORATORY
PROCUREMENT
BURDEN**

UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY

LABORATORY PROCUREMENT BURDEN ON CONSTRUCTION PROCUREMENT ACTIVITIES

PROJECT TITLE:

NMSF PF-41 TA-55

DATE:

30-Jun-95

P. I. D.:

11818

ESTIMATOR:

ICF KAISER ENGINEERS

TAXABLE ITEM	CONTRACT AMOUNT	LABORATORY PROCUREMENT BURDEN FOR LINE ITEM PROJECTS 3.25%
A&E SFE COST OF SERVICES	\$679,450.00	\$22,082.13
A&E FACILITY COST OF SERVICES	\$3,406,096.00	\$110,698.12
CONSTRUCTION COST (SFE & FACILITY)	\$24,341,909.00	\$791,112.04
0	\$0.00	\$0.00
0	\$0.00	\$0.00
0	\$0.00	\$0.00
0	\$0.00	\$0.00
0	\$0.00	\$0.00
=====	=====	=====
TOTAL LABORATORY PROCUREMENT BURDEN	\$28,427,455.00	\$923,892.29

r.s.miller

Los Alamos National Laboratory
Procurement Recharge Rates
(mat tax)

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<u>Expense Projects</u>		<u>FY-94</u>	<u>FY-95</u>
Contracts:	less than \$1,000,000	7.86%	7.10%
	\$1,000,000 to \$4,000,000	2.275%	2.275%
	greater than \$4,000,000	1.875%	1.875%

GPP and Line Item Projects

Contracts:	Construction Contracts	3.25%	3.25%
	A/E Service Contracts	3.25%	3.25%

Notes: Rates are in effect on FY-94 - GPPs

Rates are in effect on FY-95 - Line Item and Expense Projects

OTHER PROJECT COST ANALYSIS

LOS ALAMOS NATIONAL LABORATORY
LOS ALAMOS, NEW MEXICO 87544

OTHER PROJECT COSTS-CONVENTIONAL ACQUISITION STRATEGY

PROJECT TITLE:NUCLEAR MATERIALS STORAGE FACILITY

DATE:

26-May-95

P. I. D.: 11818

ESTIMATOR: ICF KAISER ENGINEERS

R&D NECESSARY TO COMPLETE PROJECT	\$4,751,503
PRE-AUTHORIZATION	
RESEARCH AND DEVELOPMENT	\$3,017,665
DESIGN (UNDER AUTHORIZATION)	
RESEARCH & DEVELOPMENT (related to project)	\$1,733,838
CONCEPTUAL PLANNING COSTS	\$3,200,936
PRE-AUTHORIZATION (Prior to Start of Title I Design)	
ENGINEERING STUDY	\$420,000
SITE SELECTION REPORT	\$0
SURVEYING FOR SITING	\$0
CAPITAL REVIEW BOARD (CRB Approval)	\$0
CANDIDATE PROJECTS	\$0
(support sheet and presentation to DOE)	
SHORT FORM DATA SHEET/CAMP	\$0
CONCEPTUAL DESIGN PLAN	\$0
WORK ORDERS - CDR Prep, etc.	\$0
INTEGRATED PROJECT SCHEDULE	\$0
(R & D, Safety, Environmental, Operations, etc.)	
FUNCTIONAL DESIGN CRITERIA	\$80,435
EVALUATION OF RCRA/EPA/STATE	\$0
PERMIT REQUIREMENTS	
ESTIMATES, as required (Parametric, ICE)	\$0
PROJECT - VALIDATIONS	\$0
EXPENSE FUNDING	\$0
CONCEPTUAL DESIGN COSTS	
CONCEPTUAL DESIGN REPORT (CDR)	\$2,027,635
DESIGN REVIEWS	\$172,000
ACTION DESCRIPTION MEMO	\$0
CONCEPTUAL PROJECT SCHEDULE	\$0
PLANT FORCES WORK REVIEW	\$0
ENERGY CONSERVATION REPORT	\$0
ECONOMIC/LIFE CYCLE COST ANALYSIS	\$0
PHYSICALLY HANDICAPPED REVIEW	\$0
STATEMENT OF WORK - FOR OPERATING CONTRACTOR	\$0
(OC) PROJECT MANAGEMENT ACTIVITIES	
SECURITY REVIEW AND PLAN	\$0
VULNERABILITY ASSESSMENTS	\$15,131

LOS ALAMOS NATIONAL LABORATORY
LOS ALAMOS, NEW MEXICO 87544

OTHER PROJECT COSTS-CONVENTIONAL ACQUISITION STRATEGY

PROJECT TITLE: NUCLEAR MATERIALS STORAGE FACILITY
P. I. D.: 11818
ESTIMATOR: JCF KAISER ENGINEERS

DATE: 26-May-95

MASTER SAFEGUARDS & SECURE ANALYSIS	\$0	
CONSTRUCTION PROJECT DATA SHEET	\$0	
E&E CROSSCUT	\$0	
STRATEGIC FACILITY ASSESSMENT (Mission Need)	\$0	
ESTIMATES, as required (Parametric, ICR)	\$80,348	
PROJECT - VALIDATIONS	\$31,623	
MONTHLY CONCEPTUAL STATUS REPORT	\$0	
REQUEST FOR PROJECT AUTHORIZATION	\$0	
ARCHITECT/ENGINEER (A/E) SELECTION	\$0	
SOW FOR OFF-SITE A/E		
IDENTIFICATION OF PROJECT RECORD REQUIREMENTS	\$0	
PROJECT MANAGEMENT PLAN (PMP)	\$0	
PROJECT QUALITY ASSURANCE (QA)	\$0	
CONFIGURATION MANAGEMENT PLAN	\$0	
PILOT PLANTS	\$0	
EXPENSE FUNDING	\$0	
FACILITY AS-BUILTS DRAWINGS	\$0	
PRIOR TO DESIGN START		
WORK ORDERS - CDR Prep, etc.	\$0	
INTEGRATED PROJECT SCHEDULE	\$0	
(R & D, Safety, Environmental, Operations, etc.)		
EVALUATION OF RCRA/EPA/STATE	\$0	
PERMIT REQUIREMENTS		
DESIGN (UNDER AUTHORIZATION)		
OUTSIDE CONTRACTOR SUPPORT	\$103,960	
PRIOR TO START OF TITLE I DESIGN		
OBTAIN PERMITS REQUIRED PRIOR TO START OF	\$42,847	
CONSTRUCTION (prior to start of Title I)		
VALUE ENGINEERING (before Title I)	\$226,958	
DECONTAMINATION AND DECOMMISSIONING		\$0
PROCUREMENT AND CONSTRUCTION		
DECONTAMINATION (exceeds normal operating levels)	\$0	
ENVIRONMENTAL DOCUMENTATION COSTS		\$139,278
PRE-AUTHORIZATION		
DDE ENVIRONMENTAL CHECKLIST (DEC)	\$0	
CULTURAL RESOURCES REVIEW	\$0	

LOS ALAMOS NATIONAL LABORATORY
LOS ALAMOS, NEW MEXICO 87544

OTHER PROJECT COSTS-CONVENTIONAL ACQUISITION STRATEGY

PROJECT TITLE:NUCLEAR MATERIALS STORAGE FACILITY
P. I. D.: 11818
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 26-May-95

NEPA DOCUMENTATION	\$96,432	
NEHAPS DOCUMENTATION	\$42,847	
DISCHARGE PERMITS	\$0	
ARCHAEOLOGICAL ASSESSMENT	\$0	
PROCESS WASTE MANAGEMENT ASSESSMENT	\$0	
PROJECT PLAN FOR WASTE MANAGEMENT	\$0	
SAFETY DOCUMENTATION COSTS		\$638,514
PRE-AUTHORIZATION		
REQUIREMENTS FOR SAFETY	\$104,540	
ANALYSIS DETERMINATION		
PRELIMINARY SAFETY ANALYSIS REPORT (SAR)	\$426,857	
(If performed as part of the Conceptual Design Report)		
PROCUREMENT AND CONSTRUCTION		
SAFETY/SECURITY (Prior to Title I)	\$107,117	
SAFETY PLAN & OVERVIEW	\$0	
OTHER PROJECT-RELATED COSTS		\$247,355
DESIGN (UNDER AUTHORIZATION)		
DESIGN REVIEW SUPPORT BY DC	\$0	
PROCUREMENT AND CONSTRUCTION		
OPERATING CONTRACTOR/OPERATOR SUPPORT DURING CONSTRUCTION	\$247,355	
SPARE PARTS INVENTORY	\$0	
DAVIS BACON/SOLE SOURCE DETERMINATION	\$0	
ACCEPTANCE AND TURNOVER		\$2,383,512
PERFORM OPERATION ACCEPTANCE TESTING	\$417,805	
OPERATIONAL READINESS REVIEW	\$1,237,369	
START-UP COSTS	\$85,319	
OPERATIONS AND MAINTENANCE PROCEDURES	\$171,966	
TRAINING OPERATORS	\$123,695	
AS-BUILTS & CONFIGURATION MANAGEMENT	\$265,552	
USER MOVE-IN	\$61,805	
GRAND TOTAL	\$11,361,099	\$11,361,099

UNIVERSITY OF CALIFORNIA
JULIUS ROSENBLUTH NATIONAL LABORATORY
OTHER PROJECT CODE: DETAILED WORK-SHEET

PROJECT TITLE	NUCLEAR MATERIALS STORAGE FACILITY
P.O. NO.	11898
EST NUMBER	EST-040000-0000000000

DATE 2018-12-12

REGISTRATION RATE												TOTAL																																																																																																																																																																																																																																																																																																																																																																																																									
1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	23

STANDARDIZATION OF THE
FEDERAL BUREAU OF INVESTIGATION
PUNISHMENT, DEPARTMENT OF JUSTICE

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CAN-AM PROJECT BOOK | ONE HALF MOON DRIVE

PROJECT TITLE	NUCLEAR WASTE MANAGEMENT PROJECT
P.I.O.	1978
ESTIMATION	100 MARCH 1980

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CONCEPTUAL DESIGN CONF
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 CONCEPTUAL DESIGN REPORT CONF

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FIELDWORK CITY OF CHICAGO

NORTH BAYVIEW STATION FACILITY										2010-2011										2012-2013										2014-2015									
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UNIVERSITY OF CALIFORNIA
LOS ANGELES NATIONAL LABORATORY
OTHER PROJECT COSTS DETAIL WORKSHEET

PROJECT TITLE		DATE												20-100-00	
P. 1. 01.															
DESCRIPTION															
BASE YEAR															
ESTIMATION NAME															
PERCENT															
FROM BASE YEAR															
CONCEPTUAL DESIGN COSTS															
PERCENT OF TOTAL PROJECT COSTS (%)															
UNRECALCULATED COSTS															
FTE															
TOTAL UNRECALCULATED COSTS BY YEAR															
RECALCULATED COSTS															
FTE															
TOTAL RECALCULATED COSTS BY YEAR															

OTHER PROJECTS OF OUTSTANDING WORK-LOAD

PROJECT TITLE	MULTI-MATERIALS STORAGE FACILITY
CITY	PORT
DESCRIPTION	NEW FACILITY

DATE 24 May 1964

BASE YEAR											TOTAL
ENCUMBRANCE RATE	FF-APP	1966	1967	1968	1969	1970	1971	1972	1973	1974	
AVERAGE	8.00%	8.00%	8.00%	8.10%	8.20%	8.30%	8.40%	8.50%	8.60%	8.70%	
PROG BASE YEAR	8.00%	8.00%	8.00%	8.10%	8.20%	8.30%	8.40%	8.50%	8.60%	8.70%	

CONCEPTUAL DESIGN CODE
ENCLOSURE/CONTAINER (PART 1) (2)
PAGE(S) - 10/10/10

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DATE	DESCRIPTION	AMOUNT	BALANCE	CHECK NO.	DATE	DESCRIPTION	AMOUNT	BALANCE	CHECK NO.
01/01/2020	OPENING BALANCE	100.00	100.00		01/01/2020	OPENING BALANCE	100.00	100.00	
01/05/2020	PAYROLL	50.00	50.00	101	01/05/2020	PAYROLL	50.00	50.00	101
01/10/2020	RENT	25.00	25.00	102	01/10/2020	RENT	25.00	25.00	102
01/15/2020	UTILITIES	15.00	15.00	103	01/15/2020	UTILITIES	15.00	15.00	103
01/20/2020	INSURANCE	10.00	10.00	104	01/20/2020	INSURANCE	10.00	10.00	104
01/25/2020	MAINTENANCE	5.00	5.00	105	01/25/2020	MAINTENANCE	5.00	5.00	105
01/30/2020	CLOSING BALANCE	100.00	100.00		01/30/2020	CLOSING BALANCE	100.00	100.00	

[illegible]

10/1/2018	10/2/2018	10/3/2018	10/4/2018	10/5/2018	10/6/2018	10/7/2018	10/8/2018	10/9/2018	10/10/2018	10/11/2018	10/12/2018	10/13/2018	10/14/2018	10/15/2018	10/16/2018	10/17/2018	10/18/2018	10/19/2018	10/20/2018	10/21/2018	10/22/2018	10/23/2018	10/24/2018	10/25/2018	10/26/2018	10/27/2018	10/28/2018	10/29/2018	10/30/2018	10/31/2018	11/1/2018	11/2/2018	11/3/2018	11/4/2018	11/5/2018	11/6/2018	11/7/2018	11/8/2018	11/9/2018	11/10/2018	11/11/2018	11/12/2018	11/13/2018	11/14/2018	11/15/2018	11/16/2018	11/17/2018	11/18/2018	11/19/2018	11/20/2018	11/21/2018	11/22/2018	11/23/2018	11/24/2018	11/25/2018	11/26/2018	11/27/2018	11/28/2018	11/29/2018	11/30/2018	12/1/2018	12/2/2018	12/3/2018	12/4/2018	12/5/2018	12/6/2018	12/7/2018	12/8/2018	12/9/2018	12/10/2018	12/11/2018	12/12/2018	12/13/2018	12/14/2018	12/15/2018	12/16/2018	12/17/2018	12/18/2018	12/19/2018	12/20/2018	12/21/2018	12/22/2018	12/23/2018	12/24/2018	12/25/2018	12/26/2018	12/27/2018	12/28/2018	12/29/2018	12/30/2018	12/31/2018
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CHART PROJECT COSTS BY YEAR

PROJECT TITLE	NUCLEAR WASTE STORAGE FACILITY
P. I. NO.	1499
ISS. NO.	0264588 (ENCLOSURE)

date: 10-10-2010

		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432
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DESIGN (UNDER DEVELOPMENT)
OUR POLYGRAPHIC DESIGNERS ARE TO START OF THIS DESIGN

UNEMPLOYED COST	1991	1994	COSTS	1995	COSTS	1996	COSTS	1997	COSTS	1998	COSTS	1999	COSTS	2000	COSTS	2001	COSTS	2002	COSTS	2003	COSTS	2004	COSTS	2005	COSTS	2006	COSTS	2007	COSTS	2008	COSTS	2009	COSTS	2010	COSTS	2011	COSTS	2012	COSTS	2013	COSTS	2014	COSTS	2015	COSTS	2016	COSTS	2017	COSTS	2018	COSTS	2019	COSTS	2020	COSTS	2021	COSTS	2022	COSTS	2023	COSTS	2024	COSTS	2025	COSTS	2026	COSTS	2027	COSTS	2028	COSTS	2029	COSTS	2030	COSTS	2031	COSTS	2032	COSTS	2033	COSTS	2034	COSTS	2035	COSTS	2036	COSTS	2037	COSTS	2038	COSTS	2039	COSTS	2040	COSTS	2041	COSTS	2042	COSTS	2043	COSTS	2044	COSTS	2045	COSTS	2046	COSTS	2047	COSTS	2048	COSTS	2049	COSTS	2050	COSTS	2051	COSTS	2052	COSTS	2053	COSTS	2054	COSTS	2055	COSTS	2056	COSTS	2057	COSTS	2058	COSTS	2059	COSTS	2060	COSTS	2061	COSTS	2062	COSTS	2063	COSTS	2064	COSTS	2065	COSTS	2066	COSTS	2067	COSTS	2068	COSTS	2069	COSTS	2070	COSTS	2071	COSTS	2072	COSTS	2073	COSTS	2074	COSTS	2075	COSTS	2076	COSTS	2077	COSTS	2078	COSTS	2079	COSTS	2080	COSTS	2081	COSTS	2082	COSTS	2083	COSTS	2084	COSTS	2085	COSTS	2086	COSTS	2087	COSTS	2088	COSTS	2089	COSTS	2090	COSTS	2091	COSTS	2092	COSTS	2093	COSTS	2094	COSTS	2095	COSTS	2096	COSTS	2097	COSTS	2098	COSTS	2099	COSTS	2100	COSTS	2101	COSTS	2102	COSTS	2103	COSTS	2104	COSTS	2105	COSTS	2106	COSTS	2107	COSTS	2108	COSTS	2109	COSTS	2110	COSTS	2111	COSTS	2112	COSTS	2113	COSTS	2114	COSTS	2115	COSTS	2116	COSTS	2117	COSTS	2118	COSTS	2119	COSTS	2120	COSTS	2121	COSTS	2122	COSTS	2123	COSTS	2124	COSTS	2125	COSTS	2126	COSTS	2127	COSTS	2128	COSTS	2129	COSTS	2130	COSTS	2131	COSTS	2132	COSTS	2133	COSTS	2134	COSTS	2135	COSTS	2136	COSTS	2137	COSTS	2138	COSTS	2139	COSTS	2140	COSTS	2141	COSTS	2142	COSTS	2143	COSTS	2144	COSTS	2145	COSTS	2146	COSTS	2147	COSTS	2148	COSTS	2149	COSTS	2150	COSTS	2151	COSTS	2152	COSTS	2153	COSTS	2154	COSTS	2155	COSTS	2156	COSTS	2157	COSTS	2158	COSTS	2159	COSTS	2160	COSTS	2161	COSTS	2162	COSTS	2163	COSTS	2164	COSTS	2165	COSTS	2166	COSTS	2167	COSTS	2168	COSTS	2169	COSTS	2170	COSTS	2171	COSTS	2172	COSTS	2173	COSTS	2174	COSTS	2175	COSTS	2176	COSTS	2177	COSTS	2178	COSTS	2179	COSTS	2180	COSTS	2181	COSTS	2182	COSTS	2183	COSTS	2184	COSTS	2185	COSTS	2186	COSTS	2187	COSTS	2188	COSTS	2189	COSTS	2190	COSTS	2191	COSTS	2192	COSTS	2193	COSTS	2194	COSTS	2195	COSTS	2196	COSTS	2197	COSTS	2198	COSTS	2199	COSTS	2200	COSTS	2201	COSTS	2202	COSTS	2203	COSTS	2204	COSTS	2205	COSTS	2206	COSTS	2207	COSTS	2208	COSTS	2209	COSTS	2210	COSTS	2211	COSTS	2212	COSTS	2213	COSTS	2214	COSTS	2215	COSTS	2216	COSTS	2217	COSTS	2218	COSTS	2219	COST
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PROJECT TITLE: NUCLEAR MATERIAL STORAGE FACILITY
P.L.O.: 14816
ESTIMATOR: GCF KAISER ENGINEERING

DATE: 05-14-84 BY: MWD-BH

[illegible]

ENVIRONMENTAL DOCUMENTATION CONFERENCE
AN INTERNATIONAL
NETWORK DOCUMENTATION

UNDEVELOPED COST	2006	2007	COSTS	2008	COSTS	2009	COSTS	2010	COSTS	2011	COSTS	2012	COSTS	2013	COSTS	2014	COSTS	2015	COSTS	2016	COSTS	2017	COSTS	2018	COSTS	2019	COSTS	2020	COSTS	2021	COSTS	2022	COSTS	2023	COSTS	2024	COSTS	2025	COSTS	2026	COSTS	2027	COSTS	2028	COSTS	2029	COSTS	2030	COSTS	2031	COSTS	2032	COSTS	2033	COSTS	2034	COSTS	2035	COSTS	2036	COSTS	2037	COSTS	2038	COSTS	2039	COSTS	2040	COSTS	2041	COSTS	2042	COSTS	2043	COSTS	2044	COSTS	2045	COSTS	2046	COSTS	2047	COSTS	2048	COSTS	2049	COSTS	2050	COSTS	2051	COSTS	2052	COSTS	2053	COSTS	2054	COSTS	2055	COSTS	2056	COSTS	2057	COSTS	2058	COSTS	2059	COSTS	2060	COSTS	2061	COSTS	2062	COSTS	2063	COSTS	2064	COSTS	2065	COSTS	2066	COSTS	2067	COSTS	2068	COSTS	2069	COSTS	2070	COSTS	2071	COSTS	2072	COSTS	2073	COSTS	2074	COSTS	2075	COSTS	2076	COSTS	2077	COSTS	2078	COSTS	2079	COSTS	2080	COSTS	2081	COSTS	2082	COSTS	2083	COSTS	2084	COSTS	2085	COSTS	2086	COSTS	2087	COSTS	2088	COSTS	2089	COSTS	2090	COSTS	2091	COSTS	2092	COSTS	2093	COSTS	2094	COSTS	2095	COSTS	2096	COSTS	2097	COSTS	2098	COSTS	2099	COSTS	2100	COSTS	2101	COSTS	2102	COSTS	2103	COSTS	2104	COSTS	2105	COSTS	2106	COSTS	2107	COSTS	2108	COSTS	2109	COSTS	2110	COSTS	2111	COSTS	2112	COSTS	2113	COSTS	2114	COSTS	2115	COSTS	2116	COSTS	2117	COSTS	2118	COSTS	2119	COSTS	2120	COSTS	2121	COSTS	2122	COSTS	2123	COSTS	2124	COSTS	2125	COSTS	2126	COSTS	2127	COSTS	2128	COSTS	2129	COSTS	2130	COSTS	2131	COSTS	2132	COSTS	2133	COSTS	2134	COSTS	2135	COSTS	2136	COSTS	2137	COSTS	2138	COSTS	2139	COSTS	2140	COSTS	2141	COSTS	2142	COSTS	2143	COSTS	2144	COSTS	2145	COSTS	2146	COSTS	2147	COSTS	2148	COSTS	2149	COSTS	2150	COSTS	2151	COSTS	2152	COSTS	2153	COSTS	2154	COSTS	2155	COSTS	2156	COSTS	2157	COSTS	2158	COSTS	2159	COSTS	2160	COSTS	2161	COSTS	2162	COSTS	2163	COSTS	2164	COSTS	2165	COSTS	2166	COSTS	2167	COSTS	2168	COSTS	2169	COSTS	2170	COSTS	2171	COSTS	2172	COSTS	2173	COSTS	2174	COSTS	2175	COSTS	2176	COSTS	2177	COSTS	2178	COSTS	2179	COSTS	2180	COSTS	2181	COSTS	2182	COSTS	2183	COSTS	2184	COSTS	2185	COSTS	2186	COSTS	2187	COSTS	2188	COSTS	2189	COSTS	2190	COSTS	2191	COSTS	2192	COSTS	2193	COSTS	2194	COSTS	2195	COSTS	2196	COSTS	2197	COSTS	2198	COSTS	2199	COSTS	2200	COSTS	2201	COSTS	2202	COSTS	2203	COSTS	2204	COSTS	2205	COSTS	2206	COSTS	2207	COSTS	2208	COSTS	2209	COSTS	2210	COSTS	2211	COSTS	2212	COSTS	2213	COSTS	2214	COSTS	2215	COSTS	2216	COSTS	2217	COSTS	2218	COSTS	2219	COSTS	2220	COSTS	2221	COSTS	2222	COSTS	2223	COSTS	2224	COSTS	2225	COSTS	2226	COSTS	2227	COSTS	2228	COSTS	2229	COSTS	2230	COSTS	2231	COSTS	2232	COST
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수업시간에 학생은 자신의 학습을 주도적으로 할 수 있도록 하는 것이 중요하다.

PROJECT TITLE: JMWAVE, JMWAVE, & STORAGE FACILITY
P.A.D.: 111111
SUBJECT: JMWAVE, JMWAVE, & STORAGE FACILITY

DATE 11-14-66 FILE # 44-38861-100

BASIC YEAR												TOTAL
REGISTRATION FEE	FT--	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	TOTAL
ANNUAL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PERMANENT FEE	0.00%	0.00%	0.00%	2.10%	10.10%	16.35%	17.30%	20.00%	21.00%	22.00%	26.00%	166.85%

EDUCATIONAL DOCUMENTATION CONTINUES TO BE A CHALLENGE FOR THE DOCUMENTATION COMMUNITY

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INDEX **Page**

TOTAL

**SAFETY DOCUMENTATION COSTS
PROCUREMENT AND CONSTRUCTION
SAFETY SECURITY FROM 10-75-10**

[illegible]

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RESEARCHER'S: **MAURICE MONTAGNA, Director, Facility**

time

Date: _____ Page: _____

BASE YEAR												TOTAL
EXPANSION RATE	FY----	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
WORKING		0.00%	0.07%	0.06%	0.10%	0.10%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%
OTHER BASE YEAR		0.00%	0.07%	0.06%	0.12%	0.04%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%

自來水公司供水設備及管線安全檢查表

[illegible]

UNIVERSITY OF CALIFORNIA
RADIATION PHYSICS LABORATORY
OTHER PROJECT OR SITE RELATED WORKSHEETS

PROJECT TITLE:	NAGLER MATERIALS STORAGE FACILITY
R.I.D.:	1816
DIVISION:	CYCLONE ENGINEERING

© ASCE 10.1061/(ASCE)1080-4069(2006)10:6(691)

ESCALATION RATE ANNUAL FIVE YEAR MEAN	BASE YEAR										TOTAL
	1960	1961	1962	1967	1968	1969	1970	1971	1972	1973	
	0.00%	0.67%	0.00%	1.00%	1.00%	1.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.00%	2.18%	1.00%	1.73%	1.00%	0.00%	0.00%	0.00%	0.00%

OTHER PROJECT-RELATED COSTS
PROCUREMENT AND CONSTRUCTION
OPERATING CONTRACTORS/OPERATING SUPPORT DURING CONSTRUCTION

[illegible]

UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY

PROJECT TITLE:	NUCLEAR MATERIALS & STRUCTURAL FACILITY
P.A.C.	11519
ESTIMATOR:	ICF FLUORIDE ENGINEERING

Date: 04-10-2009 11:00 AM

[illegible]

ACCEPTANCE AND TURNOVER PERFORMANCE/ACCEPTANCE TESTING

[illegible][illegible][illegible][illegible]

UNIVERSITY OF CALIFORNIA,
LOS ANGELES NATIONAL LABORATORY

◆ 本報凡刊登之廣告，其內容均須符合法律及社會道德規範，如有違反者，本報將保留刪除之權利。

PROJECT TITLE:	NUCLEAR MATERIALS STORAGE FACILITY
P.A.D.#	14616
ESTIMATOR:	SCOTT W. BLOOMBERG

DATE: 22-05-2014

PERCENTAGE OF THE TOTAL													TOTAL
EDUCATION RATE	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	
ADULT	0.005	0.017	0.040	0.087	0.190	0.370	0.507	0.607	0.690	0.740	0.780	0.800	
FROM SAME YEAR	0.005	0.017	0.040	0.087	0.190	0.370	0.507	0.607	0.690	0.740	0.780	0.800	

ACCEPTANCE AND TURNOVER PERFORMANCE ACCEPTANCE TESTS

[illegible]

အမျိုးအမည်	၂၀၁၈	၂၀၁၉	၂၀၂၀	၂၀၂၁	၂၀၂၂	၂၀၂၃	၂၀၂၄	၂၀၂၅	၂၀၂၆	၂၀၂၇	၂၀၂၈	၂၀၂၉	၂၀၃၀	၂၀၃၁	၂၀၃၂	၂၀၃၃	၂၀၃၄	၂၀၃၅	၂၀၃၆	၂၀၃၇	၂၀၃၈	၂၀၃၉	၂၀၄၀	၂၀၄၁	၂၀၄၂	၂၀၄၃	၂၀၄၄	၂၀၄၅	၂၀၄၆	၂၀၄၇	၂၀၄၈	၂၀၄၉	၂၀၅၀
အမျိုးအမည်	၂၀၁၈	၂၀၁၉	၂၀၂၀	၂၀၂၁	၂၀၂၂	၂၀၂၃	၂၀၂၄	၂၀၂၅	၂၀၂၆	၂၀၂၇	၂၀၂၈	၂၀၂၉	၂၀၃၀	၂၀၃၁	၂၀၃၂	၂၀၃၃	၂၀၃၄	၂၀၃၅	၂၀၃၆	၂၀၃၇	၂၀၃၈	၂၀၃၉	၂၀၄၀	၂၀၄၁	၂၀၄၂	၂၀၄၃	၂၀၄၄	၂၀၄၅	၂၀၄၆	၂၀၄၇	၂၀၄၈	၂၀၄၉	၂၀၅၀

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TOTAL EXPANDED COST BY YEAR	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
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UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY
OTHER PROJECT COSTS DETAILED WORKSHEETS

PROJECT TITLE: NUCLEAR MATERIALS STORAGE FACILITY
P.A.D.: 1964
ESTIMATION: FOR FUNDING CHARGES

DATE: 30-Mar-66

DISCOUNT RATE	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	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ADDITIONAL AND TURN-OF-HEAT START-UP COSTS

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TOTAL UNPAID/PAID CONT BY YEAR		0-30	30-60	60-90	90-120	120-150	150-180	180-210	210-240	240-270	270-300	300-330	330-360	360-390	390-420	420-450	450-480	480-510	510-540	540-570	570-600	600-630	630-660	660-690	690-720	720-750	750-780	780-810	810-840	840-870	870-900	900-930	930-960	960-990	990-1020	1020-1050	1050-1080	1080-1110	1110-1140	1140-1170	1170-1200	1200-1230	1230-1260	1260-1290	1290-1320	1320-1350	1350-1380	1380-1410	1410-1440	1440-1470	1470-1500	1500-1530	1530-1560	1560-1590	1590-1620	1620-1650	1650-1680	1680-1710	1710-1740	1740-1770	1770-1800	1800-1830	1830-1860	1860-1890	1890-1920	1920-1950	1950-1980	1980-2010	2010-2040	2040-2070	2070-2100	2100-2130	2130-2160	2160-2190	2190-2220	2220-2250	2250-2280	2280-2310	2310-2340	2340-2370	2370-2400	2400-2430	2430-2460	2460-2490	2490-2520	2520-2550	2550-2580	2580-2610	2610-2640	2640-2670	2670-2700	2700-2730	2730-2760	2760-2790	2790-2820	2820-2850	2850-2880	2880-2910	2910-2940	2940-2970	2970-3000	3000-3030	3030-3060	3060-3090	3090-3120	3120-3150	3150-3180	3180-3210	3210-3240	3240-3270	3270-3300	3300-3330	3330-3360	3360-3390	3390-3420	3420-3450	3450-3480	3480-3510	3510-3540	3540-3570	3570-3600	3600-3630	3630-3660	3660-3690	3690-3720	3720-3750	3750-3780	3780-3810	3810-3840	3840-3870	3870-3900	3900-3930	3930-3960	3960-3990	3990-4020	4020-4050	4050-4080	4080-4110	4110-4140	4140-4170	4170-4200	4200-4230	4230-4260	4260-4290	4290-4320	4320-4350	4350-4380	4380-4410	4410-4440	4440-4470	4470-4500	4500-4530	4530-4560	4560-4590	4590-4620	4620-4650	4650-4680	4680-4710	4710-4740	4740-4770	4770-4800	4800-4830	4830-4860	4860-4890	4890-4920	4920-4950	4950-4980	4980-5010	5010-5040	5040-5070	5070-5100	5100-5130	5130-5160	5160-5190	5190-5220	5220-5250	5250-5280	5280-5310	5310-5340	5340-5370	5370-5400	5400-5430	5430-5460	5460-5490	5490-5520	5520-5550	5550-5580	5580-5610	5610-5640	5640-5670	5670-5700	5700-5730	5730-5760	5760-5790	5790-5820	5820-5850	5850-5880	5880-5910	5910-5940	5940-5970	5970-6000	6000-6030	6030-6060	6060-6090	6090-6120	6120-6150	6150-6180	6180-6210	6210-6240	6240-6270	6270-6300	6300-6330	6330-6360	6360-6390	6390-6420	6420-6450	6450-6480	6480-6510	6510-6540	6540-6570	6570-6600	6600-6630	6630-6660	6660-6690	6690-6720	6720-6750	6750-6780	6780-6810	6810-6840	6840-6870	6870-6900	6900-6930	6930-6960	6960-6990	6990-7020	7020-7050	7050-7080	7080-7110	7110-7140	7140-7170	7170-7200	7200-7230	7230-7260	7260-7290	7290-7320	7320-7350	7350-7380	7380-7410	7410-7440	7440-7470	7470-7500	7500-7530	7530-7560	7560-7590	7590-7620	7620-7650	7650-7680	7680-7710	7710-7740	7740-7770	7770-7800	7800-7830	7830-7860	7860-7890	7890-7920	7920-7950	7950-7980	7980-8010	8010-8040	8040-8070	8070-8100	8100-8130	8130-8160	8160-8190	8190-8220	8220-8250	8250-8280	8
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[illegible]

TOTAL EXCLUDED COST BY YEAR	0-04	00-00	00-05	00-06	00-08	00-10	00-15	00-20	00-25	00-30	00-35	00-40	00-45	00-50	00-55	00-60	00-65	00-70	00-75	00-80	00-85	00-90	00-95	01-00	01-05	01-10	01-15	01-20	01-25	01-30	01-35	01-40	01-45	01-50	01-55	01-60	01-65	01-70	01-75	01-80	01-85	01-90	01-95	02-00	02-05	02-10	02-15	02-20	02-25	02-30	02-35	02-40	02-45	02-50	02-55	02-60	02-65	02-70	02-75	02-80	02-85	02-90	02-95	03-00	03-05	03-10	03-15	03-20	03-25	03-30	03-35	03-40	03-45	03-50	03-55	03-60	03-65	03-70	03-75	03-80	03-85	03-90	03-95	04-00	04-05	04-10	04-15	04-20	04-25	04-30	04-35	04-40	04-45	04-50	04-55	04-60	04-65	04-70	04-75	04-80	04-85	04-90	04-95	05-00	05-05	05-10	05-15	05-20	05-25	05-30	05-35	05-40	05-45	05-50	05-55	05-60	05-65	05-70	05-75	05-80	05-85	05-90	05-95	06-00	06-05	06-10	06-15	06-20	06-25	06-30	06-35	06-40	06-45	06-50	06-55	06-60	06-65	06-70	06-75	06-80	06-85	06-90	06-95	07-00	07-05	07-10	07-15	07-20	07-25	07-30	07-35	07-40	07-45	07-50	07-55	07-60	07-65	07-70	07-75	07-80	07-85	07-90	07-95	08-00	08-05	08-10	08-15	08-20	08-25	08-30	08-35	08-40	08-45	08-50	08-55	08-60	08-65	08-70	08-75	08-80	08-85	08-90	08-95	09-00	09-05	09-10	09-15	09-20	09-25	09-30	09-35	09-40	09-45	09-50	09-55	09-60	09-65	09-70	09-75	09-80	09-85	09-90	09-95	10-00	10-05	10-10	10-15	10-20	10-25	10-30	10-35	10-40	10-45	10-50	10-55	10-60	10-65	10-70	10-75	10-80	10-85	10-90	10-95	11-00	11-05	11-10	11-15	11-20	11-25	11-30	11-35	11-40	11-45	11-50	11-55	11-60	11-65	11-70	11-75	11-80	11-85	11-90	11-95	12-00	12-05	12-10	12-15	12-20	12-25	12-30	12-35	12-40	12-45	12-50	12-55	12-60	12-65	12-70	12-75	12-80	12-85	12-90	12-95	13-00	13-05	13-10	13-15	13-20	13-25	13-30	13-35	13-40	13-45	13-50	13-55	13-60	13-65	13-70	13-75	13-80	13-85	13-90	13-95	14-00	14-05	14-10	14-15	14-20	14-25	14-30	14-35	14-40	14-45	14-50	14-55	14-60	14-65	14-70	14-75	14-80	14-85	14-90	14-95	15-00	15-05	15-10	15-15	15-20	15-25	15-30	15-35	15-40	15-45	15-50	15-55	15-60	15-65	15-70	15-75	15-80	15-85	15-90	15-95	16-00	16-05	16-10	16-15	16-20	16-25	16-30	16-35	16-40	16-45	16-50	16-55	16-60	16-65	16-70	16-75	16-80	16-85	16-90	16-95	17-00	17-05	17-10	17-15	17-20	17-25	17-30	17-35	17-40	17-45	17-50	17-55	17-60	17-65	17-70	17-75	17-80	17-85	17-90	17-95	18-00	18-05	18-10	18-15	18-20	18-25	18-30	18-35	18-40	18-45	18-50	18-55	18-60	18-65	18-70	18-75	18-80	18-85	18-90	18-95	19-00	19-05	19-10	19-15	19-20	19-25	19-30	19-35	19-40	19-45	19-50	19-55	19-60	19-65	19-70	19-75	19-80	19-85	19-90	19-95	20-00	20-05	20-10	20-15	20-20
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[illegible]

FIGURE 1

[illegible]ACCEPTANCE AND TURNOVER:
CORRELATIONS AND MANTON-SMITH PROCEDURE

UNRECALCULATED COST	1986	1986	COSTS	1985	COSTS	1984	COSTS	1983	COSTS	1982	COSTS	1981	COSTS	1980	COSTS	1979	COSTS	1978	COSTS	1977	COSTS	1976	COSTS	1975	COSTS	1974	COSTS	1973	COSTS	1972	COSTS	1971	COSTS	1970	COSTS	1969	COSTS	1968	COSTS	1967	COSTS	1966	COSTS	1965	COSTS	1964	COSTS	1963	COSTS	1962	COSTS	1961	COSTS	1960	COSTS	1959	COSTS	1958	COSTS	1957	COSTS	1956	COSTS	1955	COSTS	1954	COSTS	1953	COSTS	1952	COSTS	1951	COSTS	1950	COSTS	1949	COSTS	1948	COSTS	1947	COSTS	1946	COSTS	1945	COSTS	1944	COSTS	1943	COSTS	1942	COSTS	1941	COSTS	1940	COSTS	1939	COSTS	1938	COSTS	1937	COSTS	1936	COSTS	1935	COSTS	1934	COSTS	1933	COSTS	1932	COSTS	1931	COSTS	1930	COSTS	1929	COSTS	1928	COSTS	1927	COSTS	1926	COSTS	1925	COSTS	1924	COSTS	1923	COSTS	1922	COSTS	1921	COSTS	1920	COSTS	1919	COSTS	1918	COSTS	1917	COSTS	1916	COSTS	1915	COSTS	1914	COSTS	1913	COSTS	1912	COSTS	1911	COSTS	1910	COSTS	1909	COSTS	1908	COSTS	1907	COSTS	1906	COSTS	1905	COSTS	1904	COSTS	1903	COSTS	1902	COSTS	1901	COSTS	1900	COSTS	1899	COSTS	1898	COSTS	1897	COSTS	1896	COSTS	1895	COSTS	1894	COSTS	1893	COSTS	1892	COSTS	1891	COSTS	1890	COSTS	1889	COSTS	1888	COSTS	1887	COSTS	1886	COSTS	1885	COSTS	1884	COSTS	1883	COSTS	1882	COSTS	1881	COSTS	1880	COSTS	1879	COSTS	1878	COSTS	1877	COSTS	1876	COSTS	1875	COSTS	1874	COSTS	1873	COSTS	1872	COSTS	1871	COSTS	1870	COSTS	1869	COSTS	1868	COSTS	1867	COSTS	1866	COSTS	1865	COSTS	1864	COSTS	1863	COSTS	1862	COSTS	1861	COSTS	1860	COSTS	1859	COSTS	1858	COSTS	1857	COSTS	1856	COSTS	1855	COSTS	1854	COSTS	1853	COSTS	1852	COSTS	1851	COSTS	1850	COSTS	1849	COSTS	1848	COSTS	1847	COSTS	1846	COSTS	1845	COSTS	1844	COSTS	1843	COSTS	1842	COSTS	1841	COSTS	1840	COSTS	1839	COSTS	1838	COSTS	1837	COSTS	1836	COSTS	1835	COSTS	1834	COSTS	1833	COSTS	1832	COSTS	1831	COSTS	1830	COSTS	1829	COSTS	1828	COSTS	1827	COSTS	1826	COSTS	1825	COSTS	1824	COSTS	1823	COSTS	1822	COSTS	1821	COSTS	1820	COSTS	1819	COSTS	1818	COSTS	1817	COSTS	1816	COSTS	1815	COSTS	1814	COSTS	1813	COSTS	1812	COSTS	1811	COSTS	1810	COSTS	1809	COSTS	1808	COSTS	1807	COSTS	1806	COSTS	1805	COSTS	1804	COSTS	1803	COSTS	1802	COSTS	1801	COSTS	1800	COSTS	1799	COSTS	1798	COSTS	1797	COSTS	1796	COSTS	1795	COSTS	1794	COSTS	1793	COSTS	1792	COSTS	1791	COSTS	1790	COSTS	1789	COSTS	1788	COSTS	1787	COSTS	1786	COSTS	1785	COSTS	1784	COSTS	1783	COSTS	1782	COSTS	1781	COSTS	1780	COSTS	1779	COSTS	1778	COSTS	1777	COSTS	1776	COSTS	1775	COSTS	1774	COSTS	1773	COSTS	1772	COSTS	1771	COSTS	1770	COSTS	1769	COSTS	1768	COSTS	1767	COSTS	1766	COSTS	1765	COSTS	1764	COSTS	1763	COSTS	1762	COSTS	1761	COSTS	1760	COSTS	1759	COSTS	1758	COSTS	1757	COSTS	1756	COSTS	1755	COSTS	1754	COSTS	1753	COSTS	1752	COSTS	1751	COSTS	1750	COSTS	1749	COSTS	1748	COSTS	1747	COSTS	1746	COSTS	1745	COSTS	1744	COSTS	1743	COSTS	1742	COSTS	1741	COSTS	1740	COSTS	1739	COSTS	1738	COSTS	1737	COSTS	1736	COSTS	1735	COSTS	1734	COSTS	1733	COSTS	1732	COSTS	1731	COSTS	1730	COSTS	1729	COSTS	1728	COSTS	1727	COSTS	1726	COSTS	1725	COSTS	1724	COSTS	1723	COSTS	1722	COSTS	1721	COSTS	1720	COSTS	1719	COSTS	1718	COSTS	1717	COSTS	1716	COSTS	1715	COSTS	1714	COSTS	1713	COSTS	1712	COSTS	1711	COSTS	1710	COSTS	1709	COSTS	1708	COSTS	1707	COSTS	1706	COSTS	1705	COSTS	1704	COSTS	1703	COSTS	1702	COSTS	1701	COSTS	1700	COSTS	1699	COSTS	1698	COSTS	1697	COSTS	1696	COSTS	1695	COSTS	1694	COSTS	1693	COSTS	1692	COSTS	1691	COSTS	1690	COSTS	1689	COSTS	1688	COSTS	1687	COSTS	1686	COSTS	1685	COSTS	1684	COSTS	1683	COSTS	1682	COSTS	1681	COSTS	1680	COSTS	1679	COSTS	1678	COSTS	1677	COSTS	1676	COSTS	1675	COSTS	1674	COSTS	1673	COSTS	1672	COSTS	1671	COSTS	1670	COSTS	1669	COSTS	1668	COSTS	1667	COSTS	1666	COSTS	1665	COSTS	1664	COSTS	1663	COSTS	1662	COSTS	1661	COSTS	1660	COSTS	1659	COSTS	1658	COSTS	1657	COSTS	1656	COSTS	1655	COSTS	1654	COSTS	1653	COSTS	1652	COSTS	1651	COSTS	1650	COSTS	1649	COSTS	1648	COSTS	1647	COSTS	1646	COSTS	1645	COSTS	1644	COSTS	1643	COSTS	1642	COSTS	1641	COSTS	1640	COSTS	1639	COSTS	1638	COSTS	1637	COSTS	1636	COSTS	1635	COSTS	1634	COSTS	1633	COSTS	1632	COSTS	1631	COSTS	1630	COSTS	1629	COSTS	1628	COSTS	1627	COSTS	1626	COSTS	1625	COSTS	1624	COSTS	1623	COSTS	1622	COSTS	1621	COSTS	1620	COSTS	1619	COSTS	1618	COSTS	1617	COSTS	1616	COSTS	1615	COSTS	1614	COSTS	1613	COSTS	1612	COSTS	1611	COSTS	1610	COSTS	1609	COSTS	1608	COSTS	1607	COSTS	1606	COSTS	1605	COSTS	1604	COSTS	1603	COSTS	1602	COSTS	1601	COSTS	1600	COSTS	1599	COSTS	1598	COSTS	1597	COSTS	1596	COSTS	1595	COSTS	1594	COSTS	1593	COSTS	1592	COSTS	1591	COSTS	1590	COSTS	1589	COSTS	1588	COSTS	1587	COSTS	1586	COSTS	1585	COSTS	1584	COSTS	1583	COSTS	1582	COSTS	1581	COSTS	1580	COSTS	1579	COSTS	1578	COSTS	1577	COSTS	1576	COSTS	1575	COSTS	1574	COSTS	1573	COSTS	1572	COSTS	1571	COSTS	1570	COSTS	1569	COSTS	1568	COSTS	1567	COSTS	1566	COSTS	1565	COSTS	1564	COSTS	1563	COSTS	1562	COSTS	1561	COSTS	1560	COSTS	1559	COSTS	1558	COSTS	1557	COSTS	1556	COSTS	1555	COSTS	1554	COSTS	1553	COSTS	1552	COSTS	1551	COSTS	1550	COSTS	1549	COSTS	1548	COSTS	1547	COSTS	1546	COSTS	1545	COSTS	1544	COSTS	1543	COSTS	1542	COSTS	1541	COSTS	1540	COSTS	1539	COSTS	1538	COSTS	1537	COSTS	1536	COSTS	1535	COSTS	1534	COSTS	1533	COSTS	1532	COSTS	1531	COSTS	1530	COSTS	1529	COSTS	1528	COSTS	1527	COSTS	1526	COSTS	1525	COSTS	1524	COSTS	1523	COSTS	1522	COSTS	1521	COSTS	1520	COSTS	1519	COSTS	1518	COSTS	1517	COSTS	1516	COSTS	1515	COSTS	1514	COSTS	1513	COSTS	1512	COSTS	1511	COSTS	1510	COSTS	1509	COSTS	1508	COSTS	1507	COSTS	1506	COSTS	1505	COSTS	1504	COSTS	1503	COSTS	1502	COSTS	1501	COSTS	1500	COSTS	1499	COSTS	1498	COSTS	1497	COSTS	1496	COSTS	1495	COSTS	1494	COSTS	1493	COSTS	1492	COSTS	1491	COSTS	1490	COSTS	1489	COSTS	1488	COSTS	1487	COSTS	1486	COSTS	1485	COSTS	1484	COSTS	1483	COSTS	1482	COSTS	1481	COSTS	1480	COSTS	1479	COSTS	1478	COSTS	1477	COSTS	1476	COSTS	1475	COSTS	1474	COSTS	1473	COSTS	1472	COSTS	1471	COSTS	1470	COSTS	1469	COSTS	1468	COSTS	1467	COSTS	1466	COSTS	1465	COSTS	1464	COSTS	1463	COSTS	1462	COSTS	1461	COSTS	1460	COSTS	1459	COSTS	1458	COSTS	1457	COSTS	1456	COSTS	1455	COSTS	1454	COSTS	1453	COSTS	1452	COSTS	1451	COSTS	1450	COSTS	1449	COSTS	1448	COSTS	1447	COSTS	1446	COSTS	1445	COSTS	1444	COSTS	1443	COSTS	1442	COSTS	1441	COSTS	1440	COSTS	1439	COSTS	1438	COSTS	1437	COSTS	1436	COSTS	1435	COSTS	1434	COSTS	1433	COSTS	1432	COSTS	1431	COSTS	1430	COSTS	1429	COSTS	1428	COSTS	1427	COSTS	1426	COSTS	1425	COSTS	1424	COSTS	1423	COSTS	1422	COSTS	1421	COSTS	1420	COSTS	1419	COSTS	1418	COSTS	1417	COSTS	1416	COSTS	1415	COSTS	1414	COSTS	1413	COSTS	1412	COSTS	1411	COSTS	1410	COSTS	1409	COSTS	1408	COSTS	1407	COSTS	1406	COSTS	1405	COSTS	1404	COSTS	1403	COSTS	1402	COSTS	1401	COSTS	1400	COSTS	1399	COSTS	1398	COSTS	1397	COSTS	1396	COSTS	1395	COSTS	1394	COSTS	1393	COSTS	1392	COSTS	1391	COSTS	1390	COSTS	1389	COSTS	1388	COSTS	1387	COSTS	1386	COSTS	1385	COSTS	1384	COSTS	1383	COSTS	1382	COSTS	1381	COSTS	1380	COSTS	1379	COSTS	1378	COSTS	1377	COSTS	1376	COSTS	1375	COSTS	1374	COSTS	1373	COSTS	1372	COSTS	1371	COSTS	1370	COSTS	1369	COSTS	1368	COSTS	1367	COSTS	1366	COSTS	1365	COSTS	1364	COSTS	1363	COSTS	1362	COSTS	1361	COSTS	1360	COSTS	1359	COSTS	1358	COSTS	1357	COSTS	1356	COSTS	1355	COSTS	1354	COSTS	1353	COSTS	1352	COSTS	1351	COSTS	1350	COSTS	1349	COSTS	1348	COSTS	1347	COSTS	1346	COSTS	1345	COSTS	1344	COSTS	1343	COSTS	1342	COSTS	1341	COSTS	1340	COSTS	1339	COSTS	1338	COSTS	1337	COSTS	1336	COSTS	1335	COSTS	1334	COSTS	1333	COSTS	1332	COSTS	1331	COSTS	1330	COSTS	1329	COSTS	1328	COSTS	1327	COSTS	1326	COSTS	1325	COSTS	1324	COSTS	1323	COSTS	1322	COSTS	1321	COSTS	1320	COSTS	1319	COSTS	1318	COSTS	1317	COSTS	1316	COSTS	1315	COSTS	1314	COSTS	1313	COSTS	1312	COSTS	1311	COSTS	1310	COSTS	1309	COSTS	1308	COSTS	1307	COSTS	1306	COSTS	1305	COSTS	1304	COSTS	1303	COSTS	1302	COSTS	1301	COSTS	1300	COSTS	1299	COSTS	1298	COSTS	1297	COSTS	1296	COSTS	1295	COSTS	1294	COSTS	1293	COSTS	1292	COSTS	1291	COSTS	1290	COSTS	1289	COSTS	1288	COSTS	1287	COSTS	1286	COSTS	1285	COSTS	1284	COSTS	1283	COSTS	1282	COSTS	1281	COSTS	1280	COSTS	1279	COSTS	1278	COSTS	1277	COSTS	1276	COSTS	1275	COSTS	1274	COSTS	1273	COSTS	1272	COSTS	1271	COSTS	1270	COSTS	1269	COSTS	1268	COSTS	1267	COSTS	1266	COSTS	1265	COSTS	1264	COSTS	1263	COSTS	1262	COSTS	1261	COSTS	1260	COSTS	1259	COSTS	1258	COSTS	1257	COSTS	1256	COSTS	1255	COSTS	1254	COSTS	1253	COSTS	1252	COSTS	1251	COSTS	1250	COSTS	1249	COSTS	1248	COSTS	1247	COSTS	1246	COSTS	1245	COSTS	1244	COSTS	1243	COSTS	1242	COSTS	1241	COSTS	1240	COSTS	1239	COSTS	1238	COSTS	1237	COSTS	1236	COSTS	1235	COSTS	1234	COSTS	1233	COSTS	1232	COSTS	1231	COSTS	1230	COSTS	1229	COSTS	1228	COSTS	1227	COSTS	1226	COSTS	1225	COSTS	1224	COSTS	1223	COSTS	1222	COSTS	1221	COSTS	1220	COSTS	1219	COSTS	1218	COSTS	1217	COSTS	1216	COSTS	1215	COSTS	1214</
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[illegible]

UNIVERSITY OF CALIFORNIA
LOS ALAMOS MATERIALS LABORATORY
OTHER PROJECT COSTS DETAILED WORKSHEETS

PROJECT TITLE: NUCLEAR MATERIAL STORAGE FACILITY
P.L.D.: 11111
ESTIMATOR: JCF/KRBR EXPENDS

DATE: 24-May-78

REGULATION RATE	PERCENT	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	TOTAL
ANNUAL	0.00%	0.00%	0.00%	3.00%	3.10%	3.20%	3.30%	3.40%	3.50%	3.60%	3.70%	3.80%	
FROM BASE YEAR	0.00%	0.00%	0.00%	3.00%	3.10%	3.20%	3.30%	3.40%	3.50%	3.60%	3.70%	3.80%	

ACCEPTANCE AND TURNOVER
TRAINING OPERATIONS

UNREGULATED COST	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	TOTAL
PRODUCTION	00	00	00	00	00	00	00	00	00	00	00	00
PRODUCTION	00	00	00	00	00	00	00	00	00	00	00	00
QUALITY	00	00	00	00	00	00	00	00	00	00	00	00
QUALITY	00	00	00	00	00	00	00	00	00	00	00	00
ADMIN	00	00	00	00	00	00	00	00	00	00	00	00
AD	00	00	00	00	00	00	00	00	00	00	00	00
ADULT (MKT)	00	00	00	00	00	00	00	00	00	00	00	00
AD	00	00	00	00	00	00	00	00	00	00	00	00
OTHER	00	00	00	00	00	00	00	00	00	00	00	00
OTHER	00	00	00	00	00	00	00	00	00	00	00	00

TOTAL UNREGULATED COST BY YEAR: 000 0000 000 0000 000 0000 000 0000 000 0000 000 0000 000 0000

REGULATED COST	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	TOTAL
PRODUCTION	00	00	00	00	00	00	00	00	00	00	00	00
PRODUCTION	00	00	00	00	00	00	00	00	00	00	00	00
QUALITY	00	00	00	00	00	00	00	00	00	00	00	00
QUALITY	00	00	00	00	00	00	00	00	00	00	00	00
ADMIN	00	00	00	00	00	00	00	00	00	00	00	00
AD	00	00	00	00	00	00	00	00	00	00	00	00
ADULT (MKT)	00	00	00	00	00	00	00	00	00	00	00	00
AD	00	00	00	00	00	00	00	00	00	00	00	00
OTHER	00	00	00	00	00	00	00	00	00	00	00	00
OTHER	00	00	00	00	00	00	00	00	00	00	00	00

TOTAL REGULATED COST BY YEAR: 000 0000 000 0000 000 0000 000 0000 000 0000 000 0000 000 0000

[illegible]

PROJECT TITLE:	NUCLEAR WASTE STORAGE FACILITY
P.I.D.:	1000
ESTIMATOR:	KEVIN J. EVANS

DATE: 10-10-10

[illegible]AC-DEPTANCE AND TULFOWER
AA-DEPTANCE AND TULFOWER[illegible][illegible][illegible]

TOTAL EMPLOYED COST BY YEAR		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000
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UNIVERSITY OF CALIFORNIA
L. J. MATHIAS HALL, LABORATORY
STATIONERS' GUILD CONFERENCE ROOM, 2000-2100

PROJECT TITLE: HULLMAN MATERIALS STORAGE FACILITY
P.L.O.C. NUMBER: JOP-KA00000-K0000000

DATE: 01-May-01

	BASE YEAR	TOTAL
EQUALIZATION RATE	97 -- >	
AVERAGE	80%	60%
FROM SAME YEAR	80%	60%

ACCEPTANCE AND TURNOVER UNDER MONOPOLY

[illegible][illegible]

EXPLAINED COST	C0009		C0010		C0015		C0016		C0019		C0025		C0026		C0028		C0035		C0036		C0037		C0038		C0039		C0040		C0041		C0042		C0043		C0044		C0045		C0046		C0047		C0048		C0049		C0050		C0051		C0052		C0053		C0054		C0055		C0056		C0057		C0058		C0059		C0060		C0061		C0062		C0063		C0064		C0065		C0066		C0067		C0068		C0069		C0070		C0071		C0072		C0073		C0074		C0075		C0076		C0077		C0078		C0079		C0080		C0081		C0082		C0083		C0084		C0085		C0086		C0087		C0088		C0089		C0090		C0091		C0092		C0093		C0094		C0095		C0096		C0097		C0098		C0099		C0100		C0101		C0102		C0103		C0104		C0105		C0106		C0107		C0108		C0109		C0110		C0111		C0112		C0113		C0114		C0115		C0116		C0117		C0118		C0119		C0120		C0121		C0122		C0123		C0124		C0125		C0126		C0127		C0128		C0129		C0130		C0131		C0132		C0133		C0134		C0135		C0136		C0137		C0138		C0139		C0140		C0141		C0142		C0143		C0144		C0145		C0146		C0147		C0148		C0149		C0150		C0151		C0152		C0153		C0154		C0155		C0156		C0157		C0158		C0159		C0160		C0161		C0162		C0163		C0164		C0165		C0166		C0167		C0168		C0169		C0170		C0171		C0172		C0173		C0174		C0175		C0176		C0177		C0178		C0179		C0180		C0181		C0182		C0183		C0184		C0185		C0186		C0187		C0188		C0189		C0190		C0191		C0192		C0193		C0194		C0195		C0196		C0197		C0198		C0199		C0200		C0201		C0202		C0203		C0204		C0205		C0206		C0207		C0208		C0209		C0210		C0211		C0212		C0213		C0214		C0215		C0216		C0217		C0218		C0219		C0220		C0221		C0222		C0223		C0224		C0225		C0226		C0227		C0228		C0229		C0230		C0231		C0232		C0233		C0234		C0235		C0236		C0237		C0238		C0239		C0240		C0241		C0242		C0243		C0244		C0245		C0246		C0247		C0248		C0249		C0250		C0251		C0252		C0253		C0254		C0255		C0256		C0257		C0258		C0259		C0260		C0261		C0262		C0263		C0264		C0265		C0266		C0267		C0268		C0269		C0270		C0271		C0272		C0273		C0274		C0275		C0276		C0277		C0278		C0279		C0280		C0281		C0282		C0283		C0284		C0285		C0286		C0287		C0288		C0289		C0290		C0291		C0292		C0293		C0294		C0295		C0296		C0297		C0298		C0299		C0300		C0301		C0302		C0303		C0304		C0305		C0306		C0307		C0308		C0309		C0310		C0311		C0312		C0313		C0314		C0315		C0316		C0317		C0318		C0319		C0320		C0321		C0322		C0323		C0324		C0325		C0326		C0327		C0328		C0329		C0330		C0331		C0332		C0333		C0334		C0335		C0336		C0337		C0338		C0339		C0340		C0341		C0342		C0343		C0344		C0345		C0346		C0347		C0348		C0349		C0350		C0351		C0352		C0353		C0354		C0355		C0356		C0357		C0358		C0359		C0360		C0361		C0362		C0363		C0364		C0365		C0366		C0367		C0368		C0369		C0370		C0371		C0372		C0373		C0374		C0375		C0376		C0377		C0378		C0379		C0380		C0381		C0382		C0383		C0384		C0385		C0386		C0387		C0388		C0389		C0390		C0391		C0392		C0393		C0394		C0395		C0396		C0397		C0398		C0399		C0400		C0401		C0402		C0403		C0404		C0405		C0406		C0407		C0408		C0409		C0410		C0411		C0412		C0413		C0414		C0415		C0416		C0417		C0418		C0419		C0420		C0421		C0422		C0423		C0424		C0425		C0426		C0427		C0428		C0429		C0430		C0431		C0432		C0433		C0434		C0435		C0436		C0437		C0438		C0439		C0440		C0441		C0442		C0443		C0444		C0445		C0446		C0447		C0448		C0449		C0450		C0451		C0452		C0453		C0454		C0455		C0456		C0457		C0458		C0459		C0460		C0461		C0462		C0463		C0464		C0465		C0466		C0467		C0468		C0469		C0470		C0471		C0472		C0473		C0474		C0475		C0476		C0477		C0478		C0479		C0480		C0481		C0482		C0483		C0484		C0485		C0486		C0487		C0488		C0489		C0490		C0491		C0492		C0493		C0494		C0495		C0496		C0497		C0498		C0499		C0500		C0501		C0502		C0503		C0504		C0505		C0506		C0507		C0508		C0509		C0510		C0511		C0512		C0513		C0514		C0515		C0516		C0517		C0518		C0519		C0520		C0521		C0522		C0523		C0524		C0525		C0526		C0527		C0528		C0529		C0530		C0531		C0532		C0533		C0534		C0535		C0536		C0537		C0538		C0539		C0540		C0541		C0542		C0543		C0544		C0545		C0546		C0547		C0548		C0549		C0550		C0551		C0552		C0553		C0554		C0555		C0556		C0557		C0558		C0559		C0560		C0561		C0562		C0563		C0564		C0565		C0566		C0567		C0568		C0569		C0570		C0571		C0572		C0573		C0574		C0575		C0576		C0577		C0578		C0579		C0580		C0581		C0582		C0583		C0584		C0585		C0586		C0587		C0588		C0589		C0590		C0591		C0592		C0593		C0594		C0595		C0596		C0597		C0598		C0599		C0600		C0601		C0602		C0603		C0604		C0605		C0606		C0607		C0608		C0609		C0610		C0611		C0612		C0613		C0614		C0615		C0616		C0617		C0618		C0619		C0620		C0621		C0622		C0623		C0624		C0625		C0626		C0627		C0628		C0629		C0630		C0631		C0632		C0633		C0634		C0635		C0636		C0637		C0638		C0639		C0640		C0641		C0642		C0643		C0644		C0645		C0646		C0647		C0648		C0649		C0650		C0651		C0652		C0653		C0654		C0655		C0656		C0657		C0658		C0659		C0660		C0661		C0662		C0663		C0664		C0665		C0666		C0667		C0668		C0669		C0670		C0671		C0672		C0673		C0674		C0675		C0676		C0677		C0678		C0679		C0680		C0681		C0682		C0683		C0684		C0685		C0686		C0687		C0688		C0689		C0690		C0691		C0692		C0693		C0694		C0695		C0696		C0697		C0698		C0699		C0700		C0701		C0702		C0703		C0704		C0705		C0706		C0707		C0708		C0709		C0710		C0711		C0712		C0713		C0714		C0715		C0716		C0717		C0718		C0719		C0720		C0721		C0722		C0723		C0724		C0725		C0726		C0727		C0728		C0729		C0730		C0731		C0732		C0733		C0734		C0735		C0736		C0737		C0738		C0739		C074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TOTAL DISCLOSED COST BY YEAR	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000	3001	3002	3003	3004	3005	3006	3007	3008	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**FIELD OVERHEAD
AND EXPENSES**

UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY

FIELD OVERHEAD EXPENSES

PROJECT TITLE: NMSF PF-41 TA-55
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 25-May-95
JOB NUMBER: 11818

CONSTRUCTION DURATION (in months): 35.0

ACTIVITY	QUANTITY	UNIT	FACTOR	LABOR RATE	EXTENSION	MATERIAL RATE	EXTENSION	CONST. EQUIPMENT RATE	EXTENSION	SUBCONTRACT	TOTAL
MANAGEMENT											
Project Manager	35	Month	0.75	\$5,833.00	\$153,116.25						\$153,116.25
Superintendent	35	Month	0.75	\$5,833.00	\$153,116.25						\$153,116.25
Field Engineer	35	Month	0.1	\$2,666.00	\$9,331.00						\$9,331.00
Field Clerk	35	Month	0.75	\$2,666.00	\$9,331.00						\$9,331.00
Project Control/Scheduler	35	Month	0.2	\$2,666.00	\$18,662.00						\$18,662.00
Security Watchman	0	Month	0	\$0.00	\$0.00						\$0.00
TEMPORARY FACILITIES											
OFFICE RENTAL											
Management Office	35	Month				\$453.00	\$15,855.00				\$15,855.00
Inspector's Office	0	Month				\$453.00	\$0.00				\$0.00
Safety Office	0	Month				\$453.00	\$0.00				\$0.00
Warehouse(s)	12	Month				\$1,500.00	\$18,000.00				\$18,000.00
Tool/Storage Van(s)	30	Month				\$93.00	\$2,790.00				\$2,790.00
OFFICE INSTALLATION											
Management Office		Lump Sum			\$790.00		\$0.00		\$150.00		\$940.00
Inspector's Office		Lump Sum			\$790.00		\$0.00		\$150.00		\$940.00
Safety Office		Lump Sum			\$790.00		\$0.00		\$150.00		\$940.00
Warehouse(s)		Lump Sum			\$0.00		\$0.00		\$0.00		\$0.00
Tool/Storage Van(s)		Lump Sum			\$282.00		\$0.00		\$150.00		\$432.00
UTILITY COSTS											
Water	0	Month				\$100.00	\$0.00				\$0.00
Sanitary(Temp. Toilets)	35	Month				\$234.00	\$8,190.00				\$8,190.00
Electric	0	Month				\$110.00	\$0.00				\$0.00
Communications	35	Month				\$250.00	\$8,750.00				\$8,750.00
Heating Fuel	12	Month				\$250.00	\$3,000.00				\$3,000.00
Drinking Water/Ice	35	Month				\$40.00	\$1,400.00				\$1,400.00
UTILITY INSTALLATION											
Water		Lump Sum			\$479.36		\$200.00		\$0.00	\$0.00	\$679.36
Sanitary		Lump Sum			\$0.00		\$0.00		\$0.00	\$0.00	\$0.00
Electric		Lump Sum			\$481.28		\$500.00		\$0.00	\$0.00	\$981.28
Communications		Lump Sum			\$481.28		\$150.00		\$0.00	\$0.00	\$631.28
FIELD OFFICE EXPENSES											
Office Supplies	35	Month				\$175.00	\$6,125.00				\$6,125.00
First Aid Expenses	35	Month				\$150.00	\$5,250.00				\$5,250.00
Project Signs	35	Month				\$100.00	\$3,500.00				\$3,500.00
Project Photographs	35	Month				\$150.00	\$5,250.00				\$5,250.00

UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY

FIELD OVERHEAD EXPENSES

PROJECT TITLE: NMSF PF-41 TA-55
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 25-May-95
JOB NUMBER: 11819

CONSTRUCTION DURATION (in months): 35.0

ACTIVITY	QUANTITY	UNIT	FACTOR	LABOR RATE	EXTENSION	MATERIAL RATE	EXTENSION	CONST. EQUIPMENT RATE	EXTENSION	SUBCONTRACT	TOTAL
JOBSITE SECURITY											
Fence Rental	0	Month				\$0.00	\$0.00				\$0.00
Fence Installation		Lump Sum			\$0.00						\$0.00
JOBSITE MAINTENANCE											
Jobsite Policing	35	Month	0.25	\$3,146.00	\$27,527.50			\$142.50	\$4,987.50		\$32,515.00
Snow Removal	12	Month	0.2	\$3,180.00	\$7,632.00	\$0.00	\$0.00	\$385.00	\$4,820.00		\$12,252.00
Access Maintenance	0	Month	0.2	\$3,180.00	\$0.00	\$150.00	\$0.00	\$385.00	\$0.00		\$0.00
Misc Labor (Operator)	0	Month	0	\$3,180.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00
CONSTRUCTION EQUIPMENT											
Project Manager's Vehicle	35	Month						\$570.00	\$19,950.00		\$19,950.00
Superintendent's Pick-up	35	Month						\$570.00	\$19,950.00		\$19,950.00
Jobsite Pick-up(s)	35	Month						\$570.00	\$19,950.00		\$19,950.00
Flatbed Dump Truck(s)	0	Month						\$0.00	\$0.00		\$0.00
Cherry Picker - 15 ton	0	Month						\$0.00	\$0.00		\$0.00
Backhoe - Rubber Tired	0	Month						\$1,925.00	\$0.00		\$0.00
Skid Loader ("Bobcat")	0	Month						\$0.00	\$0.00		\$0.00
Misc. Equipment	0	Month						\$200.00	\$0.00		\$0.00
Small Tools	35	Month						\$150.00	\$5,250.00		\$5,250.00
Fuel/Maintenance	35	Month	1	\$420.00	\$14,700.00	\$350.00	\$12,250.00	\$0.00	\$0.00		\$26,950.00
QUALITY CONTROL											
Project Manager	35	Month	0.25	\$5,833.00	\$51,038.75						\$51,038.75
Superintendent	35	Month	0.25	\$5,833.00	\$51,038.75						\$51,038.75
Field Engineer	35	Month	0.1	\$2,666.00	\$9,331.00						\$9,331.00
Field Clerk	35	Month	0.25	\$2,666.00	\$23,327.50						\$23,327.50
Project Control/Scheduler	35	Month	0.02	\$2,666.00	\$1,866.20						\$1,866.20
Soils Tests		Lump Sum			\$0.00		\$0.00				\$0.00
Concrete Tests		Lump Sum			\$0.00		\$0.00				\$0.00
Piping Tests		Lump Sum			\$0.00		\$0.00				\$0.00
Electrical Tests		Lump Sum			\$0.00		\$0.00				\$0.00
Misc. Tests		Lump Sum			\$0.00		\$0.00				\$0.00
MOVE-IN/MOVE-OUT											
Initial Transportation to Jobsite		Lump Sum			\$20,000.00						\$20,000.00
Jobsite Dismantling		Lump Sum			INCL						\$0.00
Transportation from Jobsite		Lump Sum			INCL						\$0.00

UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY

FIELD OVERHEAD EXPENSES

PROJECT TITLE: NMSF PF-41 TA-55
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 25-May-85
JOB NUMBER: 11813

CONSTRUCTION DURATION (in months): 35.0

ACTIVITY	QUANTITY	UNIT	FACTOR	LABOR RATE	EXTENSION	MATERIAL RATE	EXTENSION	CONST. EQUIPMENT RATE	EXTENSION	SUBCONTRACT	TOTAL
BONDS		Lump Sum								\$0	\$0
INSURANCE/FEES											
Builders Risk		Lump Sum								\$40,285	\$40,285.31
Utility (Urgent)		Lump Sum								\$76,561	\$76,561.09
AGC Fees		Lump Sum								\$16,116	\$16,116.12
SAFETY											
TRAINING											
GET Training	70	EACH	10	\$24.55	\$17,185.00						\$17,185.00
Site Specific Training	70	EACH	2	\$24.55	\$3,437.00						\$3,437.00
SAFETY EQUIPMENT											
Safety Plan		Lump Sum			\$11,000.00						\$11,000.00
Barricades		Lump Sum					\$13,800.00				\$13,800.00
Equipment		Lump Sum									\$0.00
Supplies		Lump Sum									\$0.00
GRAND TOTAL					\$646,385.62		\$105,010.00		\$75,307.50	\$132,974.52	\$959,677.64

ED&I ANALYSIS

University of California
Los Alamos National Laboratory
ENGINEERING, DESIGN & INSPECTION (ED&I) SUMMARY

JOB NUMBER: 11818
PROJECT TITLE: MSF PF-41 TA-55 (CONVENTIONAL)
ESTIMATOR: ICF KAISER ENGINEERS
DATE: 16-Jun-95

Item Description		Item Total Cost
A&E Design Costs		\$4,465,357
Facilities		\$3,722,122
Title 1	\$1,681,944	
Title 2	\$1,552,046	
Title 3	\$488,132	
Special Facilities		\$743,235
Title 1	\$311,718	
Title 2	\$331,478	
Title 3	\$100,039	
LANL ED&I		\$1,541,322
Facilities		\$1,437,144
Title 1	\$87,514	
Title 2	\$175,629	
Title 3	\$1,174,001	
Special Facilities		\$104,178
Title 1	\$20,352	
Title 2	\$52,915	
Title 3	\$30,910	
TOTAL ED&I		\$6,006,678
Facilities		\$5,159,266
Title 1	\$1,769,458	
Title 2	\$1,727,675	
Title 3	\$1,662,133	
Special Facilities		\$847,412
Title 1	\$332,070	
Title 2	\$384,394	
Title 3	\$130,949	
PROJECT MANAGEMENT		\$2,802,154
Facilities		\$2,802,154
Project Management	\$1,686,109.77	
Construction Management	\$1,116,044.24	
Special Facilities		\$0

3

DATE: 18-Jun-85

		BASE YEAR										
ESCALATION RATE	PY-->	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
ANNUAL			0.87%	3.00%	3.10%	3.10%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
FROM BASE YEAR			0.87%	3.20%	7.42%	10.44%	13.73%	17.16%	20.68%	24.30%	28.03%	31.87%

FACILITIES AND DESIGN COSTS

UNESCALATED COST		TOTAL COST	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	DURATION/ COST
TITLE 1 -- WEEKS OF EFFORT	40.0	0	0	40	0	0	0	0	0	0	0	0	40
TITLE 2 -- WEEKS OF EFFORT	52.0	0	0	8	44	0	0	0	0	0	0	0	52
TITLE 3 -- WEEKS OF EFFORT	142.0	0	0	0	24	52	52	14	0	0	0	0	142
TITLE 1 -- DISTRIBUTED COST	\$1,570,195	\$0	\$0	\$1,570,195	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,570,195
TITLE 2 -- DISTRIBUTED COST	\$1,441,883	\$0	\$0	\$217,214	\$1,194,679	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,411,883
TITLE 3 -- DISTRIBUTED COST	\$424,006	\$0	\$0	\$0	\$71,663	\$155,271	\$185,271	\$41,804	\$0	\$0	\$0	\$0	\$424,006
TOTAL UNESCALATED COST BY YEAR			\$0	\$0	\$1,787,409	\$1,266,342	\$155,271	\$185,271	\$41,804	\$0	\$0	\$0	\$3,406,098

ESCALATED COST

TITLE 1	-- DISTRIBUTED COST	\$1,570,195	\$0	\$0	\$1,681,944	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,681,944
TITLE 2	-- DISTRIBUTED COST	\$1,411,893	\$0	\$0	\$232,673	\$1,319,373	\$0	\$0	\$0	\$0	\$0	\$0	\$1,552,046
TITLE 3	-- DISTRIBUTED COST	\$424,008	\$0	\$0	\$0	\$79,143	\$176,821	\$161,920	\$50,448	\$0	\$0	\$0	\$408,132
TOTAL ESCALATED COST BY YEAR			\$0	\$0	\$1,914,617	\$1,398,516	\$176,821	\$161,920	\$50,448	\$0	\$0	\$0	\$3,722,122

A&E DESIGN OVERSIGHT

TITLE : STAFF PLAN (HRS)

			\$/HR	1998	1999	2000	2001	2002	2003	2004	HOURS
TITLE 1	FSS-6	TEAM LEAD	\$95.00	0	0	0	0	0	0	0	0
TITLE 1	FSS-6	CIVIL/STRU	\$95.00	0	0	320	0	0	0	0	320
TITLE 1	FSS-6	ARCH	\$95.00	0	0	180	0	0	0	0	180
TITLE 1	FSS-6	MECH	\$95.00	0	0	180	0	0	0	0	180
TITLE 1	FSS-6	ELEC	\$95.00	0	0	180	0	0	0	0	180
TITLE 1	FSS-6	OTH	\$75.00	0	0	0	0	0	0	0	0
TITLE 1	FSS-6	GEN INSP	\$75.00	0	0	0	0	0	0	0	0
TOTAL TITLE 1 HOURS				0	0	880	0	0	0	0	880
TOTAL FTE'S				0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.4

University of California
Los Alamos National Laboratory
FACILITY ENGINEERING, DESIGN & INSPECTION (ED&I) COSTS

JOB NUMBER: 11815.0
PROJECT TITLE: NNSF PF-41 TA-55 (CONVENTIONAL)
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 15-Jun-95

			BASE YEAR												
ESCALATION RATE			FY-->	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
ANNUAL					0.87%	3.00%	3.10%	3.10%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	
FROM BASE YEAR					0.87%	3.90%	7.12%	10.44%	13.75%	17.16%	20.55%	24.30%	28.03%	31.87%	
=====															
TITLE I					1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	COST
=====															
TITLE 1	FSS-6	TEAM LEAD			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 1	FSS-6	CIVIL/STRU			\$0	\$0	\$32,564	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$32,564
TITLE 1	FSS-6	ARCH			\$0	\$0	\$18,317	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,317
TITLE 1	FSS-6	MECH			\$0	\$0	\$18,317	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,317
TITLE 1	FSS-6	ELEC			\$0	\$0	\$18,317	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,317
TITLE 1	FSS-6	OTH			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 1	FSS-6	GEN INSP			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL TITLE I ESCALATED STAFF COST					\$0	\$0	\$87,514	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$87,514
=====															
TITLE II STAFF PLAN (HRS)			\$/HR		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TOTAL HOURS
=====															
TITLE 2	FSS-6	TEAM LEAD	\$95.00		0	0	0	0	0	0	0	0	0	0	0
TITLE 2	FSS-6	CIVIL/STRU	\$95.00		0	0	0	400	40	0	0	0	0	0	440
TITLE 2	FSS-6	ARCH	\$85.00		0	0	0	256	40	0	0	0	0	0	296
TITLE 2	FSS-6	MECH	\$95.00		0	0	0	256	40	0	0	0	0	0	296
TITLE 2	FSS-6	ELEC	\$95.00		0	0	0	256	40	0	0	0	0	0	296
TITLE 2	FSS-6	H/S ENG	\$95.00		0	0	0	0	0	0	0	0	0	0	0
TITLE 2	FSS-6	CONST ENG	\$95.00		0	0	0	300	40	0	0	0	0	0	340
TITLE 2	FSS-6	OTH	\$75.00		0	0	0	0	0	0	0	0	0	0	0
TITLE 2	FSS-6	GEN INSP	\$95.00		0	0	0	0	0	0	0	0	0	0	0
TOTAL TITLE II HOURS					0	0	0	1488	200	0	0	0	0	0	1688
TOTAL FTE'S					0.0	0.0	0.0	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.6
=====															
ESCALATED STAFF COST PER YEAR			TITLE II												
					1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	COST
=====															
TITLE 2	FSS-6	TEAM LEAD			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 2	FSS-6	CIVIL/STRU			\$0	\$0	\$0	\$41,966	\$4,323	\$0	\$0	\$0	\$0	\$0	\$46,289
TITLE 2	FSS-6	ARCH			\$0	\$0	\$0	\$26,858	\$4,323	\$0	\$0	\$0	\$0	\$0	\$31,181
TITLE 2	FSS-6	MECH			\$0	\$0	\$0	\$26,858	\$4,323	\$0	\$0	\$0	\$0	\$0	\$31,181
TITLE 2	FSS-6	ELEC			\$0	\$0	\$0	\$26,858	\$4,323	\$0	\$0	\$0	\$0	\$0	\$31,181
TITLE 2	FSS-6	H/S ENG			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 2	FSS-6	CONST ENG			\$0	\$0	\$0	\$31,475	\$4,323	\$0	\$0	\$0	\$0	\$0	\$35,797
TITLE 2	FSS-6	OTH			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 2	FSS-6	GEN INSP			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL TITLE II ESCALATED STAFF COST					\$0	\$0	\$0	\$154,016	\$21,613	\$0	\$0	\$0	\$0	\$0	\$175,629

University of California
Los Alamos National Laboratory
FACILITY ENGINEERING, DESIGN & INSPECTION (ED&I) COSTS

JOB NUMBER: 11818.0
PROJECT TITLE: NMSF #F-41 TA-55 (CONVENTIONAL)
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 15-Jun-95

ESCALATION RATE	FY-->	BASE YEAR	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
ANNUAL		1994	0.87%	3.00%	3.10%	3.10%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
FROM BASE YEAR			0.87%	3.90%	7.12%	10.44%	13.78%	17.16%	20.68%	24.30%	28.03%	31.87%

TITLE III STAFF PLAN (HRS)			1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TOTAL HOURS
TITLE 3	FSS-6	TEAM LEAD	\$95.00	0	0	0	0	0	0	0	0	0	0	0
TITLE 3	FSS-6	CIVIL/STRU	\$95.00	0	0	0	80	40	40	40	0	0	0	200
TITLE 3	FSS-6	ARCH	\$95.00	0	0	0	80	40	40	40	0	0	0	200
TITLE 3	FSS-6	MECH	\$95.00	0	0	0	40	40	0	0	0	0	0	80
TITLE 3	FSS-6	ELEC	\$95.00	0	0	0	40	40	0	0	0	0	0	80
TITLE 3	FSS-6	QA ENG	\$95.00	0	0	0	0	0	0	0	0	0	0	0
TITLE 3	FSS-6	CONST ENG	\$95.00	0	0	0	480	1750	1750	320	0	0	0	4300
TITLE 3	FSS-6	H/S ENG	\$95.00	0	0	0	0	0	0	0	0	0	0	0
TITLE 3	FSS-6	QA ENG	\$95.00	0	0	0	0	0	0	0	0	0	0	0
TITLE 3	FSS-6	OTH	\$75.00	0	0	0	0	0	0	0	0	0	0	0
TITLE 3	FSS-6	GEN INSP	\$75.00	0	0	0	480	1500	1500	240	0	0	0	3720
TITLE 3	FSS-6	SAFETY INS	\$75.00	0	0	0	480	1500	1500	240	0	0	0	3720
TOTAL TITLE III HOURS				0	0	0	1600	4910	4830	680	0	0	0	12300
TOTAL FTE'S				0.0	0.0	0.0	0.8	2.4	2.3	0.4	0.0	0.0	0.0	5.9

ESCALATED STAFF COST PER YEAR			1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	COST
TITLE 3	FSS-6	TEAM LEAD	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 3	FSS-6	CIVIL/STRU	\$0	\$0	\$0	\$6,393	\$4,323	\$4,452	\$4,586	\$0	\$0	\$0	\$21,754
TITLE 3	FSS-6	ARCH	\$0	\$0	\$0	\$6,393	\$4,323	\$4,452	\$4,586	\$0	\$0	\$0	\$21,754
TITLE 3	FSS-6	MECH	\$0	\$0	\$0	\$4,197	\$4,323	\$0	\$0	\$0	\$0	\$0	\$8,519
TITLE 3	FSS-6	ELEC	\$0	\$0	\$0	\$4,197	\$4,323	\$0	\$0	\$0	\$0	\$0	\$8,519
TITLE 3	FSS-6	QA ENG	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 3	FSS-6	CONST ENG	\$0	\$0	\$0	\$60,380	\$189,110	\$194,784	\$36,688	\$0	\$0	\$0	\$470,940
TITLE 3	FSS-6	H/S ENG	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 3	FSS-6	QA ENG	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 3	FSS-6	OTH	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 3	FSS-6	GEN INSP	\$0	\$0	\$0	\$39,758	\$127,969	\$131,809	\$21,722	\$0	\$0	\$0	\$326,258
TITLE 3	FSS-6	SAFETY INS	\$0	\$0	\$0	\$39,758	\$127,969	\$131,809	\$21,722	\$0	\$0	\$0	\$326,258
TOTAL TITLE III ESCALATED STAFF COST			\$0	\$0	\$0	\$155,054	\$462,339	\$467,305	\$89,302	\$0	\$0	\$0	\$1,174,001

TOTAL FACILITIES A&E DESIGN OVERSIGHT			1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	COST
TITLE 1			\$0.00	\$0.00	\$87,514.48	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$87,514.49
TITLE 2			\$0.00	\$0.00	\$0.00	\$154,016.14	\$21,612.62	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$175,628.76
TITLE 3			\$0.00	\$0.00	\$0.00	\$155,034.25	\$462,339.43	\$467,305.21	\$89,301.75	\$0.00	\$0.00	\$0.00	\$1,174,000.64
TOTAL FACILITIES A&E DESIGN OVERSIGHT (ESCALATED)			\$0.00	\$0.00	\$87,514.48	\$309,070.39	\$483,952.04	\$467,305.21	\$89,301.75	\$0.00	\$0.00	\$0.00	\$1,437,443.89

University of California
Los Alamos National Laboratory
FACILITY PROJECT MANAGEMENT COSTS

PROJECT TITLE NMSF PF-41 TA-55 (CONVENTIONAL)
JOB NUMBER 11918
ESTIMATOR ICF KASER ENGINEERS

DATE 10-Jan-85

ESCALATION	FY-->	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
ANNUAL			0.87%	0.86%	0.10%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
FROM BASE YEAR			0.87%	0.90%	7.12%	10.44%	13.70%	17.18%	20.88%	24.32%	28.03%	31.87%

ENGINEERING DIVISION MANAGEMENT COSTS

STAFF PLAN	HOURS	LMR	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TOTAL HOURS
PROJECT													
PROJ MGR	0	\$85.00	0	0	0	0	0	0	0	0	0	0	0
PROJ LDR	3,790	\$95.00	0	0	289	1084	1084	1084	269	0	0	0	3790
PROJ CTRL	500	\$75.00	0	0	0	65	140	210	85	0	0	0	500
USER REP	3,790	\$85.00	0	0	289	1084	1084	1084	269	0	0	0	3790
HS/ENG	800	\$85.00	0	0	30	200	300	200	100	0	0	0	800
QA/REP	560	\$85.00	0	0	30	180	190	100	40	0	0	0	560
ADMIN	3,790	\$75.00	0	0	289	1084	1084	1084	269	0	0	0	3790
TOTAL	13,260		0	0	697	3,697	3,692	3,612	679	0	0	0	12935
CONSTRUCTION													
PROJ MGR	0	\$85.00	0	0	0	0	0	0	0	0	0	0	0
PROJ LDR	2,338	\$85.00	0	0	169	888	888	888	189	0	0	0	2338
PROJ CTRL	1,540	\$75.00	0	0	0	305	480	590	185	0	0	0	1540
USER REP	2,338	\$85.00	0	0	169	888	888	888	189	0	0	0	2338
HS/ENG	1,540	\$85.00	0	0	30	400	600	400	140	0	0	0	1540
QA/REP	800	\$85.00	0	0	50	250	310	250	40	0	0	0	800
ADMIN	2,338	\$70.00	0	0	169	888	888	888	189	0	0	0	2338
TOTAL	11,136		0	0	607	2,640	3,369	3,336	672	0	0	0	11,136
TOTAL HOURS	24,396		0	0	1,474	6,337	7,250	7,150	1,350	0	0	0	24,396
FTE'S			0.0	0.0	0.7	3.2	3.5	3.4	0.7	0.0	0.0	0.0	11.8

ESCALATED STAFF COST PER YEAR

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	COST
PROJECT											
PROJ MGR	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PROJ LDR	\$0.00	\$0.00	\$27,373.72	\$113,728.54	\$117,140.40	\$120,654.81	\$30,638.87	\$0.00	\$0.00	\$0.00	\$408,738.54
PROJ CTRL	\$0.00	\$0.00	\$0.00	\$7,068.67	\$11,643.82	\$18,450.20	\$4,677.97	\$0.00	\$0.00	\$0.00	\$43,243.65
USER REP	\$0.00	\$0.00	\$27,373.72	\$113,728.54	\$117,140.40	\$120,654.81	\$30,638.87	\$0.00	\$0.00	\$0.00	\$408,738.54
HS/ENG	\$0.00	\$0.00	\$3,032.83	\$20,883.13	\$32,418.63	\$22,281.00	\$11,484.41	\$0.00	\$0.00	\$0.00	\$80,180.30
QA/REP	\$0.00	\$0.00	\$27,373.72	\$113,728.54	\$117,140.40	\$120,654.81	\$30,638.87	\$0.00	\$0.00	\$0.00	\$408,738.54
ADMIN	\$0.00	\$0.00	\$21,810.83	\$88,785.89	\$82,478.26	\$85,253.84	\$24,348.76	\$0.00	\$0.00	\$0.00	\$323,478.21
TOTAL	\$0.00	\$0.00	\$108,784.82	\$450,823.11	\$468,263.18	\$467,911.88	\$133,307.00	\$0.00	\$0.00	\$0.00	\$1,888,106.77
CONSTRUCTION											
PROJ MGR	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PROJ LDR	\$0.00	\$0.00	\$17,187.81	\$89,873.81	\$71,970.02	\$74,128.12	\$18,374.88	\$0.00	\$0.00	\$0.00	\$252,545.43
PROJ CTRL	\$0.00	\$0.00	\$0.00	\$25,262.58	\$39,343.87	\$58,801.92	\$18,744.08	\$0.00	\$0.00	\$0.00	\$141,882.85
USER REP	\$0.00	\$0.00	\$17,187.81	\$89,873.81	\$71,970.02	\$74,128.12	\$18,374.88	\$0.00	\$0.00	\$0.00	\$252,545.43
HS/ENG	\$0.00	\$0.00	\$5,088.05	\$41,969.29	\$64,637.86	\$44,352.00	\$19,090.88	\$0.00	\$0.00	\$0.00	\$172,484.34
QA/REP	\$0.00	\$0.00	\$5,088.05	\$26,228.91	\$33,489.56	\$27,859.25	\$4,585.77	\$0.00	\$0.00	\$0.00	\$87,228.53
ADMIN	\$0.00	\$0.00	\$13,377.08	\$55,183.53	\$58,818.44	\$58,522.89	\$15,295.84	\$0.00	\$0.00	\$0.00	\$186,377.97
TOTAL	\$0.00	\$0.00	\$58,148.40	\$288,368.86	\$326,339.87	\$336,781.41	\$99,429.88	\$0.00	\$0.00	\$0.00	\$1,118,044.24
TOTAL BURDENED STAFF COST	\$0.00	\$0.00	\$166,933.21	\$748,191.89	\$800,603.05	\$807,693.05	\$224,736.88	\$0.00	\$0.00	\$0.00	\$2,602,154.01

TOTAL FACILITY PM COST

WITH ESCALATION	\$0.00	\$0.00	\$166,933.21	\$748,191.89	\$800,603.05	\$807,693.05	\$224,736.88	\$0.00	\$0.00	\$0.00	\$2,602,154.01
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University of California
Los Alamos National Laboratory
SFE ENGINEERING, DESIGN & INSPECTION (ED&I) COSTS

JOB NUMBER: 11,818
PROJECT TITLE: NMSF PF-41 TA-55 (CONVENTIONAL)
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 16-Jun-95

ESCALATION	FY-->	BASE YEAR	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
ANNUAL		1994	0.87%	3.00%	3.10%	3.10%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
FROM BASE YEAR			0.87%	3.90%	7.12%	10.44%	13.75%	17.16%	20.68%	24.30%	28.03%	31.87%

SFE A&E DESIGN COSTS

UNESCALATED COST	TOTAL COST	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TOTAL DURATION/COST
TITLE 1 -- WEEKS OF EFFORT	40	0	0	40	0	0	0	0	0	0	0	40
TITLE 2 -- WEEKS OF EFFORT	52	0	0	8	44	0	0	0	0	0	0	52
TITLE 3 -- WEEKS OF EFFORT	142	0	0	0	24	52	52	14	0	0	0	142
TITLE 1 -- DISTRIBUTED COST	\$291,007	\$0	\$0	\$291,007	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$291,007
TITLE 2 -- DISTRIBUTED COST	\$301,545	\$0	\$0	\$48,392	\$255,153	\$0	\$0	\$0	\$0	\$0	\$0	\$301,545
TITLE 3 -- DISTRIBUTED COST	\$86,897	\$0	\$0	\$0	\$14,687	\$31,821	\$31,821	\$8,567	\$0	\$0	\$0	\$86,897
TOTAL UNESCALATED COST BY YEAR		\$0	\$0	\$337,399	\$269,840	\$31,821	\$31,821	\$8,567	\$0	\$0	\$0	\$679,449

ESCALATED COST		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TOTAL COST
TITLE 1 -- DISTRIBUTED COST	\$291,007	\$0	\$0	\$311,718	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$311,718
TITLE 2 -- DISTRIBUTED COST	\$301,545	\$0	\$0	\$49,693	\$261,785	\$0	\$0	\$0	\$0	\$0	\$0	\$331,478
TITLE 3 -- DISTRIBUTED COST	\$86,897	\$0	\$0	\$0	\$16,220	\$36,197	\$37,283	\$10,339	\$0	\$0	\$0	\$100,039
TOTAL SFE ED&I ESCALATED COST BY YEAR		\$0	\$0	\$361,411	\$299,005	\$36,197	\$37,283	\$10,339	\$0	\$0	\$0	\$743,235

USER DESIGN OVERSIGHT/DESIGN EFFORT

STAFF PLAN (HRS)	\$/HR	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TOTAL HOURS
TITLE 1 CIVIL/STRU	\$95.00	0	0	100	0	0	0	0	0	0	0	100
TITLE 1 MECH	\$95.00	0	0	100	0	0	0	0	0	0	0	100
TITLE 1 ELEC	\$95.00	0	0	100	0	0	0	0	0	0	0	100
TITLE 1 NMT USER	\$95.00	0	0	100	0	0	0	0	0	0	0	100
TITLE 2 CIVIL/STRU	\$95.00	0	0	24	120	0	0	0	0	0	0	144
TITLE 2 MECH	\$95.00	0	0	24	120	0	0	0	0	0	0	144
TITLE 2 ELEC	\$95.00	0	0	24	120	0	0	0	0	0	0	144
TITLE 2 CONST ENG	\$95.00	0	0	0	80	0	0	0	0	0	0	80
TITLE 3 CIVIL/STRU	\$95.00	0	0	0	0	120	80	40	0	0	0	240
TITLE 3 MECH	\$95.00	0	0	0	0	120	80	40	0	0	0	240

University of California
Los Alamos National Laboratory
SFE ENGINEERING, DESIGN & INSPECTION (ED&I) COSTS

JOB NUMBER: 11,818
PROJECT TITLE: NMSF PF-41 TA-55 (CONVENTIONAL)
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 16-Jun-95

		BASE YEAR												
ESCALATION		FY-->	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
ANNUAL				0.87%	3.00%	3.10%	3.10%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	
FROM BASE YEAR				0.87%	3.90%	7.12%	10.44%	13.75%	17.16%	20.66%	24.30%	28.03%	31.97%	
TITLE 3	ELEC		\$95.00	0	0	0	0	120	80	40	0	0	0	240
TITLE 3	CONST ENCL		\$85.00	0	0	0	0	0	40	0	0	0	0	40
TOTAL HOURS				0	0	472	440	360	280	120	0	0	0	1672
TOTAL FTE'S				0.0	0.0	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.8

ESCALATED STAFF COST PER YEAR

		SFEYRJ	SFEYRK	SFEYRL	SFEYRM	SFEYRN	SFEYRD	SFEYRP	SFEYRQ	SFEYRR	SFEYRS	COST
		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
TITLE 1	CIVIL/STRU	\$0	\$0	\$10,176	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,176
TITLE 1	MECH	\$0	\$0	\$10,176	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,176
TITLE 1	ELEC	\$0	\$0	\$10,176	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,176
TITLE 1	NMT USER	\$0	\$0	\$10,176	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,176
TITLE 2	CIVIL/STRU	\$0	\$0	\$2,442	\$12,580	\$0	\$0	\$0	\$0	\$0	\$0	\$15,032
TITLE 2	MECH	\$0	\$0	\$2,442	\$12,580	\$0	\$0	\$0	\$0	\$0	\$0	\$15,032
TITLE 2	ELEC	\$0	\$0	\$2,442	\$12,580	\$0	\$0	\$0	\$0	\$0	\$0	\$15,032
TITLE 2	CONST ENCL	\$0	\$0	\$0	\$8,393	\$0	\$0	\$0	\$0	\$0	\$0	\$8,393
TITLE 3	CIVIL/STRU	\$0	\$0	\$0	\$0	\$12,968	\$8,904	\$4,586	\$0	\$0	\$0	\$26,458
TITLE 3	MECH	\$0	\$0	\$0	\$0	\$12,968	\$8,904	\$4,586	\$0	\$0	\$0	\$26,458
TITLE 3	ELEC	\$0	\$0	\$0	\$0	\$12,968	\$8,904	\$4,586	\$0	\$0	\$0	\$26,458
TITLE 3	CONST ENCL	\$0	\$0	\$0	\$0	\$0	\$4,452	\$0	\$0	\$0	\$0	\$4,452
TITLE 1	TOTAL	\$0	\$0	\$20,352	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,352
TITLE 2	TOTAL	\$0	\$0	\$0	\$0	\$25,935	\$17,808	\$9,172	\$0	\$0	\$0	\$52,915
TITLE 3	TOTAL	\$0	\$0	\$0	\$0	\$12,968	\$13,357	\$4,586	\$0	\$0	\$0	\$30,910
TOTAL ESCALATED BURDENED STAFF COST		\$0	\$0	\$48,031	\$48,163	\$38,903	\$31,165	\$13,757	\$0	\$0	\$0	\$178,019
		\$0	\$0	\$20,352	\$0	\$38,903	\$31,165	\$13,757	\$0	\$0	\$0	\$104,178

TOTAL SFE ED&I WITH ESCALATION

TOTAL TITLE 1	\$0	\$0	\$332,070	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$332,070
TOTAL TITLE 2	\$0	\$0	\$49,693	\$281,785	\$25,935	\$17,808	\$9,172	\$0	\$0	\$0	\$0	\$384,394
TOTAL TITLE 3	\$0	\$0	\$0	\$16,220	\$49,185	\$50,540	\$14,925	\$0	\$0	\$0	\$0	\$130,949
TOTAL SFE ED&I WITH ESCALATION		\$0	\$0	\$381,783	\$298,005	\$75,100	\$68,449	\$24,098	\$0	\$0	\$0	\$847,412

UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY

PROJECT and CONSTRUCTION MANAGEMENT MANHOURS

PROJECT TITLE: NMSF PF-41 TA-55 (CONVENTIONAL)

P. I. O.:

11518

DATE:

25-May-95

ESTIMATOR: ICF KAISER ENGINEERS

	PROJECT MANAGEMENT							TOTAL
	PROJ MGR	PROJ LDR	PROJ CTRL	USER REP	H/S ENG	Q/A REP	ADMIN	
DESIGN (under authorization)								
Letter of Instruction	0	36	0	36	0	0	36	108
Funding to A/E for Design	0	64	10	64	0	0	64	202
PMP Revisions	0	100	10	100	0	0	100	300
CPDS Revisions	0	140	10	140	0	0	140	430
Integrated Project Schedule	0	270	100	270	0	0	270	910
Project Revisions	0	270	0	270	150	60	270	1040
Request for Project Authorization	0	140	0	140	0	0	140	420
Prin. Safety Analysis Report	0	270	0	270	480	144	270	1434
Cost Estimates	0	270	50	270	0	0	270	560
Design Reviews by Project Team	0	400	50	400	0	0	400	1250
Project Schedule	0	240	180	240	0	0	240	900
Acceptance Test Procedure & Plans	0	180	0	180	60	144	180	
Performance Evaluations of A/E	0	40	0	40	0	0	40	120
Inspection Planning	0	180	0	180	50	144	180	784
Surveys - Support Design	0	40	0	40	0	0	40	120
Constructability Reviews	0	180	38	180	60	48	180	684
Outside Contractor Support for Design & Construction	0	270	0	270	0	0	270	810
Change Control - for Design	0	360	30	360	0	0	360	1110
Obtain Permits Prior to Start of Construction (after Title I)	0	240	0	240	0	0	240	720
Value Engineering (after Title I)	0	100	24	100	0	0	100	324
PROCUREMENT AND CONSTRUCTION								
Bid Package Preparation	0	0	0	0	0	0	0	0
Bid Evaluations, Opening and Award	0	0	0	0	0	0	0	0
Construction Coordination and Planning	0	0	0	0	0	0	0	0
Contract Administration	0	0	0	0	0	0	0	0
Engineering Support (A/E)	0	0	0	0	0	0	0	0
Design Changes/Control	0	0	0	0	0	0	0	0
Non-Conformance Reports (NCRs)	0	0	0	0	0	0	0	0
Control Systems for Construction Activities	0	0	0	0	0	0	0	0
Project Assessment & Reporting	0	0	0	0	0	0	0	0
Construction Status Reports and Meetings	0	0	0	0	0	0	0	0
Drawings - Record Administration	0	0	0	0	0	0	0	0
Vendor Submittals	0	0	0	0	0	0	0	0
Field Support of Construction	0	0	0	0	0	0	0	0
Field or Lab Tests	0	0	0	0	0	0	0	0
Radiation Protection by OC	0	0	0	0	0	0	0	0
Safeguard/Security Systems	0	0	0	0	0	0	0	0
Project Estimates	0	0	0	0	0	0	0	0
Quality Control (QC) Inspection	0	0	0	0	0	0	0	0
Inspection & Acceptance	0	0	0	0	0	0	0	0
Negotiations of Fixed Price Contract Changes	0	0	0	0	0	0	0	0
Trips to Vendor/Fabricators	0	0	0	0	0	0	0	0
Procurements Coordination	0	0	0	0	0	0	0	0
Equipment/Hardware Cost	0	0	0	0	0	0	0	0
Material Procurement Plan	0	0	0	0	0	0	0	0
Safety Plan & Overview	0	0	0	0	0	0	0	0
Surveying to Support Construction	0	0	0	0	0	0	0	0
Interest Payments	0	0	0	0	0	0	0	0
ACCEPTANCE								
Perform Acceptance Testing	0	0	0	0	0	0	0	0
Final Safety Analysis Report (FSAR)	0	0	0	0	0	0	0	0
As-Built	0	0	0	0	0	0	0	0
Project Closeout	0	0	0	0	0	0	0	0
A/E & Construction Performance Appraisal	0	0	0	0	0	0	0	0
TOTAL	0	3790	500	3790	830	560	3790	13260

UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY

PROJECT and CONSTRUCTION MANAGEMENT MANHOURS

PROJECT TITLE: NNSF PF-41 TA-85 (CONVENTIONAL)

P.L.D.:

11818

DATE:

25-May-85

ESTIMATOR: ICF KAISER ENGINEERS

	CONSTRUCTION MANAGEMENT							TOTAL	TOTAL
	PROJ MGR	PROJ LDR	PROJECTRL	USER REP	M/S ENG	Q/A REP	ADMIN		
DESIGN (under authorization)									
Letter of Instruction									108
Pending to A/E for Design									202
PMP Revisions									310
CPDS Revisions									430
Integrated Project Schedule									610
Project Revisions									1040
Request for Project Authorization									420
Pratim. Safety Analysis Report									1434
Cost Estimates									860
Design Reviews by Project Team									1250
Project Schedule									900
Acceptance Test Procedure & Plans									0
Performance Evaluations of A/E									120
Inspection Planning									784
Surveys - Support Design									120
Constructability Reviews									884
Outside Contractor Support for									819
Design & Construction									0
Change Control - for Design									1110
Obtain Permits Prior to Start of									720
Construction (after Title I)									0
Value Engineering (after Title I)									304
PROCUREMENT AND CONSTRUCTION									0
Bid Package Preparation	0	40	0	40	0	0	40	120	120
Bid Evaluations, Opening and Award	0	40	0	40	0	0	40	120	120
Construction Coordination and Planning	0	60	100	60	0	60	60	340	340
Contract Administration	0	80	0	80	0	0	80	180	180
Engineering Support (A/E)	0	180	0	180	0	0	180	340	340
Design Changes/Control	0	300	300	100	0	0	100	900	900
Non-Compliance Reports (NCRs)	0	40	0	40	0	120	40	240	240
Control Systems for Construction Activities	0	80	0	80	0	120	80	300	300
Project Assessment & Reporting	0	160	300	180	0	50	180	880	880
Construction Status Reports and Meetings	0	800	150	890	132	60	800	2732	2732
Drawings - Basic Administration	0	20	0	20	0	0	20	80	80
Vendor Submittals	0	80	0	80	132	100	80	472	472
Field Support of Construction	0	40	0	40	0	0	40	120	120
Field or Lab Tests	0	30	0	30	0	80	30	180	180
Radiation Protection by QC	0	30	0	30	0	0	30	80	80
Safeguards/Security Systems	0	20	0	20	0	0	20	80	80
Project Estimates	0	30	440	30	0	0	30	530	530
Quality Control (QC) Inspection	0	30	0	30	80	80	30	230	230
Inspection & Acceptance	0	40	0	40	180	150	40	460	460
Negotiations of Fixed Price Contract Changes	0	24	150	24	0	0	24	222	222
Trips to Vendor/Fabricators	0	24	0	24	88	0	24	136	136
Programmatic Coordination	0	24	0	24	0	0	24	72	72
Equipment/Hardware Cost	0	0	150	0	0	0	0	150	150
Material Procurement Rate	0	0	0	0	0	0	0	0	0
Safety Plans & Overview	0	20	0	20	60	18	20	188	188
Surveying to Support Construction	0	20	0	20	0	0	20	80	80
Interest Penalties	0	0	0	0	0	0	0	0	0
ACCEPTANCE									
Perform Acceptance Testing	0	180	0	180	140	18	180	638	638
Final Safety Analysis Report (FSAR)	0	50	0	50	720	40	50	810	810
As-Built	0	50	0	50	0	0	50	150	150
Project Closeout	0	84	80	84	70	38	84	350	350
A/E & Construction Performance Appraisals	0	20	0	20	0	0	20	80	80
TOTAL	0	2338	1640	2338	1890	900	2338	11138	24308

**A&E COST OF SERVICES
ANALYSIS (SFE)**

SUMMARY

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)
 LJ No.: 11818
 Prepared By: ICF KAISER ENGINEERS Date: 16-Jun-95

TITLE I

* DIRECT LABOR		\$228,337.02
SUPPORT STAFF		\$7,749.09
FIXED FEE (10.00%)		\$23,608.61
REIMBURSABLES		\$13,724.50
REPRODUCTION	\$10,514.50	
TRAVEL	\$3,210.00	
OTHER REIMBURSABLES	\$0.00	
GENERAL & ADMIN CHARGE ON REIMBURSABLES,	7.00%	\$950.72
SUBTOTAL		\$274,379.94
NEW MEXICO GROSS RECEIPTS TAX,	6.060%	\$16,627.42
TOTAL TITLE I,		42.83%
		\$291,007.37

TITLE II

** DIRECT LABOR		\$234,374.87
SUPPORT STAFF		\$7,749.09
FIXED FEE (10.00%)		\$24,212.40
REIMBURSABLES		\$16,803.00
REPRODUCTION	\$13,593.00	
TRAVEL	\$3,210.00	
OTHER REIMBURSABLES	\$0.00	
GENERAL & ADMIN CHARGE ON REIMBURSABLES,	7.00%	\$1,176.21
SUBTOTAL		\$284,315.56
NEW MEXICO GROSS RECEIPTS TAX,	6.060%	\$17,229.52
TOTAL TITLE II,		44.38%
		\$301,545.09

TITLE III

*** DIRECT LABOR		\$60,191.72
SUPPORT STAFF		\$9,088.13
FIXED FEE (10.00%)		\$6,927.98
REIMBURSABLES		\$5,350.00
TRAVEL	\$5,350.00	
OTHER REIMBURSABLES	\$0.00	
GENERAL & ADMIN CHARGE ON REIMBURSABLES,	7.00%	\$374.50
SUBTOTAL		\$81,932.33
NEW MEXICO GROSS RECEIPTS TAX,	6.060%	\$4,965.10
TOTAL TITLE III,		12.79%
		\$86,897.43
TOTAL I,II & III,		12.79%
		\$679,449.88

* NUMBER WAS DERIVED BY TAKING THE TITLE I LABOR COST BY DISCIP FROM DESIGN MANHOUR SUMMARY AND ADDING 161% FOR A/E OVERHEAD.

** NUMBER WAS DERIVED BY TAKING THE TITLE II LABOR COST BY DISCIP FROM DESIGN MANHOUR SUMMARY AND ADDING 161% FOR A/E OVERHEAD.

*** NUMBER WAS DERIVED BY TAKING THE TITLE III LABOR COST BY DISCIP FROM DESIGN MANHOUR SUMMARY AND ADDING 161% FOR A/E OVERHEAD.

**LOS ALAMOS NATIONAL LABORATORY
UNIVERSITY OF CALIFORNIA**

A/E COST AS A PERCENTAGE OF ESTIMATED CONSTRUCTION COST

Title:
P. J. D.
Prepared by:

Nuclear Material Storage Facil, PF-45 TA-00(SFE)
19816
ICF KAISER ENGINEERS

Date:

17-JUN-85

	ENGINEERING DISCIPLINE	Est. # of Orgs	Hourly Rate	Est. Hours	TITLE I		Est. Hours	TITLE II		TOTAL	DESIGN
					Estimated Cost A/E	Consultant		Estimated Cost A/E	Consultant		Estimated Cost
D R A W I N G S	PROJECT MANAGEMENT				\$0.00			\$0.00		0.00	\$0.00
	Project Engineer		\$37.00	68	\$2,501.40		68	\$2,501.40		136.00	\$5,002.80
	ARCHITECTURAL				\$0.00			\$0.00		0.00	\$0.00
	Lead Architect		\$31.20	0	\$0.00		0	\$0.00		0.00	\$0.00
	Architect		\$22.00	0	\$0.00		0	\$0.00		0.00	\$0.00
	STRUCTURAL				\$0.00			\$0.00		0.00	\$0.00
	Lead Structural Engineer		\$31.20	0	\$0.00		0	\$0.00		0.00	\$0.00
	Structural Engineer		\$22.00	0	\$0.00		0	\$0.00		0.00	\$0.00
	MECHANICAL				\$0.00			\$0.00		0.00	\$0.00
	Lead Mechanical Engineer		\$31.20	0	\$0.00		0	\$0.00		0.00	\$0.00
	Mechanical Engineer		\$22.00	0	\$0.00		0	\$0.00		0.00	\$0.00
	ELECTRICAL				\$0.00			\$0.00		0.00	\$0.00
	Lead Electrical Engineer		\$31.20	0	\$0.00		0	\$0.00		0.00	\$0.00
	Electrical Engineer		\$22.00	0	\$0.00		0	\$0.00		0.00	\$0.00
	CIVIL				\$0.00			\$0.00		0.00	\$0.00
	Lead Civil Engineer		\$31.20	382	\$11,919.40		382	\$10,795.20		764.00	\$22,713.80
	Civil Engineer		\$22.00	280	\$6,160.00		280	\$8,040.78		560.00	\$13,784.18
	FIRE SUPPRESSION				\$0.00			\$0.00		0.00	\$0.00
	Lead Fire Engineer		\$31.20	0	\$0.00		0	\$0.00		0.00	\$0.00
	Fire Engineer		\$22.00	0	\$0.00		0	\$0.00		0.00	\$0.00
	QUALITY CONTROL				\$0.00			\$0.00		0.00	\$0.00
	Coordination QC				\$0.00			\$0.00		0.00	\$0.00
	DESIGNERS				\$0.00			\$0.00		0.00	\$0.00
	Architectural Designer		\$18.85	0	\$0.00		0	\$0.00		0.00	\$0.00
	Structural Designer		\$18.85	0	\$0.00		0	\$0.00		0.00	\$0.00
	Mechanical Designer		\$18.85	0	\$0.00		0	\$0.00		0.00	\$0.00
	Electrical Designer		\$18.85	0	\$0.00		0	\$0.00		0.00	\$0.00
	Process Designer		\$18.85	266	\$5,004.80		492	\$9,321.40		984.00	\$18,827.80
	Fire Designer		\$18.85	0	\$0.00		0	\$0.00		0.00	\$0.00
	CRAFTSMEN				\$0.00			\$0.00		0.00	\$0.00
	Architectural Draftsman	0	\$14.23	0	\$0.00		0	\$0.00		0.00	\$0.00
	Structural Draftsman	0	\$14.23	0	\$0.00		0	\$0.00		0.00	\$0.00
	Mechanical Draftsman	0	\$14.23	0	\$0.00		0	\$0.00		0.00	\$0.00
	Electrical Draftsman	0	\$14.23	0	\$0.00		0	\$0.00		0.00	\$0.00
	Process Draftsman	33	\$14.23	565	\$8,024.55		789	\$11,237.47		1374.00	\$19,552.02
	Fire Draftsman	0	\$14.23	0	\$0.00		0	\$0.00		0.00	\$0.00
	TOTAL DRAWINGS	33			\$39,941.95	\$0.00		\$41,456.23	\$0.00	824.00	\$77,880.18
S P E C I F I C A T I O N S	Specification Writer	1			\$0.00			\$0.00		0.00	\$0.00
	Typist	34	\$12.77	34	\$434.18		34	\$434.18		34.00	\$434.18
	TOTAL SPECIFICATIONS	1			\$434.18	\$0.00		\$434.18	\$0.00		\$434.18
Total Estimated Cost A/E & Consultant		34		1723	\$39,942.13	\$0.00	2093	\$42,322.41	\$0.00	3914	\$78,748.54
Overhead A/E		181%			\$58,848.07			\$88,129.08			\$128,785.15
Overhead Consultant		0%				\$0.00			\$0.00		\$0.00
SUBTOTAL					\$98,072.20	\$0.00		\$110,481.49	\$0.00		\$208,553.69
PROFIT 10.00%					\$9,807.22	\$0.00		\$11,048.15	\$0.00		\$20,855.37
SUBTOTAL					\$104,579.42	\$0.00		\$121,529.64	\$0.00		\$229,087.06
ESCALATION RATE					0.00%			0.00%			
SUBTOTAL INC. ESCALATION					\$104,579.42			\$121,529.64			\$229,087.06
TOTAL COST OF DESIGN						\$8,851.12 per sheet		0.80% of ECC			\$229,087.06
ESTIMATED CONSTRUCTION COST (INCLUDING ESCALATION AND CONTINGENCY)					\$24,341,008.00						

REPRODUCTION COSTS

TITLE I

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

LJ No.: 11818

Prepared BICE KAISER ENGINEERS

Date:

25-May-95

	DWGS/PGS	SETS	RATE	TOTAL
1) TITLE I 25% REVIEW				
A. PRINTS (24" x 36")	6	50	\$0.50	\$150.00
B. SEPIAS (24" x 36")	6	1	\$4.50	\$27.00
C. PAGES (8 1/2" x 11")	500	50	\$0.06	\$1,500.00
SUBTOTAL				\$1,677.00
2) TITLE I 50% REVIEW				
A. PRINTS (24" x 36")	9	50	\$0.50	\$225.00
B. SEPIAS (24" x 36")	9	1	\$4.50	\$40.50
C. PAGES (8 1/2" x 11")	1,000	50	\$0.06	\$3,000.00
SUBTOTAL				\$3,265.50
3) TITLE I 100% REVIEW				
A. PRINTS (24" x 36")	16	50	\$1.25	\$1,000.00
B. SEPIAS (24" x 36")	16	1	\$4.50	\$72.00
C. PAGES (8 1/2" x 11")	1,500	50	\$0.06	\$4,500.00
SUBTOTAL				\$5,572.00
4) DESIGN SUMMARY				
A. PRINTS (24" x 36")	0	1	\$1.25	\$0.00
B. SEPIAS (24" x 36")	0	1	\$10.00	\$0.00
C. PAGES (8 1/2" x 11")	0	1	\$0.25	\$0.00
SUBTOTAL				\$0.00
TOTAL TITLE I				\$10,514.50

REPRODUCTION COSTS

TITLE II

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

P. I. D. 11818

Prepared BICF KAISER ENGINEERS

Date:

25-May-95

	DWGS/PGS	SETS	RATE	TOTAL
1) TITLE II 25% REVIEW				
A. PRINTS (24" x 36")	8	50	\$0.50	\$200.00
B. SEPIAS (24" x 36")	8	1	\$4.50	\$36.00
C. PAGES (8 1/2" x 11")	500	50	\$0.06	\$1,500.00
SUBTOTAL				\$1,736.00
2) TITLE II 60% REVIEW				
A. PRINTS (24" x 36")	12	50	\$0.50	\$300.00
B. SEPIAS (24" x 36")	12	1	\$4.50	\$54.00
C. PAGES (8 1/2" x 11")	1,000	50	\$0.06	\$3,000.00
SUBTOTAL				\$3,354.00
3) TITLE II 100% REVIEW				
A. PRINTS (24" x 36")	17	50	\$0.50	\$425.00
B. SEPIA (24" x 36")	17	1	\$10.00	\$170.00
C. SPECS (8 1/2" x 11")	1,500	50	\$0.06	\$4,500.00
D. DESIGN ANALYSIS (8 1/2" x 11")	500	50	\$0.06	\$1,500.00
SUBTOTAL				\$6,595.00
4) FINAL BID DOCUMENTS				
A. PRINTS (24" x 36")	24	25	\$0.50	\$300.00
B. MYLAR (24" x 36")	24	1	\$4.50	\$108.00
C. SPECS (8 1/2" x 11")	1,000	25	\$0.06	\$1,500.00
SUBTOTAL				\$1,908.00
TOTAL TITLE II				\$13,593.00

TRAVEL AND OTHER REIMBURSABLE COSTS

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFB)

P. I. D. 11818

Prepared By: ICF KAISER ENGINEERS

Date: 25-May-95

TRIP	PEOPLE	AIRFARE	DAYS	PERDIEM	CARS	RATE	MILES	RATE	SUBTOTAL
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TITLE I									
PD	2	\$350.00	4	\$70.00	2	\$45.00			\$1,070
SV	2	\$350.00	4	\$70.00	2	\$45.00			\$1,070
RM	2	\$350.00	4	\$70.00	2	\$45.00			\$1,070

TOTAL TITLE I TRAVEL									\$3,210
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1)
2)
3)
4)

TOTAL OTHER TITLE I REIMBURSABLES									\$0
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TITLE II									
PD	2	\$350.00	4	\$70.00	2	\$45.00			\$1,070
SV	2	\$350.00	4	\$70.00	2	\$45.00			\$1,070
RM	2	\$350.00	4	\$70.00	2	\$45.00			\$1,070

TOTAL TITLE II TRAVEL									\$3,210
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1)
2)
3)
4)

TOTAL OTHER TITLE II REIMBURSABLES									\$0
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TITLE III									
PC		\$350.00		\$70.00		\$45.00			\$0
SV		\$350.00		\$70.00		\$45.00			\$0
IN	10	\$350.00	20	\$70.00	10	\$45.00			\$5,350

TOTAL TITLE III TRAVEL									\$5,350
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1) GENERAL INSPECTION CONTRACT									\$0
2) 0									
3) 0									
4) 0									

TOTAL OTHER TITLE III REIMBURSABLES									\$0
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PD - Predesign trip SV - Site visit IN - Inspection Trip
RM - Review meeting PC - Preconstruction trip

DE. JN MANHOUR SUMMARY

Title:
P. I. D.
Prepared By:

Nuclear Material Storage Facil. PF-41 TA-55(SFE)
11618
ICF KAISER ENGINEERS

Date: *****

LABOR SUMMARY	PM	LE	PROCESS ER	OS	DP	LA	ARCHITECTURAL AR	OS	DP	LE	STRUCTURAL ER	OS	DP
TITLE I - PRELIMIN DESIGN													
DESIGN SERVICES													
DRAWING HOURS	18	182	280	396	585	0	0	0	0	0	0	0	0
CALCULATIONS & ANALYSIS	24	80	0	0	0	0	0	0	0	0	0	0	0
TOTAL DRAWING HOURS	42	262	280	396	585	0	0	0	0	0	0	0	0
SPECIFICATIONS	24	120	0	0	0	0	0	0	0	0	0	0	0
TOTAL SPECIFICATIONS HOURS	24	120	0	0	0	0	0	0	0	0	0	0	0
TOTAL DESIGN SERVICES	66	382	280	396	585	0	0	0	0	0	0	0	0
ENGINEERING SERVICES													
1 Conference	16	187	24	0	40	0	0	0	0	0	0	0	0
2 Field Work		0	0	0	0	0	0	0	0	0	0	0	0
3 Define Project	8	40	0	0	0	0	0	0	0	0	0	0	0
4 Interior Design		0	0	0	0	0	0	0	0	0	0	0	0
5 Preliminary studies:		0	0	0	0	0	0	0	0	0	0	0	0
5A no. alternate site plans		0	0	0	0	0	0	0	0	0	0	0	0
5B no. alternate bldg plans		0	0	0	0	0	0	0	0	0	0	0	0
5C no. sections & elevations		0	0	0	0	0	0	0	0	0	0	0	0
6 Studies/Reports		0	0	0	0	0	0	0	0	0	0	0	0
6A Soil Borings and Analysis		0	0	0	0	0	0	0	0	0	0	0	0
6B Topographic Studies		0	0	0	0	0	0	0	0	0	0	0	0
6C Storm Water Management Report		0	0	0	0	0	0	0	0	0	0	0	0
6D Energy Study		0	0	0	0	0	0	0	0	0	0	0	0
6E Energy Conservation Report		0	0	0	0	0	0	0	0	0	0	0	0
6F Energy Systems Operation Guide		0	0	0	0	0	0	0	0	0	0	0	0
6G Environmental Permits Report		0	0	0	0	0	0	0	0	0	0	0	0
6H Fire Protection Analysis		0	0	0	0	0	0	0	0	0	0	0	0
6 Thermal/Stress Analysis		180	240	0	0	0	0	0	0	0	0	0	0
6 Seismic Coordination		80	120	0	0	0	0	0	0	0	0	0	0
6 Other Components		120	120	0	0	0	0	0	0	0	0	0	0
7 Cost Engineer	24	0	140	0	0	0	0	0	0	0	0	0	0
8 Model or Rendering	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Project Engineering Documentation (PED)	40	0	80	0	0	0	0	0	0	0	0	0	0
10 Value Engineering	32	0	0	0	0	0	0	0	0	0	0	0	0
11 Quality Assurance	32	60	0	0	0	0	0	0	0	0	0	0	0
12 Final Revisions		12	40	20	40	0	0	0	0	0	0	0	0
13 Reproduction of Plans & Specs.	32	0	0	0	40	0	0	0	0	0	0	0	0
14 Other		0	0	0	0	0	0	0	0	0	0	0	0
15 Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0	0
TITLE I PERSON-HOURS	250	1,041	1,024	416	705	0	0	0	0	0	0	0	0
TITLE I HOURS BY DISCIPLINE	250	<	<	3,186 >	<	<	<	0 >	<	<	<	0 >	<
DISCIPLINE HOUR PERCENTS	6.78%			86.34%								0.00%	
HOURLY RATE	\$37.80	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23
TITLE I PERSON-HOUR COST	\$9,475	\$32,479	\$22,620	\$7,883	\$10,032	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE I LABOR COST BY DISCIP	\$9,475	<	<	\$73,015 >	<	<	<	\$0 >	<	<	<	\$0 >	<
DISCIPLINE COST PERCENTS	10.83%			83.46%				0.00%				0.00%	

Title:
P. I. O.
Prepared By:

LABOR SUMMARY	MECHANICAL				ELECTRICAL				FIRE SUPPRESSION			
	LE	ER	DS	DP	LE	ER	DS	DP	LE	ER	DS	DP
DESIGN SERVICES												
DRAWING HOURS	0	0	0	0	0	0	0	0	0	0	0	0
CALCULATIONS & ANALYSIS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL DRAWING HOURS	0	0	0	0	0	0	0	0	0	0	0	0
SPECIFICATIONS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL SPECIFICATIONS HOURS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL DESIGN SERVICES	0	0	0	0	0	0	0	0	0	0	0	0
ENGINEERING SERVICES												
1 Conferences	0	0	0	0	0	0	0	0	0	0	0	0
2 Field Work	0	0	0	0	0	0	0	0	0	0	0	0
3 Define Project	0	0	0	0	0	0	0	0	0	0	0	0
4 Interior Design	0	0	0	0	0	0	0	0	0	0	0	0
5 Preliminary studies:	0	0	0	0	0	0	0	0	0	0	0	0
5A no. alternate site plans	0	0	0	0	0	0	0	0	0	0	0	0
5B no. alternate bldg plans	0	0	0	0	0	0	0	0	0	0	0	0
5C no. sections & elevations	0	0	0	0	0	0	0	0	0	0	0	0
6 Studies/Reports	0	0	0	0	0	0	0	0	0	0	0	0
6A Soil Borings and Analysis	0	0	0	0	0	0	0	0	0	0	0	0
6B Topographic Studies	0	0	0	0	0	0	0	0	0	0	0	0
6C Storm Water Management Report	0	0	0	0	0	0	0	0	0	0	0	0
6D Energy Study	0	0	0	0	0	0	0	0	0	0	0	0
6E Energy Conservation Report	0	0	0	0	0	0	0	0	0	0	0	0
6F Energy Systems Operation Guide	0	0	0	0	0	0	0	0	0	0	0	0
6G Environmental Permits Report	0	0	0	0	0	0	0	0	0	0	0	0
6H Fire Protection Analysis	0	0	0	0	0	0	0	0	0	0	0	0
6 Thermal/Stress Analysis	0	0	0	0	0	0	0	0	0	0	0	0
6 Seismic Coordination	0	0	0	0	0	0	0	0	0	0	0	0
6 Other Components	0	0	0	0	0	0	0	0	0	0	0	0
7 Cost Engineer	0	0	0	0	0	0	0	0	0	0	0	0
8 Model or Rendering	0	0	0	0	0	0	0	0	0	0	0	0
9 Project Engineering Documentation (PED)	0	0	0	0	0	0	0	0	0	0	0	0
10 Value Engineering	0	0	0	0	0	0	0	0	0	0	0	0
11 Quality Assurance	0	0	0	0	0	0	0	0	0	0	0	0
12 Final Revisions	0	0	0	0	0	0	0	0	0	0	0	0
13 Reproduction of Plans & Specs.	0	0	0	0	0	0	0	0	0	0	0	0
14 Other	0	0	0	0	0	0	0	0	0	0	0	0
15 Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0
TITLE I PERSON-HOURS	0	0	0	0	0	0	0	0	0	0	0	0
TITLE I HOURS BY DISCIPLINE	<		>		<		>		<		>	
DISCIPLINE HOUR PERCENTS			0.00%				0.00%				0.00%	
HOURLY RATE	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23
TITLE I PERSON-HOUR COST	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE I LABOR COST BY DISCIP	<		>		<		>		<		>	
DISCIPLINE COST PERCENTS			0.00%				0.00%				0.00%	

Title:
P. I. O.
Prepared By:

N

LABOR SUMMARY	ES	WP	TOTAL
DESIGN SERVICES			
DRAWING HOURS	49	18	1,507
CALCULATIONS & ANALYSIS	0		104
TOTAL DRAWING HOURS	49	18	1611
SPECIFICATIONS	0	16	160
TOTAL SPECIFICATIONS HOURS	0	16	160
TOTAL DESIGN SERVICES	49	34	1771
ENGINEERING SERVICES	140		140
1 Conference		16	263
2 Field Work			0
3 Define Project			48
4 Interior Design			0
5 Preliminary studies:			0
5A ___ no. alternate site plans			0
5B ___ no. alternate bldg plans			0
5C ___ no. sections & elevations			0
6 Studies/Reports		16	16
6A Soil Borings and Analysis			0
6B Topographic Studies			0
6C Storm Water Management Report			0
6D Energy Study			0
6E Energy Conservation Report			0
6F Energy Systems Operation Guide			0
6G Environmental Permits Report			0
6H Fire Protection Analysis			0
6 Thermal/Stress Analysis			400
6 Seismic Coordination			200
6 Other Components			240
7 Cost Engineer			164
8 Model or Rendering			0
9 Project Engineering Documentation (PED)			120
10 Value Engineering			32
11 Quality Assurance			82
12 Final Revisions			112
13 Reproduction of Plans & Specs.			72
14 Other			0
15 Miscellaneous			0
TITLE I PERSON-HOURS	188	66	3,690
TITLE I HOURS BY DISCIPLINE	188	66	3,690
DISCIPLINE HOUR PERCENTS	5.09%	1.79%	100.00%
HOURLY RATE	\$22.09	\$12.77	
TITLE I PERSON-HOUR COST	\$4,153	\$843	
TITLE I LABOR COST BY DISCIP	\$4,153	\$843	\$87,488
DISCIPLINE COST PERCENTS	4.75%	0.96%	100.00%

DELTA MANHOUR SUMMARY

Title:
P. I. D.
Prepared By:

Nuclear Material Storage Fac. PF-41 TA-55(SFE)
11618
ICF KAISER ENGINEERS

Date:

LABOR SUMMARY	PROCESS					ARCHITECTURAL				STRUCTURAL			
	PM	LE	ER	DS	DP	LA	AR	DS	DP	LE	ER	DS	DP
TITLE II - FINAL DESIGN													
DESIGN SERVICES													
DRAWING HOURS	18	226	364	492	789	0	0	0	0	0	0	0	0
CALCULATIONS & ANALYSIS	24	60	0	0	0	0	0	0	0	0	0	0	0
TOTAL DRAWING HOURS	42	286	364	492	789	0	0	0	0	0	0	0	0
SPECIFICATIONS	24	60	0	0	0	0	0	0	0	0	0	0	0
TOTAL SPECIFICATIONS HOURS	24	60	0	0	0	0	0	0	0	0	0	0	0
TOTAL DESIGN SERVICES	66	346	364	492	789	0	0	0	0	0	0	0	0
ENGINEERING SERVICES													
1 Conferences	16	167	24	0	40	0	0	0	0	0	0	0	0
2 Field Work		0	0	0	0	0	0	0	0	0	0	0	0
3 Define Project	8	40	0	0	0	0	0	0	0	0	0	0	0
4 Interior Design		0	0	0	0	0	0	0	0	0	0	0	0
5 Preliminary studies:		0	0	0	0	0	0	0	0	0	0	0	0
5A no. alternate site plans		0	0	0	0	0	0	0	0	0	0	0	0
5B no. alternate bldg plans		0	0	0	0	0	0	0	0	0	0	0	0
5C no. sections & elevations		0	0	0	0	0	0	0	0	0	0	0	0
6 Studies/Reports		0	0	0	0	0	0	0	0	0	0	0	0
6A Soil Borings and Analysis		0	0	0	0	0	0	0	0	0	0	0	0
6B Topographic Studies		0	0	0	0	0	0	0	0	0	0	0	0
6C Storm Water Management Report		0	0	0	0	0	0	0	0	0	0	0	0
6D Energy Study		0	0	0	0	0	0	0	0	0	0	0	0
6E Energy Conservation Report		0	0	0	0	0	0	0	0	0	0	0	0
6F Energy Systems Operation Guide		0	0	0	0	0	0	0	0	0	0	0	0
6G Environmental Permit Report		0	0	0	0	0	0	0	0	0	0	0	0
6H Fire Protection Analysis		0	0	0	0	0	0	0	0	0	0	0	0
6I Thermal Analysis		120	120	0	0	0	0	0	0	0	0	0	0
6J Seismic Coordination		60	120	0	0	0	0	0	0	0	0	0	0
6K Other Components		120	120	0	0	0	0	0	0	0	0	0	0
7 Cost Engineer	24	0	140	0	0	0	0	0	0	0	0	0	0
8 Model or Rendering	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Project Engineering Documentation (PEE)	40	0	80	0	0	0	0	0	0	0	0	0	0
10 Value Engineering	32	0	0	0	0	0	0	0	0	0	0	0	0
11 Quality Assurance	32	60	0	0	0	0	0	0	0	0	0	0	0
12 Final Revisions	32	0	40	20	40	0	0	0	0	0	0	0	0
13 Reproduction of Plans & Specs.		0	0	0	40	0	0	0	0	0	0	0	0
14 Other		0	0	0	0	0	0	0	0	0	0	0	0
15 Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0	0
TITLE II PERSON-HOURS	250	973	1,008	512	909	0	0	0	0	0	0	0	0
TITLE II HOURS BY DISCIPLINE	250	<		3,402	>	<		0	>	<		0	>
DISCIPLINE HOUR PERCENTS	6.40%			87.03%				0.00%				0.00%	
HOURLY RATE	\$37.90	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23
TITLE II PERSON-HOUR COST	\$9,475	\$30,358	\$22,297	\$9,702	\$12,935	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE II LABR COST BY DISCIP	\$9,475	<		\$75,262	>	<		\$0	>	<		\$0	>
DISCIPLINE COST PERCENTS	10.55%			83.81%				0.00%				0.00%	

Title:
P. I. D.
Prepared By:

N

LABOR SUMMARY	MECHANICAL				ELECTRICAL				FIRE SUPPRESSION			
	LE	ER	DS	DP	LE	ER	DS	DP	LE	ER	DS	DP
TITLE II - FINAL DESIGN												
DESIGN SERVICES												
DRAWING HOURS	0	0	0	0	0	0	0	0	0	0	0	0
CALCULATIONS & ANALYSIS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL DRAWING HOURS	0	0	0	0	0	0	0	0	0	0	0	0
SPECIFICATIONS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL SPECIFICATIONS HOURS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL DESIGN SERVICES	0	0	0	0	0	0	0	0	0	0	0	0
ENGINEERING SERVICES												
1 Conferences	0	0	0	0	0	0	0	0	0	0	0	0
2 Field Work	0	0	0	0	0	0	0	0	0	0	0	0
3 Define Project	0	0	0	0	0	0	0	0	0	0	0	0
4 Interior Design	0	0	0	0	0	0	0	0	0	0	0	0
5 Preliminary studies:	0	0	0	0	0	0	0	0	0	0	0	0
5A no. alternate site plans	0	0	0	0	0	0	0	0	0	0	0	0
5B no. alternate bldg plans	0	0	0	0	0	0	0	0	0	0	0	0
5C no. sections & elevations	0	0	0	0	0	0	0	0	0	0	0	0
6 Studies/Reports	0	0	0	0	0	0	0	0	0	0	0	0
6A Soil Borings and Analysis	0	0	0	0	0	0	0	0	0	0	0	0
6B Topographic Studies	0	0	0	0	0	0	0	0	0	0	0	0
6C Storm Water Management Report	0	0	0	0	0	0	0	0	0	0	0	0
6D Energy Study	0	0	0	0	0	0	0	0	0	0	0	0
6E Energy Conservation Report	0	0	0	0	0	0	0	0	0	0	0	0
6F Energy Systems Operation Guide	0	0	0	0	0	0	0	0	0	0	0	0
6G Environmental Permit Report	0	0	0	0	0	0	0	0	0	0	0	0
6H Fire Protection Analysis	0	0	0	0	0	0	0	0	0	0	0	0
6I Thermal Analysis	0	0	0	0	0	0	0	0	0	0	0	0
6J Seismic Coordination	0	0	0	0	0	0	0	0	0	0	0	0
6K Other Components	0	0	0	0	0	0	0	0	0	0	0	0
7 Civil Engineer	0	0	0	0	0	0	0	0	0	0	0	0
8 Model or Rendering	0	0	0	0	0	0	0	0	0	0	0	0
9 Project Engineering Documentation (PED)	0	0	0	0	0	0	0	0	0	0	0	0
10 Value Engineering	0	0	0	0	0	0	0	0	0	0	0	0
11 Quality Assurance	0	0	0	0	0	0	0	0	0	0	0	0
12 Final Review	0	0	0	0	0	0	0	0	0	0	0	0
13 Reproduction of Plans & Specs.	0	0	0	0	0	0	0	0	0	0	0	0
14 Other	0	0	0	0	0	0	0	0	0	0	0	0
15 Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0
TITLE II PERSON-HOURS	0	0	0	0	0	0	0	0	0	0	0	0
TITLE II HOURS BY DISCIPLINE	<	0	>		<	0	>		<	0	>	
DISCIPLINE HOUR PERCENTS			0.00%				0.00%				0.00%	
HOURLY RATE	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23
TITLE II PERSON-HOUR COST	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE II LABR COST BY DISCIP	<		\$0	>	<		\$0	>	<		\$0	>
DISCIPLINE COST PERCENTS			0.00%				0.00%				0.00%	

Title:
P. I. D.
Prepared By:

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LABOR SUMMARY	ES	WP	TOTAL
TITLE II - FINAL DESIGN			
DESIGN SERVICES			
DRAWING HOURS	51	18	1958
CALCULATIONS & ANALYSIS	0		84
TOTAL DRAWING HOURS	51	18	2042
SPECIFICATIONS	0	16	100
TOTAL SPECIFICATIONS HOURS	0	16	100
TOTAL DESIGN SERVICES	51	34	2142
ENGINEERING SERVICES	140		140
1 Conferences		16	253
2 Field Work			0
3 Define Project			48
4 Interior Design			0
5 Preliminary studies:			0
5A no. alternate site plans			0
5B no. alternate bldg plans			0
5C no. sections & elevations			0
6 Studies/Reports		16	16
6A Soil Borings and Analysis			0
6B Topographic Studies			0
6C Storm Water Management Report			0
6D Energy Study			0
6E Energy Conservation Report			0
6F Energy Systems Operation Guide			0
6G Environmental Permits Report			0
6H Fire Protection Analysis			0
6I Thermal Analysis			240
6J Seismic Coordination			200
6K Other Components			240
7 Cost Engineer			164
8 Model or Rendering			0
9 Project Engineering Documentation (PED)			120
10 Value Engineering			32
11 Quality Assurance			112
12 Final Revisions			132
13 Reproduction of Plans & Specs.			40
14 Other			0
15 Miscellaneous			0
TITLE II PERSON-HOURS	191	66	3,769
TITLE II HOURS BY DISCIPLINE	191	66	3,809
DISCIPLINE HOUR PERCENTS	4.99%	1.69%	100.00%
HOURLY RATE	\$22.09	\$12.77	
TITLE II PERSON-HOUR COST	\$4,219	\$843	
TITLE II LABR COST BY DISCP	\$4,219	\$843	\$89,799
DISCIPLINE COST PERCENTS	4.70%	0.94%	100.00%

Title:
P. I. D.
Prepared By:

Nuclear Material Storage Facil. PF-41 TA-55(SFE)
11818
ICF KAISER ENGINEERS

DE. JN MANHOUR SUMMARY

Date:

LABOR SUMMARY	PM	LE	PROCESS ER	DS	DP	LA	ARCHITECTURAL AR	DS	DP	LE	STRUCTURAL ER	DS	DP
TITLE III - HOME OFFICE													
CONSTRUCTION SERVICES													
Review of Submittals	0	40	0	0	0	0	0	0	0	0	0	0	0
Inspection Services	0	240	120	0	0	0	0	0	0	0	0	0	0
Prepare As-Built Drawings	0	0	4	0	120	0	0	0	0	0	0	0	0
TOTAL CONSTRUCTION SERVICES	0	280	124	0	120	0	0	0	0	0	0	0	0
ENGINEERING SERVICES													
1 Conferences	0	80	0	0	0	0	0	0	0	0	0	0	0
2 Field Work	0	40	0	0	0	0	0	0	0	0	0	0	0
3 Cost Engineer	0	40	0	0	0	0	0	0	0	0	0	0	0
4 Quality Control	0	80	0	0	0	0	0	0	0	0	0	0	0
5 Other	0	40	40	0	0	0	0	0	0	0	0	0	0
6 Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0	0
TITLE III HOME OFFICE HOURS	0	540	164	0	120	0	0	0	0	0	0	0	0
TITLE III HOURS BY DISCIPL	0	<		824	>	<		0	>	<		0	>
DISCIPLINE HOUR PERCENTS	0.00%			95.37%				0.00%				0.00%	
HOURLY RATE	\$37.90	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23
TITLE III PERSON-HOUR COST	\$0	\$18,848	\$3,623	\$0	\$1,708	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE III HOME OFF LABR COST	\$0	<		\$22,178	>	<		\$0	>	<		\$0	>
DISCIPLINE COST PERCENTS	0.00%			98.17%				0.00%				0.00%	

Title:
P. I. D.
Prepared By:

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LABOR SUMMARY	MECHANICAL				ELECTRICAL				FIRE SUPPRESSION			
	LE	ER	DS	DP	LE	ER	DS	DP	LE	ER	DS	DP
TITLE III - HOME OFFICE												
CONSTRUCTION SERVICES												
Review of Submittals	0	0	0	0	0	0	0	0	0	0	0	0
Inspection Services	0	0	0	0	0	0	0	0	0	0	0	0
Prepare As-Built Drawings	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL CONSTRUCTION SERVICES	0	0	0	0	0	0	0	0	0	0	0	0
ENGINEERING SERVICES												
1 Conferences	0	0	0	0	0	0	0	0	0	0	0	0
2 Field Work	0	0	0	0	0	0	0	0	0	0	0	0
3 Cost Engineer	0	0	0	0	0	0	0	0	0	0	0	0
4 Quality Control	0	0	0	0	0	0	0	0	0	0	0	0
5 Other	0	0	0	0	0	0	0	0	0	0	0	0
6 Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0
TITLE III HOME OFFICE HOURS	0	0	0	0	0	0	0	0	0	0	0	0
TITLE III HOURS BY DISCIPL	< 0 >				< 0 >				< 0 >			
DISCIPLINE HOUR PERCENTS	0.00%				0.00%				0.00%			
HOURLY RATE	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23
TITLE III PERSON-HOUR COST	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE III HOME OFF LABR COST	< \$0 >				< \$0 >				< \$0 >			
DISCIPLINE COST PERCENTS	0.00%				0.00%				0.00%			

Title:
P. I. O.
Prepared By:

N

LABOR SUMMARY	ES	WP	TOTAL
TITLE II -- HOME OFFICE			
CONSTRUCTION SERVICES			
Review of Submittals	0	0	40
Inspection Services	0		350
Prepare As-Built Drawings	0	0	124
TOTAL CONSTRUCTION SERVICES	0	0	524
ENGINEERING SERVICES	40		
1 Conferences		0	50
2 Field Work			40
3 Cost Engineer			40
4 Quality Control			50
5 Other			50
6 Miscellaneous			0
TITLE III HOME OFFICE HOURS	40	0	524
TITLE III HOURS BY DISCIPL	40	0	554
DISCIPLINE HOUR PERCENTS	4.63%	0.00%	100.00%
HOURLY RATE	\$22.09	\$12.77	
TITLE III PERSON-HOUR COST	\$884	\$0	
TITLE III HOME OFF LABR COST	\$884	\$0	\$23,062
DISCIPLINE COST PERCENTS	3.83%	0.00%	100.00%

TITLE I
PROJECT MANAGEMENT, WORD PROCESSING, AND STAFF SUPPORT

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

P. 1. 0.

11818

Date:

25-May-95

Prepared BICF KAISER ENGINEERS

SFE & STORAGE EQUIPMENT PROJECT MANAGEMENT

	PROC	ARCH	STRICT	MECK	ELEC	CLERK	TOTAL
DESIGN SERVICES							
Drawing Preparation	18	0	0	0	0	0	18
Specifications	24	0	0	0	0	0	24
Calculations & Analysis	24	0	0	0	0	0	24
Title I Design Services PM Total	66	0	0	0	0	0	66
ENGINEERING SERVICES							
Conference	16	0	0	0	0	0	16
Define Project	8	0	0	0	0	0	8
Cost Engineer	24	0	0	0	0	0	24
Model or Rendering	0	0	0	0	0	0	0
Project Engineering Documentation	40	0	0	0	0	0	40
Value Engineering Services	32	0	0	0	0	0	32
Quality Assurance	32	0	0	0	0	0	32
Reproduction of Plans & Specs	32	0	0	0	0	0	32
Miscellaneous	0	0	0	0	0	0	0
Title I Engineering Services PM T	184	0	0	0	0	0	184
TITLE I PROJECT MANAGEMENT	250	0	0	0	0	0	250

WORD PROCESSING

	PROC	ARCH	STACT	MECK	ELEC	CLERK	TOTAL
DESIGN SERVICES							
Drawing Preparation	18	0	0	0	0	0	18
Specifications	16	0	0	0	0	0	16
Title I Design Services Word Proc	34	0	0	0	0	0	34
ENGINEERING SERVICES							
Reports	16	0	0	0	0	0	16
Conferences	16	0	0	0	0	0	16
Title I Engineering Services Word Proce	32	0	0	0	0	0	32
TITLE I WORD PROCESSING	66	0	0	0	0	0	66

TITLE I
PROJECT MANAGEMENT, WORD PROCESSING, AND STAFF SUPPORT

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

P. I. D.

11818

Date:

25-May-95

Prepared BICF KAISER ENGINEERS

SUPPORT STAFF

	PROC	ARCH	STRICT	MECH	ELEC	CLERK	TOTAL
Project Managment	4	0	0	0	0	0	4
Project Administrator	4	0	0	0	0	0	4
Project Controls	4	0	0	0	0	0	4
Planner/Scheduler	4	0	0	0	0	0	4
Purchasing	4	0	0	0	0	0	4
Accounting/Audit	4	0	0	0	0	0	4
Quality Assurance & Records Manag	60	0	0	60	60	60	240
Contract Administration	4	0	0	0	0	0	4
Database Maintenance	4	0	0	0	0	0	4
Records Management	4	0	0	0	0	0	4
TITLE I STAFF SUPPORT TOTAL	96	0	0	60	60	60	276

3732 = TOTAL TITLE I PERSON HOURS
41.01% = PERCENT OF TOTAL PERSON HOURS

TITLE 1 ENGINEERING

ESTIMATED HOURS - TITLE 1

Title: Nuclear Material Storage Facility, PF-41 TA-35(SFE)

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

SFE & STORAGE EQUIPMENT

DESIGN SERVICES

DRAWING PREPARATION

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
P1	MATERIAL HANDLING FLOW DIAGRAM	12	12	0	33	3	60
P2	STORAGE CONTAINER DRAWING	12	20	48	45	3	128
P3	STORAGE CONTAINER DRAWING	12	12	0	33	3	60
P4	FIXTURE/BASKET DRAWING	12	12	0	33	3	60
P5	FIXTURE/BASKET DRAWING	18	36	60	75	3	192
P6	DRYWELL DRAWING	18	36	60	75	3	192
P7	DRYWELL DRAWING	18	36	60	75	3	192
P8	CHARGE DECK DRAWING	12	20	48	45	3	128
P9	CHARGE DECK DRAWING	8	8		18	3	37
P10	MISCELLANEOUS FIXTURES DRAWING	8	8		18	3	37
P11	TUBE TUBE HANDLING MACHINE	8	8		18	3	37
P12	TUBE TUBE HANDLING MACHINE	12	20	48	45	3	128
P13	TUBE TUBE HANDLING MACHINE	8	8	18	18	3	55
P14	MOA LAB DRAWING	8	8	18	18	3	55
P15	MOA LAB DRAWING	8	8	18	18	3	55
P16	PACK/UNPACK DRAWING	8	8	18	18	3	55

TITLE 1 DRAWING PREPARATION TOTAL

182 260 396 585 48 1471

SPECIFICATIONS

120 0 0 0 0 120

CALCULATIONS & ANALYSIS

80 0 0 0 0 80

TITLE 1 PROCESS EQUIP. DESIGN SERVICES TOT

382 260 396 585 48 1671

ENGINEERING SERVICES

1 Conferences

1A	Pre-design meeting, LAB office	8	0	0	0	0	8
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	8	0	0	0	0	8
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	16	0	0	0	0	16
1F	Misc. meetings/conferences	40	0	0	0	0	40
1G	Bi-weekly hi-light reports	18	0	0	0	0	18

TITLE I ENGINEERING

ESTIMATED HOURS - TITLE I

Title: Nuclear Material Storage Facil. PF-41 7A-55(SFE)

P.I. 11818

Date:

25-May-95

Prepared By:ICF KAISER ENGINEERS

1H	Monthly reports	9	0	0	0	0	9
1I	Revisions/reply to comments	8	24	0	40	0	72
1J	Assemble Title I summary report	80	0	0	0	0	80
2	Field Work	0	0	0	0	0	0
2A	Site investigation	0	0	0	0	0	0
3	Define Project	0	0	0	0	0	0
3A	Concept submission	40	0	0	0	0	40
4	Interior Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0
5A	___ no. alternate site plans	0	0	0	0	0	0
5B	___ no. alternate bldg plans	0	0	0	0	0	0
5C	___ no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	0	0	0	0	0	0
6B	Topographic Studies	0	0	0	0	0	0
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	0	0	0	0	0	0
6E	Energy Conservation Report	0	0	0	0	0	0
6F	Energy Systems Operation Guide	0	0	0	0	0	0
6G	Environmental Permit Report	0	0	0	0	0	0
6H	Fire Protection Analysis	0	0	0	0	0	0
6I	Thermal/Stress Analysis	160	240	0	0	0	400
6J	Seismic Coordination	80	120	0	0	0	200
6K	Other Components	120	120	0	0	0	240
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	0	20	0	0	20	40
7B	Construction cost estimate, 50%	0	40	0	0	40	80
7C	Construction cost estimate, 100%	0	80	0	0	80	160
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (PED)	0	80	0	0	0	80
10	Value Engineering	0	0	0	0	0	0
11	Quality Assurance	60	0	0	0	0	60
12	Final Revisions	12	40	20	40	0	112
13	Reproduction of Plans & Specs.	0	0	0	40	0	40
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0
TITLE I PROCESS ENGINEERING SERVICES TOTAL		659	764	20	120	140	1703
TITLE I PROCESS TOTAL		1041	1024	416	705	188	3374

TITLE I ENGINEERING

ESTIMATED HOURS - TITLE I

Title: Nuclear Material Storage Facil. PF-41 1A-55(SFE)

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

DRAWING COUNT

SFE & STORAGE EQUIPMENT DRAWINGS	16
ARCHITECTURAL DRAWINGS	0
STRUCTURAL DRAWINGS	0
MECHANICAL DRAWINGS	0
INSTRUMENTATION & ELECTRICAL	0
FIRE SUPPRESSION DRAWINGS	0

TOTAL DRAWINGS 16

TITLE II
PROJECT MANAGEMENT, WORD PROCESSING AND STAFF SUPPORT

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

P.I. 11818

Date:

25-May-95

Prepared By ICF KAISER ENGINEERS

SFE & STORAGE EQUIPMENT PROJECT MANAGEMENT

	PROC	ARCH	STRCT	MECH	ELEC	CLERK	TOTAL
	-----	-----	-----	-----	-----	-----	-----
DESIGN SERVICES							
Drawing Preparation	18	0	0	0	0	0	18
Specifications	24	0	0	0	0	0	24
Calculations & Analysis	24	0	0	0	0	0	24
	-----	-----	-----	-----	-----	-----	-----
Title II Design Services PM Total	66	0	0	0	0	0	66
ENGINEERING SERVICES							
Conference	16	0	0	0	0	0	16
Define Project	8	0	0	0	0	0	8
Cost Engineer	24	0	0	0	0	0	24
Model or Rendering	0	0	0	0	0	0	0
Project Engineering Documentation	40	0	0	0	0	0	40
Value Engineering Services	32	0	0	0	0	0	32
Quality Assurance	32	0	0	0	0	0	32
Reproduction of Plans & Specs	32	0	0	0	0	0	32
Miscellaneous	0	0	0	0	0	0	0
	-----	-----	-----	-----	-----	-----	-----
Title II Engineering Services PM	184	0	0	0	0	0	184
	-----	-----	-----	-----	-----	-----	-----
TITLE II: PROJECT MANAGEMENT	250	0	0	0	0	0	250

WORD PROCESSING

	PROC	ARCH	STRCT	MECH	ELEC	CLERK	TOTAL
	-----	-----	-----	-----	-----	-----	-----
DESIGN SERVICES							
Drawing Preparation	18	0	0	0	0	0	18
Specifications	16	0	0	0	0	0	16
	-----	-----	-----	-----	-----	-----	-----
Title II Design Services Word Pro	34	0	0	0	0	0	34
ENGINEERING SERVICES							
Reports	16	0	0	0	0	0	16
Conferences	16	0	0	0	0	0	16
	-----	-----	-----	-----	-----	-----	-----
Title II Engineering Services Word Proce	32	0	0	0	0	0	32
	-----	-----	-----	-----	-----	-----	-----
TITLE II WORD PROCESSING	66	0	0	0	0	0	66

TITLE II
PROJECT MANAGEMENT, WORD PROCESSING AND STAFF SUPPORT

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

P.I. 11B18

Date:

25-May-95

Prepared by: KAISER ENGINEERS

SUPPORT STAFF

	PRGC	ARCH	STRT	MECH	ELEC	CLERK	TOTAL
	-----	-----	-----	-----	-----	-----	-----
Project Managment	4	0	0	0	0	0	4
Project Administrator	4	0	0	0	0	0	4
Project Controls	4	0	0	0	0	0	4
Planner/Scheduler	4	0	0	0	0	0	4
Purchasing	4	0	0	0	0	0	4
Accounting/Audit	4	0	0	0	0	0	4
Quality Assurance & Records Manag	60	0	0	60	60	60	240
Contract Administration	4	0	0	0	0	0	4
Database Maintenance	4	0	0	0	0	0	4
Records Management	4	0	0	0	0	0	4
	-----	-----	-----	-----	-----	-----	-----
TITLE II STAFF SUPPORT TOTAL	96	0	0	60	60	60	276

4185 = TOTAL TITLE II PERSON HOURS
 45.98% = PERCENT OF TOTAL PERSON HOURS

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

P.L. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

SFE & STORAGE EQUIPMENT

DESIGN SERVICES

DRAWING PREPARATION

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
P1	MATERIAL HANDLING FLOW DIAGRAM	12	12	0	33	3	60
P2	STORAGE CONTAINER DRAWING	12	24	48	45	3	132
P3	STORAGE CONTAINER DRAWING	12	24	48	45	3	132
P4	FIXTURE/BASKET DRAWING	12	12	0	33	3	60
P5	FIXTURE/BASKET DRAWING	12	12	0	33	3	60
P6	DRYWELL DRAWING	12	12	0	33	3	60
P7	DRYWELL DRAWING	12	12	0	33	3	60
P8	CHARGE DECK DRAWING	18	36	60	75	3	192
P9	CHARGE DECK DRAWING	12	24	48	45	3	132
P10	MISCELLANEOUS FIXTURES DRAWING	18	36	60	75	3	192
P11	TUBE TUBE HANDLING MACHINE	18	36	60	75	3	192
P12	TUBE TUBE HANDLING MACHINE	18	36	60	75	3	192
P13	NDA LAB DRAWING	18	36	60	75	3	192
P14	NDA LAB DRAWING	8	8		18	3	37
P15	PACK/UNPACK DRAWING	8	8		18	3	37
P16	ERECTION DRAWING - MISC	12	12	0	33	3	60
P17	ERECTION DRAWING - MISC	12	24	48	45	3	132
TITLE II DRAWING PREPARATION TOTAL		226	364	492	789	51	1922

SPECIFICATIONS	60	0	0	0	0	0	60
CALCULATIONS & ANALYSIS	60	0	0	0	0	0	60

TITLE II PROCESS EQUIP. SERVICES TOTAL	346	364	492	789	51	2042
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ENGINEERING SERVICES

1	Conferences						
1A	Pre-design meeting, LAB office	8	0	0	0	0	8
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	8	0	0	0	0	8
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	16	0	0	0	0	16
1F	Misc. meetings/conferences	40	0	0	0	0	40
1G	Bi-weekly hi-light reports	18	0	0	0	0	18

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

1H	Monthly reports	9	0	0	0	0	9
1I	Revisions/reply to comments	8	24	0	40	0	72
1J	Bidding Process	80	0	0	0	0	80
2	Field Work	0	0	0	0	0	0
2A	Site Investigation	0	0	0	0	0	0
3	Define Project	0	0	0	0	0	0
3A	Concept submission	40	0	0	0	0	40
4	Interior Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0
5A	— no. alternate site plans	0	0	0	0	0	0
5B	— no. alternate bldg plans	0	0	0	0	0	0
5C	— no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	0	0	0	0	0	0
6B	Topographic Studies	0	0	0	0	0	0
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	0	0	0	0	0	0
6E	Energy Conservation Report	0	0	0	0	0	0
6F	Energy Systems Operation Guide	0	0	0	0	0	0
6G	Environmental Permits Report	0	0	0	0	0	0
6H	Fire Protection Analysis	0	0	0	0	0	0
6I	Thermal Analysis	120	120	0	0	0	240
6J	Seismic Coordination	80	120	0	0	0	200
6K	Other Components	120	120	0	0	0	240
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	0	20	0	0	20	40
7B	Construction cost estimate, 50%	0	40	0	0	40	80
7C	Construction cost estimate, 100%	0	80	0	0	80	160
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (PED)	0	80	0	0	0	80
10	Value Engineering	0	0	0	0	0	0
11	Quality Assurance	80	0	0	0	0	80
12	Final Revisions	0	40	20	40	0	100
13	Reproduction of Plans & Specs.	0	0	0	40	0	40
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0
TITLE II PROCESS ENGINEERING SERVICES TOTAL		627	644	20	120	140	1551
TITLE II PROCESS TOTAL		973	1008	512	909	191	3593

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

DRAWING COUNT

SFE & STORAGE EQUIPMENT DRAWINGS	17
ARCHITECTURAL DRAWINGS	0
STRUCTURAL DRAWINGS	0
MECHANICAL DRAWINGS	0
INSTRUMENTATION & ELECTRICAL	0
FIRE SUPPRESSION DRAWINGS	0

TOTAL DRAWINGS	17

TITLE III
PROJECT MANAGEMENT, WORD PROCESSING, AND STAFF SUPPORT

Title: Nuclear Material Storage Facil. PF-41 TA-53(SFE)

P. I. D.

11818

Date:

25-May-95

Prepare By:ICF KAISER ENGINEERS

SFE & STORAGE EQUIPMENT PROJECT MANAGEMENT

	PROC	ARCH	STRCT	MECH	ELEC	CLERK	TOTAL
	-----	-----	-----	-----	-----	-----	-----
POST CONSTRUCTION MAINT SERVICES							
Review of Submittals	0	0	0	0	0	0	0
Inspection Services	0	0	0	0	0	0	0
Prepare As-Built Drawings	0	0	0	0	0	0	0
<hr/>							
Title III PCAS PM Total	0	0	0	0	0	0	0
ENGINEERING SERVICES							
Conference	0	0	0	0	0	0	0
Cost Engineer	0	0	0	0	0	0	0
Model or Rendering	0	0	0	0	0	0	0
Quality Control	0	0	0	0	0	0	0
Reproduction of Plans & Specs	0	0	0	0	0	0	0
Miscellaneous	0	0	0	0	0	0	0
<hr/>							
Title III Engineering Services PM T	0	0	0	0	0	0	0
<hr/>							
TITLE III PROJECT MANAGEMENT	0	0	0	0	0	0	0

WORD PROCESSING

	CIVIL	ARCH	STRCT	MECH	ELEC	CLERK	TOTAL
	-----	-----	-----	-----	-----	-----	-----
DESIGN SERVICES							
Review of Submittals	0	0	0	0	0	0	0
Prepare As-Built Drawings	0	0	0	0	0	0	0
<hr/>							
Title III Design Services Word Proc	0	0	0	0	0	0	0
ENGINEERING SERVICES							
Conferences	0	0	0	0	0	0	0
<hr/>							
Title III Engineering Services Word Proc	0	0	0	0	0	0	0
<hr/>							
TITLE III WORD PROCESSING	0	0	0	0	0	0	0

TITLE III
PROJECT MANAGEMENT, WORD PROCESSING, AND STAFF SUPPORT

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

P. I. D.

11818

Date:

25-May-95

Prepared By/ICF KAISER ENGINEERS

SUPPORT STAFF

	CIVIL	ARCH	STRCT	MECH	ELEC	CLERK	TOTAL
Project Management	0	0	0	0	0	0	0
Project Administrator	0	0	0	0	0	0	0
Project Controls	0	0	0	0	0	0	0
Planner/Scheduler	0	0	0	0	0	0	0
Purchasing	0	0	0	0	0	0	0
Accounting/Audit	0	0	0	0	0	0	0
Quality Control & Records Management	80	0	0	80	80	80	320
Contract Administration	0	0	0	0	0	0	0
Database Maintenance	0	0	0	0	0	0	0
Records Management	0	0	0	0	0	0	0
TITLE III STAFF SUPPORT TOTAL	80	0	0	80	80	80	320

1184 = TOTAL TITLE III PERSON HOURS

13.01% = PERCENT OF TOTAL PERSON HOURS

TITLE III ENGINEERING

ESTIMATED HOURS - TITLE III

Project Title: Nuclear Material Storage Facility, PF-41 TA-55(SFE)

P. S. D. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

SFE & STORAGE EQUIPMENT

	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
POST CONSTRUCTION AWARD SERVICES						
REVIEW OF SUBMITTALS	40	0	0	0	0	40
TITLE III INSPECTION SERVICES						
FIELD INSPECTION	120	60	0	0	0	180
VENDOR EQUIPMENT INSPECTION	120	60	0	0	0	180
INSPECTION SERVICES TOTAL	240	120	0	0	0	360
PREPARE AS-BUILT DRAWINGS	0	4	0	120	0	124
TITLE III CIVIL PCAS TOTAL	280	124	0	120	0	524

ENGINEERING SERVICES

1	Conferences					
1A	Bi-weekly hi-light reports	40	0	0	0	40
1B	Monthly reports	40	0	0	0	40
2	Field Work	40	0	0	0	40
3	Cost Engineer	40	0	0	0	40
4	Quality Control	60	0	0	0	60
5	Other	40	40	0	0	120
6	Miscellaneous	0	0	0	0	0
TITLE III PROCESS ENGINEERING SERVICES TO		260	40	0	0	340
TITLE III PROCESS TOTAL		540	164	0	120	864

**A&E COST OF SERVICES
ANALYSIS (FACILITY)**

SUMMARY

Title: Nuclear Materials Storage Facility PF-41 TA-55

LJ No.: 11818

Prepared By: ICF KAISER ENGINEERS

Date:

16-Jun-95

TITLE I

* DIRECT LABOR		\$1,229,449.03
SUPPORT STAFF		\$14,004.17
FIXED FEE (10.00%)		\$124,345.32
REIMBURSABLES		\$105,308.00
REPRODUCTION	\$28,178.00	
TRAVEL	\$11,130.00	
OTHER REIMBURSABLES	\$66,000.00	
GENERAL & ADMIN CHARGE ON REIMBURSABLES,	7.00%	\$7,371.56
SUBTOTAL		\$1,480,478.08
NEW MEXICO GROSS RECEIPTS TAX,	6.060%	\$89,716.97
TOTAL TITLE I,		\$1,570,195.05

TITLE II

** DIRECT LABOR		\$1,082,575.17
SUPPORT STAFF		\$13,135.41
FIXED FEE (10.00%)		\$109,571.06
REIMBURSABLES		\$117,700.00
REPRODUCTION	\$76,570.00	
TRAVEL	\$11,130.00	
OTHER REIMBURSABLES	\$30,000.00	
GENERAL & ADMIN CHARGE ON REIMBURSABLES,	7.00%	\$8,239.00
SUBTOTAL		\$1,331,220.64
NEW MEXICO GROSS RECEIPTS TAX,	6.060%	\$80,671.97
TOTAL TITLE II,		\$1,411,892.61

TITLE III

*** DIRECT LABOR		\$325,270.73
SUPPORT STAFF		\$27,340.54
FIXED FEE (10.00%)		\$35,261.13
REIMBURSABLES		\$11,130.00
TRAVEL	\$11,130.00	
OTHER REIMBURSABLES	\$0.00	
GENERAL & ADMIN CHARGE ON REIMBURSABLES,	7.00%	\$779.10
SUBTOTAL		\$399,781.49
NEW MEXICO GROSS RECEIPTS TAX,	6.060%	\$24,226.76
TOTAL TITLE III,		\$424,008.25
TOTAL I, II & III,		\$3,406,095.92

* NUMBER WAS DERIVED BY TAKING THE TITLE I LABOR COST BY DISCIP FROM DESIGN MANHOUR SUMMARY AND ADDING 161% FOR A/E OVERHEAD.

** NUMBER WAS DERIVED BY TAKING THE TITLE II LABOR COST BY DISCIP FROM DESIGN MANHOUR SUMMARY AND ADDING 161% FOR A/E OVERHEAD.

*** NUMBER WAS DERIVED BY TAKING THE TITLE III LABOR COST BY DISCIP FROM DESIGN MANHOUR SUMMARY AND ADDING 161% FOR A/E OVERHEAD.

**LOS ALAMOS NATIONAL LABORATORY
UNIVERSITY OF CALIFORNIA**

A/E COST AS A PERCENTAGE OF ESTIMATED CONSTRUCTION COST

Title:
P. I. D.
Prepared by:

Nuclear Materials Storage Facility PF-41 TA-55
11818
ICF KAISER ENGINEERS

Date:

17-Jun-85

	ENGINEERING DISCIPLINE	Est. # of Days	Hourly Rate	Est. Hours	TITLE I		Est. Hours	TITLE II		TOTAL Est. Hours	DESIGN Estimated Cost
					Estimated Cost A/E	Consultant		Estimated Cost A/E	Consultant		
O R A W I N G S	PROJECT MANAGEMENT				\$0.00			\$0.00		0.00	\$0.00
	Project Engineer		\$17.50	400	\$15,100.00		380	\$13,844.00		780.00	\$28,944.00
	ARCHITECTURAL				\$0.00			\$0.00		0.00	\$0.00
	Lead Architect		\$31.20	220	\$8,864.00		220	\$8,864.00		440.00	\$17,728.00
	Architect		\$22.04	500	\$11,045.00		520	\$11,468.00		1020.00	\$22,501.00
	STRUCTURAL				\$0.00			\$0.00		0.00	\$0.00
	Lead Structural Engineer		\$31.20	368	\$12,105.60		368	\$11,481.60		736.00	\$23,587.20
	Structural Engineer		\$22.04	956	\$21,188.04		706	\$17,563.04		1782.00	\$38,701.08
	MECHANICAL				\$0.00			\$0.00		0.00	\$0.00
	Lead Mechanical Engineer		\$31.20	440	\$10,728.00		436	\$10,475.20		876.00	\$20,203.20
	Mechanical Engineer		\$22.04	924	\$18,202.16		880	\$19,426.20		1704.00	\$37,641.28
	ELECTRICAL				\$0.00			\$0.00		0.00	\$0.00
	Lead Electrical Engineer		\$31.20	300	\$9,360.00		408	\$12,728.80		708.00	\$22,088.80
	Electrical Engineer		\$22.04	424	\$9,360.16		580	\$12,812.20		1004.00	\$22,178.28
	CIVIL				\$0.00			\$0.00		0.00	\$0.00
	Lead Civil Engineer		\$31.20	68	\$1,886.40		82	\$2,586.40		140.00	\$4,288.00
	Civil Engineer		\$22.04	190	\$2,438.00		118	\$2,608.40		298.00	\$5,098.80
	FIRE SUPPRESSION				\$0.00			\$0.00		0.00	\$0.00
	Lead Fire Engineer		\$31.20	80	\$2,496.00		186	\$3,863.60		266.00	\$6,361.60
	Fire Engineer		\$22.04	104	\$2,297.36		58	\$1,237.04		180.00	\$3,534.40
	QUALITY CONTROL				\$0.00			\$0.00		0.00	\$0.00
	Coordination QC				\$0.00			\$0.00		0.00	\$0.00
O R A W I N G S	DESIGNERS				\$0.00			\$0.00		0.00	\$0.00
	Architectural Designer		\$18.85	400	\$7,540.00		304	\$5,760.80		704.00	\$13,300.80
	Structural Designer		\$18.85	456	\$8,541.20		408	\$8,641.20		912.00	\$17,282.40
	Mechanical Designer		\$18.85	40	\$758.00		40	\$758.00		80.00	\$1,516.00
	Electrical Designer		\$18.85	282	\$5,333.40		252	\$4,775.40		544.00	\$10,208.80
	Civil Designer		\$18.85	66	\$1,886.20		32	\$608.40		128.00	\$2,425.60
	Fire Designer		\$18.85	126	\$2,425.80		112	\$2,122.40		240.00	\$4,548.20
	DRAFTSMEN				\$0.00			\$0.00		0.00	\$0.00
	Civil Draftsman	9	\$14.23	640	\$8,107.20		640	\$8,107.20		1280.00	\$16,214.40
	Architectural Draftsman	82	\$14.23	808	\$8,851.64		808	\$8,851.64		1218.00	\$17,303.68
	Structural Draftsman	38	\$14.23	684	\$12,294.72		684	\$12,294.72		1728.00	\$24,589.44
	Mechanical Draftsman	72	\$14.23	1062	\$22,094.96		1588	\$22,588.76		3138.00	\$44,853.74
	Electrical Draftsman	171	\$14.23	178	\$2,532.64		148	\$2,028.68		326.00	\$4,583.80
	Fire Draftsman	12	\$14.23	160	\$2,276.80		112	\$1,593.76		272.00	\$3,870.56
	TOTAL DRAWINGS	384			\$209,697.60	\$0.00		\$212,985.04	\$0.00		\$422,372.74
S P E C S	Specification Writer	5			\$0.00			\$0.00		0.00	\$0.00
	Typist	5	\$12.77	490	\$6,129.60		280	\$3,575.60		290.00	\$9,705.20
	TOTAL SPECIFICATIONS	5			\$6,129.60	\$0.00		\$3,575.60	\$0.00		\$9,705.20
Total Estimated Cost A/E & Consultant					300	\$215,817.28	\$0.00	1050	\$216,280.68	\$0.00	\$432,077.94
Overhead A/E					101%	\$217,485.82	\$0.00		\$217,485.82	\$0.00	\$1,127,723.42
Overhead Consultant					5%	\$10,890.92	\$0.00		\$10,890.92	\$0.00	\$10,890.92
SUBTOTAL						\$239,283.10	\$0.00		\$239,283.10	\$0.00	\$1,579,244.87
PROFIT 10.00%						\$24,328.31	\$0.00		\$24,328.31	\$0.00	\$134,289.41
SUBTOTAL						\$263,611.41	\$0.00		\$263,611.41	\$0.00	\$1,478,382.49
ESCALATION RATE						5.63%			6.15%		
SUBTOTAL INC. ESCALATION							\$635,749.33		\$635,749.33		\$1,584,501.28
TOTAL COST OF DESIGN							\$4,129.31 per sheet		6.51% of ECC		\$1,584,501.28
ESTIMATED CONSTRUCTION COST (INCLUDING ESCALATION & CONTINGENCY)						\$24,341,909.00					

REPRODUCTION COSTS

TITLE I

Title: Nuclear Materials Storage Facility PF-41 TA-55

LJ No.: 11818

Prepared BICF KAISER ENGINEERS

Date:

25-May-95

	DWGS/PGS	SETS	RATE	TOTAL
1) TITLE I 25% REVIEW				
A. PRINTS (24" x 36")	45	50	\$0.50	\$1,125.00
B. SEPIAS (24" x 36")	45	1	\$4.50	\$202.50
C. PAGES (8 1/2" x 11")	1,000	50	\$0.06	\$3,000.00
SUBTOTAL				\$4,327.50
2) TITLE I 50% REVIEW				
A. PRINTS (24" x 36")	85	50	\$0.50	\$2,125.00
B. SEPIAS (24" x 36")	85	1	\$4.50	\$382.50
C. PAGES (8 1/2" x 11")	2,000	50	\$0.06	\$6,000.00
SUBTOTAL				\$8,507.50
3) TITLE I 100% REVIEW				
A. PRINTS (24" x 36")	154	50	\$0.50	\$3,850.00
B. SEPIAS (24" x 36")	154	1	\$4.50	\$693.00
C. PAGES (8 1/2" x 11")	3,000	50	\$0.06	\$9,000.00
SUBTOTAL				\$13,543.00
4) DESIGN SUMMARY				
A. PRINTS (24" x 36")	0	1	\$1.25	\$0.00
B. SEPIAS (24" x 36")	0	1	\$10.00	\$0.00
C. PAGES (8 1/2" x 11")	5,000	6	\$0.06	\$1,800.00
SUBTOTAL				\$1,800.00
TOTAL TITLE I				\$28,178.00

REPRODUCTION COSTS

TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P. I. D. 11818

Prepared BIGF KAISER ENGINEERS

Date:

25-May-95

	DWGS/PGS	SETS	RATE	TOTAL
1) TITLE II 25% REVIEW				
A. PRINTS (24" x 36")	80	50	\$0.50	\$2,000.00
B. SEPIAS (24" x 36")	80	1	\$4.50	\$360.00
C. PAGES (8 1/2" x 11")	2,000	50	\$0.06	\$6,000.00
SUBTOTAL				\$8,360.00
2) TITLE II 60% REVIEW				
A. PRINTS (24" x 36")	150	50	\$0.50	\$3,750.00
B. SEPIAS (24" x 36")	150	1	\$4.50	\$675.00
C. PAGES (8 1/2" x 11")	4,000	50	\$0.06	\$12,000.00
SUBTOTAL				\$16,425.00
3) TITLE II 100% REVIEW				
A. PRINTS (24" x 36")	230	50	\$0.50	\$5,750.00
B. SEPIA (24" x 36")	230	1	\$4.50	\$1,035.00
C. SPECS (8 1/2" x 11")	5,000	50	\$0.06	\$15,000.00
D. DESIGN ANALYSIS (8 1/2" x 11")	10,000	50	\$0.06	\$30,000.00
SUBTOTAL				\$51,785.00
4) FINAL BID DOCUMENTS				
A. PRINTS (24" x 36")	0	0	\$0.50	\$0.00
B. MYLAR (24" x 36")	0	1	\$40.00	\$0.00
C. SPECS (8 1/2" x 11")	0	1	\$0.25	\$0.00
SUBTOTAL				\$0.00
TOTAL TITLE II				\$76,570.00

TRAVEL AND OTHER REIMBURSABLE COSTS

Title: Nuclear Materials Storage Facility PF-41 TA-55

P. I. D. 11818

Prepared By: ICF KAISER ENGINEERS

Date: 25-May-95

TRIP	PEOPLE	AIRFARE	DAYS	PERDIEM	CARS	RATE	MILES	RATE	SUBTOTAL
------	--------	---------	------	---------	------	------	-------	------	----------

TITLE I

PD	6	\$350.00	14	\$70.00	14	\$45.00			\$3,710
SV	6	\$350.00	14	\$70.00	14	\$45.00			\$3,710
RM	6	\$350.00	14	\$70.00	14	\$45.00			\$3,710

TOTAL TITLE I TRAVEL

\$11,130

1) Seismic Analysis									\$30,000
2) Subsurface Soil Investigation(Utill Bldg)									\$6,000
3) Material Testing/Ultrasonic/Xray									\$30,000
4)									

TOTAL OTHER TITLE I REIMBURSABLES

\$66,000

TITLE II

PD	6	\$350.00	14	\$70.00	14	\$45.00			\$3,710
SV	6	\$350.00	14	\$70.00	14	\$45.00			\$3,710
RM	6	\$350.00	14	\$70.00	14	\$45.00			\$3,710

TOTAL TITLE II TRAVEL

\$11,130

1) Value Engineering									\$30,000
2)									
3)									
4)									

TOTAL OTHER TITLE II REIMBURSABLES

\$30,000

TITLE III

PC	6	\$350.00	14	\$70.00	14	\$45.00			\$3,710
SV	6	\$350.00	14	\$70.00	14	\$45.00			\$3,710
IN	6	\$350.00	14	\$70.00	14	\$45.00			\$3,710

TOTAL TITLE III TRAVEL

\$11,130

1) GENERAL INSPECTION CONTRACT									\$0
2) 0									
3) 0									
4) 0									

TOTAL OTHER TITLE III REIMBURSABLES

\$0

PD = Predesign trip
RM = Review meeting

SV = Site visit
PC = Preconstruction trip

IN = Inspection Trip

Title:
P. I. D.
Prepared By:

Nuclear Materials Storage Facility PF-41 TA-55
1181B
ICF KAISER ENGINEERS

DE .N MANHOUR SUMMARY

Date:

LABOR SUMMARY	PM	LE	CIVIL	ER	DS	DP	LA	ARCHITECTURAL	DS	DP	LE	STRUCTURAL	ER	DS	DP
								AR							
TITLE I - PRELIM DESIGN															
DESIGN SERVICES															
DRAWING HOURS	200	4	8	20	12		160	400	400	640	228	456	456	608	
CALCULATIONS & ANALYSIS	0	0	0	0	0		40	60	0	0	160	500			0
TOTAL DRAWING HOURS	200	4	8	20	12		200	460	400	640	388	956	456	608	
SPECIFICATIONS	200	54	102	76	166		20	40	0	0	0	0	0	0	0
TOTAL SPECIFICATIONS HOURS	200	54	102	76	166		20	40	0	0	0	0	0	0	0
TOTAL DESIGN SERVICES	400	58	110	96	178		220	500	400	640	388	956	456	608	
ENGINEERING SERVICES															
1 Conferences	40	96	88	0	40		176	180	0	80	136	104	0	40	
2 Field Work		4	4	0	0		8	8	0	0	4	8	0	0	
3 Define Project	20	0	0	0	0		0	0	0	0	4	8	0	0	
4 Interior Design		0	0	0	0		0	0	0	0	0	0	0	0	
5 Preliminary studies:		0	0	0	0		0	0	0	0	0	0	0	0	
5A no. alternate site plans		0	0	0	0		0	0	0	0	0	0	0	0	
5B no. alternate bldg plans		0	0	0	0		0	0	0	0	0	0	0	0	
5C no. sections & elevations		0	0	0	0		0	0	0	0	0	0	0	0	
6 Studies/Reports		0	0	0	0		0	0	0	0	0	0	0	0	
6A Soil Borings and Analysis		4	6	0	0		2	2	0	0	700	400	200	200	
6B Topographic Studies		8	8	0	0		2	2	0	0	2	2	0	0	
6C Storm Water Management Report		8	12	0	0		1	1	0	0	0	0	0	0	
6D Energy Study		0	0	0	0		40	80	0	0	0	0	0	0	
6E Energy Conservation Report		0	0	0	0		8	8	0	0	0	0	0	0	
6F Energy Systems Operation Guide		0	0	0	0		2	2	0	0	0	0	0	0	
6G Environmental Permits Report		0	0	0	0		0	0	0	0	0	0	0	0	
6H Fire Protection Analysis		0	0	0	0		8	8	0	0	0	0	0	0	
6 Other		0	0	0	0		0	0	0	0	48	48	0	0	
6 Other		0	0	0	0		0	0	0	0	500	1500	0	0	
6 Other		0	0	0	0		0	0	0	0	300	500	0	0	
7 Cost Engineer	6	40	64	0	0		24	24	0	0	24	48	0	0	
8 Model or Rendering	6	0	0	0	0		0	0	0	0	0	0	0	0	
9 Project Engineering Documentation (PED)	10	0	0	0	0		0	0	0	0	0	0	0	0	
10 Value Engineering	10	8	24	0	24		8	24	0	24	8	8	0	0	
11 Quality Plan Annex	40	16	0	0	0		40	60	0	0	36	36	0	0	
12 Final Revisions		8	8	0	0		16	14	0	40	16	24	0	32	
13 Reproduction of Plans & Specs.	0	0	0	0	40		0	0	0	40	0	0	0	32	
14 Other		0	0	0	0		0	0	0	0	0	0	0	0	
15 Miscellaneous	0	0	0	0	0		0	0	0	0	0	0	0	0	
TITLE I PERSON-HOURS	530	250	328	96	282		555	913	400	824	2,166	3,642	656	912	
TITLE I HOURS BY DISCIPLINE	530	<		954 >			<		2,692 >		<		7,376 >		
DISCIPLINE HOUR PERCENTS	2.48%			4.47%									34.54%		
HOURLY RATE	\$37.90	\$31.20	\$22.09	\$18.95	\$14.23		\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23	
TITLE I PERSON-HOUR COST	\$20,087	\$7,800	\$7,201	\$1,819	\$4,013		\$17,316	\$20,168	\$7,580	\$11,726	\$67,579	\$80,462	\$12,431	\$12,978	
TITLE I LABOR COST BY DISC	\$20,087	<		\$20,833 >			<		\$58,790 >		<		\$173,440 >		
DISCIPLINE COST PERCENTS	4.26%			4.42%					12.06%				38.82%		

Title:
P. I. D.
Prepared By:

N

LABOR SUMMARY	MECHANICAL				ELECTRICAL				FIRE SUPPRESSION			
	LE	ER	DS	DP	LE	ER	DS	DP	LE	ER	DS	DP
DESIGN SERVICES												
DRAWING HOURS	258	576	0	884	134	192	146	776	20	40	64	80
CALCULATIONS & ANALYSIS	120	200	40	0	134	192	146	776	20	40	64	80
TOTAL DRAWING HOURS	408	776	40	884	268	384	292	1552	40	80	128	160
SPECIFICATIONS	32	48	0	0	32	40	0	0	40	24	0	0
TOTAL SPECIFICATIONS HOURS	32	48	0	0	32	40	0	0	40	24	0	0
TOTAL DESIGN SERVICES	440	824	40	884	300	424	292	1552	80	104	128	160
ENGINEERING SERVICES												
1 Conferences	120	80	0	48	205	96	0	64	104	0	0	24
2 Field Work	8	8	0	0	8	8	0	0	4	0	0	0
3 Define Project	0	0	0	0	0	0	0	0	20	0	0	0
4 Interior Design	0	0	0	0	0	0	0	0	0	0	0	0
5 Preliminary studies:	0	0	0	0	0	0	0	0	0	0	0	0
5A no. alternate site plans	0	0	0	0	0	0	0	0	0	0	0	0
5B no. alternate bldg plans	0	0	0	0	0	0	0	0	0	0	0	0
5C no. sections & elevations	0	0	0	0	0	0	0	0	0	0	0	0
6 Studies/Reports	0	0	0	0	0	0	0	0	0	0	0	0
6A Soil Borings and Analysis	0	0	0	0	0	0	0	0	0	0	0	0
6B Topographic Studies	0	0	0	0	0	0	0	0	0	0	0	0
6C Storm Water Management Report	0	0	0	0	0	0	0	0	0	0	0	0
6D Energy Study	60	80	40	0	8	24	0	0	0	0	0	0
6E Energy Conservation Report	16	16	0	0	16	16	0	0	0	0	0	0
6F Energy Systems Operation Guide	8	16	0	0	8	16	0	0	0	0	0	0
6G Environmental Permit Report	0	0	0	0	0	0	0	0	0	0	0	0
6H Fire Protection Analysis	24	24	0	0	4	8	0	0	80	0	0	0
6 Other	74	0	0	80	8	24	0	16	0	0	0	0
6 Other	0	0	0	0	8	24	0	16	0	0	0	0
6 Other	0	0	0	0	0	0	0	0	0	0	0	0
7 Cost Engineer	40	40	0	0	86	72	0	0	40	0	0	0
8 Model or Rendering	0	0	0	0	0	0	0	0	0	0	0	0
9 Project Engineering Documentation (PED)	0	0	0	0	0	0	0	0	0	0	0	0
10 Value Engineering	16	16	0	0	8	20	0	0	8	0	0	0
11 Quality Plan Annex	24	24	0	0	40	44	0	0	24	0	0	0
12 Final Revisions	8	16	0	32	24	32	0	50	8	0	0	32
13 Reproduction of Plans & Specs.	0	0	0	40	0	0	0	64	0	0	0	32
14 Other	16	32	0	24	0	0	0	0	0	0	0	0
15 Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0
TITLE I PERSON-HOURS	854	1,176	80	1,088	694	816	292	1,762	368	104	128	248
TITLE I HOURS BY DISCIPLINE	<		3,188 >		<		3,584 >		<		848 >	
DISCIPLINE HOUR PERCENTS			14.97%				16.69%				3.97%	
HOURLY RATE	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23
TITLE I PERSON-HOUR COST	\$28,645	\$25,978	\$15,116	\$15,482	\$21,859	\$18,025	\$5,533	\$25,073	\$11,482	\$2,297	\$2,428	\$3,528
TITLE I LABOR COST BY DISCIP	<		\$89,621 >		<		\$70,285 >		<		\$19,734 >	
DISCIPLINE COST PERCENTS			14.78%				14.92%				0.00%	

Title:
P. I. D.
Prepared By:

N

LABOR SUMMARY	ES	WP	TOTAL
DESIGN SERVICES			
DRAWING HOURS	334	240	7,346
CALCULATIONS & ANALYSIS	286		2,658
TOTAL DRAWING HOURS	620	240	10204
SPECIFICATIONS	10	240	1,124
TOTAL SPECIFICATIONS HOURS	10	240	1,124
TOTAL DESIGN SERVICES	630	480	11328
ENGINEERING SERVICES	684		684
1 Conferences		200	1,022
2 Field Work			72
3 Define Project			52
4 Interior Design			0
5 Preliminary studies:			0
5A no. alternate site plans			0
5B no. alternate bldg plans			0
5C no. sections & elevations			0
6 Studies/Reports		200	200
6A Soil Borings and Analysis			1,516
6B Topographic Studies			24
6C Storm Water Management Report			22
6D Energy Study			332
6E Energy Conservation Report			80
6F Energy Systems Operation Guide			52
6G Environmental Permits Report			0
6H Fire Protection Analysis			156
6 Other			296
6 Other			2,048
6 Other			800
7 Cost Engineer			477
8 Model or Rendering			5
9 Project Engineering Documentation (PED)			10
10 Value Engineering			214
11 Quality Plan Annex			354
12 Final Revisions			360
13 Reproduction of Plans & Specs.			248
14 Other			72
15 Miscellaneous			0
TITLE I PERSON-HOURS	1,314	680	21,358
TITLE I HOURS BY DISCIPLINE	1,314	680	21,358
DISCIPLINE HOUR PERCENTS	6.15%	4.12%	87.88%
HOURLY RATE	\$22.08	\$12.77	
TITLE I PERSON-HOUR COST	\$29,028	\$11,238	
TITLE I LABOR COST BY DISCIP	\$29,028	\$11,238	\$471,053
DISCIPLINE COST PERCENTS	6.16%	2.38%	95.81%

Title:
P. I. D.
Prepared By:

Nuclear Materials Storage Facility PF-41 TA-55
11818
ICF KAISER ENGINEERS

DE N MANHOUR SUMMARY

Date:

Area: 0000000000

LABOR SUMMARY	PM	LE	CIVIL	ER	DS	DP	LA	ARCHITECTURAL	AR	DS	DP	LE	STRUCTURAL	ER	DS	DP
TITLE II - FINAL DESIGN																
DESIGN SERVICES																
DRAWING HOURS	120	48	74	32	142		180	400	304	640		228	456	456	608	
CALCULATIONS & ANALYSIS	120	10	20	0	0		20	40	0	0		100	300	0	0	
TOTAL DRAWING HOURS	240	58	94	32	142		180	440	304	640		328	756	456	608	
SPECIFICATIONS	120	24	24	0	0		40	80	0	0		40	40	0	0	
TOTAL SPECIFICATIONS HOURS	120	24	24	0	0		40	80	0	0		40	40	0	0	
TOTAL DESIGN SERVICES	360	82	118	32	142		220	520	304	640		368	796	456	608	
ENGINEERING SERVICES																
1 Conferences	200	113	112	0	24		173	176	0	80		86	88	0	40	
2 Field Work	40	0	0	20	0		0	0	0	0		4	8	0	0	
3 Define Project	40	0	0	0	0		0	0	0	0		0	0	0	0	
4 Interior Design		0	0	0	0		0	0	0	0		0	0	0	0	
5 Preliminary studies:		0	0	0	0		0	0	0	0		0	0	0	0	
6A no. alternate site plans		0	0	0	0		0	0	0	0		0	0	0	0	
6B no. alternate bldg plans		0	0	0	0		0	0	0	0		0	0	0	0	
6C no. sections & elevations		0	0	0	0		0	0	0	0		0	0	0	0	
6 Studies/Reports		0	0	0	0		0	0	0	0		0	0	0	0	
6A Soil Borings and Analysis		0	0	0	0		0	0	0	0		4	4	0	0	
6B Topographic Studies		0	0	0	0		0	0	0	0		2	2	0	0	
6C Storm Water Management Report		0	0	0	0		0	0	0	0		0	0	0	0	
6D Energy Study		0	0	0	0		4	4	0	0		0	0	0	0	
6E Energy Conservation Report		0	0	0	0		8	8	0	0		0	0	0	0	
6F Energy Systems Operation Guide		0	0	0	0		4	4	0	0		0	0	0	0	
6G Environmental Permit Report		0	0	0	0		0	0	0	0		0	0	0	0	
6H Fire Protection Analysis		0	0	0	0		2	4	0	0		0	0	0	0	
6I Other		0	0	0	0		0	0	0	0		24	32	0	0	
6J Other		0	0	0	0		0	0	0	0		250	750	0	0	
6K Other		0	0	0	0		0	0	0	0		150	250	0	0	
7 Cost Engineer	60	24	48	0	0		24	100	0	0		24	48	0	0	
8 Model or Rendering	16	0	0	0	0		20	32	0	40		0	0	0	0	
9 Project Engineering Documentation (PED)	80	16	32	0	0		16	32	0	0		0	0	0	0	
10 Value Engineering	80	0	0	0	0		0	0	0	0		8	8	0	0	
11 Quality Plan Annex	160	8	8	0	8		24	32	0	0		36	36	0	0	
12 Final Revisions	20	6	12	12	12		16	24	0	24		16	24	0	32	
13 Reproduction of Plans & Specs.		0	0	0	32		0	0	0	60		0	0	0	32	
14 Other		0	0	0	0		0	0	0	0		0	0	0	0	
15 Miscellaneous	120	0	0	0	0		0	0	0	0		0	0	0	0	
TITLE II PERSON-HOURS	1,176	248	330	64	216		511	936	304	844		982	2,046	456	712	
TITLE II HOURS BY DISCIPLINE	1,176	<	>	881	>		<	>	2,595	>		<	>	4,198	>	
DISCIPLINE HOUR PERCENTS	6.35%			4.65%					14.00%					22.64%		
HOURLY RATE	\$37.00	\$31.20	\$22.09	\$18.95	\$14.23		\$31.20	\$22.09	\$18.95	\$14.23		\$31.20	\$22.09	\$18.95	\$14.23	
TITLE II PERSON-HOUR COST	\$44,670	\$7,768	\$7,290	\$1,213	\$3,102		\$15,843	\$20,675	\$5,761	\$12,010		\$30,638	\$45,196	\$8,641	\$10,132	
TITLE II LABR COST BY DISCIP	\$44,670	<	>	\$19,373	>		<	>	\$54,390	>		<	>	\$94,608	>	
DISCIPLINE COST PERCENTS	10.75%			4.67%					13.11%					22.61%		

Title:
P. I. D.
Prepared By:

LABOR SUMMARY	MECHANICAL				ELECTRICAL				FIRE SUPPRESSION			
	LE	ER	DS	DP	LE	ER	DS	DP	LE	ER	DS	DP
TITLE II - FINAL DESIGN												
DESIGN SERVICES												
DRAWING HOURS	288	576	0	864	304	422	204	1,586	28	56	88	112
CALCULATIONS & ANALYSIS	160	240	40	0	64	88	48	0	80	0	24	0
TOTAL DRAWING HOURS	448	816	40	864	368	510	252	1586	108	56	112	112
SPECIFICATIONS	48	84	0	0	40	70	0	0	80	0	0	0
TOTAL SPECIFICATIONS HOURS	48	84	0	0	40	70	0	0	80	0	0	0
TOTAL DESIGN SERVICES	496	900	40	864	408	580	252	1586	188	56	112	112
ENGINEERING SERVICES												
1 Conference	120	80	0	48	200	128	0	48	104	72	0	24
2 Field Work	8	8	0	0	12	12	0	0	4	4	0	0
3 Define Project	0	0	0	0	0	0	0	0	0	0	0	0
4 Interior Design	0	0	0	0	0	0	0	0	0	0	0	0
5 Preliminary studies:	0	0	0	0	0	0	0	0	0	0	0	0
5A no. alternate site plans	0	0	0	0	0	0	0	0	0	0	0	0
5B no. alternate bldg plans	0	0	0	0	0	0	0	0	0	0	0	0
5C no. sections & elevations	0	0	0	0	0	0	0	0	0	0	0	0
6 Studies/Reports	0	0	0	0	0	0	0	0	0	0	0	0
6A Soil Borings and Analysis	0	0	0	0	0	0	0	0	0	0	0	0
6B Topographic Studies	0	0	0	0	0	0	0	0	0	0	0	0
6C Storm Water Management Report	0	0	0	0	0	0	0	0	0	0	0	0
6D Energy Study	16	24	0	0	12	30	0	0	0	0	0	0
6E Energy Conservation Report	16	16	0	0	24	24	0	0	0	0	0	0
6F Energy Systems Operation Guide	8	16	0	0	12	24	0	0	0	0	0	0
6G Environmental Permits Report	0	0	0	0	0	0	0	0	0	0	0	0
6H Fire Protection Analysis	24	24	0	0	6	12	0	0	20	40	0	24
6I Other	74	0	0	80	0	0	0	0	0	0	0	0
6J Other	0	0	0	0	0	0	0	0	0	0	0	0
6K Other	0	0	0	0	0	0	0	0	0	0	0	0
7 Cost Engineer	40	40	0	0	80	84	0	0	40	40	0	0
8 Model or Rendering	0	0	0	0	0	0	0	0	0	0	0	0
9 Project Engineering Documentation (PED)	0	0	0	0	0	0	0	0	0	0	0	0
10 Value Engineering	16	16	0	0	12	30	0	0	8	24	0	0
11 Quality Plan Annex	24	24	0	0	60	60	0	0	24	24	0	0
12 Final Revisions	8	16	0	32	12	24	0	40	8	16	0	32
13 Reproduction of Plans & Specs.	0	0	0	40	0	0	0	56	0	0	0	32
14 Other	16	32	0	24	0	0	0	0	0	0	0	0
15 Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0
TITLE II PERSON-HOURS	886	1,176	40	1,088	818	1,006	252	1,730	396	276	112	224
TITLE II HOURS BY DISCIPLINE	<		3,170 >		<		3,808 >		<		1,008 >	
DISCIPLINE HOUR PERCENTS			17.10%				20.54%				5.44%	
HOURLY RATE	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.08	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23
TITLE II PERSON-HOUR COST	\$27,019	\$25,978	\$758	\$15,482	\$25,522	\$22,229	\$4,775	\$24,616	\$12,355	\$8,097	\$2,122	\$3,198
TITLE II LABR COST BY DISCIP	<		\$69,237 >		<		\$77,137 >		<		\$23,762 >	
DISCIPLINE COST PERCENTS			18.69%				18.80%				5.73%	

Title:
P. I. D.
Prepared By:

N

LABOR SUMMARY	ES	WP	TOTAL
TITLE II - FINAL DESIGN			
DESIGN SERVICES			
DRAWING HOURS	410	120	\$726
CALCULATIONS & ANALYSIS	0		1,354
TOTAL DRAWING HOURS	410	120	10080
SPECIFICATIONS	0	160	830
TOTAL SPECIFICATIONS HOURS	0	160	830
TOTAL DESIGN SERVICES	410	280	10910
ENGINEERING SERVICES	632		632
1 Conferences		200	2,124
2 Field Work			120
3 Define Project			40
4 Interior Design			0
5 Preliminary studies:			0
5A no. alternate site plans			0
5B no. alternate bldg plans			0
5C no. sections & elevations			0
6 Studies/Reports		200	200
6A Soil Borings and Analysis			8
6B Topographic Studies			4
6C Storm Water Management Report			0
6D Energy Study			90
6E Energy Conservation Report			88
6F Energy Systems Operation Guide			68
6G Environmental Permits Report			0
6H Fire Protection Analysis			158
6I Other			210
6J Other			1,000
6K Other			400
7 Cost Engineer			632
8 Model or Rendering			108
9 Project Engineering Documentation (PED)			178
10 Value Engineering			202
11 Quality Plan Annex			528
12 Final Revisions			388
13 Reproduction of Plans & Specs.			252
14 Other			72
15 Miscellaneous			120
TITLE II PERSON-HOURS	1,042	680	17,902
TITLE II HOURS BY DISCIPLINE	1,042	680	18,534
DISCIPLINE HOUR PERCENTS	5.82%	3.67%	100.00%
HOURLY RATE	\$22.09	\$12.77	
TITLE II PERSON-HOUR COST	\$23,018	\$8,684	
TITLE II LABOR COST BY DISCIP	\$23,018	\$8,684	\$414,780
DISCIPLINE COST PERCENTS	5.55%	2.09%	100.00%

DE .N MANHOUR SUMMARY

Title:

Nuclear Materials Storage Facility PF-41 TA-55

P. I. D.

11818

Date:

Prepared By:

ICF KAISER ENGINEERS

LABOR SUMMARY	PM	LE	CM/L ER	DS	DP	LA	ARCHITECTURAL AR	DS	DP	LE	STRUCTURAL ER	DS	DP
TITLE II - HOME OFFICE													
CONSTRUCTION SERVICES													
Review of Submittals	100	4	8	0	0	4	12	12	0	12	20	20	0
Inspection Services	100	44	8	0	0	148	12	12	0	52	20	20	0
Prepare As-Built Drawings	100	8	24	24	40	8	40	40	60	8	24	24	40
TOTAL CONSTRUCTION SERVICES	300	56	40	24	40	160	64	64	60	72	64	64	40
ENGINEERING SERVICES													
1 Conference	150	42	32	0	0	50	40	0	0	50	40	0	0
2 Field Work	100	0	0	0	0	0	0	0	0	0	0	0	0
3 Cost Engineer	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Quality Control	100	32	0	0	0	40	0	0	0	40	0	0	0
5 Other	50	8	12	12	20	8	20	20	40	4	8	8	16
6 Miscellaneous	100	16	16	16	0	16	16	16	0	16	16	16	0
TITLE III HOME OFFICE HOURS	600	154	100	52	60	274	140	100	100	182	128	88	56
TITLE III HOURS BY DISCIPL	600	<		366	>	<		614	>	<		454	>
DISCIPLINE HOUR PERCENTS	15.00%			7.27%				12.20%				8.02%	
HOURLY RATE	\$37.90	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23
TITLE III PERSON-HOUR COST	\$30,320	\$4,806	\$2,209	\$985	\$854	\$9,548	\$3,093	\$1,895	\$1,423	\$5,679	\$2,625	\$1,668	\$797
TITLE III HOME OFF LABR COST	\$30,320	<		\$8,853	>	<		\$14,959	>	<		\$10,970	>
DISCIPLINE COST PERCENTS	24.33%			7.10%				12.00%				6.90%	

Title:
P. I. O.
Prepared By:

N

LABOR SUMMARY	MECHANICAL				ELECTRICAL				FIRE SUPPRESSION			
	LE	ER	DS	DP	LE	ER	DS	DP	LE	ER	DS	DP
TITLE III - HOME OFFICE												
CONSTRUCTION SERVICES												
Review of Submittals	20	40	16	0	22	34	20	0	60	0	40	0
Inspection Services	48	16	16	0	72	120	80	0	40	0	0	0
Prepare As-Built Drawings	0	24	24	40	8	24	24	72	8	16	16	40
TOTAL CONSTRUCTION SERVICES	78	80	56	40	102	178	104	72	108	16	56	40
ENGINEERING SERVICES												
1 Conferences	50	40	0	0	78	60	0	0	50	40	0	0
2 Field Work	0	0	0	0	0	40	0	0	0	0	0	0
3 Cost Engineer	0	0	0	0	0	0	0	0	0	0	0	0
4 Quality Control	40	0	0	0	40	0	0	0	40	0	0	0
5 Other	8	16	16	20	24	18	18	34	8	12	12	20
6 Miscellaneous	8	0	8	0	16	16	16	0	16	16	16	0
TITLE III HOME OFFICE HOURS	182	144	80	60	268	312	138	106	222	84	84	60
TITLE III HOURS BY DISCIPL	< 468 >				< 814 >				< 450 >			
DISCIPLINE HOUR PERCENTS	8.26%				16.18%				6.94%			
HOURLY RATE	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23
TITLE III PERSON-HOUR COST	\$5,678	\$3,181	\$1,518	\$854	\$8,050	\$6,892	\$2,615	\$1,506	\$8,926	\$1,856	\$1,592	\$854
TITLE III HOME OFF LABR COST	< \$11,229 >				< \$19,085 >				< \$11,229 >			
DISCIPLINE COST PERCENTS	6.01%				15.30%				0.00%			

Title:
P. I. D.
Prepared By:

N

LABOR SUMMARY	ES	WP	TOTAL
TITLE III - HOME OFFICE			
CONSTRUCTION SERVICES			
Review of Submittals	0	300	744
Inspection Services	0	150	838
Prepare As-Built Drawings	0	150	894
TOTAL CONSTRUCTION SERVICES	0	600	2576
ENGINEERING SERVICES	468		
1 Conferences			720
2 Field Work			140
3 Cost Engineer			0
4 Quality Control			332
5 Other			432
6 Miscellaneous			364
TITLE III HOME OFFICE HOURS	468	600	4,564
TITLE III HOURS BY DISCIPL	468	600	5,032
DISCIPLINE HOUR PERCENTS	9.30%	11.92%	100.00%
HOURLY RATE	\$22.09	\$12.77	
TITLE III PERSON-HOUR COST	\$10,338	\$7,662	
TITLE III HOME OFF LABR COST	\$10,338	\$7,662	\$124,625
DISCIPLINE COST PERCENTS	8.30%	6.15%	90.99%

TITLE 1

Title: Nuclear Materials Storage Facility PF-41 TA-55

11818

Date:

25-May-95

Prepared BY CF KAISER ENGINEERS

PROJECT MANAGEMENT

CIVIL	ARCH	STRET	MECH	ELEC	CLERK	TOTAL
1	1	1	1	1	1	6
2	2	2	2	2	2	12
3	3	3	3	3	3	18
4	4	4	4	4	4	24
5	5	5	5	5	5	30
6	6	6	6	6	6	36
7	7	7	7	7	7	42
8	8	8	8	8	8	48
9	9	9	9	9	9	54
10	10	10	10	10	10	60
11	11	11	11	11	11	66
12	12	12	12	12	12	72
13	13	13	13	13	13	78
14	14	14	14	14	14	84
15	15	15	15	15	15	90
16	16	16	16	16	16	96
17	17	17	17	17	17	102
18	18	18	18	18	18	108
19	19	19	19	19	19	114
20	20	20	20	20	20	120
21	21	21	21	21	21	126
22	22	22	22	22	22	132
23	23	23	23	23	23	138
24	24	24	24	24	24	144
25	25	25	25	25	25	150
26	26	26	26	26	26	156
27	27	27	27	27	27	162
28	28	28	28	28	28	168
29	29	29	29	29	29	174
30	30	30	30	30	30	180
31	31	31	31	31	31	186
32	32	32	32	32	32	192
33	33	33	33	33	33	198
34	34	34	34	34	34	204
35	35	35	35	35	35	210
36	36	36	36	36	36	216
37	37	37	37	37	37	222
38	38	38	38	38	38	228
39	39	39	39	39	39	234
40	40	40	40	40	40	240
41	41	41	41	41	41	246
42	42	42	42	42	42	252
43	43	43	43	43	43	258
44	44	44	44	44	44	264
45	45	45	45	45	45	270
46	46	46	46	46	46	276
47	47	47	47	47	47	282
48	48	48	48	48	48	288
49	49	49	49	49	49	294
50	50	50	50	50	50	300
51	51	51	51	51	51	306
52	52	52	52	52	52	312
53	53	53	53	53	53	318
54	54	54	54	54	54	324
55	55	55	55	55	55	330
56	56	56	56	56	56	336
57	57	57	57	57	57	342
58	58	58	58	58	58	348
59	59	59	59	59	59	354
60	60	60	60	60	60	360
61	61	61	61	61	61	366
62	62	62	62	62	62	372
63	63	63	63	63	63	378
64	64	64	64	64	64	384

WORD PROCESSING

CIVIL	ARCH	STRICT	MECH	ELEC	CLERK	TOTAL
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TITLE I
PROJECT MANAGEMENT, WORD PROCESSING, AND STAFF SUPPORT

Title: Nuclear Materials Storage Facility PF-41 TA-55

P. I. D. 11818

Date: 30-Jun-95

Prepared BY KF KAISER ENGINEERS

SUPPORT STAFF

	CIVIL	ARCH	STRT	MECH	ELEC	CLERK	TOTAL
Project Managment	4	4	4	4	4	0	20
Project Administrator	4	4	4	4	4	0	20
Project Controls	8	8	8	8	8	0	40
Planner/Scheduler	8	8	8	8	8	0	40
Purchasing	2	2	2	2	2	0	10
Accounting/Audit	4	4	4	4	4	0	20
Quality Assurance & Records Manag	60	8	8	60	60	60	256
Contract Administration	8	8	8	8	8	0	40
Database Maintenance	8	8	8	8	8	0	40
Records Management	8	8	8	8	8	0	40
TITLE I STAFF SUPPORT TOTAL	114	62	62	114	114	60	526

21356 = TOTAL TITLE I PERSON HOURS

46.49% = PERCENT OF TOTAL PERSON HOURS

TITLE I ENGINEERING

ESTIMATED HOURS - TITLE I

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: JCF KAISER ENGINEERS

C I V I L

DESIGN SERVICES

DRAWING PREPARATION

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
C1	SITE PLAN	8	16	20	32	2	78
C2	UTILITY PLAN	8	16	20	32	2	78
C3	GRADING & DRAINAGE	12	18		34	2	66
C4	GENERAL DETAILS	4	8		24	2	38
C5	SPECIFICATIONS	4	8	20	12	0	44
C6	SHORING PLAN	8	16	16	32	2	74

TITLE I DRAWING PREPARATION TOTAL

44 82 76 166 10 378

SPECIFICATIONS

0 0 0 0 0 0

CALCULATIONS & ANALYSIS

10 20 0 0 0 30

TITLE I CIVIL DESIGN SERVICES TOTAL

54 102 76 166 10 408

ENGINEERING SERVICES

1 Conferences

1A	Pre-design meeting, LAB office	8	0	0	0	0	8
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	8	8	0	0	0	16
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	8	8	0	0	0	16
1F	Nics. meetings/conferences	24	24	0	0	0	48
1G	Bi-weekly hi-light reports	12	0	0	0	0	12
1H	Monthly reports	12	0	0	0	0	12
1I	Revisions/reply to comments	16	24	0	40	0	80
1J	Assemble Title I summary report	8	24	0	0	0	32

2 Field Work

2A	Site investigation	0	0	0	0	0	0
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3 Define Project

3A	Concept submission	0	0	0	0	0	0
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4 Interior Design

5	Preliminary studies:	0	0	0	0	0	0
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5A no. alternate site plans

0 0 0 0 0 0

5B no. alternate bldg plans

0 0 0 0 0 0

TITLE I ENGINEERING

ESTIMATED HOURS - TITLE I

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date:

25-May-95

Prepared By: ICF KAISER ENGINEERS

5C	no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	4	8	0	0	0	12
6B	Topographic Studies	8	8	0	0	0	16
6C	Storm Water Management Report	8	12	0	0	0	20
6D	Energy Study	0	0	0	0	0	0
6E	Energy Conservation Report	0	0	0	0	0	0
6F	Energy Systems Operation Guide	0	0	0	0	0	0
6G	Environmental Permits Report	0	0	0	0	0	0
6H	Fire Protection Analysis	0	0	0	0	0	0
6I	Other	0	0	0	0	0	0
6J	Other	0	0	0	0	0	0
6K	Other	0	0	0	0	0	0
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	8	16	0	0	24	48
7B	Construction cost estimate, 50%	16	24	0	0	40	80
7C	Construction cost estimate, 100%	16	24	0	0	40	80
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (PED)	0	0	0	0	0	0
10	Value Engineering	8	24	0	24	0	56
11	Quality Plan Annex	16	0	0	0	0	16
12	Final Revisions	8	8	0	0	0	16
13	Reproduction of Plans & Specs.	0	0	0	40	0	40
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0
TITLE I CIVIL ENGINEERING SERVICES TOTAL		192	216	0	104	104	616
TITLE I CIVIL TOTAL		246	318	76	270	114	1024

ESTIMATED HOURS - TITLE I

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

ARCHITECTURAL

DESIGN SERVICES

DWG NO.	TITLE	LEAD	STAFF	DESIGN	DRAFT	ESTIM	TOTAL
		ARCH	ARCH				
A1	BASEMENT FLOOR PLAN	4	10	10	16	2	42
A2	FIRST FLOOR PLAN	4	10	10	16	2	42
A3	BASEMENT DEMO PLAN	4	10	10	16	2	42
A4	FIRST FLOOR DEMO PLAN	4	10	10	16	2	42
A5	MEZZANINE PLAN	4	10	10	16	2	42
A6	LARGE SCALE PLANS/LOCKER RMS/TOILETS	4	10	10	16	2	42
A7	LARGE SCALE PLANS	4	10	10	16	2	42
A8	LARGE SCALE PLAN	4	10	10	16	2	42
A9	LARGE SCALE PLANS/ADMIN. AREA	4	10	10	16	2	42
A10	NORTH & EAST ELEVATIONS	4	10	10	16	2	42
A11	WEST & SOUTH ELEVATIONS	4	10	10	16	2	42
A12	BUILDING SECTION-WEST	4	10	10	16	2	42
A13	BUILDING SECTION-NORTH, PROCESS	4	10	10	16	2	42
A14	BUILDING SECTION-NORTH, ADMIN	4	10	10	16	2	42
A15	ROOF PLAN	4	10	10	16	2	42
A16	ROOF DETAILS	4	10	10	16	2	42
A17	LIGHTENING PROTECTION PLAN	4	10	10	16	2	42
A18	REFLECTED CEILING PLAN-1ST FLR	4	10	10	16	2	42
A19	REFLECTED CEILING PLAN-BASEMENT	4	10	10	16	2	42
A20	WALL SECTIONS	4	10	10	16	2	42
A21	WALL SECTIONS	4	10	10	16	2	42
A22	WALL SECTIONS	4	10	10	16	2	42
A23	WALL SECTIONS	4	10	10	16	2	42
A24	SECTIONS AND DETAILS	4	10	10	16	2	42
A25	SECTIONS AND DETAILS	4	10	10	16	2	42
A26	SECTIONS AND DETAILS	4	10	10	16	2	42
A27	SECTIONS AND DETAILS	4	10	10	16	2	42
A28	SECTIONS AND DETAILS	4	10	10	16	2	42
A29	SECTIONS AND DETAILS	4	10	10	16	2	42
A30	SECTIONS AND DETAILS	4	10	10	16	2	42
A31	SECTIONS AND DETAILS	4	10	10	16	2	42
A32	BUILDING PERSPECTIVE	4	10	10	16	2	42
**** UTILITY BLDG ****							

TITLE I ENGINEERING

ESTIMATED HOURS - TITLE I

Title: Nuclear Materials Storage Facility PF-41 TA-95

P.I. 11818

Date:

25-May-95

Prepared By: ICF KAISER ENGINEERS

A33	UTILITY BLDG FLOOR/ROOF PLAN	4	10	10	16	2	42
A34	UTILITY BLDG SOUTH/WEST ELEVATIONS	4	10	10	16	2	42
A35	UTILITY BLDG SECTIONS	4	10	10	16	2	42
A36	UTILITY BLDG WALL SECTIONS	4	10	10	16	2	42
A37	UTILITY BLDG DETAILS	4	10	10	16	2	42
A38	UTILITY BLDG FINISHES & MISC. DETAILS	4	10	10	16	2	42
A39	UTILITY BLDG SECTIONS & DETAILS	4	10	10	16	2	42
A40	UTILITY BLDG SECTIONS & DETAILS	4	10	10	16	2	42
		-----	-----	-----	-----	-----	-----
TITLE I DRAWING PREPARATION TOTAL		160	400	400	640	80	1680
SPECIFICATIONS		20	40	0	0	0	60
CALCULATIONS & ANALYSIS		40	60	0	0	0	100
		-----	-----	-----	-----	-----	-----
TITLE I ARCH DESIGN SERVICES TOTAL		220	500	400	640	80	1840
ENGINEERING SERVICES		-----	-----	-----	-----	-----	-----
1	Conferences						
1A	Pre-design meeting, LAB office	24	24	0	0	0	48
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	8	8	0	0	0	16
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	16	16	0	0	0	32
1F	Misc. meetings/conferences	24	24	0	0	0	48
1G	Bi-weekly hi-light reports	12	8	0	0	0	20
1H	Monthly reports	12	0	0	0	0	12
1I	Revisions/reply to comments	40	60	0	80	0	180
1J	Assemble Title I summary report	40	40	0	0	0	80
2	Field Work	0	0	0	0	0	0
2A	Site investigation	8	8	0	0	0	16
3	Define Project	0	0	0	0	0	0
3A	Concept submission	0	0	0	0	0	0
4	Interfer Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0
5A	___ no. alternate site plans	0	0	0	0	0	0
5B	___ no. alternate bldg plans	0	0	0	0	0	0
5C	___ no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	2	2	0	0	0	4
6B	Topographic Studies	2	2	0	0	0	4
6C	Storm Water Management Report	1	1	0	0	0	2
6D	Energy Study	40	80	0	0	0	120

TITLE 1 ENGINEERING

ESTIMATED HOURS - TITLE 1

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.L. 11018

Date:

25-May-95

Prepared By: ICF KAISER ENGINEERS

4E	Energy Conservation Report	8	8	0	0	0	16
6F	Energy Systems Operation Guide	2	2	0	0	0	4
6G	Environmental Permit Report	0	0	0	0	0	0
6H	Fire Protection Analysis	8	8	0	0	0	16
6I	Other	0	0	0	0	0	0
6J	Other	0	0	0	0	0	0
6K	Other	0	0	0	0	0	0
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	8	8	0	0	40	56
7B	Construction cost estimate, 50%	8	8	0	0	40	56
7C	Construction cost estimate, 100%	8	8	0	0	40	56
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (PED)	0	0	0	0	0	0
10	Value Engineering	8	24	0	24	0	56
11	Quality Plan Annex	40	60	0	0	0	100
12	Final Revisions	16	16	0	40	0	70
13	Reproduction of Plans & Specs.	0	0	0	40	0	40
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0
TITLE 1 ARCH ENGINEERING SERVICES TOTAL		336	413	0	184	120	1052
TITLE 1 ARCHITECTURAL TOTAL		555	913	400	824	200	2892

TITLE I ENGINEERING

ESTIMATED HOURS - TITLE I

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-93

Prepared By: ICF KAISER ENGINEERS

STRUCTURAL

DESIGN SERVICES

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
S1	FOUNDATION-BASEMENT PLAN	12	24	24	32	2	94
S2	NEW SECOND FLOOR PLAN	12	24	24	32	2	94
S3	FIRST FLOOR PLAN	12	24	24	32	2	94
S4	ROOF PLAN	12	24	24	32	2	94
S5	MECH PENTHOUSE PLAN	12	24	24	32	2	94
S6	CHARGE DECK PLAN	12	24	24	32	2	94
S7	SECTIONS & DETAILS	12	24	24	32	2	94
S8	SECTIONS & DETAILS	12	24	24	32	2	94
S9	SECTIONS & DETAILS	12	24	24	32	2	94
S10	SECTIONS & DETAILS	12	24	24	32	2	94
S11	SECTIONS & DETAILS	12	24	24	32	2	94
S12	SECTIONS & DETAILS	12	24	24	32	2	94
S13	DEMOLITION PLAN FND/BASEMENT	12	24	24	32	2	94
S14	DEMOLITION PLAN/FIRST FLOOR	12	24	24	32	2	94
S15	DEMOLITION PLAN ROOF	12	24	24	32	2	94
S16	DEMOLITION MISC DETAILS	12	24	24	32	2	94
	**** UTILITY BLDG ****						0
S17	FNDN PLAN	12	24	24	32	2	94
S18	ROOF PLAN	12	24	24	32	2	94
S19	SECTIONS & DETAILS	12	24	24	32	2	94
TITLE I DRAWING PREPARATION TOTAL		228	456	456	608	38	1786
SPECIFICATIONS		16	24	0	0	0	40
CALCULATIONS & ANALYSIS		160	500	0	0	0	660
TITLE I STRU DESIGN SERVICES TOTAL		404	980	456	608	38	2486

ENGINEERING SERVICES

I	Conferences						
1A	Pre-design meeting, LAB office	24	0	0	0	0	24
1B	25% review meeting, A/E office	0	0	0	0	0	0

TITLE I ENGINEERING

ESTIMATED HOURS - TITLE I

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date:

25-May-95

Prepared By: ICF KAISER ENGINEERS

1C	50% review meeting, A/E office	24	16	0	0	0	40
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	16	16	0	0	0	32
1F	Misc. meetings/conferences	24	24	0	0	0	48
1G	Bi-weekly hi-light reports	12	0	0	0	0	12
1H	Monthly reports	12	0	0	0	0	12
1I	Revisions/reply to comments	16	24	0	40	0	80
1J	Assemble Title I summary report	8	24	0	0	0	32
2	Field Work	0	0	0	0	0	0
2A	Site investigation	4	8	0	0	0	12
3	Define Project	0	0	0	0	0	0
3A	Concept submission	0	0	0	0	0	0
4	Interior Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0
5A	___ no. alternate site plans	0	0	0	0	0	0
5B	___ no. alternate bldg plans	0	0	0	0	0	0
5C	___ no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Seismic Soil Borings and Analysis	700	400	200	200	100	1600
6B	Topographic Studies	2	2	0	0	0	4
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	0	0	0	0	0	0
6E	Energy Conservation Report	0	0	0	0	0	0
6F	Energy Systems Operation Guide	0	0	0	0	0	0
6G	Environmental Permits Report	0	0	0	0	0	0
6H	Fire Protection Analysis	0	0	0	0	0	0
6I	MATERIAL TESTING/ULTRASONIC/XRAY	48	48	0	0	0	96
6J	DYNAMIC SEISMIC ANALYSIS	500	1500	0	0	0	2000
6K	Other/Checking/Q/A	300	500	0	0	0	800
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	8	16	0	0	24	48
7B	Construction cost estimate, 50%	8	16	0	0	24	48
7C	Construction cost estimate, 100%	8	16	0	0	32	56
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (PED)	0	0	0	0	0	0
10	Value Engineering	8	8	0	0	0	16
11	Quality Plan Annex	36	36	0	0	0	72
12	Final Revisions	16	24	0	32	0	72
13	Reproduction of Plans & Specs.	0	0	0	32	0	32
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0

TITLE I STRU ENGINEERING SERVICES TOTAL

1774 2678 200 304 180 5136

TITLE 1 ENGINEERING

ESTIMATED HOURS - TITLE 1

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KATZER ENGINEERS

TITLE 1 STRUCTURAL TOTAL

*****	*****	*****	*****	*****	*****
2178	3658	200	912	218	7622

TITLE I ENGINEERING

ESTIMATED HOURS - TITLE I

Title: Nuclear Materials Storage Facility Pf-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

MECHANICAL

DESIGN SERVICES

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
M1	ZONE PLAN	8	16	0	24	2	50
M2	SUPPORT AREA MECH PLAN	8	16	0	24	2	50
M3	FIRST FLOOR MAA MECH PLAN	8	16	0	24	2	50
M4	BASEMENT MAA MECH PLAN	8	16	0	24	2	50
M5	MEZZANINE MECH PLAN	8	16	0	24	2	50
M6	MECH PENTHOUSE HVAC PLAN	8	16	0	24	2	50
M7	HEPA PLENUM MECH ROOM PLAN	8	16	0	24	2	50
M8	MECHANICAL DETAILS	8	16	0	24	2	50
M9	MECHANICAL DETAILS	8	16	0	24	2	50
M10	MECHANICAL DETAILS	8	16	0	24	2	50
M11	HEATING WATER PIPING PLAN	8	16	0	24	2	50
M12	FIRST FLOOR PIPING PLAN	8	16	0	24	2	50
M13	BASEMENT PIPING PLAN	8	16	0	24	2	50
M14	MECH PENTHOUSE PIPING PLAN	8	16	0	24	2	50
M15	PIPING DETAILS	8	16	0	24	2	50
M16	PIPING DETAILS	8	16	0	24	2	50
M17	MAA HVAC AIR FLOW DIAGRAM	8	16	0	24	2	50
M18	MAA HVAC CONTROL DIAGRAM	8	16	0	24	2	50
M19	MAA HVAC CONTROL DIAGRAM	8	16	0	24	2	50
M20	MAA HVAC CONTROL DIAGRAM	8	16	0	24	2	50
M21	SUPPORT AREA HVAC AIR FLOW DIAG.	8	16	0	24	2	50
M22	CHILLED WATER FLOW DIAGRAM	8	16	0	24	2	50
M23	HEATING HOT WATER FLOW DIAGRAM	8	16	0	24	2	50
M24	FIRST FLOOR PLUMBING PLAN	8	16	0	24	2	50
M25	BASEMENT PLUMBING PLAN	8	16	0	24	2	50
M26	MEZZANINE PLUMBING PLAN	8	16	0	24	2	50
M27	PLUMBING RISERS	8	16	0	24	2	50
M28	PLUMBING RISERS	8	16	0	24	2	50
M29	PLUMBING DETAILS	8	16	0	24	2	50
M30	PLUMBING DETAILS	8	16	0	24	2	50
M31	SYMBOL LEGEND	8	16	0	24	2	50
	**** UTILITY BLDG ****						0
M32	ENLARGED UTIL BLDG MECH PLAN	8	16	0	24	2	50

TITLE I ENGINEERING

ESTIMATED HOURS - TITLE I

Title: Nuclear Materials Storage Facility PF-41 7A-55

P.I. 11818

Date:

25-May-95

Prepared By:ICF KAISER ENGINEERS

M33 MECHANICAL DETAILS	8	16	0	24	2	50
M34 UTIL BLDG PLUMBING PLAN	8	16	0	24	2	50
M35 PLUMBING RISERS	8	16	0	24	2	50
M36 SECTIONS	8	16	0	24	2	50
	-----	-----	-----	-----	-----	-----
TITLE I DRAWING PREPARATION TOTAL	288	576	0	864	72	1800
SPECIFICATIONS	32	48	0	0	0	80
CALCULATIONS & ANALYSIS	120	200	40	0	0	360
	-----	-----	-----	-----	-----	-----
TITLE I MECH DESIGN SERVICES TOTAL	440	824	40	864	72	2240

ENGINEERING SERVICES

1	Conferences	-----	-----	-----	-----	-----
1A	Pre-design meeting, LAB office	16	0	0	0	16
1B	25% review meeting, A/E office	0	0	0	0	0
1C	50% review meeting, A/E office	8	8	0	0	16
1D	60% review meeting, A/E office	0	0	0	0	0
1E	100% review meeting	16	16	0	0	32
1F	Misc. meetings/conferences	24	16	0	0	40
1G	Bi-weekly hi-light reports	12	0	0	0	12
1H	Monthly reports	12	0	0	0	12
1I	Revisions/reply to comments	24	32	0	48	104
1J	Assemble Title I summary report	8	8	0	0	16
2	Field Work	0	0	0	0	0
2A	Site investigation	8	8	0	0	16
3	Define Project	0	0	0	0	0
3A	Concept submission	0	0	0	0	0
4	Interior Design	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0
5A	___ no. alternate site plans	0	0	0	0	0
5B	___ no. alternate bldg plans	0	0	0	0	0
5C	___ no. sections & elevations	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0
6A	Soil Borings and Analysis	0	0	0	0	0
6B	Topographic Studies	0	0	0	0	0
6C	Storm Water Management Report	0	0	0	0	0
6D	Energy Study	60	80	40	0	180
6E	Energy Conservation Report	16	16	0	0	32
6F	Energy Systems Operation Guide	8	16	0	0	24
6G	Environmental Permits Report	0	0	0	0	0
6H	Fire Protection Analysis	24	24	0	0	48

TITLE I ENGINEERING

ESTIMATED HOURS - TITLE I

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: JCF KAISER ENGINEERS

6I	Checking	74	0	0	80	0	154
6J	Other	0	0	0	0	0	0
6K	Other	0	0	0	0	0	0
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	16	16	0	0	24	56
7B	Construction cost estimate, 50%	8	8	0	0	40	56
7C	Construction cost estimate, 100%	16	16	0	0	40	72
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (PED)	0	0	0	0	0	0
10	Value Engineering	16	16	0	0	0	32
11	Quality Plan Annex	24	24	0	0	0	48
12	Final Revisions	8	16	0	32	0	56
13	Reproduction of Plans & Specs.	0	0	0	40	0	40
14	Submittal Preparation	16	32	0	24	0	72
15	Miscellaneous	0	0	0	0	0	0
TITLE I MECH ENGINEERING SERVICES TOTAL		414	352	40	224	104	1134
TITLE I MECHANICAL TOTAL		854	1176	80	1088	176	3374

TITLE I ENGINEERING

ESTIMATED HOURS - TITLE I

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

INSTRUMENTATION & ELECTRICAL

DESIGN SERVICES

OWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
E1	LEGEND & NOTES	4	4	10	16	2	36
E2	ONE LINE DIAGRAM	4	4	10	16	2	36
E3	ONE LINE DIAGRAM	4	4	10	16	2	36
E4	LIGHTING PLANS	4	4	10	16	2	36
E5	LIGHTING PLANS	4	4	10	16	2	36
E6	LIGHTING PLANS	4	4	10	16	2	36
E7	POWER PLANS	4	4	10	16	2	36
E8	POWER PLANS	4	4	10	16	2	36
E9	POWER PLANS	4	4	10	16	2	36
E10	SPECIAL SYSTEMS PLANS	4	4	10	16	2	36
E11	SPECIAL SYSTEMS PLANS	4	4	10	16	2	36
E12	SPECIAL SYSTEMS PLANS	4	4	10	16	2	36
E13	LIGHTNING PROT. & GROUNDING PLANS	4	4	10	16	2	36
E14	LIGHTNING PROT. & GROUNDING PLANS	4	4	10	16	2	36
I1	FMS SYSTEM BLOCK DIAGRAM	4	4	0	16	2	24
I2	FMS COMMUNICATION DIAGRAM	4	4	0	16	2	24
I3	FMS PLC ENCLOSURE ARRANGEMENT	2	4	0	16	2	24
I4	FMS PLC ENCLOSURE POWER DIAGRAM	2	4	0	16	2	24
I5	FMS I/O ENCLOSURE ARRANGEMENT	2	4	0	16	2	24
I6	FMS I/O ENCLOSURE POWER DIAGRAM	2	4	0	16	2	24
I7	FMS I/O SCHEMATIC DIAGRAM (TYPICAL)	2	4	0	16	2	24
I8	FMS I/O SCHEMATIC DIAGRAM (TYPICAL)	2	4	0	16	2	24
I9	FMS PF4 CONTROL ROOM LAYOUT	2	4	0	16	2	24
I10	FMS NMSF CONTROL ROOM LAYOUT	2	4	0	16	2	24
I11	INST LOCATION PLAN	2	4	0	16	2	24
I12	INST LOCATION PLAN	2	4	0	16	2	24
I13	INST LOCATION PLAN	2	4	0	16	2	24
I14	INST LOCATION PLAN	2	4	0	16	2	24
I15	INST INSTALL DETAIL-TYPICAL	2	4	0	24	2	32
I16	CAN INSTALLATION DETAIL	2	4	0	16	2	24
I17	CAN CONNECTION DIAGRAM - TYPICAL	2	4	0	16	2	24
I18	CAN CONNECTION DIAGRAM - TYPICAL	2	4	0	16	2	24
I19	CRIT ALARM SYS INSTALLATION DETAIL	2	4	0	16	2	24

TITLE I ENGINEERING

ESTIMATED HOURS - TITLE I

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: JCF KAISER ENGINEERS

120	CRIT ALARM SYS CONN DIAGRAM - TYP	2	4	0	16	2	24
121	CRIT ALARM SYS CONN DIAGRAM - TYP	2	4	0	16	2	24
122	PERSONNEL MON INSTALL DET	2	4	0	16	2	24
123	PERSONNEL MONITOR CONN DIAG TYP	2	4	0	16	2	24
124	PERSONNEL MONITOR CONN DIAG TYP	2	4	0	16	2	24
125	STACK MON INSTALL DTL	2	4	0	16	2	24
126	STACK MONITOR CONN DIAG TYP	2	4	0	16	2	24
127	STACK MONITOR CONN DIAG TYP	2	4	0	16	2	24
128	RADIATION MONITOR OLAN	2	4	0	16	2	24
129	RADIATION MONITOR OLAN	2	4	0	16	2	24
130	RADIATION MONITOR OLAN	2	4	0	16	2	24
131	RADIATION MONITOR OLAN	2	4	0	16	2	24
	**** UTILITY BLDG ****						0
E15	UTIL BLDG LIGHTING PLAN	4	4	2	16	2	28
E16	UTIL BLDG POWER PLAN	4	4	2	16	2	28
E17	UTIL BLDG SPECIAL SYSTEMS	4	4	2	16	2	28
TITLE I DRAWING PREPARATION TOTAL		134	192	146	776	96	1344
SPECIFICATIONS		32	40	0	0	0	72
CALCULATIONS & ANALYSIS		36	40	24	0	0	100
TITLE I I&E DESIGN SERVICES TOTAL		202	272	170	776	96	1516

ENGINEERING SERVICES

1	Conferences						
1A	Pre-design meeting, LAB office	24	0	0	0	0	24
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	16	8	0	0	0	24
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	24	16	0	0	0	40
1F	Misc. meetings/conferences	60	24	0	0	0	84
1G	Bi-weekly hi-light reports	12	0	0	0	0	12
1H	Monthly reports	22	0	0	0	0	22
1I	Revisions/reply to comments	24	24	0	48	0	96
1J	Assemble Title I summary report	24	24	0	16	0	64
2	Field Work	8	8	0	0	0	16
2A	Site investigation	0	0	0	0	0	0
3	Define Project	0	0	0	0	0	0
3A	Concept submission	0	0	0	0	0	0
4	Interior Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0

TITLE I ENGINEERING

ESTIMATED HOURS - TITLE I

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

5A	___ no. alternate site plans	0	0	0	0	0	0
5B	___ no. alternate bldg plans	0	0	0	0	0	0
5C	___ no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	0	0	0	0	0	0
6B	Topographic Studies	0	0	0	0	0	0
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	8	24	0	0	0	32
6E	Energy Conservation Report	16	16	0	0	0	32
6F	Energy Systems Operation Guide	8	16	0	0	0	24
6G	Environmental Permits Report	0	0	0	0	0	0
6H	Fire Protection Analysis	4	8	0	0	0	12
6I	Special Systems	8	24	0	16	0	48
6J	Other	8	24	0	16	0	48
6K	Other	0	0	0	0	0	0
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	8	16	0	0	24	48
7B	Construction cost estimate, 50%	24	28	0	0	40	92
7C	Construction cost estimate, 100%	24	28	0	0	40	92
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (PED)	0	0	0	0	0	0
10	Value Engineering	8	28	0	0	0	36
11	Quality Plan Annex	40	44	0	0	0	84
12	Final Revisions	24	32	0	50	0	106
13	Reproduction of Plans & Specs.	0	0	0	64	0	64
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0
TITLE I I&E ENGINEERING SERVICES TOTAL		394	392	0	210	104	1100
TITLE I INSTRUMENTATION & ELECTRICAL TOTAL		596	664	170	986	200	2616

TITLE I ENGINEERING

ESTIMATED HOURS - TITLE I

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.L. 11818

Date:

25-May-95

Prepared By: ICF KAISER ENGINEERS

FIRE SUPPRESSION ENGINEERING

DESIGN SERVICES

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
FP1	FIRE PROTECTION FL. PLAN BASEMENT	4	8	16	16	2	46
FP2	FIRE PROTECTION FL. PLAN 1ST FLOOR	4	8	16	16	2	46
FP3	RISER DIAGRAM	4	8	16	16	2	46
	**** UTIL BLDG ****						0
FP4	FIRE PROTECTION FLOOR PLAN	4	8	8	16	2	38
FP5	RISER DIAGRAM	4	8	8	16	2	38
TITLE I DRAWING PREPARATION TOTAL		20	40	64	80	10	214
SPECIFICATIONS		40	24	0	0	0	64
CALCULATIONS & ANALYSIS (update PFHA)		40	20	20	0	0	80
TITLE I FIRE SUPPRESSION ENGR. DESIGN SERVICES T		100	84	84	80	10	358

ENGINEERING SERVICES

1	Conferences						
1A	Pre-design meeting, LAR office	10	0	0	0	0	10
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	10	0	0	0	0	10
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	10	0	0	0	0	10
1F	Misc. meetings/conferences	24	0	0	0	0	24
1G	Bi-weekly hi-light reports	12	0	0	0	0	12
1H	Monthly reports	12	0	0	0	0	12
1I	Revisions/reply to comments	16	0	0	24	0	40
1J	Assemble Title I summary report	10	0	0	0	0	10
2	Field Work	0	0	0	0	0	0
2A	Site investigation	4	0	0	0	0	4
3	Define Project	20	0	0	0	0	20
3A	Concept submission	0	0	0	0	0	0
4	Interior Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0
5A	___ no. alternate site plans	0	0	0	0	0	0

TITLE I ENGINEERING

ESTIMATED HOURS - TITLE I

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.L. 11818

Date:

25-May-95

Prepared By: ICF KAISER ENGINEERS

5B	— no. alternate bldg plans	0	0	0	0	0	0
5C	— no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	0	0	0	0	0	0
6B	Topographic Studies	0	0	0	0	0	0
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	0	0	0	0	0	0
6E	Energy Conservation Report	0	0	0	0	0	0
6F	Energy Systems Operation Guide	0	0	0	0	0	0
6G	Environmental Permits Report	0	0	0	0	0	0
6H	Fire Protection Analysis	80	0	0	0	0	80
6I	Other	0	0	0	0	0	0
6J	Other	0	0	0	0	0	0
6K	Other	0	0	0	0	0	0
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	8	0	0	0	16	24
7B	Construction cost estimate, 50%	16	0	0	0	24	40
7C	Construction cost estimate, 100%	16	0	0	0	32	48
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (PED)	0	0	0	0	0	0
10	Value Engineering	8	0	0	0	0	8
11	Quality Plan Annex	24	0	0	0	0	24
12	Final Revisions	8	0	0	32	0	40
13	Reproduction of Plans & Specs.	0	0	0	32	0	32
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0
TITLE I ENGINEERING SERVICES TOTAL		288	0	0	88	72	448
TITLE I FIRE SUPPRESSION ENRG. TOTAL		388	84	84	168	82	806

TITLE I ENGINEERING

ESTIMATED HOURS - TITLE I

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

DRAWING COUNT

CIVIL DRAWINGS	5
ARCHITECTURAL DRAWINGS	41
STRUCTURAL DRAWINGS	19
MECHANICAL DRAWINGS	36
INSTRUMENTATION & ELECTRICAL	48
FIRE SUPPRESSION DRAWINGS	5

TOTAL DRAWINGS 154

	CIVIL	ARCH	STRICT	MECH	ELEC	CLERK	TOTAL
DESIGN SERVICES							
Drawing Preparation	24	24	24	24	24	0	120
Specifications	32	32	32	32	32	0	160
Title II Design Services Word Pro	56	56	56	56	56	0	280
ENGINEERING SERVICES							
Reports	40	40	40	40	40	0	200
Conferences	40	40	40	40	40	0	200
Title II Engineering Services Word Proce	80	80	80	80	80	0	400
TITLE II WORD PROCESSING	136	136	136	136	136	0	680

TITLE II
PROJECT MANAGEMENT, WORD PROCESSING AND STAFF SUPPORT

Title: Nuclear Materials Storage Facility Pf-41 TA-55

P.I. 11618

Date:

25-May-95

Prepared By: ICF KAISER ENGINEERS

SUPPORT STAFF

	CIVIL	ARCH	STRUCT	MECH	ELEC	CLERK	TOTAL
	-----	-----	-----	-----	-----	-----	-----
Project Management	4	4	4	4	4	0	20
Project Administrator	4	4	4	4	4	0	20
Project Controls	8	8	8	8	8	0	40
Planner/Scheduler	8	8	8	8	8	0	40
Purchasing	2	2	2	2	2	0	10
Accounting/Audit	4	4	4	4	4	0	20
Quality Assurance & Records Manag	60	8	8	60	60	60	236
Contract Administration	8	8	8	8	8	0	40
Database Maintenance	8	8	8	8	8	0	40
Records Management	8	8	8	8	8	0	40
	-----	-----	-----	-----	-----	-----	-----
TITLE II STAFF SUPPORT TOTAL	114	62	62	114	114	60	526

18644 = TOTAL TITLE II PERSON HOURS
 41.84% = PERCENT OF TOTAL PERSON HOURS

TITLE 11 ENGINEERING

ESTIMATED HOURS - TITLE 11

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11878

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

C I V I L

DESIGN SERVICES

DRAWING PREPARATION

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
C1	SITE PLAN	8	16	8	30	2	64
C2	UTILITY PLAN	8	16	8	30	2	64
C3	GRADING & DRAINAGE PLAN	10	18	8	34	2	72
C4	CIVIL DETAILS	6	8	8	24	2	48
C5	SHORING PLAN	16	16	0	24	2	58

TITLE 11 DRAWING PREPARATION TOTAL	48	74	32	142	10	306
------------------------------------	----	----	----	-----	----	-----

SPECIFICATIONS	24	24	0	0	0	48
CALCULATIONS & ANALYSIS	10	20	0	0	0	30

TITLE 11 CIVIL DESIGN SERVICES TOTAL	82	118	32	142	10	384
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ENGINEERING SERVICES

1	Conferences	-----	-----	-----	-----	-----	-----
1A	Pre-design meeting, LAB office	8	0	0	0	0	8
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	16	8	0	0	0	24
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	16	0	0	0	0	16
1F	Misc. meetings/conferences	28	28	0	0	0	56
1G	Bi-weekly hi-light reports	14	14	0	0	0	28
1H	Monthly reports	7	14	0	0	0	21
1I	Revisions/reply to comments	12	24	0	24	0	60
1J	Bidding Process	12	24	0	0	24	60
2	Field Work	0	0	0	0	0	0
2A	Site investigation	0	0	20	0	0	20
3	Define Project	0	0	0	0	0	0
3A	Concept submission	0	0	0	0	0	0
4	Interior Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0
5A	___ no. alternate site plans	0	0	0	0	0	0
5B	___ no. alternate bldg plans	0	0	0	0	0	0
5C	___ no. sections & elevations	0	0	0	0	0	0

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	0	0	0	0	0	0
6B	Topographic Studies	0	0	0	0	0	0
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	0	0	0	0	0	0
6E	Energy Conservation Report	0	0	0	0	0	0
6F	Energy Systems Operation Guide	0	0	0	0	0	0
6G	Environmental Permits Report	0	0	0	0	0	0
6H	Fire Protection Analysis	0	0	0	0	0	0
6I	Other	0	0	0	0	0	0
6J	Other	0	0	0	0	0	0
6K	Other	0	0	0	0	0	0
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	8	16	0	0	16	40
7B	Construction cost estimate, 50	8	16	0	0	16	40
7C	Construction cost estimate, 100	8	16	0	0	16	40
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (	16	32	0	0	0	48
10	Value Engineering	0	0	0	0	0	0
11	Quality Plan Annex	8	8	0	8	0	24
12	Final Revisions	6	12	12	12	0	42
13	Reproduction of Plans & Specs.	0	0	0	32	0	32
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0
TITLE II CIVIL ENGINEERING SERVICES TOTAL		167	212	32	76	72	559
TITLE II CIVIL TOTAL		249	330	64	218	82	943

TITLE 11 ENGINEERING

ESTIMATED HOURS - TITLE 11

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.L. 1181B

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

ARCHITECTURAL

DESIGN SERVICES

DWG NO.	TITLE	LEAD ARCH	STAFF ARCH	DESIGN	DRAFT	ESTIM	TOTAL
A1	BASEMENT FLOOR PLAN	4	10	8	16	2	40
A2	FIRST FLOOR PLAN	4	10	8	16	2	40
A3	BASEMENT DEMO PLAN	4	10	8	16	2	40
A4	FIRST FLOOR DEMO PLAN	4	10	8	16	2	40
A5	MEZZANINE PLAN	4	10	8	16	2	40
A6	LARGE SCALE PLANS/LOCKER RMS/TOILET	4	10	8	16	2	40
A7	LARGE SCALE PLANS	4	10	8	16	2	40
A8	LARGE SCALE PLAN	4	10	8	16	2	40
A9	LARGE SCALE PLANS/ADMIN. AREA	4	10	8	16	2	40
A10	NORTH & EAST ELEVATIONS	4	10	8	16	2	40
A11	WEST & SOUTH ELEVATIONS	4	10	8	16	2	40
A12	BUILDING SECTION-WEST	4	10	8	16	2	40
A13	BUILDING SECTION-NORTH, PROCESS	4	10	8	16	2	40
A14	BUILDING SECTION-NORTH, ADMIN	4	10	8	16	2	40
A15	ROOF PLAN	4	10	8	16	2	40
A16	ROOF DETAILS	4	10	8	16	2	40
A17	LIGHTENING PROTECTION PLAN	4	10	8	16	2	40
A18	REFLECTED CEILING PLAN-1ST FLR	4	10	8	16	2	40
A19	REFLECTED CEILING PLAN-BASEMENT	4	10	8	16	2	40
A20	WALL SECTIONS	4	10	8	16	2	40
A21	WALL SECTIONS	4	10	8	16	2	40
A22	WALL SECTIONS	4	10	8	16	2	40
A23	WALL SECTIONS	4	10	8	16	2	40
A24	SECTIONS AND DETAILS	4	10	8	16	2	40
A25	SECTIONS AND DETAILS	4	10	8	16	2	40
A26	SECTIONS AND DETAILS	4	10	8	16	2	40
A27	SECTIONS AND DETAILS	4	10	8	16	2	40
A28	SECTIONS AND DETAILS	4	10	8	16	2	40
A29	SECTIONS AND DETAILS	4	10	8	16	2	40
A30	SECTIONS AND DETAILS	4	10	8	16	2	40
A31	SECTIONS AND DETAILS	4	10	8	16	2	40
A32	BUILDING PERSPECTIVE	4	10	8	16	2	40
	**** UTILITY BLDG ****	4	10	8	16	2	40

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.L. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

A33	UTILITY BLDG FLOOR/ROOF PLAN	4	10	8	16	2	40
A34	UTILITY BLDG SOUTH/WEST ELEVATIONS	4	10	8	16	2	40
A35	UTILITY BLDG SECTIONS	4	10	8	16	2	40
A36	UTILITY BLDG WALL SECTIONS	4	10	8	16	2	40
A37	UTILITY BLDG DETAILS	4	10	8	16	2	40
A38	UTILITY BLDG FINISHES & MISC. DETAILS						
A39	UTILITY BLDG SECTIONS & DETAILS	4	10	0	16	2	32
A40	UTILITY BLDG SECTIONS & DETAILS	4	10	0	16	2	32
TITLE II DRAWING PREPARATION TOTAL		160	400	304	640	80	1584
SPECIFICATIONS		40	80	0	0	0	120
CALCULATIONS & ANALYSIS		20	40	0	0	0	60
TITLE II ARCH DESIGN SERVICES TOTAL		220	520	304	640	80	1764

ENGINEERING SERVICES

1	Conferences						
1A	Pre-design meeting, LAB office	16	0	0	0	0	16
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	16	8	0	0	0	24
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	16	0	0	0	0	16
1F	Misc. meetings/conferences	40	40	0	0	0	80
1G	Bi-weekly hi-light reports	14	14	0	0	0	28
1H	Monthly reports	7	14	0	0	0	21
1I	Revisions/reply to comments	40	60	0	80	0	180
1J	Bidding Process	24	40	0	0	40	104
2	Field Work	0	0	0	0	0	0
2A	Site investigation	0	0	0	0	0	0
3	Define Project	0	0	0	0	0	0
3A	Concept submission	0	0	0	0	0	0
4	Interior Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0
5A	— no. alternate site plans	0	0	0	0	0	0
5B	— no. alternate bldg plans	0	0	0	0	0	0
5C	— no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	0	0	0	0	0	0
6B	Topographic Studies	0	0	0	0	0	0
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	4	4	0	0	0	8

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date:

25-May-95

Prepared By: ICF KAISER ENGINEERS

6E	Energy Conservation Report	8	8	0	0	0	16
6F	Energy Systems Operation Guide	4	4	0	0	0	8
6G	Environmental Permits Report	0	0	0	0	0	0
6H	Fire Protection Analysis	2	4	0	0	0	6
6I	Other	0	0	0	0	0	0
6J	Other	0	0	0	0	0	0
6K	Other	0	0	0	0	0	0
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	8	20	0	0	40	68
7B	Construction cost estimate, 50	8	40	0	0	60	108
7C	Construction cost estimate, 100	8	40	0	0	60	108
8	Model or Rendering	20	32	0	40	0	92
9	Project Engineering Documentation (	16	32	0	0	0	48
10	Value Engineering	0	0	0	0	0	0
11	Quality Plan Annex	24	32	0	0	0	56
12	Final Revisions	16	24	0	24	0	64
13	Reproduction of Plans & Specs.	0	0	0	60	0	60
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0
TITLE II ARCH ENGINEERING SERVICES TOTAL		291	416	0	204	200	1111
TITLE II ARCHITECTURAL TOTAL		511	936	304	844	280	2875

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 1A-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

S T R U C T U R A L

DESIGN SERVICES

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
S1	FOUNDATION-BASEMENT PLAN	12	24	24	32	2	94
S2	NEW SECOND FLOOR PLAN	12	24	24	32	2	94
S3	FIRST FLOOR PLAN	12	24	24	32	2	94
S4	ROOF PLAN	12	24	24	32	2	94
S5	MECH PENTHOUSE PLAN	12	24	24	32	2	94
S6	CHARGE DECK PLAN	12	24	24	32	2	94
S7	SECTIONS & DETAILS	12	24	24	32	2	94
S8	SECTIONS & DETAILS	12	24	24	32	2	94
S9	SECTIONS & DETAILS	12	24	24	32	2	94
S10	SECTIONS & DETAILS	12	24	24	32	2	94
S11	SECTIONS & DETAILS	12	24	24	32	2	94
S12	SECTIONS & DETAILS	12	24	24	32	2	94
S13	DEMOLITION PLAN FND/BASEMENT	12	24	24	32	2	94
S14	DEMOLITION PLAN/FIRST FLOOR	12	24	24	32	2	94
S15	DEMOLITION PLAN ROOF	12	24	24	32	2	94
S16	DEMOLITION MISC DETAILS	12	24	24	32	2	94
	**** UTILITY BLDG ****						
S17	FNDG PLAN	12	24	24	32	2	
S18	ROOF PLAN	12	24	24	32	2	94
S19	SECTIONS & DETAILS	12	24	24	32	2	94
TITLE II DRAWING PREPARATION TOTAL		228	456	456	608	38	1410
SPECIFICATIONS		40	40	0	0	0	80
CALCULATIONS & ANALYSIS		100	300	0	0	0	400
TITLE II STRU DESIGN SERVICES TOTAL		368	796	456	608	38	1890

ENGINEERING SERVICES

1	Conferences						
1A	Pre-design meeting, LAB office	8	0	0	0	0	8

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.L. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

1B	35% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	8	8	0	0	0	16
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	8	8	0	0	0	16
1F	Misc. meetings/conferences	24	24	0	0	0	48
1G	Bi-weekly hi-light reports	12	0	0	0	0	12
1H	Monthly reports	12	0	0	0	0	12
1J	Revisions/reply to comments	16	24	0	40	0	80
1I	Bidding Process	8	24	0	0	0	32
2	Field Work	0	0	0	0	0	0
2A	Site investigation	4	8	0	0	0	12
3	Define Project	0	0	0	0	0	0
3A	Concept submission	0	0	0	0	0	0
4	Interior Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0
5A	___ no. alternate site plans	0	0	0	0	0	0
5B	___ no. alternate bldg plans	0	0	0	0	0	0
5C	___ no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	4	4	0	0	0	8
6B	Topographic Studies	2	2	0	0	0	4
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	0	0	0	0	0	0
6E	Energy Conservation Report	0	0	0	0	0	0
6F	Energy Systems Operation Guide	0	0	0	0	0	0
6G	Environmental Permits Report	0	0	0	0	0	0
6H	Fire Protection Analysis	0	0	0	0	0	0
6I	MATERIAL TESTING/ULTRASONIC/XRAY	24	32	0	0	0	56
6J	DYNAMIC SEISMIC ANALYSIS	250	750	0	0	0	1000
6K	Other-Checking/Q/A	150	250	0	0	0	400
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	8	16	0	0	24	48
7B	Construction cost estimate, 50	8	16	0	0	24	48
7C	Construction cost estimate, 100	8	16	0	0	32	56
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (	0	0	0	0	0	0
10	Value Engineering	8	8	0	0	0	16
11	Quality Plan Annex	36	36	0	0	0	72
12	Final Revisions	16	24	0	32	0	72
13	Reproduction of Plans & Specs.	0	0	0	32	0	32
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

TITLE II STRU ENGINEERING SERVICES TOTAL	614	1250	0	104	80	2048
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TITLE II STRUCTURAL TOTAL	982	2046	456	712	118	3038

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

MECHANICAL

DESIGN SERVICES

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
M1	ZONE PLAN	8	16	0	24	2	50
M2	SUPPORT AREA MECH PLAN	8	16	0	24	2	50
M3	FIRST FLOOR MAA MECH PLAN	8	16	0	24	2	50
M4	BASEMENT MAA MECH PLAN	8	16	0	24	2	50
M5	MEZZANINE MECH PLAN	8	16	0	24	2	50
M6	MECH PENTHOUSE HVAC PLAN	8	16	0	24	2	50
M7	HEPA PLENUM MECH ROOM PLAN	8	16	0	24	2	50
M8	MECHANICAL DETAILS	8	16	0	24	2	50
M9	MECHANICAL DETAILS	8	16	0	24	2	50
M10	MECHANICAL DETAILS	8	16	0	24	2	50
M11	HEATING WATER PIPING PLAN	8	16	0	24	2	50
M12	FIRST FLOOR PIPING PLAN	8	16	0	24	2	50
M13	BASEMENT PIPING PLAN	8	16	0	24	2	50
M14	MECH PENTHOUSE PIPING PLAN	8	16	0	24	2	50
M15	PIPING DETAILS	8	16	0	24	2	50
M16	PIPING DETAILS	8	16	0	24	2	50
M17	MAA HVAC AIR FLOW DIAGRAM	8	16	0	24	2	50
M18	MAA HVAC CONTROL DIAGRAM	8	16	0	24	2	50
M19	MAA HVAC CONTROL DIAGRAM	8	16	0	24	2	50
M20	MAA HVAC CONTROL DIAGRAM	8	16	0	24	2	50
M21	SUPPORT AREA HVAC AIR FLOW DIAG.	8	16	0	24	2	50
M22	CHILLED WATER FLOW DIAGRAM	8	16	0	24	2	50
M23	HEATING HOT WATER FLOW DIAGRAM	8	16	0	24	2	50
M24	FIRST FLOOR PLUMBING PLAN	8	16	0	24	2	50
M25	BASEMENT PLUMBING PLAN	8	16	0	24	2	50
M26	MEZZANINE PLUMBING PLAN	8	16	0	24	2	50
M27	PLUMBING RISERS	8	16	0	24	2	50
M28	PLUMBING RISERS	8	16	0	24	2	50
M29	PLUMBING DETAILS	8	16	0	24	2	50
M30	PLUMBING DETAILS	8	16	0	24	2	50
M31	SYMBOL LEGEND	8	16	0	24	2	50
	**** UTILITY BLDG ****						
M32	ENLARGED UTIL BLDG MECH PLAN	8	16	0	24	2	50

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

M33	MECHANICAL DETAILS	8	16	0	24	2	50
M34	UTIL BLDG PLUMBING PLAN	8	16	0	24	2	50
M35	PLUMBING RISERS	8	16	0	24	2	50
M36	SECTIONS	8	16	0	24	2	50
		-----	-----	-----	-----	-----	-----
TITLE II DRAWING PREPARATION TOTAL		288	576	0	864	72	1800
SPECIFICATIONS		48	64	0	0	0	112
CALCULATIONS & ANALYSIS		160	240	40	0	0	440
		-----	-----	-----	-----	-----	-----
TITLE II MECH DESIGN SERVICES TOTAL		496	880	40	864	72	2352
ENGINEERING SERVICES							
		-----	-----	-----	-----	-----	-----
1	Conferences						
1A	Pre-design meeting, LAB office	16	0	0	0	0	16
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	8	8	0	0	0	16
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting, A/E office	16	16	0	0	0	32
1F	Misc. meetings/conferences	24	16	0	0	0	40
1G	Bi-weekly hi-light reports	12	0	0	0	0	12
1H	Monthly reports	12	0	0	0	0	12
1I	Revisions/reply to comments	24	32	0	48	0	104
1J	Bidding Process	8	8	0	0	0	16
2	Field Work	0	0	0	0	0	0
2A	Site Investigation	8	8	0	0	0	16
3	Define Project	0	0	0	0	0	0
3A	Concept submission	0	0	0	0	0	0
4	Interior Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0
5A	___ no. alternate site plans	0	0	0	0	0	0
5B	___ no. alternate bldg plans	0	0	0	0	0	0
5C	___ no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	0	0	0	0	0	0
6B	Topographic Studies	0	0	0	0	0	0
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	16	24	0	0	0	40
6E	Energy Conservation Report	16	16	0	0	0	32
6F	Energy Systems Operation Guide	8	16	0	0	0	24
6G	Environmental Permits Report	0	0	0	0	0	0
6H	Fire Protection Analysis	24	24	0	0	0	48

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 1A-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

6I	Checking	74	0	0	80	0	154
6J	Other	0	0	0	0	0	0
6K	Other	0	0	0	0	0	0
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	16	16	0	0	24	56
7B	Construction cost estimate, 50	8	8	0	0	40	56
7C	Construction cost estimate, 100	16	16	0	0	40	72
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (	0	0	0	0	0	0
10	Value Engineering	16	16	0	0	0	32
11	Quality Plan Annex	24	24	0	0	0	48
12	Final Revisions	8	16	0	32	0	56
13	Reproduction of Plans & Specs.	0	0	0	40	0	40
14	Submittal Preparation	16	32	0	24	0	72
15	Miscellaneous	0	0	0	0	0	0
TITLE II MECH ENGINEERING SERVICES TOTAL		370	296	0	224	104	994
TITLE II MECHANICAL TOTAL		866	1176	40	1088	176	3346

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 JA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

INSTRUMENTATION & ELECTRICAL

DESIGN SERVICES

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
E1	LEGEND & NOTES	4	4	8	18	2	36
E2	ONE LINE DIAGRAM DEMOLITION	4	4		16	2	26
E3	ONE LINE DIAGRAM	4	4		16	2	26
E4	ONE LINE DIAGRAM	4	4		16	2	26
E5	LIGHTING PLANS	4	4	10	16	2	36
E6	LIGHTING PLANS	4	4	10	16	2	36
E7	LIGHTING PLANS	4	4	10	16	2	36
E8	POWER PLANS	4	4	10	16	2	36
E9	POWER PLANS	4	4	10	16	2	36
E10	POWER PLANS	4	4	10	16	2	36
E11	SPECIAL SYSTEMS PLANS	4	4	10	16	2	36
E12	SPECIAL SYSTEMS PLANS	4	4	10	16	2	36
E13	SPECIAL SYSTEMS PLANS	4	4	10	16	2	36
E14	LIGHTNING PROT. & GROUNDING PLANS	4	4	10	16	2	36
E15	LIGHTNING PROT. & GROUNDING PLANS	4	4	10	16	2	36
E16	DETAILS	4	4	10	16	2	36
E17	DETAILS	4	4	10	16	2	36
E18	DETAILS	4	4	10	16	2	36
E19	LIGHTING PLANS DEMOLITION	4	4	10	16	2	36
E20	LIGHTING PLANS DEMOLITION	4	4	10	16	2	36
E21	POWER PLANS DEMOLITION	4	4	10	16	2	36
E22	POWER PLANS DEMOLITION	4	4	10	16	2	36
E23	SPECIAL SYSTEMS	4	4	10	16	2	36
E24	SPECIAL SYSTEMS	4	4	0	16	2	26
I1	FMS SYSTEM BLOCK DIAGRAM	4	4	0	16	2	26
I2	FMS COMMUNICATION DIAGRAM	4	4	0	16	2	26
I3	FMS PLC ENCLOSURE ARRANGEMENT	2	4	0	16	2	24
I4	FMS PLC ENCLOSURE ARRANGEMENT	2	4	0	16	2	24
I5	FMS PLC POWER DIAGRAM	2	4	0	16	2	24
I6	FMS PLC POWER DIAGRAM	2	4	0	16	2	24
I7	FMS I/O ENCLOSURE ARRANGEMENT	2	4	0	12	2	20
I8	FMS I/O ENCLOSURE ARRANGEMENT	2	4	0	16	2	24
I9	FMS I/O ENCLOSURE ARRANGEMENT	2	4	0	12	2	20

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11918

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

110	FMS I/O ENCLOSURE ARRANGEMENT	2	4	0	16	2	24
111	FMS I/O ENCLOSURE POWER DIAGRAM	2	4	0	12	2	20
112	FMS I/O ENCLOSURE POWER DIAGRAM	2	4	0	12	2	20
113	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
114	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
115	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
116	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
117	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
118	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
119	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
120	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
121	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
122	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
123	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
124	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
125	FMS PF4 CONTROL ROOM LAYOUT	2	4	0	16	2	24
126	FMS WMSF CONTROL ROOM LAYOUT	2	4	0	16	2	24
127	INSTR LOCATION PLAN	2	4	0	14	2	22
128	INSTR LOCATION PLAN	2	4	0	14	2	22
129	INSTR LOCATION PLAN	2	4	0	14	2	22
130	INSTR LOCATION PLAN	2	4	0	14	2	22
131	INSTR INSTALL DETAIL - TYPICAL	2	4	0	14	2	22
132	INSTR INSTALL DETAIL - TYPICAL	2	4	0	14	2	22
133	INSTR INSTALL DETAIL - TYPICAL	2	4	0	14	2	22
134	INSTR INSTALL DETAIL - TYPICAL	2	4	0	14	2	22
135	HVAC INSTR LOOP DIAGRAM	2	2	0	8	2	14
136	HVAC INSTR LOOP DIAGRAM	2	2	0	8	2	14
137	HVAC INSTR LOOP DIAGRAM	2	2	0	8	2	14
138	HVAC INSTR LOOP DIAGRAM	2	2	0	8	2	14
139	HVAC INSTR LOOP DIAGRAM	2	2	0	8	2	14
140	HVAC INTERLOCK/LOGIC DIAGRAM	2	2	0	8	2	14
141	HVAC INTERLOCK/LOGIC DIAGRAM	2	2	0	8	2	14
142	SECURITY INSTR LOOP DIAGRAM	2	2	0	8	2	14
143	SECURITY INSTR LOOP DIAGRAM	2	2	0	8	2	14
144	SECURITY INSTR LOOP DIAGRAM	2	2	0	8	2	14
145	SECURITY INSTR LOOP DIAGRAM	2	2	0	8	2	14
146	SECURITY INTERLOCK/LOGIC DIAGRAM	2	2	0	8	2	14
147	SECURITY INTERLOCK/LOGIC DIAGRAM	2	2	0	8	2	14
148	CAM INSTALLATION DETAIL	2	4	0	16	2	24
149	CAM CONNECTION DIAGRAM - TYPICAL	2	4	0	16	2	24
150	CAM CONNECTION DIAGRAM - TYPICAL	2	4	0	16	2	24
151	CAM CONNECTION WIRING DIAGRAM	2	4	0	16	2	24
152	CAM CONNECTION WIRING DIAGRAM	2	4	0	16	2	24

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

153	CRIT ALARM SYS INSTALLATION DETAIL	2	4	0	16	2	24
154	CRIT ALARM SYS CONN DIAGRAM - TYP	2	4	0	16	2	24
155	CRIT ALARM SYS CONN DIAGRAM - TYP	2	4	0	16	2	24
156	CRIT ALARM SYS WIRING DIAGRAM	2	4	0	16	2	24
157	CRIT ALARM SYS WIRING DIAGRAM	2	4	0	16	2	24
158	PERSONNEL MON INSTALLATION DETAIL	2	4	0	16	2	24
159	PERSONNEL MON CONN DIAGRAM - TYP	2	4	0	16	2	24
160	PERSONNEL MON CONN DIAGRAM - TYP	2	4	0	16	2	24
161	PERSONNEL MON WIRING DIAGRAM	2	4	0	16	2	24
162	PERSONNEL MON WIRING DIAGRAM	2	4	0	16	2	24
163	STACK MONITOR INSTALLATION DETAIL	2	4	0	16	2	24
164	STACK MONITOR CONN DIAGRAM - TYP	2	4	0	16	2	24
165	STACK MONITOR CONN DIAGRAM - TYP	2	4	0	16	2	24
166	STACK MONITOR WIRING DIAGRAM	2	4	0	16	2	24
167	STACK MONITOR WIRING DIAGRAM	2	4	0	16	2	24
168	SPECIAL SYSTEMS PLAN	2	4	0	16	2	24
169	SPECIAL SYSTEMS PLAN	2	4	0	16	2	24
170	SPECIAL SYSTEMS PLAN	2	4	0	16	2	24
171	SPECIAL SYSTEMS PLAN	2	4	0	16	2	24
172	RADIATION MONITOR PLAN	2	4	0	8	0	14
173	RADIATION MONITOR PLAN	2	4	0	8	0	14
174	RADIATION MONITOR PLAN	2	4	0	8	0	14
175	RADIATION MONITOR PLAN	2	2	0	8	0	12
176	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
177	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
178	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
179	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
180	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
181	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
182	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
183	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
184	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
184	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
185	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
186	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
187	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
188	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
189	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
190	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
191	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
192	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
193	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
194	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

I95	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
	**** UTILITY BLDG ****						0
E25	UTIL BLDG LIGHTING PLAN	4	4	2	16	2	28
E26	UTIL BLDG POWER PLAN	4	4	2	16	2	28
E27	UTIL BLDG SPECIAL SYSTEMS	4	4	2	16	2	28
		-----	-----	-----	-----	-----	-----
TITLE II DRAWING PREPARATION TOTAL		304	422	204	1586	196	2712
SPECIFICATIONS		40	70	0	0	0	110
CALCULATIONS & ANALYSIS		64	88	48	0	0	200
		-----	-----	-----	-----	-----	-----
TITLE II I&E DESIGN SERVICES TOTAL		408	580	252	1586	196	3022

ENGINEERING SERVICES

Conferences							
1A	Pre-design meeting, LAB office	24	0	0	0	0	24
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	12	12	0	0	0	24
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	20	24	0	0	0	44
1F	Misc. meetings/conferences	60	30	0	0	0	90
1G	Bi-weekly hi-light reports	18	0	0	0	0	18
1H	Monthly reports	18	0	0	0	0	18
1I	Revisions/reply to comments	24	30	0	48	0	102
1J	Bidding Process	24	30	0	0	0	54
2	Field Work	12	12	0	0	0	24
2A	Site Investigation	0	0	0	0	0	0
3	Define Project	0	0	0	0	0	0
3A	Concept submission	0	0	0	0	0	0
4	Interior Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0
5A	___ no. alternate site plans	0	0	0	0	0	0
5B	___ no. alternate bldg plans	0	0	0	0	0	0
5C	___ no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	0	0	0	0	0	0
6B	Topographic Studies	0	0	0	0	0	0
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	12	30	0	0	0	42
6E	Energy Conservation Report	24	24	0	0	0	48
6F	Energy Systems Operation Guide	12	24	0	0	0	36
6G	Environmental Permits Report	0	0	0	0	0	0

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

6H	Fire Protection Analysis	6	12	0	0	0	18
6I	Other	0	0	0	0	0	0
6J	Other	0	0	0	0	0	0
6K	Other	0	0	0	0	0	0
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	12	24	0	0	24	60
7B	Construction cost estimate, 50	24	30	0	0	40	94
7C	Construction cost estimate, 100	24	30	0	0	40	94
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (	0	0	0	0	0	0
10	Value Engineering	12	30	0	0	0	42
11	Quality Plan Annex	60	60	0	0	0	120
12	Final Revisions	12	24	0	40	0	76
13	Reproduction of Plans & Specs.	0	0	0	56	0	56
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0
TITLE II I&E ENGINEERING SERVICES TOTAL		410	426	0	144	104	1084
TITLE II INSTRUMENTATION & ELECTRICAL TOTAL		818	1006	252	1730	300	4106

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KATSER ENGINEERS

FIRE SUPPRESSION ENGINEERING

DESIGN SERVICES

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
FP1	FIRE PROTECTION FL. PLAN BASEMENT	4	8	16	16	2	46
FP2	FIRE PROTECTION FL. PLAN 1ST FLOOR	4	8	16	16	2	46
FP3	RISER DIAGRAM	4	8	16	16	2	46
FP4	FIRE PROTECTION DETAILS	4	8	16	16	2	46
	**** UTIL BLDG ****						0
FP5	FIRE PROTECTION FLOOR PLAN	4	8	8	16	2	38
FP6	RISER DIAGRAM	4	8	8	16	2	38
FP7	FIRE PROTECTION DETAILS	4	8	8	16	2	38
TITLE II DRAWING PREPARATION TOTAL		28	56	88	112	14	298
SPECIFICATIONS		80	0	0	0	0	80
CALCULATIONS & ANALYSIS		80	0	24	0	0	104
TITLE II FIRE SUPPRESSION ENGR. DESIGN SERV)		188	56	112	112	14	482

ENGINEERING SERVICES

1	Conferences						
1A	Pre-design meeting, LAB office	8	0	0	0	0	8
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	8	8	0	0	0	16
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	16	16	0	0	0	32
1F	Misc. meetings/conferences	24	24	0	0	0	48
1G	Bi-weekly hi-light reports	12	0	0	0	0	12
1H	Monthly reports	12	0	0	0	0	12
1I	Revisions/reply to comments	16	8	0	24	0	48
1J	Assemble Title I summary report	8	16	0	0	0	24
2	Field Work	0	0	0	0	0	0
2A	Site Investigation	4	4	0	0	0	8
3	Define Project	0	0	0	0	0	0
3A	Concept submission	0	0	0	0	0	0
4	Interior Design	0	0	0	0	0	0

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

5	Preliminary studies:	0	0	0	0	0	0
5A	___ no. alternate site plans	0	0	0	0	0	0
5B	___ no. alternate bldg plans	0	0	0	0	0	0
5C	___ no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	0	0	0	0	0	0
6B	Topographic Studies	0	0	0	0	0	0
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	0	0	0	0	0	0
6E	Energy Conservation Report	0	0	0	0	0	0
6F	Energy Systems Operation Guide	0	0	0	0	0	0
6G	Environmental Permits Report	0	0	0	0	0	0
6H	Fire Protection Analysis	20	40	0	24	0	84
6I	Other	0	0	0	0	0	0
6J	Other	0	0	0	0	0	0
6K	Other	0	0	0	0	0	0
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	8	8	0	0	16	32
7B	Construction cost estimate, 50	16	16	0	0	24	56
7C	Construction cost estimate, 100	16	16	0	0	32	64
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (	0	0	0	0	0	0
10	Value Engineering	8	24	0	0	0	32
11	Quality Plan Annex	24	24	0	0	0	48
12	Final Revisions	8	16	0	32	0	56
13	Reproduction of Plans & Specs.	0	0	0	32	0	32
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0
TITLE II ENGINEERING SERVICES TOTAL		208	220	0	112	72	612
TITLE II FIRE SUPPRESSION ENG. TOT		396	276	112	224	86	1094

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 7A-55

P.I. T1818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

DRAWING COUNT

CIVIL DRAWINGS	4
ARCHITECTURAL DRAWINGS	41
STRUCTURAL DRAWINGS	19
MECHANICAL DRAWINGS	36
INSTRUMENTATION & ELECTRICAL	123
FIRE SUPPRESSION DRAWINGS	7

TOTAL DRAWINGS 230

TITLE III
PROJECT MANAGEMENT, WORD PROCESSING, AND STAFF SUPPORT

Title: Nuclear Materials Storage Facility PF-41 TA-55

P. I. D.

11818

Date:

25-May-95

Prepare By/ICF KAISER ENGINEERS

PROJECT MANAGEMENT

	CIVIL	ARCH	STRCT	MECH	ELEC	CLERK	TOTAL
	-----	-----	-----	-----	-----	-----	-----
POST CONSTRUCTION AWARD SERVICES							0
Review of Submittals	20	20	20	20	20	0	100
Inspection Services	20	20	20	20	20	0	100
Prepare As-Built Drawings	20	20	20	20	20	0	100
<hr/>							
Title III PCAS PM Total	60	60	60	60	60	0	300
<hr/>							
ENGINEERING SERVICES							
Conference	30	30	30	30	30	0	150
Cost Engineer	20	20	20	20	20	0	100
Model or Rendering	0	0	0	0	0	0	0
Quality Control	20	20	20	20	20	0	100
Reproduction of Plans & Specs	10	10	10	10	10	0	50
Miscellaneous	20	20	20	20	20	0	100
<hr/>							
Title III Engineering Services PM T	100	100	100	100	100	0	500
<hr/>							
TITLE III PROJECT MANAGEMENT	160	160	160	160	160	0	800

WORD PROCESSING

	CIVIL	ARCH	STRCT	MECH	ELEC	CLERK	TOTAL
	-----	-----	-----	-----	-----	-----	-----
DESIGN SERVICES							
Review of Submittals	60	60	60	60	60	0	300
Prepare As-Built Drawings	30	30	30	30	30	0	150
<hr/>							
Title III Design Services Word Proc	90	90	90	90	90	0	450
<hr/>							
ENGINEERING SERVICES							
Conferences	40	40	40	40	40	0	200
<hr/>							
Title III Engineering Services Word Proc	40	40	40	40	40	0	200
<hr/>							
TITLE III WORD PROCESSING	130	130	130	130	130	0	650

TITLE III
PROJECT MANAGEMENT, WORD PROCESSING, AND STAFF SUPPORT

Title: Nuclear Materials Storage Facility PF-41 TA-55

P. I. D.

11818

Date:

25-May-95

Prepare By/CF KAISER ENGINEERS

SUPPORT STAFF

	CIVIL	ARCH	STRICT	MECH	ELEC	CLERK	TOTAL
Project Management	10	10	10	10	10	0	50
Project Administrator	10	10	10	10	10	0	50
Project Controls	20	20	20	20	20	0	100
Planner/Scheduler	20	20	20	20	20	0	100
Purchasing	10	10	10	10	10	0	50
Accounting/Audit	10	10	10	10	10	0	50
Quality Assurance & Records Manage	80	30	30	80	80	80	380
Contract Administration	20	20	20	20	20	0	100
Database Maintenance	10	10	10	10	10	0	50
Records Management	20	20	20	20	20	0	100
TITLE III STAFF SUPPORT TOTAL	210	160	160	210	210	80	1030

5932 = TOTAL TITLE III PERSON HOURS
13.31% = PERCENT OF TOTAL PERSON HOURS

TITLE III ENGINEERING

ESTIMATED HOURS - TITLE III

Project Title Nuclear Materials Storage Facility PF-41 TA-55

P. I. D. 11818

Date: 25-May-95

Prepared By: JCF KAISER ENGINEERS

C I V I L

	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
POST CONSTRUCTION AWARD SERVICES						
REVIEW OF SUBMITTALS	4	8	0	0	0	12
TITLE III INSPECTION SERVICES						
FIELD INSPECTION	40	0	0	0	0	40
VENDOR EQUIPMENT INSPECTION	4	8	0	0	0	12
INSPECTION SERVICES TOTAL	44	8	0	0	0	52
PREPARE AS-BUILT DRAWINGS	8	24	24	40	0	96
TITLE III CIVIL PCAS TOTAL	56	40	24	40	0	160
ENGINEERING SERVICES						
1 Conferences						
1A Bi-weekly hi-light reports	24	32	0	0	0	56
1B Monthly reports	18	0	0	0	0	18
2 Field Work	0	0	0	0	0	0
3 Cost Engineer	0	0	0	0	40	40
4 Quality Control	32	0	0	0	0	32
5 Other(Change Orders, etc)	8	12	12	20	20	72
6 Miscellaneous	16	16	16	0	0	48
TITLE III CIVIL ENGINEERING SERVICES TOTAL	98	60	28	20	60	266
TITLE III CIVIL TOTAL	154	100	52	60	60	426

TITLE III ENGINEERING

ESTIMATED HOURS - TITLE III

Project Title Nuclear Materials Storage Facility PF-41 TA-55

P. J. D. 11010

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

ARCHITECTURAL

POST CONSTRUCTION AWARD SERVICES

REVIEW OF SUBMITTALS	4	12	12	0	0	28
INSPECTION SERVICES	0	0	0	0	0	0
FIELD INSPECTION	144	0	0	0	0	144
VENDOR EQUIPMENT INSPECTION	4	12	12	0	0	28
INSPECTION SERVICES TOTAL	148	12	12	0	0	172
PREPARE AS-BUILT DRAWINGS	8	40	40	60	0	148

TITLE III ARCH PCAS TOTAL	160	64	64	60	0	348
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ENGINEERING SERVICES

1	Conferences					
1A	Bi-weekly hi-light reports	32	40	0	0	72
1B	Monthly reports	18	0	0	0	18
2	Field Work	0	0	0	0	0
3	Cost Engineer	0	0	0	48	48
4	Quality Control	40	0	0	0	40
5	Other(Change Orders, etc)	8	20	20	40	88
6	Miscellaneous	16	16	16	0	48

TITLE III ARCH ENGINEERING SERVICES TOTAL	114	76	36	40	88	226
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TITLE III ARCHITECTURAL TOTAL	274	140	100	100	88	574
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TITLE III ENGINEERING

ESTIMATED HOURS - TITLE III

Project Title Nuclear Materials Storage Facility PF-41 TA-55

P. I. D. 11818

Date:

25-May-95

Prepared By: ICF KAISER ENGINEERS

STRUCTURAL

POST CONSTRUCTION AWARD SERVICES

REVIEW OF SUBMITTALS	12	20	20	0	0	52
INSPECTION SERVICES	0	0	0	0	0	0
FIELD INSPECTION	40	0	0	0	0	40
VENDOR EQUIPMENT INSPECTION	12	20	20	0	0	52
INSPECTION SERVICES TOTAL	52	20	20	0	0	92
PREPARE AS-BUILT DRAWINGS	8	24	24	40	0	96

TITLE III STRUCTURAL PCAS TOTAL	72	64	64	40	0	240
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ENGINEERING SERVICES

1	Conferences					
1A	Bi-weekly hi-light reports	32	40	0	0	72
1B	Monthly reports	18	0	0	0	18
2	Field Work	0	0	0	0	0
3	Cost Engineer	0	0	0	60	60
4	Quality Control	40	0	0	0	40
5	Other(Change Orders, etc)	4	8	8	16	0
6	Miscellaneous	16	16	16	0	48

TITLE III STRU ENGINEERING SERVICES TOTAL	110	64	24	16	76	238
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TITLE III STRUCTURAL TOTAL	182	128	88	56	76	478
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TITLE III ENGINEERING

ESTIMATED HOURS - TITLE III

Project Title: Nuclear Materials Storage Facility PF-41 TA-55

P. I. D. 11B18

Date:

25-May-95

Prepared By: ICF KAISER ENGINEERS

MECHANICAL

POST CONSTRUCTION AWARD SERVICES

REVIEW OF SUBMITTALS	20	40	16	0	0	76
INSPECTION SERVICES	0	0	0	0	0	0
FIELD INSPECTION	40	0	0	0	0	40
VENDOR EQUIPMENT INSPECTION	8	16	16	0	0	40
INSPECTION SERVICES TOTAL	48	16	16	0	0	80

PREPARE AS-BUILT DRAWINGS	8	24	24	40	0	96
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TITLE III MECH PCAS TOTAL	76	80	56	40	0	252
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ENGINEERING SERVICES

1	Conferences					
1A	Bi-weekly hi-light reports	32	40	0	0	72
1B	Monthly reports	18	0	0	0	18
2	Field Work	0	0	0	0	0
3	Cost Engineer	0	0	0	48	48
4	Quality Control	40	0	0	0	40
5	Other(Change Orders, etc)	8	16	16	20	80
6	Miscellaneous	8	8	8	0	24

TITLE III MECH ENGINEERING SERVICES TOTAL	106	64	24	20	68	282
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TITLE III MECHANICAL TOTAL	182	144	80	60	68	534
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TITLE III ENGINEERING

ESTIMATED HOURS - TITLE III

Project Title Nuclear Materials Storage Facility PF-41 TA-55

P. I. D. 11818

Date:

25-May-95

Prepared By: ICF KAISER ENGINEERS

INSTRUMENTATION & ELECTRICAL

POST CONSTRUCTION AWARD SERVICES

REVIEW OF SUBMITTALS	22	34	20	0	0	76
INSPECTION SERVICES	0	0	0	0	0	0
FIELD INSPECTION	60	60	0	0	0	120
VENDOR EQUIPMENT INSPECTION	12	60	60	0	0	132
INSPECTION SERVICES TOTAL	72	120	60	0	0	252

PREPARE AS-BUILT DRAWINGS

8	24	24	72	0	128
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TITLE III I & E PCAS TOTAL

102	178	104	72	0	456
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ENGINEERING SERVICES

1	Conferences					
1A	Bi-weekly hi-light reports	50	60	0	0	110
1B	Monthly reports	26	0	0	0	26
2	Field Work	0	40	0	0	40
3	Cost Engineer	0	0	0	70	70
4	Quality Control	40	0	0	0	40
5	Other (Change Orders, etc)	24	18	18	34	120
6	Miscellaneous	16	16	16	0	48

TITLE III I&E ENGINEERING SERVICES TOTAL	156	134	34	34	96	454
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TITLE III INSTRUMENTATION & ELECTRICAL TO	258	312	138	106	96	910
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TITLE III ENGINEERING

ESTIMATED HOURS - TITLE III

Project Title Nuclear Materials Storage Facility PF-41 TA-53

P. I. O. 11818

Date:

25-May-95

Prepared By: ICF KAISER ENGINEERS

FIRE SUPPRESSION ENGINEERING

POST CONSTRUCTION AWARD SERVICES

REVIEW OF SUBMITTALS	60	0	40	0	0	100
INSPECTION SERVICES	0	0	0	0	0	0
FIELD INSPECTION	20	0	0	0	0	20
VENDOR EQUIPMENT INSPECTION	20	0	0	0	0	20
INSPECTION SERVICES TOTAL	40	0	0	0	0	40

PREPARE AS-BUILT DRAWINGS	8	16	16	40	0	80
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TITLE III PCAS TOTAL	108	16	56	40	0	220
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ENGINEERING SERVICES

1 Conferences						
1A Bi-weekly hi-light reports	32	40	0	0	0	72
1B Monthly reports	18	0	0	0	0	18
2 Field Work	0	0	0	0	0	0
3 Cost Engineer	0	0	0	0	60	60
4 Quality Control	40	0	0	0	0	40
5 Other	8	12	12	20	20	72
6 Miscellaneous	16	16	16	0	0	48

TITLE III ENGINEERING SERVICES TOTAL	114	68	28	20	80	310
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TITLE III FIRE SUPPRESSION ENGR. TOTAL	222	84	84	60	80	530
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DETAILED CONSTRUCTION COST

ICF Kaiser Engineers
Los Alamos, NM

PROJECT FACTORS FILE LISTING

PF File Name: 056MNSF.PRF 9:57:16 6/30/95

HEADER INFORMATION

Job Number: 41552-056

Chng Order Number:

Title: MNSF CONVENTIONAL

Estimator: ICF KAISER

Abbrev:

Location: TA-55 PF41

TD Reference Date: 03/06/95

DEFAULT BURDEN RATES

Contract Direct Markups

Labor: 0.0000

Material: 0.0000

Const Equip: 0.0000

Subcontract: 0.0000

Contract General Markups

Overhead: 0.0000

Profit: 0.0000

Gross Receipts Tax: 0.0000

Bond: 0.0000

Project Markups

Escalation: 0.0000

Proj Mngmt: 0.0000

ED&I: 0.0000

Contingency: 0.0000

Notes File Name: 056MNSF.PFN

ICF Kaiser Engineers
Los Alamos, NM

PROJECT FACTORS FILE LISTING

PF File Name: 056MNSF.PRF 9:57:16 6/30/95

Work Breakdown Structure 1

5 Character Strings

59 Strings Defined

Character String	Category Title	Escalation	Proj Mngmt	ED&I	Contingency	Funds Expended Amount	Date	Charac Value	Dimen Unit
	Default Values	0.0000	0.0000	0.0000	0.0000			0	
A1F01	PROJECT MANAGEMENT	0.0000	\$ 1686110	0.0000	0.2000				
A2F01	CONSTRUCTION MANAGEMENT	0.0000	\$ 1116044	0.0000	0.2000				
B1F01	ED&I FAC. TITLE I	0.0000	0.0000	\$ 1769458	0.2000				
B1S01	ED&I SFE TITLE I	0.0000	0.0000	\$ 332070	0.2500				
B2F01	ED&I FAC. TITLE II	0.0000	0.0000	\$ 1727675	0.2000				
B2S01	ED&I SFE TITLE II	0.0000	0.0000	\$ 384394	0.2500				
B3F01	ED&I FAC. TITLE III	0.0000	0.0000	\$ 1662133	0.2000				
B3S01	ED&I SFE TITLE III	0.0000	0.0000	\$ 130949	0.2500				
B4M01	LABORATORY PROCUREMENT BURDEN	0.0000	0.0000	\$ 923892	0.0000				
C0011	FIELD OVERHEAD (SEE L OTUS WORKSHEET)	0.1310	0.0000	0.0000	0.1500				
C1C02	CONVENT. DEMOLITION	0.1310	0.0000	0.0000	0.1800				
C1C03	CONCRETE DEMOLITION	0.1310	0.0000	0.0000	0.1800				
C1C05	STRUCT. DEMOLITION	0.1310	0.0000	0.0000	0.1800				
C1C15	MECH. DEMOLITION	0.1310	0.0000	0.0000	0.1800				
C1C16	ELECT. DEMOLITION	0.1310	0.0000	0.0000	0.1800				
C1S	SPECIAL SECURITY CONSTRUCTION	0.1310	0.0000	0.0000	0.2500				
C2	SITING	0.1171	0.0000	0.0000	0.2000				
C3A02	BASEMENT EXCAVATION	0.1148	0.0000	0.0000	0.2000				
C3A03	STRUCTURAL CONCRETE	0.1148	0.0000	0.0000	0.2000				
C3A04	STRUCTURAL MASONRY	0.1148	0.0000	0.0000	0.2000				
C3A05	METALS	0.1148	0.0000	0.0000	0.2000				
C3A06	WOODS AND PLASTICS	0.1148	0.0000	0.0000	0.2000				
C3A07	ROOFING AND SIDING	0.1148	0.0000	0.0000	0.2000				
C3A08	DOORS AND WINDOWS	0.1148	0.0000	0.0000	0.2000				
C3A09	FINISHES	0.1148	0.0000	0.0000	0.2000				
C3A10	SPECIALITIES	0.1148	0.0000	0.0000	0.2000				
C3A15	MECHANICAL SYSTEMS	0.1422	0.0000	0.0000	0.2000				
C3A16	ELECTRICAL SYSTEMS	0.1365	0.0000	0.0000	0.2000				
C3B02	UTILITY BLDG SITE WORK & GRADING	0.1148	0.0000	0.0000	0.1800				
C3B03	UTIL BLDG STRUCTURAL CONCRETE	0.1148	0.0000	0.0000	0.2000				
C3B04	UTIL BLDG STRUCTURAL MASONRY	0.1148	0.0000	0.0000	0.2000				
C3B05	UTIL BLDG METALS	0.1148	0.0000	0.0000	0.2000				
C3B07	UTIL BLDG ROOFING & SIDING	0.1148	0.0000	0.0000	0.2000				

ICF Kaiser Engineers
Los Alamos, NM

PROJECT FACTORS FILE LISTING

PF File Name: DS6NMF.PRF 9:57:16 6/30/95

Work Breakdown Structure 1

5 Character Strings

59 Strings Defined

Character String	Category Title	Escalation	Proj Mngmt	ED&I	Contingency	Funds Expended Amount	Date	Charac Dimen Value	Unit
	Default Values	0.0000	0.0000	0.0000	0.0000			0	
C3B08	UTIL BLDG DOORS & WINDOWS	0.1148	0.0000	0.0000	0.2000				
C3B09	UTIL BLDG FINISHES	0.1148	0.0000	0.0000	0.2000				
C3B10	UTIL BLDG SPECIALTIES	0.1148	0.0000	0.0000	0.2000				
C3B15	UTIL BLDG MECHANICAL	0.1148	0.0000	0.0000	0.2000				
C3B16	UTIL BLDG ELECT. SYSTEMS	0.1148	0.0000	0.0000	0.2000				
C3C05	MECH. PENTHOUSE MECHANICALS	0.1148	0.0000	0.0000	0.2000				
C3C08	MECH. PENTHOUSE DOORS & WINDOWS	0.1148	0.0000	0.0000	0.2000				
C5B16	ELECTRICAL UTILITIES	0.1171	0.0000	0.0000	0.2000				
C5D15	NATURAL GAS PIPING OUTSIDE OF BUILDING	0.1171	0.0000	0.0000	0.2000				
C5G15	WATER PIPING OUTSIDE OF BUILDING	0.1171	0.0000	0.0000	0.2000				
C5E15	FIRE PROTECTION OUTSIDE OF BUILDING	0.1171	0.0000	0.0000	0.2000				
C5F15	RAD/ACID WASTE LINE OUTSIDE OF BLDG.	0.1171	0.0000	0.0000	0.2000				
E2C11	FACILITY MONITORING CONTROL SYS EQUIP	0.1450	0.0000	0.0000	0.2500				
E2C15	FACILITY MONITORING CONTROL SYS MECH	0.1450	0.0000	0.0000	0.2500				
E2C16	FACILITY MONITORING CONTROL SYS ELEC	0.1450	0.0000	0.0000	0.2500				
E2L11	AUTO MATERIAL HANDLING	0.1450	0.0000	0.0000	0.2000				
E2L12	MATERIAL HANDLING STAGING/UNPACKING	0.1450	0.0000	0.0000	0.2000				
E2L13	MATERIAL HANDLING MATERIALS STORAGE VAULT	0.1450	0.0000	0.0000	0.2000				
E2L14	MATERIAL HANDLING AGING EQUIPMENT	0.1450	0.0000	0.0000	0.2000				
E2L15	MATERIAL HANDLING LOADING DOCKS	0.1450	0.0000	0.0000	0.2000				
E20	SECURITY SYSTEMS EQUIPMENT	0.1450	0.0000	0.0000	0.2000				

ICF Kaiser Engineers
Los Alamos, NM

PROJECT FACTORS FILE LISTING

PF File Name: 056VMSF.PRF 9:57:16 6/30/95

Work Breakdown Structure 1

5 Character Strings

59 Strings Defined

Character String	Category Title	Escalation	Proj Mgmt	ED&I	Contingency	Funds Expended Amount	Date	Charac Dimen Value	Unit
	Default Values	0.0000	0.0000	0.0000	0.0000			0	
E2S11	SPEC FAC EQUIPMENT STRG ARRAY HARDWARE	0.1450	0.0000	0.0000	0.2500				
E2S12	SPEC FAC EQUIPMENT STRG ARRAY COOLING	0.1450	0.0000	0.0000	0.2500				
E2S13	SPEC FAC EQUIPMENT STRG ARRAY SHIPPING	0.1450	0.0000	0.0000	0.2000				
E2S14	SPEC FAC EQUIPMENT STRG ALARM SYSTEMS	0.1450	0.0000	0.0000	0.2500				
E2S15	SPEC FAC EQUIPMENT STRG MECH SYSTEMS	0.1450	0.0000	0.0000	0.2500				

ICF Kaiser Engineers
Los Alamos, NM

PROJECT FACTORS FILE LISTING

PF File Name: 056MNSF.PRF 8:56:51 6/21/95

Markup Breakdown

2 Digit Markup Tags

6 Tags Defined

Tag	Contractor	Labor	Mat	Equip	Sub Contract	Overhead	Profit	GRTax	Bond	Funds Expended Amount	Date

	Default Markups	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
01	NO MARKUP	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
02	SUBCONTRACTOR	0.0000	0.0000	0.0000	0.0000	0.1000	0.1300	0.0606	0.0125		
03	JCI	0.4090	0.2080	0.0000	0.2080	0.2820	0.0000	0.0000	0.0000		
04	DIRECT QUOTE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0606	0.0125		
05	PRIME CONTRACTOR	0.0000	0.0000	0.0000	0.0000	0.0500	0.0300	0.0606	0.0125		
06	GFE INSTALLED BY CONTRACTOR	0.0000	0.0000	0.0000	0.0000	0.0500	0.0300	0.0606	0.0125		

PF File: 056MNSF.PRF
TD File: 056MNSF.TAK

ICF Kaiser Engineers
Los Alamos, NM
GENERAL COST SUMMARY

Sorted by WBS 1 Summarized on 5 Characters
Secondary Subtotals on 0 Characters

Job Number: 41552-056

Change Order Number:

9:59:45

6/30/95

Project Title: MNSF CONVENTIONAL

Checked By:

Estimator: ICF KAISER

Abbrev:

Location: TA-55 PF41

Character String	Brkdn Category Title	Escd	PN	ED&I	Cont	Category Direct Cost	Category Contct Markup	Escd	PN	Project Markups Subtotal	ED&I	Cont	Category Total Cost
A1F01	PROJECT MANAGMENT	0.0000	*****	0.0000	0.2000	1.	0.	0	1686110	1686111.	0	337222	2023333.
A2F01	CONSTRUCTION MANAGME NT	0.0000	*****	0.0000	0.2000	1.	0.	0	1116044	1116045.	0	223209	1339254.
B1F01	ED&I FAC. TITLE I	0.0000	0.0000	*****	0.2000	1.	0.	0	0	1769458	353892	2123351.	
B1S01	ED&I SFE TITLE I	0.0000	0.0000	*****	0.2500	1.	0.	0	0	332070	83018	415089.	
B2F01	ED&I FAC. TITLE II	0.0000	0.0000	*****	0.2000	1.	0.	0	0	1727675	345535	2073211.	
B2S01	ED&I SFE TITLE II	0.0000	0.0000	*****	0.2500	1.	0.	0	0	384394	96099	480494.	
B3F01	ED&I FAC TITLE III	0.0000	0.0000	*****	0.2000	1.	0.	0	0	1662133	332427	1994561.	
B3S01	ED&I SFE TITLE III	0.0000	0.0000	*****	0.2500	1.	0.	0	0	130949	32738	163688.	
B4N01	LABORATORY PROCUREME NT BURDEN	0.0000	0.0000	*****	0.0000	1.	0.	0	0	923892	0	923893.	
C0011	FIELD OVERHEAD(SEE L OTUS WORKSHEET)	0.1310	0.0000	0.0000	0.1500	959677.	154901.	146010	0	1260588.	0	189088	1449676.
C1C02	CONVENT. DEMOLITION	0.1310	0.0000	0.0000	0.1800	91631.	20951.	14748	0	127330.	0	22919	150249.
C1C03	CONCRETE DEMOLITION	0.1310	0.0000	0.0000	0.1800	290715.	47635.	44324	0	382674.	0	68881	451555.
C1C05	STRUCT. DEMOLITION	0.1310	0.0000	0.0000	0.1800	57349.	8754.	8659	0	74762.	0	13457	88219.
C1C15	MECH. DEMOLITION	0.1310	0.0000	0.0000	0.1800	42784.	14326.	7481	0	64591.	0	11626	76217.
C1C16	ELECT. DEMOLITION	0.1310	0.0000	0.0000	0.1800	73993.	24776.	12939	0	111708.	0	20107	131815.
C1S	SPECIAL SECURITY CON STRUCTION	0.1310	0.0000	0.0000	0.2500	421502.	141137.	73706	0	636345.	0	159086	795431.
C2	SITWORK	0.1171	0.0000	0.0000	0.2000	20000.	10973.	3627	0	34600.	0	6920	41520.

Character String	Brkdw Category Title	Escal	PM	ED&I	Cont	Category Direct Cost	Category Contct Markup	Escal	PM	Project Markups Subtotal	ED&I	Cont	Category Total Cost
C3A02	BASEMENT EXCAVATION	0.1148	0.0000	0.0000	0.2000								
						424031.	141984.	64979	0	630994.	0	126199	757193.
C3A03	STRUCTURAL CONCRETE	0.1148	0.0000	0.0000	0.2000								
						864539.	289407.	132473	0	1286419.	0	257284	1543703.
C3A04	STRUCTURAL MASONRY	0.1148	0.0000	0.0000	0.2000								
						17485.	2822.	2331	0	22638.	0	4528	27166.
C3A05	METALS	0.1148	0.0000	0.0000	0.2000								
						299494.	100283.	45894	0	445671.	0	89134	534805.
C3A06	WOODS AND PLASTICS	0.1148	0.0000	0.0000	0.2000								
						1459.	488.	224	0	2171.	0	434	2605.
C3A07	ROOFING AND SIDING	0.1148	0.0000	0.0000	0.2000								
						47717.	15978.	7312	0	71007.	0	14201	85208.
C3A08	DOORS AND WINDOWS	0.1148	0.0000	0.0000	0.2000								
						194150.	65010.	29752	0	288912.	0	57782	346694.
C3A09	FINISHES	0.1148	0.0000	0.0000	0.2000								
						635212.	212598.	97329	0	945139.	0	189028	1134167.
C3A10	SPECIALITIES	0.1148	0.0000	0.0000	0.2000								
						15641.	2525.	2085	0	20251.	0	4050	24301.
C3A15	MECHANICAL SYSTEMS	0.1422	0.0000	0.0000	0.2000								
						1782440.	584615.	333751	0	2680806.	0	536161	3216967.
C3A16	ELECTRICAL SYSTEMS	0.1365	0.0000	0.0000	0.2000								
						608985.	207911.	111506	0	928402.	0	185680	1114082.
C3B02	UTILITY BLDG SITE WO RK & GRADING	0.1148	0.0000	0.0000	0.1800								
						4574.	1532.	701	0	6807.	0	1225	8032.
C3B03	UTIL BLDG STRUCTURAL CONCRETE	0.1148	0.0000	0.0000	0.2000								
						8740.	1411.	1165	0	11316.	0	2263	13579.
C3B04	UTIL BLDG STRUCTURAL MASONRY	0.1148	0.0000	0.0000	0.2000								
						11827.	1909.	1577	0	15313.	0	3063	18376.
C3B05	UTIL BLDG METALS	0.1148	0.0000	0.0000	0.2000								
						4935.	1653.	756	0	7344.	0	1469	8813.
C3B08	UTIL BLDG DOORS & WINDOWS	0.1148	0.0000	0.0000	0.2000								
						1655.	267.	221	0	2143.	0	429	2572.
C3B09	UTIL BLDG FINISHES	0.1148	0.0000	0.0000	0.2000								
						1248.	417.	191	0	1856.	0	371	2227.
C3B16	UTIL BLDG ELECT. SYS TEMS	0.1148	0.0000	0.0000	0.2000								
						17246.	5775.	2643	0	25664.	0	5133	30797.
C3C05	MECH. PENTHOUSE META LS	0.1148	0.0000	0.0000	0.2000								
						33783.	11312.	5177	0	50272.	0	10054	60326.
C3C08	MECH. PENTHOUSE DOOR S & WINDOWS	0.1148	0.0000	0.0000	0.2000								
						893.	299.	137	0	1329.	0	266	1595.
C5D15	NATURAL GAS PIPING OUTSIDE OF BUILDING	0.1171	0.0000	0.0000	0.2000								
						11477.	3844.	1794	0	17115.	0	3423	20538.
C5E15	FIRE PROTECTION OUTS IDE OF BUILDING	0.1171	0.0000	0.0000	0.2000								
						41435.	13874.	6477	0	61786.	0	12357	74143.
C5F15	RAD/ACID WASTE LINE OUTSIDE OF BLDG.	0.1171	0.0000	0.0000	0.2000								
						5166.	1730.	808	0	7704.	0	1541	9245.
C5G15	WATER PIPING OUTSIDE OF BUILDING	0.1171	0.0000	0.0000	0.2000								
						4427.	1482.	692	0	6601.	0	1320	7921.

Character String	Brkdm Category Title	Rates				Category Direct Cost	Category Contract Markup	Escal	PM	Project Markups			Category Total Cost
		Escal	PM	ED&I	Cont					Subtotal	ED&I	Cont	
E20	SECURITY SYSTEMS EQUIPMENT	0.1450	0.0000	0.0000	0.2000	816025.	90143.	131394	0	1037562.	0	207512	1245074.
E2C11	FACILITY MONITORING CONTROL SYS EQUIP	0.1450	0.0000	0.0000	0.2500	972758.	325721.	188279	0	1486758.	0	371690	1858448.
E2C15	FACILITY MONITORING CONTROL SYS MECH	0.1450	0.0000	0.0000	0.2500	73678.	24671.	14261	0	112610.	0	28153	140763.
E2C16	FACILITY MONITORING CONTROL SYS ELEC	0.1450	0.0000	0.0000	0.2500	171436.	57404.	33182	0	262022.	0	65506	327528.
E2L13	MATERIAL HANDLING HD A/STORAGE VAULT	0.1450	0.0000	0.0000	0.2000	4600000.	339745.	716263	0	5656008.	0	1131202	6787210.
E2S11	SPEC FAC EQUIPMENT STRG ARRAY HARDWARE	0.1450	0.0000	0.0000	0.2500	5556490.	1860550.	1075471	0	8492511.	0	2123128	10615639.
E2S12	SPEC FAC EQUIPMENT STRG ARRAY COOLING	0.1450	0.0000	0.0000	0.2500	290533.	23777.	45575	0	359885.	0	89971	449856.
E2S14	SPEC FAC EQUIPMENT STRG ALARM SYSTEMS	0.1450	0.0000	0.0000	0.2500	15000.	1108.	2336	0	18444.	0	4611	23055.
E2S15	SPEC FAC EQUIPMENT STRG MECH SYSTEMS	0.1450	0.0000	0.0000	0.2500	50353.	3719.	7840	0	61912.	0	15478	77390.
						*****	*****	*****	*****	*****	*****	*****	*****
Project Total Cost						19522492.	4819417.	3376070	2802154	6930571	7840870		45291574.

PF File: 056MNSF.PRF
 TO File: 056MNSF.TAK

ICF Kaiser Engineers
 Los Alamos, NM

TAKE-OFF EXTENSION

Sort: NBS1

Subtotal: 5 characters

Job Number: 41552-056

Change Order Number:

9:59:45

6/30/95

Project Title: MNSF CONVENTIONAL

Checked By:

Estimator: ICF KAISER

Abbrev:

Location: 1A-55 PF41

(Items with '0' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Bkdn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
		Trd b ID F	c Markup t Tag			Factor	Rate	Ext'd Cost		Rate	Ext'd Cost		
1389	A1F01	0	0	PROJECT MANAGEMENT	1.0 EA	1.000		1.00 1.	0.00 0.	0.00 0.		0. 0.	1.
	A1F01			Category Direct Cost				1.	0.	0.		0.	1.
1390	A2F01	0	0	CONSTRUCTION MANAGEMENT	1.0 EA	1.000		1.00 1.	0.00 0.	0.00 0.		0. 0.	1.
	A2F01			Category Direct Cost				1.	0.	0.		0.	1.
1391	B1F01	0	0	ED&I FAC. TITLE I	1.0 EA	1.000		1.00 1.	0.00 0.	0.00 0.		0. 0.	1.
	B1F01			Category Direct Cost				1.	0.	0.		0.	1.
1392	B1S01	0	0	ED&I SPE. TITLE I	1.0 EA	1.000		1.00 1.	0.00 0.	0.00 0.		0. 0.	1.
	B1S01			Category Direct Cost				1.	0.	0.		0.	1.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdm Structure 1	J b ID	A c F	Contract Markup Tag	Take-Off Item Description	Quantity Unit	Factor	Labor Rate Ext'd Cost	Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
1393	B2F01	0	0	ED&I FAC. TITLE II	1.0 EA	1.000	1.00 1.	0.00 0.	0.00 0.	0.00 0.	0.00 0.	1.
	B2F01				Category Direct Cost		1.	0.	0.	0.	0.	1.
1394	B2S01	0	0	ED&I SFE. TITLE II	1.0 EA	1.000	1.00 1.	0.00 0.	0.00 0.	0.00 0.	0.00 0.	1.
	B2S01				Category Direct Cost		1.	0.	0.	0.	0.	1.
1395	B3F01	0	0	ED&I FAC. TITLE III	1.0 EA	1.000	1.00 1.	0.00 0.	0.00 0.	0.00 0.	0.00 0.	1.
	B3F01				Category Direct Cost		1.	0.	0.	0.	0.	1.
1396	B3S01	0	0	ED&I SFE. TITLE III	1.0 EA	1.000	1.00 1.	0.00 0.	0.00 0.	0.00 0.	0.00 0.	1.
	B3S01				Category Direct Cost		1.	0.	0.	0.	0.	1.
1397	B4N01	0	0	LABORATORY PROCUREMENT WT BURDEN	1.0 EA	1.000	1.00 1.	0.00 0.	0.00 0.	0.00 0.	0.00 0.	1.
	B4N01				Category Direct Cost		1.	0.	0.	0.	0.	1.
1398	C0011	0	5	FIELD OVERHEAD	1.0 EA	1.000	646385.00 646385.	105010.00 105010.	75307.50 75308.	75307.50 75308.	132975.	959677.

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdw Structure 1	J A	O c Cnctc		Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Cnctc Cost	Item Direct Cost
		Tnd b	c Markup	Factor			Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost			
		ID F	t Tag												
COD11						Category Direct Cost		646385.	105010.	79308.	132975.	959677.			
155	C1C02	SHELVING SYSTEM				REMOVAL									
161	C1C02	45	0	5	ELECTRICAL TRACK	240.0	0.080	17.29	0.00	1.48					
					LF			332.	0.	355.	0.	687.			
162	C1C02	45	0	5	GUIDE RAIL (TOP)	240.0	0.080	17.29	0.00	1.48					
					LF			332.	0.	355.	0.	687.			
163	C1C02	45	0	5	CROSS MEMBERS	144.0	1.000	17.29	0.00	8.90					
					HRS			2490.	0.	1282.	0.	3771.			
164	C1C02	45	0	5	FLOOR RAIL 2 BOLT	240.0	0.060	17.29	0.00	0.00					
					24" CENTERS	LF		249.	0.	0.	0.	249.			
165	C1C02	45	0	5	STORAGE BOXES	1376.0	1.000	17.29	0.00	4.45					
					2X4	HRS		23791.	0.	6123.	0.	29914.			
166	C1C02	45	0	5	STANDS BB LEGS	352.0	1.000	17.29	0.00	4.45					
					2 BOLTS	HRS		6086.	0.	1566.	0.	7652.			
167	C1C02	45	0	5	MINI LOAD MACHINES	32.0	1.000	17.29	0.00	0.00					
					HR			553.	0.	0.	0.	553.			
168	C1C02	49	0	5	TRUCK AND DRIVER	72.0	1.000	19.20	0.00	71.00					
					SALVAGE	HR		1382.	0.	5112.	0.	6494.			
169	C1C02	49	0	5	TRUCK AND DRIVER	40.0	1.000	19.20	0.00	71.00					
					DUMP	HR		768.	0.	2840.	0.	3608.			
170	C1C02	STORAGE BOX DEMO													
171	C1C02	45	0	5	REMOVE PLASTIC	144.0	1.000	17.29	0.00	0.00					
					STORAGE BOXES AND SUPPORTS	HRS		2490.	0.	0.	0.	2490.			

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Cntret Cost	Item Direct Cost
		Trd b	c Markup			Factor	Rate	Ext'd Cost				
1481	C1C02			INSTALL EXT. BUTTRESSES DRILL 5'-0" DIA X 36 FT DEEP HOLES								
1482	C1C02	45	0 2	MAKE CONNECTIONS/INS	5.0	24.000		17.29	300.00	18.00		
				TALL DOMELS INSIDE T	EA			2075.	1500.	90.	0.	3665.
				O O/S COLUMN LINES								
1483	C1C02	85	0 2	EXCAVATION, CONCRETE	180.0	0.533		32.28	95.00	19.00		
				REINFORCING 5'-0"	VLF			3097.	17100.	3420.	0.	23617.
				CASSOM X 36 DEEP								
1484	C1C02	99	0 2	INSPECTION	5.0	7.000		24.88	0.00	0.00		
					EA			871.	0.	0.	0.	871.
1485	C1C02		0 2	MOBILIZATION	1.0			0.00	2100.00	0.00		
				(BACKHOE & RIG)	EA			0.	2100.	0.	0.	2100.
1486	C1C02	53	0 2	LOAD SPOILS	150.0	0.020		23.44	0.00	2.00		
					CY			70.	0.	300.	0.	370.
1487	C1C02	49	0 2	HAUL SPOILS & DUMP	12.0	4.000		19.20	16.00	70.00		
				FEES	RT			922.	192.	840.	0.	1954.
1488	C1C02	73	0 2	MISC. FORMWORK @ TOP	350.0	0.250		25.69	2.00	0.00		
				5'-0"	SF			2248.	700.	0.	0.	2948.
C1C02 Category Direct Cost								47756.	21592.	22284.	0.	91631.
240	C1C03	45	0 5	REMOVE WALLS AT	200.0	0.429		17.29	0.00	1.38		
				ENTRANCE	SF			1483.	0.	276.	0.	1759.
242	C1C03			CUTOUT DEMOLITION								
244	C1C03			SAW CUTTING								
245	C1C03			CONCRETE DEMO								

[Items with '#' have been adjusted by Job factor and/or Equip Factor]

Item	Work Bkdw Structure 1	J Trd ID	A o F	c c t	Contract Markup t	Take-Off Item Tag Description	Quantity Unit	- - - L a b o r - - -			Material		Const Equip		Sub Contract Cost	Item Direct Cost
								Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
247	C1C03	73	0	5		SAW CUT DOOR JAMBS AT TRUCK GARAGE	48.0 LF	1.280	25.69	1578.	5.60	269.	8.32	399.	0.	2247.
253	C1C03	45	0	5		SAW CUT SLAB AT STAIRS (6" THICK)	30.0 LF	0.174	17.29	90.	2.16	65.	3.00	90.	0.	245.
254	C1C03	45	0	5		SAW CUT DOOR AT MEZZANINE STAIRS (1" THICK)	20.0 LF	2.670	17.29	923.	5.60	112.	8.32	166.	0.	1202.
255	C1C03	45	0	5		REMOVE CONC SLAB AT STAIRS (6" THICK)	107.0 SF	2.000	17.29	3700.	0.00	0.	1.52	163.	0.	3863.
256	C1C03					BASEMENT DEMOLITION										
257	C1C03	45	0	5		MIDDLE BASEMENT WALL (1'-0" THK)	2400.0 SF	0.500	17.29	20748.	0.00	0.	1.80	4320.	0.	25068.
258	C1C03	45	0	5		STAIRS & SLAB @ ENTRANCE	140.0 SF	0.150	17.29	363.	0.00	0.	2.72	381.	0.	744.
266	C1C03	45	0	5		DEMO STAIRWELL DECKS & RISERS	656.0 CF	1.600	17.29	18148.	0.00	0.	2.96	1942.	0.	20089.
267	C1C03	45	0	5		DEMO STAIRWELL WALLS	860.0 SF	0.429	17.29	6379.	0.00	0.	1.38	1187.	0.	7566.
268	C1C03	45	0	5		REMOVE FLOOR FOR LOADING DOCK	553.0 SF	0.180	17.29	1721.	0.00	0.	3.53	1952.	0.	3673.
269	C1C03	45	0	5		REMOVE HOUSEKEEPING PADS	247.0 SF	0.150	17.29	641.	0.00	0.	2.72	672.	0.	1312.
295	C1C03					EXCAVATION										
298	C1C03	45	0	5		EXCAVATION AT ENTRY STAIRS	21.0 CY	1.300	17.29	472.	0.00	0.	22.13	465.	0.	937.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdwn Structure 1	J Trd 10	A b F	c c t	Entrect Markup Tag	Take-Off Item Description	Quantity Unit	Labor		Material Rate Ext'd Cost	Const Equip		Sub Entrect Cost	Item Direct Cost
								Factor	Rate Ext'd Cost		Rate Ext'd Cost	Rate Ext'd Cost		
299	C1C03	45	0	5		EXCAVATE AT NEW STAIRS	26.0 CY	2.000	17.29 899.	0.00	0.00	0.	0.	899.
1250	C1C03	45	0	2		CUT HOLE IN WALL - 12'x30'	360.0 SF	0.500	16.75 3015.	0.00	3.00 1080.	0.	0.	4095.
1399	C1C03				BASEMENT DEMO (CONT)									
1400	C1C03	45	0	5		SAWCUT BASEMENT WALLS	120.0 LF	2.200	17.29 4565.	5.76 691.	9.12 1094.	0.	0.	6350.
1401	C1C03	45	0	5		SAWCUT MEZZANINE DOOR & WALL	20.0 LF	2.200	17.29 761.	5.76 115.	9.12 182.	0.	0.	1058.
1402	C1C03	45	0	5		DEMO WALL & OPS AREA	1200.0 SF	0.500	17.29 10374.	0.00	1.80 2160.	0.	0.	12534.
1403	C1C03	45	0	5		CONCRETE CURB	48.0 SF	0.200	17.29 166.	0.00	1.00 48.	0.	0.	214.
1404	C1C03	45	0	5		CONCRETE WING WALLS	480.0 SF	0.500	17.29 4150.	0.00	1.80 864.	0.	0.	5014.
1405	C1C03	45	0	5		MEZZANINE DECK (1'-0" TK)	1200.0 SF	2.000	17.29 41496.	0.00	1.80 2160.	0.	0.	43656.
1406	C1C03				DEMO FIRST FLOOR									
1407	C1C03	45	0	5		1ST FLOOR SLAB	4800.0 SF	0.150	17.29 12449.	0.00	0.52 2496.	0.	0.	14945.
1408	C1C03	73	0	5		SHORING/SCAFFOLD	48.0 CSF	0.640	25.69 789.	20.00 960.	0.00	0.	0.	1749.
1409	C1C03	45	0	5		SAWCUT 1ST FLR DEMO SLAB	185.0 LF	1.700	17.29 5438.	3.84 710.	0.00	0.	0.	6148.
1410	C1C03	45	0	5		SAWCUT 1ST FLR FOR NEW WALLS	450.0 LF	0.200	17.29 1556.	2.16 972.	3.00 1350.	0.	0.	3878.

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Item	Work Brkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	Labor		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd ID	a b F			Factor	Rate Ext'd Cost				
1495	C1C03	45	0 5	REMOVE TOPPING (3")	5500.0 SF	0.200	17.29 19019.	0.00 0.	0.32 1760.	0.	20779.
C1C03 Category Direct Cost							240354.	9689.	40672.	0.	290715.
120	C1C05			LAVATORY DEMOLITION							
121	C1C05			DOOR DEMOLITION							
123	C1C05			CARPET DEMOLITION							
124	C1C05	73	0 5	REMOVE OVERHEAD DOOR	1.0 EA	6.000	25.69 154.	0.00 0.	6.00 6.	0.	160.
125	C1C05			CEILING DEMOLITION							
126	C1C05	45	0 5	GYPSUM BOARD CEILING	3852.0 SF	0.060	17.29 3996.	0.00 0.	0.00 0.	0.	3996.
127	C1C05	45	0 5	ACOUSTIC CEILING	2040.0 SF	0.050	17.29 1764.	0.00 0.	0.00 0.	0.	1764.
128	C1C05	45	0 5	DOORS 3X7	56.0 EA	0.650	17.29 629.	0.00 0.	0.00 0.	0.	629.
129	C1C05	45	0 5	DOORS JAMS	56.0 EA	1.500	17.29 1452.	0.00 0.	0.00 0.	0.	1452.
130	C1C05	45	0 5	DOORS 5X10	5.0 EA	2.000	17.29 173.	0.00 0.	0.00 0.	0.	173.
131	C1C05	45	0 5	CARPET FIRST FLOOR	2200.0 SF	0.020	17.29 761.	0.00 0.	0.00 0.	0.	761.
134	C1C05	45	0 5	COUNTER TOP	12.0 LF	1.000	17.29 207.	0.00 0.	0.00 0.	0.	207.

(Items with '#' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Bkdw Structure 1	J Trd ID	A b F	c Markup Tag	Take-Off Item Description	Quantity Unit	- - - - L a b o r - - - -			Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
							Factor	Rate	Ext'd Cost		Rate	Ext'd Cost		
135	C1C05	45	0	5	LOCKERS	12.0 LF	2.000	17.29	415.	0.00	0.00	0.	0.	415.
137	C1C05	69	0	5	LAVATORY	4.0 EA	1.300	33.56	175.	0.00	0.00	0.	0.	175.
138	C1C05	69	0	5	URINAL WALL MOUNT	1.0 EA	1.500	33.56	50.	0.00	0.00	0.	0.	50.
139	C1C05	69	0	5	WATER CLOSET	3.0 EA	1.500	33.56	151.	0.00	0.00	0.	0.	151.
142	C1C05				WALL DEMOLITION									
143	C1C05	45	0	5	GYPSUM BOARD WALLS	12715.0 SF	0.150	17.29	32976.	0.00	0.00	0.	0.	32976.
144	C1C05	45	0	5	HOLLOW METAL WALLS (PARTITIONS)	4.0 EA	1.300	17.29	90.	0.00	0.00	0.	0.	90.
149	C1C05	45	0	5	HAND RAILS	30.0 LF	0.050	17.29	26.	0.00	0.00	0.	0.	26.
182	C1C05				ROOFING DEMOLITION AT PENTHOUSE									
183	C1C05		0	0	ROOF DRAIN 6"	285.0 LF	0.400	33.56	3826.	0.00	0.00	0.	0.	3826.
184	C1C05	85	0	5	REMOVE STEEL LOUVERS & EQUIPMENT MOUNTS	104.0 LF	0.200	32.28	671.	0.00	0.30	31.	0.	703.
185	C1C05	45	0	5	REMOVE DEBRIS	1.0 LOT	16.000	17.29	277.	0.00	0.00	0.	0.	277.
186	C1C05	45	0	5	REMOVE ROOFING & GRAVEL	1380.0 SF	0.060	17.29	1432.	0.00	0.00	0.	0.	1432.
187	C1C05	45	0	5	REMOVE INSULATION	1380.0 SF	0.013	17.29	310.	0.00	0.00	0.	0.	310.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
		Trd b	c Markup			Factor	Rate	Ext'd Cost		Rate	Ext'd Cost		
188	C1C05	49	0 5	HAUL DEBRIS	5.0 TONS	0.800	19.20	77.	16.00	3.00	15.	0.	172.
899	C1C05			HAULING									
903	C1C05		0 2	TRUCK & DRIVER HAULING & DUMPING	20.0 TONS	0.800	19.20	307.	15.00	2.77	55.	0.	663.
1496	C1C05	45	0 5	ROOFING DEMOLITION (INCL. GRAVEL)	5500.0 SF	0.060	17.29	5706.	0.00	0.00	0.	0.	5706.
1497	C1C05	45	0 5	REMOVE INSULATION BOARD	5500.0 SF	0.013	17.29	1236.	0.00	0.00	0.	0.	1236.
C1C05 Category Direct Cost							56861.		380.	108.	0.	57349.	
98	C1C15			HVAC DEMOLITION (FIRST FLOOR)									
99	C1C15	45	0 2	12"X 12" DUCT	295.0 LF	0.080	17.29	408.	0.00	0.00	0.	0.	408.
100	C1C15	45	0 2	24"X 12" DUCT	1080.0 LF	0.150	17.29	2801.	0.00	0.00	0.	0.	2801.
101	C1C15	45	0 2	24"X 24" DUCT	1030.0 LF	0.150	17.29	2671.	0.00	0.00	0.	0.	2671.
102	C1C15	45	0 2	30"X 36" DUCT	20.0 LF	0.200	17.29	69.	0.00	0.00	0.	0.	69.
103	C1C15	45	0 2	36"X 12" DUCT	28.0 LF	0.150	17.29	73.	0.00	0.00	0.	0.	73.
104	C1C15	45	0 2	36"X 36" DUCT	12.0 LF	0.200	17.29	41.	0.00	0.00	0.	0.	41.

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Item	Work Bkdn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
		Trd 10 F	o c Markup 1 Tag			Factor	Rate	Ext'd Cost		Rate	Ext'd Cost		
105	C1C15	45	0 2	12" ROUND STAINLESS STEEL	100.0 LF	0.100	17.29	173.	0.00	0.00	0.	0.	173.
111	C1C15			HVAC DEMOLITION BASEMENT & MEZZANINE									
112	C1C15	45	0 2	16" X 12" DUCT	202.0 LF	0.120	17.29	419.	0.00	0.00	0.	0.	419.
113	C1C15	45	0 2	36" X 36" DUCT	50.0 LF	0.200	17.29	173.	0.00	0.00	0.	0.	173.
114	C1C15	45	0 2	24" X 24" DUCT	290.0 LF	0.150	17.29	752.	0.00	0.00	0.	0.	752.
115	C1C15	45	0 2	12" X 12" DUCT	280.0 LF	0.120	17.29	581.	0.00	0.00	0.	0.	581.
116	C1C15	45	0 2	36" X 24" DUCT	210.0 LF	0.200	17.29	726.	0.00	0.00	0.	0.	726.
117	C1C15	45	0 2	36" X 12" DUCT	300.0 LF	0.150	17.29	778.	0.00	0.00	0.	0.	778.
118	C1C15	45	0 2	16" X 18" DUCT	30.0 LF	0.150	17.29	78.	0.00	0.00	0.	0.	78.
119	C1C15	45	0 2	12" ROUND STAINLESS STEEL	200.0 LF	0.100	17.29	346.	0.00	0.00	0.	0.	346.
173	C1C15			PLUMBING DEMOLITION									
175	C1C15	45	0 2	1 1/2" COPPER SUPPLY AND RETURN	1200.0 LF	0.050	17.29	1037.	0.00	0.00	0.	0.	1037.
176	C1C15	45	0 2	1 1/2" PIPE	3920.0 LF	0.050	17.29	3389.	0.00	0.00	0.	0.	3389.
177	C1C15	45	0 2	2" PIPE	100.0 LF	0.050	17.29	86.	0.00	0.00	0.	0.	86.

(Items with '#' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Brkdm Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
		Trd b ID F	c Markup t Tag			Factor	Rate	Ext'd Cost		Rate	Ext'd Cost		
178	C1C15	45	0 2 2	1/2" PIPE	685.0 LF	0.070	17.29	829.	0.00	0.00	0.	0.	829.
179	C1C15	45	0 2 3	" PIPE	545.0 LF	0.070	17.29	660.	0.00	0.00	0.	0.	660.
180	C1C15	45	0 2 1	" PIPE	455.0 LF	0.050	17.29	393.	0.00	0.00	0.	0.	393.
189	C1C15	VACUUM / AIR LINES DEMOLITION											
194	C1C15	45	0 2 1/2"	COPPER LINES	2145.0 LF	0.050	17.29	1854.	0.00	0.00	0.	0.	1854.
195	C1C15	45	0 2 1"	COPPER LINES	100.0 LF	0.050	17.29	86.	0.00	0.00	0.	0.	86.
196	C1C15	45	0 2 1 1/2"	COPPER LINE	1185.0 LF	0.050	17.29	1024.	0.00	0.00	0.	0.	1024.
197	C1C15	45	0 2 2"	COPPER LINE	260.0 LF	0.050	17.29	225.	0.00	0.00	0.	0.	225.
198	C1C15	45	0 2 3"	COPPER LINE	680.0 LF	0.070	17.29	823.	0.00	0.00	0.	0.	823.
199	C1C15	45	0 2 3/4"	COPPER LINE	40.0 LF	0.050	17.29	35.	0.00	0.00	0.	0.	35.
212	C1C15	MECHANICAL ROOM DEMO											
216	C1C15	69	0 2	REMOVE AIR HANDLERS	6.3 TONS	5.400	33.56	1133.	0.00	0.00	0.	0.	1133.
217	C1C15	69	0 2	REMOVE SMALL NEPA'S	6.5 TONS	5.400	33.56	1178.	0.00	0.00	0.	0.	1178.
218	C1C15	69	0 2	REMOVE LARGE NEPA'S	18.0 TONS	5.400	33.56	3262.	0.00	0.00	0.	0.	3262.

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdw Structure 1	Job ID F	A c t	Contract Markup Tag	Take-Off Item Description	Quantity Unit	- - - - Labor - - - -			Material		Const Equip		Sub Contract Cost	Item Direct Cost
							Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
219	C1C15	69	0	2 2	BLOWERS	3.0 TONS	5.400	33.56	544.	0.00	0.	0.00	0.	0.	544.
220	C1C15	69	0	2 4	SMALL BLOWERS	1.0 TONS	5.400	33.56	181.	0.00	0.	0.00	0.	0.	181.
221	C1C15	69	0	2 1	COMPRESSOR	1.0 TONS	5.400	33.56	181.	0.00	0.	0.00	0.	0.	181.
225	C1C15	45	0	2 14"	X 12" DUCT	233.0 LF	0.150	17.29	604.	0.00	0.	0.00	0.	0.	604.
226	C1C15	45	0	2 12"	X 12" DUCT	75.0 LF	0.150	17.29	195.	0.00	0.	0.00	0.	0.	195.
227	C1C15	45	0	2 18"	X 18" DUCT	280.0 LF	0.150	17.29	726.	0.00	0.	0.00	0.	0.	726.
228	C1C15	45	0	2 24"	X 24" DUCT	149.0 LF	0.150	17.29	386.	0.00	0.	0.00	0.	0.	386.
229	C1C15	45	0	2 30"	X 24" DUCT	156.0 LF	0.180	17.29	486.	0.00	0.	0.00	0.	0.	486.
230	C1C15	45	0	2 48"	X 36" DUCT	30.0 LF	0.190	17.29	99.	0.00	0.	0.00	0.	0.	99.
231	C1C15	45	0	2 60"	X 48" DUCT	42.0 LF	0.200	17.29	145.	0.00	0.	0.00	0.	0.	145.
232	C1C15	45	0	2 72"	X 48" DUCT	38.0 LF	0.200	17.29	131.	0.00	0.	0.00	0.	0.	131.
233	C1C15	45	0	2 12"	STAINLESS STEEL DUCT	11.0 LF	0.250	17.29	48.	0.00	0.	0.00	0.	0.	48.
234	C1C15	49	0	2	TRUCK AND DRIVER SALVAGE	24.0 HR	1.000	19.20	461.	0.00	0.	71.00	1704.	0.	2165.

[Items with '*' have been adjusted by Job factor and/or Equip factor]

Item	Work Brkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd ID	o c b F Markup t Tag			Factor	Rate Ext'd Cost				
235	C1C15	49	0 2	TRUCK AND DRIVER DUMP	16.0 HR	1.000	19.20 307.	0.00 0.	71.00 1136.	0.	1443.
384	C1C15			BOILER ROOM DEMO							
390	C1C15		0 2	24" DUCT	40.0 LF	0.200	17.29 138.	0.00 0.	0.00 0.	0.	138.
391	C1C15		0 2	EQUIPMENT	6.0 TORS	19.000	33.56 3826.	0.00 0.	0.00 0.	0.	3826.
392	C1C15		0 2	FORK LIFT & OPERATOR	18.0 HR	1.000	14.88 268.	0.00 0.	35.15 633.	0.	901.
393	C1C15		0 2	HAUL TO SALVAGE	4.0 HR	1.000	19.20 77.	0.00 0.	71.00 284.	0.	361.
394	C1C15		0 2	HAUL TO DUMP	4.0 HR	1.000	19.20 77.	0.00 0.	71.00 284.	0.	361.
395	C1C15		0 2	DUMP CHARGES	2.0 TONS	1.000	0.00 0.	15.00 30.	0.00 0.	0.	30.
399	C1C15		0 2	4" PIPE	400.0 LF	0.070	17.29 484.	0.00 0.	0.00 0.	0.	484.
400	C1C15		0 2	3" PIPE	200.0 LF	0.070	17.29 242.	0.00 0.	0.00 0.	0.	242.
401	C1C15		0 2	2" PIPE	500.0 LF	0.050	17.29 432.	0.00 0.	0.00 0.	0.	432.
402	C1C15		0 2	1" PIPE	750.0 LF	0.050	17.29 648.	0.00 0.	0.00 0.	0.	648.
907	C1C15			HAULING							
1454	C1C15	69	0 2	DEMO CONDENSING UNIT ON ROOF (PIPING INCLUDED)	2.0 EA	16.000	33.56 1074.	0.40 1.	0.00 0.	0.	1075.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Contract Cost	Item Direct Cost
		Trd b Id F	c Markup t Tag			Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1455	C1C15	45	0 2	DEMO ROOFTOP EXHAUST FAN	2.0 EA	6.000	17.29	207.	0.40	0.00	0.00	0.00	0.	208.
1456	C1C15	73	0 2	REPAIR ROOF PENETRATIONS	2.0 EA	6.000	25.69	308.	50.00	100.	0.00	0.00	0.	408.
1457	C1C15	69	0 2	DEMO ROOF DRAINS	2.0 EA	3.000	33.56	201.	15.00	30.	0.00	0.00	0.	231.
C1C15 Category Direct Cost								38582.		162.		4041.	0.	42784.
303	C1C16			COMMUNICATION DEMOLITION										
306	C1C16		0 2	REMOVE 3/4" TO 1" COMM. CONDUIT	1725.0 LF	0.100	22.91	3952.	0.00	0.00	0.00	0.00	0.	3952.
307	C1C16		0 2	REMOVE 1 1/4" TO 2 1/2" COMM. CONDUIT	125.0 LF	0.150	22.91	430.	0.00	0.00	0.00	0.00	0.	430.
308	C1C16		0 2	REMOVE 4" COMM. CONDUIT	550.0 LF	0.250	22.91	3150.	0.00	0.00	0.00	0.00	0.	3150.
309	C1C16		0 2	REMOVE COMMUNICATION CABLE TRAY	150.0 LF	0.160	22.91	550.	0.00	0.00	0.00	0.00	0.	550.
311	C1C16			FIRE PROTECTION DEMOLITION										
312	C1C16		0 2	REMOVE CABLE TRAY FIRE PROT.	100.0 LF	0.160	22.91	367.	0.00	0.00	0.00	0.00	0.	367.
313	C1C16		0 2	REMOVE 4X4 WIREWAY FIRE PROT.	950.0 LF	0.250	22.91	5441.	0.00	0.00	0.00	0.00	0.	5441.
314	C1C16		0 2	REMOVE 3/4" TO 1" FIRE PROT / SEC CONDUIT & WIRES	4050.0 LF	0.100	22.91	9279.	0.00	0.00	0.00	0.00	0.	9279.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Breakdown Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
		Trd b ID F	c Markup t Tag			Factor	Rate	Ext'd Cost		Rate	Ext'd Cost		
315	C1C16	0	2	REMOVE 1 1/4 - 2 1/2 FIRE PROT / SEC CONDUIT & WIRES	400.0 LF	0.150	22.91	9175.	0.00	0.00	0.	0.	1375.
316	C1C16			STANDARD ELECTRICAL DEMOLITION									
317	C1C16	0	2	REMOVE 1 1/4 - 2 1/2 CONDUIT AND WIRE	700.0 LF	0.150	22.91	2406.	0.00	0.00	0.	0.	2406.
318	C1C16	0	2	REMOVE CABLE TRAYS	100.0 LF	0.160	22.91	367.	0.00	0.00	0.	0.	367.
323	C1C16	0	2	REMOVE WIRE MOLDS WITH RECEPTACLES	120.0 LF	0.200	22.91	550.	0.00	0.00	0.	0.	550.
324	C1C16	0	2	REMOVE RECEPTACLES	280.0 LF	0.200	32.96	1846.	0.00	0.00	0.	0.	1846.
325	C1C16	0	2	REMOVE 4X4 WIREWAY	100.0 LF	0.250	22.91	573.	0.00	0.00	0.	0.	573.
326	C1C16	0	2	REMOVE UPS	1.0 EA	24.000	22.91	550.	0.00	0.00	0.	0.	550.
327	C1C16	0	2	REMOVE 3/4" TO 1" CONDUIT & WIRE	10800.0 LF	0.100	22.91	24743.	0.00	0.00	0.	0.	24743.
336	C1C16	0	2	REMOVE SWITCHBOARD A	1.0 EA	80.000	32.96	2637.	0.00	0.00	0.	0.	2637.
337	C1C16	0	2	REMOVE MOTOR CONTROL CENTER "A"	1.0 EA	80.000	32.96	2637.	0.00	0.00	0.	0.	2637.
338	C1C16	0	2	REMOVE MOTOR CONTROL CENTER "B"	1.0 EA	80.000	32.96	2637.	0.00	0.00	0.	0.	2637.
339	C1C16	0	2	REMOVE PANELBOARDS	7.0 EA	40.000	32.96	9229.	0.00	0.00	0.	0.	9229.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

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[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Cntret Cost	Item Direct Cost
		Trd b 30 F	c Markup t Tag			Factor	Rate	Ext'd Cost				
1283	C3A02	61	0 2	POUR/FORM/SHORE (12")	160.0 CY	5.400	24.19	20900.	158.00 25280.	68.00 10880.	0.	57060.
1284	C3A02	61	0 2	FINISH SLAB	3600.0 SF	0.015	24.19	1306.	0.00 0.	0.00 0.	0.	1306.
1285	C3A02		0 2	ADD ELEVATOR STOP @ 2ND FLOOR (SEE QUOTE)	1.0 EA		0.00	0.	50000.00 50000.	0.00 0.	0.	50000.
1286	C3A02			SECURITY VEST(SULE								
1287	C3A02	61	0 2	CONCRETE WALLS	6.0 CY	12.000	24.19	1742.	128.00 768.	68.00 408.	0.	2918.
1288	C3A02	61	0 2	CONCRETE ROOF (12")	4.0 CY	5.400	24.19	523.	128.00 512.	68.00 272.	0.	1307.
1289	C3A02	53	0 2	EXCAVATE ACCESS ROAD TO PF-4	800.0 CY	1.000	23.44	18752.	0.00 0.	4.33 3464.	0.	22216.
1290	C3A02	53	0 2	PAVE TEMPORARY ACCESS ROAD TO PF-4	54.0 SY	0.050	23.44	63.	5.30 286.	0.40 22.	0.	371.
463	C3A02262	53	0 2	LOAD TRUCKS	4000.0 CY	0.250	23.44	23440.	0.00 0.	10.00 40000.	0.	63440.
C3A02 Category Direct Cost								166536.	104292.	153203.	0.	424031.
439	C3A03			CONCRETE FINISHING								
442	C3A03	61	0 2	FLOOR FINISH	693.0 SF	0.015	24.19	251.	0.00 0.	0.00 0.	0.	251.
443	C3A03	61	0 2	STAIR FINISH	271.0 SF	0.160	24.19	1049.	0.00 0.	0.00 0.	0.	1049.

(Items with *#* have been adjusted by Job Factor and/or Equip Factor)

Item	Work Brkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r		Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
		Trd b ID F	c Markup t Tag			Factor	Rate Ext'd Cost		Rate Ext'd Cost	Rate Ext'd Cost		
444	C3A03			EXTERIOR VESTIBULE ON W. SIDE								
445	C3A03	53	0 5	STRUCTURAL EXCAV.	4.0 CY	0.213	23.44 20.	0.00	5.55	22.	0.	42.
447	C3A03	61	0 5	SLAB ON GRADE W/ TURNED DOWN EDGES	2.5 CY	1.050	26.19 63.	100.00	3.66	9.	0.	323.
448	C3A03	61	0 5	FLOOR FINISH	64.0 SF	0.015	26.19 23.	0.00	0.00	0.	0.	23.
449	C3A03	45	0 5	6" COMPACTED GRAVEL FILL	64.0 SF	0.017	17.29 19.	0.40	0.02	1.	0.	46.
450	C3A03	45	0 5	STRUCTURAL FILL	3.5 CY	0.260	17.29 16.	0.00	0.02	0.	0.	16.
1248	C3A03			STRUCTURAL CONCRETE								
1249	C3A03			REINFORCE INTAKE OPENING								
1251	C3A03	85	0 2	STEEL LINTEL - MC18 X42.7	2296.0 LBS	0.010	32.28 741.	0.50	0.10	250.	0.	2119.
1252	C3A03	85	0 2	JAMBS - MC18X42.7	2049.6 LBS	0.010	32.28 662.	0.50	0.10	205.	0.	1891.
1254	C3A03	45	0 2	GROUT/CONCRETE	2.0 CY	6.600	17.29 228.	125.00	68.00	136.	0.	614.
1263	C3A03	73	0 2	LAYDOWN AREA SLABS	39.0 CY	5.400	25.69 5410.	158.00	68.00	2652.	0.	14224.
1264	C3A03			CONSTRUCT INTERIOR WALLS								
1265	C3A03	73	0 2	CONCRETE ALLEY (2' 130"X14.75"X1.5')	215.0 CY	12.000	25.69 66280.	128.00	68.00	14620.	0.	108420.

(Items with 'M' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Bkdw Structure 1	J Trd ID	A b F	c t	Contract Markup Tag	Take-Off Item Description	Quantity Unit	- - - - L a b o r - - - -			Material		Const Equip		Sub Contract Cost	Item Direct Cost
								Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1266	C3A03	73	0	2		CONCRETE THICKEN (2-144'14.75'X1.5')	236.0 CY	12.000	25.69	72754.	128.00	30208.	68.00	16048.	0.	119010.
1267	C3A03	73	0	2		SHORINGS/FASTEN TO EXISTING/NEW ITEMS	1.5 MKS	200.000	25.69	7707.	0.00	0.	68.00	102.	0.	7809.
1268	C3A03	73	0	2		CONCRETE SEPARATOR WALL - 1ST FLOOR	125.0 CY	12.000	25.69	38535.	128.00	16000.	68.00	8500.	0.	63035.
1269	C3A03	73	0	2		CONCRETE WALLS - INTERIOR - 12"	547.0 CY	12.000	25.69	168629.	128.00	70016.	68.00	37196.	0.	275841.
1270	C3A03	73	0	2		FILL IN LOUVER OPENINGS WITH CONCRE TE	10.0 CY	12.000	25.69	3083.	128.00	1280.	68.00	680.	0.	5043.
1271	C3A03	61	0	2		JIB CRANE FTG	8.0 CY	2.000	24.19	387.	90.00	720.	0.00	0.	0.	1107.
1272	C3A03	61	0	2		STRIP FOOTINGS AT NEW WALL	100.0 CY	2.000	24.19	4838.	80.00	8000.	0.00	0.	0.	12838.
1435	C3A03	73	0	2		BASEMENT VESTIBULE WALLS	6.3 CY	12.000	25.69	1942.	12.00	76.	68.00	428.	0.	2446.
1436	C3A03	73	0	2		SOUTH STAIR WALLS	33.0 CY	12.000	25.69	10173.	128.00	4224.	68.00	2244.	0.	16641.
1437	C3A03	73	0	2		TUBE XFER WALLS	12.0 CY	12.000	25.69	3699.	128.00	1536.	68.00	816.	0.	6051.
1438	C3A03	73	0	2		TUBE LOADING	11.0 CY	12.000	25.69	3391.	128.00	1408.	68.00	748.	0.	5547.
1439	C3A03	73	0	2		IN PROCESS #2	7.0 CY	12.000	25.69	2158.	128.00	896.	68.00	476.	0.	3530.
1440	C3A03	73	0	2		IN PROCESS #1	7.0 CY	12.000	25.69	2158.	128.00	896.	68.00	476.	0.	3530.

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Item	Work Brkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Contract Cost	Item Direct Cost
		Trd b ID F	c Markup t Tag			Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1498	C3A03			REINFORCEMENT OF EXISTING ROOF	24"x12" conc. bms @ 4'-0" O.C									
1499	C3A03	73	0 2	NEW CONC BEAMS (24"x12")-INCREASE DUE TO DIFFICULTY OF WORK	100.0 CY	24.000	25.69	6165.6	175.00	17500.	75.00	7500.	0.	86656.
1500	C3A03	45	0 2	INSTALL SHEAR STUDS & CUT HOLES IN ROOF	25.0 BEAM	16.000	17.29	6916.	500.00	12500.	25.00	625.	0.	20041.
1501	C3A03	73	0 2	CONCRETE TOPPING	140.0 CY	2.500	25.69	8992.	100.00	14000.	68.00	9520.	0.	32512.
1502	C3A03	77	0 2	SINGLE PLY ROOFING	5500.0 SF	0.210	21.14	24417.	1.50	7150.	0.00	0.	0.	31567.
1503	C3A03	77	0 2	INSULATION (1" TK)	5500.0 SF	0.010	21.14	1163.	0.36	1980.	0.00	0.	0.	3143.
1504	C3A03	77	0 2	FLASHING	400.0 LF	0.500	21.14	4228.	6.00	2400.	0.00	0.	0.	6628.
1505	C3A03	61	0 2	FINISH CONCRETE	5500.0 SF	0.015	24.19	1996.	0.00	0.	0.10	550.	0.	2546.
1512	C3A03		0 2	MATERIALS TESTING	1.0 LOT		0.00	0.	0.00	0.	0.00	0.	30000.	30000.
C3A03 Category Direct Cost							503584.		227170.		103785.		30000.	864539.
446	C3A04			CONCRETE MASONRY										
451	C3A04	61	0 5	8" CMU WALLS	2800.0 SF	0.130	24.19	8805.	2.50	7000.	0.60	1680.	0.	17485.
C3A04 Category Direct Cost							8805.		7000.		1680.		0.	17485.

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Item	Work Bkdn Structure 1	J A			Quantity	Unit	Labor			Material		Const Equip		Sub Contract Cost	Item Direct Cost
		Ind b	c	Markup			Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
745	C3A05														
748	C3A05	85	0	2	METAL HANDRAIL	238.0	0.250	32.28	12.50	0.60					
					LF				1921.	2975.	143.	0.	5038.		
749	C3A05														
750	C3A05	85	0	2	VESTIBULE AT N. SIDE EXTERIOR STEEL JOIST	0.1	8.000	32.28	655.00	74.00					
					TON			26.	66.	7.	0.	99.			
1246	C3A05	45	0	2	REMOVE 3 RANGING PLATFORM	517.0	0.022	17.29	0.00	0.00					
					SF			197.	0.	0.	0.	197.			
1274	C3A05	45	0	2	STEEL PRE-FAB STAIRS (QUOTE)	2.0		0.00	21400.00	0.00					
					EA			0.	42800.	0.	0.	42800.			
1441	C3A05	85	0	2	EXHAUST BAFFLES	3700.0	0.020	32.28	0.50	0.10					
					LBS			2389.	1850.	370.	0.	4609.			
1442	C3A05	85	0	2	SECURITY GRILLES ON INTAKE & EXHAUST	90000.0		0.00	0.50	0.00					
					LBS			0.	45000.	0.	0.	45000.			
1443	C3A05	85	0	2	FABRICATE GRILLES	90000.0	0.050	32.28	0.05	0.25					
					LBS			145260.	4500.	22500.	0.	172260.			
1444	C3A05	85	0	2	INSTALL GRILLES	2.0	32.000	32.28	200.00	0.00					
					EA			2066.	400.	0.	0.	2466.			
1445	C3A05	53	0	2	NOIST GRILLES	2.0	8.000	23.44	0.00	2800.00					
					EA			375.	0.	5600.	0.	5975.			
1447	C3A05	85	0	2	SHIELDING SHROUD (PLATE 1" & AIRLOCK)	18375.0	0.020	32.28	0.40	0.10					
					LBS			11863.	7350.	1838.	0.	21050.			
C3A05					Category Direct Cost			164096.	104941.	30458.	0.	299494.			

(Items with '#' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Bkdm Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Entret Cost	Item Direct Cost
		Trd b ID F	c Markup t Tag			Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
738	C3A06			WOOD AND PLASTICS										
742	C3A06	73	0 2	BASE CABINETS	12.0 LF	0.750	25.69	231.	85.00	1020.	0.00	0.	0.	1251.
743	C3A06	73	0 2	COUNTER TOP	12.0 LF	0.350	25.69	108.	8.30	100.	0.00	0.	0.	207.
C3A06 Category Direct Cost								339.		1120.		0.	0.	1459.
751	C3A07			ROOFING AND SIDING										
760	C3A07	77	0 2	SINGLE PLY ROOFING	8250.0 SF	0.210	21.14	36625.	1.30	10725.	0.00	0.	0.	47350.
761	C3A07	77	0 2	SINGLE PLY ROOFING	64.0 SF	0.210	21.14	284.	1.30	83.	0.00	0.	0.	367.
C3A07 Category Direct Cost								36909.		10808.		0.	0.	47717.
765	C3A08			DOORS WINDOWS AND GLASS										
766	C3A08	73	0 2	DOUBLE DOOR HARDWARE	8.0 EA	1.100	25.69	226.	225.00	1800.	0.00	0.	0.	2026.
768	C3A08	85	0 2	ALARMED VAULT DOOR CLASS V (SINGLE)	7.0 EA	50.000	32.28	13106.	12278.00	85946.	0.00	0.	0.	99052.
769	C3A08	85	0 2	CLASS V VAULT DOUBLE /INCL SHIPPING	2.0 EA	64.000	32.28	4132.	18603.00	37206.	0.00	0.	0.	41338.
770	C3A08	85	0 2	SECURITY WINDOWS	4.0 EA	17.300	32.28	2234.	2350.00	9400.	0.00	0.	0.	11634.

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Item	Work Brkdn Structure 1	Trd b ID F	J A o c Markup t Tag	Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Contract Cost	Item Direct Cost
						Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
785	C3A09	57	0 2	PAINT HANDRAIL	2000.0 LF	0.014	23.26	651.	0.30	600.	0.00	0.	0.	1251.
790	C3A09	57	0 5	PAINT VESTIBULES	1780.0 SF	0.005	23.26	207.	0.20	356.	0.00	0.	0.	563.
791	C3A09			FINISHES FOR INTERIOR										
793	C3A09	57	0 2	PAINT EXTERIOR SECURITY VESTIBULE	256.0 SF	0.060	23.26	357.	0.20	51.	0.00	0.	0.	408.
805	C3A09	57	0 2	PLASITE PAINT (QUOTE)	1.0 LOT	1.000	0.00	0.	0.00	0.	0.00	0.	596556.	596556.
814	C3A09	73	0 2	CEILING SUSPENSION SYSTEM	4945.0 SF	0.150	25.69	19056.	1.24	6132.	0.00	0.	0.	25187.
815	C3A09	61	0 2	EXTERIOR INSULATED FINISH SYSTEM	2000.0 SF	0.163	24.19	7886.	1.53	3060.	0.15	300.	0.	11246.
C3A09 Category Direct Cost								28157.		10199.		300.	596556.	635212.
799	C3A10			SPECIALITIES										
801	C3A10	73	0 5	SIGNAGE ALLOWANCE	1.0 LOT	1.000	7000.00	7000.	2000.00	2000.	0.00	0.	0.	9000.
802	C3A10	73	0 5	METAL LOCKERS	36.0 EA	0.400	25.69	370.	70.00	2520.	0.00	0.	0.	2890.
803	C3A10	73	0 5	BENCH, LOCKER	20.0 LF	0.090	25.69	46.	20.00	400.	0.00	0.	0.	446.
804	C3A10	73	0 5	RESTROOM ACCESSORY	3.0 EA	1.500	25.69	116.	275.00	825.	0.00	0.	0.	941.

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Item	Work Bkdn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd b ID F	c Markup t Tag			Factor	Rate Ext'd Cost				
894	C3A10		0 5	TOILET COMPARTMENTS	5.0 EA	4.200	25.69 539.	365.00 1825.	0.00 0.	0.	2364.
	C3A10			Category Direct Cost			8071.	7570.	0.	0.	15641.
14	C3A15			MECHANICAL							
15	C3A15	89	0 2	OUTSIDE AIR FAN (FS-1, FS-2) 3500CFM 7-1/2 HP	2.0 EA	14.000	33.79 946.	5075.00 10150.	0.00 0.	0.	11096.
16	C3A15	89	0 2	RESTROOM EXHAUST FAN (600 CFM)	3.0 EA	4.000	33.79 405.	268.00 804.	0.00 0.	0.	1209.
17	C3A15	89	0 2	OUTSIDE AIR LOUVERS	10.0 SF	0.300	33.79 101.	37.25 373.	0.00 0.	0.	474.
18	C3A15	89	0 2	AIR HANDLING UNIT (2500 CFM)	1.0 EA	30.000	33.79 1014.	4500.00 4500.	0.00 0.	0.	5514.
19	C3A15	89	0 2	18 X 18 SUPPLY DIFFUSER	38.0 EA	1.000	33.79 1284.	105.00 3990.	0.00 0.	0.	5274.
20	C3A15	89	0 2	24 X 24 SUPPLY DIFFUSER	16.0 EA	1.500	33.79 811.	167.00 2672.	0.00 0.	0.	3483.
21	C3A15	89	0 2	12 X 12 SUPPLY DIFFUSER	4.0 EA	1.000	33.79 135.	57.00 228.	0.00 0.	0.	363.
22	C3A15	89	0 2	24 X 24 EXHAUST GRILL	8.0 EA	0.500	33.79 135.	67.00 536.	0.00 0.	0.	671.
23	C3A15	89	0 2	RECIRC FANS (FR-1, FR-2 19,400 CFM, 40 HP) QUOTE	2.0 EA	24.000	33.79 1622.	18000.00 36000.	0.00 0.	0.	37622.

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Item	Work Brkdw Structure 1	Job ID	A Contract ID	Take-Off Item Description	Quantity Unit	Labor			Material		Const Equip		Sub Contract Cost	Item Direct Cost
						Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
24	C3A15	89	0	2 24 X 24 RETURN GRILL	26.0 EA	0.600	33.79	878.14	39.00	1014.	0.00	0.	0.	1541.
25	C3A15	89	0	2 FANS (FE-4, FS-3, 3H P, 1994)	2.0 EA	10.000	33.79	67.58	3150.00	6300.	0.00	0.	0.	6976.
26	C3A15	89	0	2 OPPOSED BLADE DAMPER 12 X 12	45.0 EA	0.500	33.79	1521.45	28.00	1260.	0.00	0.	0.	2020.
27	C3A15	89	0	2 DAMPER ACTUATOR 12 X 12	25.0 EA	0.800	33.79	844.75	112.00	2800.	0.00	0.	0.	3476.
28	C3A15	89	0	2 GALVANIZED DUCTWORK + 5% FOR FITTINGS	23000.0 LBS	0.110	33.79	7771.70	0.40	9200.	0.00	0.	0.	94689.
29	C3A15	89	0	2 STAINLESS DUCTWORK	2000.0 LBS	0.120	33.79	675.80	1.50	3000.	0.00	0.	0.	11110.
30	C3A15	89	0	2 TEST & BALANCE PRICE INCLUDES EQUIPMENT TESTING	245.0 EA	1.600	33.79	8278.55	0.00	0.	0.00	0.	0.	13246.
31	C3A15	69	0	2 3" BLACK STEEL PIPE	770.0 LF	0.450	33.56	25840.20	7.80	6006.	0.00	0.	0.	17635.
32	C3A15	69	0	2 2" BLACK STEEL PIPE	760.0 LF	0.400	33.56	25505.60	3.75	2850.	0.00	0.	0.	13052.
33	C3A15	69	0	2 1" BLACK STEEL PIPE	30.0 LF	0.180	33.56	1006.80	2.00	60.	0.00	0.	0.	241.
34	C3A15	69	0	2 3 WAY VALVES	7.0 LOT	7.000	33.56	234.92	2035.00	2035.	0.00	0.	0.	2270.
35	C3A15	89	0	2 EXHAUST FAN (FE-3, 3/4 HP, 480 CFM)	1.0 EA	7.000	33.79	237.79	1950.00	1950.	0.00	0.	0.	2187.
36	C3A15	69	0	2 CHILLED WATER COIL	2.0 EA	32.000	33.56	671.20	1845.00	3690.	0.00	0.	0.	5838.

(Items with '#' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Bkden Structure 1	J Tcd ID	A b F	o c t	o c t	Take-Off Tag Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Contract Cost	Item Direct Cost
								Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
37	C3A15	69		0	2	PRE-HEAT COIL	1.0 EA	8.000	33.56	33.56	530.00	530.00	0.00	0.00		
38	C3A15	69		0	2	TERMINAL HEATING COILS	28.0 EA	6.500	33.56	939.68	510.00	14280.00	0.00	0.00		798.
39	C3A15	69		0	2	MISC VALVES & FITTINGS FOR TERMINA L HEATING COILS	28.0 EA		0.00	0.00	120.00	3360.00	0.00	0.00		20388.
68	C3A15			0	2	HEATING PIPE INSULATION	1.0 LOT	160.000	25.69	25.69	5000.00	5000.00	0.00	0.00		
84	C3A15			0	2	BACKFLOW PREVENTER	2.0 EA	0.600	33.56	67.12	150.00	300.00	0.00	0.00		9110.
90	C3A15	69		0	2	EXHAUST FANS (FE-1, FE-2 3,417CFM 7-1/2 HP)	2.0 EA	14.000	33.56	67.12	5075.00	10150.00	0.00	0.00		340.
92	C3A15	89		0	2	OUTSIDE/EXHAUST AIR 2X2 THREE STAGE PLENUM (SEE BACK UP)	4.0 EA	30.000	33.79	135.16	68640.00	274560.00	0.00	0.00		11090.
93	C3A15	89		0	2	RETURN AIR PLENUM 5X4 THREE STAGE PLEN UM (SEE BACK UP)	2.0 EA	86.000	33.79	67.58	189360.00	378720.00	0.00	0.00		278615.
94	C3A15	89		0	2	HEPA FOR PACK/UNPACK AREA & CHANGE ROOM W/ENCLOSURE	3.0 EA	8.000	33.79	101.37	8330.00	24990.00	0.00	0.00		384532.
796	C3A15	69		0	2	CHEMICAL FEEDER	2.0 EA	3.000	29.56	59.12	300.00	600.00	0.00	0.00		25801.
797	C3A15	69		0	2	3/4" 3-WAY VALVE FOR TERMINAL HEATING COI LS	30.0 EA	0.500	29.56	886.80	119.00	3570.00	0.00	0.00		777.
										443.						4013.

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Item	Work Brkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
		Ted b ID F	c Markup t Tag			Factor	Rate	Ext'd Cost		Rate	Ext'd Cost		
798	C3A15	69	0 2	1-1/2" 3-WAY VALVE	1.0 EA	0.740	29.56	22.00	220.00	0.00	0.00	0.00	242.
809	C3A15	69	0 2	1" COPPER PIPES (INCLUDING FITTINGS)	1080.0 LF	0.160	33.56	5799.	2.56	0.00	0.00	0.00	8564.
810	C3A15	69	0 2	3/4" COPPER PIPES (INCLUDING FITTINGS)	1540.0 LF	0.140	33.56	7236.	2.02	0.00	0.00	0.00	10346.
811	C3A15	45	0 2	1/2" COPPER PIPES (INCLUDING FITTINGS)	570.0 LF	0.130	33.56	2487.	1.28	0.00	0.00	0.00	3216.
826	C3A15	69	0 2	3" BLACK STEEL	840.0 LF	0.480	33.56	13531.	9.15	0.00	0.00	0.00	21217.
830	C3A15	69	0 2	1 1/2" COPPER PIPE (INCLUDING FITTINGS)	240.0 LF	0.200	33.56	1611.	4.03	0.00	0.00	0.00	2578.
831	C3A15	69	0 2	4" SANITARY SEWER CAST IRON PIPE	240.0 LF	0.330	33.56	2658.	5.10	0.00	0.00	0.00	3882.
832	C3A15	69	0 2	2" SANITARY SEWER CAST IRON PIPE	140.0 LF	0.320	33.56	1503.	4.13	0.00	0.00	0.00	2082.
833	C3A15	PLUMBING FIXTURES											
834	C3A15	69	0 2	WALL HUNG FLUSH VA. WATER CLOSETS	5.0 EA	3.920	33.56	658.	705.00	0.00	0.00	0.00	4183.
836	C3A15	69	0 2	WALL HUNG LAVATORIES W/ FAUCET	4.5 EA	6.000	33.56	906.	220.00	0.00	0.00	0.00	1896.
837	C3A15	69	0 2	JANITOR SINKS	2.0 EA	4.720	33.56	317.	465.00	0.00	0.00	0.00	1247.
838	C3A15	69	0 2	SHOWER STALL 1 PIECE	5.0 EA	7.500	33.56	1259.	462.00	0.00	0.00	0.00	3569.

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Item	Work Bkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Contract Cost	Item Direct Cost
		Trd b ID F	c Markup t Tag			Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
839	C3A15	69	0 2	HOSE BIBBS	2.0 EA	0.740	33.56	50.	125.00	250.	0.00	0.	0.	300.
845	C3A15		0 0	MONITORING WIRE	2000.0 LF		0.00	0.	7.00	14000.	0.00	0.	0.	14000.
846	C3A15		0 0	MONITORING PANEL	1.0 EA		0.00	0.	2500.00	2500.	0.00	0.	0.	2500.
848	C3A15		0 2	HVAC CONTROLS	1.0 LOT		0.00	0.	0.00	0.	0.00	0.	115000.	115000.
920	C3A15			GAS PIPING IN BUILDING										
921	C3A15	69	0 2	2" BLACK STEEL PIPE	60.0 LF	0.250	33.56	503.	4.05	243.	0.00	0.	0.	746.
922	C3A15	69	0 2	1-1/2" BLACK STEEL PIPE	80.0 LF	0.220	33.56	591.	3.05	244.	0.00	0.	0.	835.
923	C3A15	69	0 2	1" BLACK STEEL PIPE	40.0 LF	0.200	33.56	268.	2.18	87.	0.00	0.	0.	356.
924	C3A15		0 2	MISC VALVES AND FITT INGS	1.0 LOT		0.00	0.	200.00	200.	0.00	0.	0.	200.
931	C3A15			HEATING HOT WATER PIPING										
932	C3A15	69	0 2	3" COPPER PIPE TYPE L	260.0 LF	0.300	33.56	2618.	10.70	2782.	0.00	0.	0.	5400.
933	C3A15	69	0 2	2" COPPER PIPE TYPE L	120.0 LF	0.200	33.56	805.	5.30	636.	0.00	0.	0.	1441.
934	C3A15	69	0 2	1" COPPER PIPE TYPE L	360.0 LF	0.150	33.56	1812.	3.45	1242.	0.00	0.	0.	3054.
935	C3A15	69	0 2	3/4" COPPER PIPE TYP E L	460.0 LF	0.120	33.56	1853.	1.57	722.	0.00	0.	0.	2575.

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Item	Work Brkdwn Structure 1	J A			Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd ID	b F	c t			Factor	Rate	Ext'd Cost				
936	CSA15			0 2	MISC VALVES AND FITTINGS (10% OF TOTAL LAB. AND MAT. COST)	1.0 LOT			0.00 0.	1200.00 1200.	0.00 0.	0.	1200.
937	CSA15				HEATING WATER PIPE INSULATION								
938	CSA15	81		0 2	3" FIBERGLASS INSULATION	260.0 LF	0.270	25.88	1817.	6.80 1768.	0.00 0.	0.	3585.
939	CSA15	81		0 2	2" FIBERGLASS INSULATION	120.0 LF	0.250	25.88	776.	6.20 744.	0.00 0.	0.	1520.
940	CSA15	81		0 2	1" FIBERGLASS INSULATION	360.0 LF	0.230	25.88	2143.	5.75 2070.	0.00 0.	0.	4213.
941	CSA15	81		0 2	3/4" FIBERGLASS INSULATION	440.0 LF	0.210	25.88	2391.	5.25 2310.	0.00 0.	0.	4701.
942	CSA15				CHILLED WATER PIPING								
943	CSA15	69		0 2	4" COPPER PIPE TYPE L	260.0 LF	0.420	33.56	3665.	17.10 4446.	0.00 0.	0.	8111.
944	CSA15	69		0 2	3" COPPER PIPE TYPE L	180.0 LF	0.300	33.56	1812.	10.70 1926.	0.00 0.	0.	3738.
945	CSA15			0 2	MISC VALVES & FITTINGS (10% OF TOT. LAB & MAT)	1.0 LOT			0.00 0.	1150.00 1150.	0.00 0.	0.	1150.
946	CSA15	81		0 2	4" CHILLED WATER PIPING INSULATION	260.0 LF	0.333	25.88	2241.	11.05 2873.	0.00 0.	0.	5114.
947	CSA15	81		0 2	3" CHILLED WATER PIPING INSULATION	180.0 LF	0.286	25.88	1332.	8.20 1476.	0.00 0.	0.	2808.
951	CSA15				POTABLE HOT & COLD WATER PIPING								

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Item	Work Bk'd in Structure 1	J Trd ID	A b F	c c t	e e t	Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Entret Cost	Item Direct Cost
								Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
952	C3A15	69	0	2	1-1/4" COPPER PIPE	380.0		0.140	33.56		2.86		0.00			
					TYPE L	LF			1785.		1087.		0.		0.	2872.
953	C3A15	69	0	2	1" COPPER PIPE	240.0		0.120	33.56		2.10		0.00		0.	
					1	LF			967.		504.		0.		0.	1471.
954	C3A15	69	0	2	3/4" COPPER PIPE	60.0		0.110	33.56		1.57		0.00		0.	
					TYPE L	LF			221.		94.		0.		0.	316.
955	C3A15	69	0	2	1/2" COPPER PIPE	140.0		0.100	33.56		1.31		0.00		0.	
					TYPE L	LF			470.		183.		0.		0.	653.
956	C3A15		0	2	MISC VALVES & FITTING	1.0			0.00		500.00		0.00		0.	
					GS (10% OF TOT LAB. & MAT.)	LOT			0.		500.		0.		0.	500.
962	C3A15				SOIL WASTE AND VENT PIPING IN BLDG											
963	C3A15	69	0	2	4" CAST IRON PIPE	360.0		0.280	33.56		7.85		0.00		0.	
					LF				3385.		2626.		0.		0.	6209.
964	C3A15	69	0	2	3" CAST IRON PIPE	220.0		0.260	33.56		6.20		0.00		0.	
					LF				1920.		1364.		0.		0.	3284.
965	C3A15	69	0	2	2" CAST IRON PIPE	140.0		0.240	33.56		4.70		0.00		0.	
					LF				1128.		658.		0.		0.	1786.
966	C3A15	69	0	2	1-1/2" CAST IRON PIPE	260.0		0.230	33.56		4.69		0.00		0.	
					E	LF			2007.		1219.		0.		0.	3226.
967	C3A15		0	2	MISC VALVES & FITTING	1.0			0.00		1375.00		0.00		0.	
					GS (10% OF TOT LAB. & MAT.)	LOT			0.		1375.		0.		0.	1375.
968	C3A15				DRAIN PIPING AND INSULATION											
970	C3A15	69	0	2	3/4" COPPER PIPE	220.0		0.110	33.56		1.57		0.00		0.	
					LF				812.		345.		0.		0.	1158.

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Item	Work Bkdm Structure 1	J A			Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Contract Cost	Item Direct Cost
		Job ID	Est b	Entret c			Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
971	C3A15	81	0	2	3/4" INSULATION	220.0 LF	0.089	25.88	507.	2.24	493.	0.00	0.	0.	1000.
976	C3A15				ROOF DRAINS & OVERFLOW PIPING FOR PENTHOUSE										
977	C3A15	69	0	2	4" STEEL PIPING	120.0 LF	0.450	33.56	1812.	9.45	1134.	0.00	0.	0.	2946.
978	C3A15		0	2	MISC FITTINGS (10% OF TOTAL LAB. & MAT)	1.0 LOT		0.00	0.	280.00	280.	0.00	0.	0.	280.
979	C3A15	69	0	2	ROOF DRAINS	2.0 EA	1.500	33.56	101.	65.00	130.	0.00	0.	0.	231.
985	C3A15				BREATHING AIR SYSTEM										
986	C3A15	69	0	2	REGULATOR FROM BOTTLE MANIFOLD TO 150 PSI	1.0 EA	1.000	33.56	34.	165.00	165.	0.00	0.	0.	199.
987	C3A15	69	0	2	REGULATOR FROM 150 PSI TO 100 PSI	4.0 EA	1.000	33.56	134.	165.00	660.	0.00	0.	0.	794.
988	C3A15	69	0	2	REGULATOR FROM 100 PSI TO 15 PSI	16.0 EA	1.000	33.56	537.	165.00	2640.	0.00	0.	0.	3177.
989	C3A15	69	0	2	BOTTLE MANIFOLD SYSTEM	1.0 EA	8.000	33.56	268.	2500.00	2500.	0.00	0.	0.	2768.
990	C3A15	69	0	2	AIR STATION MANIFOLD SYSTEM	4.0 EA	4.000	33.56	134.	500.00	2000.	0.00	0.	0.	2537.
991	C3A15		0	2	MISC VALVES AND FITTINGS	1.0 LOT		0.00	0.	1500.00	1500.	0.00	0.	0.	1500.
996	C3A15				AIR COMPRESSOR SYSTEM										
997	C3A15	69	0	2	OIL FREE AIR COMPRESSOR (QUOTE)	2.0 EA	24.000	33.56	1611.	36230.00	72460.	0.00	0.	0.	74071.

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Item	Work Bkdn Structure 1	Trd ID	J b F	A c t	Contract Markup Tag	Take-Off Item Description	Quantity	Unit	Labor			Material		Const Equip		Sub Contract Cost	Item Direct Cost
									Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
998	C3A15	69	0	2		DESICCANT AIR DRYER (QUOTE)	2.0	EA	8.000	33.56	537.	5124.00	10248.	0.00	0.	0.	10785.
999	C3A15	69	0	2		PRE-FILTER (QUOTE)	2.0	EA	4.000	33.56	268.	726.00	1452.	0.00	0.	0.	1720.
1000	C3A15	69	0	2		AFTER FILTER (QUOTE)	2.0	EA	4.000	33.56	268.	424.00	848.	0.00	0.	0.	1116.
1001	C3A15	69	0	2		3/4" COPPER PIPING	360.0	LF	0.110	33.56	1329.	1.57	565.	0.00	0.	0.	1894.
1002	C3A15	69	0	2		1/2" COPPER PIPING	260.0	LF	0.100	33.56	873.	1.31	341.	0.00	0.	0.	1213.
1007	C3A15					VACUUM PUMP SYSTEM											
1008	C3A15	69	0	2		VACUUM PUMP 50 HP (QUOTE)	2.0	EA	24.000	33.56	1611.	23000.00	46000.	0.00	0.	0.	47611.
1009	C3A15	69	0	2		LABOR TO REMOVE AND RELOCATE EXISTING VACUUM PUMP	1.0	EA	40.000	33.56	1342.	200.00	200.	0.00	0.	0.	1542.
1024	C3A15					RADIOACTIVE LIQUID WASTE LINE											
1025	C3A15	69	0	2		4" DOUBLE CONTAINMENT RAD/ACID WASTE PIPE	260.0	LF	0.600	33.56	5235.	35.00	9100.	0.00	0.	0.	14335.
1026	C3A15	45	0	2		DEMO EXISTING CONCRETE	200.0	SF	0.471	17.29	1629.	0.00	0.	1.74	348.	0.	1977.
1027	C3A15	53	0	2		TRENCHING	322.0	CF	0.200	23.44	1510.	0.00	0.	1.74	560.	0.	2070.
1028	C3A15	45	0	2		SAND BED FOR PIPING	12.4	CY	0.030	17.29	6.	0.03	0.	6.00	74.	0.	81.

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Item	Work Brkdn Structure 1	Trd ID	J o b F	A c t i v e	Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Contract Cost	Item Direct Cost
							Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1052	C3A15	69	0	2	CHILLER 60 TON	2.0 EA	200.000	33.56	13426.	35000.00	70000.	0.00	0.	0.	83426.
1053	C3A15	69	0	2	CHILLED WATER PUMPS	3.0 EA	7.500	33.56	755.	975.00	2925.	0.00	0.	0.	3680.
1054	C3A15	69	0	2	AIR SEPERATOR	1.0 EA	2.000	33.56	67.	1234.00	1234.	0.00	0.	0.	1301.
1055	C3A15	69	0	2	EXPANSION TANK	1.0 EA	2.400	33.56	81.	1286.00	1286.	0.00	0.	0.	1367.
1062	C3A15	69	0	2	BOILER (900 MBH)	2.0 EA	60.000	33.56	4027.	11000.00	22000.	0.00	0.	0.	26027.
1063	C3A15	69	0	2	BOILER PUMPS 1-1/2HP (32 GPM)	3.0 EA	6.000	33.56	604.	895.00	2685.	0.00	0.	0.	3289.
1064	C3A15	69	0	2	AIR SEPERATOR	1.0 EA	2.000	33.56	67.	1234.00	1234.	0.00	0.	0.	1301.
1065	C3A15	69	0	2	EXPANSION TANK	1.0 EA	2.400	33.56	81.	1286.00	1286.	0.00	0.	0.	1367.
1066	C3A15	89	0	2	BOILER FLUE	2.0 EA	10.000	33.79	676.	500.00	1000.	0.00	0.	0.	1676.
1067	C3A15	89	0	2	WATER HEATER FLUE	1.0 EA	5.000	33.79	169.	250.00	250.	0.00	0.	0.	419.
1071	C3A15				UNIT HEATERS										
1072	C3A15	69	0	2	UTILITY BUILDING ELECTRIC UNIT HEATER	1.0 EA	8.000	33.56	268.	470.00	470.	0.00	0.	0.	738.
1073	C3A15	69	0	2	MECHANICAL PENTHOUSE UNIT HEATER	1.0 EA	4.000	33.56	134.	380.00	380.	0.00	0.	0.	514.

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Item	Work Bkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
		Trd b ID F	c Markup t Tag			Factor	Rate	Ext'd Cost		Rate	Ext'd Cost		
1074	C3A15	69	0 2	TRUCK LOADING AREA UNIT HEATER	1.0 EA	4.000		33.56 134.	380.00 380.	0.00 0.		0.	514.
1075	C3A15	89	0 2	UTILITY BLDG VENTILATION FAN	1.0 EA	5.000		33.79 169.	420.00 420.	0.00 0.		0.	589.
1076	C3A15	89	0 2	UTILITY BLDG INTAKE LOUVER WITH FILTERS W/ DAMPER	6.0 SF	0.400		33.79 81.	26.50 159.	0.00 0.		0.	240.
1077	C3A15	89	0 2	MOTOR FOR DAMPER	1.0 EA	0.571		33.79 19.	300.00 300.	0.00 0.		0.	319.
1093	C3A15			FIRE PROTECTION SYSTEM									
1094	C3A15	69	0 2	PREACTION SPRINK. SYS. COVER 90% OF BLDG (INSTALLED)	23140.0 SF			0.00 0.	0.00 0.	0.00 0.		47437.	47437.
1095	C3A15	69	0 2	WET SPRINKLER SYS. COVER 10% OF BLDG (INSTALLED)	2572.0 SF			0.00 0.	0.00 0.	0.00 0.		4501.	4501.
1096	C3A15	69	0 2	DELUGE SYSTEM FOR RECIRC HEPA FILTER UNITS	2.0 UNIT			0.00 0.	0.00 0.	0.00 0.		52000.	52000.
1097	C3A15	69	0 2	SPRINKLER SYSTEM RISERS (INSTALLED)	6.0 EA			0.00 0.	0.00 0.	0.00 0.		36000.	36000.
1459	C3A15			COMPRESSED AIR PIPING									
1460	C3A15	69	0 2	1-1/2" BLACK STEEL	400.0 LF	0.220		33.56 2953.	5.55 2220.	0.00 0.		0.	5173.
1461	C3A15	69	0 2	1-1/4" BLACK STEEL	100.0 LF	0.200		33.56 671.	3.13 313.	0.00 0.		0.	984.

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Item	Work Bkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r		Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
		Trd b ID F	c Markup t Tag			Factor	Rate Ext'd Cost		Rate Ext'd Cost	Rate Ext'd Cost		
1462	C3A15	69	0 2	1" BLACK STEEL	100.0 LF	0.180	33.56 604.	2.49 249.	0.00	0.	0.	853.
1463	C3A15	69	0 2	3/4" BLACK STEEL	100.0 LF	0.140	33.56 470.	1.73 173.	0.00	0.	0.	643.
1464	C3A15	69	0 2	1/2" BLACK STEEL	100.0 LF	0.130	33.56 436.	1.50 150.	0.00	0.	0.	586.
1465	C3A15		0 2	MISC VALVES AND FITTINGS (10% OF TOT. LAB. AND MAT.)	1.0 LOT		0.00 0.	850.00 850.	0.00	0.	0.	850.
1518	C3A15			DEIONIZED WATER SYSTEM FOR NDA LAB								
1519	C3A15	69	0 2	DEIONIZATION EQUIPMENT (QUOTE, SEE BACK UP INFO)	1.0 EA	32.000	33.56 1074.	4080.00 4080.	0.00	0.	0.	5154.
1520	C3A15	69	0 2	1" STAINLESS STEEL PIPING	160.0 LF	0.178	33.56 956.	7.40 1184.	0.00	0.	0.	2140.
1521	C3A15	69	0 2	MISC VALVES AND FITTINGS (10% OF TOTAL LABOR & MAT.)	1.0 LOT		0.00 0.	220.00 220.	0.00	0.	0.	220.
1527	C3A15			DUPLEX PUMPING STATION SYSTEM FOR NDA LAB								
1528	C3A15	69	0 2	DUPLEX PUMPING STATION (QUOTE, SEE BACK UP INFO)	1.0 EA	40.000	33.56 1342.	3023.00 3023.	0.00	0.	0.	4365.
1529	C3A15	69	0 2	1" PVC PIPING	100.0 LF	0.174	33.56 584.	3.57 357.	0.00	0.	0.	941.
1530	C3A15	69	0 2	MISC VALVES AND FITTINGS (10% OF TOTAL LABOR & MAT.)	1.0 LOT		0.00 0.	95.00 95.	0.00	0.	0.	95.

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Item	Work Brkdw Structure 1	J A			Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd	b	c			Factor	Rate	Ext'd Cost				
----	-----	ID	F	t	Tag	-----	-----	-----	-----	-----	-----	-----	-----
C3A15						Category Direct Cost			313014.	1189881.	4608.	254938.	1762440.
478	C3A16	ELECTRICAL SYSTEMS SMB A											
479	C3A16	ELECTRICAL SYSTEMS SMB A CONDUIT											
484	C3A16	65	0	2	WIRE # 12	1200.0	0.010	32.96	0.08	0.00			
					LF			396.	96.	0.	0.	492.	
485	C3A16	65	0	2	WIRE # 8	50.0	0.010	32.96	0.20	0.00			
					LF			16.	10.	0.	0.	26.	
486	C3A16	65	0	2	WIRE # 6	350.0	0.010	32.96	0.27	0.00			
					LF			115.	95.	0.	0.	210.	
487	C3A16	65	0	2	WIRE # 2	600.0	0.020	32.96	0.77	0.00			
					LF			396.	462.	0.	0.	858.	
488	C3A16	65	0	2	CONDUIT 2"	200.0	0.230	32.96	4.20	0.00			
					LF			1516.	840.	0.	0.	2356.	
489	C3A16	65	0	2	CONDUIT 1"	50.0	0.160	32.96	2.10	0.00			
					LF			264.	105.	0.	0.	369.	
490	C3A16	65	0	2	CONDUIT 3/4"	300.0	0.100	32.96	1.57	0.00			
					LF			989.	471.	0.	0.	1460.	
496	C3A16	MOTOR CONTROL CENTER A & B											
502	C3A16	65	0	2	WIRE #12	2300.0	0.010	32.96	0.08	0.00			
					LF			758.	184.	0.	0.	942.	
503	C3A16	65	0	2	WIRE #10	2300.0	0.010	32.96	0.13	0.00			
					LF			758.	299.	0.	0.	1057.	
504	C3A16	65	0	2	WIRE #8	3600.0	0.010	32.96	0.20	0.00			
					LF			1187.	720.	0.	0.	1907.	

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Item	Work Brkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	Labor		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd b ID F	c Markup t Tag			Factor	Rate Ext'd Cost				
505	C3A16	65	0 2	WIRE #6	2000.0 LF	0.010	32.96 659.	0.27 540.	0.00 0.	0.	1199.
507	C3A16			MOTOR CONTROL CENTER CONDUIT							
508	C3A16	65	0 2	CONDUIT 1"	1100.0 LF	0.160	32.96 5801.	2.10 2310.	0.00 0.	0.	8111.
509	C3A16	65	0 2	CONDUIT 3/4"	3200.0 LF	0.130	32.96 13711.	1.57 5026.	0.00 0.	0.	18735.
510	C3A16			MOTOR CONTROL CENTER EQUIPMENT							
511	C3A16	65	0 2	STARTER UNITS	20.0 EA	1.000	0.00 0.	1500.00 30000.	0.00 0.	0.	30000.
512	C3A16			MOTOR CONTROL CENTER							
514	C3A16	65	0 3	MAINTENANCE (MCC)	80.0 HR	0.080	32.96 211.	12.50 1000.	0.00 0.	0.	1211.
515	C3A16			PANEL BOARDS							
516	C3A16	65	0 2	SWB A	1.0 EA	17.300	32.96 570.	0.00 0.	0.00 0.	0.	570.
521	C3A16	65	0 2	WIRE #12	50000.0 LF	0.010	32.96 16480.	0.08 4000.	0.00 0.	0.	20480.
522	C3A16			PANEL BOARD CONDUIT							
524	C3A16	65	0 2	CONDUIT 3/4"	10000.0 LF	0.130	32.96 42848.	1.57 15700.	0.00 0.	0.	58548.
525	C3A16	65	0 2	PANEL BOARD INSTALLATION	7.0 EA	40.000	32.96 9229.	0.00 0.	0.00 0.	0.	9229.
529	C3A16			TRANSFORMERS							

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Item	Work Bkdm Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
		Tnd b ID F	c Markup t Tag			Factor	Rate	Ext'd Cost		Rate	Ext'd Cost		
533	C3A16	65	0 2	WIRE # 4/0	2000.0 LF	0.040		32.96 2637.	0.16 320.	0.00	0.	0.	2957.
534	C3A16	65	0 2	WIRE #8	500.0 LF	0.010		32.96 165.	0.20 100.	0.00	0.	0.	265.
535	C3A16	65	0 2	WIRE #4	500.0 LF	0.020		32.96 330.	0.45 225.	0.00	0.	0.	555.
536	C3A16	65	0 2	WIRE #2	1500.0 LF	0.020		32.96 989.	0.80 1200.	0.00	0.	0.	2189.
538	C3A16			TRANSFORMER CONDUIT									
540	C3A16	65	0 2	CONDUIT 2"	500.0 LF	0.230		32.96 3790.	4.20 2100.	0.00	0.	0.	5890.
541	C3A16	65	0 2	CONDUIT 1"	500.0 LF	0.160		32.96 2637.	2.10 1050.	0.00	0.	0.	3687.
543	C3A16			TRANSFORMERS									
544	C3A16	65	0 2	TRANSFORMER INSTALLATION	4.0 EA	24.000		32.96 3164.	0.00 0.	0.00	0.	0.	3164.
858	C3A16			LIGHTING									
862	C3A16	65	0 2	HID REMOTE BALLAST FIXTURES	3000.0 SF	0.245		32.96 24226.	4.88 14640.	0.00	0.	0.	38866.
863	C3A16	65	0 2	MAINTENANCE	500.0 SF	0.240		32.96 3955.	4.88 2440.	0.00	0.	0.	6395.
864	C3A16	65	0 2	SPECIAL WIRING ASSY 1/2" RIGID CONDUIT	4000.0 LF	0.087		32.96 11470.	1.20 4800.	0.00	0.	0.	16270.
865	C3A16	65	0 2	REMAINDER OF BLDG	18000.0 SF	0.170		32.96 10858.	3.50 63000.	0.00	0.	0.	163858.

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Item	Work Brkdwn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Cntrct Cost	Item Direct Cost
		Trd b c ID F t	o c Markup Tag			Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
B66	C3A16	65	0 2	RECEPTACLES	25000.0 SF	0.060	32.96	49440.	0.62	10500.	0.00	0.	0.	59940.
B70	C3A16	LIGHTNING PROTECTION & GROUNDING												
B73	C3A16	65	0 2	NEW COUNTERPOISE #4/0 BARE COPPER	700.0 LF	0.030	32.96	692.	2.00	1400.	0.00	0.	0.	2092.
B74	C3A16	53	0 2	TRENCHING 6"X 2'	700.0 LF	0.025	23.44	410.	0.00	0.	0.17	119.	0.	529.
B75	C3A16	53	0 2	BACKFILL	700.0 LF	0.035	23.44	574.	0.00	0.	0.26	182.	0.	756.
B76	C3A16	45	0 2	SAUCUT EXISTING ASPHALT PAVING	700.0 LF	0.025	17.29	303.	0.25	175.	0.40	280.	0.	758.
B77	C3A16	65	0 2	NEW DOWNCOMERS #4/0 COPPER	210.0 LF	0.030	32.96	208.	2.00	420.	0.00	0.	0.	628.
B78	C3A16	65	0 2	BONDING TO WATER PIPE #1/0 COPPER	20.0 LF	3.000	32.96	1978.	1.00	20.	0.00	0.	0.	1998.
B79	C3A16	65	0 2	TRANSFORMER #6 COPPER	200.0 LF	0.820	32.96	5405.	0.30	60.	0.00	0.	0.	5465.
1098	C3A16	FIRE ALARM CONTROL PANEL												
1099	C3A16	65	0 2	REINSTALL PANEL	1.0 EA	100.000	32.96	3296.	0.00	0.	0.00	0.	0.	3296.
1100	C3A16	65	0 2	WIRE & CONDUIT	6000.0 FT	0.100	32.96	19776.	0.50	3000.	0.00	0.	0.	22776.
1101	C3A16	65	0 2	DETECTORS	60.0 EA	1.000	32.96	1978.	35.00	2100.	0.00	0.	0.	4078.
1102	C3A16	FIRE ALARM REPORTER BOX												

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Item	Work Brkdn Structure 1	Trd ID	J b F	A c t Tag	Take-Off Item Description	Quantity Unit	Labor		Material		Const Equip		Sub Entret Cost	Item Direct Cost
							Factor	Rate Ext'd Cost	Rate Ext'd Cost	Rate Ext'd Cost	Rate Ext'd Cost			
1103	C3A16	65	0	2	REINSTALL BOX	1.0 EA	83.000	32.96 2736.	0.00 0.	0.00 0.	0.00 0.	0.	0.	2736.
1104	C3A16	CONNECTIONS TO THE PIV SUPERVISOR SWITCHES												
1105	C3A16	65	0	2	CONDUIT	400.0 LF	0.200	32.96 2637.	0.65 260.	0.00 0.	0.00 0.	0.	0.	2897.
1106	C3A16	65	0	2	SWITCHES	9.0 EA		0.00 0.	25.00 225.	0.00 0.	0.00 0.	0.	0.	225.
1513	C3A16	65	0	2	UPS-10KVA W/24 HR BACKUP	1.0 EA	96.000	32.96 3164.	54000.00 54000.	0.00 0.	0.00 0.	0.	0.	57164.
1514	C3A16	165	0	3	S-9 FEEDER RELIABILITY ENHANCEMENT	1.0 EA	168.000	33.00 5544.	5000.00 5000.	0.00 0.	0.00 0.	0.	0.	10544.
1515	C3A16	65	0	2	TELEPHONE & DATA (EXTERIOR)	1.0 EA	228.000	32.96 7515.	10200.00 10200.	0.00 0.	0.00 0.	0.	0.	17715.
1516	C3A16	65	0	2	TELEPHONE & DATA (INTERIOR)	1.0 EA	174.000	32.96 5735.	7800.00 7800.	0.00 0.	0.00 0.	0.	0.	13535.
C3A16 Category Direct Cost								361514.	246891.	581.	0.	0.	608985.	
1107	C3B02	UTILITY BUILDING SITE WORK AND GRADING												
1108	C3B02	53	0	2	FINE GRADE FOR SLAB ON GRADE	225.0 SY	0.035	23.44 185.	0.00 0.	1.15 259.	0.00 0.	0.	0.	443.
1109	C3B02	45	0	2	HAND GRADE SELECT GRAVEL INCL 6" COMPACTION	225.0 SY	0.700	17.29 2723.	0.00 0.	0.12 27.	0.00 0.	0.	0.	2750.
1110	C3B02	53	0	2	FINISH GRADE AT SLOPES	1000.0 SY	0.004	23.44 94.	0.00 0.	0.07 70.	0.00 0.	0.	0.	164.

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Item	Work Bkdw Structure 1	J 10 F	A o c b c	Contract Markup t Tag	Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
							Factor	Rate	Ext'd Cost				
1111	C3802	61	0	2	CHILLER PADS OUTSIDE UTILITY BLDG	432.0 SF	0.046	24.19	481.	1.00 432.	0.00 0.	0.	913.
1112	C3802	61	0	2	TRANSFORMER PAD	144.0 SF	0.046	24.19	160.	1.00 144.	0.00 0.	0.	304.
C3802		Category Direct Cost							3642.	576.	356.	0.	4574.
1113	C3803	UTILITY BUILDING STRUCTURAL CONCRETE											
1114	C3803	53	0	5	STRUCTURAL EXCAVATION	117.0 CY	0.213	23.44	584.	0.00 0.	5.55 649.	0.	1233.
1115	C3803	73	0	5	SLAB ON GRADE	25.0 CY	0.015	25.69	10.	158.00 3950.	3.66 92.	0.	4051.
1116	C3803	61	0	5	FLOOR FINISH	1240.0 SF	0.015	24.19	450.	0.00 0.	0.00 0.	0.	450.
1117	C3803	61	0	5	STRIP FOOTING	12.0 CY	2.000	24.19	581.	80.00 960.	0.00 0.	0.	1541.
1118	C3803	45	0	5	6" COMP GRAVEL FILL	1344.0 SF	0.017	17.29	395.	0.40 538.	0.02 27.	0.	960.
1119	C3803	53	0	5	STRUCTURAL FILL	82.7 CY	0.260	23.44	504.	0.00 0.	0.02 2.	0.	506.
C3803		Category Direct Cost							2523.	5448.	769.	0.	8740.
1130	C3804	UTILITY BUILDING STRUCTURAL MASONRY											
1131	C3804	61	0	5	8" CMU	1900.0 SF	0.130	24.19	5973.	2.49 4731.	0.59 1121.	0.	11827.

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Item	Work Bkdw Structure 1	J A			Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd	b	c			Factor	Rate	Ext'd Cost				
		ID	F	t	Tag								
C3804 Category Direct Cost									5975.	4731.	1121.	0.	11827.
1137	C3805	UTILITY BUILDING METALS											
1138	C3805	85	0	2	OPEN WEB STEEL	2.8	8.000	32.28	727.00	0.00			
					JOISTS 18 K5	TON		723.	2036.	0.	0.		2759.
1139	C3805	85	0	2	22 GA METAL DECK	2000.0	0.008	32.28	0.80	0.03			
					SF			516.	1600.	60.	0.		2176.
C3805 Category Direct Cost									1240.	3636.	60.	0.	4935.
1148	C3808	UTILITY BUILDING DOORS AND WINDOWS											
1149	C3808	73	0	5	3X7 HOLLOW METAL	1.0	1.300	25.69	197.00	1.08			
					DOOR W/ HALF GLASS	EA		33.	197.	1.	0.		231.
1150	C3808	73	0	5	3X7 HOLLOW METAL	1.0	1.300	25.69	228.00	1.08			
					DOOR FRAME	EA		33.	228.	1.	0.		262.
1151	C3808	73	0	5	DOOR HARDWARE	1.0	1.300	25.69	500.00	0.00			
					EA			33.	500.	0.	0.		533.
1152	C3808	73	0	5	OVERHEAD DOOR	1.0	10.400	25.69	360.00	0.00			
					EA			267.	360.	0.	0.		627.
C3808 Category Direct Cost									367.	1285.	2.	0.	1655.
1162	C3809	UTILITY BUILDING FINISHES											
1163	C3809	57	0	2	INTERIOR/EXTERIOR	3720.0	0.005	23.26	0.20	0.00			
					PAINT ALKYD	SF		433.	744.	0.	0.		1177.

(Items with '#' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Brkdwn Structure 1	J A		Take-Off Item Description	Quantity Unit	- - - - l o b o r - - - -		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Entret Cost	Item Direct Cost
		Trd b	o c			Factor	Rate Ext'd Cost				
1164	C3809	57	0	2 PAINT 3 X 7 DOOR AND JAMB	1.0 EA	1.300	23.26 30.	0.20 0.	0.00 0.	0. 0.	30.
1165	C3809	57	0	2 PAINT ON DOOR	128.0 SF	0.005	23.26 15.	0.20 26.	0.00 0.	0. 0.	40.
C3809 Category Direct Cost							478.	770.	0.	0.	1248.
1079	C3816	UTILITY BLDG SYSTEMS									
1080	C3816	65	0	2 3/4" CONDUIT	1025.0 LF	0.130	32.96 4392.	1.57 1609.	0.00 0.	0. 0.	4001.
1081	C3816	65	0	2 #12 WIRE	3000.0 LF	0.010	32.96 989.	0.08 240.	0.00 0.	0. 0.	1229.
1082	C3816	65	0	2 #10 WIRE	625.0 LF	0.010	32.96 206.	0.20 125.	0.00 0.	0. 0.	331.
1083	C3816	65	0	2 CABLE TRANSFORMER TR-1 9KVA	1.0 EA	14.800	32.96 488.	595.00 595.	0.00 0.	0. 0.	1083.
1084	C3816	65	0	2 PANEL 80 LP-1 208/120	1.0 EA	19.600	32.96 646.	650.00 650.	0.00 0.	0. 0.	1296.
1085	C3816	65	0	2 CKT BREAKERS 50AF/1P	12.0 EA	0.867	32.96 343.	17.50 210.	0.00 0.	0. 0.	553.
1086	C3816	65	0	2 1" CONDUIT	600.0 LF	0.160	32.96 1964.	2.10 1260.	0.00 0.	0. 0.	4424.
1087	C3816	65	0	2 #4 WIRE	2100.0 LF	0.020	32.96 1384.	0.45 945.	0.00 0.	0. 0.	2329.
C3816 Category Direct Cost							11612.	5634.	0.	0.	17246.

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdw Structure J	Trd ID	J o b F	A c t i v e T a g	Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
							Factor	Rate	Ext'd Cost				
1299	C3C05				MECHANICAL PENTHOUSE								
1300	C3C05				ERECT STRUCTURAL STEEL								
1301	C3C05	85	0	2	BEAMS - W10X39	7176.0 LBS	0.020	32.28	4633.	0.50 3588.	0.10 718.	0.	8938.
1302	C3C05	85	0	2	GIRDERS W14X74	8880.0 LBS	0.020	32.28	5733.	0.50 4440.	0.10 888.	0.	11061.
1303	C3C05	85	0	2	COLUMNS W8X24	2304.0 LBS	0.020	32.28	1487.	0.50 1152.	0.10 230.	0.	2870.
1304	C3C05	85	0	2	BASE PLATES/FASTEN TO ROOF	1.0 LOT	8.000	32.28	258.	100.00 100.	0.10 0.	0.	358.
1305	C3C05	53	0	2	CRANE	1.0 DAY	8.000	23.44	188.	0.00 0.	0.10 0.	0.	188.
1306	C3C05	85	0	2	ROOFING - 20 GA-3"	1380.0 SF	0.010	32.28	445.	1.00 1380.	0.00 0.	0.	1825.
1307	C3C05	85	0	2	GIRTS - C6X11.5 & CURB	5244.0 LBS	0.020	32.28	3386.	0.50 2622.	0.10 524.	0.	6532.
1308	C3C05	85	0	2	SIDING (1-1/2" STEEL)	1520.0 SF	0.010	32.28	491.	1.00 1520.	0.00 0.	0.	2011.
C3C05					Category Direct Cost				16621.	14802.	2361.	0.	33783.
1309	C3C08	73	0	2	DOOR 6 X 7	1.0 EA	2.000	25.69	51.	450.00 450.	0.00 0.	0.	501.
1310	C3C08	73	0	2	DOOR FRAME - DOUBLE	1.0 EA	1.500	25.69	39.	100.00 100.	0.00 0.	0.	139.

[Items with *#* have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdw Structure	Trd ID	J A b c F t	c Mark t Tag	Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Entret Cost	Item Direct Cost
							Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1311	C3C08	73	0	2	HARDWARE	1.0 EA	1.100	25.69	28.	225.00	225.	0.00	0.	0.	253.
C3C08							Category Direct Cost			118.	775.	0.	0.	0.	893.
1173	C5D15				NATURAL GAS PIPING FROM BUILDING TO MAIN										
1174	C5D15	69	0	2	1-1/4" SCHEDULE 40 BLK STEEL	155.0 LF	1.280	33.56	6658.	3.18	493.	0.00	0.	0.	7151.
1175	C5D15	69	0	2	1-1/4" SIZE GAS STOP W/ CHECK	1.0 EA	0.667	33.56	22.	20.35	20.	0.00	0.	0.	43.
1176	C5D15	69	0	2	1-1/4" PRESSURE REG. VALVE	1.0 EA	1.920	33.56	64.	177.00	177.	0.00	0.	0.	241.
1177	C5D15	69	0	2	MISC VALVES AND FITTINGS (10X OF TOT MAT. AND LAB.)	1.0 LOT		0.00	0.	650.00	650.	0.00	0.	0.	650.
1178	C5D15	69	0	2	1-1/4" METERS INLET OUTLET	2.0 EA	2.000	33.56	134.	258.75	518.	0.00	0.	0.	652.
1179	C5D15	45	0	2	3" THICK PAVEMENT REMOVAL OVER GAS LINE	15.0 SY	4.000	17.29	1037.	0.00	0.	1.98	30.	0.	1067.
1180	C5D15	45	0	2	4" THICK PAVEMENT REPLACE OVER GAS LINE	15.0 SY	1.500	17.29	389.	6.77	102.	0.00	0.	0.	491.
1181	C5D15	69	0	2	2" SCHEDULE 40 BLK STEEL PIPE	10.0 LF	1.280	33.56	430.	3.50	35.	0.00	0.	0.	465.
1182	C5D15	69	0	2	1" CAP	1.0 EA	0.640	33.56	21.	2.46	2.	0.00	0.	0.	24.

(Items with '#' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Brkdw Structure 1	Trd ID	J o b F	A c t i v e T a g	Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Contract Cost	Item Direct Cost
							Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1183	C5015	53	0	2	TRENCHING	35.0 CY	0.070	23.44	820.40	0.00	0.00	1.76	61.60	0.	119.
1184	C5015	45	0	2	BACKFILL + 15% SHRINKAGE	30.0 CY	0.096	17.29	518.70	0.00	0.00	0.60	18.00	0.	68.
1185	C5015	53	0	2	BEDDING	10.0 CY	0.017	23.44	234.40	3.76	37.60	0.83	8.30	0.	50.
1186	C5015	45	0	2	COMPACTION	30.0 CY	0.834	17.29	518.70	0.00	0.00	0.83	24.90	0.	457.
C5015 Category Direct Cost									9301.		2034.		143.	0.	11477.
1213	C5E15	FIRE PROTECTION OUTSIDE OF BUILDING													
1214	C5E15	69	0	2	10" STEEL PIPE	820.0 LF	0.311	33.56	27519.20	14.95	12259.00	1.19	976.00	0.	21793.
1215	C5E15	45	0	2	CUT AND REMOVE ASPHALT	74.0 SY	4.000	17.29	1279.40	0.00	0.00	1.97	146.00	0.	5264.
1216	C5E15	53	0	2	TRENCHING	295.0 CY	0.070	23.44	6914.80	0.00	0.00	1.76	519.00	0.	1003.
1217	C5E15	45	0	2	BACKFILL	240.0 CY	0.600	17.29	4149.60	0.00	0.00	0.60	144.00	0.	2634.
1218	C5E15	45	0	2	BEDDING	34.0 CY	0.100	17.29	587.86	3.76	128.06	0.70	23.80	0.	210.
1219	C5E15	45	0	2	COMPACTION	340.0 CY	0.830	17.29	5879.00	0.00	0.00	0.83	282.00	0.	5161.
1220	C5E15	53	0	2	REPLACE ASPHALT PAVING	85.0 SY	1.500	23.44	1992.70	6.77	575.45	0.00	0.00	0.	3564.

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdn Structure 1	Trd ID	b F	J o c t	A c t r c t t a g	Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Contract Cost	Item Direct Cost
								Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1221	CSE15	69		0	2	10" 90 DEG ELBOMS	4.0 EA	1.333	33.56	179.	253.00	1012.	5.10	20.	0.	1211.
1222	CSE15	61		0	2	THRUST BLOCKS	4.0 CY	2.000	24.19	194.	100.00	400.	0.00	0.	0.	594.
CSE15 Category Direct Cost										24949.	14374.	2111.	0.	0.	0.	41435.
1229	CSF15					RAD/ACID WASTE LINE OUTSIDE OF BUILDING										
1230	CSF15	69		0	2	4" DOUBLE CONTAINED PIPE	60.0 LF	0.600	33.56	1208.	35.00	2100.	0.00	0.	0.	3308.
1231	CSF15	45		0	2	CUT AND REMOVE EXISTING ASPHALT PAVING	10.0 SY	4.000	17.29	692.	0.00	0.	1.97	20.	0.	711.
1232	CSF15	53		0	2	TRENCHING	13.0 CY	0.070	23.44	21.	0.00	0.	1.76	23.	0.	44.
1233	CSF15	45		0	2	BACKFILLG	15.0 CY	0.600	17.29	156.	0.00	0.	0.60	9.	0.	165.
1234	CSF15	45		0	2	BEDDING	2.0 CY	0.100	17.29	3.	3.76	8.	0.70	1.	0.	12.
1235	CSF15	45		0	2	COMPACTION	15.0 CY	0.830	17.29	215.	0.00	0.	0.83	12.	0.	228.
1236	CSF15	45		0	2	REPLACE ASPHALT PAVING	13.0 CY	1.500	17.29	337.	6.77	88.	0.00	0.	0.	425.
1237	CSF15	69		0	2	DOUBLE CONTAINMENT 45 DEG ELBOMS	2.0 CY	0.200	33.56	13.	1.89	4.	0.00	0.	0.	17.
1238	CSF15	69		0	2	DOUBLE CONTAINMENT CLEAN-OUT	1.0 EA	0.300	33.56	10.	245.00	245.	0.00	0.	0.	255.

(Items with '#' have been adjusted by Job Factor and/or Equip Factor)

Items with 10 have been adjusted by 100 Factor 12/2/01 Equip Factor														
Item	Work Bkdn Structure 1	J A				Quantity Unit	- - - L a b o r - - -			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Cntrct Cost	Item Direct Cost	
		Ted ID	b F	c t	c Markup Tag		Take-Off Item Description	Factor	Rate					Ext'd Cost
C5F15								Category Direct Cost		2656.	2444.	65.	0.	5166.
1195	C5G15	POTABLE AND NON POTABLE WATER SYSTEM OUTSIDE OF BUILDING												
1196	C5G15	POTABLE AND NON POTABLE WATER SYSTEM OUTSIDE OF BUILDING												
1197	C5G15	69	0	2	2" COPPER ASTM 888	20.0	0.182	33.56	4.96	0.00				
					LF			122.	99.	0.	0.	221.		
1198	C5G15	69	0	2	1" COPPER ASTM 888	190.0	0.114	33.56	1.69	0.00				
					LF			727.	321.	0.	0.	1048.		
1199	C5G15	69	0	2	MISC VALVES AND	1.0		0.00	150.00	0.00				
					FITTINGS (10% OF TOT	LOT		0.	150.	0.	0.	150.		
					. LAB. & MAT OF PIPE									
1200	C5G15	45	0	2	REMOVE EXISTING	18.0	4.000	17.29	0.00	1.97				
					PAVEMENT	SY		1245.	0.	35.	0.	1280.		
1201	C5G15	53	0	2	TRENCHING	42.0	0.070	23.44	0.00	1.76				
					CY			69.	0.	74.	0.	143.		
1202	C5G15	45	0	2	BACKFILL	35.0	0.600	17.29	0.00	0.60				
					CY			363.	0.	21.	0.	384.		
1203	C5G15	45	0	2	BEDDING	13.0	0.100	17.29	3.76	0.70				
					CY			22.	49.	9.	0.	80.		
1204	C5G15	45	0	2	COMPACTION	35.0	0.830	17.29	0.00	0.83				
					CY			502.	0.	29.	0.	531.		
1205	C5G15	45	0	2	REPLACE WITH 4"	18.0	1.500	17.29	6.77	0.00				
					ASPHALT	SY		467.	122.	0.	0.	589.		
C5G15								Category Direct Cost		3518.	741.	169.	0.	4427.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdn Structure 1	J A			Take-Off Item Description	Quantity Unit	- - - - L a b o r - - - -			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Entret Cost	Item Direct Cost
		Ind b	c	Markup			Factor	Rate	Ext'd Cost				
1312	E20				SECURITY SYSTEMS EQUIPMENT (05 8)								
1313	E20	65	0	1	SECURITY ALARM EQUIPMENT & LABOR W/O ENTRY POST	1.0 EA	4000.000	\$2.96	131840.	24808.00 24808.	0.00 0.	0.	136648.
1314	E20	65	0	1	SECURITY VIDEO EQUIPMENT & LABOR W/O ENTRY POST	1.0 EA	664.000	\$2.96	21885.	47700.00 47700.	0.00 0.	0.	69585.
1315	E20	65	0	1	HAA ENTRY POST EQUIPMENT & LABOR (SEE BACKUP)	1.0 LOT	1296.000	\$2.96	42716.	252825.00 252825.	0.00 0.	0.	295541.
1316	E20	165	0	3	SECURITY HOME RUN TO PF-47 2-4" SCH. 80 PVC CONDUIT	1000.0 LF	0.356	\$2.40	11534.	8.50 8500.	0.00 0.	0.	20034.
1317	E20	165	0	3	CONDUCTORS, #4-0 IN CL. GRND. WIRE	5000.0 LF	0.043	\$2.40	6966.	2.00 10000.	0.00 0.	0.	16966.
1318	E20	145	0	3	CUT AND REMOVE EXIST ASPHALT PAVING	14.0 SY	8.000	14.40	1613.	0.00 0.	3.25 46.	0.	1658.
1319	E20	145	0	3	REPAIR PAVING	14.0 SY	1.140	14.40	230.	8.00 112.	0.75 11.	0.	352.
1320	E20	145	0	3	TRENCHING	166.0 CY	0.070	14.40	167.	0.00 0.	1.76 292.	0.	459.
1321	E20	145	0	3	HAND LAB. @ EXISTING UTILITY LINES	40.0 HRS	1.000	14.40	576.	0.00 0.	0.00 0.	0.	576.
1322	E20	145	0	3	BEDDING	10.0 CY	0.100	14.40	14.	0.00 0.	0.70 7.	0.	21.
1323	E20	145	0	3	ENCASE CONDUITS IN CONCRETE	6.0 CY	1.000	14.40	86.	63.50 381.	9.70 58.	0.	526.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Ted b ID F	o c Markup t Tag			Factor	Rate	Ext'd Cost				
1324	E20	145	0 3	BACKFILL TRENCH INCL 15% FOR SHRINKAGE	172.0 CY	0.600	14.40	1486.	0.00	0.60	0.	1589.
1325	E20	145	0 3	COMPACTION	172.0 CY	0.830	14.40	2056.	0.00	0.83	0.	2199.
1326	E20			GENERAL CONTRACTOR ROUGH IN								
1327	E20	65	0 5	3/4" RIGID CONDUIT W/ PULLWIRE FOR ALMS DETECTORS & SWITCHES	4000.0 LF	0.132	32.96	17403.	1.58	0.00	0.	23723.
1453	E20			FIBER OPTIC DETECTION GRILLE								
1466	E20		0 5	ST 4X6CS/16 APP 18.77 LB/FT X 80LF	6000.0 LBS		0.00	0.	1.12	0.00	0.	6720.
1467	E20		0 5	3/4" PIPE SCH 40 APP 1.13 LB/LF	4160.0 LF		0.00	0.	1.72	0.00	0.	7155.
1468	E20	B5	0 5	CUT AND BEVEL, PUNCH 26" OC-ST 4X6	320.0 LF	0.500	29.73	4757.	1.00	0.00	0.	5077.
1469	E20	B5	0 5	FAB COVER PLATE 3/16 5" WIDE APP 3.19 LB/ FT	1024.0 LBS	0.300	29.73	9133.	1.12	0.00	0.	10280.
1470	E20	B5	0 5	3/16 WELD SCH 40 TO ST 4X6 3IN/JOINT	576.0 EA	0.200	29.73	3425.	2.00	0.00	0.	4577.
1471	E20	B5	0 5	3/16 WELD SCH 40 TO SCH 40 4 IN/JOINT	3888.0 EA	0.250	29.73	28898.	2.00	0.00	0.	36674.
1472	E20	65	0 2	INSTALL FIBER OPTIC CABLES	6000.0 LF	0.349	32.96	69078.	7.00	0.00	0.	111078.
1473	E20	65	0 5	INSTALL 1/2" DIA EXPANSION ANCHORS 3"-O.C.	120.0 EA	0.750	32.28	2905.	10.00	0.00	0.	4105.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdw Structure 1	Trd b ID F	J A o c t Markup Tag	Entret Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Entret Cost	Item Direct Cost
						Factor	Rate	Ext'd Cost				
1474	E20	85	0 5	INSTALL COVER PLATE	1024.0 LBS	1.000	32.28	33055.	0.50	0.00	0.	33567.
1475	E20	85	0 5	TACK WELD COVER PLATE	640.0 LF	0.300	32.28	6198.	1.12	0.00	0.	6915.
E20						Category Direct Cost			396021.	419345.	659.	816025.
564	E2C11	BREATHING AIR SYSTEM MONITORING										
569	E2C11	SPECIAL FACILITY EQUIP. BREATHING AIR SYSTEM MONITORING										
570	E2C11	65	0 2	FLOW MONITORS (QUOTE	2.0 EA	8.000	32.96	527.	2120.00	0.00	0.	4767.
571	E2C11	65	0 2	PRESSURE MONITORS	2.0 EA	8.000	33.56	537.	2120.00	0.00	0.	4777.
572	E2C11	65	0 2	CO 2 MONITORS	2.0 EA	8.000	32.96	527.	3180.00	0.00	0.	6887.
575	E2C11	FMS PLC SYSTEM										
576	E2C11		0 2	PLC CARDS (61)	1.0 LOT		0.00	0.	56944.00	0.00	0.	56944.
577	E2C11		0 2	PLC RACKS (5)	1.0 LOT		0.00	0.	10880.00	0.00	0.	10880.
578	E2C11		0 2	PLC PROCESSOR (2)	1.0 LOT		0.00	0.	23052.00	0.00	0.	23052.
579	E2C11	65	0 2	PLC ENCLOSURE	4.0 LOT	16.000	32.96	2109.	5000.00	0.00	0.	22109.
587	E2C11		0 2	TAPE DRIVE	8.0 EA		0.00	0.	700.00	0.00	0.	5600.

(Items with '#' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Brkdm Structure 1	J Trd b ID F	A c t	c t	Markup Tag	Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Contract Cost	Item Direct Cost
								Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
588	E2C11			0	2	E-NET CARD	16.0 EA			0.00 0.	100.00 1600.		0.00 0.		0.	1600.
589	E2C11	65		0	2	PRINTER	8.0 EA	2.000	32.96 527.	685.00 5480.		0.00 0.		0.	0.	6007.
590	E2C11			0	2	OS/2 V.3X	8.0 EA		0.00 0.	325.00 2600.		0.00 0.		0.	0.	2600.
591	E2C11			0	2	TAPES/DISK	1.0 EA		0.00 0.	500.00 500.		0.00 0.		0.	0.	500.
592	E2C11			0	2	DOCUMENTATION	1.0 EA		0.00 0.	500.00 500.		0.00 0.		0.	0.	500.
593	E2C11			0	2	SERVER NETWORK SOFTWARE	2.0 EA		0.00 0.	1900.00 3800.		0.00 0.		0.	0.	3800.
594	E2C11			0	2	STATION NETWORK SOFTWARE	8.0 EA		0.00 0.	2360.00 18880.		0.00 0.		0.	0.	18880.
595	E2C11			0	2	ICOM MMI	7.0 EA		0.00 0.	6000.00 42000.		0.00 0.		0.	0.	42000.
596	E2C11			0	2	ICOM BASE	1.0 EA		0.00 0.	9500.00 9500.		0.00 0.		0.	0.	9500.
597	E2C11			0	2	CONFIGURATION	240.0 HRS		0.00 0.	65.00 15600.		0.00 0.		0.	0.	15600.
598	E2C11			0	2	PROGRAMMING	2000.0 HRS		0.00 0.	35.00 70000.		0.00 0.		0.	0.	70000.
613	E2C11					REMOTE AREA MONITORS										
617	E2C11			0	2	REMOTE AREA MONITORS	1.0 LOT		0.00 0.	10600.00 10600.		0.00 0.		0.	0.	10600.

[Items with 'd' have been adjusted by Job Factor and/or Equip factor]

[illegible]

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdw Structure 1	J A			Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Entret Cost	Item Direct Cost
		Trd ID	b F	c t		Factor	Rate	Ext'd Cost				
666	E2C11	65	0	2	CRITICALITY HEADS	5.0 EA	10.000	32.96 1978.	1590.00 9540.	0.00 0.	0.	11518.
667	E2C11	65	0	2	ALARM SYSTEMS	1.0 EA	100.000	32.96 3296.	21200.00 21200.	0.00 0.	0.	24496.
668	E2C11	65	0	2	UPS SYSTEM	1.0 EA	16.000	32.96 527.	6360.00 6360.	0.00 0.	0.	6887.
674	E2C11	STACK MONITORING SYSTEM										
679	E2C11	65	0	2	STACK SENSORS	4.0 EA	20.000	32.96 2637.	7420.00 29680.	0.00 0.	0.	32317.
680	E2C11	65	0	2	UPS	4.0 EA	10.000	32.96 1318.	1060.00 4240.	0.00 0.	0.	5558.
681	E2C11	65	0	2	PUMP	4.0 EA	10.000	32.96 1318.	1060.00 4240.	0.00 0.	0.	5558.
682	E2C11	69	0	2	FLOW SENSOR	2.0 EA	8.000	33.56 937.	2120.00 4240.	0.00 0.	0.	4777.
E2C11 Category Direct Cost								47602.	925156.	0.	0.	972758.
706	E2C15	CONTROL SYSTEM MECH										
712	E2C15	69	0	2	1 1/2" COPPER TUBING	4000.0 LF	0.200	33.56 26848.	4.30 17200.	0.00 0.	0.	46048.
713	E2C15	69	0	2	1/2" COPPER TUBING	900.0 LF	0.130	33.56 3927.	1.35 1215.	0.00 0.	0.	5142.
714	E2C15	69	0	2	5/8" TYGON TUBING	340.0 LF	0.070	33.56 799.	0.37 126.	0.00 0.	0.	925.

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd b ID F	c Markup t Tag			Factor	Rate Ext'd Cost				
722	E2C15		0 2	5/8" TYGON TUBING	340.0 LF	0.070	33.56 799.	0.35 119.	0.00 0.	0. 0.	918.
729	E2C15			CONTROL SYSTEM VALVES							
733	E2C15	69	0 2	1/2" BALL VALVES	88.0 EA	0.500	33.56 1477.	35.00 3080.	0.00 0.	0. 0.	4557.
734	E2C15	69	0 2	VACUUM EXHAUST PIPES	1.0 LOT	160.000	33.56 5370.	12720.00 12720.	0.00 0.	0. 0.	18090.
E2C15 Category Direct Cost							39218.	34460.	0.	0.	73678.
580	E2C16		0 2	PLC LADDER LOGIC PROGRAMMING	480.0 HRS		0.00 0.	35.00 16800.	0.00 0.	0. 0.	16800.
581	E2C16		0 2	PLC PORT TERMINAL	1.0 EA		0.00 0.	5911.00 5911.	0.00 0.	0. 0.	5911.
582	E2C16		0 2	PLC PROGRAM/DOC PACKAGE	1.0 EA		0.00 0.	2500.00 2500.	0.00 0.	0. 0.	2500.
583	E2C16	65	0 2	PLC TERMINATION	2400.0 EA	0.084	32.96 6645.	0.00 0.	0.00 0.	0. 0.	6645.
584	E2C16			FMS COMPUTER SYSTEM							
585	E2C16	65	0 2	IBM INDUSTRIAL (OP. ST.)	8.0 EA	2.000	32.96 527.	7955.00 63640.	0.00 0.	0. 0.	64167.
586	E2C16	65	0 2	IBM SERVER	2.0 EA	8.000	32.96 527.	0.00 0.	0.00 0.	0. 0.	527.
689	E2C16			CONTROL SYSTEM WIRE							
690	E2C16	65	0 2	TW,SH PAIR	3000.0 LF	0.010	32.96 989.	0.15 450.	0.00 0.	0. 0.	1439.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Entrect Cost	Item Direct Cost
		Trd b ID F	c Markup t Tag			Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
693	E2C16	65	0 2	WIRE #14	22000.0 LF	0.010	32.96	7251.	0.17	3740.	0.00	0.	0.	10991.
694	E2C16	65	0 2	WIRE #12	7000.0 LF	0.010	32.96	2307.	0.10	700.	0.00	0.	0.	3007.
698	E2C16			CONTROL SYSTEYEM CONDUIT										
702	E2C16	65	0 2	3/4" CONDUIT	10000.0 LF	0.130	32.96	42848.	1.66	16600.	0.00	0.	0.	59448.
E2C16 Category Direct Cost								61095.		110341.		0.	0.	171436.
359	E2L13			NOA LAB & STORAGE VAULT										
373	E2L13		0 4	GANTRY ROBOTICS (QUOTE)	1.0 EA	1.000	0.00	0.	0.00	0.	0.00	0.	600000.	600000.
374	E2L13		0 4	CALORIMETERS (3) (QUOTE)	1.0 LOT	1.000	0.00	0.	0.00	0.	0.00	0.	1000000.	1000000.
375	E2L13		0 4	SHUFFLER (QUOTE)	1.0 EA	1.000	0.00	0.	0.00	0.	0.00	0.	1200000.	1200000.
376	E2L13		0 4	MUETRON MULTIPLICITY COUNTER (QUOTE)	1.0 EA	1.000	0.00	0.	0.00	0.	0.00	0.	800000.	800000.
377	E2L13		0 4	GAMMA ISOTOPICS (2) (QUOTE)	1.0 LOT	1.000	0.00	0.	0.00	0.	0.00	0.	450000.	450000.
378	E2L13		0 4	COMPUTER/NETWORK INTEGRATE WITH MASS (QUOTE)	1.0 LOT	1.000	0.00	0.	0.00	0.	0.00	0.	550000.	550000.
E2L13 Category Direct Cost								0.		0.		0.	4600000.	4600000.

[Items with 'B' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdn Structure t	J A			Quantity Unit	L a b o r			Material		Const Equip		Sub Contract Cost	Item Direct Cost
		Trd ID	b F	c t		Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1329	E2S11													
1330	E2S11													
1331	E2S11	85	0	2	WELD ASSEMBLY-AUTO WELDED (20"/MIN)	18357.8 LF	0.100	32.28 59259.	0.23 96600.	0.00 0.	0.25 0.	0.00 0.	0.	96600.
1332	E2S11	85	0	2	FIT AND ALIGN	420000.0 LBS	0.003	32.28 40673.	0.00 0.	0.25 105000.	0.00 0.	0.	0.	145673.
1333	E2S11	85	0	2	WELD AND FIT INSPECTION	18357.8 LF	0.050	32.28 29630.	0.00 0.	0.10 1836.	0.00 0.	0.	0.	31465.
1334	E2S11	61	0	2	FILL DECK WITH CONCRETE (SHIELDING) IN SHOP	238.6 CY	1.500	24.19 8658.	100.00 23860.	2.00 477.	0.	0.	0.	32995.
1335	E2S11		0	2	DELIVER STEEL VIA TRUCK (10 DAYS)	18.0 EA		0.00 0.	0.00 0.	3500.00 63000.			0.	63000.
1336	E2S11	85	0	2	RIGGING & ERECTION THRU END WALL	1.0 EA	160.000	32.28 5165.	0.00 0.	0.00 0.	0.00 0.	0.	0.	5165.
1337	E2S11	53	0	2	RIGGING - CRANE OPERATOR	1.0 EA	40.000	23.44 938.	0.00 0.	13600.00 13600.			0.	14538.
1338	E2S11	85	0	2	FIELD WELD TOP SECTIONS CLF OF WELD PASSES	32636.2 LF	0.033	32.28 34765.	0.10 3264.	0.32 10444.			0.	48473.
1339	E2S11	85	0	2	FIELD WELD BOTTOM SECTIONS W/FULL PEN	32636.2 LF	0.050	32.28 52675.	0.10 3264.	0.32 10444.			0.	66382.
1340	E2S11	85	0	2	FIELD WELD INSPECTION	65272.3 LF	0.025	32.28 52675.	0.00 0.	0.10 6527.			0.	59202.
1341	E2S11	85	0	2	MISC GRINDING/ FITTING/ETC.	60000.0 LF	0.010	32.28 19368.	0.00 0.	0.10 6000.			0.	25368.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdn Structure #	J A		Take-Off (Item Description)	Quantity Unit	L a b o r			Material		Const Equip		Sub Contract Cost	Item Direct Cost
		Trd b 10 P	c Markup t Tag			Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1342	E2S11		0 2	FABRICATE CUT & PUNCH ITEM #1330 (BY SUPPLIER)	420000.0 LBS			0.00 0.	0.00 0.	0.00 0.	0.00 0.	84000. 0.		84000.
1343	E2S11		0 2	NQA-1 DOCUMENTATION & CERTIFICATION FOR ITEM #1330	420000.0 LBS			0.00 0.	0.00 0.	0.00 0.	0.00 0.	42000. 0.		42000.
1348	E2S11			BRIDGE CRANE - 20 TON										
1349	E2S11	B5	0 2	INSTALL CRANE (QUOTE)	1.0 EA	420.000	32.28	32.28 13558.	807000.00	807000. 0.	0.00 0.	0. 0.		820558.
1350	E2S11	B5	0 2	INSTALL CRANE BEAMS HORIZONTAL BRACE 2-W 27X114'S	260.0 LF	1.500	32.28	32.28 12589.	53.50 13910.	2.50 650.	0.00 0.	0. 0.		27149.
1351	E2S11	B5	0 2	INSTALL BRACKETS	56.0 EA	6.000	32.28	32.28 10846.	100.00 5600.	1.00 56.	0.00 0.	0. 0.		16502.
1352	E2S11	53	0 2	FORKLIFT TO ERECT BEAMS & BRACKET	2.0 WKS	40.000	23.46	23.46 1875.	0.00 0.	600.00 1200.	0.00 0.	0. 0.		3075.
1353	E2S11		0 2	SCISSOR LIFT-MAKE CONNECTIONS/PAINT	3.0 WKS		0.00	0.00 0.	0.00 0.	300.00 900.	0.00 0.	0. 0.		900.
1354	E2S11	57	0 2	PAINT CRANE RAILS AND BRACKETS	5100.0 SF	0.012	23.26	23.26 1424.	0.20 1020.	0.02 102.	0.00 0.	0. 0.		2546.
1355	E2S11	85	0 2	FIT AND ALIGN CRANE	1.0 WKS	240.000	32.28	32.28 7747.	0.00 0.	0.00 0.	0.00 0.	0. 0.		7747.
1356	E2S11	85	0 2	1-W24X131 BEAM	130.0 LF	1.500	32.28	32.28 6295.	67.00 8710.	2.50 325.	0.00 0.	0. 0.		15330.
1357	E2S11	85	0 2	1-60# RAIL	130.0 LF	0.500	32.28	32.28 2098.	15.00 1950.	1.00 130.	0.00 0.	0. 0.		4178.

[Items with *#* have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Contract Cost	Item Direct Cost
		Trd b ID F	c Markup t Tag			Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1358	E2S11	85	0 2	W 24X 131 (EAST WALL)	130.0 LF	1.500	32.28	6295.	67.00	8710.	2.50	325.	0.	15330.
1359	E2S11		0 2	START UP AND TEST ITEM #1349 (QUOTE)	1.0 EA		0.00	0.00	0.	0.00	0.00	0.	100000.	100000.
1363	E2S11			TUBE HANDLING MACHINE & ASSOC. EQUIPMENT										
1364	E2S11		0 2	CONTAINER HANDLING MACHINE (QUOTE)	1.0 EA		0.00	0.00	0.00	0.00	0.00	0.	1000000.	1000000.
1365	E2S11		0 2	PLUG PULLERS (QUOTE)	2.0 EA		0.00	0.00	0.00	0.00	0.00	0.	50000.	50000.
1366	E2S11		0 2	SHIELDING VALVE (QUOTE)	2.0 EA		0.00	0.00	0.00	0.00	0.00	0.	600000.	600000.
1367	E2S11		0 2	CCTV/ILLUMINATION/ BAR CODE READER (QUOTE)	1.0 EA		0.00	0.00	0.00	0.00	0.00	0.	100000.	100000.
1373	E2S11			MATERIAL X-FER AIRLOCKS-BASEMENT										
1374	E2S11		0 2	MATERIAL X-FER EQUIPMENT	1.0 EA		0.00	0.00	0.00	0.00	0.00	0.	50000.	50000.
1380	E2S11			CONTAINER BASKETS										
1381	E2S11		0 2	CONTAINER BASKETS (WITH EXTRAS) \$750EA SEE BACK UP QUOTE	1100.0 EA		0.00	0.00	0.00	0.00	0.00	0.	825000.	825000.
1382	E2S11			ALUMINIZED STEEL STORAGE DRYWELLS										
1383	E2S11		0 2	18" DIA X 17'-1"X 1/2" TK (QUOTE)	515.0 EA		0.00	0.	775.00	399125.	0.00	0.	0.	399125.
1384	E2S11	85	0 2	FLANGES - 1"X2"X18 I.D. WELDED TO DRYWELL	507.0 EA	3.000	32.28	49098.	20.00	10140.	12.00	6084.	0.	65322.

[[Items With '#' have been adjusted by Job Factor and/or Equip Factor]]

Item	Work Breakdown Structure 1	J Tnd b 3D F	A o c t Tag	Contract e Markup Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Entret Cost	Item Direct Cost
						Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1385	E2S11	45	0	2 SOCKETS/PINS & FASTEN W TO FLOOR	515.0 EA	0.500	17.29	4452.	75.00	38625.	1.56	803.	0.	43881.
1386	E2S11		0	2 CONC SHIELDED PLUGS (800#/EA) SEE BREAKDOWN	515.0 EA		0.00	0.	225.00	115875.	0.00	0.	0.	115875.
1387	E2S11	85	0	2 INSTALL DRYWELL	515.0 EA	0.250	32.28	4156.	0.00	0.	5.00	2575.	0.	6731.
1388	E2S11	85	0	2 WELD/FASTEN DRYWELL TO DECK	515.0 EA	3.000	32.28	49873.	3.00	1545.	12.00	6180.	0.	57598.
1517	E2S11	69	0	2 24" NEOPRENE GASKET	507.0 EA	2.000	33.56	34030.	162.00	82134.	0.00	0.	0.	116164.
1535	E2S11	85	0	2 FABRICATE DRYWELLS	515.0 EA	8.000	32.28	132994.	50.00	25750.	80.00	41200.	0.	199944.
1536	E2S11	85	0	2 INSPECT DRYWELLS	515.0 EA	4.000	32.28	66497.	0.00	0.	0.00	0.	0.	66497.
1537	E2S11	85	0	2 DOCUMENTATION AND TESTING DRYWELLS	515.0 EA	4.000	32.28	66497.	0.00	0.	0.00	0.	0.	66497.
E2S11 Category Direct Cost								774126.		1648917.		282447.	2851000.	5556490.
345	E2S12			STAGING & UNPACKING AREA										
350	E2S12		0	4 STAGING AREA MANUAL DOLLIES (QUOTE)	12.0 EA	1.000	0.00	0.	0.00	0.	0.00	0.	8400.	8400.
352	E2S12		0	4 MISC. CARTS (QUOTE)	3.0 EA		0.00	0.	900.00	2700.	0.00	0.	0.	2700.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdn Structure 1	J Trd b ID F	A c Markup t Tag	Take-Off Item Description	Quantity Unit	Labor			Material		Const Equip		Sub Contract Cost	Item Direct Cost
						Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
353	E2S12		0	4 UNPACKING AREA SHIELD WALL ASSY. (QUOTE)	1.0 EA	1.000		0.00 0.		0.00 0.		0.00 0.	65000.	65000.
354	E2S12		0	4 UNPACKING AREA MANIPULATOR (QUOTE)	1.0 EA	1.000		0.00 0.		0.00 0.		0.00 0.	200000.	200000.
355	E2S12		0	4 UNPACKING AREA CCTV SYSTEM (QUOTE)	1.0 EA	1.000		0.00 0.		0.00 0.		0.00 0.	4000.	4000.
356	E2S12		0	4 DRUM HANDLER (QUOTE)	3.0 EA			0.00 0.	350.00		0.00		0.	1050.
357	E2S12		0	4 DRUM CRADLES (QUOTE)	3.0 EA			0.00 0.	90.00		0.00		0.	270.
358	E2S12		0	4 DRUM DOLLIES (QUOTE)	3.0 EA			0.00 0.	75.00		0.00		0.	225.
1476	E2S12		0	2 JIB CRANE (FRAME) (QUOTE)	2.0 EA			0.00 0.	1300.00		0.00		0.	2600.
1477	E2S12		0	2 1 TON ELECT HOIST (QUOTE)	2.0 EA			0.00 0.	1300.00		0.00		0.	2600.
1478	E2S12		0	2 TROLLEY (QUOTE)	2.0 EA			0.00 0.	200.00		0.00		0.	400.
1479	E2S12	85	0	2 INSTALL JIB CRANE & ASSEMBLE FRAME	2.0 EA	16.000		32.28 1033.	100.00		0.00		0.	1233.
1480	E2S12	65	0	2 POWER TO JIB CRANES	2.0 EA	16.000		32.96 1055.	500.00		0.00		0.	2055.
E2S12						Category Direct Cost			2088.	11045.	0.	277400.	290533.	

(Items with '#' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Bkdn Structure 1	J Trd ID	A b F	c Markup t	Take-Off Item Tag Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
							Factor	Rate	Ext'd Cost				
1328	E2S14	65	0	4	HELIUM DETECTION ALARM AT STORAGE VAULTS	1.0 EA			0.00 0.	0.00 0.	0.00 0.	15000.	15000.
E2S14 Category Direct Cost									0.	0.	0.	15000.	15000.
344	E2S15	LOADING DOCKS											
347	E2S15	0	4		LOADING DOCK LIFT TABLE 10,000 LB CAP (QUOTE)	1.0 EA	1.000		0.00 0.	0.00 0.	0.00 0.	10453.	10453.
348	E2S15	0	4		LOADING DOCK FORK LIFT 6,000 LB CAP (QUOTE)	1.0 EA	1.000		0.00 0.	0.00 0.	0.00 0.	39900.	39900.
E2S15 Category Direct Cost									0.	0.	0.	50353.	50353.
Project Direct Cost									6256287.	5695508.	742478.	8828222.	19522494.

TEC & TPC SUMMARIES

University of California
Los Alamos National Laboratory
TOTAL PROJECT CONSTRUCTION COST (TPC) SUMMARY
DESIGN/BUILD ACQUISITION STRATEGY

PROJECT TITLE: NMSF CONCEPTUAL DESIGN REPORT

JOB NUMBER: 11118

DATE: 07/13/95

ITEM DESCRIPTION				SUBTOTAL	TOTAL COST
BURDENED TPC SUMMARY					
A. Design and Management Costs					\$6,463,110
1. Facility ED&I				\$3,466,170	
WBS	Category				
A. B1F01	Title I	(@ 0.0% of ECC)	\$0		
B. B2F01	Title II	(@ 7.1% of ECC)	\$1,914,754		
C. B3F01	Title III	(@ 5.8% of ECC)	\$1,551,416		
2. Special Facilities ED&I				\$509,625	
WBS	Category				
A. B1S01	Title I	(@ 0.0% of SFE)	\$0		
B. B2S01	Title II	(@ 2.3% of SFE)	\$383,392		
C. B3S01	Title III	(@ 0.7% of SFE)	\$126,233		
3. Project Management				\$2,487,315	
WBS	Category				
A. A1F01	Project Management	(@ 3.8% of ECC+ED&I+SFE)	\$1,151,888		
B. A2F01	Construction Management	(@ 4.5% of ECC+ED&I+SFE)	\$1,335,427		
B. Construction Cost (ECC+SFE)					\$26,965,032
WBS	Category				
1. C3A Building & Site (ECC)					
A. Modifications				\$7,185,243	
2. Other Structures (ECC)				\$121,683	
WBS	Category				
A. C3B	Utility Building		\$70,240.00		
B. C3C	Mech. Penthouse		\$51,463.00		
3. Special Facilities Equipment (SFE)				\$17,020,355	
WBS	Category				
A. E2O	Security Systems Equipment		\$1,009,834.00		
B. E2L	NDA Equipment		\$5,504,852.00		
C. E2C	Facility Monitoring System (Controls & Monitors)		\$1,811,644.00		
D. E2S	Storage Equipment		\$8,694,025.00		
WBS	Category				
4. C5	Utilities (ECC)			\$90,451	
5. C1C	Demolition (ECC)			\$729,512	
6. C1S	Special Security Construction (ECC)			\$609,957	
7. C2	Skework (ECC)			\$33,578	
8. C0011	Field Overhead & Expenses (ECC)			\$1,174,243	
WBS	Category				
C. B4M01 Laboratory Procurement Burden					\$887,940
1. Construction Contract		(\$24,143,059) (3.25%)	\$789,746		
2. A/E Design Contracts		(\$1,300,759) (3.25%)	\$65,570		
3. SFE Design Contract		\$256,772 (3.25%)	\$12,624		
SUBTOTAL				\$34,296,082	
D. Contingency					\$7,949,231
E. Total Estimated Construction Costs (TEC)					\$42,245,313
F. Other Project Costs (OPC)				(@ 25.8% of TEC)	\$10,890,295
G. Total Project Costs (TPC)					\$53,135,608

University of California
Los Alamos National Laboratory
TOTAL PROJECT COST (TPC) SUMMARY

PROJECT TITLE: NMSF DESIGN/BUILD
JOB NUMBER: 11818
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 10-Jul-95

Item Description		Item Total Cost
Total Estimated Construction Cost		\$42,245,313
Other Project Costs		\$10,890,296
R&D Necessary to Complete Project	\$4,772,488	
Conceptual Planning Costs	\$3,158,064	
Decontamination & Decommissioning	\$0	
Environmental Documentation	\$136,732	
Safety Documentation	\$619,443	
Other Project Related Costs	\$233,156	
Acceptance and Turnover	\$1,970,413	
Total Project Cost (TPC)		\$53,135,609

CONTINGENCY ANALYSIS (SFE)

University of California
Los Alamos National Laboratory
CONTINGENCY RATE AND ALLOWANCE SUMMARY

PROJECT TITLE: MMSF PF-41 TA-53
JOB NUMBER:
ESTIMATOR: ICF KAISER ENGINEERS

11818 DATE:

WBS	Contingency
Item Element of Cost	Rate

Allowance

E20 OTHER SECURITY EQUIP.	20.00%
E2S11 STORAGE ARRAY HARDWARE	25.00%
E2S12 STORAGE ARRAY COOLING	25.00%
E2S13 STORAGE ARRAY SHIPPING	20.00%
E2S14 ALARM SYSTEMS	25.00%

2

22

University of New Mexico
Los Alamos National Laboratory
RISK AND CONTINGENCY ANALYSIS

PROJECT TITLE: NMF PF-41 TA-55
JOB NUMBER:
ESTIMATOR: JCF KASPER ENGINEERS

DATE: 25-May-95

NORMAL MAXIMUM ESTIMATE
CONTINGENCY RATES

ENTER
ESTIMATE TYPE

Feasibility 30%
Conceptual 25%
Title I 20%
Title II 15%
Construction 10%
Conceptual

COLUMN HEADING LEGEND

RW = Relative Weight (0=Not Applicable; 5=Important)
CL = Confidence Level (1=Low Risk; 5=High Risk)
WS = Weighted Score

RISK ASSESSMENT ITEM	E20 OTHER SECURITY EQUIP.			E2011 STORAGE ARRAY HARDWARE			E2012 STORAGE ARRAY COOLING			E2013 STORAGE ARRAY SHIPPING			E2014 ALARM SYSTEMS		
	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS
DESIGN ELEMENTS															
Site Selection/Conditions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Complexity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Specification Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Specification Complexity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CONSTRUCTION ELEMENTS															
Site Conditions	4	3	12	5	4	20	5	4	20	4	3	12	5	4	20
Types of Construction	4	4	16	5	5	25	5	5	25	4	4	16	5	5	25
Design Completeness/Complexity	5	3	15	5	5	25	5	5	25	5	3	15	5	5	25
Material Conditions	5	4	20	5	5	25	5	5	25	5	4	20	5	5	25
Method of Accomplishment (e.g. FPM, SBA, etc.)	5	5	25	5	5	25	5	5	25	5	5	25	5	5	25
Life Safety/Security Requirements	4	4	16	4	4	16	4	4	16	4	4	16	4	4	16
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STANDARD EQUIPMENT ELEMENTS															
Specification Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quantity Accuracy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Price Accuracy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SPECIAL FACILITIES/EQUIPMENT ELEMENTS															
Requester's Specifications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maturity of Technology	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PROJECT MANAGEMENT ELEMENTS															
Project Complexity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Project Schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quality Assurance/Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	27	23	104	29	28	136	29	28	136	27	23	104	29	28	136

CONTINGENCY ANALYSIS (FACILITY)

University of California
Los Alamos National Laboratory
CONTINGENCY RATE AND ALLOWANCE SUMMARY

PROJECT TITLE: NNSF PF-41 TA-55
JOB NUMBER:
ESTIMATOR: ICF KAISER ENGINEERS

11818 DATE:

WBS Item	Element of Cost	Contingency Rate
		Allowance
A	PROJ/CONST. MANAGEMENT	20.00%
B1F	ED&I FAC TITLE I	N/A
B2F	ED&I FAC TITLE II	25.00%
B3F	ED&I FAC TITLE III	25.00%
B1S	ED&I SFE TITLE I	N/A
B2S	ED&I SFE TITLE II	25.00%
B3S	ED&I SFE TITLE III	25.00%
C1C	DEMOLITION	18.00%
C1S	SPEC. SECURITY CONST.	25.00%
C3A	BLDG. MOOS	25.00%
C3B	MECH BLDG.	25.00%
C5	UTILITIES	25.00%
C3B02	MECH. BLDG. SITE WORK	18.00%
E2C	SFE CONTROLS	25.00%
E2L	SFE	20.00%

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University of California
Los Alamos National Laboratory
RISK AND CONTINGENCY ANALYSIS

PROJECT TITLE: NNSF PF-417A-65
JOB NUMBER: 11816
ESTIMATOR: ICF KASER ENGINEERS

DATE: 22-May-85

NORMAL MAXIMUM ESTIMATE
CONTINGENCY RATES

ENTER
ESTIMATE TYPE

Feasibility 30%
Conceptual 25%
Title I 20%
Title II 15%
Construction 10%
Conceptual

COLUMN HEADING LEGEND

RW = Relative Weight (0=Not Applicable; 5=Important)
CL = Confidence Level (1=Low Risk; 5=High Risk)
WS = Weighted Score

WORKBREAKDOWN ITEM DESCRIPTION -->	A PROJ/MGMT. MANAGEMENT			B1F EDM FAC TITLE I			B2F EDM FAC TITLE II			B3F EDM FAC TITLE III			B4F EDM FAC TITLE IV			B5F EDM FAC TITLE V		
	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS
DESIGN ELEMENTS																		
Design Elements																		
Site Selection/Conditions	0	0	0	0	0	0	0	5	5	25	5	5	25	5	5	25	0	0
Design Completeness	0	0	0	0	0	0	0	5	5	25	5	5	25	5	5	25	0	0
Design Complexity	0	0	0	0	0	0	0	5	5	25	5	5	25	5	5	25	0	0
Design Schedule	0	0	0	0	0	0	0	5	5	25	5	5	25	5	5	25	0	0
Specification Completeness	0	0	0	0	0	0	0	5	5	25	5	5	25	5	5	25	0	0
Specification Complexity	0	0	0	0	0	0	0	4	4	16	4	4	16	4	4	16	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CONSTRUCTION ELEMENTS																		
Construction Elements																		
Site Conditions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Type of Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Completeness/Complexity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Market Conditions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment (e.g. FFI, SSS, SBA, etc)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Life Safety/Security Requirements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STANDARD EQUIPMENT ELEMENTS																		
Standard Equipment Elements																		
Specification Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quantity Accuracy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Price Accuracy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SPECIAL FACILITIES/EQUIPMENT ELEMENTS																		
Special Facilities/Equipment Elements																		
Requester's Specifications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ministry of Technology	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PROJECT MANAGEMENT ELEMENTS																		
Project Management Elements																		
Project Complexity	4	4	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Project Schedule	4	4	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quality Assurance/Control	4	4	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	12	12	48	0	0	0	0	29	29	141	29	29	141	29	29	141	0	0

PROJECT TITLE: NMSF PF-41 TA-55
 JOB NUMBER: 11318
 ESTIMATOR: KCF KASER ENGINEERS

University of ...
 Los Alamos National Laboratory
 RISK AND CONTINGENCY ANALYSIS

DATE: 25-May-95

NORMAL, MAXIMUM ESTIMATE
 CONTINGENCY RATES

ENTER
 ESTIMATE TYPE

Feasibility 35%
 Conceptual 25%
 Title I 25%
 Title II 15%
 Construction 10%
 Concept

COLUMN HEADING LEGEND

RW = Relative Weight (0=Not Applicable; 5=Important)
 CL = Confidence Level (1=Low Risk; 3=High Risk)
 WS = Weighted Score

RISK ASSESSMENT (ITEM)	A PROJ CONST. MANAGEMENT			B1F ED&I FAC TITLE I			B2F ED&I FAC TITLE II			B3F ED&I FAC TITLE III			B4F ED&I SFE TITLE I		
	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS
DESIGN ELEMENTS															
TOTAL POSSIBLE SCORE (total relative weights x 5)		50			0			145			145			0	
SCORE RATIO (weighted score total/total possible score)	48 /	50 =	0.960	0 /	0 =	0.000	141 /	145 =	0.972	141 /	145 =	0.972	0 /	0 =	0.000
BASE CONTINGENCY RATE (Score Ratio X Normal Max. Contingency)	0.960 x	25% =	24.0%	0.000 x	25% =	0.0%	0.972 x	25% =	24.3%	0.972 x	25% =	24.3%	0.000 x	25% =	0.0%
BASE CONTINGENCY RATE			24.0%			0.0%			24.3%			24.3%			0.0%
OTHER CONSIDERATIONS															
Quality Assurance Level I, II, III (+0 to 10%)			0.0%			0.0%			0.0%			0.0%			0.0%
Quality Assurance Level IV (+0 to 10%)															
Underground Lines not clearly defined, (+0 to 10%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Environmental Considerations (describe) (+0 to 10%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Other Special Requirements (describe) (+ 0 to 10%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Design Uncertainty (explain) (+ 0 to 10%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Construction Uncertainty (explain) (+ 0 to 10%)			0.0%			0.0%			0.0%			0.0%			0.0%
TOTAL ITEM CONTINGENCY RATE			24.0%			0.0%			24.3%			24.3%			0.0%
ROUND TO			24.0%			0.0%			25.0%			25.0%			0.0%
ESTIMATED CONSTRUCTION COST ---->			\$0.00			\$0.00			\$0.00			\$0.00			\$0.00
ITEM CONTINGENCY ALLOWANCE			\$0.00			\$0.00			\$0.00			\$0.00			\$0.00

* NOTES & EXPLANATIONS

University of California
Los Alamos National Laboratory
RISK AND CONTINGENCY ANALYSIS

PROJECT TITLE: NMSF PF-41 TA-55
JOB NUMBER: 11618
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 25-May-80

NORMAL MAXIMUM ESTIMATE
CONTINGENCY RATES

ENTER
ESTIMATE TYPE

Feasibility	35%	} Conceptual
Conceptual	25%	
Title I	20%	
Title II	15%	
Construction	10%	

COLUMN HEADING LEGEND

RW = Relative Weight (0=Not Applicable; 5=Important)
CL = Confidence Level (1=Low Risk; 5=High Risk)
WS = Weighted Score

WORKBREAKDOWN ITEM DESCRIPTION -->	B2B ECON. SFC. TITLE I			B3B ECON. SFC. TITLE II			C10 DEMOLITION			C2B SPEC. SECURITY CONST.			C3A BLDG. MOOS			WS
	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	
DESIGN ELEMENTS																
DESIGN ELEMENTS																
Site Selection/Conditions	5	5	25	5	5	25	0	0	0	0	0	0	0	0	0	0
Design Completeness	5	5	25	5	5	25	0	0	0	0	0	0	0	0	0	0
Design Complexity	5	5	25	5	5	25	0	0	0	0	0	0	0	0	0	0
Design Schedule	5	5	25	5	5	25	0	0	0	0	0	0	0	0	0	0
Specification Completeness	5	5	25	5	5	25	0	0	0	0	0	0	0	0	0	0
Specification Complexity	5	5	25	5	5	25	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CONSTRUCTION ELEMENTS																
CONSTRUCTION ELEMENTS																
Site Conditions	0	0	0	0	0	0	0	3	3	0	4	4	16	5	5	25
Type of Construction	0	0	0	0	0	0	0	3	3	0	4	4	16	5	5	25
Design Completeness/Complexity	0	0	0	0	0	0	0	3	3	0	4	4	16	5	5	25
Market Conditions	0	0	0	0	0	0	0	4	4	16	4	4	16	5	5	25
Method of Accomplishment (e.g. PFI, SDB, SBA, etc)	0	0	0	0	0	0	0	4	4	16	4	4	16	5	5	25
Life Safety/Security Requirements	0	0	0	0	0	0	0	4	4	16	4	4	16	5	5	25
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STANDARD EQUIPMENT ELEMENTS																
STANDARD EQUIPMENT ELEMENTS																
Specification Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quantity Accuracy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Price Accuracy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SPECIAL FACILITIES/EQUIPMENT ELEMENTS																
SPECIAL FACILITIES/EQUIPMENT ELEMENTS																
Requester's Specifications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maturity of Technology	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PROJECT MANAGEMENT ELEMENTS																
PROJECT MANAGEMENT ELEMENTS																
Project Complexity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Project Schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quality Assurance/Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	30	30	150	30	30	150	21	21	78	24	24	96	30	26	146	

University of
Los Alamos National Laboratory
RISK AND CONTINGENCY ANALYSIS

PROJECT TITLE: NMSF PF-41 TA-50
JOB NUMBER: 11839
ESTIMATOR: ICF KAIBER ENGINEERS

DATE: 25-May-88

NORMAL MAXIMUM ESTIMATE
CONTINGENCY RATES

ENTER
ESTIMATE TYPE

Feasibility	35%	]-----[Conceptual
Conceptual	25%	
Title I	20%	
Title II	15%	
Construction	10%	

COLUMN HEADINGS LEGEND

RW = Relative Weight (0=Not Applicable; 5=Important)
CL = Confidence Level (1=Low Risk; 5=High Risk)
WS = Weighted Score

RISK ASSESSMENT ITEM	R2S EDM OFE TITLE II*			B3S EDM OFE TITLE II			C3C DEMOLITION			C3B SPEC. SECURITY CONST.			C3A BLDG. MODS		
	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS
DESIGN ELEMENTS															
TOTAL POSSIBLE SCORE (total relative weights x 5)		150			150			100			120			150	
SCORE RATIO (weighted score total/total possible score)	150 / 150 =		1.000	150 / 150 =		1.000	75 / 100 =	0.714		90 / 120 =	0.800		145 / 150 =	0.967	
BASE CONTINGENCY RATE (Score Ratio X Normal Max. Contingency)	1.000 x 25% =		25.0%	1.000 x 25% =		25.0%	0.714 x 25% =	17.9%		0.800 x 25% =	20.0%		0.967 x 25% =	24.2%	
BASE CONTINGENCY RATE			25.0%			25.0%			17.9%			20.0%			24.2%
OTHER CONSIDERATIONS															
Quality Assurance Level I, II, III (+0 to 10%) (Quality Assurance Level IV = no addition)			0.0%			0.0%			0.0%			0.0%			0.0%
Underground Lines not clearly defined, (+0 to 5%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Environmental Considerations (describe) (+0 to 10%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Other Special Requirements (describe) (+ 5%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Design Uncertainty (estimate) (+ 5%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Construction Uncertainty (estimate) (+ 5%)			0.0%			0.0%			0.0%			0.0%			0.0%
TOTAL ITEM CONTINGENCY RATE			25.0%			25.0%			17.9%			20.0%			24.2%
ROUND TO			25.0%			25.0%			18.0%			20.0%			25.0%
ESTIMATED CONSTRUCTION COST -->			\$0.00			\$0.00			\$0.00			\$0.00			\$0.00
ITEM CONTINGENCY ALLOWANCE			\$0.00			\$0.00			\$0.00			\$0.00			\$0.00

* NOTES & EXPLANATIONS

University of California
Los Alamos National Laboratory
RISK AND CONTINGENCY ANALYSIS

PROJECT TITLE: NNSF PF-41 TA-98
JOB NUMBER: 11818
ESTIMATOR: KCF KAISER ENGINEERS

DATE: 20-May-95

NORMAL, MAXIMUM ESTIMATE
CONTINGENCY RATES

ENTER
ESTIMATE TYPE

Feasibility 33%
Conceptual 25%
Title I 30%
Title II 15%
Construction 10%

Conceptual

COLUMN HEADING LEGEND

RW = Relative Weight (0=Not Applicable; 5=Important)
CL = Confidence Level (1=Low Risk; 5=High Risk)
WS = Weighted Score

RISK ASSESSMENT ITEM	C35 MECH BLDG.			C5 UTILITIES			C3502 MECH. BLDG. SITE WORK			E2C BFE CONTROLS			E2L SFE		
	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS
DESIGN ELEMENTS															
TOTAL POSSIBLE SCORE (total relative weights x 5)		143			150			115			140			135	
SCORE RATIO (weighted score total/total possible score)	143 / 143 =		1.000	150 / 150 =		1.000	82 / 115 =		0.713	108 / 140 =		0.838	104 / 135 =		0.770
BASE CONTINGENCY RATE (Score Ratio X Normal Max. Contingency)	1.000 x 25% =		25.0%	1.000 x 25% =		25.0%	0.713 x 25% =		17.8%	0.838 x 25% =		20.4%	0.770 x 25% =		19.3%
BASE CONTINGENCY RATE			25.0%			25.0%			17.8%			20.4%			19.3%
OTHER CONSIDERATIONS															
Quality Assurance Level I, II, III (+0 to 10%) (Quality Assurance Level IV = no addition)			0.0%			0.0%			0.0%			0.0%			0.0%
Underground Lines not clearly defined, (+0 to 5%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Environmental Considerations (describe) (+0 to 10%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Other Special Requirements (describe) (+ 5%)			0.0%			0.0%			0.0%			0.0%			0.0%
* Design Uncertainty (explicit) (+ 5%)			0.0%			0.0%			0.0%			1.0%			0.0%
* Construction Uncertainty (explicit) (+ 5%)			0.0%			0.0%			0.0%			0.0%			0.0%
TOTAL ITEM CONTINGENCY RATE			25.0%			25.0%			17.8%			20.4%			19.3%
ROUND TO			25.0%			25.0%			18.0%			21.0%			20.0%
ESTIMATED CONSTRUCTION COST --->			\$0.00			\$0.00			\$0.00			\$0.00			\$0.00
ITEM CONTINGENCY ALLOWANCE			\$0.00			\$0.00			\$0.00			\$0.00			\$0.00

* NOTES & EXPLANATIONS

Univ. of Illinois
Los Alamos National Laboratory
RISK AND CONTINGENCY ANALYSIS

PROJECT TITLE: NMSF PF-41 TA-55
JOB NUMBER: 11818
ESTIMATOR: NCF KASPER ENGINEERS

DATE: 28-May-95

NORMAL, MAXIMUM ESTIMATE
CONTINGENCY RATES

ENTER
ESTIMATE TYPE

Feasibility	05%	} Conceptual
Conceptual	23%	
Title I	20%	
Title II	18%	
Construction	10%	

COLUMN HEADING LEGEND

RW = Relative Weight 0=Not Applicable, 5=Important
CL = Confidence Level (1=Low Risk, 5=High Risk)
WS = Weighted Score

WORKBREAKDOWN ITEM/DESCRIPTION -->	C001 MECH. BLDG.			C002 UTILITIES			C003 MECH. BLDG. SITE WORK			E001 SFE CONTROLS			E002 SFE		
	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS	RW	CL	WS
DESIGN ELEMENTS															
DESIGN ELEMENTS															
Site Selection/Conditions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Complexity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Specification Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Specification Complexity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CONSTRUCTION ELEMENTS															
Site Conditions	5	5	25	5	5	25	4	4	16	0	4	20	4	3	12
Type of Construction	5	5	25	5	5	25	4	3	12	5	5	25	4	4	16
Design Completeness/Complexity	5	5	25	5	5	25	3	3	9	5	5	25	5	3	15
Market Conditions	4	5	20	5	5	25	4	4	16	5	5	25	5	4	20
Method of Accomplishment (e.g. FPI, GBS, SEA, etc)	5	5	25	5	5	25	3	3	9	5	5	25	5	5	25
Life Safety/Security Requirements	5	5	25	5	5	25	5	4	20	4	4	16	4	4	16
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STANDARD EQUIPMENT ELEMENTS															
Specification Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quantity Accuracy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Price Accuracy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SPECIAL FACILITIES/EQUIPMENT ELEMENTS															
Requester's Specifications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maturity of Technology	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Completeness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Method of Accomplishment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PROJECT MANAGEMENT ELEMENTS															
Project Complexity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Project Schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quality Assurance/Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	28	30	145	30	30	150	23	29	92	29	28	138	27	23	104

ESCALATION ANALYSIS

University of California
Los Alamos National Laboratory
ESCALATION SUMMARY BY WBS

PROJECT TITLE: NMSF PF-41 TA-55 (DESIGN/BUILD)
JOB NUMBER: 11818
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 25-May-95

Current DRI Escalation Rates by Year

1995	1996	1997	1998	1999
0.87%	3.00%	3.10%	3.10%	3.00%
2000	2001	2002	2003	2004
3.00%	3.00%	3.00%	3.00%	3.00%

WBS ACTIVITY		ESCAL BASE DATE	ACTIVITY START DATE	END DATE	MID- POINT	ESCAL RATE
A1	PROJECT MANAGEMENT	Jun-95	Oct-96	Feb-2000	Jun-98	8.97%
A2	CONSTRUCTION MANAGEMENT	Jun-95	Mar-97	Sep-2000	Dec-98	10.62%
B2	TITLE II DESIGN	Jun-95	Oct-96	Mar-98	Jun-97	5.69%
B3	TITLE III DESIGN	Jun-95	Mar-97	Sep-2000	Dec-98	10.62%
C1	DEMOLITION	Jun-95	Mar-98	Jun-98	Apr-98	8.41%
C2	SITEWORK	Jun-95	Mar-98	May-98	Apr-98	8.41%
C3A	BLDG CONSTRUCTION	Jun-95	Mar-98	May-99	Oct-98	10.07%
C3A15	MECHANICAL	Jun-95	Jul-98	Sep-99	Feb-99	11.16%
C3A16	ELECTRICAL	Jun-95	May-98	Jul-99	Dec-98	10.62%
C3A16F	FIRE PROTECTION	Jun-95	Jul-98	Jan-99	Oct-98	10.07%
C3B	UTILITY BLDG	Jun-95	Jul-98	Sep-99	Feb-99	11.16%
C5A	UTILITY	Jun-95	Mar-98	Jun-98	Apr-98	8.41%
E2	SFE	Jun-95	Mar-98	Feb-2000	Feb-99	11.44%

**LABORATORY
PROCUREMENT
BURDEN**

UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY

LABORATORY PROCUREMENT BURDEN ON CONSTRUCTION PROCUREMENT ACTIVITIES

PROJECT TITLE: NMSF PF-41 TA-55 30-Jun-95
P. I. D.: 11818
ESTIMATOR: ICF KAISER ENGINEERS

TAXABLE ITEM	CONTRACT AMOUNT	LABORATORY PROCUREMENT BURDEN FOR LINE ITEM PROJECTS 3.25%
A&E SFE COST OF SERVICES	\$388,442.00	\$12,624.37
A&E FACILITY COST OF SERVICES	\$2,017,538.00	\$65,569.99
CONSTRUCTION COST (SFE & FACILITY)	\$24,299,884.00	\$789,746.23
0	\$0.00	\$0.00
0	\$0.00	\$0.00
0	\$0.00	\$0.00
0	\$0.00	\$0.00
0	\$0.00	\$0.00
=====	=====	=====
TOTAL LABORATORY PROCUREMENT BURDEN	\$26,705,884.00	\$867,940.58

r.e.millar

Los Alamos National Laboratory
Procurement Recharge Rates
(mat tax)

5/3/95
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<u>Expense Projects</u>		<u>FY-94</u>	<u>FY-95</u>
Contracts:	less than \$1,000,000	7.86%	7.10%
	\$1,000,000 to \$4,000,000	2.275%	2.275%
	greater than \$4,000,000	1.875%	1.875%

<u>GPP and Line Item Projects</u>			
Contracts:	Construction Contracts	3.25%	3.25%
	A/E Service Contracts	3.25%	3.25%

Notes: Rates are in effect on FY-94 - GPPs

Rates are in effect on FY-95 - Line Item and Expense Projects

OTHER PROJECT COST ANALYSIS

LOS ALAMOS NATIONAL LABORATORY
LOS ALAMOS, NEW MEXICO 87544

OTHER PROJECT COSTS-DESIGN/BUILD ACQUISITION STRATEGY

PROJECT TITLE:NUCLEAR MATERIALS STORAGE FACILITY

DATE:

26-May-95

P. I. D.: 11838

ESTIMATOR: ICF KAISER ENGINEERS

R&D NECESSARY TO COMPLETE PROJECT		\$4,701,003
PRE-AUTHORIZATION		
RESEARCH AND DEVELOPMENT	\$3,017,665	
DESIGN (UNDER AUTHORIZATION)		
RESEARCH & DEVELOPMENT (related to project)	\$1,683,338	
CONCEPTUAL PLANNING COSTS		\$3,200,936
PRE-AUTHORIZATION (Prior to Start of Title I Design)		
ENGINEERING STUDY	\$420,000	
SITE SELECTION REPORT	\$0	
SURVEYING FOR SITING	\$0	
CAPITAL REVIEW BOARD (CRB Approval)	\$0	
CANDIDATE PROJECTS	\$0	
(support sheet and presentation to DOE)		
SHORT FORM DATA SHEET/CAMP	\$0	
CONCEPTUAL DESIGN PLAN	\$0	
WORK ORDERS - CRB Prep, etc.	\$0	
INTERGRATED PROJECT SCHEDULE	\$0	
(R & D, Safety, Environmental, Operations, etc.)		
FUNCTIONAL DESIGN CRITERIA	\$80,435	
EVALUATION OF RCRA/EPA/STATE	\$0	
PERMIT REQUIREMENTS		
ESTIMATES, as required (Parametric, ICE)	\$0	
PROJECT - VALIDATIONS	\$0	
EXPENSE FUNDING	\$0	
CONCEPTUAL DESIGN COSTS		
CONCEPTUAL DESIGN REPORT (CDR)	\$2,027,635	
DESIGN REVIEWS	\$172,000	
ACTION DESCRIPTION MEMO	\$0	
CONCEPTUAL PROJECT SCHEDULE	\$0	
PLANT FORCES WORK REVIEW	\$0	
ENERGY CONSERVATION REPORT	\$0	
ECONOMIC/LIFE CYCLE COST ANALYSIS	\$0	
PHYSICALLY HANDICAPPED REVIEW	\$0	
STATEMENT OF WORK - FOR OPERATING CONTRACTOR	\$0	
(OC) PROJECT MANAGEMENT ACTIVITIES		
SECURITY REVIEW AND PLAN	\$0	
VULNERABILITY ASSESSMENTS	\$15,131	

LOS ALAMOS NATIONAL LABORATORY
LOS ALAMOS, NEW MEXICO 87544

OTHER PROJECT COSTS-DESIGN/BUILD ACQUISITION STRATEGY

PROJECT TITLE:NUCLEAR MATERIALS STORAGE FACILITY

DATE:

26-May-95

P. I. D.: 11818

ESTIMATOR: ICF KAISER ENGINEERS

=====		
MASTER SAFEGUARDS & SECURE ANALYSIS	\$0	
CONSTRUCTION PROJECT DATA SHEET	\$0	
ESEN CROSSCUT	\$0	
STRATEGIC FACILITY ASSESSMENT (Mission Need)	\$0	
ESTIMATES, as required (Parametric, ICR)	\$80,348	
PROJECT - VALIDATIONS	\$31,623	
MONTHLY CONCEPTUAL STATUS REPORT	\$0	
REQUEST FOR PROJECT AUTHORIZATION	\$0	
ARCHITECT/ENGINEER (A/E) SELECTION	\$0	
SOW FOR OFF-SITE A/E		
IDENTIFICATION OF PROJECT RECORD REQUIREMENTS	\$0	
PROJECT MANAGEMENT PLAN (PMP)	\$0	
PROJECT QUALITY ASSURANCE (QA)	\$0	
CONFIGURATION MANAGEMENT PLAN	\$0	
PILOT PLANTS	\$0	
EXPENSE FUNDING	\$0	
FACILITY AS-BUILTS DRAWINGS	\$0	
PRIOR TO DESIGN START		
WORK ORDERS - COR Prep, etc.	\$0	
INTEGRATED PROJECT SCHEDULE	\$0	
(R & D, Safety, Environmental, Operations, etc.)		
EVALUATION OF RCRA/EPA/STATE	\$0	
PERMIT REQUIREMENTS		
DESIGN (UNDER AUTHORIZATION)		
OUTSIDE CONTRACTOR SUPPORT	\$103,960	
PRIOR TO START OF TITLE I DESIGN		
OBTAIN PERMITS REQUIRED PRIOR TO START OF	\$42,847	
CONSTRUCTION (prior to start of Title I)		
VALUE ENGINEERING (before Title I)	\$226,958	
DECONTAMINATION AND DECOMMISSIONING		\$0
PROCUREMENT AND CONSTRUCTION		
DECONTAMINATION (exceeds normal operating levels)	\$0	
ENVIRONMENTAL DOCUMENTATION COSTS		\$139,278
PRE-AUTHORIZATION		
DOE ENVIRONMENTAL CHECKLIST (DEC)	\$0	
CULTURAL RESOURCES REVIEW	\$0	

LOS ALAMOS NATIONAL LABORATORY
LOS ALAMOS, NEW MEXICO 87544

OTHER PROJECT COSTS-DESIGN/BUILD ACQUISITION STRATEGY

PROJECT TITLE:NUCLEAR MATERIALS STORAGE FACILITY

DATE:

26-May-95

P. I. O.: 11818

ESTIMATOR: ICF KAISER ENGINEERS

=====		
NEPA DOCUMENTATION	\$96,432	
NEHAPS DOCUMENTATION	\$42,867	
DISCHARGE PERMITS	\$0	
ARCHAEOLOGICAL ASSESSMENT	\$0	
PROCESS WASTE MANAGEMENT ASSESSMENT	\$0	
PROJECT PLAN FOR WASTE MANAGEMENT	\$0	
 SAFETY DOCUMENTATION COSTS		\$638,514
PRE-AUTHORIZATION		
REQUIREMENTS FOR SAFETY	\$104,540	
ANALYSIS DETERMINATION		
PRELIMINARY SAFETY ANALYSIS REPORT (SAR)	\$426,857	
(If performed as part of the Conceptual		
Design Report)		
PROCUREMENT AND CONSTRUCTION		
SAFETY/SECURITY (Prior to Title I)	\$107,117	
SAFETY PLAN & OVERVIEW	\$0	
 OTHER PROJECT-RELATED COSTS		\$240,150
DESIGN (UNDER AUTHORIZATION)		
DESIGN REVIEW SUPPORT BY OC	\$0	
PROCUREMENT AND CONSTRUCTION		
OPERATING CONTRACTOR/OPERATOR SUPPORT	\$240,150	
DURING CONSTRUCTION		
SPARE PARTS INVENTORY	\$0	
DAVIS BACON/SOLE SOURCE DETERMINATION	\$0	
 ACCEPTANCE AND TURNOVER		\$1,970,413
PERFORM OPERATION ACCEPTANCE TESTING	\$405,636	
OPERATIONAL READINESS REVIEW	\$278,817	
START-UP COSTS	\$32,834	
OPERATIONS AND MAINTENANCE PROCEDURES	\$166,957	
TRAINING OPERATORS	\$120,092	
AS-BUILTS & CONFIGURATION MANAGEMENT	\$257,818	
USER MOVE-IN	\$58,257	
=====		
GRAND TOTAL	\$10,890,295	\$10,890,295

UNIVERSITY OF CALIFORNIA
LOS ANGELES NATIONAL LABORATORY
OFFICE OF PLASMA PHYSICS, ROOM 36-106, UNIVERSITY OF CALIFORNIA

PROJECT NO. 1	NUCLEAR MATERIALS STORAGE FACILITY
P. 1.5	7/1/68
REVISION	BY: [illegible]

Date: May 4-06

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PROJECT NAME: NEW CLARK COUNTY JAIL AND DETENTION FACILITY

 											
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BASE YEAR		1988		1989		1990		1991		1992		1993		1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		2021		2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040		2041		2042		2043		2044		2045		2046		2047		2048		2049		2050		2051		2052		2053		2054		2055		2056		2057		2058		2059		2060		2061		2062		2063		2064		2065		2066		2067		2068		2069		2070		2071		2072		2073		2074		2075		2076		2077		2078		2079		2080		2081		2082		2083		2084		2085		2086		2087		2088		2089		2090		2091		2092		2093		2094		2095		2096		2097		2098		2099		2100		2101		2102		2103		2104		2105		2106		2107		2108		2109		2110		2111		2112		2113		2114		2115		2116		2117		2118		2119		2120		2121		2122		2123		2124		2125		2126		2127		2128		2129		2130		2131		2132		2133		2134		2135		2136		2137		2138		2139		2140		2141		2142		2143		2144		2145		2146		2147		2148		2149		2150		2151		2152		2153		2154		2155		2156		2157		2158		2159		2160		2161		2162		2163		2164		2165		2166		2167		2168		2169		2170		2171		2172		2173		2174		2175		2176		2177		2178		2179		2180		2181		2182		2183		2184		2185		2186		2187		2188		2189		2190		2191		2192		2193		2194		2195		2196		2197		2198		2199		2200		2201		2202		2203		2204		2205		2206		2207		2208		2209		2210		2211		2212		2213		2214		2215		2216		2217		2218		2219		2220		2221		2222		2223		2224		2225		2226		2227		2228		2229		2230		2231		2232		2233		2234		2235		2236		2237		2238		2239		2240		2241		2242		2243		2244		2245		2246		2247		2248		2249		2250		2251		2252		2253		2254		2255		2256		2257		2258		2259		2260		2261		2262		2263		2264		2265		2266		2267		2268		2269		2270		2271		2272		2273		2274		2275		2276		2277		2278		2279		2280		2281		2282		2283		2284		2285		2286		2287		2288		2289		2290		2291		2292		2293		2294		2295		2296		2297		2298		2299		2300	
ESTIMATION RATE		1988		1989		1990		1991		1992		1993		1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		2021		2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040		2041		2042		2043		2044		2045		2046		2047		2048		2049		2050		2051		2052		2053		2054		2055		2056		2057		2058		2059		2060		2061		2062		2063		2064		2065		2066		2067		2068		2069		2070		2071		2072		2073		2074		2075		2076		2077		2078		2079		2080		2081		2082		2083		2084		2085		2086		2087		2088		2089		2090		2091		2092		2093		2094		2095		2096		2097		2098		2099		2100		2101		2102		2103		2104		2105		2106		2107		2108		2109		2110		2111		2112		2113		2114		2115		2116		2117		2118		2119		2120		2121		2122		2123		2124		2125		2126		2127		2128		2129		2130		2131		2132		2133		2134		2135		2136		2137		2138		2139		2140		2141		2142		2143		2144		2145		2146		2147		2148		2149		2150		2151		2152		2153		2154		2155		2156		2157		2158		2159		2160		2161		2162		2163		2164		2165		2166		2167		2168		2169		2170		2171		2172		2173		2174		2175		2176		2177		2178		2179		2180		2181		2182		2183		2184		2185		2186		2187		2188		2189		2190		2191		2192		2193		2194		2195		2196		2197		2198		2199		2200		2201		2202		2203		2204		2205		2206		2207		2208		2209		2210		2211		2212		2213		2214		2215		2216		2217		2218		2219		2220		2221		2222		2223		2224		2225		2226		2227		2228		2229		2230		2231		2232		2233		2234		2235		2236		2237		2238		2239		2240		2241		2242		2243		2244		2245		2246		2247		2248		2249		2250		2251		2252		2253		2254		2255		2256		2257		2258		2259		2260		2261		2262		2263		2264		2265		2266		2267		2268		2269		2270		2271		2272		2273		2274		2275		2276		2277		2278		2279		2280		2281		2282		2283		2284		2285		2286		2287		2288		2289		2290		2291		2292		2293		2294		2295		2296		2297		2298		2299		2300	
FROM BASE YEAR		1988		1989		1990		1991		1992		1993		1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		2021		2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040		2041		2042		2043		2044		2045		2046		2047		2048		2049		2050		2051		2052		2053		2054		2055		2056		2057		2058		2059		2060		2061		2062		2063		2064		2065		2066		2067		2068		2069		2070		2071		2072		2073		2074		2075		2076		2077		2078		2079		2080		2081		2082		2083		2084		2085		2086		2087		2088		2089		2090		2091		2092		2093		2094		2095		2096		2097		2098		2099		2100		2101		2102		2103		2104		2105		2106		2107		2108		2109		2110		2111		2112		2113		2114		2115		2116		2117		2118		2119		2120		2121		2122		2123		2124		2125		2126		2127		2128		2129		2130		2131		2132		2133		2134		2135		2136		2137		2138		2139		2140		2141		2142		2143		2144		2145		2146		2147		2148		2149		2150		2151		2152		2153		2154		2155		2156		2157		2158		2159		2160		2161		2162		2163		2164		2165		2166		2167		2168		2169		2170		2171		2172		2173		2174		2175		2176		2177		2178		2179		2180		2181		2182		2183		2184		2185		2186		2187		2188		2189		2190		2191		2192		2193		2194		2195		2196		2197		2198		2199		2200		2201		2202		2203		2204		2205		2206		2207		2208		2209		2210		2211		2212		2213		2214		2215		2216		2217		2218		2219		2220		2221		2222		2223		2224		2225		2226		2227		2228		2229		2230		2231		2232		2233		2234		2235		2236		2237		2238		2239		2240		2241		2242		2243		2244		2245		2246		2247		2248		2249		2250		2251		2252		2253		2254		2255		2256		2257		2258		2259		2260		2261		2262		2263		2264		2265		2266		2267		2268		2269		2270		2271		2272		2273		2274		2275		2276		2277		2278		2279		2280		2281		2282		2283		2284		2285		2286		2287		2288		2289		2290		2291		2292		2293		2294		2295		2296		2297		2298		2299		2300	
CONDUCT PLAN OF WORK CODE 3		1988		1989		1990		1991		1992		1993		1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		2021		2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040		2041		2042		2043		2044		2045		2046		2047		2048		2049		2050		2051		2052		2053		2054		2055		2056		2057		2058		2059		2060		2061		2062		2063		2064		2065		2066		2067		2068		2069		2070		2071		2072		2073		2074		207																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

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price 70-100 + 00

ESCALATION RATE	BASE YEAR										TOTAL
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
	ANNUAL	3.00%	3.00%	3.00%	3.12%	3.19%	3.30%	3.43%	3.57%	3.72%	
FROM BASE YEAR	0.00%	3.00%	3.00%	7.12%	10.4%	13.78%	17.4%	20.98%	24.92%	29.31%	

CONCEPTUAL DESIGN CENTER
FACULTY OF ARCHITECTURE
OSAKA UNIVERSITY

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CÔNG TY TNHH DỊCH VỤ CÔNG NGHỆ

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Figure 1

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DE-GR PROJECT COME DET ALSO WORKING

1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 26

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UNIVERSITY OF CALIFORNIA
LOS ANGELES MATERIALS LABORATORY
ON-48 PROJECT COSTS DETAILED WORKSHEET 15

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Q46 30-407-02

ESTIMATE YEAR		1984		1985		1986		1987		1988		1989		1990		1991		1992		1993		1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		2021		2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040		2041		2042		2043		2044		2045		2046		2047		2048		2049		2050		2051		2052		2053		2054		2055		2056		2057		2058		2059		2060		2061		2062		2063		2064		2065		2066		2067		2068		2069		2070		2071		2072		2073		2074		2075		2076		2077		2078		2079		2080		2081		2082		2083		2084		2085		2086		2087		2088		2089		2090		2091		2092		2093		2094		2095		2096		2097		2098		2099		2100		2101		2102		2103		2104		2105		2106		2107		2108		2109		2110		2111		2112		2113		2114		2115		2116		2117		2118		2119		2120		2121		2122		2123		2124		2125		2126		2127		2128		2129		2130		2131		2132		2133		2134		2135		2136		2137		2138		2139		2140		2141		2142		2143		2144		2145		2146		2147		2148		2149		2150		2151		2152		2153		2154		2155		2156		2157		2158		2159		2160		2161		2162		2163		2164		2165		2166		2167		2168		2169		2170		2171		2172		2173		2174		2175		2176		2177		2178		2179		2180		2181		2182		2183		2184		2185		2186		2187		2188		2189		2190		2191		2192		2193		2194		2195		2196		2197		2198		2199		2200		2201		2202		2203		2204		2205		2206		2207		2208		2209		2210		2211		2212		2213		2214		2215		2216		2217		2218		2219		2220		2221		2222		2223		2224		2225		2226		2227		2228		2229		2230		2231		2232		2233		2234		2235		2236		2237		2238		2239		2240		2241		2242		2243		2244		2245		2246		2247		2248		2249		2250		2251		2252		2253		2254		2255		2256		2257		2258		2259		2260		2261		2262		2263		2264		2265		2266		2267		2268		2269		2270		2271		2272		2273		2274		2275		2276		2277		2278		2279		2280		2281		2282		2283		2284		2285		2286		2287		2288		2289		2290		2291		2292		2293		2294		2295		2296	
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PROJECT TITLE NUCLEAR WASTEPOOL STORAGE FACILITY

DATE DE 2011[illegible]

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PROJ# FTRJ PROJ# FTR JMWTPA-9 STORAGE FACILITY
P.O.#: IISW
SUBTRACTOR KCF HANSEN ENGINEERS

DATE 12-14-88 BY 1401

BANK VALUE													10%
EDUCATION RATE	77.44%	78.00%	78.56%	79.12%	79.68%	80.24%	80.80%	81.36%	81.92%	82.48%	83.04%	83.60%	10%
APPLIC.	77.44%	78.00%	78.56%	79.12%	79.68%	80.24%	80.80%	81.36%	81.92%	82.48%	83.04%	83.60%	
PHONE BANK TEAM	77.44%	78.00%	78.56%	79.12%	79.68%	80.24%	80.80%	81.36%	81.92%	82.48%	83.04%	83.60%	

INFORMATIONAL DOCUMENTATION COSTS
PUBLICATION
AND DOCUMENTATION

[illegible]

UNIVERSITY OF CALIFORNIA
 CALIFORNIA NATIONAL LABORATORY
 OTHER PROJECT COSTS DETAIL BY WORKSHEET

PROJECT TITLE:		PROGRAM MATERIALS BURNING FACILITY		DATE		BY: JWP: 88	
P. I. S.		OFFICE: ENR-1000					
DESCRIPTION:		PR: 1000		DATE: 10/10/88		TOTAL	
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 14. 职称: 中学一级教师
 15. 健康状况: 良好
 16. 婚姻状况: 已婚
 17. 子女情况: 一子一女
 18. 兴趣爱好: 阅读、运动
 19. 自我评价: 为人正直, 工作认真负责
 20. 其他说明: 无不良嗜好

DATE: 10/10/2019 10:10:10 AM

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SAFETY DOCUMENTATION CODES
PRELIMINARY ACTION
REQUIREMENTS FOR SAFETY ANALYSIS DETERMINATION

UNDECALATED COST	2000	2001	COSTS	2002	COSTS	2003	COSTS	2004	COSTS	2005	COSTS	2006	COSTS	2007	COSTS	2008	COSTS	2009	COSTS	2010	COSTS	2011	COSTS	2012	COSTS	2013	COSTS	2014	COSTS	2015	COSTS	2016	COSTS	2017	COSTS	2018	COSTS	2019	COSTS	2020	COSTS	2021	COSTS	2022	COSTS	2023	COSTS	2024	COSTS	2025	COSTS	2026	COSTS	2027	COSTS	2028	COSTS	2029	COSTS	2030	COSTS	2031	COSTS	2032	COSTS	2033	COSTS	2034	COSTS	2035	COSTS	2036	COSTS	2037	COSTS	2038	COSTS	2039	COSTS	2040	COSTS	2041	COSTS	2042	COSTS	2043	COSTS	2044	COSTS	2045	COSTS	2046	COSTS	2047	COSTS	2048	COSTS	2049	COSTS	2050	COSTS	2051	COSTS	2052	COSTS	2053	COSTS	2054	COSTS	2055	COSTS	2056	COSTS	2057	COSTS	2058	COSTS	2059	COSTS	2060	COSTS	2061	COSTS	2062	COSTS	2063	COSTS	2064	COSTS	2065	COSTS	2066	COSTS	2067	COSTS	2068	COSTS	2069	COSTS	2070	COSTS	2071	COSTS	2072	COSTS	2073	COSTS	2074	COSTS	2075	COSTS	2076	COSTS	2077	COSTS	2078	COSTS	2079	COSTS	2080	COSTS	2081	COSTS	2082	COSTS	2083	COSTS	2084	COSTS	2085	COSTS	2086	COSTS	2087	COSTS	2088	COSTS	2089	COSTS	2090	COSTS	2091	COSTS	2092	COSTS	2093	COSTS	2094	COSTS	2095	COSTS	2096	COSTS	2097	COSTS	2098	COSTS	2099	COSTS	2100	COSTS	2101	COSTS	2102	COSTS	2103	COSTS	2104	COSTS	2105	COSTS	2106	COSTS	2107	COSTS	2108	COSTS	2109	COSTS	2110	COSTS	2111	COSTS	2112	COSTS	2113	COSTS	2114	COSTS	2115	COSTS	2116	COSTS	2117	COSTS	2118	COSTS	2119	COSTS	2120	COSTS	2121	COSTS	2122	COSTS	2123	COSTS	2124	COSTS	2125	COSTS	2126	COSTS	2127	COSTS	2128	COSTS	2129	COSTS	2130	COSTS	2131	COSTS	2132	COSTS	2133	COSTS	2134	COSTS	2135	COSTS	2136	COSTS	2137	COSTS	2138	COSTS	2139	COSTS	2140	COSTS	2141	COSTS	2142	COSTS	2143	COSTS	2144	COSTS	2145	COSTS	2146	COSTS	2147	COSTS	2148	COSTS	2149	COSTS	2150	COSTS	2151	COSTS	2152	COSTS	2153	COSTS	2154	COSTS	2155	COSTS	2156	COSTS	2157	COSTS	2158	COSTS	2159	COSTS	2160	COSTS	2161	COSTS	2162	COSTS	2163	COSTS	2164	COSTS	2165	COSTS	2166	COSTS	2167	COSTS	2168	COSTS	2169	COSTS	2170	COSTS	2171	COSTS	2172	COSTS	2173	COSTS	2174	COSTS	2175	COSTS	2176	COSTS	2177	COSTS	2178	COSTS	2179	COSTS	2180	COSTS	2181	COSTS	2182	COSTS	2183	COSTS	2184	COSTS	2185	COSTS	2186	COSTS	2187	COSTS	2188	COSTS	2189	COSTS	2190	COSTS	2191	COSTS	2192	COSTS	2193	COSTS	2194	COSTS	2195	COSTS	2196	COSTS	2197	COSTS	2198	COSTS	2199	COSTS	2200	COSTS	2201	COSTS	2202	COSTS	2203	COSTS	2204	COSTS	2205	COSTS	2206	COSTS	2207	COSTS	2208	COSTS	2209	COSTS	2210	COSTS	2211	COSTS	2212	COSTS	2213	COSTS	2214	COSTS	2215	COSTS	2216	COSTS	2217	COSTS	2218	COSTS	2219	COSTS	2220	COSTS	2221	COSTS	2222	COSTS	2223	COSTS	2224	COSTS	2225	COSTS	2226	COST
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PROJEC TITL E: NUCLEAR MATERIAL S STORAGE FACILITY
P.L.O.: 1988
EXPIRATION: 6/3/1998 EXHAUSTION

DATE _____

	BANK YEAR									TOTAL
EPC-A FROM PLATE	7Y - 80%	1960	1965	1970	1975	1980	1985	1990	1995	
SUBSIDIZING	- 100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
PAYABLE GROSS YIELD	- 100%	0.00%	0.00%	7.10%	10.00%	10.70%	17.10%	20.00%	20.00%	

SAFETY DOCUMENTATION COSTS
(FIRM/THORLACON)
FOR SAFETY STUDY AND THE REPORTS MADE AS PERFORMED AS PART OF THE CONCEPTUAL DESIGN REPORTS

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UNIVERSITY OF CALIFORNIA
LIVERMORE NATIONAL LABORATORY
OTHER AND DET CONTD DETAILED WORKSHEETS

PROJECT FILE.	NUCLEAR MATERIAL STORAGE FACILITY
P 1 B3	1988
EXPLANATION	PCP KAMPHEN ENGINEERING

DATE 2-14-68 45

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**SAFETY DOCUMENTATION COSTS
PROCUREMENT AND CONSTRUCTION
SAFETY/SECURITY PRIOR TO TDR 9**

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UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY
631-225-5000 ext 5000

PROJECT TITLE:	INDIAN WASTEFLARE STORAGE FACILITY
PLANT:	THIRU
DESCRIPTION:	100 TONS/ANNUM

DATE: 2014-10-10 10:10:10

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PROPOSAL DEVELOPER

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DESCRIPTION CODE	C0001	C0002	C0003	C0004	C0005	C0006	C0007	C0008	C0009	C0010	C0011	C0012	C0013	C0014	C0015	C0016	C0017	C0018	C0019	C0020	C0021	C0022	C0023	C0024	C0025	C0026	C0027	C0028	C0029	C0030	C0031	C0032	C0033	C0034	C0035	C0036	C0037	C0038	C0039	C0040	C0041	C0042	C0043	C0044	C0045	C0046	C0047	C0048	C0049	C0050	C0051	C0052	C0053	C0054	C0055	C0056	C0057	C0058	C0059	C0060	C0061	C0062	C0063	C0064	C0065	C0066	C0067	C0068	C0069	C0070	C0071	C0072	C0073	C0074	C0075	C0076	C0077	C0078	C0079	C0080	C0081	C0082	C0083	C0084	C0085	C0086	C0087	C0088	C0089	C0090	C0091	C0092	C0093	C0094	C0095	C0096	C0097	C0098	C0099	C0100	C0101	C0102	C0103	C0104	C0105	C0106	C0107	C0108	C0109	C0110	C0111	C0112	C0113	C0114	C0115	C0116	C0117	C0118	C0119	C0120	C0121	C0122	C0123	C0124	C0125	C0126	C0127	C0128	C0129	C0130	C0131	C0132	C0133	C0134	C0135	C0136	C0137	C0138	C0139	C0140	C0141	C0142	C0143	C0144	C0145	C0146	C0147	C0148	C0149	C0150	C0151	C0152	C0153	C0154	C0155	C0156	C0157	C0158	C0159	C0160	C0161	C0162	C0163	C0164	C0165	C0166	C0167	C0168	C0169	C0170	C0171	C0172	C0173	C0174	C0175	C0176	C0177	C0178	C0179	C0180	C0181	C0182	C0183	C0184	C0185	C0186	C0187	C0188	C0189	C0190	C0191	C0192	C0193	C0194	C0195	C0196	C0197	C0198	C0199	C0200	C0201	C0202	C0203	C0204	C0205	C0206	C0207	C0208	C0209	C0210	C0211	C0212	C0213	C0214	C0215	C0216	C0217	C0218	C0219	C0220	C0221	C0222	C0223	C0224	C0225	C0226	C0227	C0228	C0229	C0230	C0231	C0232	C0233	C0234	C0235	C0236	C0237	C0238	C0239	C0240	C0241	C0242	C0243	C0244	C0245	C0246	C0247	C0248	C0249	C0250	C0251	C0252	C0253	C0254	C0255	C0256	C0257	C0258	C0259	C0260	C0261	C0262	C0263	C0264	C0265	C0266	C0267	C0268	C0269	C0270	C0271	C0272	C0273	C0274	C0275	C0276	C0277	C0278	C0279	C0280	C0281	C0282	C0283	C0284	C0285	C0286	C0287	C0288	C0289	C0290	C0291	C0292	C0293	C0294	C0295	C0296	C0297	C0298	C0299	C0300	C0301	C0302	C0303	C0304	C0305	C0306	C0307	C0308	C0309	C0310	C0311	C0312	C0313	C0314	C0315	C0316	C0317	C0318	C0319	C0320	C0321	C0322	C0323	C0324	C0325	C0326	C0327	C0328	C0329	C0330	C0331	C0332	C0333	C0334	C0335	C0336	C0337	C0338	C0339	C0340	C0341	C0342	C0343	C0344	C0345	C0346	C0347	C0348	C0349	C0350	C0351	C0352	C0353	C0354	C0355	C0356	C0357	C0358	C0359	C0360	C0361	C0362	C0363	C0364	C0365	C0366	C0367	C0368	C0369	C0370	C0371	C0372	C0373	C0374	C0375	C0376	C0377	C0378	C0379	C0380	C0381	C0382	C0383	C0384	C0385	C0386	C0387	C0388	C0389	C0390	C0391	C0392	C0393	C0394	C0395	C0396	C0397	C0398	C0399	C0400	C0401	C0402	C0403	C0404	C0405	C0406	C0407	C0408	C0409	C0410	C0411	C0412	C0413	C0414	C0415	C0416	C0417	C0418	C0419	C0420	C0421	C0422	C0423	C0424	C0425	C0426	C0427	C0428	C0429	C0430	C0431	C0432	C0433	C0434	C0435	C0436	C0437	C0438	C0439	C0440	C0441	C0442	C0443	C0444	C0445	C0446	C0447	C0448	C0449	C0450	C0451	C0452	C0453	C0454	C0455	C0456	C0457	C0458	C0459	C0460	C0461	C0462	C0463	C0464	C0465	C0466	C0467	C0468	C0469	C0470	C0471	C0472	C0473	C0474	C0475	C0476	C0477	C0478	C0479	C0480	C0481	C0482	C0483	C0484	C0485	C0486	C0487	C0488	C0489	C0490	C0491	C0492	C0493	C0494	C0495	C0496	C0497	C0498	C0499	C0500	C0501	C0502	C0503	C0504	C0505	C0506	C0507	C0508	C0509	C0510	C0511	C0512	C0513	C0514	C0515	C0516	C0517	C0518	C0519	C0520	C0521	C0522	C0523	C0524	C0525	C0526	C0527	C0528	C0529	C0530	C0531	C0532	C0533	C0534	C0535	C0536	C0537	C0538	C0539	C0540	C0541	C0542	C0543	C0544	C0545	C0546	C0547	C0548	C0549	C0550	C0551	C0552	C0553	C0554	C0555	C0556	C0557	C0558	C0559	C0560	C0561	C0562	C0563	C0564	C0565	C0566	C0567	C0568	C0569	C0570	C0571	C0572	C0573	C0574	C0575	C0576	C0577	C0578	C0579	C0580	C0581	C0582	C0583	C0584	C0585	C0586	C0587	C0588	C0589	C0590	C0591	C0592	C0593	C0594	C0595	C0596	C0597	C0598	C0599	C0600	C0601	C0602	C0603	C0604	C0605	C0606	C0607	C0608	C0609	C0610	C0611	C0612	C0613	C0614	C0615	C0616	C0617	C0618	C0619	C0620	C0621	C0622	C0623	C0624	C0625	C0626	C0627	C0628	C0629	C0630	C0631	C0632	C0633	C0634	C0635	C0636	C0637	C0638	C0639	C0640	C0641	C0642	C0643	C0644	C0645	C0646	C0647	C0648	C0649	C0650	C0651	C0652	C0653	C0654	C0655	C0656	C0657	C0658	C0659	C0660	C0661	C0662	C0663	C0664	C0665	C0666	C0667	C0668	C0669	C0670	C0671	C0672	C0673	C0674	C0675	C0676	C0677	C0678	C0679	C0680	C0681	C0682	C0683	C0684	C0685	C0686	C0687	C0688	C0689	C0690	C0691	C0692	C0693	C0694	C0695	C0696	C0697	C0698	C0699	C0700	C0701	C0702	C0703	C0704	C0705	C0706	C0707	C0708	C0709	C0710	C0711	C0712	C0713	C0714	C0715	C0716	C0717	C0718	C0719	C0720	C0721	C0722	C0723	C0724	C0725	C0726	C0727	C0728	C0729	C0730	C0731	C0732	C0733	C0734	C0735	C0736	C0737	C0738	C0739	C0740	C0741	C0742	C0743	C0744	C0745	C0746	C0747	C0748	C0749	C0750	C0751	C0752	C0753	C0754	C0755	C0756	C0757	C0758	C0759	C0760	C0761	C0762	C0763	C0764	C0765	C0766	C0767	C0768	C0769	C0770	C0771	C0772	C0773	C0774	C0775	C0776	C0777	C0778	C0779	C0780	C0781	C0782	C0783	C0784	C0785	C0786	C0787	C0788	C0789	C0790	C0791	C0792	C0793	C0794	C0795	C0796	C0797	C0798	C0799	C0800	C0801	C0802	C0803	C0804	C0805	C0806	C0807	C0808	C0809	C0810	C0811	C0812	C0813	C0814	C0815	C0816	C0817	C0818	C0819	C0820	C0821	C0822	C0823	C0824	C0825	C0826	C0827	C0828	C0829	C0830	C0831	C0832	C08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UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY
OTHER PROJECT ESTIMATE DATA SHEET

PROJECT TITLE:		NICKEL MACHINES, & STORAGE FACILITY		DATE		10/7/74	
A.I. D.2		11/4/74					
AFFILIATION:		NCP MEMBER ENGINEERING					
SACALATION NAME:		NICKEL MACHINES					
SACALATION YEAR:		1974					
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PROTECTIVE:
P.L.O.
PROTECTOR:
PROTECTOR:

PROJECT NAME:
P.L. 87
INTERPOLATION:

[illegible]

OTHER PROJECT COSTS: DUE TO THE LIMITED INFORMATION AVAILABLE, THE PROJECT COSTS WERE NOT QUANTIFIED.

PROJ. # 17-17
P.I. # 1
SUBMISSION

DATE 22-11-2011

[illegible]

ACCEPTANCE AND FURTHER TRAINING OPERATIONS

[illegible][illegible][illegible]

	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	110%	120%	130%	140%	150%	160%	170%	180%	190%	200%	210%	220%	230%	240%	250%	260%	270%	280%	290%	300%	310%	320%	330%	340%	350%	360%	370%	380%	390%	400%	410%	420%	430%	440%	450%	460%	470%	480%	490%	500%	510%	520%	530%	540%	550%	560%	570%	580%	590%	600%	610%	620%	630%	640%	650%	660%	670%	680%	690%	700%	710%	720%	730%	740%	750%	760%	770%	780%	790%	800%	810%	820%	830%	840%	850%	860%	870%	880%	890%	900%	910%	920%	930%	940%	950%	960%	970%	980%	990%	1000%	1010%	1020%	1030%	1040%	1050%	1060%	1070%	1080%	1090%	1100%	1110%	1120%	1130%	1140%	1150%	1160%	1170%	1180%	1190%	1200%	1210%	1220%	1230%	1240%	1250%	1260%	1270%	1280%	1290%	1300%	1310%	1320%	1330%	1340%	1350%	1360%	1370%	1380%	1390%	1400%	1410%	1420%	1430%	1440%	1450%	1460%	1470%	1480%	1490%	1500%	1510%	1520%	1530%	1540%	1550%	1560%	1570%	1580%	1590%	1600%	1610%	1620%	1630%	1640%	1650%	1660%	1670%	1680%	1690%	1700%	1710%	1720%	1730%	1740%	1750%	1760%	1770%	1780%	1790%	1800%	1810%	1820%	1830%	1840%	1850%	1860%	1870%	1880%	1890%	1900%	1910%	1920%	1930%	1940%	1950%	1960%	1970%	1980%	1990%	2000%	2010%	2020%	2030%	2040%	2050%	2060%	2070%	2080%	2090%	2100%	2110%	2120%	2130%	2140%	2150%	2160%	2170%	2180%	2190%	2200%	2210%	2220%	2230%	2240%	2250%	2260%	2270%	2280%	2290%	2300%	2310%	2320%	2330%	2340%	2350%	2360%	2370%	2380%	2390%	2400%	2410%	2420%	2430%	2440%	2450%	2460%	2470%	2480%	2490%	2500%	2510%	2520%	2530%	2540%	2550%	2560%	2570%	2580%	2590%	2600%	2610%	2620%	2630%	2640%	2650%	2660%	2670%	2680%	2690%	2700%	2710%	2720%	2730%	2740%	2750%	2760%	2770%	2780%	2790%	2800%	2810%	2820%	2830%	2840%	2850%	2860%	2870%	2880%	2890%	2900%	2910%	2920%	2930%	2940%	2950%	2960%	2970%	2980%	2990%	3000%	3010%	3020%	3030%	3040%	3050%	3060%	3070%	3080%	3090%	3100%	3110%	3120%	3130%	3140%	3150%	3160%	3170%	3180%	3190%	3200%	3210%	3220%	3230%	3240%	3250%	3260%	3270%	3280%	3290%	3300%	3310%	3320%	3330%	3340%	3350%	3360%	3370%	3380%	3390%	3400%	3410%	3420%	3430%	3440%	3450%	3460%	3470%	3480%	3490%	3500%	3510%	3520%	3530%	3540%	3550%	3560%	3570%	3580%	3590%	3600%	3610%	3620%	3630%	3640%	3650%	3660%	3670%	3680%	3690%	3700%	3710%	3720%	3730%	3740%	3750%	3760%	3770%	3780%	3790%	3800%	3810%	3820%	3830%	3840%	3850%	3860%	3870%	3880%	3890%	3900%	3910%	3920%	3930%	3940%	3950%	3960%	3970%	3980%	3990%	4000%	4010%	4020%	4030%	4040%	4050%	4060%	4070%	4080%	4090%	4100%	4110%	4120%	4130%	4140%	4150%	4160%	4170%	4180%	4190%	4200%	4210%	4220%	4230%	4240%	4250%	4260%	4270%	4280%	4290%	4300%	4310%	4320%	4330%	4340%	4350%	4360%	4370%	4380%	4390%	4400%	4410%	4420%	4430%	4440%	4450%	4460%	4470%	4480%	4490%	4500%	4510%	4520%	4530%	4540%	4550%	4560%	4570%	4580%	4590%	4600%	4610%	4620%	4630%	4640%	4650
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UNIVERSITY OF CALIFORNIA
LOS ANGELES INDUSTRIAL LABORATORY
CHEMICAL AND PHYSICAL DIVISION

PROJECT TITLE: BUILDING MATERIALS & STORAGE FACILITY
P.L.N.: 11818
FUNDING AGENCY: NSF (KLEIN) (KLEIN)

DATE: 04-78

20-100-00

DESCRIPTION	Y-1	Y-2	Y-3	Y-4	Y-5	Y-6	Y-7	Y-8	Y-9	Y-10	Y-11	Y-12	Y-13	Y-14	Y-15	Y-16	Y-17	Y-18	Y-19	Y-20	Y-21	Y-22	Y-23	Y-24	Y-25	Y-26	Y-27	Y-28	Y-29	Y-30	Y-31	Y-32	Y-33	Y-34	Y-35	Y-36	Y-37	Y-38	Y-39	Y-40	Y-41	Y-42	Y-43	Y-44	Y-45	Y-46	Y-47	Y-48	Y-49	Y-50	Y-51	Y-52	Y-53	Y-54	Y-55	Y-56	Y-57	Y-58	Y-59	Y-60	Y-61	Y-62	Y-63	Y-64	Y-65	Y-66	Y-67	Y-68	Y-69	Y-70	Y-71	Y-72	Y-73	Y-74	Y-75	Y-76	Y-77	Y-78	Y-79	Y-80	Y-81	Y-82	Y-83	Y-84	Y-85	Y-86	Y-87	Y-88	Y-89	Y-90	Y-91	Y-92	Y-93	Y-94	Y-95	Y-96	Y-97	Y-98	Y-99	Y-100	Y-101	Y-102	Y-103	Y-104	Y-105	Y-106	Y-107	Y-108	Y-109	Y-110	Y-111	Y-112	Y-113	Y-114	Y-115	Y-116	Y-117	Y-118	Y-119	Y-120	Y-121	Y-122	Y-123	Y-124	Y-125	Y-126	Y-127	Y-128	Y-129	Y-130	Y-131	Y-132	Y-133	Y-134	Y-135	Y-136	Y-137	Y-138	Y-139	Y-140	Y-141	Y-142	Y-143	Y-144	Y-145	Y-146	Y-147	Y-148	Y-149	Y-150	Y-151	Y-152	Y-153	Y-154	Y-155	Y-156	Y-157	Y-158	Y-159	Y-160	Y-161	Y-162	Y-163	Y-164	Y-165	Y-166	Y-167	Y-168	Y-169	Y-170	Y-171	Y-172	Y-173	Y-174	Y-175	Y-176	Y-177	Y-178	Y-179	Y-180	Y-181	Y-182	Y-183	Y-184	Y-185	Y-186	Y-187	Y-188	Y-189	Y-190	Y-191	Y-192	Y-193	Y-194	Y-195	Y-196	Y-197	Y-198	Y-199	Y-200	Y-201	Y-202	Y-203	Y-204	Y-205	Y-206	Y-207	Y-208	Y-209	Y-210	Y-211	Y-212	Y-213	Y-214	Y-215	Y-216	Y-217	Y-218	Y-219	Y-220	Y-221	Y-222	Y-223	Y-224	Y-225	Y-226	Y-227	Y-228	Y-229	Y-230	Y-231	Y-232	Y-233	Y-234	Y-235	Y-236	Y-237	Y-238	Y-239	Y-240	Y-241	Y-242	Y-243	Y-244	Y-245	Y-246	Y-247	Y-248	Y-249	Y-250	Y-251	Y-252	Y-253	Y-254	Y-255	Y-256	Y-257	Y-258	Y-259	Y-260	Y-261	Y-262	Y-263	Y-264	Y-265	Y-266	Y-267	Y-268	Y-269	Y-270	Y-271	Y-272	Y-273	Y-274	Y-275	Y-276	Y-277	Y-278	Y-279	Y-280	Y-281	Y-282	Y-283	Y-284	Y-285	Y-286	Y-287	Y-288	Y-289	Y-290	Y-291	Y-292	Y-293	Y-294	Y-295	Y-296	Y-297	Y-298	Y-299	Y-300	Y-301	Y-302	Y-303	Y-304	Y-305	Y-306	Y-307	Y-308	Y-309	Y-310	Y-311	Y-312	Y-313	Y-314	Y-315	Y-316	Y-317	Y-318	Y-319	Y-320	Y-321	Y-322	Y-323	Y-324	Y-325	Y-326	Y-327	Y-328	Y-329	Y-330	Y-331	Y-332	Y-333	Y-334	Y-335	Y-336	Y-337	Y-338	Y-339	Y-340	Y-341	Y-342	Y-343	Y-344	Y-345	Y-346	Y-347	Y-348	Y-349	Y-350	Y-351	Y-352	Y-353	Y-354	Y-355	Y-356	Y-357	Y-358	Y-359	Y-360	Y-361	Y-362	Y-363	Y-364	Y-365	Y-366	Y-367	Y-368	Y-369	Y-370	Y-371	Y-372	Y-373	Y-374	Y-375	Y-376	Y-377	Y-378	Y-379	Y-380	Y-381	Y-382	Y-383	Y-384	Y-385	Y-386	Y-387	Y-388	Y-389	Y-390	Y-391	Y-392	Y-393	Y-394	Y-395	Y-396	Y-397	Y-398	Y-399	Y-400	Y-401	Y-402	Y-403	Y-404	Y-405	Y-406	Y-407	Y-408	Y-409	Y-410	Y-411	Y-412	Y-413	Y-414	Y-415	Y-416	Y-417	Y-418	Y-419	Y-420	Y-421	Y-422	Y-423	Y-424	Y-425	Y-426	Y-427	Y-428	Y-429	Y-430	Y-431	Y-432	Y-433	Y-434	Y-435	Y-436	Y-437	Y-438	Y-439	Y-440	Y-441	Y-442	Y-443	Y-444	Y-445	Y-446	Y-447	Y-448	Y-449	Y-450	Y-451	Y-452	Y-453	Y-454	Y-455	Y-456	Y-457	Y-458	Y-459	Y-460	Y-461	Y-462	Y-463	Y-464	Y-465	Y-466	Y-467	Y-468	Y-469	Y-470	Y-471	Y-472	Y-473	Y-474	Y-475	Y-476	Y-477	Y-478	Y-479	Y-480	Y-481	Y-482	Y-483	Y-484	Y-485	Y-486	Y-487	Y-488	Y-489	Y-490	Y-491	Y-492	Y-493	Y-494	Y-495	Y-496	Y-497	Y-498	Y-499	Y-500	Y-501	Y-502	Y-503	Y-504	Y-505	Y-506	Y-507	Y-508	Y-509	Y-510	Y-511	Y-512	Y-513	Y-514	Y-515	Y-516	Y-517	Y-518	Y-519	Y-520	Y-521	Y-522	Y-523	Y-524	Y-525	Y-526	Y-527	Y-528	Y-529	Y-530	Y-531	Y-532	Y-533	Y-534	Y-535	Y-536	Y-537	Y-538	Y-539	Y-540	Y-541	Y-542	Y-543	Y-544	Y-545	Y-546	Y-547	Y-548	Y-549	Y-550	Y-551	Y-552	Y-553	Y-554	Y-555	Y-556	Y-557	Y-558	Y-559	Y-560	Y-561	Y-562	Y-563	Y-564	Y-565	Y-566	Y-567	Y-568	Y-569	Y-570	Y-571	Y-572	Y-573	Y-574	Y-575	Y-576	Y-577	Y-578	Y-579	Y-580	Y-581	Y-582	Y-583	Y-584	Y-585	Y-586	Y-587	Y-588	Y-589	Y-590	Y-591	Y-592	Y-593	Y-594	Y-595	Y-596	Y-597	Y-598	Y-599	Y-600	Y-601	Y-602	Y-603	Y-604	Y-605	Y-606	Y-607	Y-608	Y-609	Y-610	Y-611	Y-612	Y-613	Y-614	Y-615	Y-616	Y-617	Y-618	Y-619	Y-620	Y-621	Y-622	Y-623	Y-624	Y-625	Y-626	Y-627	Y-628	Y-629	Y-630	Y-631	Y-632	Y-633	Y-634	Y-635	Y-636	Y-637	Y-638	Y-639	Y-640	Y-641	Y-642	Y-643	Y-644	Y-645	Y-646	Y-647	Y-648	Y-649	Y-650	Y-651	Y-652	Y-653	Y-654	Y-655	Y-656	Y-657	Y-658	Y-659	Y-660	Y-661	Y-662	Y-663	Y-664	Y-665	Y-666	Y-667	Y-668	Y-669	Y-670	Y-671	Y-672	Y-673	Y-674	Y-675	Y-676	Y-677	Y-678	Y-679	Y-680	Y-681	Y-682	Y-683	Y-684	Y-685	Y-686	Y-687	Y-688	Y-689	Y-690	Y-691	Y-692	Y-693	Y-694	Y-695	Y-696	Y-697	Y-698	Y-699	Y-700	Y-701	Y-702	Y-703	Y-704	Y-705	Y-706	Y-707	Y-708	Y-709	Y-710	Y-711	Y-712	Y-713	Y-714	Y-715	Y-716	Y-717	Y-718	Y-719	Y-720	Y-721	Y-722	Y-723	Y-724	Y-725	Y-726	Y-727	Y-728	Y-729	Y-730	Y-731	Y-732	Y-733	Y-734	Y-735	Y-736	Y-737	Y-738	Y-739	Y-740	Y-741	Y-742	Y-743	Y-744	Y-745	Y-746	Y-747	Y-748	Y-749	Y-750	Y-751	Y-752	Y-753	Y-754	Y-755	Y-756	Y-757	Y-758	Y-759	Y-760	Y-761	Y-762	Y-763	Y-764	Y-765	Y-766	Y-767	Y-768	Y-769	Y-770	Y-771	Y-772	Y-773	Y-774	Y-775	Y-776	Y-777	Y-778	Y-779	Y-780	Y-781	Y-782	Y-783	Y-784	Y-785	Y-786	Y-787	Y-788	Y-789	Y-790	Y-791	Y-792	Y-793	Y-794	Y-795	Y-796	Y-797	Y-798	Y-799	Y-800	Y-801	Y-802	Y-803	Y-804	Y-805	Y-806	Y-807	Y-808	Y-809	Y-810	Y-811	Y-812	Y-813	Y-814	Y-815	Y-816	Y-817	Y-818	Y-819	Y-820	Y-821	Y-822	Y-823	Y-824	Y-825	Y-826	Y-827	Y-828	Y-829	Y-830	Y-831	Y-832	Y-833	Y-834	Y-835	Y-836	Y-837	Y-838	Y-839	Y-840	Y-841	Y-842	Y-843	Y-844	Y-845	Y-846	Y-847	Y-848	Y-849	Y-850	Y-851	Y-852	Y-853	Y-854	Y-855	Y-856	Y-857	Y-858	Y-859	Y-860	Y-861	Y-862	Y-863	Y-864	Y-865	Y-866	Y-867	Y-868	Y-869	Y-870	Y-871	Y-872	Y-873	Y-874	Y-875	Y-876	Y-877	Y-878	Y-879	Y-880	Y-881	Y-882	Y-883	Y-884	Y-885	Y-886	Y-887	Y-888	Y-889	Y-890	Y-891	Y-892	Y-893	Y-894	Y-895	Y-896	Y-897	Y-898	Y-899	Y-900	Y-901	Y-902	Y-903	Y-904	Y-905	Y-906	Y-907	Y-908	Y-909	Y-910	Y-911	Y-912	Y-913	Y-914	Y-915	Y-916	Y-917	Y-918	Y-919	Y-920	Y-921	Y-922	Y-923	Y-924	Y-925	Y-926	Y-927	Y-928	Y-929	Y-930	Y-931	Y-932	Y-933	Y-934	Y-935	Y-936	Y-937	Y-938	Y-939	Y-940	Y-941	Y-942	Y-943	Y-944	Y-945	Y-946	Y-947	Y-948	Y-949	Y-950	Y-951	Y-952	Y-953	Y-954	Y-955	Y-956	Y-957	Y-958	Y-959	Y-960	Y-961	Y-962	Y-963	Y-964	Y-965	Y-966	Y-967	Y-968	Y-969	Y-970	Y-971	Y-972	Y-973	Y-974	Y-975	Y-976	Y-977	Y-978	Y-979	Y-980	Y-981	Y-982	Y-983	Y-984	Y-985	Y-986	Y-987	Y-988	Y-989	Y-990	Y-991	Y-992	Y-993	Y-994	Y-995	Y-996	Y-997	Y-998	Y-999	Y-1000	Y-1001	Y-1002	Y-1003	Y-1004	Y-1005	Y-1006	Y-1007	Y-1008	Y-1009	Y-1010	Y-1011	Y-1012	Y-1013	Y-1014	Y-1015	Y-1016	Y-1017	Y-1018	Y-1019	Y-1020	Y-1021	Y-1022	Y-1023	Y-1024	Y-1025	Y-1026	Y-1027	Y-1028	Y-1029	Y-1030	Y-1031	Y-1032	Y-1033	Y-1034	Y-1035	Y-1036	Y-1037	Y-1038	Y-1039	Y-1040	Y-1041	Y-1042	Y-1043	Y-1044	Y-1045	Y-1046	Y-1047	Y-1048	Y-1049	Y-1050	Y-1051	Y-1052	Y-1053	Y-1054	Y-1055	Y-1056	Y-1057	Y-1058	Y-1059	Y-1060	Y-1061	Y-1062	Y-1063	Y-1064	Y-1065	Y-1066	Y-1067	Y-1068	Y-1069	Y-1070	Y-1071	Y-1072	Y-1073	Y-1074	Y-1075	Y-1076	Y-1077	Y-1078	Y-1079	Y-1080	Y-1081	Y-1082	Y-1083	Y-1084	Y-1085	Y-1086	Y-1087	Y-1088	Y-1089	Y-1090	Y-1091	Y-1092	Y-1093	Y-1094	Y-1095	Y-1096	Y-1097	Y-1098	Y-1099	Y-1100	Y-1101	Y-1102	Y-1103	Y-1104	Y-1105	Y-1106	Y-1107	Y-1108	Y-1109	Y-1110	Y-1111	Y-1112	Y-1113	Y-1114	Y-1115	Y-1116	Y-1117	Y-1118	Y-1119	Y-1120	Y-1121	Y-1122	Y-1123	Y-1124	Y-1125	Y-1126	Y-1127	Y-1128	Y-1129	Y-1130	Y-1131	Y-1132	Y-1133	Y-1134	Y-1135	Y-1136	Y-1137	Y-1138	Y-1139	Y-1140	Y-1141	Y-1142	Y-1143	Y-1144	Y-1145	Y-1146	Y-1147	Y-1148	Y-1149	Y-1150	Y-1151	Y-1152	Y-1153	Y-1154	Y-1155	Y-1156	Y-1157	Y-1158	Y-1159	Y-1160	Y-1161	Y-1162	Y-1163	Y-1164	Y-1165	Y-1166	Y-1167	Y-1168	Y-1169	Y-1170	Y-1171	Y-1172	Y-1173	Y-1174	Y-1175	Y-1176	Y-1177	Y-1178	Y-1179	Y-1180	Y-1181	Y-1182	Y-1183	Y-1184	Y-1185	Y-1186	Y-1187	Y-1188	Y-1189	Y-1190	Y-1191	Y-1192	Y-1193	Y-1194	Y-1195	Y-1196	Y-1197	Y-1198	Y-1199	Y-1200	Y-1201	Y-1
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PROPOSED TITLE: MATERIALS, METHODS & PROTOCOLS OF ACCTIVITY
1 of 1: 4 pages
BIRTHDAY: 04/12/1984
4th FLOOR, SUBDIVISION

2000-2001

[illegible]

FIELD OVERHEAD AND EXPENSES

UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY

FIELD OVERHEAD EXPENSES

PROJECT TITLE: NMSF PF-41 TA-55
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 25-May-95
JOB NUMBER: 11818

CONSTRUCTION DURATION (in months): 33.0

ACTIVITY	QUANTITY	UNIT	FACTOR	LABOR RATE	EXTENSION	MATERIAL RATE	EXTENSION	CONST. EQUIPMENT RATE	EXTENSION	SUBCONTRACT	TOTAL
MANAGEMENT											
Project Manager	33	Month	0.75	\$5,833.00	\$144,366.75						\$144,366.75
Superintendent	33	Month	0.75	\$5,833.00	\$144,366.75						\$144,366.75
Field Engineer	33	Month	0.1	\$2,888.00	\$8,797.80						\$8,797.80
Field Clerk	33	Month	0.75	\$2,888.00	\$85,983.50						\$85,983.50
Project Control/Scheduler	33	Month	0.2	\$2,668.00	\$17,585.60						\$17,585.60
Security Watchman	0	Month	0	\$0.00	\$0.00						\$0.00
TEMPORARY FACILITIES											
OFFICE RENTAL											
Management Office	33	Month				\$453.00	\$14,949.00				\$14,949.00
Inspector's Office	0	Month				\$453.00	\$0.00				\$0.00
Safety Office	0	Month				\$453.00	\$0.00				\$0.00
Warehouse(s)	12	Month				\$1,500.00	\$18,000.00				\$18,000.00
Tool/Storage Van(s)	30	Month				\$83.00	\$2,790.00				\$2,790.00
OFFICE INSTALLATION											
Management Office		Lump Sum			\$790.00		\$0.00		\$150.00		\$940.00
Inspector's Office		Lump Sum			\$790.00		\$0.00		\$150.00		\$940.00
Safety Office		Lump Sum			\$790.00		\$0.00		\$150.00		\$940.00
Warehouse(s)		Lump Sum			\$0.00		\$0.00		\$0.00		\$0.00
Tool/Storage Van(s)		Lump Sum			\$282.00		\$0.00		\$150.00		\$432.00
UTILITY COSTS											
Water	0	Month				\$100.00	\$0.00				\$0.00
Sanitary(Temp. Toilets)	33	Month				\$234.00	\$7,722.00				\$7,722.00
Electric	0	Month				\$110.00	\$0.00				\$0.00
Communications	33	Month				\$250.00	\$8,250.00				\$8,250.00
Heating Fuel	12	Month				\$250.00	\$3,000.00				\$3,000.00
Drinking Water/Ice	33	Month				\$40.00	\$1,320.00				\$1,320.00
UTILITY INSTALLATION											
Water		Lump Sum			\$479.38		\$200.00		\$0.00	\$0.00	\$679.38
Sanitary		Lump Sum			\$0.00		\$0.00		\$0.00	\$0.00	\$0.00
Electric		Lump Sum			\$481.28		\$500.00		\$0.00	\$0.00	\$981.28
Communications		Lump Sum			\$481.28		\$150.00		\$0.00	\$0.00	\$631.28
FIELD OFFICE EXPENSES											
Office Supplies	33	Month				\$175.00	\$5,775.00				\$5,775.00
First Aid Expenses	33	Month				\$150.00	\$4,950.00				\$4,950.00
Project Signs	33	Month				\$100.00	\$3,300.00				\$3,300.00
Project Photographs	33	Month				\$150.00	\$4,950.00				\$4,950.00

UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY

FIELD OVERHEAD EXPENSES

PROJECT TITLE: NMSF PF-41 TA-35
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 25-May-95
JOB NUMBER: 11818

CONSTRUCTION DURATION (in months): 33.0

ACTIVITY	QUANTITY	UNIT	FACTOR	LABOR RATE	EXTENSION	MATERIAL RATE	EXTENSION	CONST. EQUIPMENT RATE	EXTENSION	SUBCONTRACT	TOTAL
JOBSITE SECURITY											
Fence Rental	0	Month				\$0.00	\$0.00				\$0.00
Fence Installation		Lump Sum			\$0.00						\$0.00
JOBSITE MAINTENANCE											
Job Site Policing	33	Month	0.25	\$3,148.00	\$25,854.00			\$142.50	\$4,702.50		\$30,657.00
Snow Removal	12	Month	0.2	\$3,180.00	\$7,632.00	\$0.00	\$0.00	\$385.00	\$4,820.00		\$12,252.00
Access Maintenance	0	Month	0.2	\$3,180.00	\$0.00	\$150.00	\$0.00	\$385.00	\$0.00		\$0.00
Misc Labor (Operator)	0	Month	0	\$3,180.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00
CONSTRUCTION EQUIPMENT											
Project Manager's Vehicle	33	Month						\$570.00	\$18,810.00		\$18,810.00
Superintendent's Pick-up	33	Month						\$570.00	\$18,810.00		\$18,810.00
Job Site Pick-up(s)	33	Month						\$570.00	\$18,810.00		\$18,810.00
Flatbed Dump Truck(s)	0	Month						\$0.00	\$0.00		\$0.00
Cherry Picker - 15 ton	0	Month						\$0.00	\$0.00		\$0.00
Backhoe - Rubber Tired	0	Month						\$1,925.00	\$0.00		\$0.00
Skid Loader ("Bobcat")	0	Month						\$0.00	\$0.00		\$0.00
Misc. Equipment	0	Month						\$200.00	\$0.00		\$0.00
Small Tools	33	Month						\$150.00	\$4,850.00		\$4,850.00
Fuel/Maintenance	33	Month	1	\$420.00	\$13,860.00	\$350.00	\$11,550.00	\$0.00	\$0.00		\$25,410.00
QUALITY CONTROL											
Project Manager	33	Month	0.25	\$5,833.00	\$48,122.25						\$48,122.25
Superintendent	33	Month	0.25	\$5,833.00	\$48,122.25						\$48,122.25
Field Engineer	33	Month	0.1	\$2,866.00	\$8,797.80						\$8,797.80
Field Clerk	33	Month	0.25	\$2,666.00	\$21,894.50						\$21,894.50
Project Control/Scheduler	33	Month	0.02	\$2,666.00	\$1,759.56						\$1,759.56
Soils Tests		Lump Sum			\$0.00		\$0.00				\$0.00
Concrete Tests		Lump Sum			\$0.00		\$0.00				\$0.00
Piping Tests		Lump Sum			\$0.00		\$0.00				\$0.00
Electrical Tests		Lump Sum			\$0.00		\$0.00				\$0.00
Misc. Tests		Lump Sum			\$0.00		\$0.00				\$0.00
MOVE-IN/MOVE-OUT											
Initial Transportation to Job Site		Lump Sum			\$20,000.00						\$20,000.00
Job Site Dismantling		Lump Sum			INCL						\$0.00
Transportation from Job Site		Lump Sum			INCL						\$0.00

UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY

FIELD OVERHEAD EXPENSES

PROJECT TITLE: NNSF PF-41 TA-55
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 25-May-95
JOB NUMBER: 11016

CONSTRUCTION DURATION (in months): 33.0

ACTIVITY	QUANTITY	UNIT	FACTOR	LABOR RATE	EXTENSION	MATERIAL RATE	EXTENSION	CONST. EQUIPMENT RATE	EXTENSION	SUBCONTRACT	TOTAL
BONDS		Lump Sum								\$0	\$0
INSURANCE/FEEs											
Builder's Risk		Lump Sum								\$40,295	\$40,295.31
Liability (Umbrella)		Lump Sum								\$76,561	\$76,561.09
AGC Fees		Lump Sum								\$16,116	\$16,116.12
SAFETY											
TRAINING											
GET Training	70	EACH	10	\$24.55	\$17,185.00						\$17,185.00
Site Specific Training	70	EACH	2	\$24.55	\$3,437.00						\$3,437.00
SAFETY EQUIPMENT											
Safety Plan		Lump Sum			\$11,000.00						\$11,000.00
Barricades		Lump Sum					\$13,600.00				\$13,600.00
Equipment		Lump Sum									\$0.00
Supplies		Lump Sum									\$0.00
GRAND TOTAL					\$613,069.18		\$101,206.00		\$71,302.50	\$132,974.52	\$918,552.20

ED&I ANALYSIS

University of California
Los Alamos National Laboratory
ENGINEERING, DESIGN & INSPECTION (ED&I) SUMMARY

JOB NUMBER: 11818
PROJECT TITLE: NMSF PF-41 TA-55 (DESIGN/BUILD) DATE: 16-Jun-95
ESTIMATOR: ICF KAISER ENGINEERS

Item Description	Item Total Cost
A&E Design Costs	\$2,637,432
Facilities	\$2,204,869
Title 1	\$0
Title 2	\$1,723,649
Title 3	\$481,220
Special Facilities	\$432,563
Title 1	\$0
Title 2	\$332,017
Title 3	\$100,545
LANL ED&I	\$1,338,363
Facilities	\$1,261,301
Title 1	\$0
Title 2	\$191,105
Title 3	\$1,070,196
Special Facilities	\$77,061
Title 1	\$0
Title 2	\$51,374
Title 3	\$25,687
TOTAL ED&I	\$3,975,794
Facilities	\$3,466,170
Title 1	\$0
Title 2	\$1,914,754
Title 3	\$1,551,416
Special Facilities	\$509,624
Title 1	\$0
Title 2	\$383,392
Title 3	\$126,233
PROJECT MANAGEMENT	\$2,487,315
Facilities	\$2,487,315
Project Management	\$1,151,888.11
Construction Management	\$1,335,427.29
Special Facilities	\$0

University of California
Los Alamos National Laboratory
FACILITY ENGINEERING, DESIGN & INSPECTION (ED&I) COSTS

JOB NUMBER: 11616.0
PROJECT TITLE: NMSF PF-41 TA-65 (DESIGN/BUILD)
ESTIMATOR: ICE KAISER ENGINEERS

DATE _____

16-40-95

		BASE YEAR										
ESCALATION RATE	FY-->	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
ANNUAL		0.87%	3.00%	3.10%	3.10%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
FROM BASE YEAR		0.87%	3.90%	7.12%	10.44%	13.76%	17.18%	20.88%	24.30%	28.03%	31.87%	

FACILITIES A/E DESIGN COSTS

UNESCALATED COST		TOTAL COST	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	TOTAL DURATION/ COST
TITLE 1 -- WEEKS OF EFFORT	0.0	0	0	0	0	0	0	0	0	0	0	0	0
TITLE 2 -- WEEKS OF EFFORT	40.0	0	0	52	24	0	0	0	0	0	0	0	76
TITLE 3 -- WEEKS OF EFFORT	107.9	0	0	0	26	52	18	0	0	0	0	0	96
TITLE 1 -- DISTRIBUTED COST	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 2 -- DISTRIBUTED COST	\$1,593,529	\$0	\$0	\$1,090,309	\$503,225	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,593,529
TITLE 3 -- DISTRIBUTED COST	\$424,000	\$0	\$0	\$0	\$114,836	\$229,671	\$79,502	\$0	\$0	\$0	\$0	\$0	\$424,000
TOTAL UNESCALATED COST BY YEAR			\$0	\$0	\$1,090,309	\$618,055	\$229,671	\$79,502	\$0	\$0	\$0	\$0	\$2,017,537

ELOCATED COST		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TOTAL COST
TITLE 1	-- DISTRIBUTED COST	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 2	-- DISTRIBUTED COST	\$1,693,528	\$0	\$1,167,905	\$665,743	\$0	\$0	\$0	\$0	\$0	\$0	\$1,723,049
TITLE 3	-- DISTRIBUTED COST	\$424,008	\$0	\$0	\$128,821	\$261,252	\$93,146	\$0	\$0	\$0	\$0	\$481,220
TOTAL ELOCATED COST BY YEAR		\$0	\$0	\$1,167,905	\$682,585	\$261,252	\$93,146	\$0	\$0	\$0	\$0	\$2,204,888

A&E DESIGN OVERSIGHT

TITLE: STAFF PLAN (HR59)[illegible]

University of California
Los Alamos National Laboratory
FACILITY ENGINEERING, DESIGN & INSPECTION (ED&I) COSTS

JOB NUMBER: 11818.0
PROJECT TITLE: NMSF PF-41 TA-55 (DESIGN/BUILD)
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 16-Jun-95

ESCALATION RATE	FY-->	BASE YEAR	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
ANNUAL		1994	0.87%	3.00%	3.10%	3.10%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
FROM BASE YEAR			0.87%	3.00%	7.12%	10.44%	13.75%	17.16%	20.68%	24.30%	28.03%	31.87%

TITLE I			1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	COST
TITLE 1	FSS-6	TEAM LEAD	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 1	FSS-6	CMU/STRU	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 1	FSS-6	ARCH	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 1	FSS-6	MECH	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 1	FSS-6	ELEC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 1	FSS-6	OTH	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 1	FSS-6	GEN INSP	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL TITLE I ESCALATED STAFF COST			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

TITLE II STAFF PLAN (HRS)			\$/HR	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TOTAL HOURS
TITLE 2	FSS-6	TEAM LEAD	\$95.00	0	0	0	0	0	0	0	0	0	0	0
TITLE 2	FSS-6	CMU/STRU	\$95.00	0	0	320	180	0	0	0	0	0	0	490
TITLE 2	FSS-6	ARCH	\$95.00	0	0	220	100	0	0	0	0	0	0	320
TITLE 2	FSS-6	MECH	\$95.00	0	0	220	100	0	0	0	0	0	0	320
TITLE 2	FSS-6	ELEC	\$95.00	0	0	220	100	0	0	0	0	0	0	320
TITLE 2	FSS-6	H/S ENG	\$95.00	0	0	0	0	0	0	0	0	0	0	0
TITLE 2	FSS-6	CONST ENR	\$95.00	0	0	300	120	0	0	0	0	0	0	420
TITLE 2	FSS-6	OTH	\$75.00	0	0	0	0	0	0	0	0	0	0	0
TITLE 2	FSS-6	GEN INSP	\$75.00	0	0	0	0	0	0	0	0	0	0	0
TOTAL TITLE II HOURS				0	0	1250	590	0	0	0	0	0	0	1890
TOTAL FTE'S				0.0	0.0	0.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.9

ESCALATED STAFF COST PER YEAR			TITLE II	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	COST
TITLE 2	FSS-6	TEAM LEAD		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 2	FSS-6	CMU/STRU		\$0	\$0	\$32,560	\$16,787	\$0	\$0	\$0	\$0	\$0	\$0	\$49,350
TITLE 2	FSS-6	ARCH		\$0	\$0	\$22,387	\$10,492	\$0	\$0	\$0	\$0	\$0	\$0	\$32,879
TITLE 2	FSS-6	MECH		\$0	\$0	\$22,387	\$10,492	\$0	\$0	\$0	\$0	\$0	\$0	\$32,879
TITLE 2	FSS-6	ELEC		\$0	\$0	\$22,387	\$10,492	\$0	\$0	\$0	\$0	\$0	\$0	\$32,879
TITLE 2	FSS-6	H/S ENG		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 2	FSS-6	CONST ENR		\$0	\$0	\$30,520	\$12,590	\$0	\$0	\$0	\$0	\$0	\$0	\$43,110
TITLE 2	FSS-6	OTH		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 2	FSS-6	GEN INSP		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL TITLE II ESCALATED STAFF COST				\$0	\$0	\$130,254	\$60,851	\$0	\$0	\$0	\$0	\$0	\$0	\$191,105

University of California
Los Alamos National Laboratory
FACILITY ENGINEERING, DESIGN & INSPECTION (ED&I) COSTS

JOB NUMBER: 11818.0
PROJECT TITLE: NMSF PF-417A-55 (DESIGN/BUILD)
ESTIMATOR: HCF KAISER ENGINEERS

DATE: 16-Jun-95

			BASE YEAR												
ESCALATION RATE			FY-->		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
ANNUAL						0.87%	3.00%	3.10%	3.10%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
FROM BASE YEAR						0.87%	3.90%	7.12%	10.44%	13.78%	17.16%	20.68%	24.30%	28.03%	31.57%
TITLE III STAFF PLAN (HRS)															
			\$/HR		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TOTAL HOURS
TITLE 3	FSS-6	TEAM LEAD	\$95.00		0	0	0	0	0	0	0	0	0	0	0
TITLE 3	FSS-6	CIVIL/STRU	\$95.00		0	0	0	180	240	60	0	0	0	0	480
TITLE 3	FSS-6	ARCH	\$95.00		0	0	0	120	30	30	0	0	0	0	280
TITLE 3	FSS-6	MECH	\$95.00		0	0	0	120	30	30	0	0	0	0	280
TITLE 3	FSS-6	ELEC	\$95.00		0	0	0	120	30	30	0	0	0	0	280
TITLE 3	FSS-6	QA ENG	\$95.00		0	0	0	0	0	0	0	0	0	0	0
TITLE 3	FSS-6	CONST ENG	\$95.00		0	0	0	1325	1750	480	0	0	0	0	3555
TITLE 3	FSS-6	H/S ENG	\$95.00		0	0	0	0	0	0	0	0	0	0	0
TITLE 3	FSS-6	QA ENG	\$95.00		0	0	0	0	0	0	0	0	0	0	0
TITLE 3	FSS-6	OTH	\$75.00		0	0	0	0	0	0	0	0	0	0	0
TITLE 3	FSS-6	GEN INSP	\$75.00		0	0	0	1500	1500	240	0	0	0	0	3240
TITLE 3	FSS-6	SAFETY INS	\$75.00		0	0	0	1500	1500	240	0	0	0	0	3240
TOTAL TITLE III HOURS					0	0	0	4845	5230	1280	0	0	0	0	11355
TOTAL FTE'S					0.0	0.0	0.0	2.3	2.5	0.8	0.0	0.0	0.0	0.0	5.5
ESCALATED STAFF COST PER YEAR															
TITLE III					1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	COST
TITLE 3	FSS-6	TEAM LEAD			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 3	FSS-6	CIVIL/STRU			\$0	\$0	\$0	\$18,787	\$25,935	\$8,904	\$0	\$0	\$0	\$0	\$51,826
TITLE 3	FSS-6	ARCH			\$0	\$0	\$0	\$12,590	\$8,645	\$8,904	\$0	\$0	\$0	\$0	\$30,139
TITLE 3	FSS-6	MECH			\$0	\$0	\$0	\$12,590	\$8,645	\$8,904	\$0	\$0	\$0	\$0	\$30,139
TITLE 3	FSS-6	ELEC			\$0	\$0	\$0	\$12,590	\$8,645	\$8,904	\$0	\$0	\$0	\$0	\$30,139
TITLE 3	FSS-6	QA ENG			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 3	FSS-6	CONST ENG			\$0	\$0	\$0	\$139,013	\$189,110	\$53,428	\$0	\$0	\$0	\$0	\$381,550
TITLE 3	FSS-6	H/S ENG			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 3	FSS-6	QA ENG			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 3	FSS-6	OTH			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 3	FSS-6	GEN INSP			\$0	\$0	\$0	\$124,242	\$127,969	\$21,089	\$0	\$0	\$0	\$0	\$273,301
TITLE 3	FSS-6	SAFETY INS			\$0	\$0	\$0	\$124,242	\$127,969	\$21,089	\$0	\$0	\$0	\$0	\$273,301
TOTAL TITLE III ESCALATED STAFF COST					\$0	\$0	\$0	\$442,054	\$496,920	\$131,223	\$0	\$0	\$0	\$0	\$1,070,196
TOTAL FACILITIES A&E DESIGN OVERSIGHT															
TITLE 1					\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TITLE 2					\$0.00	\$0.00	\$130,254.12	\$60,851.08	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$191,105.19
TITLE 3					\$0.00	\$0.00	\$0.00	\$442,053.71	\$496,919.82	\$131,222.72	\$0.00	\$0.00	\$0.00	\$0.00	\$1,070,196.05
TOTAL FACILITIES A&E DESIGN OVERSIGHT (ESCALATED)					\$0.00	\$0.00	\$130,254.12	\$502,904.78	\$496,919.82	\$131,222.72	\$0.00	\$0.00	\$0.00	\$0.00	\$1,261,301.24

University of California
Los Alamos National Laboratory
FACILITY PROJECT MANAGEMENT COSTS

PROJECT TITLE: NMSF PF-41 TA-05 (DESIGN/BUILD)
JOB NUMBER: 11018
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 18-Jan-85

ESCALATION	FY-->	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
ANNUAL			0.87%	3.00%	3.10%	3.10%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
FROM BASE YEAR			0.87%	3.90%	7.12%	10.44%	13.75%	17.18%	20.68%	24.30%	28.03%	31.87%

ENGINEERING DIVISION MANAGEMENT COSTS

STAFF PLAN	HOURS	\$/HR	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	TOTAL HOURS
PROJECT													
PROJ MGR	0	\$85.00	0	0	0	0	0	0	0	0	0	0	0
PROJ LDR	2,510	\$85.00	0	0	750	750	750	280	0	0	0	0	2510
PROJ CTRL	400	\$75.00	0	0	0	175	175	80	0	0	0	0	400
USER REP	2,510	\$85.00	0	0	750	750	750	280	0	0	0	0	2510
HIS ENG	1,080	\$85.00	0	0	300	330	330	80	0	0	0	0	1080
QA/REP	700	\$85.00	0	0	150	240	240	80	0	0	0	0	700
ADMIN	2,510	\$75.00	0	0	750	750	750	280	0	0	0	0	2510
TOTAL	8,710		0	0	2,740	2,985	2,985	880	0	0	0	0	8710
CONSTRUCTION													
PROJ MGR	0	\$85.00	0	0	0	0	0	0	0	0	0	0	0
PROJ LDR	3,320	\$85.00	0	0	1000	1000	1000	320	0	0	0	0	3320
PROJ CTRL	1,200	\$75.00	0	0	0	525	525	180	0	0	0	0	1200
USER REP	3,320	\$85.00	0	0	1000	1000	1000	320	0	0	0	0	3320
HIS ENG	1,410	\$85.00	0	0	420	420	420	150	0	0	0	0	1410
QA/REP	1,020	\$85.00	0	0	340	340	340	80	0	0	0	0	1020
ADMIN	3,320	\$75.00	0	0	1000	1000	1000	320	0	0	0	0	3320
TOTAL	13,580		0	0	3,660	4,305	4,305	1,320	0	0	0	0	13,580
TOTAL HOURS	23,300		0	0	4,400	7,300	7,300	2,300	0	0	0	0	23,300
FTEs			0.0	0.0	3.1	3.5	3.5	1.1	0.0	0.0	0.0	0.0	11.2

ESCALATED STAFF COST PER YEAR

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	COST
PROJECT											
PROJ MGR	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PROJ LDR	\$0.00	\$0.00	\$75,320.78	\$78,686.72	\$81,047.32	\$29,839.00	\$0.00	\$0.00	\$0.00	\$0.00	\$298,894.12
PROJ CTRL	\$0.00	\$0.00	\$0.00	\$14,464.82	\$14,829.77	\$4,340.82	\$0.00	\$0.00	\$0.00	\$0.00	\$33,616.31
USER REP	\$0.00	\$0.00	\$75,320.78	\$78,686.72	\$81,047.32	\$29,839.00	\$0.00	\$0.00	\$0.00	\$0.00	\$298,894.12
HIS ENG	\$0.00	\$0.00	\$33,881.14	\$34,822.18	\$35,880.82	\$12,017.45	\$0.00	\$0.00	\$0.00	\$0.00	\$113,681.57
QA/REP	\$0.00	\$0.00	\$75,320.78	\$78,686.72	\$81,047.32	\$29,839.00	\$0.00	\$0.00	\$0.00	\$0.00	\$298,894.12
ADMIN	\$0.00	\$0.00	\$80,253.24	\$83,121.10	\$85,584.73	\$29,848.81	\$0.00	\$0.00	\$0.00	\$0.00	\$298,895.85
TOTAL	\$0.00	\$0.00	\$322,796.72	\$347,296.34	\$357,717.29	\$124,075.77	\$0.00	\$0.00	\$0.00	\$0.00	\$1,151,688.11
CONSTRUCTION											
PROJ MGR	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PROJ LDR	\$0.00	\$0.00	\$101,781.04	\$104,815.83	\$106,093.10	\$36,817.90	\$0.00	\$0.00	\$0.00	\$0.00	\$330,537.25
PROJ CTRL	\$0.00	\$0.00	\$0.00	\$43,464.77	\$44,738.31	\$13,180.85	\$0.00	\$0.00	\$0.00	\$0.00	\$101,434.83
USER REP	\$0.00	\$0.00	\$101,781.04	\$104,815.83	\$106,093.10	\$36,817.90	\$0.00	\$0.00	\$0.00	\$0.00	\$330,537.25
HIS ENG	\$0.00	\$0.00	\$42,738.83	\$44,084.56	\$45,388.50	\$15,885.75	\$0.00	\$0.00	\$0.00	\$0.00	\$148,688.65
QA/REP	\$0.00	\$0.00	\$84,422.85	\$87,768.83	\$89,902.71	\$29,879.30	\$0.00	\$0.00	\$0.00	\$0.00	\$107,773.29
ADMIN	\$0.00	\$0.00	\$80,337.08	\$83,288.13	\$85,512.67	\$28,119.18	\$0.00	\$0.00	\$0.00	\$0.00	\$276,597.81
TOTAL	\$0.00	\$0.00	\$421,022.01	\$447,878.34	\$459,517.69	\$153,608.25	\$0.00	\$0.00	\$0.00	\$0.00	\$1,325,427.28
TOTAL BURDENED STAFF COST	\$0.00	\$0.00	\$873,818.73	\$895,274.67	\$897,234.97	\$279,684.02	\$0.00	\$0.00	\$0.00	\$0.00	\$2,477,115.39
TOTAL FACILITY PM COST											
WITH ESCALATION	\$0.00	\$0.00	\$873,818.73	\$895,274.67	\$897,234.97	\$279,684.02	\$0.00	\$0.00	\$0.00	\$0.00	\$2,477,115.39

University of California
Los Alamos National Laboratory
SFE ENGINEERING, DESIGN & INSPECTION (EDA) COSTS

JOB NUMBER: 11,818
PROJECT TITLE: NMSF PF-41 TA-55 (DESIGN/BUILD)
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 16-Jun-95

ESCALATION	FY-->	BASE YEAR 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
ANNUAL			0.87%	3.00%	3.10%	3.10%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
FROM BASE YEAR			0.97%	3.90%	7.12%	10.44%	13.75%	17.16%	20.88%	24.30%	28.03%	31.87%

SFE A&E DESIGN COSTS

UNESCALATED COST	TOTAL COST	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TOTAL DURATION/ COST
TITLE 1 --- WEEKS OF EFFORT	0	0	0	0	0	0	0	0	0	0	0	0
TITLE 2 --- WEEKS OF EFFORT	40	0	0	4	36	0	0	0	0	0	0	40
TITLE 3 --- WEEKS OF EFFORT	107	0	0	0	3	46	43	8	0	0	0	107
TITLE 1 --- DISTRIBUTED COST	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 2 --- DISTRIBUTED COST	\$301,545	\$0	\$0	\$30,155	\$271,391	\$0	\$0	\$0	\$0	\$0	\$0	\$301,545
TITLE 3 --- DISTRIBUTED COST	\$88,897	\$0	\$0	\$0	\$2,436	\$38,982	\$38,982	\$6,497	\$0	\$0	\$0	\$88,897
TOTAL UNESCALATED COST BY YEAR		\$0	\$0	\$30,155	\$273,827	\$38,982	\$38,982	\$6,497	\$0	\$0	\$0	\$383,442

ESCALATED COST		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TOTAL COST
TITLE 1 --- DISTRIBUTED COST	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 2 --- DISTRIBUTED COST	\$301,545	\$0	\$0	\$32,301	\$299,717	\$0	\$0	\$0	\$0	\$0	\$0	\$332,017
TITLE 3 --- DISTRIBUTED COST	\$88,897	\$0	\$0	\$0	\$2,691	\$44,342	\$45,872	\$7,840	\$0	\$0	\$0	\$100,545
TOTAL SFE EDA ESCALATED COST BY YEAR		\$0	\$0	\$32,301	\$302,408	\$44,342	\$45,872	\$7,840	\$0	\$0	\$0	\$432,563

USER DESIGN OVERSIGHT/DESIGN EFFORT

STAFF PLAN (HRS)	\$/HR	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TOTAL HOURS
TITLE 1 CIVIL/STRU	\$95.00	0	0	0	0	0	0	0	0	0	0	0
TITLE 1 MECH	\$95.00	0	0	0	0	0	0	0	0	0	0	0
TITLE 1 ELEC	\$95.00	0	0	0	0	0	0	0	0	0	0	0
TITLE 1 NMT USER	\$95.00	0	0	0	0	0	0	0	0	0	0	0
TITLE 2 CIVIL/STRU	\$95.00	0	0	120	24	0	0	0	0	0	0	144
TITLE 2 MECH	\$95.00	0	0	120	24	0	0	0	0	0	0	144
TITLE 2 ELEC	\$95.00	0	0	120	24	0	0	0	0	0	0	144
TITLE 2 CONST ENR	\$95.00	0	0	80	40	0	0	0	0	0	0	120
TITLE 3 CIVIL/STRU	\$95.00	0	0	0	120	80	40	0	0	0	0	240
TITLE 3 MECH	\$95.00	0	0	0	120	80	40	0	0	0	0	240

University of California
Los Alamos National Laboratory
SFE ENGINEERING, DESIGN & INSPECTION (ED&I) COSTS

JOB NUMBER: 11,816
PROJECT TITLE: NMSF PF-41 TA-55 (DESIGN/BUILD)
ESTIMATOR: ICF KAISER ENGINEERS

DATE: 18-Jun-95

		BASE YEAR												
ESCALATION		FY-->	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
ANNUAL				0.67%	3.00%	3.10%	3.10%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	
FROM BASE YEAR				0.67%	3.90%	7.12%	10.44%	13.75%	17.16%	20.68%	24.30%	28.03%	31.87%	
TITLE 3	ELEC		\$95.00	0	0	0	120	80	40	0	0	0	0	240
TITLE 3	CONST ENK		\$95.00	0	0	0	0	0	0	0	0	0	0	0
TOTAL HOURS				0	0	440	472	240	120	0	0	0	0	1272
TOTAL FTE'S				0.0	0.0	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.6

ESCALATED STAFF COST PER YEAR

		SFEYRJ 1995	SFEYRK 1996	SFEYRL 1997	SFEYRM 1998	SFEYRN 1999	SFEYRO 2000	SFEYRP 2001	SFEYRQ 2002	SFEYRR 2003	SFEYRS 2004	COST
TITLE 1	CIVIL/STRU	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 1	MECH	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 1	ELEC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 1	NMT USER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 2	CIVIL/STRU	\$0	\$0	\$12,211	\$2,518	\$0	\$0	\$0	\$0	\$0	\$0	\$14,729
TITLE 2	MECH	\$0	\$0	\$12,211	\$2,518	\$0	\$0	\$0	\$0	\$0	\$0	\$14,729
TITLE 2	ELEC	\$0	\$0	\$12,211	\$2,518	\$0	\$0	\$0	\$0	\$0	\$0	\$14,729
TITLE 2	CONST ENK	\$0	\$0	\$8,141	\$4,197	\$0	\$0	\$0	\$0	\$0	\$0	\$12,338
TITLE 3	CIVIL/STRU	\$0	\$0	\$0	\$12,590	\$8,645	\$4,452	\$0	\$0	\$0	\$0	\$25,687
TITLE 3	MECH	\$0	\$0	\$0	\$12,590	\$8,645	\$4,452	\$0	\$0	\$0	\$0	\$25,687
TITLE 3	ELEC	\$0	\$0	\$0	\$12,590	\$8,645	\$4,452	\$0	\$0	\$0	\$0	\$25,687
TITLE 3	CONST ENK	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 1	TOTAL	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE 2	TOTAL	\$0	\$0	\$0	\$25,180	\$17,290	\$8,904	\$0	\$0	\$0	\$0	\$51,374
TITLE 3	TOTAL	\$0	\$0	\$0	\$12,590	\$8,645	\$4,452	\$0	\$0	\$0	\$0	\$25,687
TOTAL ESCALATED BURDENED STAFF COST		\$0	\$0	\$44,775	\$49,520	\$25,935	\$13,357	\$0	\$0	\$0	\$0	\$133,587
		\$0	\$0	\$0	\$37,770	\$25,935	\$13,357	\$0	\$0	\$0	\$0	\$77,061
TOTAL SFE ED&I WITH ESCALATION												
TOTAL TITLE 1		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL TITLE 2		\$0	\$0	\$32,301	\$324,897	\$17,290	\$8,904	\$0	\$0	\$0	\$0	\$383,392
TOTAL TITLE 3		\$0	\$0	\$0	\$15,261	\$52,987	\$50,125	\$7,840	\$0	\$0	\$0	\$126,233
TOTAL SFE ED&I WITH ESCALATION		\$0	\$0	\$32,301	\$340,177	\$70,277	\$59,029	\$7,840	\$0	\$0	\$0	\$509,624

**A&E COST OF SERVICES
ANALYSIS (SFE)**

SUMMARY

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

LJ No.: 11818

Prepared By: ICF KAISER ENGINEERS

Date:

16-Jun-95

TITLE I

DIRECT LABOR		\$0.00
SUPPORT STAFF		\$0.00
FIXED FEE (10.00%)		\$0.00
REIMBURSABLES		\$0.00
REPRODUCTION	\$0.00	
TRAVEL	\$0.00	
OTHER REIMBURSABLES	\$0.00	
GENERAL & ADMIN CHARGE ON REIMBURSABLES,	7.00%	\$0.00
SUBTOTAL		\$0.00
NEW MEXICO GROSS RECEIPTS TAX,	6.060%	\$0.00
TOTAL TITLE I,		0.00%
		\$0.00

TITLE II

* DIRECT LABOR		\$234,374.87
SUPPORT STAFF		\$7,749.09
FIXED FEE (10.00%)		\$24,212.40
REIMBURSABLES		\$16,803.00
REPRODUCTION	\$13,593.00	
TRAVEL	\$3,210.00	
OTHER REIMBURSABLES	\$0.00	
GENERAL & ADMIN CHARGE ON REIMBURSABLES,	7.00%	\$1,176.21
SUBTOTAL		\$284,315.56
NEW MEXICO GROSS RECEIPTS TAX,	6.060%	\$17,229.52
TOTAL TITLE II,		77.63%
		\$301,545.09

TITLE III

** DIRECT LABOR		\$60,191.72
SUPPORT STAFF		\$9,088.13
FIXED FEE (10.00%)		\$6,927.98
REIMBURSABLES		\$5,350.00
TRAVEL	\$5,350.00	
OTHER REIMBURSABLES	\$0.00	
GENERAL & ADMIN CHARGE ON REIMBURSABLES,	7.00%	\$374.50
SUBTOTAL		\$81,932.33
NEW MEXICO GROSS RECEIPTS TAX,	6.060%	\$4,965.10
TOTAL TITLE III,		22.37%
		\$86,897.43
TOTAL I,II & III,		22.37%
		\$388,442.52

* NUMBER WAS DERIVED BY TAKING THE TITLE II LABOR COST BY DISCIP FROM DESIGN MANHOUR SUMMARY AND ADDING 161% FOR A/E OVERHEAD.

** NUMBER WAS DERIVED BY TAKING THE TITLE III LABOR COST BY DISCIP FROM DESIGN MANHOUR SUMMARY AND ADDING 161% FOR A/E OVERHEAD.

LOS ALAMOS NATIONAL LABORATORY
UNIVERSITY OF CALIFORNIA

A/E COST AS A PERCENTAGE OF ESTIMATED CONSTRUCTION COST

Title
P.L.D.
Prepared by

Nuclear Material Storage Facility - 41 TA-55(SPE)
11018
ICF KAISER ENGINEERS

Date

19-Jun-95

	ENGINEERING DISCIPLINE	Est. # of Days	Hourly Rate	Est. Hours	TITLE I		Est. Hours	TITLE II		TOTAL Est. Hours	DESIGN	
					Estimated Cost A/E	Consultant		Estimated Cost A/E	Consultant		Estimated Cost	Estimated Cost
D R A W I N G S	PROJECT MANAGEMENT				\$0.00			\$0.00		0.00	\$0.00	\$0.00
	Project Engineer		\$37.00	0	\$0.00		86	\$2,501.40		86.00	\$2,501.40	\$2,501.40
	ARCHITECTURAL				\$0.00			\$0.00		0.00	\$0.00	\$0.00
	Lead Architect		\$31.20	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	Architect		\$22.00	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	STRUCTURAL				\$0.00			\$0.00		0.00	\$0.00	\$0.00
	Lead Structural Engineer		\$31.20	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	Structural Engineer		\$22.00	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	MECHANICAL				\$0.00			\$0.00		0.00	\$0.00	\$0.00
	Lead Mechanical Engineer		\$31.20	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	Mechanical Engineer		\$22.00	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	ELECTRICAL				\$0.00			\$0.00		0.00	\$0.00	\$0.00
	Lead Electrical Engineer		\$31.20	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	Electrical Engineer		\$22.00	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	CIVIL				\$0.00			\$0.00		0.00	\$0.00	\$0.00
	Lead Civil Engineer		\$31.20	0	\$0.00		348	\$10,795.20		348.00	\$10,795.20	\$10,795.20
	Civil Engineer		\$22.00	0	\$0.00		384	\$8,040.76		384.00	\$8,040.76	\$8,040.76
	PIPE SUPPRESSION				\$0.00			\$0.00		0.00	\$0.00	\$0.00
	Lead Pipe Engineer		\$31.20	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	Pipe Engineer		\$22.00	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	QUALITY CONTROL				\$0.00			\$0.00		0.00	\$0.00	\$0.00
	Coordination QC				\$0.00			\$0.00		0.00	\$0.00	\$0.00
D R A W I N G S	DESIGNERS				\$0.00			\$0.00		0.00	\$0.00	\$0.00
	Architectural Designer		\$18.95	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	Structural Designer		\$18.95	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	Mechanical Designer		\$18.95	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	Electrical Designer		\$18.95	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	Process Designer		\$18.95	0	\$0.00		482	\$9,323.40		482.00	\$9,323.40	\$9,323.40
	Pipe Designer		\$18.95	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	DRAFTSMEN				\$0.00			\$0.00		0.00	\$0.00	\$0.00
	Architectural Draftsman	0	\$14.23	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	Structural Draftsman	0	\$14.23	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
D R A W I N G S	Mechanical Draftsman	0	\$14.23	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	Electrical Draftsman	0	\$14.23	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	Process Draftsman	17	\$14.23	0	\$0.00		786	\$11,227.47		786.00	\$11,227.47	\$11,227.47
	Pipe Draftsman	0	\$14.23	0	\$0.00		0	\$0.00		0.00	\$0.00	\$0.00
	TOTAL DRAWINGS	17			\$0.00	\$0.00		\$41,888.25	\$0.00		\$41,888.25	\$41,888.25
S P E C S	Specification Writer	1			\$0.00			\$0.00		0.00	\$0.00	\$0.00
	Typist	1	\$12.77	0	\$0.00		34	\$434.18		34.00	\$434.18	\$434.18
	TOTAL SPECIFICATIONS	1			\$0.00	\$0.00		\$434.18	\$0.00		\$434.18	\$434.18
	TOTAL ESTIMATED COST A/E & CONSULTANT	18			\$0.00	\$0.00	2081	\$42,322.41	\$0.00	2081	\$42,322.41	\$42,322.41
S P E C S	Overhead A/E	181%			\$0.00			\$88,139.08			\$88,139.08	\$88,139.08
	Overhead Consultant	0%			\$0.00			\$0.00			\$0.00	\$0.00
SUBTOTAL					\$0.00	\$0.00		\$110,461.49	\$0.00		\$110,461.49	\$110,461.49
PROFIT 10.00%					\$0.00	\$0.00		\$11,046.15	\$0.00		\$11,046.15	\$11,046.15
SUBTOTAL					\$0.00	\$0.00		\$121,507.64	\$0.00		\$121,507.64	\$121,507.64
ESCALATION RATE					0.00%			0.00%				
SUBTOTAL INC. ESCALATION					\$0.00			\$121,507.64			\$121,507.64	\$121,507.64
TOTAL COST OF DESIGN						\$7,147.51 per sheet		0.50% of ECC			\$121,507.64	\$121,507.64
ESTIMATED CONSTRUCTION COST (INCLUDING ESCALATION AND CONTINGENCY)					\$24,289,864.00							

REPRODUCTION COSTS

TITLE I

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

LJ No.: 11818

Prepared BICF KAISER ENGINEERS

Date:

25-May-95

	DWGS/PGS	SETS	RATE	TOTAL
1) TITLE I 25% REVIEW				
A. PRINTS (24" x 36")	0	0	\$0.50	\$0.00
B. SEPIAS (24" x 36")	0	0	\$4.50	\$0.00
C. PAGES (8 1/2" x 11")	0	0	\$0.06	\$0.00
SUBTOTAL				\$0.00
2) TITLE I 50% REVIEW				
A. PRINTS (24" x 36")	0	0	\$0.50	\$0.00
B. SEPIAS (24" x 36")	0	0	\$4.50	\$0.00
C. PAGES (8 1/2" x 11")	0	0	\$0.06	\$0.00
SUBTOTAL				\$0.00
3) TITLE I 100% REVIEW				
A. PRINTS (24" x 36")	0	0	\$1.25	\$0.00
B. SEPIAS (24" x 36")	0	0	\$4.50	\$0.00
C. PAGES (8 1/2" x 11")	0	0	\$0.06	\$0.00
SUBTOTAL				\$0.00
4) DESIGN SUMMARY				
A. PRINTS (24" x 36")	0	1	\$1.25	\$0.00
B. SEPIAS (24" x 36")	0	1	\$10.00	\$0.00
C. PAGES (8 1/2" x 11")	0	1	\$0.25	\$0.00
SUBTOTAL				\$0.00
TOTAL TITLE I				\$0.00

REPRODUCTION COSTS

TITLE II

Title: Nuclear Material Storage Facil. PF-41 TA-55(SPE)

P. I. D. 11818

Prepared BICF KAISER ENGINEERS

Date:

25-May-95

	DWGS/PGS	SETS	RATE	TOTAL
1) TITLE II 25% REVIEW				
A. PRINTS (24" x 36")	8	50	\$0.50	\$200.00
B. SEPIAS (24" x 36")	8	1	\$4.50	\$36.00
C. PAGES (8 1/2" x 11")	500	50	\$0.06	\$1,500.00
SUBTOTAL				\$1,736.00
2) TITLE II 60% REVIEW				
A. PRINTS (24" x 36")	12	50	\$0.50	\$300.00
B. SEPIAS (24" x 36")	12	1	\$4.50	\$54.00
C. PAGES (8 1/2" x 11")	1,000	50	\$0.06	\$3,000.00
SUBTOTAL				\$3,354.00
3) TITLE II 100% REVIEW				
A. PRINTS (24" x 36")	17	50	\$0.50	\$425.00
B. SEPIA (24" x 36")	17	1	\$10.00	\$170.00
C. SPECS (8 1/2" x 11")	1,500	50	\$0.06	\$4,500.00
D. DESIGN ANALYSIS (8 1/2" x 11")	500	50	\$0.06	\$1,500.00
SUBTOTAL				\$6,595.00
4) FINAL BID DOCUMENTS				
A. PRINTS (24" x 36")	24	25	\$0.50	\$300.00
B. MYLAR (24" x 36")	24	1	\$4.50	\$108.00
C. SPECS (8 1/2" x 11")	1,000	25	\$0.06	\$1,500.00
SUBTOTAL				\$1,908.00
TOTAL TITLE II				\$13,593.00

TRAVEL AND OTHER REIMBURSABLE COSTS

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

P. I. D. 11818

Prepared By: ICF KAISER ENGINEERS

Date: 25-May-95

TRIP	PEOPLE	AIRFARE	DAYS	PERDIEM	CARS	RATE	MILES	RATE	SUBTOTAL
------	--------	---------	------	---------	------	------	-------	------	----------

TITLE I

PD	0	\$350.00	0	\$70.00	0	\$45.00			\$0
SV	0	\$350.00	0	\$70.00	0	\$45.00			\$0
RM	0	\$350.00	0	\$70.00	0	\$45.00			\$0

TOTAL TITLE I TRAVEL

\$0

1)

2)

3)

4)

TOTAL OTHER TITLE I REIMBURSABLES

\$0

TITLE II

PD	2	\$350.00	4	\$70.00	2	\$45.00			\$1,070
SV	2	\$350.00	4	\$70.00	2	\$45.00			\$1,070
RM	2	\$350.00	4	\$70.00	2	\$45.00			\$1,070

TOTAL TITLE II TRAVEL

\$3,210

1)

2)

3)

4)

TOTAL OTHER TITLE II REIMBURSABLES

\$0

TITLE III

PC		\$350.00		\$70.00		\$45.00			\$0
SV		\$350.00		\$70.00		\$45.00			\$0
IN	10	\$350.00	20	\$70.00	10	\$45.00			\$5,350

TOTAL TITLE III TRAVEL

\$5,350

1) GENERAL INSPECTION CONTRACT

\$0

2) 0

3) 0

4) 0

TOTAL OTHER TITLE III REIMBURSABLES

\$0

PD - Predesign trip

SV - Site visit

IN - Inspection Trip

RM - Review meeting

PC - Preconstruction trip

DESIGN MANHOUR SUMMARY

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)
 P. I. D. 11818
 Prepared By: ICF KAISER ENGINEERS
 Date: 11/18/88

LABOR SUMMARY	PROCESS					ARCHITECTURAL				STRUCTURAL			
	PM	LE	ER	DS	DP	LA	AR	DS	DP	LE	ER	DS	DP
TITLE II - FINAL DESIGN													
DESIGN SERVICES													
DRAWING HOURS	18	228	364	492	789	0	0	0	0	0	0	0	0
CALCULATIONS & ANALYSIS	24	60	0	0	0	0	0	0	0	0	0	0	0
TOTAL DRAWING HOURS	42	288	364	492	789	0	0	0	0	0	0	0	0
SPECIFICATIONS	24	60	0	0	0	0	0	0	0	0	0	0	0
TOTAL SPECIFICATIONS HOURS	24	60	0	0	0	0	0	0	0	0	0	0	0
TOTAL DESIGN SERVICES	66	348	364	492	789	0	0	0	0	0	0	0	0
ENGINEERING SERVICES													
1 Conferences	16	187	24	0	40	0	0	0	0	0	0	0	0
2 Field Work		0	0	0	0	0	0	0	0	0	0	0	0
3 Define Project	8	40	0	0	0	0	0	0	0	0	0	0	0
4 Interior Design		0	0	0	0	0	0	0	0	0	0	0	0
5 Preliminary studies:		0	0	0	0	0	0	0	0	0	0	0	0
5A no. alternate site plans		0	0	0	0	0	0	0	0	0	0	0	0
5B no. alternate bldg plans		0	0	0	0	0	0	0	0	0	0	0	0
5C no. sections & elevations		0	0	0	0	0	0	0	0	0	0	0	0
6 Studies/Reports		0	0	0	0	0	0	0	0	0	0	0	0
6A Soil Borings and Analysis		0	0	0	0	0	0	0	0	0	0	0	0
6B Topographic Studies		0	0	0	0	0	0	0	0	0	0	0	0
6C Storm Water Management Report		0	0	0	0	0	0	0	0	0	0	0	0
6D Energy Study		0	0	0	0	0	0	0	0	0	0	0	0
6E Energy Conservation Report		0	0	0	0	0	0	0	0	0	0	0	0
6F Energy Systems Operation Guide		0	0	0	0	0	0	0	0	0	0	0	0
6G Environmental Permit Report		0	0	0	0	0	0	0	0	0	0	0	0
6H Fire Protection Analysis		0	0	0	0	0	0	0	0	0	0	0	0
6I Thermal Analysis		120	120	0	0	0	0	0	0	0	0	0	0
6J Seismic Coordination		80	120	0	0	0	0	0	0	0	0	0	0
6K Other Components		120	120	0	0	0	0	0	0	0	0	0	0
7 Cost Engineer	24	0	140	0	0	0	0	0	0	0	0	0	0
8 Model or Rendering	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Project Engineering Documentation (PED)	40	0	80	0	0	0	0	0	0	0	0	0	0
10 Value Engineering	32	0	0	0	0	0	0	0	0	0	0	0	0
11 Quality Assurance	32	80	0	0	0	0	0	0	0	0	0	0	0
12 Final Revisions	32	0	40	20	40	0	0	0	0	0	0	0	0
13 Reproduction of Plans & Specs.		0	0	0	40	0	0	0	0	0	0	0	0
14 Other		0	0	0	0	0	0	0	0	0	0	0	0
15 Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0	0
TITLE II PERSON-HOURS	250	973	1,008	512	908	0	0	0	0	0	0	0	0
TITLE II HOURS BY DISCIPLINE	250	<		3,402 >		<		0 >		<		0 >	
DISCIPLINE HOUR PERCENTS	6.40%			67.03%				0.00%				0.00%	
HOURLY RATE	\$37.80	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23
TITLE II PERSON-HOUR COST	\$9,475	\$30,358	\$22,267	\$9,702	\$12,935	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE II LABR COST BY DISCIP	\$9,475	<		\$75,262 >		<		\$0 >		<		\$0 >	
DISCIPLINE COST PERCENTS	10.55%			83.81%				0.00%				0.00%	

Title:
P. I. O.
Prepared By:

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LABOR SUMMARY	MECHANICAL				ELECTRICAL				FIRE SUPPRESSION			
	LE	ER	DS	DP	LE	ER	DS	DP	LE	ER	DS	DP
TITLE II - FINAL DESIGN												
DESIGN SERVICES												
DRAWING HOURS	0	0	0	0	0	0	0	0	0	0	0	0
CALCULATIONS & ANALYSIS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL DRAWING HOURS	0	0	0	0	0	0	0	0	0	0	0	0
SPECIFICATIONS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL SPECIFICATIONS HOURS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL DESIGN SERVICES	0	0	0	0	0	0	0	0	0	0	0	0
ENGINEERING SERVICES												
1 Conferences	0	0	0	0	0	0	0	0	0	0	0	0
2 Field Work	0	0	0	0	0	0	0	0	0	0	0	0
3 Define Project	0	0	0	0	0	0	0	0	0	0	0	0
4 Interior Design	0	0	0	0	0	0	0	0	0	0	0	0
5 Preliminary studies:	0	0	0	0	0	0	0	0	0	0	0	0
5A no. alternate site plans	0	0	0	0	0	0	0	0	0	0	0	0
5B no. alternate bldg plans	0	0	0	0	0	0	0	0	0	0	0	0
5C no. sections & elevations	0	0	0	0	0	0	0	0	0	0	0	0
6 Studies/Reports	0	0	0	0	0	0	0	0	0	0	0	0
6A Soil Borings and Analysis	0	0	0	0	0	0	0	0	0	0	0	0
6B Topographic Studies	0	0	0	0	0	0	0	0	0	0	0	0
6C Storm Water Management Report	0	0	0	0	0	0	0	0	0	0	0	0
6D Energy Study	0	0	0	0	0	0	0	0	0	0	0	0
6E Energy Conservation Report	0	0	0	0	0	0	0	0	0	0	0	0
6F Energy Systems Operation Guide	0	0	0	0	0	0	0	0	0	0	0	0
6G Environmental Permits Report	0	0	0	0	0	0	0	0	0	0	0	0
6H Fire Protection Analysis	0	0	0	0	0	0	0	0	0	0	0	0
6I Thermal Analysis	0	0	0	0	0	0	0	0	0	0	0	0
6J Seismic Coordination	0	0	0	0	0	0	0	0	0	0	0	0
6K Other Components	0	0	0	0	0	0	0	0	0	0	0	0
7 Cost Engineer	0	0	0	0	0	0	0	0	0	0	0	0
8 Model or Rendering	0	0	0	0	0	0	0	0	0	0	0	0
9 Project Engineering Documentation (PED)	0	0	0	0	0	0	0	0	0	0	0	0
10 Value Engineering	0	0	0	0	0	0	0	0	0	0	0	0
11 Quality Assurance	0	0	0	0	0	0	0	0	0	0	0	0
12 Final Revisions	0	0	0	0	0	0	0	0	0	0	0	0
13 Reproduction of Plans & Specs.	0	0	0	0	0	0	0	0	0	0	0	0
14 Other	0	0	0	0	0	0	0	0	0	0	0	0
15 Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0
TITLE II PERSON-HOURS	0	0	0	0	0	0	0	0	0	0	0	0
TITLE II HOURS BY DISCIPLINE	<		>		<		>		<		>	
DISCIPLINE HOUR PERCENTS		0.00%				0.00%				0.00%		
HOURLY RATE	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23
TITLE II PERSON-HOUR COST	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE II LABOR COST BY DISCIP	<		>		<		>		<		>	
DISCIPLINE COST PERCENTS		0.00%				0.00%				0.00%		

Title:
P. I. D.
Prepared By:

N

LABOR SUMMARY	ES	WP	TOTAL
=====			
TITLE II - FINAL DESIGN			
DESIGN SERVICES			
DRAWING HOURS	51	18	1958
CALCULATIONS & ANALYSIS	0		84
TOTAL DRAWING HOURS	51	18	2042
SPECIFICATIONS	0	18	100
TOTAL SPECIFICATIONS HOURS	0	18	100
TOTAL DESIGN SERVICES	51	34	2142
ENGINEERING SERVICES	140		140
1 Conferences		16	283
2 Field Work			0
3 Define Project			48
4 Interior Design			0
5 Preliminary studies:			0
5A no. alternate site plans			0
5B no. alternate bldg plans			0
5C no. sections & elevations			0
6 Studies/Reports		16	16
6A Soil Borings and Analysis			0
6B Topographic Studies			0
6C Storm Water Management Report			0
6D Energy Study			0
6E Energy Conservation Report			0
6F Energy Systems Operation Guide			0
6G Environmental Permits Report			0
6H Fire Protection Analysis			0
6I Thermal Analysis			240
6J Seismic Coordination			200
6K Other Components			240
7 Cost Engineer			164
8 Model or Rendering			0
9 Project Engineering Documentation (PED)			120
10 Value Engineering			32
11 Quality Assurance			112
12 Final Revisions			132
13 Reproduction of Plans & Specs.			40
14 Other			0
15 Miscellaneous			0
TITLE II PERSON-HOURS	191	66	3,769
TITLE II HOURS BY DISCIPLINE	191	66	3,909
DISCIPLINE HOUR PERCENTS	4.88%	1.69%	100.00%
HOURLY RATE	\$22.09	\$12.77	
TITLE II PERSON-HOUR COST	\$4,219	\$843	
TITLE II LABR COST BY DISCIP	\$4,219	\$843	\$89,799
DISCIPLINE COST PERCENTS	4.70%	0.94%	100.00%
=====			

DESIGN MANHOUR SUMMARY

Title:
P. L. D.
Prepared By:

Nuclear Material Storage Facil. PF-41 TA-55(SFB)
11818
ICF KAISER ENGINEERS

Date: *****

LABOR SUMMARY	PM	LE	PROCESS ER	DS	DP	LA	ARCHITECTURAL AR	DS	DP	LE	STRUCTURAL ER	DS	DP
TITLE II - HOME OFFICE													
CONSTRUCTION SERVICES													
Review of Submittals	0	40	0	0	0	0	0	0	0	0	0	0	0
Inspection Services	0	240	120	0	0	0	0	0	0	0	0	0	0
Prepare As-Built Drawings	0	0	4	0	120	0	0	0	0	0	0	0	0
TOTAL CONSTRUCTION SERVICES	0	280	124	0	120	0	0	0	0	0	0	0	0
ENGINEERING SERVICES													
1 Conferences	0	80	0	0	0	0	0	0	0	0	0	0	0
2 Field Work	0	40	0	0	0	0	0	0	0	0	0	0	0
3 Cost Engineer	0	40	0	0	0	0	0	0	0	0	0	0	0
4 Quality Control	0	80	0	0	0	0	0	0	0	0	0	0	0
5 Other	0	40	40	0	0	0	0	0	0	0	0	0	0
6 Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0	0
TITLE III HOME OFFICE HOURS	0	540	164	0	120	0	0	0	0	0	0	0	0
TITLE III HOURS BY DISCIPL	0	<		824	>	<		0	>	<		0	>
DISCIPLINE HOUR PERCENTS	0.00%			95.37%				0.00%				0.00%	
HOURLY RATE	\$37.90	\$31.20	\$22.08	\$18.95	\$14.23	\$31.20	\$22.08	\$18.95	\$14.23	\$31.20	\$22.08	\$18.95	\$14.23
TITLE III PERSON-HOUR COST	\$0	\$16,848	\$3,623	\$0	\$1,708	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE III HOME OFF LABR COST	\$0	<		\$22,176	>	<		\$0	>	<		\$0	>
DISCIPLINE COST PERCENTS	0.00%			96.17%				0.00%				0.00%	

Title:
P. I. D.
Prepared By:

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LABOR SUMMARY	MECHANICAL				ELECTRICAL				FIRE SUPPRESSION			
	LE	ER	DS	DP	LE	ER	DS	DP	LE	ER	DS	DP
TITLE III - HOME OFFICE												
CONSTRUCTION SERVICES												
Review of Submittals	0	0	0	0	0	0	0	0	0	0	0	0
Inspection Services	0	0	0	0	0	0	0	0	0	0	0	0
Prepare As-Built Drawings	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL CONSTRUCTION SERVICES	0	0	0	0	0	0	0	0	0	0	0	0
ENGINEERING SERVICES												
1 Conferences	0	0	0	0	0	0	0	0	0	0	0	0
2 Field Work	0	0	0	0	0	0	0	0	0	0	0	0
3 Cost Engineer	0	0	0	0	0	0	0	0	0	0	0	0
4 Quality Control	0	0	0	0	0	0	0	0	0	0	0	0
5 Other	0	0	0	0	0	0	0	0	0	0	0	0
6 Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0
TITLE III HOME OFFICE HOURS	0	0	0	0	0	0	0	0	0	0	0	0
TITLE III HOURS BY DISCIPL	< 0 >				< 0 >				< 0 >			
DISCIPLINE HOUR PERCENTS	0.00%				0.00%				0.00%			
HOURLY RATE	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23
TITLE III PERSON-HOUR COST	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TITLE III HOME OFF LABR COST	< \$0 >				< \$0 >				< \$0 >			
DISCIPLINE COST PERCENTS	0.00%				0.00%				0.00%			

Title:
P. I. D.
Prepared By:

N

LABOR SUMMARY	ES	WP	TOTAL
TITLE III - HOME OFFICE			
CONSTRUCTION SERVICES			
Review of Submittals	0	0	40
Inspection Services	0		360
Prepare As-Built Drawings	0	0	124
TOTAL CONSTRUCTION SERVICES	0	0	524
ENGINEERING SERVICES	40		
1 Conferences		0	80
2 Field Work			40
3 Cost Engineer			40
4 Quality Control			60
5 Other			80
6 Miscellaneous			0
TITLE III HOME OFFICE HOURS	40	0	824
TITLE III HOURS BY DISCIPL	40	0	864
DISCIPLINE HOUR PERCENTS	4.63%	0.00%	100.00%
HOURLY RATE	\$22.09	\$12.77	
TITLE III PERSON-HOUR COST	\$884	\$0	
TITLE III HOME OFF LABR COST	\$884	\$0	\$23,062
DISCIPLINE COST PERCENTS	3.83%	0.00%	100.00%

TITLE II
PROJECT MANAGEMENT, WORD PROCESSING AND STAFF SUPPORT

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

P.J. 11818

Date: 25-May-95

Prepared By/CF KAISER ENGINEERS

SFE & STORAGE EQUIPMENT PROJECT MANAGEMENT

	PROC	ARCH	STRICT	MECH	ELEC	CLERK	TOTAL
	-----	-----	-----	-----	-----	-----	-----
DESIGN SERVICES							
Drawing Preparation	18	0	0	0	0	0	18
Specifications	24	0	0	0	0	0	24
Calculations & Analysis	24	0	0	0	0	0	24
<hr/>							
Title II Design Services PM Total	66	0	0	0	0	0	66
ENGINEERING SERVICES							
Conference	16	0	0	0	0	0	16
Define Project	8	0	0	0	0	0	8
Cost Engineer	24	0	0	0	0	0	24
Model or Rendering	0	0	0	0	0	0	0
Project Engineering Documentation	40	0	0	0	0	0	40
Value Engineering Services	32	0	0	0	0	0	32
Quality Assurance	32	0	0	0	0	0	32
Reproduction of Plans & Specs	32	0	0	0	0	0	32
Miscellaneous	0	0	0	0	0	0	0
<hr/>							
Title II Engineering Services PM	184	0	0	0	0	0	184
<hr/>							
TITLE II PROJECT MANAGEMENT	250	0	0	0	0	0	250

WORD PROCESSING

	PROC	ARCH	STRICT	MECH	ELEC	CLERK	TOTAL
	-----	-----	-----	-----	-----	-----	-----
DESIGN SERVICES							
Drawing Preparation	18	0	0	0	0	0	18
Specifications	16	0	0	0	0	0	16
<hr/>							
Title II Design Services Word Pro	34	0	0	0	0	0	34
ENGINEERING SERVICES							
Reports	16	0	0	0	0	0	16
Conferences	16	0	0	0	0	0	16
<hr/>							
Title II Engineering Services Word Proce	32	0	0	0	0	0	32
<hr/>							
TITLE II WORD PROCESSING	66	0	0	0	0	0	66

TITLE II
PROJECT MANAGEMENT, WORD PROCESSING AND STAFF SUPPORT

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

P.L. 11818

Date:

25-May-95

Prepared By/CF KAISER ENGINEERS

SUPPORT STAFF

	PRDC	ARCH	STRT	MECH	ELEC	CLERK	TOTAL
Project Management	4	0	0	0	0	0	4
Project Administrator	4	0	0	0	0	0	4
Project Controls	4	0	0	0	0	0	4
Planner/Scheduler	4	0	0	0	0	0	4
Purchasing	4	0	0	0	0	0	4
Accounting/Audit	4	0	0	0	0	0	4
Quality Assurance & Records Manag	60	0	0	60	60	60	240
Contract Administration	4	0	0	0	0	0	4
Database Maintenance	4	0	0	0	0	0	4
Records Management	4	0	0	0	0	0	4
TITLE II STAFF SUPPORT TOTAL	96	0	0	60	60	60	276

4185 = TOTAL TITLE II PERSON HOURS
77.95% * PERCENT OF TOTAL PERSON HOURS

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

SFE & STORAGE EQUIPMENT

DESIGN SERVICES

DRAWING PREPARATION

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
P1	MATERIAL HANDLING FLOW DIAGRAM	12	12	0	33	3	60
P2	STORAGE CONTAINER DRAWING	12	24	48	45	3	132
P3	STORAGE CONTAINER DRAWING	12	24	48	45	3	132
P4	FIXTURE/BASKET DRAWING	12	12	0	33	3	60
P5	FIXTURE/BASKET DRAWING	12	12	0	33	3	60
P6	DRYWELL DRAWING	12	12	0	33	3	60
P7	DRYWELL DRAWING	12	12	0	33	3	60
P8	CHARGE DECK DRAWING	18	36	60	75	3	192
P9	CHARGE DECK DRAWING	12	24	48	45	3	132
P10	MISCELLANEOUS FIXTURES DRAWING	18	36	60	75	3	192
P11	TUBE TUBE HANDLING MACHINE	18	36	60	75	3	192
P12	TUBE TUBE HANDLING MACHINE	18	36	60	75	3	192
P13	KDA LAB DRAWING	18	36	60	75	3	192
P14	KDA LAB DRAWING	8	8		18	3	37
P15	PACK/UNPACK DRAWING	8	8		18	3	37
P16	ERECTION DRAWING - MISC	12	12	0	33	3	60
P17	ERECTION DRAWING - MISC	12	24	48	45	3	132
TITLE II DRAWING PREPARATION TOTAL		226	364	492	789	51	1922

SPECIFICATIONS

60 0 0 0 0 60

CALCULATIONS & ANALYSIS

60 0 0 0 0 60

TITLE II PROCESS EQUIP. SERVICES TOTAL

346 364 492 789 51 2042

ENGINEERING SERVICES

1	Conferences						
1A	Pre-design meeting, LAB office	8	0	0	0	0	8
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	8	0	0	0	0	8
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	16	0	0	0	0	16
1F	Misc. meetings/conferences	40	0	0	0	0	40
1G	Bi-weekly hi-light reports	18	0	0	0	0	18

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

1H	Monthly reports	9	0	0	0	0	9
1I	Revisions/reply to comments	8	24	0	40	0	72
1J	Bidding Process	80	0	0	0	0	80
2	Field Work	0	0	0	0	0	0
2A	Site investigation	0	0	0	0	0	0
3	Define Project	0	0	0	0	0	0
3A	Concept submission	40	0	0	0	0	40
4	Interior Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0
5A	___ no. alternate site plans	0	0	0	0	0	0
5B	___ no. alternate bldg plans	0	0	0	0	0	0
5C	___ no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	0	0	0	0	0	0
6B	Topographic Studies	0	0	0	0	0	0
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	0	0	0	0	0	0
6E	Energy Conservation Report	0	0	0	0	0	0
6F	Energy Systems Operation Guide	0	0	0	0	0	0
6G	Environmental Permits Report	0	0	0	0	0	0
6H	Fire Protection Analysis	0	0	0	0	0	0
6I	Thermal Analysis	120	120	0	0	0	240
6J	Seismic Coordination	80	120	0	0	0	200
6K	Other Components	120	120	0	0	0	240
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	0	20	0	0	20	40
7B	Construction cost estimate, 50%	0	40	0	0	40	80
7C	Construction cost estimate, 100%	0	80	0	0	80	160
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (PED)	0	80	0	0	0	80
10	Value Engineering	0	0	0	0	0	0
11	Quality Assurance	80	0	0	0	0	80
12	Final Revisions	0	40	20	40	0	100
13	Reproduction of Plans & Specs.	0	0	0	40	0	40
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0
TITLE II PROCESS ENGINEERING SERVICES TOTAL		627	644	20	120	140	1551
TITLE II PROCESS TOTAL		973	1008	512	909	191	3593

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Material Storage Facility PF-41 TA-55(SFE)

P.I. 11618

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

DRAWING COUNT

SFE & STORAGE EQUIPMENT DRAWINGS	17
ARCHITECTURAL DRAWINGS	0
STRUCTURAL DRAWINGS	0
MECHANICAL DRAWINGS	0
INSTRUMENTATION & ELECTRICAL	0
FIRE SUPPRESSION DRAWINGS	0

TOTAL DRAWINGS 17

PROJECT MANAGEMENT, WORD PROCESSING, AND STAFF SUPPORT

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFG)

25-May-95

Prepare BYICF KAISER ENGINEERS

SFE & STORAGE EQUIPMENT PROJECT MANAGEMENT

	PROC	ARCH	STRICT	MECH	ELEC	CLERK	TOTAL
	-----	-----	-----	-----	-----	-----	-----
POST CONSTRUCTION AWARD SERVICES							
Review of Submittals	0	0	0	0	0	0	0
Inspection Services	0	0	0	0	0	0	0
Prepare As-Built Drawings	0	0	0	0	0	0	0
	-----	-----	-----	-----	-----	-----	-----
Title III PCAS PM Total	0	0	0	0	0	0	0

ENGINEERING SERVICES

Conference	0	0	0	0	0	0	0
Cost Engineer	0	0	0	0	0	0	0
Model or Rendering	0	0	0	0	0	0	0
Quality Control	0	0	0	0	0	0	0
Reproduction of Plans & Specs	0	0	0	0	0	0	0
Miscellaneous	0	0	0	0	0	0	0

Title III Engineering Services PM ?	0	0	0	0	0	0	0
-------------------------------------	---	---	---	---	---	---	---

TITLE 11) PROJECT MANAGEMENT	0	0	0	0	0	0	0
------------------------------	---	---	---	---	---	---	---

WORD PROCESSING

	CIVIL	ARCH	STRUCT	MECH	ELEC	CLERK	TOTAL
DESIGN SERVICES							
Review of Submittals	0	0	0	0	0	0	0
Prepare As-Built Drawings	0	0	0	0	0	0	0
Title III Design Services Word Proc	0	0	0	0	0	0	0

ENGINEERING SERVICES

Conferences	0	0	0	0	0	0	0
-------------	---	---	---	---	---	---	---

Title III Engineering Services Word Proce	0	0	0	0	0	0	0
---	---	---	---	---	---	---	---

TITLE III WORD PROCESSING 0 0 0 0 0 0 0

TITLE III
PROJECT MANAGEMENT, WORD PROCESSING, AND STAFF SUPPORT

Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

P. I. D.

11818

Date:

25-May-95

Prepare By/CF KAISER ENGINEERS

SUPPORT STAFF

	CIVIL	ARCH	STRCT	MECH	ELEC	CLERK	TOTAL
Project Management	0	0	0	0	0	0	0
Project Administrator	0	0	0	0	0	0	0
Project Controls	0	0	0	0	0	0	0
Planner/Scheduler	0	0	0	0	0	0	0
Purchasing	0	0	0	0	0	0	0
Accounting/Audit	0	0	0	0	0	0	0
Quality Control & Records Management	80	0	0	80	80	80	320
Contract Administration	0	0	0	0	0	0	0
Database Maintenance	0	0	0	0	0	0	0
Records Management	0	0	0	0	0	0	0
TITLE III STAFF SUPPORT TOTAL	80	0	0	80	80	80	320

1184 = TOTAL TITLE III PERSON HOURS
22.05% = PERCENT OF TOTAL PERSON HOURS

TITLE III ENGINEERING

ESTIMATED HOURS - TITLE III

Project Title: Nuclear Material Storage Facil. PF-41 TA-55(SFE)

P. I. O. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

SFE & STORAGE EQUIPMENT

	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
POST CONSTRUCTION AWARD SERVICES						
REVIEW OF SUBMITTALS	40	0	0	0	0	40
TITLE III INSPECTION SERVICES						
FIELD INSPECTION	120	60	0	0	0	180
VENDOR EQUIPMENT INSPECTION	120	60	0	0	0	180
INSPECTION SERVICES TOTAL	240	120	0	0	0	360
PREPARE AS-BUILT DRAWINGS	0	4	0	120	0	124
TITLE III CIVIL PCAS TOTAL	240	124	0	120	0	524

ENGINEERING SERVICES

1	Conferences					
1A	Bi-weekly hi-light reports	40	0	0	0	40
1B	Monthly reports	40	0	0	0	40
2	Field Work	40	0	0	0	40
3	Cost Engineer	40	0	0	0	40
4	Quality Control	60	0	0	0	60
5	Other	40	40	0	0	120
6	Miscellaneous	0	0	0	0	0
TITLE III PROCESS ENGINEERING SERVICES TO	260	40	0	0	40	340
TITLE III PROCESS TOTAL	540	164	0	120	40	864

**A&E COST OF SERVICES
ANALYSIS (FACILITY)**

SUMMARY

Title: Nuclear Materials Storage Facility PF-41 TA-55

LJ No.: 11818

Prepared By: ICF KAISER ENGINEERS

Date:

16-Jun-95

TITLE I

DIRECT LABOR		\$0.00
SUPPORT STAFF		\$0.00
FIXED FEE (10.00%)		\$0.00
REIMBURSABLES		\$0.00
REPRODUCTION	\$0.00	
TRAVEL	\$0.00	
OTHER REIMBURSABLES	\$0.00	
GENERAL & ADMIN CHARGE ON REIMBURSABLES,	7.00%	\$0.00
SUBTOTAL		\$0.00
NEW MEXICO GROSS RECEIPTS TAX,	6.060%	\$0.00
TOTAL TITLE I,		0.00%
		\$0.00

TITLE II

* DIRECT LABOR		\$1,278,273.18
SUPPORT STAFF		\$13,135.41
FIXED FEE (10.00%)		\$129,140.86
REIMBURSABLES		\$76,570.00
REPRODUCTION	\$76,570.00	
TRAVEL	\$0.00	
OTHER REIMBURSABLES	\$0.00	
GENERAL & ADMIN CHARGE ON REIMBURSABLES,	7.00%	\$5,359.90
SUBTOTAL		\$1,502,479.35
NEW MEXICO GROSS RECEIPTS TAX,	6.060%	\$91,050.25
TOTAL TITLE II,		78.98%
		\$1,593,529.60

TITLE III

** DIRECT LABOR		\$325,270.73
SUPPORT STAFF		\$27,340.54
FIXED FEE (10.00%)		\$35,261.13
REIMBURSABLES		\$11,130.00
TRAVEL	\$11,130.00	
OTHER REIMBURSABLES	\$0.00	
GENERAL & ADMIN CHARGE ON REIMBURSABLES,	7.00%	\$779.10
SUBTOTAL		\$399,781.49
NEW MEXICO GROSS RECEIPTS TAX,	6.060%	\$24,226.76
TOTAL TITLE III,		21.02%
		\$424,008.25
TOTAL I, II & III,		21.02%
		\$2,017,537.85

* NUMBER WAS DERIVED BY TAKING THE TITLE II LABOR COST BY DISCIP FROM DESIGN MANHOUR SUMMARY AND ADDING 161% FOR A/E OVERHEAD.

** NUMBER WAS DERIVED BY TAKING THE TITLE III LABOR COST BY DISCIP FROM DESIGN MANHOUR SUMMARY AND ADDING 161% FOR A/E OVERHEAD.

LOS ALAMOS NATIONAL LABORATORY
UNIVERSITY OF CALIFORNIA

A/E COST AS A PERCENTAGE OF ESTIMATED CONSTRUCTION COST

Title,
P. I. D.
Prepared by

Nuclear Materials Storage Facility RF-41 TA-58
11818
ICF KAISER ENGINEERS

Date

10-Jun-95

	ENGINEERING DISCIPLINE	Est # of Draws	Hourly Rate	Est Hours	TITLE I		Est Hours	TITLE II		TOTAL	DESIGN
					Estimated Cost A/E	Consultant		Estimated Cost A/E	Consultant		Estimated Cost
O R A W I N G S	PROJECT MANAGEMENT				\$0.00			\$0.00		0.00	\$0.00
	Project Engineer		\$37.50	0	\$0.00		360	\$13,944.00		360.00	\$13,944.00
	ARCHITECTURAL				\$0.00			\$0.00		0.00	\$0.00
	Lead Architect		\$31.20	0	\$0.00		220	\$6,864.00		220.00	\$6,864.00
	Architect		\$22.00	0	\$0.00		520	\$11,440.00		520.00	\$11,440.00
	STRUCTURAL				\$0.00			\$0.00		0.00	\$0.00
	Lead Structural Engineer		\$31.20	0	\$0.00		368	\$11,481.60		368.00	\$11,481.60
	Structural Engineer		\$22.00	0	\$0.00		796	\$17,563.20		796.00	\$17,563.20
	MECHANICAL				\$0.00			\$0.00		0.00	\$0.00
	Lead Mechanical Engineer		\$31.20	0	\$0.00		468	\$14,775.20		468.00	\$14,775.20
	Mechanical Engineer		\$22.00	0	\$0.00		860	\$18,920.00		860.00	\$18,920.00
	ELECTRICAL				\$0.00			\$0.00		0.00	\$0.00
	Lead Electrical Engineer		\$31.20	0	\$0.00		408	\$12,729.60		408.00	\$12,729.60
	Electrical Engineer		\$22.00	0	\$0.00		580	\$12,812.00		580.00	\$12,812.00
	CIVIL				\$0.00			\$0.00		0.00	\$0.00
	Lead Civil Engineer		\$31.20	0	\$0.00		82	\$2,558.40		82.00	\$2,558.40
	Civil Engineer		\$22.00	0	\$0.00		118	\$2,606.00		118.00	\$2,606.00
	FIRE SUPPRESSION				\$0.00			\$0.00		0.00	\$0.00
	Lead Fire Engineer		\$31.20	0	\$0.00		198	\$6,185.60		198.00	\$6,185.60
	Fire Engineer		\$22.00	0	\$0.00		58	\$1,237.04		58.00	\$1,237.04
	QUALITY CONTROL				\$0.00			\$0.00		0.00	\$0.00
O R A W I N G S	Coordination QC				\$0.00			\$0.00		0.00	\$0.00
	DESIGNERS				\$0.00			\$0.00		0.00	\$0.00
	Architectural Designer		\$18.85	0	\$0.00		304	\$5,750.40		304.00	\$5,750.40
	Structural Designer		\$18.85	0	\$0.00		455	\$8,641.20		455.00	\$8,641.20
	Mechanical Designer		\$18.85	0	\$0.00		40	\$758.00		40.00	\$758.00
	Electrical Designer		\$18.85	0	\$0.00		252	\$4,775.40		252.00	\$4,775.40
	Civil Designer		\$18.85	0	\$0.00		32	\$606.40		32.00	\$606.40
	Fire Designer		\$18.85	0	\$0.00		112	\$2,122.40		112.00	\$2,122.40
	DRAFTSMEN				\$0.00			\$0.00		0.00	\$0.00
	Civil Draftsman	4	\$14.23	0	\$0.00		640	\$9,107.20		640.00	\$9,107.20
	Architectural Draftsman	41	\$14.23	0	\$0.00		608	\$8,651.84		608.00	\$8,651.84
	Structural Draftsman	18	\$14.23	0	\$0.00		684	\$12,294.72		684.00	\$12,294.72
	Mechanical Draftsman	36	\$14.23	0	\$0.00		1568	\$22,568.76		1568.00	\$22,568.76
	Electrical Draftsman	123	\$14.23	0	\$0.00		142	\$2,020.66		142.00	\$2,020.66
	Fire Draftsman	7	\$14.23	0	\$0.00		112	\$1,583.76		112.00	\$1,583.76
	TOTAL DRAWINGS	230			\$0.00	\$0.00		\$212,685.06	\$0.00		\$212,685.06
S P E C I F I C A T I O N S	Specification Writer	8			\$0.00			\$0.00		0.00	\$0.00
	Typist		\$12.77	0	\$0.00		280	\$3,575.60		280.00	\$3,575.60
	TOTAL SPECIFICATIONS	8			\$0.00	\$0.00		\$3,575.60	\$0.00		\$3,575.60
					\$0.00	\$0.00		\$3,575.60	\$0.00		\$3,575.60
Total Estimated Cost A/E & Consultant					238	\$0.00	10800	\$215,260.66	\$0.00	10800	\$215,260.66
Overhead A/E					161%	\$0.00		\$348,178.68			\$348,178.68
Overhead Consultant					5%	\$0.00		\$0.00	\$0.00		\$9,731.73
SUBTOTAL						\$0.00		\$564,440.32	\$0.00		\$574,172.09
PROFIT 10.00%						\$0.00		\$56,444.03	\$0.00		\$56,444.03
SUBTOTAL						\$0.00		\$620,884.35	\$0.00		\$630,616.12
ESCALATION RATE					0.03%			0.15%			
SUBTOTAL INC. ESCALATION						\$0.00		\$671,488.43			\$671,488.43
TOTAL COST OF DESIGN						\$2,819.51 Per sheet		276% of ECC			\$671,488.43
ESTIMATED CONSTRUCTION COST (INCLUDING ESCALATION & CONTINGENCY)					\$24,289,864.00						

REPRODUCTION COSTS

TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P. I. D. 11818

Prepared BICF KAISER ENGINEERS

Date:

25-May-95

	DWGS/PGS	SETS	RATE	TOTAL
1) TITLE II 25% REVIEW				
A. PRINTS (24" x 36")	80	50	\$0.50	\$2,000.00
B. SEPIAS (24" x 36")	80	1	\$4.50	\$360.00
C. PAGES (8 1/2" x 11")	2,000	50	\$0.06	\$6,000.00
SUBTOTAL				\$8,360.00
2) TITLE II 60% REVIEW				
A. PRINTS (24" x 36")	150	50	\$0.50	\$3,750.00
B. SEPIAS (24" x 36")	150	1	\$4.50	\$675.00
C. PAGES (8 1/2" x 11")	4,000	50	\$0.06	\$12,000.00
SUBTOTAL				\$16,425.00
3) TITLE II 100% REVIEW				
A. PRINTS (24" x 36")	230	50	\$0.50	\$5,750.00
B. SEPIA (24" x 36")	230	1	\$4.50	\$1,035.00
C. SPECS (8 1/2" x 11")	5,000	50	\$0.06	\$15,000.00
D. DESIGN ANALYSIS (8 1/2" x 11")	10,000	50	\$0.06	\$30,000.00
SUBTOTAL				\$51,785.00
4) FINAL BID DOCUMENTS				
A. PRINTS (24" x 36")	0	0	\$0.50	\$0.00
B. MYLAR (24" x 36")	0	1	\$40.00	\$0.00
C. SPECS (8 1/2" x 11")	0	1	\$0.25	\$0.00
SUBTOTAL				\$0.00
TOTAL TITLE II				\$76,570.00

TRAVEL AND OTHER REIMBURSABLE COSTS

Title: Nuclear Materials Storage Facility PF-41 TA-55

P. I. D. 11818

Prepared By: ICF KAISER ENGINEERS

Date: 25-May-95

TRIP	PEOPLE	AIRFARE	DAYS	PERDIEM	CARS	RATE	MILES	RATE	SUBTOTAL
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TITLE I

PD	0	\$350.00	0	\$70.00	0	\$45.00			\$0
SV	0	\$350.00	0	\$70.00	0	\$45.00			\$0
RM	0	\$350.00	0	\$70.00	0	\$45.00			\$0

TOTAL TITLE I TRAVEL									\$0
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1)	Seismic Analysis								\$0
2)	Subsurface Soil Investigation(Utill Bldg)								\$0
3)	Material Testing/Ultrasonic/Xray								\$0
4)									

TOTAL OTHER TITLE I REIMBURSABLES									\$0
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TITLE II

PD	0	\$350.00	0	\$70.00	0	\$45.00			\$0
SV	0	\$350.00	0	\$70.00	0	\$45.00			\$0
RM	0	\$350.00	0	\$70.00	0	\$45.00			\$0

TOTAL TITLE II TRAVEL									\$0
-----------------------	--	--	--	--	--	--	--	--	-----

1)	Value Engineering								\$0
2)									
3)									
4)									

TOTAL OTHER TITLE II REIMBURSABLES									\$0
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TITLE III

PC	6	\$350.00	14	\$70.00	14	\$45.00			\$3,710
SV	6	\$350.00	14	\$70.00	14	\$45.00			\$3,710
IN	6	\$350.00	14	\$70.00	14	\$45.00			\$3,710

TOTAL TITLE III TRAVEL									\$11,130
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1)	GENERAL INSPECTION CONTRACT								\$0
2)	0								
3)	0								
4)	0								

TOTAL OTHER TITLE III REIMBURSABLES									\$0
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PD = Predesign trip SV = Site visit IN = Inspection Trip
 RM = Review meeting PC = Preconstruction trip

DESIGN MANHOUR SUMMARY

Title:

Nuclear Materials Storage Facility PF-41 TA-55

P. I. D.

11818

Date:

Prepared By:

ICF KAISER ENGINEERS

LABOR SUMMARY	PM	LE	CIVIL	ER	DS	DP	ARCHITECTURAL	LA	AR	DS	DP	STRUCTURAL	LE	ER	DS	DP
TITLE II - FINAL DESIGN																
DESIGN SERVICES																
DRAWING HOURS	120	48	74	32	142		180	400	304	640		228	456	456	608	
CALCULATIONS & ANALYSIS	120	10	20	0	0		20	40	0	0		100	300	0	0	
TOTAL DRAWING HOURS	240	58	94	32	142		180	440	304	640		328	756	456	608	
SPECIFICATIONS	120	24	24	0	0		40	80	0	0		40	40	0	0	
TOTAL SPECIFICATIONS HOURS	120	24	24	0	0		40	80	0	0		40	40	0	0	
TOTAL DESIGN SERVICES	360	82	118	32	142		220	520	304	640		368	796	456	608	
ENGINEERING SERVICES																
1 Conferences	200	113	112	0	24		173	176	0	80		96	66	0	40	
2 Field Work	40	0	0	20	0		0	0	0	0		4	6	0	0	
3 Define Project	40	0	0	0	0		0	0	0	0		0	0	0	0	
4 Interior Design		0	0	0	0		0	0	0	0		0	0	0	0	
5 Preliminary studies:		0	0	0	0		0	0	0	0		0	0	0	0	
5A no. alternate site plans		0	0	0	0		0	0	0	0		0	0	0	0	
5B no. alternate bldg plans		0	0	0	0		0	0	0	0		0	0	0	0	
5C no. sections & elevations		0	0	0	0		0	0	0	0		0	0	0	0	
6 Studies/Reports		0	0	0	0		0	0	0	0		0	0	0	0	
6A Soil Borings and Analysis		0	0	0	0		0	0	0	0		700	400	200	200	
6B Topographic Studies		0	0	0	0		0	0	0	0		2	2	0	0	
6C Storm Water Management Report		0	0	0	0		0	0	0	0		0	0	0	0	
6D Energy Study		0	0	0	0		4	4	0	0		0	0	0	0	
6E Energy Conservation Report		0	0	0	0		8	8	0	0		0	0	0	0	
6F Energy Systems Operation Guide		0	0	0	0		4	4	0	0		0	0	0	0	
6G Environmental Permits Report		0	0	0	0		0	0	0	0		0	0	0	0	
6H Fire Protection Analysis		0	0	0	0		2	4	0	0		0	0	0	0	
6I Other		0	0	0	0		0	0	0	0		48	48	0	0	
6J Other		0	0	0	0		0	0	0	0		500	1500	0	0	
6K Other		0	0	0	0		0	0	0	0		300	500	0	0	
7 Cost Engineer	60	24	48	0	0		24	100	0	0		24	48	0	0	
8 Model or Rendering	16	0	0	0	0		20	32	0	40		0	0	0	0	
9 Project Engineering Documentation (PED)	80	16	32	0	0		16	32	0	0		0	0	0	0	
10 Value Engineering	80	0	0	0	0		0	0	0	0		8	8	0	0	
11 Quality Plan Annex	160	8	8	0	8		24	32	0	0		36	36	0	0	
12 Final Revisions	20	6	12	12	12		16	24	0	24		16	24	0	32	
13 Reproduction of Plans & Specs.		0	0	0	32		0	0	0	60		0	0	0	32	
14 Other		0	0	0	0		0	0	0	0		0	0	0	0	
15 Miscellaneous	120	0	0	0	0		0	0	0	0		0	0	0	0	
TITLE II PERSON-HOURS	1,176	249	330	84	219		511	936	304	844		2,102	3,456	656	912	
TITLE II HOURS BY DISCIPLINE	1,176	<		861 >			<		2,595 >			<		7,128 >		
DISCIPLINE HOUR PERCENTS	6.45%			3.89%					12.03%					33.05%		
HOURLY RATE	\$37.90	\$31.20	\$22.09	\$18.95	\$14.23		\$31.20	\$22.09	\$18.95	\$14.23		\$31.20	\$22.09	\$18.95	\$14.23	
TITLE II PERSON-HOUR COST	\$44,570	\$7,789	\$7,290	\$1,213	\$3,102		\$15,943	\$20,676	\$5,761	\$12,010		\$65,582	\$76,387	\$12,431	\$12,978	
TITLE II LABOR COST BY DISCIP	\$44,570	<		\$19,373 >			<		\$54,390 >			<		\$167,379 >		
DISCIPLINE COST PERCENTS	9.10%			3.96%					11.11%					34.18%		

Title:
P. I. D.
Prepared By:

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LABOR SUMMARY	MECHANICAL				ELECTRICAL				FIRE SUPPRESSION			
	LE	ER	DS	DP	LE	ER	DS	DP	LE	ER	DS	DP
TITLE II - FINAL DESIGN												
DESIGN SERVICES												
DRAWING HOURS	288	576	0	864	304	422	204	1,588	28	56	88	112
CALCULATIONS & ANALYSIS	160	240	40	0	64	88	48	0	80	0	24	0
TOTAL DRAWING HOURS	448	816	40	864	368	510	252	1588	108	56	112	112
SPECIFICATIONS	48	64	0	0	40	70	0	0	80	0	0	0
TOTAL SPECIFICATIONS HOURS	48	64	0	0	40	70	0	0	80	0	0	0
TOTAL DESIGN SERVICES	496	880	40	864	408	580	252	1588	188	56	112	112
ENGINEERING SERVICES												
1 Conferences	120	80	0	48	200	128	0	48	104	72	0	24
2 Field Work	8	8	0	0	12	12	0	0	4	4	0	0
3 Define Project	0	0	0	0	0	0	0	0	0	0	0	0
4 Interior Design	0	0	0	0	0	0	0	0	0	0	0	0
5 Preliminary studies:	0	0	0	0	0	0	0	0	0	0	0	0
5A no. alternate site plans	0	0	0	0	0	0	0	0	0	0	0	0
5B no. alternate bldg plans	0	0	0	0	0	0	0	0	0	0	0	0
5C no. sections & elevations	0	0	0	0	0	0	0	0	0	0	0	0
6 Studies/Reports	0	0	0	0	0	0	0	0	0	0	0	0
6A Soil Borings and Analysis	0	0	0	0	0	0	0	0	0	0	0	0
6B Topographic Studies	0	0	0	0	0	0	0	0	0	0	0	0
6C Storm Water Management Report	0	0	0	0	0	0	0	0	0	0	0	0
6D Energy Study	16	24	0	0	12	30	0	0	0	0	0	0
6E Energy Conservation Report	16	16	0	0	24	24	0	0	0	0	0	0
6F Energy Systems Operation Guide	8	16	0	0	12	24	0	0	0	0	0	0
6G Environmental Permits Report	0	0	0	0	0	0	0	0	0	0	0	0
6H Fire Protection Analysis	24	24	0	0	6	12	0	0	20	40	0	24
6I Other	74	0	0	80	0	0	0	0	0	0	0	0
6J Other	0	0	0	0	0	0	0	0	0	0	0	0
6K Other	0	0	0	0	0	0	0	0	0	0	0	0
7 Cost Engineer	40	40	0	0	60	84	0	0	40	40	0	0
8 Model or Rendering	0	0	0	0	0	0	0	0	0	0	0	0
9 Project Engineering Documentation (PED)	0	0	0	0	0	0	0	0	0	0	0	0
10 Value Engineering	16	16	0	0	12	30	0	0	8	24	0	0
11 Quality Plan Annex	24	24	0	0	60	60	0	0	24	24	0	0
12 Final Revisions	8	16	0	32	12	24	0	40	8	16	0	32
13 Reproduction of Plans & Specs.	0	0	0	40	0	0	0	56	0	0	0	32
14 Other	16	32	0	24	0	0	0	0	0	0	0	0
15 Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0
TITLE II PERSON-HOURS	866	1,176	40	1,088	918	1,006	252	1,730	386	276	112	224
TITLE II HOURS BY DISCIPLINE	<		3,170 >		<		3,806 >		<		1,008 >	
DISCIPLINE HOUR PERCENTS			14.70%				17.65%				4.67%	
HOURLY RATE	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23
TITLE II PERSON-HOUR COST	\$27,019	\$25,978	\$758	\$15,482	\$26,522	\$22,223	\$4,775	\$24,618	\$12,355	\$6,097	\$2,122	\$3,188
TITLE II LABR COST BY DISCIP	<		\$69,237 >		<		\$77,137 >		<		\$23,762 >	
DISCIPLINE COST PERCENTS			14.14%				15.75%				4.85%	

Title:
P. I. D.
Prepared By:

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LABOR SUMMARY			
	ES	WP	TOTAL
TITLE II - FINAL DESIGN			
DESIGN SERVICES			
DRAWING HOURS	410	120	8728
CALCULATIONS & ANALYSIS	0		1,354
TOTAL DRAWING HOURS	410	120	10080
SPECIFICATIONS	0	160	830
TOTAL SPECIFICATIONS HOURS	0	160	830
TOTAL DESIGN SERVICES	410	280	10910
ENGINEERING SERVICES	732		732
1 Conferences		200	2,124
2 Field Work			120
3 Define Project			40
4 Interior Design			0
5 Preliminary studies:			0
5A no. alternate site plans			0
5B no. alternate bldg plans			0
5C no. sections & elevations			0
6 Studies/Reports		200	200
6A Soil Borings and Analysis			1,500
6B Topographic Studies			4
6C Storm Water Management Report			0
6D Energy Study			80
6E Energy Conservation Report			98
6F Energy Systems Operation Guide			68
6G Environmental Permit Report			0
6H Fire Protection Analysis			158
6I Other			250
6J Other			2,000
6K Other			800
7 Cost Engineer			832
8 Model or Rendering			108
9 Project Engineering Documentation (PED)			178
10 Value Engineering			202
11 Quality Plan Annex			528
12 Final Revisions			398
13 Reproduction of Plans & Specs.			252
14 Other			72
15 Miscellaneous			120
TITLE II PERSON - HOURS	1,142	680	20,834
TITLE II HOURS BY DISCIPLINE	1,142	680	21,566
DISCIPLINE HOUR PERCENTS	5.30%	3.15%	100.00%
HOURLY RATE	\$22.08	\$12.77	
TITLE II PERSON - HOUR COST	\$25,227	\$8,684	
TITLE II LABR COST BY DISCP	\$25,227	\$8,684	\$489,760
DISCIPLINE COST PERCENTS	5.15%	1.77%	100.00%

DESIGN MANHOUR SUMMARY

Title: Nuclear Materials Storage Facility PF-41 TA-55
 P. I. D. 11818
 Prepared By: ICF KAISER ENGINEERS

Date: ****

LABOR SUMMARY	CIVIL					ARCHITECTURAL				STRUCTURAL			
	PM	LE	ER	DS	DP	LA	AR	DS	DP	LE	ER	DS	DP
TITLE III - HOME OFFICE													
CONSTRUCTION SERVICES													
Review of Submittals	100	4	8	0	0	4	12	12	0	12	20	20	0
Inspection Services	100	44	8	0	0	148	12	12	0	52	20	20	0
Prepare As-Built Drawings	100	8	24	24	40	8	40	40	60	8	24	24	40
TOTAL CONSTRUCTION SERVICES	300	56	40	24	40	160	64	64	60	72	64	64	40
ENGINEERING SERVICES													
1 Conferences	150	42	32	0	0	50	40	0	0	50	40	0	0
2 Field Work	100	0	0	0	0	0	0	0	0	0	0	0	0
3 Cost Engineer	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Quality Control	100	32	0	0	0	40	0	0	0	40	0	0	0
5 Other	50	8	12	12	20	8	20	20	40	4	8	8	16
6 Miscellaneous	100	16	16	16	0	16	16	16	0	16	16	16	0
TITLE III HOME OFFICE HOURS	800	154	100	52	60	274	140	100	100	182	128	88	56
TITLE III HOURS BY DISCIPL	800	<		366 >		<		614 >		<		454 >	
DISCIPLINE HOUR PERCENTS	15.90%			7.27%				12.20%				9.02%	
HOURLY RATE	\$37.90	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23
TITLE III PERSON-HOUR COST	\$30,320	\$4,805	\$2,209	\$985	\$854	\$8,549	\$3,083	\$1,895	\$1,423	\$5,678	\$2,828	\$1,668	\$797
TITLE III HOME OFF LABR COST	\$30,320	<		\$8,853 >		<		\$14,939 >		<		\$10,870 >	
DISCIPLINE COST PERCENTS	24.33%			7.10%				12.00%				8.80%	

Title:
P. I. O.
Prepared By:

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LABOR SUMMARY	MECHANICAL				ELECTRICAL				FIRE SUPPRESSION			
	LE	ER	DS	DP	LE	ER	DS	DP	LE	ER	DS	DP
TITLE III - HOME OFFICE												
CONSTRUCTION SERVICES												
Review of Submittals	20	40	16	0	22	34	20	0	50	0	40	0
Inspection Services	48	16	16	0	72	120	60	0	40	0	0	0
Prepare As-Built Drawings	8	24	24	40	8	24	24	72	8	16	16	40
TOTAL CONSTRUCTION SERVICES	76	80	56	40	102	178	104	72	108	16	56	40
ENGINEERING SERVICES												
1 Conferences	50	40	0	0	76	60	0	0	50	40	0	0
2 Field Work	0	0	0	0	0	40	0	0	0	0	0	0
3 Cost Engineer	0	0	0	0	0	0	0	0	0	0	0	0
4 Quality Control	40	0	0	0	40	0	0	0	40	0	0	0
5 Other	8	16	16	20	24	16	16	34	8	12	12	20
6 Miscellaneous	8	8	8	0	16	16	16	0	16	16	16	0
TITLE III HOME OFFICE HOURS	182	144	80	60	258	312	136	106	222	84	84	60
TITLE III HOURS BY DISCIPL	< 466 >				< 814 >				< 450 >			
DISCIPLINE HOUR PERCENTS	0.25%				18.16%				0.94%			
HOURLY RATE	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23	\$31.20	\$22.09	\$18.95	\$14.23
TITLE III PERSON-HOUR COST	\$5,678	\$3,781	\$1,516	\$854	\$8,050	\$6,892	\$2,615	\$1,509	\$6,928	\$1,856	\$1,592	\$854
TITLE III HOME OFF LABR COST	< \$11,228 >				< \$19,065 >				< \$11,228 >			
DISCIPLINE COST PERCENTS	9.01%				15.30%				0.00%			

Title:
P. I. D.
Prepared By:

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LABOR SUMMARY	ES	WP	TOTAL
=====			
TITLE III - HOME OFFICE			
CONSTRUCTION SERVICES			
Review of Submittals	0	300	744
Inspection Services	0	150	836
Prepare As-Built Drawings	0	150	894
TOTAL CONSTRUCTION SERVICES	0	600	2676
ENGINEERING SERVICES	468		
1 Conferences			720
2 Field Work			140
3 Cost Engineer			0
4 Quality Control			332
5 Other			432
6 Miscellaneous			364
TITLE III HOME OFFICE HOURS	468	600	4,964
TITLE III HOURS BY DISCIPL	468	600	5,032
DISCIPLINE HOUR PERCENTS	9.30%	11.92%	100.00%
HOURLY RATE	\$22.09	\$12.77	
TITLE III PERSON-HOUR COST	\$10,338	\$7,662	
TITLE III HOME OFF LABR COST	\$10,338	\$7,662	\$124,625
DISCIPLINE COST PERCENTS	8.30%	6.15%	90.99%
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PROJECT MANAGEMENT, WORD PROCESSING AND STAFF SUPPORT

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.L. 11818

Date: 25-May-95

Prepared By: CF KAISER ENGINEERS

PROJECT MANAGEMENT

	CIVIL	ARCH	STACT	MECH	ELEC	CLERK	TOTAL
DESIGN SERVICES							
Drawing Preparation	24	24	24	24	24	0	120
Specifications	24	24	24	24	24	0	120
Calculations & Analysis	24	24	24	24	24	0	120
Title II Design Services PM Total	72	72	72	72	72	0	360
ENGINEERING SERVICES							
Conference	40	40	40	40	40	0	200
Define Project	8	8	8	8	8	0	40
Cost Engineer	12	12	12	12	12	0	60
Model or Rendering	0	16	0	0	0	0	16
Project Engineering Documentation	16	16	16	16	16	0	80
Value Engineering Services	16	16	16	16	16	0	80
Quality Plan Annex	32	32	32	32	32	0	160
Reproduction of Plans & Specs	4	4	4	4	4	0	20
Miscellaneous	24	24	24	24	24	0	120
Title II Engineering Services PM	152	168	152	152	152	0	776
TITLE II PROJECT MANAGEMENT	224	240	224	224	224	0	1136

WORD PROCESSING

	CIVIL	ARCH	STRT	MECH	ELEC	CLERK	TOTAL
DESIGN SERVICES							
Drawing Preparation	24	24	24	24	24	0	120
Specifications	32	32	32	32	32	0	160
Title 11 Design Services Word Pro	56	56	56	56	56	0	280
ENGINEERING SERVICES							
Reports	40	40	40	40	40	0	200
Conferences	40	40	40	40	40	0	200
Title 11 Engineering Services Word Proce	80	80	80	80	80	0	400
TITLE 11 WORD PROCESSING	136	136	136	136	136	0	680

TITLE II
PROJECT MANAGEMENT, WORD PROCESSING AND STAFF SUPPORT

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date:

25-May-95

Prepared By/ICF KAISER ENGINEERS

SUPPORT STAFF

	CIVIL	ARCH	STRUCT	MECH	ELEC	CLERK	TOTAL
	-----	-----	-----	-----	-----	-----	-----
Project Management	4	4	4	4	4	0	20
Project Administrator	4	4	4	4	4	0	20
Project Controls	8	8	8	8	8	0	40
Planner/Scheduler	8	8	8	8	8	0	40
Purchasing	2	2	2	2	2	0	10
Accounting/Audit	4	4	4	4	4	0	20
Quality Assurance & Records Manag	60	8	8	60	60	60	256
Contract Administration	8	8	8	8	8	0	40
Database Maintenance	8	8	8	8	8	0	40
Records Management	8	8	8	8	8	0	40
	-----	-----	-----	-----	-----	-----	-----
TITLE II STAFF SUPPORT TOTAL	114	62	62	114	114	60	526

21958 = TOTAL TITLE II PERSON HOURS
78.73% = PERCENT OF TOTAL PERSON HOURS

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: JCF KAISER ENGINEERS

C I V I L

DESIGN SERVICES

DRAWING PREPARATION

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
C1	SITE PLAN	8	16	8	30	2	64
C2	UTILITY PLAN	8	16	8	30	2	64
C3	GRADING & DRAINAGE PLAN	10	18	8	34	2	72
C4	CIVIL DETAILS	6	8	8	24	2	48
C5	SHORING PLAN	16	16	0	24	2	58

TITLE II DRAWING PREPARATION TOTAL	48	74	32	142	10	306
------------------------------------	----	----	----	-----	----	-----

SPECIFICATIONS	24	24	0	0	0	48
CALCULATIONS & ANALYSIS	10	20	0	0	0	30

TITLE II CIVIL DESIGN SERVICES TOTAL	82	118	32	142	10	384
--------------------------------------	----	-----	----	-----	----	-----

ENGINEERING SERVICES

1	Conferences						
1A	Pre-design meeting, L&B office	8	0	0	0	0	8
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	16	8	0	0	0	24
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	16	0	0	0	0	16
1F	Misc. meetings/conferences	28	28	0	0	0	56
1G	Bi-weekly hi-light reports	14	14	0	0	0	28
1H	Monthly reports	7	14	0	0	0	21
1I	Revisions/reply to comments	12	24	0	24	0	60
1J	Bidding Process	12	24	0	0	24	60
2	Field Work	0	0	0	0	0	0
2A	Site investigation	0	0	20	0	0	20
3	Define Project	0	0	0	0	0	0
3A	Concept submission	0	0	0	0	0	0
4	Interior Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0
5A	— no. alternate site plans	0	0	0	0	0	0
5B	— no. alternate bldg plans	0	0	0	0	0	0
5C	— no. sections & elevations	0	0	0	0	0	0

TITLE 11 ENGINEERING

ESTIMATED HOURS - TITLE 11

Title: Nuclear Materials Storage Facility PF-41 1A-35

P.I. 11B18

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	0	0	0	0	0	0
6B	Topographic Studies	0	0	0	0	0	0
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	0	0	0	0	0	0
6E	Energy Conservation Report	0	0	0	0	0	0
6F	Energy Systems Operation Guide	0	0	0	0	0	0
6G	Environmental Permits Report	0	0	0	0	0	0
6H	Fire Protection Analysis	0	0	0	0	0	0
6I	Other	0	0	0	0	0	0
6J	Other	0	0	0	0	0	0
6K	Other	0	0	0	0	0	0
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	8	16	0	0	16	40
7B	Construction cost estimate, 50	8	16	0	0	16	40
7C	Construction cost estimate, 100	8	16	0	0	16	40
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (	16	32	0	0	0	48
10	Value Engineering	0	0	0	0	0	0
11	Quality Plan Annex	8	8	0	8	0	24
12	Final Revisions	6	12	12	12	0	42
13	Reproduction of Plans & Specs.	0	0	0	32	0	32
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0
TITLE 11 CIVIL ENGINEERING SERVICES TOTAL		167	212	32	76	72	559
TITLE 11 CIVIL TOTAL		249	330	64	218	82	943

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

ARCHITECTURAL

DESIGN SERVICES

OWG NO.	TITLE	LEAD ARCH	STAFF ARCH	DESIGN	DRAFT	ESTIM	TOTAL
A1	BASEMENT FLOOR PLAN	4	10	8	16	2	40
A2	FIRST FLOOR PLAN	4	10	8	16	2	40
A3	BASEMENT DEMO PLAN	4	10	8	16	2	40
A4	FIRST FLOOR DEMO PLAN	4	10	8	16	2	40
A5	MEZZANINE PLAN	4	10	8	16	2	40
A6	LARGE SCALE PLANS/LOCKER RMS/TOILET	4	10	8	16	2	40
A7	LARGE SCALE PLANS	4	10	8	16	2	40
A8	LARGE SCALE PLAN	4	10	8	16	2	40
A9	LARGE SCALE PLANS/ADMIN. AREA	4	10	8	16	2	40
A10	NORTH & EAST ELEVATIONS	4	10	8	16	2	40
A11	WEST & SOUTH ELEVATIONS	4	10	8	16	2	40
A12	BUILDING SECTION-WEST	4	10	8	16	2	40
A13	BUILDING SECTION-NORTH, PROCESS	4	10	8	16	2	40
A14	BUILDING SECTION-NORTH, ADMIN	4	10	8	16	2	40
A15	ROOF PLAN	4	10	8	16	2	40
A16	ROOF DETAILS	4	10	8	16	2	40
A17	LIGHTNING PROTECTION PLAN	4	10	8	16	2	40
A18	REFLECTED CEILING PLAN-1ST FLR	4	10	8	16	2	40
A19	REFLECTED CEILING PLAN-BASEMENT	4	10	8	16	2	40
A20	WALL SECTIONS	4	10	8	16	2	40
A21	WALL SECTIONS	4	10	8	16	2	40
A22	WALL SECTIONS	4	10	8	16	2	40
A23	WALL SECTIONS	4	10	8	16	2	40
A24	SECTIONS AND DETAILS	4	10	8	16	2	40
A25	SECTIONS AND DETAILS	4	10	8	16	2	40
A26	SECTIONS AND DETAILS	4	10	8	16	2	40
A27	SECTIONS AND DETAILS	4	10	8	16	2	40
A28	SECTIONS AND DETAILS	4	10	8	16	2	40
A29	SECTIONS AND DETAILS	4	10	8	16	2	40
A30	SECTIONS AND DETAILS	4	10	8	16	2	40
A31	SECTIONS AND DETAILS	4	10	8	16	2	40
A32	BUILDING PERSPECTIVE	4	10	8	16	2	40
	**** UTILITY BLOG ****	4	10	8	16	2	40

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11B18

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

A33	UTILITY BLDG FLOOR/ROOF PLAN	4	10	8	16	2	40
A34	UTILITY BLDG SOUTH/WEST ELEVATIONS	4	10	8	16	2	40
A35	UTILITY BLDG SECTIONS	4	10	8	16	2	40
A36	UTILITY BLDG WALL SECTIONS	4	10	8	16	2	40
A37	UTILITY BLDG DETAILS	4	10	8	16	2	40
A38	UTILITY BLDG FINISHES & MISC. DETAILS						
A39	UTILITY BLDG SECTIONS & DETAILS	4	10	0	16	2	32
A40	UTILITY BLDG SECTIONS & DETAILS	4	10	0	16	2	32
		-----	-----	-----	-----	-----	-----
TITLE II DRAWING PREPARATION TOTAL		160	400	304	640	80	1584
SPECIFICATIONS		40	80	0	0	0	120
CALCULATIONS & ANALYSIS		20	40	0	0	0	60
		-----	-----	-----	-----	-----	-----
TITLE II ARCH DESIGN SERVICES TOTAL		220	520	304	640	80	1764

ENGINEERING SERVICES

1	Conferences						
1A	Pre-design meeting, LAB office	16	0	0	0	0	16
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	16	8	0	0	0	24
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	16	0	0	0	0	16
1F	Misc. meetings/conferences	40	40	0	0	0	80
1G	Bi-weekly hi-light reports	14	14	0	0	0	28
1H	Monthly reports	7	14	0	0	0	21
1I	Revisions/reply to comments	40	60	0	80	0	180
1J	Bidding Process	24	40	0	0	40	104
2	Field Work	0	0	0	0	0	0
2A	Site Investigation	0	0	0	0	0	0
3	Define Project	0	0	0	0	0	0
3A	Concept submission	0	0	0	0	0	0
4	Interior Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0
5A	— no. alternate site plans	0	0	0	0	0	0
5B	— no. alternate bldg plans	0	0	0	0	0	0
5C	— no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	0	0	0	0	0	0
6B	Topographic Studies	0	0	0	0	0	0
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	4	4	0	0	0	8

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-53

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

6E	Energy Conservation Report	8	8	0	0	0	16
6F	Energy Systems Operation Guide	4	4	0	0	0	8
6G	Environmental Permits Report	0	0	0	0	0	0
6H	Fire Protection Analysis	2	4	0	0	0	6
6I	Other	0	0	0	0	0	0
6J	Other	0	0	0	0	0	0
6K	Other	0	0	0	0	0	0
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	8	20	0	0	40	68
7B	Construction cost estimate, 50	8	40	0	0	60	108
7C	Construction cost estimate, 100	8	40	0	0	60	108
8	Model or Rendering	20	32	0	40	0	92
9	Project Engineering Documentation (	16	32	0	0	0	48
10	Value Engineering	0	0	0	0	0	0
11	Quality Plan Annex	24	32	0	0	0	56
12	Final Revisions	16	24	0	24	0	64
13	Reproduction of Plans & Specs.	0	0	0	60	0	60
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0
TITLE II ARCH ENGINEERING SERVICES TOTAL		291	416	0	204	200	1111
TITLE II ARCHITECTURAL TOTAL		511	936	304	844	280	2875

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

S T R U C T U R A L

DESIGN SERVICES

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
S1	FOUNDATION-BASEMENT PLAN	12	24	24	32	2	94
S2	NEW SECOND FLOOR PLAN	12	24	24	32	2	94
S3	FIRST FLOOR PLAN	12	24	24	32	2	94
S4	ROOF PLAN	12	24	24	32	2	94
S5	MECH PENTHOUSE PLAN	12	24	24	32	2	94
S6	CHARGE DECK PLAN	12	24	24	32	2	94
S7	SECTIONS & DETAILS	12	24	24	32	2	94
S8	SECTIONS & DETAILS	12	24	24	32	2	94
S9	SECTIONS & DETAILS	12	24	24	32	2	94
S10	SECTIONS & DETAILS	12	24	24	32	2	94
S11	SECTIONS & DETAILS	12	24	24	32	2	94
S12	SECTIONS & DETAILS	12	24	24	32	2	94
S13	DEMOLITION PLAN PND/BASEMENT	12	24	24	32	2	94
S14	DEMOLITION PLAN/FIRST FLOOR	12	24	24	32	2	94
S15	DEMOLITION PLAN ROOF	12	24	24	32	2	94
S16	DEMOLITION MISC DETAILS	12	24	24	32	2	94
	**** UTILITY BLDG ****						
S17	FNDN PLAN	12	24	24	32	2	
S18	ROOF PLAN	12	24	24	32	2	94
S19	SECTIONS & DETAILS	12	24	24	32	2	94
TITLE II DRAWING PREPARATION TOTAL		228	456	456	608	38	1692
SPECIFICATIONS		40	40	0	0	0	80
CALCULATIONS & ANALYSIS		100	300	0	0	0	400
TITLE II STRU DESIGN SERVICES TOTAL		368	796	456	608	38	2172

ENGINEERING SERVICES

1	Conferences						
1A	Pre-design meeting, LAB office	8	0	0	0	0	8

TITLE 11 ENGINEERING

ESTIMATED HOURS - TITLE 11

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.L. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	8	8	0	0	0	16
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	8	8	0	0	0	16
1F	Misc. meetings/conferences	24	24	0	0	0	48
1G	Bi-weekly hi-light reports	12	0	0	0	0	12
1H	Monthly reports	12	0	0	0	0	12
1I	Revisions/reply to comments	16	24	0	40	0	80
1J	Bidding Process	8	24	0	0	0	32
2	Field Work	0	0	0	0	0	0
2A	Site Investigation	4	8	0	0	0	12
3	Define Project	0	0	0	0	0	0
3A	Concept submission	0	0	0	0	0	0
4	Interior Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0
5A	___ no. alternate site plans	0	0	0	0	0	0
5B	___ no. alternate bldg plans	0	0	0	0	0	0
5C	___ no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Seismic Soil Borings and Analy	700	400	200	200	100	1600
6B	Topographic Studies	2	2	0	0	0	4
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	0	0	0	0	0	0
6E	Energy Conservation Report	0	0	0	0	0	0
6F	Energy Systems Operation Guide	0	0	0	0	0	0
6G	Environmental Permits Report	0	0	0	0	0	0
6H	Fire Protection Analysis	0	0	0	0	0	0
6I	MATERIAL TESTING/ULTRASONIC/XRAY	48	48	0	0	0	96
6J	DYNAMIC SEISMIC ANALYSIS	500	1500	0	0	0	2000
6K	Other-Checking/Q/A	300	500	0	0	0	800
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	8	16	0	0	24	48
7B	Construction cost estimate, 50	8	16	0	0	24	48
7C	Construction cost estimate, 100	8	16	0	0	32	56
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation	0	0	0	0	0	0
10	Value Engineering	8	8	0	0	0	16
11	Quality Plan Annex	36	36	0	0	0	72
12	Final Revisions	16	24	0	32	0	72
13	Reproduction of Plans & Specs.	0	0	0	32	0	32
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0

TITLE 11 ENGINEERING

ESTIMATED HOURS - TITLE 11

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared by: ICF KAISER ENGINEERS

TITLE 11 STRU ENGINEERING SERVICES TOTAL	1734	2662	200	304	180	5080
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TITLE 11 STRUCTURAL TOTAL	2102	3458	656	912	218	7252

TITLE 11 ENGINEERING

ESTIMATED HOURS - TITLE 11

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11218

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

MECHANICAL

DESIGN SERVICES

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
M1	ZONE PLAN	8	16	0	24	2	50
M2	SUPPORT AREA MECH PLAN	8	16	0	24	2	50
M3	FIRST FLOOR MAA MECH PLAN	8	16	0	24	2	50
M4	BASEMENT MAA MECH PLAN	8	16	0	24	2	50
M5	MEZZANINE MECH PLAN	8	16	0	24	2	50
M6	MECH PENTHOUSE HVAC PLAN	8	16	0	24	2	50
M7	HEPA PLENUM MECH ROOM PLAN	8	16	0	24	2	50
M8	MECHANICAL DETAILS	8	16	0	24	2	50
M9	MECHANICAL DETAILS	8	16	0	24	2	50
M10	MECHANICAL DETAILS	8	16	0	24	2	50
M11	HEATING WATER PIPING PLAN	8	16	0	24	2	50
M12	FIRST FLOOR PIPING PLAN	8	16	0	24	2	50
M13	BASEMENT PIPING PLAN	8	16	0	24	2	50
M14	MECH PENTHOUSE PIPING PLAN	8	16	0	24	2	50
M15	PIPING DETAILS	8	16	0	24	2	50
M16	PIPING DETAILS	8	16	0	24	2	50
M17	MAA HVAC AIR FLOW DIAGRAM	8	16	0	24	2	50
M18	MAA HVAC CONTROL DIAGRAM	8	16	0	24	2	50
M19	MAA HVAC CONTROL DIAGRAM	8	16	0	24	2	50
M20	MAA HVAC CONTROL DIAGRAM	8	16	0	24	2	50
M21	SUPPORT AREA HVAC AIR FLOW DIAG.	8	16	0	24	2	50
M22	CHILLED WATER FLOW DIAGRAM	8	16	0	24	2	50
M23	HEATING HOT WATER FLOW DIAGRAM	8	16	0	24	2	50
M24	FIRST FLOOR PLUMBING PLAN	8	16	0	24	2	50
M25	BASEMENT PLUMBING PLAN	8	16	0	24	2	50
M26	MEZZANINE PLUMBING PLAN	8	16	0	24	2	50
M27	PLUMBING RISERS	8	16	0	24	2	50
M28	PLUMBING RISERS	8	16	0	24	2	50
M29	PLUMBING DETAILS	8	16	0	24	2	50
M30	PLUMBING DETAILS	8	16	0	24	2	50
M31	SYMBOL LEGEND	8	16	0	24	2	50
	*** UTILITY BLDG ***						
M32	ENLARGED UTIL BLDG MECH PLAN	8	16	0	24	2	50

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 19818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

M33	MECHANICAL DETAILS	8	16	0	24	2	50
M34	UTIL BLOC PLUMBING PLAN	8	16	0	24	2	50
M35	PLUMBING RISERS	8	16	0	24	2	50
M36	SECTIONS	8	16	0	24	2	50
		-----	-----	-----	-----	-----	-----
TITLE II DRAWING PREPARATION TOTAL		288	576	0	864	72	1800
SPECIFICATIONS		48	64	0	0	0	112
CALCULATIONS & ANALYSIS		160	240	40	0	0	440
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TITLE II MECH DESIGN SERVICES TOTAL		496	880	40	864	72	2352

ENGINEERING SERVICES

1	Conferences						
1A	Pre-design meeting, LAB office	16	0	0	0	0	16
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	8	8	0	0	0	16
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting, A/E office	16	16	0	0	0	32
1F	Misc. meetings/conferences	24	16	0	0	0	40
1G	Bi-weekly hi-light reports	12	0	0	0	0	12
1H	Monthly reports	12	0	0	0	0	12
1I	Revisions/reply to comments	24	32	0	48	0	104
1J	Bidding Process	8	8	0	0	0	16
2	Field Work	0	0	0	0	0	0
2A	Site investigation	8	8	0	0	0	16
3	Define Project	0	0	0	0	0	0
3A	Concept submission	0	0	0	0	0	0
4	Interior Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0
5A	no. alternate site plans	0	0	0	0	0	0
5B	no. alternate bldg plans	0	0	0	0	0	0
5C	no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	0	0	0	0	0	0
6B	Topographic Studies	0	0	0	0	0	0
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	16	24	0	0	0	40
6E	Energy Conservation Report	16	16	0	0	0	32
6F	Energy Systems Operation Guide	8	16	0	0	0	24
6G	Environmental Permits Report	0	0	0	0	0	0
6H	Fire Protection Analysis	24	24	0	0	0	48

TITLE 11 ENGINEERING

ESTIMATED HOURS - TITLE 11

Title: Nuclear Materials Storage Facility PF-41 TA-58

P.L. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

6I	Checking	74	0	0	80	0	154
6J	Other	0	0	0	0	0	0
6K	Other	0	0	0	0	0	0
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	16	16	0	0	24	56
7B	Construction cost estimate, 50	8	8	0	0	40	56
7C	Construction cost estimate, 100	16	16	0	0	40	72
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (	0	0	0	0	0	0
10	Value Engineering	16	16	0	0	0	32
11	Quality Plan Annex	24	24	0	0	0	48
12	Final Revisions	8	16	0	32	0	56
13	Reproduction of Plans & Specs.	0	0	0	40	0	40
14	Submittal Preparation	16	32	0	24	0	72
15	Miscellaneous	0	0	0	0	0	0
TITLE 11 MECH ENGINEERING SERVICES TOTAL		370	296	0	224	104	994
TITLE 11 MECHANICAL TOTAL		866	1176	40	1088	176	3346

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-4? TA-55

P.I. 19818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

INSTRUMENTATION & ELECTRICAL

DESIGN SERVICES

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
E1	LEGEND & NOTES	4	4	8	16	2	36
E2	ONE LINE DIAGRAM-DEMOLITION	4	4		16	2	26
E3	ONE LINE DIAGRAM	4	4		16	2	26
E4	ONE LINE DIAGRAM	4	4		16	2	26
E5	LIGHTING PLANS	4	4	10	16	2	36
E6	LIGHTING PLANS	4	4	10	16	2	36
E7	LIGHTING PLANS	4	4	10	16	2	36
E8	POWER PLANS	4	4	10	16	2	36
E9	POWER PLANS	4	4	10	16	2	36
E10	POWER PLANS	4	4	10	16	2	36
E11	SPECIAL SYSTEMS PLANS	4	4	10	16	2	36
E12	SPECIAL SYSTEMS PLANS	4	4	10	16	2	36
E13	SPECIAL SYSTEMS PLANS	4	4	10	16	2	36
E14	LIGHTNING PROT. & GROUNDING PLANS	4	4	10	16	2	36
E15	LIGHTNING PROT. & GROUNDING PLANS	4	4	10	16	2	36
E16	DETAILS	4	4	10	16	2	36
E17	DETAILS	4	4	10	16	2	36
E18	DETAILS	4	4	10	16	2	36
E19	LIGHTING PLANS DEMOLITION	4	4	10	16	2	36
E20	LIGHTING PLANS DEMOLITION	4	4	10	16	2	36
E21	POWER PLANS DEMOLITION	4	4	10	16	2	36
E22	POWER PLANS DEMOLITION	4	4	10	16	2	36
E23	SPECIAL SYSTEMS	4	4	10	16	2	36
E24	SPECIAL SYSTEMS	4	4	0	16	2	26
11	FMS SYSTEM BLOCK DIAGRAM	4	4	0	16	2	26
12	FMS COMMUNICATION DIAGRAM	4	4	0	16	2	26
13	FMS PLC ENCLOSURE ARRANGEMENT	2	4	0	16	2	24
14	FMS PLC ENCLOSURE ARRANGEMENT	2	4	0	16	2	24
15	FMS PLC POWER DIAGRAM	2	4	0	16	2	24
16	FMS PLC POWER DIAGRAM	2	4	0	16	2	24
17	FMS I/O ENCLOSURE ARRANGEMENT	2	4	0	12	2	20
18	FMS I/O ENCLOSURE ARRANGEMENT	2	4	0	16	2	24
19	FMS I/O ENCLOSURE ARRANGEMENT	2	4	0	12	2	20

TITLE 11 ENGINEERING

ESTIMATED HOURS - TITLE 11

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.L. 11810

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

110	FMS I/O ENCLOSURE ARRANGEMENT	2	4	0	16	2	24
111	FMS I/O ENCLOSURE POWER DIAGRAM	2	4	0	12	2	20
112	FMS I/O ENCLOSURE POWER DIAGRAM	2	4	0	12	2	20
113	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
114	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
115	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
116	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
117	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
118	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
119	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
120	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
121	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
122	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
123	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
124	FMS I/O SCHEMATIC DIAGRAM	2	4	0	12	2	20
125	FMS PF4 CONTROL ROOM LAYOUT	2	4	0	16	2	24
126	FMS RMSF CONTROL ROOM LAYOUT	2	4	0	16	2	24
127	INSTR LOCATION PLAN	2	4	0	14	2	22
128	INSTR LOCATION PLAN	2	4	0	14	2	22
129	INSTR LOCATION PLAN	2	4	0	14	2	22
130	INSTR LOCATION PLAN	2	4	0	14	2	22
131	INSTR INSTALL DETAIL - TYPICAL	2	4	0	14	2	22
132	INSTR INSTALL DETAIL - TYPICAL	2	4	0	14	2	22
133	INSTR INSTALL DETAIL - TYPICAL	2	4	0	14	2	22
134	INSTR INSTALL DETAIL - TYPICAL	2	4	0	14	2	22
135	HVAC INSTR LOOP DIAGRAM	2	2	0	8	2	14
136	HVAC INSTR LOOP DIAGRAM	2	2	0	8	2	14
137	HVAC INSTR LOOP DIAGRAM	2	2	0	8	2	14
138	HVAC INSTR LOOP DIAGRAM	2	2	0	8	2	14
139	HVAC INSTR LOOP DIAGRAM	2	2	0	8	2	14
140	HVAC INTERLOCK/LOGIC DIAGRAM	2	2	0	8	2	14
141	HVAC INTERLOCK/LOGIC DIAGRAM	2	2	0	8	2	14
142	SECURITY INSTR LOOP DIAGRAM	2	2	0	8	2	14
143	SECURITY INSTR LOOP DIAGRAM	2	2	0	8	2	14
144	SECURITY INSTR LOOP DIAGRAM	2	2	0	8	2	14
145	SECURITY INSTR LOOP DIAGRAM	2	2	0	8	2	14
146	SECURITY INTERLOCK/LOGIC DIAGRAM	2	2	0	8	2	14
147	SECURITY INTERLOCK/LOGIC DIAGRAM	2	2	0	8	2	14
148	CAMS INSTALLATION DETAIL	2	4	0	16	2	24
149	CAM CONNECTION DIAGRAM - TYPICAL	2	4	0	16	2	24
150	CAM CONNECTION DIAGRAM - TYPICAL	2	4	0	16	2	24
151	CAM CONNECTION WIRING DIAGRAM	2	4	0	16	2	24
152	CAM CONNECTION WIRING DIAGRAM	2	4	0	16	2	24

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.L. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

153	CRIT ALARM SYS INSTALLATION DETAIL	2	4	0	16	2	24
154	CRIT ALARM SYS CONN DIAGRAM - TYP	2	4	0	16	2	24
155	CRIT ALARM SYS CONN DIAGRAM - TYP	2	4	0	16	2	24
156	CRIT ALARM SYS WIRING DIAGRAM	2	4	0	16	2	24
157	CRIT ALARM SYS WIRING DIAGRAM	2	4	0	16	2	24
158	PERSONNEL MON INSTALLATION DETAIL	2	4	0	16	2	24
159	PERSONNEL MON CONN DIAGRAM - TYP	2	4	0	16	2	24
160	PERSONNEL MON CONN DIAGRAM - TYP	2	4	0	16	2	24
161	PERSONNEL MON WIRING DIAGRAM	2	4	0	16	2	24
162	PERSONNEL MON WIRING DIAGRAM	2	4	0	16	2	24
163	STACK MONITOR INSTALLATION DETAIL	2	4	0	16	2	24
164	STACK MONITOR CONN DIAGRAM - TYP	2	4	0	16	2	24
165	STACK MONITOR CONN DIAGRAM - TYP	2	4	0	16	2	24
166	STACK MONITOR WIRING DIAGRAM	2	4	0	16	2	24
167	STACK MONITOR WIRING DIAGRAM	2	4	0	16	2	24
168	SPECIAL SYSTEMS PLAN	2	4	0	16	2	24
169	SPECIAL SYSTEMS PLAN	2	4	0	16	2	24
170	SPECIAL SYSTEMS PLAN	2	4	0	16	2	24
171	SPECIAL SYSTEMS PLAN	2	4	0	16	2	24
172	RADIATION MONITOR PLAN	2	4	0	8	0	14
173	RADIATION MONITOR PLAN	2	4	0	8	0	14
174	RADIATION MONITOR PLAN	2	4	0	8	0	14
175	RADIATION MONITOR PLAN	2	2	0	8	0	12
176	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
177	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
178	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
179	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
180	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
181	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
182	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
183	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
184	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
184	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
185	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
186	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
187	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
188	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
189	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
190	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
191	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
192	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
193	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
194	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

195	FMS DISPLAY ARRANGEMENT	2	2	0	8	0	12
	**** UTILITY BLDG ****						0
E25	UTIL BLDG LIGHTING PLAN	4	4	2	16	2	28
E26	UTIL BLDG POWER PLAN	4	4	2	16	2	28
E27	UTIL BLDG SPECIAL SYSTEMS	4	4	2	16	2	28
		-----	-----	-----	-----	-----	-----
	TITLE II DRAWING PREPARATION TOTAL	304	422	204	1586	196	2712
	SPECIFICATIONS	40	70	0	0	0	110
	CALCULATIONS & ANALYSIS	64	88	48	0	0	200
		-----	-----	-----	-----	-----	-----
	TITLE II I&E DESIGN SERVICES TOTAL	408	580	252	1586	196	3022

ENGINEERING SERVICES

	Conferences						
1A	Pre-design meeting, LAB office	24	0	0	0	0	24
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	12	12	0	0	0	24
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	20	24	0	0	0	44
1F	Misc. meetings/conferences	60	30	0	0	0	90
1G	Bi-weekly hi-light reports	18	0	0	0	0	18
1H	Monthly reports	18	0	0	0	0	18
1I	Revisions/reply to comments	24	30	0	48	0	102
1J	Bidding Process	24	30	0	0	0	54
2	Field Work	12	12	0	0	0	24
2A	Site investigation	0	0	0	0	0	0
3	Define Project	0	0	0	0	0	0
3A	Concept submission	0	0	0	0	0	0
4	Interior Design	0	0	0	0	0	0
5	Preliminary studies:	0	0	0	0	0	0
5A	___ no. alternate site plans	0	0	0	0	0	0
5B	___ no. alternate bldg plans	0	0	0	0	0	0
5C	___ no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	0	0	0	0	0	0
6B	Topographic Studies	0	0	0	0	0	0
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	12	30	0	0	0	42
6E	Energy Conservation Report	24	24	0	0	0	48
6F	Energy Systems Operation Guide	12	24	0	0	0	36
6G	Environmental Permits Report	0	0	0	0	0	0

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility Pf-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

6H	Fire Protection Analysis	6	12	0	0	0	18
6I	Other	0	0	0	0	0	0
6J	Other	0	0	0	0	0	0
6K	Other	0	0	0	0	0	0
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	12	24	0	0	24	60
7B	Construction cost estimate, 50	24	30	0	0	40	94
7C	Construction cost estimate, 100	24	30	0	0	40	94
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (	0	0	0	0	0	0
10	Value Engineering	12	30	0	0	0	42
11	Quality Plan Annex	60	60	0	0	0	120
12	Final Revisions	12	24	0	40	0	76
13	Reproduction of Plans & Specs.	0	0	0	56	0	56
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0
TITLE II I&E ENGINEERING SERVICES TOTAL		410	426	0	144	104	1084
TITLE II INSTRUMENTATION & ELECTRICAL TOTAL		818	1006	252	1730	300	4106

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 1181B

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

FIRE SUPPRESSION ENGINEERING

DESIGN SERVICES

DWG NO.	TITLE	LEAD ENGR	STAFF ENGR	DESIGN	DRAFT	ESTIM	TOTAL
FP1	FIRE PROTECTION FL. PLAN BASEMENT	4	8	16	16	2	46
FP2	FIRE PROTECTION FL. PLAN 1ST FLOOR	4	8	16	16	2	46
FP3	RISER DIAGRAM	4	8	16	16	2	46
FP4	FIRE PROTECTION DETAILS	4	8	16	16	2	46
	**** UTIL BLDG ****						0
FP5	FIRE PROTECTION FLOOR PLAN	4	8	8	16	2	38
FP6	RISER DIAGRAM	4	8	8	16	2	38
FP7	FIRE PROTECTION DETAILS	4	8	8	16	2	38
TITLE II DRAWING PREPARATION TOTAL		28	56	88	112	14	298
SPECIFICATIONS		80	0	0	0	0	80
CALCULATIONS & ANALYSIS		80	0	24	0	0	104
TITLE II FIRE SUPPRESSION ENGR. DESIGN SERV		188	56	112	112	14	482

ENGINEERING SERVICES

1	Conferences						
1A	Pre-design meeting, LAB office	8	0	0	0	0	8
1B	25% review meeting, A/E office	0	0	0	0	0	0
1C	50% review meeting, A/E office	8	8	0	0	0	16
1D	60% review meeting, A/E office	0	0	0	0	0	0
1E	100% review meeting	16	16	0	0	0	32
1F	Misc. meetings/conferences	24	24	0	0	0	48
1G	Bi-weekly hi-light reports	12	0	0	0	0	12
1H	Monthly reports	12	0	0	0	0	12
1I	Revisions/reply to comments	16	8	0	24	0	48
1J	Assemble Title I summary report	8	16	0	0	0	24
2	Field Work	0	0	0	0	0	0
2A	Site investigation	4	4	0	0	0	8
3	Define Project	0	0	0	0	0	0
3A	Concept submission	0	0	0	0	0	0
4	Interior Design	0	0	0	0	0	0

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-61 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

5	Preliminary studies:	0	0	0	0	0	0
5A	___ no. alternate site plans	0	0	0	0	0	0
5B	___ no. alternate bldg plans	0	0	0	0	0	0
5C	___ no. sections & elevations	0	0	0	0	0	0
6	Studies/Reports	0	0	0	0	0	0
6A	Soil Borings and Analysis	0	0	0	0	0	0
6B	Topographic Studies	0	0	0	0	0	0
6C	Storm Water Management Report	0	0	0	0	0	0
6D	Energy Study	0	0	0	0	0	0
6E	Energy Conservation Report	0	0	0	0	0	0
6F	Energy Systems Operation Guide	0	0	0	0	0	0
6G	Environmental Permits Report	0	0	0	0	0	0
6H	Fire Protection Analysis	20	40	0	24	0	84
6I	other	0	0	0	0	0	0
6J	Other	0	0	0	0	0	0
6K	other	0	0	0	0	0	0
7	Cost Engineer	0	0	0	0	0	0
7A	Preliminary cost evaluations	8	8	0	0	16	32
7B	Construction cost estimate, 50	16	16	0	0	24	56
7C	Construction cost estimate, 100	16	16	0	0	32	64
8	Model or Rendering	0	0	0	0	0	0
9	Project Engineering Documentation (	0	0	0	0	0	0
10	Value Engineering	0	24	0	0	0	32
11	Quality Plan Annex	24	24	0	0	0	48
12	Final Revisions	8	16	0	32	0	56
13	Reproduction of Plans & Specs.	0	0	0	32	0	32
14	Other	0	0	0	0	0	0
15	Miscellaneous	0	0	0	0	0	0
TITLE II ENGINEERING SERVICES TOTAL		208	220	0	112	72	612
TITLE II FIRE SUPPRESSION ENRG. TOT		396	276	112	224	86	1094

TITLE II ENGINEERING

ESTIMATED HOURS - TITLE II

Title: Nuclear Materials Storage Facility PF-41 TA-55

P.I. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

DRAWING COUNT

CIVIL DRAWINGS	4
ARCHITECTURAL DRAWINGS	41
STRUCTURAL DRAWINGS	19
MECHANICAL DRAWINGS	36
INSTRUMENTATION & ELECTRICAL	123
FIRE SUPPRESSION DRAWINGS	7

TOTAL DRAWINGS 230

TITLE III
PROJECT MANAGEMENT, WORD PROCESSING, AND STAFF SUPPORT

Title: Nuclear Materials Storage Facility PF-41 7A-55

P. I. D. 11818

Date:

25-May-95

Prepare by/CF KAISER ENGINEERS

PROJECT MANAGEMENT

	CIVIL	ARCH	STRCT	MECH	ELEC	CLERK	TOTAL
	-----	-----	-----	-----	-----	-----	-----
POST CONSTRUCTION AWARD SERVICES							0
Review of Submittals	20	20	20	20	20	0	100
Inspection Services	20	20	20	20	20	0	100
Prepare As-Built Drawings	20	20	20	20	20	0	100
Title III PCAS PM Total	60	60	60	60	60	0	300

ENGINEERING SERVICES

Conference	30	30	30	30	30	0	150
Cost Engineer	20	20	20	20	20	0	100
Model or Rendering	0	0	0	0	0	0	0
Quality Control	20	20	20	20	20	0	100
Reproduction of Plans & Specs	10	10	10	10	10	0	50
Miscellaneous	20	20	20	20	20	0	100

Title III Engineering Services PM T	100	100	100	100	100	0	500
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TITLE III PROJECT MANAGEMENT	160	160	160	160	160	0	800
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WORD PROCESSING

	CIVIL	ARCH	STRCT	MECH	ELEC	CLERK	TOTAL
	-----	-----	-----	-----	-----	-----	-----
DESIGN SERVICES							
Review of Submittals	60	60	60	60	60	0	300
Prepare As-Built Drawings	30	30	30	30	30	0	150
Title III Design Services Word Proc	90	90	90	90	90	0	450

ENGINEERING SERVICES

Conferences	40	40	40	40	40	0	200
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Title III Engineering Services Word Procs	40	40	40	40	40	0	200
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TITLE III WORD PROCESSING	130	130	130	130	130	0	650
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TITLE III
PROJECT MANAGEMENT, WORD PROCESSING, AND STAFF SUPPORT

Title: Nuclear Materials Storage Facility PF-41 TA-55

P. I. O.

11818

Date:

25-May-95

Prepare By/CF KAISER ENGINEERS

SUPPORT STAFF

	CIVIL	ARCH	STRCT	MECH	ELEC	CLERK	TOTAL
	-----	-----	-----	-----	-----	-----	-----
Project Management	10	10	10	10	10	0	50
Project Administrator	10	10	10	10	10	0	50
Project Controls	20	20	20	20	20	0	100
Planner/Scheduler	20	20	20	20	20	0	100
Purchasing	10	10	10	10	10	0	50
Accounting/Audit	10	10	10	10	10	0	50
Quality Assurance & Records Manage	80	30	30	80	80	80	360
Contract Administration	20	20	20	20	20	0	100
Database Maintenance	10	10	10	10	10	0	50
Records Management	20	20	20	20	20	0	100
	-----	-----	-----	-----	-----	-----	-----
TITLE III STAFF SUPPORT TOTAL	210	160	160	210	210	80	1030

5932 * TOTAL TITLE III PERSON HOURS

21.27% * PERCENT OF TOTAL PERSON HOURS

TITLE III ENGINEERING

ESTIMATED HOURS - TITLE III

Project Title: Nuclear Materials Storage Facility PF-41 TA-55

P. I. D. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

C I V I L

	LEAD		STAFF			
	ENGR	ENGR	DESIGN	DRAFT	ESTIM	TOTAL
<hr/>						
POST CONSTRUCTION AWARD SERVICES						
REVIEW OF SUBMITTALS	4	8	0	0	0	12
TITLE III INSPECTION SERVICES						
FIELD INSPECTION	40	0	0	0	0	40
VENDOR EQUIPMENT INSPECTION	4	8	0	0	0	12
INSPECTION SERVICES TOTAL	44	8	0	0	0	52
PREPARE AS-BUILT DRAWINGS	8	24	24	40	0	96
TITLE III CIVIL PCAS TOTAL	56	40	24	40	0	160
<hr/>						
ENGINEERING SERVICES						
1 Conferences						
1A Bi-weekly hi-light reports	24	32	0	0	0	56
1B Monthly reports	18	0	0	0	0	18
2 Field Work	0	0	0	0	0	0
3 Cost Engineer	0	0	0	0	40	40
4 Quality Control	32	0	0	0	0	32
5 Other(Change Orders, etc)	8	12	12	20	20	72
6 Miscellaneous	16	16	16	0	0	48
TITLE III CIVIL ENGINEERING SERVICES TOTAL	98	60	28	20	60	266
TITLE III CIVIL TOTAL	154	100	52	60	60	426

TITLE III ENGINEERING

ESTIMATED HOURS - TITLE III

Project Title: Nuclear Materials Storage Facility PF-41 TA-55

P. I. O. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

ARCHITECTURAL

POST CONSTRUCTION AWARD SERVICES

REVIEW OF SUBMITTALS	4	12	12	0	0	28
INSPECTION SERVICES	0	0	0	0	0	0
FIELD INSPECTION	144	0	0	0	0	144
VENDOR EQUIPMENT INSPECTION	4	12	12	0	0	28
INSPECTION SERVICES TOTAL	148	12	12	0	0	172
PREPARE AS-BUILT DRAWINGS	8	40	40	60	0	148
TITLE III ARCH PCAS TOTAL	160	64	64	60	0	348

ENGINEERING SERVICES

1	Conferences					
1A	61-weekly hi-light reports	32	40	0	0	72
1B	Monthly reports	18	0	0	0	18
2	Field Work	0	0	0	0	0
3	Cost Engineer	0	0	0	48	48
4	Quality Control	40	0	0	0	40
5	Other(Change Orders, etc)	8	20	20	40	88
6	Miscellaneous	16	16	16	0	48
TITLE III ARCH ENGINEERING SERVICES TOTAL		114	76	36	40	226
TITLE III ARCHITECTURAL TOTAL		274	140	100	88	574

TITLE III ENGINEERING

ESTIMATED HOURS - TITLE III

Project Title: Nuclear Materials Storage Facility PF-41 TA-55

P. J. D. 11818

Date:

25-May-95

Prepared By: ICF KAISER ENGINEERS

STRUCTURAL

POST CONSTRUCTION AWARD SERVICES

REVIEW OF SUBMITTALS	12	20	20	0	0	52
INSPECTION SERVICES	0	0	0	0	0	0
FIELD INSPECTION	40	0	0	0	0	40
VENDOR EQUIPMENT INSPECTION	12	20	20	0	0	52
INSPECTION SERVICES TOTAL	52	20	20	0	0	92
PREPARE AS-BUILT DRAWINGS	8	24	24	40	0	96

TITLE III STRUCTURAL PCAS TOTAL	72	64	64	40	0	240
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ENGINEERING SERVICES

1	Conferences					
1A	Bi-weekly hi-light reports	32	40	0	0	72
1B	Monthly reports	18	0	0	0	18
2	Field Work	0	0	0	0	0
3	Cost Engineer	0	0	0	60	60
4	Quality Control	40	0	0	0	40
5	Other(Change Orders, etc)	4	8	8	16	36
6	Miscellaneous	16	16	16	0	48

TITLE III STRU ENGINEERING SERVICES TOTAL	110	64	24	16	76	238
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TITLE III STRUCTURAL TOTAL	182	128	88	56	76	478
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TITLE III ENGINEERING

ESTIMATED HOURS - TITLE III

Project Title Nuclear Materials Storage Facility PF-41 TA-55

P. I. O. 11818

Date: 25-May-95

Prepared By: ICF KAISER ENGINEERS

MECHANICAL

POST CONSTRUCTION AWARD SERVICES

REVIEW OF SUBMITTALS	20	40	16	0	0	76
INSPECTION SERVICES	0	0	0	0	0	0
FIELD INSPECTION	40	0	0	0	0	40
VENDOR EQUIPMENT INSPECTION	8	16	16	0	0	40
INSPECTION SERVICES TOTAL	48	16	16	0	0	80
PREPARE AS-BUILT DRAWINGS	8	24	24	40	0	96
TITLE III MECH PCAS TOTAL	76	80	36	40	0	232

ENGINEERING SERVICES

1	Conferences					
1A	Bi-weekly hi-light reports	32	40	0	0	72
1B	Monthly reports	18	0	0	0	18
2	Field Work	0	0	0	0	0
3	Cost Engineer	0	0	0	48	48
4	Quality Control	40	0	0	0	40
5	Other (Change Orders, etc)	8	16	16	20	60
6	Miscellaneous	8	8	8	0	24
TITLE III MECH ENGINEERING SERVICES TOTAL		106	64	24	68	262
TITLE III MECHANICAL TOTAL		182	144	60	68	454

TITLE III ENGINEERING

ESTIMATED HOURS - TITLE III

Project Title: Nuclear Materials Storage Facility PF-41 TA-55

P. I. D. 11818

Date:

25-May-95

Prepared By: ICF KAISER ENGINEERS

INSTRUMENTATION & ELECTRICAL

POST CONSTRUCTION AWARD SERVICES

REVIEW OF SUBMITTALS	22	34	20	0	0	76
INSPECTION SERVICES	0	0	0	0	0	0
FIELD INSPECTION	60	60	0	0	0	120
VENDOR EQUIPMENT INSPECTION	12	60	60	0	0	132
INSPECTION SERVICES TOTAL	72	120	60	0	0	252
PREPARE AS-BUILT DRAWINGS	8	24	24	72	0	128
TITLE III I & E PCAS TOTAL	102	178	104	72	0	456

ENGINEERING SERVICES

1	Conferences					
1A	Bi-weekly hi-light reports	50	60	0	0	110
1B	Monthly reports	26	0	0	0	26
2	Field Work	0	40	0	0	40
3	Cost Engineer	0	0	0	70	70
4	Quality Control	40	0	0	0	40
5	Other (Change Orders, etc)	24	18	18	34	120
6	Miscellaneous	16	16	16	0	48
TITLE III I&E ENGINEERING SERVICES TOTAL	156	134	34	34	96	456
TITLE III INSTRUMENTATION & ELECTRICAL TO	258	312	138	106	96	910

TITLE III ENGINEERING

ESTIMATED HOURS - TITLE III

Project Title: Nuclear Materials Storage Facility PF-41 TA-55

P. J. D. 11818

Date:

25-May-95

Prepared By: JCF KAISER ENGINEERS

FIRE SUPPRESSION ENGINEERING

POST CONSTRUCTION AWARD SERVICES

REVIEW OF SUBMITTALS	60	0	40	0	0	100
INSPECTION SERVICES	0	0	0	0	0	0
FIELD INSPECTION	20	0	0	0	0	20
VENDOR EQUIPMENT INSPECTION	20	0	0	0	0	20
INSPECTION SERVICES TOTAL	40	0	0	0	0	40
PREPARE AS-BUILT DRAWINGS	8	16	16	40	0	80
TITLE III PCAS TOTAL	108	16	56	40	0	220

ENGINEERING SERVICES

1	Conferences					
1A	Bi-weekly hi-light reports	32	40	0	0	72
1B	Monthly reports	18	0	0	0	18
2	Field Work	0	0	0	0	0
3	Cost Engineer	0	0	0	60	60
4	Quality Control	40	0	0	0	40
5	Other	8	12	12	20	72
6	Miscellaneous	16	16	16	0	48
TITLE III ENGINEERING SERVICES TOTAL		114	68	28	20	310
TITLE III FIRE SUPPRESSION ENGR. TOTAL		222	84	84	60	530

DETAILED CONSTRUCTION COST

ICF Kaiser Engineers
Los Alamos, NM

PROJECT FACTORS FILE LISTING

PF File Name: 0560SBLD.PR 9:55:13 6/30/95

HEADER INFORMATION

Job Number: 41552-056

Chng Order Number:

Title: NMSF DESIGN AND BUILD

Estimator: ICF KAISER

Abbrev:

Location:TA-55 PF41

VO Reference Date: 03/15/95

DEFAULT BURDEN RATES

Contract Direct Markups	Labor: 0.0000	Material: 0.0000
	Const Equip: 0.0000	Subcontract: 0.0000
Contract General Markups	Overhead: 0.0000	Profit: 0.0000
	Gross Receipts Tax: 0.0000	Bond: 0.0000
Project Markups	Escalation: 0.0000	Proj Mgmt: 0.0000
	ED&I: 0.0000	Contingency: 0.0000

Notes File Name: 0560SBLD.PFN

TCF Kaiser Engineers
Los Alamos, NM

PROJECT FACTORS FILE LISTING

Pf File Name: 0560SBLD.PR 9:55:13 6/30/95

Work Breakdown Structure 1				5 Character Strings		57 Strings Defined		
Character String	Category Title	Escalation	Proj Mngmt	ED&I	Contingency	Funds Expended Amount	Date	Charac Dimen Value Unit
	Default Values	0.0000	0.0000	0.0000	0.0000			0
A1F01	PROJECT MANAGMENT	0.0000	\$ 1151888	0.0000	0.2000			
A2F01	CONSTRUCTION MANAGME NT	0.0000	\$ 1335427	0.0000	0.2000			
B2F01	ED&I FAC. TITLE II	0.0000	0.0000	\$ 1916754	0.2500			
B2S01	ED&I SFE TITLE II	0.0000	0.0000	\$ 383392	0.2500			
B3F01	ED&I FAC TITLE III	0.0000	0.0000	\$ 1551416	0.2500			
B3S01	ED&I SFE TITLE III	0.0000	0.0000	\$ 126233	0.2500			
B4N01	LABORATORY PROCUREME NT BURDEN	0.0000	0.0000	\$ 867940	0.2500			
C0011	FIELD OVERHEAD(SEE L OTUS WORKSHEET)	0.1007	0.0000	0.0000	0.1500			
C1C02	CONVERT. DEMOLITION	0.0841	0.0000	0.0000	0.1800			
C1C03	CONCRETE DEMOLITION	0.0841	0.0000	0.0000	0.1800			
C1C05	STRUCT. DEMOLITION	0.0841	0.0000	0.0000	0.1800			
C1C15	MECH. DEMOLITION	0.0841	0.0000	0.0000	0.1800			
C1C16	ELECT. DEMOLITION	0.0841	0.0000	0.0000	0.1800			
C1S	SPECIAL SECURITY CON STRUCTION	0.0841	0.0000	0.0000	0.2500			
C2	SITWORK	0.0841	0.0000	0.0000	0.2000			
C3A02	BASEMENT EXCAVATION	0.1007	0.0000	0.0000	0.2500			
C3A03	STRUCTURAL CONCRETE	0.1007	0.0000	0.0000	0.2500			
C3A04	STRUCTURAL MASONRY	0.1007	0.0000	0.0000	0.2500			
C3A05	METALS	0.1007	0.0000	0.0000	0.2500			
C3A06	WOODS AND PLASTICS	0.1007	0.0000	0.0000	0.2500			
C3A07	ROOFING AND SIDING	0.1007	0.0000	0.0000	0.2500			
C3A08	DOORS AND WINDOWS	0.1007	0.0000	0.0000	0.2500			
C3A09	FINISHES	0.1007	0.0000	0.0000	0.2500			
C3A10	SPECIALITIES	0.1007	0.0000	0.0000	0.2500			
C3A15	MECHANICAL SYSTEMS	0.1116	0.0000	0.0000	0.2500			
C3A16	ELECTRICAL SYSTEMS	0.1062	0.0000	0.0000	0.2500			
C3B02	UTILITY BLDG SITE MO RK & GRADING	0.1116	0.0000	0.0000	0.2500			
C3B03	UTIL BLDG STRUCTURAL CONCRETE	0.1116	0.0000	0.0000	0.2500			
C3B04	UTIL BLDG STRUCTURAL MASONARY	0.1116	0.0000	0.0000	0.2500			
C3B05	UTIL BLDG METALS	0.1116	0.0000	0.0000	0.2500			
C3B07	UTIL BLDG ROOFING & SIDING	0.1116	0.0000	0.0000	0.2500			
C3B08	UTIL BLDG DOORS & W NDOWS	0.1116	0.0000	0.0000	0.2500			

ICF Kaiser Engineers
Los Alamos, NM

PROJECT FACTORS FILE LISTING

PF File Name: 0560SBLD.PR 9:55:13 6/30/95

Work Breakdown Structure 1				5 Character Strings		57 Strings Defined		
Character String	Category Title	Escalation	Proj Mngmt	ED&I	Contingency	Funds Expended Amount	Expend Date	Charac Dimen Value Unit
	Default Values	0.0000	0.0000	0.0000	0.0000			0
C3809	UTIL BLDG FINISHES	0.1116	0.0000	0.0000	0.2500			
C3810	UTIL BLDG SPECIALTIES	0.1116	0.0000	0.0000	0.2500			
C3815	UTIL BLDG MECHANICAL	0.1116	0.0000	0.0000	0.2500			
C3816	UTIL BLDG ELECT. SYS	0.1116	0.0000	0.0000	0.2500			
C3C05	MECH. PENTHOUSE METALS	0.1116	0.0000	0.0000	0.2500			
C3C08	MECH. PENTHOUSE DOORS & WINDOWS	0.1116	0.0000	0.0000	0.2500			
C5B16	ELECTRICAL UTILITIES	0.0841	0.0000	0.0000	0.2000			
C5D15	NATURAL GAS PIPING OUTSIDE OF BUILDING	0.0841	0.0000	0.0000	0.2000			
C5G15	WATER PIPING OUTSIDE OF BUILDING	0.0841	0.0000	0.0000	0.2000			
C5E15	FIRE PROTECTION OUTSIDE OF BUILDING	0.0841	0.0000	0.0000	0.2000			
C5F15	RAD/ACID WASTE LINE OUTSIDE OF BLDG.	0.0841	0.0000	0.0000	0.2000			
E2C11	FACILITY MONITORING CONTROL SYS EQUIP	0.1144	0.0000	0.0000	0.2500			
E2C15	FACILITY MONITORING CONTROL SYS MECH	0.1144	0.0000	0.0000	0.2500			
E2C16	FACILITY MONITORING CONTROL SYS ELECT	0.1144	0.0000	0.0000	0.2500			
E2L11	AUTO MAT HANDLING	0.1144	0.0000	0.0000	0.2000			
E2L12	MATERIAL HANDLING STAGING/UNPACKING	0.1144	0.0000	0.0000	0.2000			
E2L13	MATERIAL HANDLING HD A/STORAGE VAILT	0.1144	0.0000	0.0000	0.2000			
E2L14	MATERIAL HANDLING AGV EQUIPMENT	0.1144	0.0000	0.0000	0.2000			
E2L15	MATERIAL HANDLING LOADING DOCKS	0.1144	0.0000	0.0000	0.2000			
E20	SECURITY SYSTEMS EQUIPMENT	0.1144	0.0000	0.0000	0.2000			
E2S11	SPEC FAC EQUIPMENT STRG ARRAY HARDWARE	0.1144	0.0000	0.0000	0.2500			
E2S12	SPEC FAC EQUIPMENT STRG ARRAY COOLING	0.1144	0.0000	0.0000	0.2500			

ICF Kaiser Engineers
Los Alamos, NM

PROJECT FACTORS FILE LISTING

PF File Name: 05603BLD.PR 9:55:13 6/30/95

Work Breakdown Structure 1

5 Character Strings

57 Strings Defined

Character String	Category Title	Escalation	Proj Mngmt	ED&I	Contingency	Funds Expended Amount	Date	Charac Dimen Value	Unit
	Default Values	0.0000	0.0000	0.0000	0.0000			0	
E2S13	SPEC FAC EQUIPMENT STRG ARRAY SHIPPING	0.1144	0.0000	0.0000	0.2000				
E2S14	SPEC FAC EQUIPMENT STRG ALARM SYSTEMS	0.1144	0.0000	0.0000	0.2500				
E2S15	SPEC FAC EQUIPMENT STRG MECH SYSTEMS	0.1144	0.0000	0.0000	0.2500				

JCF Kaiser Engineers
Los Alamos, NM

PROJECT FACTORS FILE LISTING

PF File Name: 0560SBLD.PR 18:59:31 6/17/95

Markup Breakdown		2 Digit Markup Tags					4 Tags Defined			
Tag	Contractor	Labor	Mat	Equip	Sub Contract	Overhead	Profit	GRTax	Bond	Funds Expended Amount Date
	Default Markups	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
31	NO MARKUP	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
32	SUBCONTRACTOR	0.0000	0.0000	0.0000	0.0000	0.1000	0.1300	0.0606	0.0125	
33	JCI	0.4090	0.2080	0.0000	0.2080	0.2820	0.0000	0.0000	0.0000	
34	DIRECT QUOTE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0606	0.0125	
35	PRIME CONTRACTOR	0.0000	0.0000	0.0000	0.0000	0.0500	0.0300	0.0606	0.0125	
36	GFE INSTALLED BY CONTRACTOR	0.0000	0.0000	0.0000	0.0000	0.0500	0.0300	0.0606	0.0125	

PF File: 056dsbtd.PR
TO File: 056dsbtd.TA

ICF Kaiser Engineers
Los Alamos, NM

TAKE-OFF EXTENSION

Sort: WBS1

Subtotal: 5 characters

Job Number: 61552-056

Change Order Number:

10: 7:21

6/30/95

Project Title: MMSF DESIGN AND BUILD

Checked By:

Estimator: ICF KAISER

Abbrev:

Location: TA-55 PF41

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd ID	c F			Factor	Rate	Ext'd Cost				
1389	A1F01	0	0	PROJECT MANAGEMENT	1.0 EA	1.000	1.00	1.00	0.00	0.00	0.00	1.00
	A1F01			Category Direct Cost			1.00	1.00	0.00	0.00	0.00	1.00
1390	A2F01	0	0	CONSTRUCTION MANAGEMENT	1.0 EA	1.000	1.00	1.00	0.00	0.00	0.00	1.00
	A2F01			Category Direct Cost			1.00	1.00	0.00	0.00	0.00	1.00
1393	B2F01	0	0	ED&I FAC. TITLE 11	1.0 EA	1.000	1.00	1.00	0.00	0.00	0.00	1.00
	B2F01			Category Direct Cost			1.00	1.00	0.00	0.00	0.00	1.00
1394	B2S01	0	0	ED&I SPE. TITLE 11	1.0 EA	1.000	1.00	1.00	0.00	0.00	0.00	1.00
	B2S01			Category Direct Cost			1.00	1.00	0.00	0.00	0.00	1.00

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdw Structure 1	J Est ID	A o b F	c Contract Markup t Tag	Take-Off Item Description	Quantity Unit	- - - L a b o r - - -			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
							Factor	Rate	Ext'd Cost				
1395	83F01			0	0 ED&I FAC. TITLE III	1.0 EA	1.000	1.00	1.	0.00 0.	0.00 0.	0. 0.	1.
	83F01				Category Direct Cost				1.	0.	0.	0.	1.
1396	83801			0	0 ED&I SFE. TITLE III	1.0 EA	1.000	1.00	1.	0.00 0.	0.00 0.	0. 0.	1.
	83801				Category Direct Cost				1.	0.	0.	0.	1.
1397	84M01			0	0 LABORATORY PROCUREMENT WT BURDEN	1.0 EA	1.000	1.00	1.	0.00 0.	0.00 0.	0. 0.	1.
	84M01				Category Direct Cost				1.	0.	0.	0.	1.
1398	C0011			0	5 FIELD OVERHEAD	1.0 EA	1.000	613069.18 613069.		101205.00 101206.	71302.50 71303.	132975. 132975.	918552. 918552.
	C0011				Category Direct Cost			613069.		101206.	71303.	132975.	918552.
155	C1C02				SHELVING SYSTEM REMOVAL								
161	C1C02	45		0	5 ELECTRICAL TRACK	240.0 LF	0.080	17.29 332.		0.00 0.	1.48 355.	0. 0.	687.
162	C1C02	45		0	5 GUIDE RAIL (TOP)	240.0 LF	0.080	17.29 332.		0.00 0.	1.48 355.	0. 0.	687.
163	C1C02	45		0	5 CROSS MEMBERS	144.0 NRS	1.000	17.29 2490.		0.00 0.	0.90 1282.	0. 0.	3771.

(Items with '*' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Brkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	Labor		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd ID	o c b c F t Tag			Factor	Rate Ext'd Cost				
164	C1C02	45	0 5	FLOOR RAIL 2 BOLT 24" CENTERS	240.0 LF	0.060	17.29 249.	0.00 0.	0.00 0.	0.	249.
165	C1C02	45	0 5	STORAGE BOXES 2X4	1376.0 HRS	1.000	17.29 23791.	0.00 0.	4.45 6123.	0.	29914.
166	C1C02	45	0 5	STANDS 88 LEGS 2 BOLTS	352.0 HRS	1.000	17.29 6086.	0.00 0.	4.45 1566.	0.	7652.
167	C1C02	45	0 5	MINI LOAD MACHINES	32.0 HR	1.000	17.29 553.	0.00 0.	0.00 0.	0.	553.
168	C1C02	49	0 5	TRUCK AND DRIVER SALVAGE	72.0 HR	1.000	19.20 1382.	0.00 0.	71.00 5112.	0.	6494.
169	C1C02	49	0 5	TRUCK AND DRIVER DUMP	40.0 HR	1.000	19.20 768.	0.00 0.	71.00 2040.	0.	3608.
170	C1C02			STORAGE BOX DEMO							
171	C1C02	45	0 5	REMOVE PLASTIC STORAGE BOXES AND SUPPORTS	144.0 HRS	1.000	17.29 2490.	0.00 0.	0.00 0.	0.	2490.
1481	C1C02			INSTALL EXTERIOR BUTRESSES DRILL 5'-0" DIA X 36 FT DEEP HOLES							
1482	C1C02	45	0 2	DRILL HOLES/DOWELS INSIDE TO O/S 8 COLUMN LINES	5.0 EA	24.000	17.29 2075.	300.00 1500.	18.00 90.	0.	3665.
1483	C1C02	85	0 2	EXCAVATION, CONCRETE REINFORCING 5'-0" CASSON X 36 DEEP	180.0 VLF	0.533	32.28 3097.	95.00 17100.	19.00 3420.	0.	23617.
1484	C1C02	99	0 2	INSPECTION	5.0 EA	7.000	24.88 871.	0.00 0.	0.00 0.	0.	871.
1485	C1C02		0 2	MOBILIZATION (BACKHOE & RIG)	1.0 EA		0.00 0.	2100.00 2100.	0.00 0.	0.	2100.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdwn Structure 1	J Trd ID	A b F	c c t	Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Cntrct Cost	Item Direct Cost	
							Factor	Rate	Ext'd Cost					
1486	C1C02	53	0	2	LOAD SPOILS	150.0 CY	0.020	23.44	70.	0.00	2.00	300.	0.	370.
1487	C1C02	49	0	2	HAUL SPOILS & DUMP FEES	12.0 RT	4.000	19.20	922.	16.00	70.00	840.	0.	1954.
1488	C1C02	73	0	2	MISC. FORMWORK @ TOP 5'-0"	350.0 SF	0.250	25.69	2248.	2.00	0.00	0.	0.	2948.
C1C02 Category Direct Cost								47756.		21592.	22284.	0.	91631.	
240	C1C03	45	0	5	REMOVE WALLS AT ENTRANCE	200.0 SF	0.429	17.29	1483.	0.00	1.38	276.	0.	1759.
242	C1C03				CUTOUT DEMOLITION									
244	C1C03				SAW CUTTING									
245	C1C03				CONCRETE DEMO									
247	C1C03	73	0	5	SAW CUT DOOR JAMBS AT TRUCK GARAGE	48.0 LF	1.280	25.69	1578.	5.60	8.32	399.	0.	2247.
253	C1C03	45	0	5	SAW CUT SLAB AT STAIRS (6" THICK)	30.0 LF	0.174	17.29	90.	2.16	3.00	90.	0.	245.
254	C1C03	45	0	5	SAW CUT DOOR AT MEZZANINE STAIRS (1" THICK)	20.0 LF	2.670	17.29	923.	5.60	8.32	166.	0.	1202.
255	C1C03	45	0	5	REMOVE CONC SLAB AT STAIRS (6" THICK)	107.0 SF	2.000	17.29	3700.	0.00	1.52	163.	0.	3863.
256	C1C03				BASEMENT DEMOLITION									
257	C1C03	45	0	5	MIDDLE BASEMENT WALL (1'-0" THICK)	2400.0 SF	0.500	17.29	20748.	0.00	1.80	4320.	0.	25068.

Items with 'H' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Brkdwn Structure 1	J A		Take-Off Item Description	Quantity Unit	Labor		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Job ID	Contract b c Markup t Tag			Factor	Rate Ext'd Cost				
258	C1C03	45	0 5	STAIRS & SLAB @ ENTRANCE	140.0 SF	0.150	17.29 363.	0.00 0.	2.72 381.	0.	744.
266	C1C03	45	0 5	DEMO STAIRWELL DECKS & RISERS	656.0 CF	1.600	17.29 18148.	0.00 0.	2.96 1942.	0.	20069.
267	C1C03	45	0 5	DEMO STAIRWELL WALLS	860.0 SF	0.429	17.29 6379.	0.00 0.	1.38 1187.	0.	7566.
268	C1C03	45	0 5	REMOVE FLOOR FOR LOADING DOCK	553.0 SF	0.180	17.29 1721.	0.00 0.	3.53 1952.	0.	3673.
269	C1C03	45	0 5	REMOVE HOUSEKEEPING PADS	247.0 SF	0.150	17.29 641.	0.00 0.	2.72 672.	0.	1312.
295	C1C03	EXCAVATION									
298	C1C03	45	0 5	EXCAVATION AT ENTRY STAIRS	21.0 CY	1.300	17.29 472.	0.00 0.	22.13 465.	0.	937.
299	C1C03	45	0 5	EXCAVATE AT NEW STAIRS	26.0 CY	2.000	17.29 899.	0.00 0.	0.00 0.	0.	899.
1250	C1C03	45	0 2	CUT HOLE IN WALL - 12"x30"	360.0 SF	0.500	16.75 3015.	0.00 0.	3.00 1080.	0.	4095.
1399	C1C03	BASEMENT DEMO (CONT)									
1400	C1C03	45	0 5	SAWCUT BASEMENT WALLS	120.0 LF	2.200	17.29 4565.	5.76 691.	9.12 1094.	0.	6350.
1401	C1C03	45	0 5	SAWCUT MEZZAMINE DOOR & WALL	20.0 LF	2.200	17.29 761.	5.76 115.	9.12 182.	0.	1058.
1402	C1C03	45	0 5	DEMO WALL @ OPS AREA	1200.0 SF	0.500	17.29 10374.	0.00 0.	1.80 2160.	0.	12534.
1403	C1C03	45	0 5	CONCRETE CURB	48.0 SF	0.200	17.29 166.	0.00 0.	1.00 48.	0.	214.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdw Structure 1	J Trd ID	A o F	c t	c t	Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Cntrct Cost	Item Direct Cost
								Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1404	C1C03	45	0	5	CONCRETE WING WALLS	480.0 SF	0.500	17.29		8150.	0.00	0.	1.80	864.	0.	5014.
1405	C1C03	45	0	5	MEZZANINE DECK (1'-0" TK)	1200.0 SF	2.000	17.29		41496.	0.00	0.	1.80	2160.	0.	43656.
1406	C1C03				DEMO FIRST FLOOR											
1407	C1C03	45	0	5	1ST FLOOR SLAB	4800.0 SF	0.150	17.29		82449.	0.00	0.	0.52	2496.	0.	14945.
1408	C1C03	73	0	5	SHORING/SCAFFOLD	48.0 CSF	0.640	25.69		789.	20.00	960.	0.00	0.	0.	1749.
1409	C1C03	45	0	5	SAWCUT 1ST FLR DEMO SLAB	185.0 LF	1.700	17.29		5438.	3.84	710.	0.00	0.	0.	6148.
1410	C1C03	45	0	5	SAWCUT 1ST FLR FOR NEW WALLS	450.0 LF	0.200	17.29		1556.	2.16	972.	3.00	1350.	0.	3878.
1411	C1C03	45	0	5	DEMO FLOOR STRIPS	5400.0 SF	0.133	17.29		12418.	0.00	0.	0.51	2754.	0.	15172.
1412	C1C03	45	0	5	DEMO SHEAR WALL 1ST FLR	725.0 SF	3.500	17.29		43873.	0.00	0.	1.52	1102.	0.	44975.
1413	C1C03	45	0	5	DEMO WALL AT GARAGE	64.0 SF	3.000	17.29		3320.	0.00	0.	1.52	97.	0.	3417.
1414	C1C03	45	0	5	REMOVE FTG @ ENTRANCE RAMP	24.0 LF	0.256	17.29		106.	0.00	0.	3.85	92.	0.	199.
1415	C1C03	45	0	5	SAWCUT FOR INTAKE	84.0 LF	1.200	17.29		1743.	5.76	484.	9.12	766.	0.	2993.
1416	C1C03	45	0	5	ROOF DEMO FOR EXHAUST	120.0 SF	0.200	17.29		415.	0.00	0.	1.00	120.	0.	535.

(Items with '#' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Brkdw Structure 1	J A			Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd ID	b F	c Tag			Factor	Rate	Ext'd Cost				
1417	C1C03	73		0 5	SHORING	1.0 CSF	0.640	25.69	25.69	20.00	0.00		
1418	C1C03	45		0 5	SAWCUT ROOF	68.0 LF	1.700	17.29	1175.82	3.84	6.00	0.	36.
1419	C1C03	49		0 5	HAILING-RUBBLE	1.0 MO	120.000	19.20	19.20	500.00	2975.00	0.	2668.
1420	C1C03	45		0 5	SWEET UP AND LOAD DEBRIS	650.0 CY	0.500	17.29	11248.50	0.00	1.00	0.	5779.
1421	C1C03	53		0 5	LOAD TRUCKS AND PILE RUBBLE	650.0 CY	0.500	23.44	15239.00	5.00	10.00	0.	6269.
1422	C1C03			0 5	DUMP FEES	80.0 TONS		0.00	0.00	16.00	0.00	0.	17348.
1494	C1C03				ROOF DEMOLITION (OVER PRECAST DOUBLE TEES)				0.	1280.	0.	0.	1280.
1495	C1C03	45		0 5	REMOVE TOPPING (3")	5500.0 SF	0.200	17.29	9509.00	0.00	0.32	0.	20779.
C1C03		Category Direct Cost							240354.	9689.	40672.	0.	290715.
120	C1C05				LAVATORY DEMOLITION								
121	C1C05				DOOR DEMOLITION								
123	C1C05				CARPET DEMOLITION								
124	C1C05	73		0 5	REMOVE OVERHEAD DOOR	1.0 EA	6.000	25.69	25.69	0.00	6.00	0.	160.
125	C1C05				CEILING DEMOLITION								

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdwn Structure I	Trd ID	J b F	A c t Tag	Take-Off Item Description	Quantity Unit	Labor			Material		Const Equip		Sub Contract Cost	Item Direct Cost
							Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
126	C1C05	45	0	5	GYPSON BOARD CEILING	3852.0 SF	0.060	17.29		0.00	0.00	0.	0.		3996.
127	C1C05	45	0	5	ACOUSTIC CEILING	2040.0 SF	0.050	17.29		0.00	0.00	0.	0.		1764.
128	C1C05	45	0	5	DOORS 3X7	56.0 EA	0.650	17.29		0.00	0.00	0.	0.		629.
129	C1C05	45	0	5	DOORS JAMS	56.0 EA	1.500	17.29		0.00	0.00	0.	0.		1452.
130	C1C05	45	0	5	DOORS 5X10	5.0 EA	2.000	17.29		0.00	0.00	0.	0.		173.
131	C1C05	45	0	5	CARPET FIRST FLOOR	2200.0 SF	0.020	17.29		0.00	0.00	0.	0.		761.
134	C1C05	45	0	5	COUNTER TOP	12.0 LF	1.000	17.29		0.00	0.00	0.	0.		207.
135	C1C05	45	0	5	LOCKERS	12.0 LF	2.000	17.29		0.00	0.00	0.	0.		415.
137	C1C05	69	0	5	LAVATORY	4.0 EA	1.300	33.56		0.00	0.00	0.	0.		175.
138	C1C05	69	0	5	URINAL WALL MOUNT	1.0 EA	1.500	33.56		0.00	0.00	0.	0.		50.
139	C1C05	69	0	5	WATER CLOSET	3.0 EA	1.500	33.56		0.00	0.00	0.	0.		151.
142	C1C05				WALL DEMOLITION										
143	C1C05	45	0	5	GYPSON BOARD WALLS	12715.0 SF	0.150	17.29		0.00	0.00	0.	0.		32976.

[Items with 'W' have been adjusted by Job Factor and/or Equip Factor]

Items with a Note Been Adjusted by Sub Factor and/or Equip Factor														
Item	Work Brkdwn Structure 1	J A			Quantity Unit	L a b o r			Material		Const Equip		Sub Cntrct Cost	Item Direct Cost
		Trd ID	b F	c Tag		Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
144	C1C05	45	0	5	HOLLOW METAL WALLS (PARTITIONS)	4.0 EA	1.300	17.29 90.	0.00 0.	0.00 0.	0.00 0.	0.	90.	
149	C1C05	45	0	5	HAND RAILS	30.0 LF	0.050	17.29 26.	0.00 0.	0.00 0.	0.00 0.	0.	26.	
182	C1C05	ROOFING DEMOLITION AT PENTHOUSE												
183	C1C05		0	0	ROOF DRAIN 6"	285.0 LF	0.400	33.56 3826.	0.00 0.	0.00 0.	0.00 0.	0.	3826.	
184	C1C05	85	0	5	REMOVE STEEL LOUVERS & EQUIPMENT MOUNTS	104.0 LF	0.200	32.28 671.	0.00 0.	0.00 0.	0.30 31.	0.	703.	
185	C1C05	45	0	5	REMOVE DEBRIS	1.0 LOT	16.000	17.29 277.	0.00 0.	0.00 0.	0.00 0.	0.	277.	
186	C1C05	45	0	5	REMOVE ROOFING & GRAVEL	1380.0 SF	0.060	17.29 1432.	0.00 0.	0.00 0.	0.00 0.	0.	1432.	
187	C1C05	45	0	5	REMOVE INSULATION	1380.0 SF	0.013	17.29 310.	0.00 0.	0.00 0.	0.00 0.	0.	310.	
188	C1C05	49	0	5	HAUL DEBRIS	5.0 TONS	0.800	19.20 77.	16.00 80.	3.00 15.	0.00 0.	0.	172.	
899	C1C05	HAULING												
903	C1C05		0	2	TRUCK & DRIVER HAULING & DUMPING	20.0 TONS	0.800	19.20 307.	15.00 300.	2.77 55.	0.00 0.	0.	663.	
1496	C1C05	45	0	5	ROOFING DEMOLITION (INCL. GRAVEL)	5500.0 SF	0.060	17.29 5706.	0.00 0.	0.00 0.	0.00 0.	0.	5706.	
1497	C1C05	45	0	5	REMOVE INSULATION BOARD	5500.0 SF	0.013	17.29 1236.	0.00 0.	0.00 0.	0.00 0.	0.	1236.	
C1C05		Category Direct Cost						56861.	380.	108.	0.	57349.		

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Item	Work Breakdown Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r		Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
		Trd b ID F	c Markup t Tag			Factor	Rate Ext'd Cost		Rate Ext'd Cost	Rate Ext'd Cost		
98	C1C15			HVAC DEMOLITION (FIRST FLOOR)								
99	C1C15	45	0 2	12" X 12" DUCT	295.0	0.080	17.29	0.00	0.00	0.00	0.00	408.
				LF			408.	0.	0.	0.	0.	
100	C1C15	45	0 2	24" X 12" DUCT	1080.0	0.150	17.29	0.00	0.00	0.00	0.00	2801.
				LF			2801.	0.	0.	0.	0.	
101	C1C15	45	0 2	24" X 24" DUCT	1030.0	0.150	17.29	0.00	0.00	0.00	0.00	2671.
				LF			2671.	0.	0.	0.	0.	
102	C1C15	45	0 2	30" X 36" DUCT	20.0	0.200	17.29	0.00	0.00	0.00	0.00	69.
				LF			69.	0.	0.	0.	0.	
103	C1C15	45	0 2	36" X 12" DUCT	28.0	0.150	17.29	0.00	0.00	0.00	0.00	73.
				LF			73.	0.	0.	0.	0.	
104	C1C15	45	0 2	36" X 36" DUCT	12.0	0.200	17.29	0.00	0.00	0.00	0.00	41.
				LF			41.	0.	0.	0.	0.	
105	C1C15	45	0 2	12" ROUND STAINLESS STEEL	100.0	0.100	17.29	0.00	0.00	0.00	0.00	173.
				LF			173.	0.	0.	0.	0.	
111	C1C15			HVAC DEMOLITION BASEMENT & MEZZANINE								
112	C1C15	45	0 2	16" X 12" DUCT	202.0	0.120	17.29	0.00	0.00	0.00	0.00	419.
				LF			419.	0.	0.	0.	0.	
113	C1C15	45	0 2	36" X 36" DUCT	50.0	0.200	17.29	0.00	0.00	0.00	0.00	173.
				LF			173.	0.	0.	0.	0.	
114	C1C15	45	0 2	24" X 24" DUCT	290.0	0.150	17.29	0.00	0.00	0.00	0.00	752.
				LF			752.	0.	0.	0.	0.	
115	C1C15	45	0 2	12" X 12" DUCT	280.0	0.120	17.29	0.00	0.00	0.00	0.00	581.
				LF			581.	0.	0.	0.	0.	
116	C1C15	45	0 2	36" X 24" DUCT	210.0	0.200	17.29	0.00	0.00	0.00	0.00	726.
				LF			726.	0.	0.	0.	0.	

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Item	Work Bkdn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r		Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
		Tnd b 10 F	c Markup t Tag			Factor	Rate Ext'd Cost		Rate Ext'd Cost	Rate Ext'd Cost		
117	C1C15	45	0	2 36" X 12" DUCT	300.0 LF	0.150	17.29 778.	0.00	0.00	0.	0.	778.
118	C1C15	45	0	2 16" X 18" DUCT	30.0 LF	0.150	17.29 78.	0.00	0.00	0.	0.	78.
119	C1C15	45	0	2 12" ROUND STAINLESS STEEL	200.0 LF	0.100	17.29 346.	0.00	0.00	0.	0.	346.
173	C1C15			PLUMBING DEMOLITION								
175	C1C15	45	0	2 1 1/2" COPPER SUPPLY AND RETURN	1200.0 LF	0.050	17.29 1037.	0.00	0.00	0.	0.	1037.
176	C1C15	45	0	2 1 1/2" PIPE	3920.0 LF	0.050	17.29 3389.	0.00	0.00	0.	0.	3389.
177	C1C15	45	0	2 2" PIPE	100.0 LF	0.050	17.29 86.	0.00	0.00	0.	0.	86.
178	C1C15	45	0	2 2 1/2" PIPE	685.0 LF	0.070	17.29 829.	0.00	0.00	0.	0.	829.
179	C1C15	45	0	2 3" PIPE	545.0 LF	0.070	17.29 660.	0.00	0.00	0.	0.	660.
180	C1C15	45	0	2 1" PIPE	455.0 LF	0.050	17.29 393.	0.00	0.00	0.	0.	393.
189	C1C15			VACUUM / AIR LINES DEMOLITION								
194	C1C15	45	0	2 1/2" COPPER LINES	2145.0 LF	0.050	17.29 1854.	0.00	0.00	0.	0.	1854.
195	C1C15	45	0	2 1" COPPER LINES	100.0 LF	0.050	17.29 86.	0.00	0.00	0.	0.	86.
196	C1C15	45	0	2 1 1/2" COPPER LINE	1185.0 LF	0.050	17.29 1024.	0.00	0.00	0.	0.	1024.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdn Structure 1	J b F	A c t	Entret Markup Tag	Take-Off Item Description	Quantity Unit	Labor		Material		Const Equip		Sub Contract Cost	Item Direct Cost
							Factor	Rate Ext'd Cost	Rate Ext'd Cost	Rate Ext'd Cost	Rate Ext'd Cost			
197	C1C15	45	0	2	2" COPPER LINE	260.0 LF	0.050	17.29 225.	0.00 0.	0.00 0.	0.00 0.	0.	0.	225.
198	C1C15	45	0	2	3" COPPER LINE	680.0 LF	0.070	17.29 823.	0.00 0.	0.00 0.	0.00 0.	0.	0.	823.
199	C1C15	45	0	2	3/4" COPPER LINE	40.0 LF	0.050	17.29 35.	0.00 0.	0.00 0.	0.00 0.	0.	0.	35.
212	C1C15	MECHANICAL ROOM DEMO												
216	C1C15	69	0	2	REMOVE AIR HANDLERS	6.3 TONS	5.400	33.56 1133.	0.00 0.	0.00 0.	0.00 0.	0.	0.	1133.
217	C1C15	69	0	2	REMOVE SMALL HEPA'S	6.5 TONS	5.400	33.56 1178.	0.00 0.	0.00 0.	0.00 0.	0.	0.	1178.
218	C1C15	69	0	2	REMOVE LARGE HEPA'S	18.0 TONS	5.400	33.56 3262.	0.00 0.	0.00 0.	0.00 0.	0.	0.	3262.
219	C1C15	69	0	2	2 BLOWERS	3.0 TONS	5.400	33.56 544.	0.00 0.	0.00 0.	0.00 0.	0.	0.	544.
220	C1C15	69	0	2	4 SMALL BLOWERS	1.0 TONS	5.400	33.56 181.	0.00 0.	0.00 0.	0.00 0.	0.	0.	181.
221	C1C15	69	0	2	1 COMPRESSOR	1.0 TONS	5.400	33.56 181.	0.00 0.	0.00 0.	0.00 0.	0.	0.	181.
225	C1C15	45	0	2	14" X 12" DUCT	233.0 LF	0.150	17.29 604.	0.00 0.	0.00 0.	0.00 0.	0.	0.	604.
226	C1C15	45	0	2	12" X 12" DUCT	75.0 LF	0.150	17.29 195.	0.00 0.	0.00 0.	0.00 0.	0.	0.	195.
227	C1C15	45	0	2	18" X 18" DUCT	280.0 LF	0.150	17.29 726.	0.00 0.	0.00 0.	0.00 0.	0.	0.	726.

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Item	Work Bkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Ted ID F	Contract Markup Tag			Factor	Rate Ext'd Cost				
228	C1C15	45	0 2	24" X 24" DUCT	149.0 LF	0.150	17.29 386.	0.00	0.00	0.	386.
229	C1C15	45	0 2	30" X 24" DUCT	156.0 LF	0.180	17.29 486.	0.00	0.00	0.	486.
230	C1C15	45	0 2	48" X 36" DUCT	30.0 LF	0.190	17.29 99.	0.00	0.00	0.	99.
231	C1C15	45	0 2	60" X 48" DUCT	42.0 LF	0.200	17.29 145.	0.00	0.00	0.	145.
232	C1C15	45	0 2	72" X 48" DUCT	38.0 LF	0.200	17.29 131.	0.00	0.00	0.	131.
233	C1C15	45	0 2	12" STAINLESS STEEL DUCT	11.0 LF	0.250	17.29 48.	0.00	0.00	0.	48.
234	C1C15	49	0 2	TRUCK AND DRIVER SALVAGE	24.0 HR	1.000	19.20 461.	0.00	71.00 1704.	0.	2165.
235	C1C15	49	0 2	TRUCK AND DRIVER DUMP	16.0 HR	1.000	19.20 307.	0.00	71.00 1136.	0.	1443.
384	C1C15			BOILER ROOM DEMO							
390	C1C15		0 2	24" DUCT	40.0 LF	0.200	17.29 138.	0.00	0.00	0.	138.
391	C1C15		0 2	EQUIPMENT	6.0 TONS	19.000	33.56 3826.	0.00	0.00	0.	3826.
392	C1C15		0 2	FORK LIFT & OPERATOR	18.0 HR	1.000	14.88 268.	0.00	35.15 633.	0.	901.
393	C1C15		0 2	HAUL TO SALVAGE	4.0 HR	1.000	19.20 77.	0.00	71.00 284.	0.	361.

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Item	Work Brkdw Structure 1	J 1st b 10 F	A c Markup t Tag	Take-Off Item Description	Quantity Unit	Labor		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Cntret Cost	Item Direct Cost
						Factor	Rate Ext'd Cost				
394	C1C15		0 2	HAUL TO DUMP	4.0 HR	1.000	19.20 77.	0.00 0.	71.00 284.		361.
395	C1C15		0 2	DUMP CHARGES	2.0 TOMS	1.000	0.00 0.	15.00 30.	0.00 0.	0.	30.
399	C1C15		0 2	4" PIPE	400.0 LF	0.070	17.29 484.	0.00 0.	0.00 0.	0.	484.
400	C1C15		0 2	3" PIPE	200.0 LF	0.070	17.29 242.	0.00 0.	0.00 0.	0.	242.
401	C1C15		0 2	2" PIPE	500.0 LF	0.050	17.29 432.	0.00 0.	0.00 0.	0.	432.
402	C1C15		0 2	1" PIPE	750.0 LF	0.050	17.29 648.	0.00 0.	0.00 0.	0.	648.
907	C1C15			HAULING							
1454	C1C15	69	0 2	DEMO CONDENSING UNIT ON ROOF (PIPING INCLUDED)	2.0 EA	16.000	33.56 1074.	0.40 1.	0.00 0.	0.	1075.
1455	C1C15	45	0 2	DEMO ROOFTOP EXHAUST FAN	2.0 EA	6.000	17.29 207.	0.40 1.	0.00 0.	0.	208.
1456	C1C15	73	0 2	REPAIR ROOF PENETRATIONS	2.0 EA	6.000	25.69 308.	50.00 100.	0.00 0.	0.	408.
1457	C1C15	69	0 2	DEMO ROOF DRAINS	2.0 EA	3.000	33.56 201.	15.00 30.	0.00 0.	0.	231.
C1C15							38582.	162.	4041.	0.	42784.
303	C1C16			Category Direct Cost							
				COMMUNICATION	DEMOLITION						

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Item	Work Bkdn Structure #	J A		Take-Off Item Description	Quantity Unit	L a b o r		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd b ID F	c c o c Markup t Tag			Factor	Rate Ext'd Cost				
306	C1C16		0 2	REMOVE 3/4" TO 1" COMM. CONDUIT	1725.0 LF	0.100	22.91 3952.	0.00 0.	0.00 0.	0.	3952.
307	C1C16		0 2	REMOVE 1 1/4" TO 2 1/2" COMM. CONDUIT	125.0 LF	0.150	22.91 430.	0.00 0.	0.00 0.	0.	430.
308	C1C16		0 2	REMOVE 4" COMM. CONDUIT	950.0 LF	0.250	22.91 3150.	0.00 0.	0.00 0.	0.	3150.
309	C1C16		0 2	REMOVE COMMUNICATION CABLE TRAY	150.0 LF	0.160	22.91 550.	0.00 0.	0.00 0.	0.	550.
311	C1C16			FIRE PROTECTION DEMOLITION							
312	C1C16		0 2	REMOVE CABLE TRAY FIRE PROT.	100.0 LF	0.160	22.91 367.	0.00 0.	0.00 0.	0.	367.
313	C1C16		0 2	REMOVE 4X4 WIREWAY FIRE PROT.	950.0 LF	0.250	22.91 5441.	0.00 0.	0.00 0.	0.	5441.
314	C1C16		0 2	REMOVE 3/4" TO 1" FIRE PROT / SEC CONDUIT & WIRES	4050.0 LF	0.100	22.91 9279.	0.00 0.	0.00 0.	0.	9279.
315	C1C16		0 2	REMOVE 1 1/4 - 2 1/2 FIRE PROT / SEC CONDUIT & WIRES	400.0 LF	0.150	22.91 1375.	0.00 0.	0.00 0.	0.	1375.
316	C1C16			STANDARD ELECTRICAL DEMOLITION							
317	C1C16		0 2	REMOVE 1 1/4 - 2 1/2 CONDUIT AND WIRE	700.0 LF	0.150	22.91 2406.	0.00 0.	0.00 0.	0.	2406.
318	C1C16		0 2	REMOVE CABLE TRAYS	100.0 LF	0.160	22.91 367.	0.00 0.	0.00 0.	0.	367.
323	C1C16		0 2	REMOVE WIRE MOLDS WITH RECEPTACLES	120.0 LF	0.200	22.91 550.	0.00 0.	0.00 0.	0.	550.

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Item	Work Bkdw Structure 1	J Trd b ID F	A c Cntret e Markup t Yag	Take-Off Item Description	Quantity Unit	Labor		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Cntret Cost	Item Direct Cost
						Factor	Rate Ext'd Cost				
324	C1C16		0 2	REMOVE RECEPTACLES	280.0 LF	0.200	32.96 1846.	0.00 0.	0.00 0.	0. 0.	1846.
325	C1C16		0 2	REMOVE 4X4 WIREWAY	100.0 LF	0.250	22.91 573.	0.00 0.	0.00 0.	0. 0.	573.
326	C1C16		0 2	REMOVE UPS	1.0 EA	24.000	22.91 550.	0.00 0.	0.00 0.	0. 0.	550.
327	C1C16		0 2	REMOVE 3/4" TO 1" CONDUIT & WIRE	10800.0 LF	0.100	22.91 24743.	0.00 0.	0.00 0.	0. 0.	24743.
336	C1C16		0 2	REMOVE SWITCHBOARD A	1.0 EA	80.000	32.96 2637.	0.00 0.	0.00 0.	0. 0.	2637.
337	C1C16		0 2	REMOVE MOTOR CONTROL CENTER "A"	1.0 EA	80.000	32.96 2637.	0.00 0.	0.00 0.	0. 0.	2637.
338	C1C16		0 2	REMOVE MOTOR CONTROL CENTER "B"	1.0 EA	80.000	32.96 2637.	0.00 0.	0.00 0.	0. 0.	2637.
339	C1C16		0 2	REMOVE PANELBOARDS	7.0 EA	40.000	32.96 9229.	0.00 0.	0.00 0.	0. 0.	9229.
340	C1C16		0 2	REMOVE TRANSFORMERS	4.0 EA	8.000	32.96 1055.	0.00 0.	0.00 0.	0. 0.	1055.
915	C1C16		HAULING								
916	C1C16		0 2	TRUCK & DRIVER HAULING & DUMP	1.0 TON	8.000	19.20 154.	15.00 15.	55.32 55.	0. 0.	224.
C1C16 Category Direct Cost							73923.	15.	55.	0.	73993.
1423	C1S			PIDA FENCE SYSTEM (OS-10)							

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Item	Work Breakdown Structure	J A		Take-Off Item Description	Quantity	Unit	L a b o r		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd	o c				Factor	Rate				
100	1	10	F	t Tag				Ext'd Cost				
424	C15	65	0	2 TEMPORARY SECURITY SYSTEM (SEE BACKUP)	1.0	LOT	3930.000	32.96	276871.00	15098.00	0.	421502.
								129533.	276871.	15098.	0.	421502.
	C15			Category Direct Cost				129533.	276871.	15098.	0.	421502.
511	C2	169	0	3 UTILITY TIE-IN	5.0	EA		0.00	0.00	0.00	0.	20000.
								0.	0.	0.	20000.	20000.
	C2			Category Direct Cost				0.	0.	0.	20000.	20000.
454	C3A02			STRUC. EXCAVATION IN BUILDING								
459	C3A02	45	0	2 COMPACTED STRUCTURAL FILL AT NEW SPREAD FOOTINGS	100.0	CY	1.000	17.29	0.00	0.02	0.	1731.
								1729.	0.	2.	0.	1731.
460	C3A02			SITE EXCAVATION								
461	C3A02			STRIP TOP SOIL								
462	C3A02	53	0	2 STRIP COMPACTED FILL	2500.0	CY	0.250	23.44	0.00	2.14	0.	20000.
								14650.	0.	5350.	0.	20000.
464	C3A02	49	0	2 STOCK PILE AND LOAD SEE SUPPORTING INFO	1.0	LS	1.000	20671.00	0.00	59915.00	0.	80586.
								20671.	0.	59915.	0.	80586.
466	C3A02	53	0	2 REMOVE DIRT FROM ROOF	712.0	CY	1.000	23.44	0.00	4.33	0.	19772.
								16689.	0.	3083.	0.	19772.
469	C3A02	45	0	2 EROSION CONTROL-JUTE MESH	400.0	SY	0.010	17.29	0.65	0.00	0.	329.
								69.	260.	0.	0.	329.
470	C3A02	73	0	2 SURVEY-SET GRADE STAKES & MAN CREW	5.0	DAY	32.000	25.69	0.00	710.00	0.	7660.
								4110.	0.	3550.	0.	7660.

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Item	Work Brkdn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd b	c Markup			Factor	Rate	Ext'd Cost				
1260	C3A02			CONSTRUCT RAFFLES								
1261	C3A02	61	0 2	CONCRETE ENDWALLS	60.0 CY	12.000	24.19	128.00	68.00			
								17417.	7680.	4080.	0.	29177.
1262	C3A02	73	0 2	SHORING/FASTEN TO EXISTING/NEW ITEMS	1.0 MKS	200.000	25.69	0.00	68.00			
								5138.	0.	68.	0.	5206.
1277	C3A02			BUILD EXHAUST CHASE/CHIMNEY								
1278	C3A02	61	0 2	CONCRETE ENDWALL- FIRST FLOOR	60.0 CY	12.000	24.19	128.00	68.00			
								17417.	7680.	4080.	0.	29177.
1279	C3A02	61	0 2	REINFORCE ROOF OPENING	10.0 CY	12.000	24.19	128.00	68.00			
								2903.	1280.	680.	0.	4863.
1280	C3A02	61	0 2	CONSTRUCT ROOF VENT STRUCTURE	43.3 CY	12.000	24.19	128.00	68.00			
								12578.	5546.	2946.	0.	21071.
1281	C3A02	61	0 2	VENT CAP AND LOUVERS	1.0 EA	32.000	24.19	5000.00	68.00			
								774.	5000.	68.	0.	5842.
1282	C3A02			NEW SECOND FLOOR SLAB FOR WDA AREA								
1283	C3A02	61	0 2	POUR/FORM/SHORE (12")	160.0 CY	5.400	24.19	158.00	68.00			
								20900.	25280.	10880.	0.	57060.
1284	C3A02	61	0 2	FINISH SLAB	3600.0 SF	0.015	24.19	0.00	0.00			
								1306.	0.	0.	0.	1306.
1285	C3A02		0 2	ADD ELEVATOR STOP @ 2ND FLOOR (SEE QUOTE)	1.0 EA		0.00	50000.00	0.00			
								0.	50000.	0.	0.	50000.
1286	C3A02			SECURITY VESTIBULE								
1287	C3A02	61	0 2	CONCRETE WALLS	6.0 CY	12.000	24.19	128.00	68.00			
								1742.	768.	408.	0.	2918.

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Item	Work Breakdown Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
		Ind b	o c			Factor	Rate	Ext'd Cost		Rate	Ext'd Cost		
1288	C3A02	61	0 2	CONCRETE ROOF (12")	4.0 CY	5.400	24.19	523.	128.00 512.	68.00 272.		0.	1307.
1289	C3A02	53	0 2	EXCAVATE ACCESS ROAD TO PF-4	800.0 CY	1.000	23.44	18752.	0.00 0.	4.33 3464.		0.	22216.
1290	C3A02	53	0 2	PAVE TEMPORARY ACCESS ROAD TO PF-4	54.0 SY	0.050	23.44	63.	5.30 286.	0.40 22.		0.	371.
463	C3A02262	53	0 2	LOAD TRUCKS	4000.0 CY	0.250	23.44	23440.	0.00 0.	10.00 40000.		0.	63440.
C3A02		Category Direct Cost						166536.	104292.	153203.		0.	424031.
439	C3A03	CONCRETE FINISHING											
442	C3A03	61	0 2	FLOOR FINISH	693.0 SF	0.015	24.19	251.	0.00 0.	0.00 0.		0.	251.
443	C3A03	61	0 2	STAIR FINISH	271.0 SF	0.160	24.19	1049.	0.00 0.	0.00 0.		0.	1049.
444	C3A03	EXTERIOR VESTIBULE ON N. SIDE											
445	C3A03	53	0 5	STRUCTURAL EXCAV.	4.0 CY	0.213	23.44	20.	0.00 0.	5.55 22.		0.	42.
447	C3A03	61	0 5	SLAB ON GRADE W/ TURNED DOWN EDGES	2.5 CY	1.050	24.19	63.	100.00 250.	3.66 9.		0.	323.
448	C3A03	61	0 5	FLOOR FINISH	64.0 SF	0.015	24.19	23.	0.00 0.	0.00 0.		0.	23.
449	C3A03	45	0 5	6" COMPACTED GRAVEL FILL	64.0 SF	0.017	17.29	19.	0.40 26.	0.02 1.		0.	46.

(Items with '*' have been adjusted by Job factor and/or Equip factor)

Item	Work Bkdn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd b ID F	o c t tag			Factor	Rate				
450	C3A03	45	0 5	STRUCTURAL FILL	3.5 CY	0.260	17.29	0.00	0.02	0.	16.
248	C3A03			STRUCTURAL CONCRETE							
249	C3A03			REINFORCE INTAKE OPENING							
251	C3A03	85	0 2	STEEL LINTEL - MC18 X42.7	2296.0 LBS	0.010	32.28	0.50	0.10	0.	2119.
252	C3A03	85	0 2	JAMBS - MC18X42.7	2049.6 LBS	0.010	32.28	0.50	0.10	0.	1891.
254	C3A03	45	0 2	GROUT/CONCRETE	2.0 CY	6.600	17.29	125.00	68.00	0.	614.
263	C3A03	73	0 2	LAYDOWN AREA SLABS	39.0 CY	5.400	25.69	158.00	68.00	0.	14224.
264	C3A03			CONSTRUCT INTERIOR WALLS							
265	C3A03	73	0 2	CONCRETE ALLEY (2- 130'X14.75'X1.5')	215.0 CY	12.000	25.69	128.00	68.00	0.	108420.
266	C3A03	73	0 2	CONCRETE THICKEN (2-144'X14.75'X1.5')	236.0 CY	12.000	25.69	128.00	68.00	0.	119010.
267	C3A03	73	0 2	SHORING/FASTEN TO EXISTING/NEW ITEMS	1.5 WKS	200.000	25.69	0.00	68.00	0.	7809.
268	C3A03	73	0 2	CONCRETE SEPARATOR WALL - 1ST FLOOR	125.0 CY	12.000	25.69	128.00	68.00	0.	63035.
269	C3A03	73	0 2	CONCRETE WALLS - INTERIOR - 12"	547.0 CY	12.000	25.69	128.00	68.00	0.	275841.
270	C3A03	73	0 2	FILL IN LOUVER OPENINGS WITH CONCRE TE	10.0 CY	12.000	25.69	128.00	68.00	0.	5043.

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Breakdown Structure	Trade	Job	Contract Markup	Take-Off Item Description	Quantity	Unit	Factor	Rate	Ext'd Cost	Material Rate	Ext'd Cost	Const Equip Rate	Ext'd Cost	Sub Contract Cost	Item Direct Cost
1271	C3A03	61	0	2	JIB CRANE FTG	8.0	CF	2.000	24.19	193.52	90.00	720.00	0.00	0.00	0.00	1107.00
1272	C3A03	61	0	2	STRIP FOOTINGS AT NEW WALL	100.0	CF	2.000	24.19	2419.00	80.00	8000.00	0.00	0.00	0.00	12838.00
1435	C3A03	73	0	2	BASEMENT VESTIBULE WALLS	6.3	CF	12.000	25.69	160.85	128.00	806.00	68.00	428.00	0.00	3177.00
1436	C3A03	73	0	2	SOUTH STAIR WALLS	33.0	CF	12.000	25.69	846.67	128.00	4224.00	68.00	2244.00	0.00	16641.00
1437	C3A03	73	0	2	TUBE XFER WALLS	12.0	CF	12.000	25.69	308.28	128.00	1536.00	68.00	816.00	0.00	6051.00
1438	C3A03	73	0	2	TUBE LOADING	11.0	CF	12.000	25.69	282.59	128.00	1408.00	68.00	748.00	0.00	5547.00
1439	C3A03	73	0	2	IN PROCESS #2	7.0	CF	12.000	25.69	179.83	128.00	896.00	68.00	476.00	0.00	3530.00
1440	C3A03	73	0	2	IN PROCESS #1	7.0	CF	12.000	25.69	179.83	128.00	896.00	68.00	476.00	0.00	3530.00
1498	C3A03				REINFORCEMENT OF EXISTING ROOF	24"x12"	conc.	bms @ 4'-0" O.C								
1499	C3A03	73	0	2	NEW CONC BEAMS (24"x12")-INCREASE DUE TO DIFFICULTY OF WORK	100.0	CF	24.000	25.69	2569.00	175.00	17500.00	75.00	7500.00	0.00	86656.00
1500	C3A03	45	0	2	INSTALL SHEAR STUDS & CUT HOLES IN ROOF	25.0	BEAM	16.000	17.29	432.25	500.00	12500.00	25.00	625.00	0.00	20041.00
1501	C3A03	73	0	2	CONCRETE TOPPING	140.0	CF	2.500	25.69	3596.60	100.00	14000.00	68.00	9520.00	0.00	32512.00
1502	C3A03	77	0	2	SINGLE PLY ROOFING	5500.0	SF	0.210	21.14	11622.00	1.30	7150.00	0.00	0.00	0.00	31567.00

(Items with 'B' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Brkdn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd b 30 F	c Markup t Tag			Factor	Rate Ext'd Cost				
1503	C3A03	77	0 2	INSULATION (1" TK)	5500.0 SF	0.010	21.14 1163.	0.36 1980.	0.00 0.	0.	3143.
1504	C3A03	77	0 2	FLASHING	400.0 LF	0.500	21.14 4228.	6.00 2400.	0.00 0.	0.	6628.
1505	C3A03	61	0 2	FINISH CONCRETE	5500.0 SF	0.015	24.19 1996.	0.00 0.	0.10 550.	0.	2546.
1512	C3A03		0 2	MATERIALS TESTING	1.0 LOT		0.00 0.	0.00 0.	0.00 0.	30000.	30000.
C3A03		Category Direct Cost					503584.	227901.	103785.	30000.	865270.
446	C3A04			CONCRETE MASONRY							
451	C3A04	61	0 5	8" CMU WALLS	2800.0 SF	0.130	24.19 8805.	2.50 7000.	0.60 1680.	0.	17485.
C3A04		Category Direct Cost					8805.	7000.	1680.	0.	17485.
745	C3A05			METALS							
748	C3A05	85	0 2	METAL HANDRAIL	238.0 LF	0.250	32.28 1921.	12.50 2975.	0.60 143.	0.	5038.
749	C3A05			VESTIBULE AT W. SIDE EXTERIOR							
750	C3A05	85	0 2	STEEL JOIST	0.1 TON	8.000	32.28 26.	655.00 66.	74.00 7.	0.	99.
1246	C3A05	45	0 2	REMOVE 3 HANGING PLATFORM	517.0 SF	0.022	17.29 197.	0.00 0.	0.00 0.	0.	197.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Breakdown Structure 1	J 1rd ID	A b F	c c Markup	Take-Off Tag Description	Quantity Unit	Labor			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
							Factor	Rate	Ext'd Cost				
1274	C3A05	45	0	2	STEEL PRE-FAB STAIRS {QUOTE}	2.0 EA			0.00	21400.00	0.00		
1441	C3A05	85	0	2	EXHAUST BAFFLES	3700.0 LBS	0.020	32.28	0.	42800.	0.	0.	42800.
1442	C3A05	85	0	2	SECURITY GRILLES ON INTAKE & EXHAUST STACK (MAY ONLY)	90000.0 LBS			0.00	0.50	0.00	0.	4609.
1443	C3A05	85	0	2	FABRICATE GRILLES	90000.0 LBS	0.050	32.28	0.05	4500.	0.25		
1444	C3A05	85	0	2	INSTALL GRILLES	2.0 EA	32.000	32.28	200.00	0.00	0.00	0.	172260.
1445	C3A05	53	0	2	HOIST GRILLES	2.0 EA	8.000	23.44	0.00	400.	2800.00	0.	2466.
1447	C3A05	85	0	2	SHIELDING SHROUD {PLATE 1" & AIRLOCK}	18375.0 LBS	0.020	32.28	0.40	0.	0.10	0.	5975.
								11863.	7350.	1838.	0.		21050.
	C3A05				Category Direct Cost				164096.	104941.	30458.	0.	299494.
738	C3A06				WOOD AND PLASTICS								
742	C3A06	73	0	2	BASE CABINETS	12.0 LF	0.750	25.69	85.00	0.00	0.	0.	1251.
743	C3A06	73	0	2	COUNTER TOP	12.0 LF	0.350	25.69	8.30	0.00	0.	0.	207.
								108.	100.	0.	0.		
	C3A06				Category Direct Cost			339.	1120.	0.	0.		1459.

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Item	Work Brkdwn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd b	o c			Factor	Rate Ext'd Cost				
751	C3A07			ROOFING AND SIDING							
760	C3A07	77	0 2	SINGLE PLY ROOFING	8250.0 SF	0.210	21.14 36625.	1.30 10725.	0.00	0.	47350.
761	C3A07	77	0 2	SINGLE PLY ROOFING	64.0 SF	0.210	21.14 284.	1.30 83.	0.00	0.	367.
C3A07 Category Direct Cost							36909.	10808.	0.	0.	47717.
765	C3A08			DOORS WINDOWS AND GLASS							
766	C3A08	73	0 2	DOUBLE DOOR HARDWARE	8.0 EA	1.100	25.69 226.	225.00 1800.	0.00	0.	2026.
768	C3A08	85	0 2	ALARMED VAULT DOOR CLASS V (SINGLE)	7.0 EA	58.000	32.28 13106.	12278.00 85946.	0.00	0.	99052.
769	C3A08	85	0 2	CLASS V VAULT DOUBLE /INCL SHIPPING	2.0 EA	64.000	32.28 4132.	18603.00 37206.	0.00	0.	41338.
770	C3A08	85	0 2	SECURITY WINDOWS	4.0 EA	17.300	32.28 2234.	2350.00 9400.	0.00	0.	11634.
771	C3A08	73	0 2	DOORS 3X7 METAL DOORS	26.0 EA	1.200	25.69 802.	210.00 5460.	0.00	0.	6262.
772	C3A08	85	0 2	FRAME FOR ROLL UP DOORS	2.0 EA	8.000	32.28 516.	550.00 1100.	0.00	0.	1616.
773	C3A08	73	0 2	DOOR FRAMES FOR 3X7 DOORS	26.0 EA	1.200	25.69 802.	70.00 1820.	0.00	0.	2622.
774	C3A08	85	0 2	ROLL UP DOORS 10X10 MOTOR OPERATED AND BOTTOM BAR	2.0 EA	22.000	32.28 1420.	2200.00 4400.	0.00	0.	5820.

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Item	Work Brkdw Structure 1	J Trd ID	A b F	o c	Entrect t Markup Tag	Take-Off Item Description	Quantity	Unit	L a b o r		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Entrect Cost	Item Direct Cost
									Factor	Rate Ext'd Cost				
775	C3A08	73	0	2	DOUBLE DOORS 8X7	8.0	EA	1.200	25.69	420.00	0.00			
							EA		247.	3360.	0.	0.		3607.
776	C3A08	73	0	2	DOUBLE DOOR FRAMES 8X7	8.0	EA	1.200	25.69	140.00	0.00	0.	0.	
							EA		247.	1120.	0.	0.		1367.
777	C3A08	73	0	2	SINGLE DOOR HARDWARE	26.0	EA	1.100	25.69	225.00	0.00	0.	0.	
							EA		735.	5850.	0.	0.		6585.
778	C3A08	85	0	2	ROLL UP DOOR HEADER	2.0	EA	8.000	32.28	610.00	18.00	36.	0.	
							EA		516.	1220.	0.	0.		1772.
779	C3A08	85	0	2	TUBE XFER CASE ACCESS HATCHES 24X36 S/S	20.0	EA	1.000	32.28	330.00	0.00	0.	0.	
							EA		646.	6600.	0.	0.		7246.
800	C3A08	73	0	2	RELOCATE EXISTING O.H. DOORS	2.0	EA	60.000	25.69	61.00	0.00	0.	0.	
							EA		3083.	122.	0.	0.		3205.
C3A08		Category Direct Cost								28710.	163404.	36.	0.	194150.
781	C3A09	FINISHES												
785	C3A09	57	0	2	PAINT HANDRAIL	2000.0	LF	0.014	23.26	0.30	0.00	0.	0.	
							LF		651.	600.	0.	0.		1251.
790	C3A09	57	0	5	PAINT VESTIBULES	1780.0	SF	0.005	23.26	0.20	0.00	0.	0.	
							SF		207.	356.	0.	0.		563.
791	C3A09	FINISHES FOR INTERIOR												
793	C3A09	57	0	2	PAINT EXTERIOR SECURITY VESTIBULE	256.0	SF	0.060	23.26	0.20	0.00	0.	0.	
							SF		357.	51.	0.	0.		408.
805	C3A09	57	0	2	PLASTIC PAINT (QUOTE)	1.0	LOT	1.000	0.00	0.00	0.00	0.	596556.	596556.
							LOT		0.	0.	0.	0.		

[Items with *#* have been adjusted by Job Factor and/or Equip Factor]

Items with "P" have been adjusted by Job Factor and/or Equip Factor.																	
Item	Work Breakdown Structure 1	Job ID	A B F	C D E	Contract Markup Tag	Take-Off Item Description	Quantity Unit	Labor			Material		Const Equip		Sub Contract Cost	Item Direct Cost	
								Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost			
814	C3A09	73	0	2		CEILING SUSPENSION SYSTEM	4945.0 SF	0.150	25.69	19056.	1.24	6132.	0.	0.		25187.	
815	C3A09	61	0	2		EXTERIOR INSULATED FINISH SYSTEM	2000.0 SF	0.163	24.19	7806.	1.53	3060.	0.15	300.	0.	11246.	
C3A09									Category Direct Cost								
									28157.				10199.		300.	596556.	635212.
799	C3A10	SPECIALTIES															
801	C3A10	73	0	5		SIGNAGE ALLOWANCE	1.0 LOT	1.000	7000.00	2000.00	2000.00	0.00	0.	0.		9000.	
802	C3A10	73	0	5		METAL LOCKERS	36.0 EA	0.400	25.69	70.00	70.00	0.00	0.	0.		2890.	
803	C3A10	73	0	5		BENCH, LOCKER	20.0 LF	0.090	25.69	46.	20.00	400.	0.00	0.	0.	446.	
804	C3A10	73	0	5		RESTROOM ACCESSORY	3.0 EA	1.500	25.69	116.	275.00	825.	0.00	0.	0.	941.	
894	C3A10		0	5		TOILET COMPARTMENTS	5.0 EA	4.200	25.69	539.	365.00	1825.	0.00	0.	0.	2364.	
C3A10									Category Direct Cost								
									8071.				7570.		0.	0.	15641.
14	C3A15	MECHANICAL															
15	C3A15	89	0	2		OUTSIDE AIR FAN (FS-1, FS-2) 3500CFM 7-1/2 HP	2.0 EA	14.000	33.79	946.	5075.00	10150.	0.00	0.	0.	11096.	
16	C3A15	89	0	2		RESTROOM EXHAUST FAN (600 CFM)	3.0 EA	4.000	33.79	405.	268.00	804.	0.00	0.	0.	1209.	

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Item	Work Bkdn Structure 1	Job ID	A Contract b Markup c Tag	Take-Off Item Description	Quantity Unit	Labor		Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
						Factor	Rate Ext'd Cost		Rate Ext'd Cost	Rate Ext'd Cost		
17	C3A15	89	0 2	OUTSIDE AIR LOUVERS	10.0 SF	0.300	33.79 101.	37.25 373.	0.00 0.	0.	0.	474.
18	C3A15	89	0 2	AIR HANDLING UNIT (2500 CFM)	1.0 EA	30.000	33.79 1014.	4500.00 4500.	0.00 0.	0.	0.	5514.
19	C3A15	89	0 2	18 X 18 SUPPLY DIFFUSER	38.0 EA	1.000	33.79 1284.	105.00 3990.	0.00 0.	0.	0.	5274.
20	C3A15	89	0 2	24 X 24 SUPPLY DIFFUSER	16.0 EA	1.500	33.79 811.	167.00 2672.	0.00 0.	0.	0.	3483.
21	C3A15	89	0 2	12 X 12 SUPPLY DIFFUSER	4.0 EA	1.000	33.79 135.	57.00 228.	0.00 0.	0.	0.	363.
22	C3A15	89	0 2	24 X 24 EXHAUST GRILL	8.0 EA	0.500	33.79 135.	67.00 536.	0.00 0.	0.	0.	671.
23	C3A15	89	0 2	RECIRC FANS (FR-1, FR-2 19,400 CFM, 40 HP) QUOTE	2.0 EA	24.000	33.79 1622.	18000.00 36000.	0.00 0.	0.	0.	37622.
24	C3A15	89	0 2	24 X 24 RETURN GRILL	26.0 EA	0.600	33.79 527.	39.00 1014.	0.00 0.	0.	0.	1541.
25	C3A15	89	0 2	FANS (FE-4, FS-3, 3H P, 1994)	2.0 EA	10.000	33.79 676.	3150.00 6300.	0.00 0.	0.	0.	6976.
26	C3A15	89	0 2	OPPOSED BLADE DAMPER 12 X 12	45.0 EA	0.500	33.79 760.	28.00 1260.	0.00 0.	0.	0.	2020.
27	C3A15	89	0 2	DAMPER ACTUATOR 12 X 12	25.0 EA	0.800	33.79 676.	112.00 2800.	0.00 0.	0.	0.	3476.
28	C3A15	89	0 2	GALVANIZED DUCTWORK + 5% FOR FITTINGS	23000.0 LBS	0.110	33.79 85489.	0.40 9200.	0.00 0.	0.	0.	94689.
29	C3A15	89	0 2	STAINLESS DUCTWORK	2000.0 LBS	0.120	33.79 8110.	1.50 3000.	0.00 0.	0.	0.	11110.

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Item	Work Bkdn Structure 1	J A		Take-Off Item Description	Quantity Unit	Labor		Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
		Trd b ID F	a c o Markup t Tag			Factor	Rate Ext'd Cost		Rate Ext'd Cost	Rate Ext'd Cost		
30	C3A15	89	0 2	TEST & BALANCE PRICE INCLUDES EQUIPMENT TESTING	245.0 EA	1.600	33.79 13246.	0.00 0.	0.00 0.	0.00 0.	0.	13246.
31	C3A15	69	0 2	3" BLACK STEEL PIPE	770.0 LF	0.450	33.56 11629.	7.80 6006.	0.00 0.	0.00 0.	0.	17635.
32	C3A15	69	0 2	2" BLACK STEEL PIPE	760.0 LF	0.400	33.56 10202.	3.75 2850.	0.00 0.	0.00 0.	0.	13052.
33	C3A15	69	0 2	1" BLACK STEEL PIPE	30.0 LF	0.180	33.56 181.	2.00 60.	0.00 0.	0.00 0.	0.	241.
34	C3A15	69	0 0	3 WAY VALVES	1.0 LOT	7.000	33.56 235.	2035.00 2035.	0.00 0.	0.00 0.	0.	2270.
35	C3A15	89	0 2	EXHAUST FAN (FE-3, 3/4 HP, 480 CFM)	1.0 EA	7.000	33.79 237.	1950.00 1950.	0.00 0.	0.00 0.	0.	2187.
36	C3A15	69	0 2	CHILLED WATER COIL	2.0 EA	32.000	33.56 2148.	1845.00 3690.	0.00 0.	0.00 0.	0.	5838.
37	C3A15	69	0 2	PRE-HEAT COIL	1.0 EA	8.000	33.56 268.	530.00 530.	0.00 0.	0.00 0.	0.	798.
38	C3A15	69	0 2	TERMINAL HEATING COILS	28.0 EA	6.500	33.56 6108.	510.00 14280.	0.00 0.	0.00 0.	0.	20388.
39	C3A15	69	0 2	MISC VALVES & FITTINGS FOR TERMINA L HEATING COILS	28.0 EA		0.00 0.	120.00 3360.	0.00 0.	0.00 0.	0.	3360.
68	C3A15		0 2	HEATING PIPE INSULATION	1.0 LOT	160.000	25.69 4110.	5000.00 5000.	0.00 0.	0.00 0.	0.	9110.
84	C3A15		0 2	BACKFLOW PREVENTER	2.0 EA	0.600	33.56 40.	150.00 300.	0.00 0.	0.00 0.	0.	340.

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdwn Structure 1	Trd ID	A b F	c Contract Markup t	Take-Off Item Description	Quantity Unit	Labor		Material		Const Equip		Sub Contract Cost	Item Direct Cost
							Factor	Rate Ext'd Cost	Rate Ext'd Cost	Rate Ext'd Cost	Rate Ext'd Cost			
90	C3A15	69	0	2	EXHAUST FANS (FE-1, FE-2 3,417CFM 7-1/2 HP)	2.0 EA	14.000	33.56 940.	5075.00 10150.	0.00	0.	0.		11090.
92	C3A15	89	0	2	OUTSIDE/EXHAUST AIR 2X2 THREE STAGE PLENUM (SEE BACK UP)	4.0 EA	30.000	33.79 4055.	68640.00 274560.	0.00	0.	0.		278615.
93	C3A15	89	0	2	RETURN AIR PLUMUM 5X4 THREE STAGE PLEN UM (SEE BACK UP)	2.0 EA	86.000	33.79 5812.	189360.00 378720.	0.00	0.	0.		384532.
94	C3A15	89	0	2	HEPA FOR PACK/UNPACK AREA & CHANGE ROOM W/ENCLOSURE	3.0 EA	8.000	33.79 811.	8330.00 24990.	0.00	0.	0.		25801.
796	C3A15	69	0	2	CHEMICAL FEEDER	2.0 EA	3.000	29.56 177.	300.00 600.	0.00	0.	0.		777.
797	C3A15	69	0	2	3/4" 3-WAY VALVE FOR TERMINAL HEATING COI LS	30.0 EA	0.500	29.56 443.	119.00 3570.	0.00	0.	0.		4013.
798	C3A15	69	0	2	1-1/2" 3-WAY VALVE	1.0 EA	0.740	29.56 22.	220.00 220.	0.00	0.	0.		242.
809	C3A15	69	0	2	1" COPPER PIPES (INCLUDING FITTINGS)	1080.0 LF	0.160	33.56 5799.	2.56 2765.	0.00	0.	0.		8564.
810	C3A15	69	0	2	3/4" COPPER PIPES (INCLUDING FITTINGS)	1540.0 LF	0.140	33.56 7236.	2.02 3111.	0.00	0.	0.		10346.
811	C3A15	45	0	2	1/2" COPPER PIPES (INCLUDING FITTINGS)	570.0 LF	0.130	33.56 2497.	1.28 730.	0.00	0.	0.		3216.
826	C3A15	69	0	2	3" BLACK STEEL	840.0 LF	0.480	33.56 13531.	9.15 7686.	0.00	0.	0.		21217.

[Items with 'B' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdn Structure 1	J Tid ID	A b F	C c t	Entret Mark t	Take-Off Item Tag Description	Quantity	Unit	L a b o r		Material Rate	Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Entret Cost	Item Direct Cost
									Factor	Rate					
830	C3A15	69	0	2	1	1/2" COPPER PIPE (INCLUDING FITTINGS)	240.0	LF	0.200	33.56	4.03	1611.	0.00	0.	2578.
831	C3A15	69	0	2	4"	SANITARY SEWER CAST IRON PIPE	240.0	LF	0.330	33.56	5.10	2658.	0.00	0.	3882.
832	C3A15	69	0	2	2"	SANITARY SEWER CAST IRON PIPE	140.0	LF	0.320	33.56	4.13	1503.	0.00	0.	2082.
833	C3A15					PLUMBING FIXTURES									
834	C3A15	69	0	2		WALL HUNG FLUSH VA. WATER CLOSETS	5.0	EA	3.920	33.56	705.00	658.	0.00	0.	4183.
836	C3A15	69	0	2		WALL HUNG LAVATORIES W/ FAUCET	4.5	EA	6.000	33.56	220.00	906.	0.00	0.	1896.
837	C3A15	69	0	2		JANITOR SINKS	2.0	EA	4.720	33.56	465.00	317.	0.00	0.	1247.
838	C3A15	69	0	2		SHOWER STALL 1 PIECE	5.0	EA	7.500	33.56	462.00	1259.	0.00	0.	3569.
839	C3A15	69	0	2		HOSE BIBBS	2.0	EA	0.740	33.56	125.00	50.	0.00	0.	300.
845	C3A15					MONITORING WIRE	2000.0	LF		0.00	7.00	14000.	0.00	0.	14000.
846	C3A15					MONITORING PANEL	1.0	EA		0.00	2500.00	0.	0.00	0.	2500.
848	C3A15					HVAC CONTROLS	1.0	LOT		0.00	0.00	0.	0.00	0.	115000.
920	C3A15					GAS PIPING IN BUILDING									
921	C3A15	69	0	2	2"	BLACK STEEL PIPE	60.0	LF	0.250	33.56	4.05	503.	0.00	0.	746.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdwn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material		Const Equip		Sub Contract Cost	Item Direct Cost
		Trd ID	o c b F Markup t Tag			Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
922	C3A15	69	0	2 1-1/2" BLACK STEEL PIPE	80.0 LF	0.220	33.56	591.	3.05	244.	0.00	0.	0.	835.
923	C3A15	69	0	2 1" BLACK STEEL PIPE	40.0 LF	0.200	33.56	268.	2.18	87.	0.00	0.	0.	356.
924	C3A15		0	2 MISC VALVES AND FITT INGS	1.0 LOT		0.00	0.	200.00	200.	0.00	0.	0.	200.
931	C3A15			HEATING HOT WATER PIPING										
932	C3A15	69	0	2 3" COPPER PIPE TYPE L	260.0 LF	0.300	33.56	2618.	10.70	2782.	0.00	0.	0.	5400.
933	C3A15	69	0	2 2" COPPER PIPE TYPE L	120.0 LF	0.200	33.56	805.	5.30	636.	0.00	0.	0.	1441.
934	C3A15	69	0	2 1" COPPER PIPE TYPE L	360.0 LF	0.150	33.56	1812.	3.45	1242.	0.00	0.	0.	3054.
935	C3A15	69	0	2 3/4" COPPER PIPE TYP E L	460.0 LF	0.120	33.56	1853.	1.57	722.	0.00	0.	0.	2575.
936	C3A15		0	2 MISC VALVES AND FITT INGS (10% OF TOTAL LAB. AND MAT. COST)	1.0 LOT		0.00	0.	1200.00	1200.	0.00	0.	0.	1200.
937	C3A15			HEATING WATER PIPE INSULATION										
938	C3A15	81	0	2 3" FIBERGLASS INSULA TION	260.0 LF	0.270	25.88	1817.	6.80	1768.	0.00	0.	0.	3585.
939	C3A15	81	0	2 2" FIBERGLASS INSULA TION	120.0 LF	0.250	25.88	776.	6.20	744.	0.00	0.	0.	1520.
940	C3A15	81	0	2 1" FIBERGLASS INSULA TION	360.0 LF	0.230	25.88	2143.	5.75	2070.	0.00	0.	0.	4213.

(Items with 'M' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Bkdn Structure	Trd ID	J b	A c	Entret Markup	Take-Off Tag	Item Description	Quantity	Unit	Labor		Material		Const Equip		Sub Contract	Item Direct
										Factor	Rate Ext'd Cost	Rate Ext'd Cost	Rate Ext'd Cost	Rate Ext'd Cost	Cost		
941	C3A15	81	0	2	3/4"		FIBERGLASS INSU LATION	440.0	LF	0.210	25.88 2391.	5.25 2310.	0.00	0.	0.		4701.
942	C3A15						CHILLED WATER PIPING										
943	C3A15	69	0	2	4"		COPPER PIPE TYPE L	260.0	LF	0.420	33.56 3665.	17.10 4446.	0.00	0.	0.		8111.
944	C3A15	69	0	2	3"		COPPER PIPE TYPE L	180.0	LF	0.300	33.56 1812.	10.70 1926.	0.00	0.	0.		3738.
945	C3A15		0	2	MISC		VALVES & FITTING GS (10% OF TOT. LAB & MAT)	1.0	LOT		0.00 0.	1150.00 1150.	0.00	0.	0.		1150.
946	C3A15	81	0	2	4"		CHILLED WATER PIPING INSULATION	260.0	LF	0.333	25.88 2241.	11.05 2873.	0.00	0.	0.		5114.
947	C3A15	81	0	2	3"		CHILLED WATER PIPING INSULATION	180.0	LF	0.286	25.88 1332.	8.20 1476.	0.00	0.	0.		2808.
951	C3A15						POTABLE HOT & COLD WATER PIPING										
952	C3A15	69	0	2	1-1/4"		COPPER PIPE TYPE L	380.0	LF	0.140	33.56 1785.	2.86 1087.	0.00	0.	0.		2872.
953	C3A15	69	0	2	1"		COPPER PIPE TYPE L	260.0	LF	0.120	33.56 967.	2.10 504.	0.00	0.	0.		1471.
954	C3A15	69	0	2	3/4"		COPPER PIPE TYPE L	60.0	LF	0.110	33.56 221.	1.57 94.	0.00	0.	0.		316.
955	C3A15	69	0	2	1/2"		COPPER PIPE TYPE L	140.0	LF	0.100	33.56 470.	1.31 183.	0.00	0.	0.		653.
956	C3A15		0	2	MISC		VALVES & FITTING GS (10% OF TOT LAB. & MAT.)	1.0	LOT		0.00 0.	500.00 500.	0.00	0.	0.		500.

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	Labor		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Entret Cost	Item Direct Cost
		Trd ID	o c F t			Factor	Rate				
962	C3A15			SOIL WASTE AND VENT PIPING IN BLDG							
963	C3A15	69	0	2 4" CAST IRON PIPE	360.0 LF	0.280	33.56 3383.	7.85 2826.	0.00 0.	0.	6209.
964	C3A15	69	0	2 3" CAST IRON PIPE	220.0 LF	0.260	33.56 1920.	6.20 1364.	0.00 0.	0.	3284.
965	C3A15	69	0	2 2" CAST IRON PIPE	140.0 LF	0.240	33.56 1128.	4.70 658.	0.00 0.	0.	1786.
966	C3A15	69	0	2 1-1/2" CAST IRON PIP	260.0 LF	0.230	33.56 2007.	4.69 1219.	0.00 0.	0.	3226.
967	C3A15		0	2 MISC VALVES & FITTING GS (10% OF TOT LAB. & MAT.)	1.0 LOT		0.00 0.	1375.00 1375.	0.00 0.	0.	1375.
968	C3A15			DRAIN PIPING AND INSULATION							
970	C3A15	69	0	2 3/4" COPPER PIPE	220.0 LF	0.110	33.56 812.	1.57 345.	0.00 0.	0.	1158.
971	C3A15	81	0	2 3/4" INSULATION	220.0 LF	0.089	25.88 567.	2.24 493.	0.00 0.	0.	1000.
976	C3A15			ROOF DRAINS & OVERFLOW PIPING FOR PENTHOUSE							
977	C3A15	69	0	2 4" STEEL PIPING	120.0 LF	0.450	33.56 1812.	9.45 1134.	0.00 0.	0.	2946.
978	C3A15		0	2 MISC FITTINGS (10% OF TOTAL LAB. & MAT)	1.0 LOT		0.00 0.	280.00 280.	0.00 0.	0.	280.
979	C3A15	69	0	2 ROOF DRAINS	2.0 EA	1.500	33.56 101.	65.00 130.	0.00 0.	0.	231.
985	C3A15			BREATHING AIR SYSTEM							

(Items with '#' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Breakdown Structure	Job ID	A	Contract Markup	Take-Off Item Description	Quantity	Unit	Labor		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
								Factor	Rate Ext'd Cost				
986	C3A15	69	0	2	REGULATOR FROM BOTTLE MANIFOLD TO 150 PSI	1.0	EA	1.000	33.56	165.00	0.00	0.	199.
987	C3A15	69	0	2	REGULATOR FROM 150 PSI TO 100 PSI	4.0	EA	1.000	33.56	165.00	0.00	0.	794.
988	C3A15	69	0	2	REGULATOR FROM 100 PSI TO 15 PSI	16.0	EA	1.000	33.56	165.00	0.00	0.	3177.
989	C3A15	69	0	2	BOTTLE MANIFOLD SYSTEM	1.0	EA	8.000	33.56	2500.00	0.00	0.	2768.
990	C3A15	69	0	2	AIR STATION MANIFOLD SYSTEM	4.0	EA	4.000	33.56	500.00	0.00	0.	2537.
991	C3A15		0	2	MISC VALVES AND FITTINGS	1.0	LOT		0.00	1500.00	0.00	0.	1500.
996	C3A15				AIR COMPRESSOR SYSTEM								
997	C3A15	69	0	2	OIL FREE AIR COMPRESSOR (QUOTE)	2.0	EA	24.000	33.56	36230.00	0.00	0.	74071.
998	C3A15	69	0	2	DESICCANT AIR DRYER (QUOTE)	2.0	EA	8.000	33.56	5124.00	0.00	0.	10785.
999	C3A15	69	0	2	PRE-FILTER (QUOTE)	2.0	EA	4.000	33.56	726.00	0.00	0.	1720.
1000	C3A15	69	0	2	AFTER FILTER (QUOTE)	2.0	EA	4.000	33.56	424.00	0.00	0.	1116.
1001	C3A15	69	0	2	3/4" COPPER PIPING	360.0	LF	0.110	33.56	1.57	0.00	0.	1894.
1002	C3A15	69	0	2	1/2" COPPER PIPING	260.0	LF	0.100	33.56	1.31	0.00	0.	1213.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	Labor			Material Rate Ext'd Cost	Const Equip		Sub Contract Cost	Item Direct Cost
		Ord B	c Entret			Factor	Rate	Ext'd Cost		Rate	Ext'd Cost		
007	C3A15			VACUUM PUMP SYSTEM									
008	C3A15	69	0 2	VACUUM PUMP 50 HP (QUOTE)	2.0 EA	24.000	33.56	1611.	23000.00 46000.	0.00	0.	0.	47611.
009	C3A15	69	0 2	LABOR TO REMOVE AND RELOCATE EXISTING VACUUM PUMP	1.0 EA	40.000	33.56	1342.	200.00 200.	0.00	0.	0.	1542.
024	C3A15			RADIOACTIVE LIQUID WASTE LINE									
025	C3A15	69	0 2	4" DOUBLE CONTAINMENT RAD/ACID WASTE PIPE	260.0 LF	0.600	33.56	5235.	35.00 9100.	0.00	0.	0.	14335.
026	C3A15	45	0 2	DEMOL EXISTING CONCRETE	200.0 SF	0.471	17.29	1629.	0.00	1.74	348.	0.	1977.
027	C3A15	53	0 2	TRENCHING	322.0 CF	0.200	23.44	1510.	0.00	1.74	560.	0.	2070.
028	C3A15	45	0 2	SAND BED FOR PIPING	12.4 CY	0.030	17.29	6.	0.03	6.00	74.	0.	81.
029	C3A15		0 2	REPLACE CONCRETE IN TRENCH CUT (INSTALLED)	4.2 CY		0.00	0.	200.00 840.	6.00	25.	0.	865.
030	C3A15	69	0 2	DOUBLE CONTAINED 90 DEG ELBOW	6.0 EA	0.200	33.56	40.	193.00 1158.	0.00	0.	0.	1198.
031	C3A15	69	0 2	DOUBLE CONTAINED 45 DEG ELBOW	4.0 EA	0.200	33.56	27.	189.00 756.	0.00	0.	0.	783.
032	C3A15	69	0 2	DOUBLE CONTAINED P-TRAP	5.0 EA	0.400	33.56	67.	650.00 3250.	0.00	0.	0.	3317.
033	C3A15	69	0 2	DOUBLE CONTAINED SAN TEE	4.0 EA	0.200	33.56	27.	591.00 2364.	0.00	0.	0.	2391.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd b ID F	a e Contract c Markup t Tag			Factor	Rate Ext'd Cost				
034	C3A15	69	0 2	DOUBLE CONTAINED CLEANOUT	3.0 EA	0.300	33.56 30.	245.00 735.	0.00 0.	0.	765.
036	C3A15			SLOTTED FUME HOOD 1H PACK/UNPACK AREA							
037	C3A15	89	0 2	FUME HOOD W/ 1X1 HEPA FILTER	1.0 EA	16.000	33.79 541.	10000.00 10000.	0.00 0.	0.	10541.
038	C3A15	89	0 2	SS SHEET METAL HEPA FILTER ENCLOSURE	3200.0 LBS	0.120	33.79 12975.	1.75 5600.	0.00 0.	0.	18575.
043	C3A15			CRANE FOR SETTING EQUIPMENT							
044	C3A15	53	0 2	CRANE FOR SETTING EQUIPMENT	5.0 DAYS	8.000	23.44 938.	0.00 0.	600.00 3000.	0.	3938.
050	C3A15	45	0 2	CLEANUP 2 LABORERS 1HR/DAY FOR 14 MONTHS	1.0 LOTS	560.000	17.29 9682.	0.00 0.	600.00 600.	0.	10282.
051	C3A15			UTILITY BUILDING EQUIPMENT							
052	C3A15	69	0 2	CHILLER 60 TON	2.0 EA	200.000	33.56 13424.	35000.00 70000.	0.00 0.	0.	83424.
053	C3A15	69	0 2	CHILLED WATER PUMPS	3.0 EA	7.500	33.56 755.	975.00 2925.	0.00 0.	0.	3680.
054	C3A15	69	0 2	AIR SEPARATOR	1.0 EA	2.000	33.56 67.	1234.00 1234.	0.00 0.	0.	1301.
055	C3A15	69	0 2	EXPANSION TANK	1.0 EA	2.400	33.56 81.	1286.00 1286.	0.00 0.	0.	1367.
062	C3A15	69	0 2	BOILER (900 MBH)	2.0 EA	60.000	33.56 4027.	11000.00 22000.	0.00 0.	0.	26027.
063	C3A15	69	0 2	BOILER PUMPS 1-1/2HP (32 GPM)	3.0 EA	6.000	33.56 604.	895.00 2685.	0.00 0.	0.	3289.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Breakdown Structure	J 1 ID	A 0 b F	C c Markup	Take-Off Tag	Item Description	Quantity	Unit	Labor			Material		Const Equip		Sub Dntret Cost	Item Direct Cost
									Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1064	C3A15	69	0	2	AIR SEPERATOR	1.0	EA	2.000	33.56	67.	1234.00	1234.	0.00	0.	0.	1301.	
1065	C3A15	69	0	2	EXPANSION TANK	1.0	EA	2.400	33.56	81.	1286.00	1286.	0.00	0.	0.	1367.	
1066	C3A15	89	0	2	BOILER FLUE	2.0	EA	10.000	33.79	676.	500.00	1000.	0.00	0.	0.	1676.	
1067	C3A15	89	0	2	WATER HEATER FLUE	1.0	EA	5.000	33.79	169.	250.00	250.	0.00	0.	0.	419.	
1071	C3A15				UNIT HEATERS												
1072	C3A15	69	0	2	UTILITY BUILDING ELECTRIC UNIT HEATER	1.0	EA	8.000	33.56	268.	470.00	470.	0.00	0.	0.	738.	
1073	C3A15	69	0	2	MECHANICAL PENTHOUSE UNIT HEATER	1.0	EA	4.000	33.56	134.	380.00	380.	0.00	0.	0.	514.	
1074	C3A15	69	0	2	TRUCK LOADING AREA UNIT HEATER	1.0	EA	4.000	33.56	134.	380.00	380.	0.00	0.	0.	514.	
1075	C3A15	89	0	2	UTILITY BLDG VENTILATION FAN	1.0	EA	5.000	33.79	169.	420.00	420.	0.00	0.	0.	589.	
1076	C3A15	89	0	2	UTILITY BLDG INTAKE LOUVER WITH FILTERS W/ DAMPER	6.0	SF	0.400	33.79	81.	26.50	159.	0.00	0.	0.	240.	
1077	C3A15	89	0	2	MOTOR FOR DAMPER	1.0	EA	0.571	33.79	19.	300.00	300.	0.00	0.	0.	319.	
1093	C3A15				FIRE PROTECTION SYSTEM												
1094	C3A15	69	0	2	PREACTION SPRINK. SYS. COVER 90% OF BLDG (INSTALLED)	23140.0	SF		0.00	0.	0.00	0.	0.00	0.	47437.	47437.	

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdw Structure 1	Trd ID	J o b F	A c t i v e T a g	Entret c Mark up Tag	Take-Off Item Description	Quantity Unit	Labor			Material		Const Equip		Sub Entret Cost	Item Direct Cost
								Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1095	C3A15	69	0	2		WET SPRINKLER SYS. COVER 10% OF BLDG (INSTALLED)	2572.0 SF			0.00	0.00	0.00	0.00	0.00	4501.	4501.
1096	C3A15	69	0	2		DELUGE SYSTEM FOR RECIRC HEPA FILTER UNITS	2.0 UNIT			0.00	0.00	0.00	0.00	0.00	52000.	52000.
1097	C3A15	69	0	2		SPRINKLER SYSTEM RISERS (INSTALLED)	6.0 EA			0.00	0.00	0.00	0.00	0.00	36000.	36000.
1459	C3A15					COMPRESSED AIR PIPING										
1460	C3A15	69	0	2		1-1/2" BLACK STEEL	400.0 LF	0.220	33.56	2953.	5.55	2220.	0.00	0.00	0.	5173.
1461	C3A15	69	0	2		1-1/4" BLACK STEEL	100.0 LF	0.200	33.56	671.	3.13	313.	0.00	0.00	0.	984.
1462	C3A15	69	0	2		1" BLACK STEEL	100.0 LF	0.180	33.56	604.	2.49	249.	0.00	0.00	0.	853.
1463	C3A15	69	0	2		3/4" BLACK STEEL	100.0 LF	0.140	33.56	470.	1.73	173.	0.00	0.00	0.	643.
1464	C3A15	69	0	2		1/2" BLACK STEEL	100.0 LF	0.130	33.56	436.	1.50	150.	0.00	0.00	0.	586.
1465	C3A15					NISC VALVES AND FITTINGS (10% OF TOT. LAB. AND MAT.)	1.0 LOT		0.00	0.	850.00	850.	0.00	0.00	0.	850.
1518	C3A15					DEIONIZED WATER SYSTEM FOR NDA LAB.										
1519	C3A15	69	0	2		DEIONIZATION EQUIPMENT (QUOTE, SEE BACK UP INFO)	1.0 EA	32.000	33.56	1074.	4080.00	4080.	0.00	0.00	0.	5154.

(Items with *# have been adjusted by Job Factor and/or Equip Factor)

Item	Work Breakdown Structure	J A		Take-Off Item Description	Quantity	Unit	L a b o r		Material Rate	Const Equip Rate	Sub Contract	Item Direct Cost
		Job ID	Contract Tag				Factor	Rate				
1520	C3A15	69	0	2 1" STAINLESS STEEL PIPING	160.0	LF	0.178	33.56	7.40	0.00	0.	2140.
1521	C3A15	69	0	2 MISC VALVES AND FITTINGS (10% OF TOTAL LABOR & MAT.)	1.0	LOT		0.00	220.00	0.00	0.	220.
1527	C3A15			DUPLEX PUMPING STATION SYSTEM FOR MDA LAB.								
1528	C3A15	69	0	2 DUPLEX PUMPING STATION (QUOTE, SEE BACK UP INFO)	1.0	EA	40.000	33.56	3023.00	0.00	0.	4365.
1529	C3A15	69	0	2 1" PVC PIPING	100.0	LF	0.174	33.56	3.57	0.00	0.	941.
1530	C3A15	69	0	2 MISC VALVES AND FITTINGS (10% OF TOTAL LABOR & MAT)	1.0	LOT		0.00	95.00	0.00	0.	95.
C3A15 Category Direct Cost								313014.	1189881.	4608.	254938.	1762440.
478	C3A16			ELECTRICAL SYSTEMS SUB A								
479	C3A16			ELECTRICAL SYSTEMS SUB A CONDUIT								
484	C3A16	65	0	2 WIRE # 12	1200.0	LF	0.010	32.96	0.06	0.00	0.	492.
485	C3A16	65	0	2 WIRE # 8	50.0	LF	0.010	32.96	0.20	0.00	0.	26.
486	C3A16	65	0	2 WIRE # 6	350.0	LF	0.010	32.96	0.27	0.00	0.	210.
487	C3A16	65	0	2 WIRE # 2	600.0	LF	0.020	32.96	0.77	0.00	0.	858.

(Items with '#' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Brkdwn Structure 1	J A		Take-Off Item Description	Quantity Unit	- - - - L a b o r - - - -		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd b	c			Factor	Rate Ext'd Cost				
488	C3A16	65	0	2 CONDUIT 2"	200.0 LF	0.230	32.96 1516.	4.20 840.	0.00 0.	0.	2336.
489	C3A16	65	0	2 CONDUIT 1"	50.0 LF	0.160	32.96 264.	2.10 105.	0.00 0.	0.	369.
490	C3A16	65	0	2 CONDUIT 3/4"	300.0 LF	0.100	32.96 989.	1.57 471.	0.00 0.	0.	1460.
496	C3A16	MOTOR CONTROL CENTER A & B									
502	C3A16	65	0	2 WIRE #12	2300.0 LF	0.010	32.96 758.	0.08 184.	0.00 0.	0.	942.
503	C3A16	65	0	2 WIRE #10	2300.0 LF	0.010	32.96 758.	0.13 299.	0.00 0.	0.	1057.
504	C3A16	65	0	2 WIRE #8	3600.0 LF	0.010	32.96 1187.	0.20 720.	0.00 0.	0.	1907.
505	C3A16	65	0	2 WIRE #6	2000.0 LF	0.010	32.96 659.	0.27 540.	0.00 0.	0.	1199.
507	C3A16	MOTOR CONTROL CENTER CONDUIT									
508	C3A16	65	0	2 CONDUIT 1"	1100.0 LF	0.160	32.96 5801.	2.10 2310.	0.00 0.	0.	8111.
509	C3A16	65	0	2 CONDUIT 3/4"	3200.0 LF	0.130	32.96 13711.	1.57 5024.	0.00 0.	0.	18735.
510	C3A16	MOTOR CONTROL CENTER EQUIPMENT									
511	C3A16	65	0	2 STARTER UNITS	20.0 EA	1.000	0.00 0.	1500.00 30000.	0.00 0.	0.	30000.
512	C3A16	MOTOR CONTROL CENTER									

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdown Structure 1	J A		Take-Off Item Description	Quantity Unit	- - - L a b o r - - -			Material		Const Equip		Sub Contract Cost	Item Direct Cost
		Trd ID	a b F	c c t		Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
514	C3A16	65	0	3	MAINTENANCE (NCC)	80.0 HR	0.080	32.96 211.	12.50 1000.	0.00	0.	0.	0.	1211.
515	C3A16				PANEL BOARDS									
516	C3A16	65	0	2	SWB A	1.0 EA	17.300	32.96 570.	0.00 0.	0.00	0.	0.	0.	570.
521	C3A16	65	0	2	WIRE #12	50000.0 LF	0.010	32.96 16480.	0.08 4000.	0.00	0.	0.	0.	20480.
522	C3A16				PANEL BOARD CONDUIT									
524	C3A16	65	0	2	CONDUIT 3/4"	10000.0 LF	0.130	32.96 42848.	1.57 15700.	0.00	0.	0.	0.	58548.
525	C3A16	65	0	2	PANEL BOARD INSTALLATION	7.0 EA	40.000	32.96 9229.	0.00 0.	0.00	0.	0.	0.	9229.
529	C3A16				TRANSFORMERS									
533	C3A16	65	0	2	WIRE # 4/0	2000.0 LF	0.040	32.96 2637.	0.16 320.	0.00	0.	0.	0.	2957.
534	C3A16	65	0	2	WIRE #8	500.0 LF	0.010	32.96 165.	0.20 100.	0.00	0.	0.	0.	265.
535	C3A16	65	0	2	WIRE #4	500.0 LF	0.020	32.96 330.	0.45 225.	0.00	0.	0.	0.	555.
536	C3A16	65	0	2	WIRE #2	1500.0 LF	0.020	32.96 989.	0.80 1200.	0.00	0.	0.	0.	2189.
538	C3A16				TRANSFORMER CONDUIT									
540	C3A16	65	0	2	CONDUIT 2"	500.0 LF	0.230	32.96 5790.	4.20 2100.	0.00	0.	0.	0.	5890.

[Items with 'N' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd ID	o c b F Entrect t Tag Markup			Factor	Rate Ext'd Cost				
541	C3A16	65	0 2	CONDUIT 1"	500.0 LF	0.160	32.96 2637.	2.10 1050.	0.00 0.	0. 0.	3687.
543	C3A16			TRANSFORMERS							
544	C3A16	65	0 2	TRANSFORMER INSTALLATION	4.0 EA	24.000	32.96 3164.	0.00 0.	0.00 0.	0. 0.	3164.
858	C3A16			LIGHTING							
862	C3A16	65	0 2	#10 REMOTE BALLAST FIXTURES	3000.0 SF	0.245	32.96 24226.	4.88 14640.	0.00 0.	0. 0.	38866.
863	C3A16	65	0 2	MAINTENANCE	500.0 SF	0.240	32.96 3955.	4.88 2440.	0.00 0.	0. 0.	6395.
864	C3A16	65	0 2	SPECIAL WIRING ASSY 1/2" RIGID CONDUIT	4000.0 LF	0.087	32.96 11470.	1.20 4800.	0.00 0.	0. 0.	16270.
865	C3A16	65	0 2	REMAINDER OF BLDG	18000.0 SF	0.170	32.96 100858.	3.50 63000.	0.00 0.	0. 0.	163858.
866	C3A16	65	0 2	RECEPTACLES	25000.0 SF	0.060	32.96 49440.	0.42 10500.	0.00 0.	0. 0.	59940.
870	C3A16			LIGHTNING PROTECTION & GROUNDING							
873	C3A16	65	0 2	NEW COUNTERPOISE #4/0 BARE COPPER	700.0 LF	0.030	32.96 692.	2.00 1400.	0.00 0.	0. 0.	2092.
874	C3A16	53	0 2	TRENCHING 6"X 2'	700.0 LF	0.025	23.44 410.	0.00 0.	0.17 119.	0. 0.	529.
875	C3A16	53	0 2	BACKFILL	700.0 LF	0.035	23.44 574.	0.00 0.	0.26 182.	0. 0.	756.
876	C3A16	45	0 2	SAWCUT EXISTING ASPHALT PAVING	700.0 LF	0.025	17.29 303.	0.25 175.	0.40 280.	0. 0.	758.

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdw Structure 1	J A o c Cntrct			Quantity	* * * * Labor * * *			Material		Const Equip		Sub Cntrct Cost	Item Direct Cost
		Ted b ID F	c Markup t Tag	Take-Off Item Description		Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
877	C3A16	65	0 2	NEW DOWNCOMERS #4/O COPPER	210.0 LF	0.030	32.96	208.	2.00	420.	0.00	0.	0.	628.
878	C3A16	65	0 2	BONDING TO WATER PIPE #1/O COPPER	20.0 LF	3.000	32.96	1978.	1.00	20.	0.00	0.	0.	1998.
879	C3A16	65	0 2	TRANSFORMER #6 COPPER	200.0 LF	0.820	32.96	5405.	0.30	60.	0.00	0.	0.	5465.
1098	C3A16			FIRE ALARM CONTROL PANEL										
1099	C3A16	65	0 2	REINSTALL PANEL	1.0 EA	100.000	32.96	3296.	0.00	0.	0.00	0.	0.	3296.
1100	C3A16	65	0 2	WIRE & CONDUIT	6000.0 FT	0.100	32.96	19776.	0.50	3000.	0.00	0.	0.	22776.
1101	C3A16	65	0 2	DETECTORS	60.0 EA	1.000	32.96	1978.	35.00	2100.	0.00	0.	0.	4078.
1102	C3A16			FIRE ALARM REPORTER BOX										
1103	C3A16	65	0 2	REINSTALL BOX	1.0 EA	83.000	32.96	2736.	0.00	0.	0.00	0.	0.	2736.
1104	C3A16			CONNECTIONS FD THE PIV SUPERVISOR SWITCHES										
1105	C3A16	65	0 2	CONDUIT	400.0 LF	0.200	32.96	2637.	0.65	260.	0.00	0.	0.	2897.
1106	C3A16	65	0 2	SWITCHES	9.0 EA		0.00	0.	25.00	225.	0.00	0.	0.	225.
1513	C3A16	65	0 2	UPS-10KVA W/24 HR BACKUP	1.0 EA	96.000	32.96	3164.	54000.00	54000.	0.00	0.	0.	57164.
1514	C3A16	165	0 3	S-9 FEEDER RELIABILITY ENHANCEMENT (BY JC1)	1.0 EA	168.000	33.00	5544.	5000.00	5000.	0.00	0.	0.	10544.

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd ID	a b F	c c t Tag		Factor	Rate	Ext'd Cost				
1515	C3A16	65	0	2 TELEPHONE & DATA (EXTERIOR)	1.0 EA	228.000	32.96	7515.	10200.00 10200.	0.00 0.	0.	17715.
1516	C3A16	65	0	2 TELEPHONE & DATA (INTERIOR)	1.0 EA	174.000	32.96	5735.	7800.00 7800.	0.00 0.	0.	13535.
C3A16 Category Direct Cost								361514.	246891.	581.	0.	608985.
1107	C3B02	UTILITY BUILDING SITE WORK AND GRADING										
1108	C3B02	53	0	2 FINE GRADE FOR SLAB ON GRADE	225.0 SY	0.035	23.44	185.	0.00 0.	1.15 259.	0.	443.
1109	C3B02	45	0	2 HAND GRADE SELECT GRAVEL INCL 6" COMPACTION	225.0 SY	0.700	17.29	2723.	0.00 0.	0.12 27.	0.	2750.
1110	C3B02	53	0	2 FINISH GRADE AT SLOPES	1000.0 SY	0.004	23.44	94.	0.00 0.	0.07 70.	0.	164.
1111	C3B02	61	0	2 CHILLER PADS OUTSIDE UTILITY BLDG	432.0 SF	0.046	24.19	481.	1.00 432.	0.00 0.	0.	913.
1112	C3B02	61	0	2 TRANSFORMER PAD	144.0 SF	0.046	24.19	160.	1.00 144.	0.00 0.	0.	304.
C3B02 Category Direct Cost								3642.	576.	356.	0.	4574.
1113	C3B03	UTILITY BUILDING STRUCTURAL CONCRETE										
1114	C3B03	53	0	5 STRUCTURAL EXCAVATION	117.0 CY	0.213	23.44	584.	0.00 0.	5.55 649.	0.	1233.
1115	C3B03	73	0	5 SLAB ON GRADE	25.0 CY	0.015	25.69	10.	158.00 3950.	3.66 92.	0.	4051.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Items with a 0 have been adjusted by 100 Factor Major Equip Factor													
	Work Breakdown Structure	J o b ID	A c c t Tag	Contract Markup Take-Off Description	Quantity Unit	L a b o r Factor	R a t e Ext'd Cost	M a t e r i a l Rate Ext'd Cost	C o n s t E q u i p Rate Ext'd Cost	S u b C o n t r a c t Cost	I t e m D i r e c t Cost		
1116	C3B03	61	0 5	FLOOR FINISH	1240.0 SF	0.015	24.19 450.	0.00 0.	0.00 0.	0.	450.		
1117	C3B03	61	0 5	STRIP FOOTING	12.0 CY	2.000	24.19 581.	80.00 960.	0.00 0.	0.	1541.		
1118	C3B03	45	0 5	6" COMP GRAVEL FILL	1344.0 SF	0.017	17.29 395.	0.40 538.	0.02 27.	0.	960.		
1119	C3B03	53	0 5	STRUCTURAL FILL	82.7 CY	0.260	23.44 504.	0.00 0.	0.02 2.	0.	506.		
	C3B03			Category Direct Cost			2523.	5448.	769.	0.	8740.		
1130	C3B04			UTILITY BUILDING STRUCTURAL MASONRY									
1131	C3B04	61	0 5	B" CMU	1900.0 SF	0.130	24.19 5975.	2.49 4731.	0.59 1121.	0.	11827.		
	C3B04			Category Direct Cost			5975.	4731.	1121.	0.	11827.		
1137	C3B05			UTILITY BUILDING METALS									
1138	C3B05	85	0 2	OPEN WEB STEEL JOISTS 18 K5	2.8 TON	8.000	32.28 723.	727.00 2036.	0.00 0.	0.	2759.		
1139	C3B05	85	0 2	22 GA METAL DECK	2000.0 SF	0.008	32.28 516.	0.80 1600.	0.03 60.	0.	2176.		
	C3B05			Category Direct Cost			1240.	3636.	60.	0.	4935.		
1148	C3B08			UTILITY BUILDING DOORS AND WINDOWS									

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Sckdm Structure 1	J Trd ID	A b F	c t	Markup Tag	Take-Off Item Description	Quantity	Unit	L a b o r		Material Rate	Ext'd Cost	Const Equip Rate	Ext'd Cost	Sub Contract Cost	Item Direct Cost
									Factor	Rate						
1149	C3B08	73	0	5		3X7 HOLLOW METAL DOOR W/ HALF GLASS	1.0	EA	1.300	25.69	197.00	33.	1.08	197.	1.	231.
1150	C3B08	73	0	5		3X7 HOLLOW METAL DOOR FRAME	1.0	EA	1.300	25.69	228.00	33.	1.08	228.	1.	262.
1151	C3B08	73	0	5		DOOR HARDWARE	1.0	EA	1.300	25.69	500.00	33.	0.00	500.	0.	533.
1152	C3B08	73	0	5		OVERHEAD DOOR	1.0	EA	10.400	25.69	360.00	267.	0.00	360.	0.	627.
C3B08 Category Direct Cost											367.	1285.	2.	0.	1655.	
1162	C3B09	UTILITY BUILDING FINISHES														
1163	C3B09	57	0	2		INTERIOR/EXTERIOR PAINT ALKYD	3720.0	SF	0.005	23.26	0.20	433.	0.00	744.	0.	1177.
1164	C3B09	57	0	2		PAINT 3 X 7 DOOR AND JAMB	1.0	EA	1.300	23.26	0.20	30.	0.00	0.	0.	30.
1165	C3B09	57	0	2		PAINT ON DOOR	128.0	SF	0.005	23.26	0.20	15.	0.00	26.	0.	40.
C3B09 Category Direct Cost											478.	770.	0.	0.	1248.	
1079	C3B16	UTILITY BLDG SYSTEMS														
1080	C3B16	65	0	2		3/4" CONDUIT	1025.0	LF	0.130	32.96	1.57	4392.	0.00	1609.	0.	6001.
1081	C3B16	65	0	2		#12 WIRE	3000.0	LF	0.010	32.96	0.08	989.	0.00	240.	0.	1229.

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdwn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd ID	o c b c F t			Factor	Rate Ext'd Cost				
1082	C3B16	65	0 2	#10 WIRE	625.0 LF	0.010	32.96 206.	0.20 125.	0.00 0.	0. 0.	331.
1083	C3B16	65	0 2	CABLE TRANSFORMER TR-1 9KVA	1.0 EA	14.800	32.96 488.	595.00 595.	0.00 0.	0. 0.	1083.
1084	C3B16	65	0 2	PANEL BD LP-1 208/120	1.0 EA	19.600	32.96 646.	650.00 650.	0.00 0.	0. 0.	1296.
1085	C3B16	65	0 2	CRT BREAKERS 50AF/1P	12.0 EA	0.867	32.96 343.	17.50 210.	0.00 0.	0. 0.	553.
1086	C3B16	65	0 2	1" CONDUIT	600.0 LF	0.160	32.96 3164.	2.10 1260.	0.00 0.	0. 0.	4424.
1087	C3B16	65	0 2	#4 WIRE	2100.0 LF	0.020	32.96 1384.	0.45 945.	0.00 0.	0. 0.	2329.
C3B16 Category Direct Cost							11612.	5634.	0.	0.	17246.
1299	C3C05	MECHANICAL PENTHOUSE									
1300	C3C05	ERECT STRUCTURAL STEEL									
1301	C3C05	85	0 2	BEAMS - W10X39	7176.0 LBS	0.020	32.28 4633.	0.50 3588.	0.10 718.	0. 0.	8938.
1302	C3C05	85	0 2	ORDERS W14X74	8880.0 LBS	0.020	32.28 5733.	0.50 4440.	0.10 888.	0. 0.	11061.
1303	C3C05	85	0 2	COLUMNS W8X24	2304.0 LBS	0.020	32.28 1487.	0.50 1152.	0.10 230.	0. 0.	2870.
1304	C3C05	85	0 2	BASE PLATES/FASTEN TO ROOF	1.0 LOT	8.000	32.28 258.	100.00 100.	0.10 0.	0. 0.	358.

[Items with 'B' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdwn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd b ID F	o c t Tag			Factor	Rate Ext'd Cost				
1305	C3C05	53	0 2	CRANE	1.0 DAY	8.000	23.44 188.	0.00 0.	0.10 0.	0.	188.
1306	C3C05	85	0 2	ROOFING - 20 GA-3" DECK	1380.0 SF	0.010	32.28 445.	1.00 1380.	0.00 0.	0.	1825.
1307	C3C05	85	0 2	GIRTS - C8X11.5 & CURB	5244.0 LBS	0.020	32.28 3386.	0.50 2622.	0.10 524.	0.	6532.
1308	C3C05	85	0 2	SIDING (1-1/2" STEEL)	1520.0 SF	0.010	32.28 491.	1.00 1520.	0.00 0.	0.	2011.
C3C05		Category Direct Cost					16621.	14802.	2361.	0.	33783.
1309	C3C08	73	0 2	DOOR 6 X 7	1.0 EA	2.000	25.69 51.	450.00 450.	0.00 0.	0.	501.
1310	C3C08	73	0 2	DOOR FRAME - DOUBLE	1.0 EA	1.500	25.69 39.	100.00 100.	0.00 0.	0.	139.
1311	C3C08	73	0 2	HARDWARE	1.0 EA	1.100	25.69 28.	225.00 225.	0.00 0.	0.	253.
C3C08		Category Direct Cost					118.	775.	0.	0.	893.
1173	C5015	NATURAL GAS PIPING FROM BUILDING TO MAIN									
1174	C5015	69	0 2	1-1/4" SCHEDULE 40 BLK STEEL	195.0 LF	1.280	33.56 6658.	3.18 493.	0.00 0.	0.	7151.
1175	C5015	69	0 2	1-1/4" SIZE GAS STOP W/ CHECK	1.0 EA	0.667	33.56 22.	20.35 20.	0.00 0.	0.	43.
1176	C5015	69	0 2	1-1/4" PRESSURE REG. VALVE	1.0 EA	1.920	33.56 64.	177.00 177.	0.00 0.	0.	241.

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdw Structure 1	J o b I D #	A c c t I t e m	Entret c Mark up Tag	Take-Off Item Description	Quantity Unit	Factor	Rate	Ext'd Cost	Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Entret Cost	Item Direct Cost
1177	C5015	69	0 2		MISC VALVES AND FITTINGS (10% OF TOT MAT. AND LAB.)	1.0 LOT		0.00	0.	650.00 650.	0.00 0.	0.	650.
1178	C5015	69	0 2		1-1/4" MEYERS INLET OUTLET	2.0 EA	2.000	33.56 134.	258.75 518.	0.00 0.	0.	0.	652.
1179	C5015	45	0 2		3" THICK PAVEMENT REMOVAL OVER GAS LINE	15.0 SY	4.000	17.29 1037.	0.00 0.	1.98 30.	0.	0.	1067.
1180	C5015	45	0 2		4" THICK PAVEMENT REPLACE OVER GAS LINE	15.0 SY	1.500	17.29 389.	6.77 102.	0.00 0.	0.	0.	491.
1181	C5015	69	0 2		2" SCHEDULE 40 BLK STEEL PIPE	10.0 LF	1.280	33.56 430.	3.50 35.	0.00 0.	0.	0.	465.
1182	C5015	69	0 2		1" CAP	1.0 EA	0.640	33.56 21.	2.46 2.	0.00 0.	0.	0.	24.
1183	C5015	53	0 2		TRENCHING	35.0 CY	0.070	23.44 57.	0.00 0.	1.76 62.	0.	0.	119.
1184	C5015	45	0 2		BACKFILL + 15% SHRINKAGE	30.0 CY	0.096	17.29 50.	0.00 0.	0.60 15.	0.	0.	68.
1185	C5015	53	0 2		BEDDING	10.0 CY	0.017	23.44 4.	3.76 38.	0.83 8.	0.	0.	50.
1186	C5015	45	0 2		COMPACTION	30.0 CY	0.834	17.29 433.	0.00 0.	0.83 25.	0.	0.	457.
C5015						Category Direct Cost			9301.	2034.	143.	0.	11477.
1213	C5E15	FIRE PROTECTION OUTSIDE OF BUILDING											

[Items with *#* have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdwn Structure 1	J o b ID	A o c t F	Entret Markup Tag	Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip		Sub Entret Cost	Item Direct Cost	
							Factor	Rate	Ext'd Cost		Rate	Ext'd Cost			
1214	CSE15	69	0	2	10" STEEL PIPE	820.0 LF	0.311	33.56	27300.8	14.95	1.19	976.	0.	21793.	
1215	CSE15	45	0	2	CUT AND REMOVE ASPHALT	74.0 SY	4.000	17.29	5118.	0.00	0.	146.	0.	5264.	
1216	CSE15	53	0	2	TRENCHING	295.0 CY	0.070	23.44	684.	0.00	0.	519.	0.	1003.	
1217	CSE15	45	D	2	BACKFILL	240.0 CY	0.600	17.29	2490.	0.00	0.	144.	0.	2634.	
1218	CSE15	45	0	2	BEDDING	34.0 CY	0.100	17.29	59.	3.76	128.	24.	0.	210.	
1219	CSE15	45	0	2	COMPACTION	340.0 CY	0.030	17.29	4879.	0.00	0.	282.	0.	5161.	
1220	CSE15	53	0	2	REPLACE ASPHALT PAVING	85.0 SY	1.500	23.44	2989.	6.77	575.	0.	0.	3564.	
1221	CSE15	69	0	2	10" 90 DEG ELBOWS	4.0 EA	1.333	33.56	179.	253.00	1012.	20.	0.	1211.	
1222	CSE15	61	0	2	THRUST BLOCKS	4.0 CY	2.000	24.19	194.	100.00	400.	0.	0.	594.	
CSE15 Category Direct Cost									24949.	14374.	2111.	0.	41435.		
1229	CSF15	RAD/ACIO WASTE LINE OUTSIDE OF BUILDING													
1230	CSF15	69	0	2	4" DOUBLE CONTAINED PIPE	60.0 LF	0.600	33.56	1208.	35.00	2100.	0.	0.	3308.	
1231	CSF15	45	0	2	CUT AND REMOVE EXISTING ASPHALT PAVING	10.0 SY	4.000	17.29	692.	0.00	0.	20.	0.	711.	

(Items with '*' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Brkdwn Structure 1	J A		Take-Off Item Description	Quantity Unit	Labor		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd b ID #	c Markup t Tag			Factor	Rate Ext'd Cost				
1232	CSF15	53	0 2	TRENCHING	13.0 CY	0.070	23.44 21.	0.00 0.	1.76 23.	0.	44.
1233	CSF15	45	0 2	BACKFILLG	15.0 CY	0.600	17.29 156.	0.00 0.	0.60 9.	0.	165.
1234	CSF15	45	0 2	BEDDING	2.0 CY	0.100	17.29 3.	3.76 8.	0.70 1.	0.	12.
1235	CSF15	45	0 2	COMPACTION	15.0 CY	0.630	17.29 215.	0.00 0.	0.83 12.	0.	220.
1236	CSF15	45	0 2	REPLACE ASPHALT PAVING	13.0 CY	1.500	17.29 337.	6.77 88.	0.00 0.	0.	425.
1237	CSF15	69	0 2	DOUBLE CONTAINMENT 45 DEG ELBOWS	2.0 CY	0.200	33.56 13.	1.69 4.	0.00 0.	0.	17.
1238	CSF15	69	0 2	DOUBLE CONTAINMENT CLEAN-OUT	1.0 EA	0.300	33.56 10.	243.00 245.	0.00 0.	0.	255.
CSF15		Category Direct Cost					2656.	2444.	65.	0.	5166.
1195	CS015	POTABLE AND NON POTABLE WATER SYSTEM OUTSIDE OF BUILDING									
1196	CS615	POTABLE AND NON POTABLE WATER SYSTEM OUTSIDE OF BUILDING									
1197	CS615	69	0 2	2" COPPER ASTM B88	20.0 LF	0.182	33.56 122.	4.96 99.	0.00 0.	0.	221.
1198	CS615	69	0 2	1" COPPER ASTM B88	190.0 LF	0.114	33.56 727.	1.69 321.	0.00 0.	0.	1048.
1199	CS615	69	0 2	MISC VALVES AND FITTINGS (10% OF TOT LAB. & MAT OF PIPE	1.0 LOT		0.00 0.	150.00 150.	0.00 0.	0.	150.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Items with * have been adjusted by sub factor and/or Equip Factor																
Item	Work Brkdwn Structure 1	Trd ID	J a b F	A c t	Contract Markup Tag	Take-Off Item Description	Quantity Unit	- - - - L a b o r - - - -			Material		Const Equip		Sub Contract Cost	Item Direct Cost
								Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1200	C5G15	45		0	2	REMOVE EXISTING PAVEMENT	18.0 SY	4.000	17.29	1245.	0.00	0.	1.97	35.	0.	1280.
1201	C5G15	53		0	2	TRENCHING	42.0 CY	0.070	23.44	69.	0.00	0.	1.76	74.	0.	143.
1202	C5G15	45		0	2	BACKFILL	35.0 CY	0.600	17.29	363.	0.00	0.	0.60	21.	0.	384.
1203	C5G15	45		0	2	BEDDING	13.0 CY	0.100	17.29	22.	3.76	49.	0.70	9.	0.	80.
1204	C5G15	45		0	2	COMPACTION	35.0 CY	0.830	17.29	502.	0.00	0.	0.83	29.	0.	531.
1205	C5G15	45		0	2	REPLACE WITH 4" ASPHALT	18.0 SY	1.500	17.29	467.	6.77	122.	0.00	0.	0.	589.
C5G15									Category Direct Cost		3510.	741.	169.	0.	4427.	
1312	E20	SECURITY SYSTEMS EQUIPMENT (OS 8)														
1313	E20	65		0	1	SECURITY ALARM EQUIPMENT & LABOR W/O ENTRY POST	1.0 EA	4000.000	32.96	131840.	24808.00	24808.	0.00	0.	0.	156648.
1314	E20	65		0	1	SECURITY VIDEO EQUIPMENT & LABOR W/O ENTRY POST	1.0 EA	664.000	32.96	21885.	47700.00	47700.	0.00	0.	0.	69585.
1315	E20	65		0	1	HAA ENTRY POST EQUIPMENT & LABOR (SEE BACKUP)	1.0 LOT	1296.000	32.96	42716.	252825.00	252825.	0.00	0.	0.	295541.
1316	E20	165		0	3	SECURITY HOME RUN TO PF-47 2-4" SCH. 80 PVC CONDUIT	1000.0 LF	0.356	32.40	11534.	8.50	8500.	0.00	0.	0.	20034.

[Items with '#1' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Breakdown Structure	Job ID	A	Contract Markup	Take-Off Item Description	Quantity	Unit	Labor		Material		Const Equip		Sub Contract Cost	Item Direct Cost
								Factor	Rate Ext'd Cost	Rate Ext'd Cost	Rate Ext'd Cost	Rate Ext'd Cost			
1317	E20	165	0	3	CONDUCTORS, #4-0 TH CL. GRND. WIRE	5000.0	LF	0.043	32.40	2.00	0.00	0.00	0.00	0.00	16966.
1318	E20	145	0	3	CUT AND REMOVE EXIST ASPHALT PAVING	14.0	SY	8.000	14.40	0.00	0.00	3.25	46.	0.00	1658.
1319	E20	145	0	3	REPAIR PAVING	14.0	SY	1.140	14.40	8.00	0.75	11.	0.00	0.00	352.
1320	E20	145	0	3	TRENCHING	166.0	CY	0.070	14.40	0.00	0.00	1.76	292.	0.00	459.
1321	E20	145	0	3	HAND LAB. & EXISTING UTILITY LINES	40.0	HRS	1.000	14.40	0.00	0.00	0.00	0.00	0.00	576.
1322	E20	145	0	3	BEDDING	10.0	CY	0.100	14.40	0.00	0.00	0.70	7.	0.00	21.
1323	E20	145	0	3	ENCASE CONDUITS IN CONCRETE	6.0	CY	1.000	14.40	63.50	9.70	58.	0.00	0.00	526.
1324	E20	145	0	3	BACKFILL TRENCH INCL 15% FOR SHRINKAGE	172.0	CY	0.600	14.40	0.00	0.60	103.	0.00	0.00	1589.
1325	E20	145	0	3	COMPACTION	172.0	CY	0.830	14.40	0.00	0.83	143.	0.00	0.00	2199.
1326	E20	GENERAL CONTRACTOR ROUGH IN													
1327	E20	65	0	5	3/4" RIGID CONDUIT W/ PULLWIRE FOR ALMS DETECTORS & SWITCHES	4000.0	LF	0.132	32.96	1.58	0.00	0.00	0.00	0.00	23723.
1453	E20	FIBER OPTIC DETECTION GRILLE													
1466	E20		0	5	ST 4X6CS/16 APP 18.77 LB/FT X 80LF	6000.0	LBS		0.00	1.12	0.00	0.00	0.00	0.00	6720.

[Items with "*" have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdw Structure 1	Job ID	A F	C F	C F	Take-Off Tag	Item Description	Quantity Unit	Labor			Material		Const Equip		Sub Contract Cost	Item Direct Cost
									Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1467	E20				0	5	3/4" PIPE SCH 40 APP 1.13 LB/LF	4160.0 LF			0.00	1.72	7155.	0.00			7155.
1468	E20	85			0	5	CUT AND BEVEL, PUNCH 26" OC-ST 4X6	320.0 LF	0.500	29.73	4757.	1.00	320.	0.00			5077.
1469	E20	85			0	5	FAB COVER PLATE 3/16 5" WIDE APP 3.19 LB/ FT	1024.0 LBS	0.300	29.73	9133.	1.12	1147.	0.00			10260.
1470	E20	85			0	5	3/16 WELD SCH 40 TO ST 4X6 3IN/JOINT	576.0 EA	0.200	29.73	3425.	2.00	1152.	0.00			4577.
1471	E20	85			0	5	3/16 WELD SCH 40 TO SCH 40 4 3IN/JOINT	3888.0 EA	0.250	29.73	28898.	2.00	7776.	0.00			36674.
1472	E20	65			0	2	INSTALL FIBER OPTIC CABLES	6000.0 LF	0.349	32.96	69078.	7.00	42000.	0.00			111078.
1473	E20	85			0	5	INSTALL 1/2" DIA EXPANSION ANCHORS 3"-D.C.	120.0 EA	0.750	32.28	2905.	10.00	1200.	0.00			4105.
1474	E20	85			0	5	INSTALL COVER PLATE	1024.0 LBS	1.000	32.28	33055.	0.50	512.	0.00			33567.
1475	E20	85			0	5	TACK WELD COVER PLATE	640.0 LF	0.300	32.28	6198.	1.12	717.	0.00			6915.
E20		Category Direct Cost								396021.		419345.		659.		0.	816025.
564	E2C11	BREATHING AIR SYSTEM MONITORING															
569	E2C11	SPECIAL FACILITY EQUIP. BREATHING AIR SYSTEM MONITORING															
570	E2C11	65			0	2	FLOW MONITORS (QUOTE)	2.0 EA	8.000	32.96	527.	2120.00	4240.	0.00			4767.

[Items with '#' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdwn Structure 1	J o c Trd ID F	A c Entret b c Markup t Tag	Take-Off Item Description	Quantity Unit	Labor		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Entret Cost	Item Direct Cost
						Factor	Rate Ext'd Cost				
571	E2C11	65	0 2	PRESSURE MONITORS	2.0 EA	8.000	33.56 537.	2120.00 4240.	0.00 0.	0.	4777.
572	E2C11	65	0 2	CO 2 MONITORS	2.0 EA	8.000	32.96 527.	3190.00 6360.	0.00 0.	0.	6887.
575	E2C11	FMS PLC SYSTEM									
576	E2C11		0 2	PLC CARDS (61)	1.0 LOT		0.00 0.	56944.00 56944.	0.00 0.	0.	56944.
577	E2C11		0 2	PLC RACKS (5)	1.0 LOT		0.00 0.	10880.00 10880.	0.00 0.	0.	10880.
578	E2C11		0 2	PLC PROCESSOR (2)	1.0 LOT		0.00 0.	23052.00 23052.	0.00 0.	0.	23052.
579	E2C11	65	0 2	PLC ENCLOSURE	4.0 LOT	16.000	32.96 2109.	5000.00 20000.	0.00 0.	0.	22109.
587	E2C11		0 2	TAPE DRIVE	8.0 EA		0.00 0.	700.00 5600.	0.00 0.	0.	5600.
588	E2C11		0 2	E-NET CARD	16.0 EA		0.00 0.	100.00 1600.	0.00 0.	0.	1600.
589	E2C11	65	0 2	PRINTER	8.0 EA	2.000	32.96 527.	685.00 5480.	0.00 0.	0.	6007.
590	E2C11		0 2	OS/2 V.3X	8.0 EA		0.00 0.	325.00 2600.	0.00 0.	0.	2600.
591	E2C11		0 2	TAPES/DISK	1.0 EA		0.00 0.	500.00 500.	0.00 0.	0.	500.
592	E2C11		0 2	DOCUMENTATION	1.0 EA		0.00 0.	500.00 500.	0.00 0.	0.	500.

(Items with '#' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Brkdw Structure 1	J o d ID	A c t Tag	Entret c Markup t Tag	Take-Off Item Description	Quantity	Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Entret Cost	Item Direct Cost
								Factor	Rate	Ext'd Cost				
593	E2C11			0 2	SERVER NETWORK SOFTWARE	2.0 EA			0.00	0.	1900.00 3800.	0.00 0.	0.	3800.
594	E2C11			0 2	STATION NETWORK SOFTWARE	8.0 EA			0.00	0.	2360.00 18880.	0.00 0.	0.	18880.
595	E2C11			0 2	ICOM MNI	7.0 EA			0.00	0.	6000.00 42000.	0.00 0.	0.	42000.
596	E2C11			0 2	ICOM BASE	1.0 EA			0.00	0.	9500.00 9500.	0.00 0.	0.	9500.
597	E2C11			0 2	CONFIGURATION	240.0 HRS			0.00	0.	65.00 15600.	0.00 0.	0.	15600.
598	E2C11			0 2	PROGRAMMING	2000.0 HRS			0.00	0.	35.00 70000.	0.00 0.	0.	70000.
613	E2C11				REMOTE AREA MONITORS									
617	E2C11			0 2	REMOTE AREA MONITORS	1.0 LOT			0.00	0.	10600.00 10600.	0.00 0.	0.	10600.
621	E2C11				CONTINUOUS AIR MONITORS									
625	E2C11			0 2	VACUUM EXHAUSTER	1.0 EA		160.000	33.56	5370.	30000.00 30000.	0.00 0.	0.	35370.
626	E2C11	65		0 2	CANS	40.0 EA		8.000	32.96	10547.	7420.00 296800.	0.00 0.	0.	307347.
627	E2C11	65		0 2	DIU'S	5.0 EA		12.000	32.96	1978.	4240.00 21200.	0.00 0.	0.	23178.
628	E2C11	65		0 2	PERSONAL COMPUTERS	2.0 EA		8.000	32.96	527.	4240.00 8480.	0.00 0.	0.	9007.
629	E2C11			0 2	SOFTWARE	1.0 EA			0.00	0.	10600.00 10600.	0.00 0.	0.	10600.

(Items with '*' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Brkdwn Structure 1	J A		Take-Off Item Description	Quantity Unit	Labor			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd b	c			Factor	Rate	Ext'd Cost				
634	E2C11			FIXED AIR SAMPLER								
639	E2C11	69	0	2 FIXED AIR SAMPLER	50.0	1.000	33.56	212.00	0.00	0.	0.	12278.
					EA		1678.	10600.				
640	E2C11	69	0	2 VACUUM EXHAUSTER	2.0	160.000	33.56	51800.00	0.00	0.	0.	74339.
					EA		10739.	63600.				
647	E2C11			PERSONNEL MONITORS								
652	E2C11	65	0	2 HAND FOOT MONITORS	2.0	2.000	32.96	1000.00	0.00	0.	0.	2132.
					EA		132.	2000.				
653	E2C11	65	0	2 HAND FOOT MONITORS	2.0	4.000	32.96	15000.00	0.00	0.	0.	30264.
				7'	EA		264.	30000.				
654	E2C11	65	0	2 PCM	2.0	8.000	32.96	30000.00	0.00	0.	0.	60527.
					EA		527.	60000.				
659	E2C11			CRITICALITY MONITORS AND ALARM SYSTEM								
666	E2C11	65	0	2 CRITICALITY HEADS	6.0	10.000	32.96	1590.00	0.00	0.	0.	11518.
					EA		1978.	9540.				
667	E2C11	65	0	2 ALARM SYSTEMS	1.0	100.000	32.96	21200.00	0.00	0.	0.	24496.
					EA		3296.	21200.				
668	E2C11	65	0	2 UPS SYSTEM	1.0	16.000	32.96	6360.00	0.00	0.	0.	6887.
					EA		527.	6360.				
674	E2C11			STACK MONITORING SYSTEM								
679	E2C11	65	0	2 STACK SENSORS	4.0	20.000	32.96	7420.00	0.00	0.	0.	32317.
					EA		2637.	29680.				
680	E2C11	65	0	2 UPS	4.0	10.000	32.96	1060.00	0.00	0.	0.	5558.
					EA		1318.	4240.				

[Items with 1# have been adjusted by Job Factor and/or Equip Factor]

Item	Work Brkdwn Structure 1	J 1rd ID	A c b F	c Entret t Tag	Take-Off Item Description	Quantity	Unit	L a b o r		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Entret Cost	Item Direct Cost
								Factor	Rate Ext'd Cost				
681	E2C11	65	0	2	PUMP	4.0	EA	10.000	32.96 1318.	1060.00 4240.	0.00 0.	0.	5558.
682	E2C11	69	0	2	FLOW SENSOR	2.0	EA	8.000	33.56 537.	2120.00 4240.	0.00 0.	0.	4777.
E2C11 Category Direct Cost									47602.	925156.	0.	0.	972758.
706	E2C15	CONTROL SYSTEM MECH											
712	E2C15	69	0	2	1 1/2" COPPER TUBING	4000.0	LF	0.200	33.56 26848.	4.30 17200.	0.00 0.	0.	44048.
713	E2C15	69	0	2	1/2" COPPER TUBING	900.0	LF	0.130	33.56 3927.	1.35 1215.	0.00 0.	0.	5142.
714	E2C15	69	0	2	5/8" TYGON TUBING	340.0	LF	0.070	33.56 799.	0.37 126.	0.00 0.	0.	925.
722	E2C15		0	2	5/8" TYGON TUBING	340.0	LF	0.070	33.56 799.	0.35 119.	0.00 0.	0.	918.
729	E2C15	CONTROL SYSTEM VALVES											
733	E2C15	69	0	2	1/2" BALL VALVES	88.0	EA	0.500	33.56 1477.	35.00 3080.	0.00 0.	0.	4557.
734	E2C15	69	0	2	VACUUM EXHAUST PIPES	1.0	LOT	160.000	33.56 5370.	12720.00 12720.	0.00 0.	0.	18090.
E2C15 Category Direct Cost									39218.	34460.	0.	0.	73678.
580	E2C16		0	2	PLC LADDER LOGIC PROGRAMMING	480.0	HRS		0.00 0.	35.00 16800.	0.00 0.	0.	16800.

(Items with '#' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Brkdwn Structure 1	J A		Take-Off Item Description	Quantity Unit	L a b o r			Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd ID	o c b c			Factor	Rate	Ext'd Cost				
581	E2C16		0 2	PLC PORT TERMINAL	1.0 EA			0.00	5911.00	0.00		
582	E2C16		0 2	PLC PROGRAM/DOC PACKAGE	1.0 EA			0.00	5911. 2500.00	0.00	0.	5911.
583	E2C16	65	0 2	PLC TERMINATION	2400.0 EA	0.084		32.96	0.00	0.00	0.	2500.
								6645.	0.		0.	6645.
584	E2C16			FMS COMPUTER SYSTEM								
585	E2C16	65	0 2	IBM INDUSTRIAL (OP. ST.)	8.0 EA	2.000		32.96	7955.00	0.00		
								527.	63640.	0.	0.	64167.
586	E2C16	65	0 2	IBM SERVER	2.0 EA	8.000		32.96	0.00	0.00		
								527.	0.	0.	0.	527.
689	E2C16			CONTROL SYSTEM WIRE								
690	E2C16	65	0 2	TW,SH PAIR	3000.0 LF	0.010		32.96	0.15	0.00		
								989.	450.	0.	0.	1439.
693	E2C16	65	0 2	WIRE #14	22000.0 LF	0.010		32.96	0.17	0.00		
								7251.	3740.	0.	0.	10991.
694	E2C16	65	0 2	WIRE #12	7000.0 LF	0.010		32.96	0.10	0.00		
								2307.	700.	0.	0.	3007.
698	E2C16			CONTROL SYSTEM CONDUIT								
702	E2C16	65	0 2	3/4" CONDUIT	10000.0 LF	0.130		32.96	1.66	0.00		
								42848.	16600.	0.	0.	59448.
E2C16		Category Direct Cost						61095.	110341.	0.	0.	171436.
359	E2L13			NDA LAB & STORAGE VAULT								

(Items with '#' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Bkdn Structure 1	J Trd ID	A o b F	c c	Entrect Markup Tag	Take-Off Item Description	Quantity Unit	Labor			Material		Const Equip		Sub Entrect Cost	Item Direct Cost
								Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
373	E2L13				0 4	BANTRY ROBOTICS (QUOTE)	1.0 EA	1.000	0.00	0.	0.00	0.	0.00	0.	600000.	600000.
374	E2L13				0 4	CALORIMETERS (3) (QUOTE)	1.0 LOT	1.000	0.00	0.	0.00	0.	0.00	0.	1000000.	1000000.
375	E2L13				0 4	SHUFFLER (QUOTE)	1.0 EA	1.000	0.00	0.	0.00	0.	0.00	0.	1200000.	1200000.
376	E2L13				0 4	MUETRON MULTIPLICITY COUNTER (QUOTE)	1.0 EA	1.000	0.00	0.	0.00	0.	0.00	0.	800000.	800000.
377	E2L13				0 4	GAMMA ISOTOPIES (2) (QUOTE)	1.0 LOT	1.000	0.00	0.	0.00	0.	0.00	0.	450000.	450000.
378	E2L13				0 4	COMPUTER/NETWORK INTEGRATE WITH MASS (QUOTE)	1.0 LOT	1.000	0.00	0.	0.00	0.	0.00	0.	550000.	550000.
E2L13								Category Direct Cost		0.	0.	0.	0.	0.	4600000.	4600000.
1329	E2S11					CHARGE FACE DECK										
1330	E2S11				0 2	STEEL-MATERIAL ONLY	420000.0 LBS		0.00	0.	0.23	96600.	0.00	0.	0.	96600.
1331	E2S11	85			0 2	WELD ASSEMBLY-AUTO WELDED (20"/MIN)	18357.8 LF	0.100	32.28	59259.	0.10	1836.	0.25	4589.	0.	65684.
1332	E2S11	85			0 2	FIT AND ALIGN	420000.0 LBS	0.003	32.28	13557.6	0.00	0.	0.25	105000.	0.	145673.
1333	E2S11	85			0 2	WELD AND FIT INSPECTION	18357.8 LF	0.050	32.28	5925.9	0.00	0.	0.10	1836.	0.	31465.
1334	E2S11	61			0 2	FILL DECK WITH CONCRETE (SHIELDING) IN SHOP	238.6 CY	1.500	24.19	5770.2	100.00	23860.	2.00	477.	0.	32995.

(Items with *#* have been adjusted by Job Factor and/or Equip Factor)

Item	Work Breakdown Structure 1	Job ID	A Contract b F	Take-Off c Tag	Item Description	Quantity	Unit	Labor			Material		Const Equip		Sub Contract Cost	Item Direct Cost
								Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1335	E2S11		0	2	DELIVER STEEL VIA TRUCK (10 DAYS)	18.0	EA			0.00	0.00	0.00	3500.00			
1336	E2S11	85	0	2	RIGGING & ERECTION THRU END WALL	1.0	EA	160.000	32.28	0.	0.00	0.	63000.	0.		63000.
1337	E2S11	53	0	2	RIGGING - CRANE OPERATOR	1.0	EA	40.000	23.44	938.	0.00	0.	13600.00	0.		5165.
1338	E2S11	85	0	2	FIELD WELD TOP SECTIONS CLF OF WELD PASSES	32636.2	LF	0.033	32.28	34765.	0.10	3264.	0.32	10444.	0.	14538.
1339	E2S11	85	0	2	FIELD WELD BOTTOM SECTIONS W/FULL PEN	32636.2	LF	0.050	32.28	52675.	0.10	3264.	0.32	10444.	0.	48473.
1340	E2S11	85	0	2	FIELD WELD INSPECTION	65272.3	LF	0.025	32.28	52675.	0.00	0.	0.10	6527.	0.	66382.
1341	E2S11	85	0	2	MISC GRINDING/ FITTING/ETC.	60000.0	LF	0.010	32.28	19368.	0.00	0.	0.10	6000.	0.	59202.
1342	E2S11		0	2	FABRICATE-CUT & PUNCH ITEM #1330 (BY SUPPLIER)	420000.0	LBS		0.00	0.	0.00	0.	0.00	0.	84000.	25368.
1343	E2S11		0	2	WQA-1 DOCUMENTATION & CERTIFICATION FOR ITEM #1330	420000.0	LBS		0.00	0.	0.00	0.	0.00	0.	42000.	84000.
1348	E2S11				BRIDGE CRANE - 20 TON											
1349	E2S11	85	0	2	INSTALL CRANE (QUOTE)	1.0	EA	420.000	32.28	13558.	807000.00	0.00	0.	0.		820958.
1350	E2S11	85	0	2	INSTALL CRANE BEAMS HORIZONTAL BRACE 2-W 27X114'S	260.0	LF	1.500	32.28	12589.	53.50	13910.	2.50	650.	0.	27149.

(Items with '0' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Broken Structure I	Job ID	A b F	o c t	c t Tag	Take-Off Item Description	Quantity	Unit	Labor		Material Rate	Ext'd Cost	Const Equip Rate	Ext'd Cost	Sub Contract Cost	Item Direct Cost
									Factor	Rate						
1351	E2S11	85	0	2		INSTALL BRACKETS	56.0	EA	6.000	32.28	100.00		1.00			
										10846.	5600.		56.		0.	16502.
1352	E2S11	53	0	2		FORKLIFT TO ERECT BEAMS & BRACKET	2.0	WKS	40.000	23.44	0.00		600.00			
										1875.	0.		1200.		0.	3075.
1353	E2S11		0	2		SCISSOR LIFT-MAKE CONNECTIONS/PAINT	3.0	WKS		0.00	0.00		300.00			
										0.	0.		900.		0.	900.
1354	E2S11	57	0	2		PAINT CRANE RAILS AND BRACKETS	5100.0	SF	0.012	23.26	0.20		0.02			
										1424.	1020.		102.		0.	2546.
1355	E2S11	85	0	2		FIT AND ALIGN CRANE	1.0	WKS	240.000	32.28	0.00		0.00			
										7747.	0.		0.		0.	7747.
1356	E2S11	85	0	2		1-W24X131 BEAM	130.0	LF	1.500	32.28	67.00		2.50			
										6295.	8710.		325.		0.	15330.
1357	E2S11	85	0	2		1-60# RAIL	130.0	LF	0.500	32.28	15.00		1.00			
										2095.	1950.		130.		0.	4178.
1358	E2S11	85	0	2		W 24X 131 (EAST WALL)	130.0	LF	1.500	32.28	67.00		2.50			
										6295.	8710.		325.		0.	15330.
1359	E2S11		0	2		START UP AND TEST CRANE (ITEM #1349)	1.0	EA		0.00	0.00		0.00			
										0.	0.		0.		100000.	100000.
1363	E2S11					TUBE HANDLING MACHINE & ASSOC. EQUIPMENT										
1364	E2S11		0	2		CONTAINER HANDLING MACHINE (QUOTE)	1.0	EA		0.00	0.00		0.00			
										0.	0.		0.		1000000.	1000000.
1365	E2S11		0	2		PLUS PULLERS (QUOTE)	2.0	EA		0.00	0.00		0.00			
										0.	0.		0.		50000.	50000.
1366	E2S11		0	2		SHIELDING VALVE (QUOTE)	2.0	EA		0.00	0.00		0.00			
										0.	0.		0.		600000.	600000.

(Items with *#* have been adjusted by Job Factor and/or Equip Factor)

Item	Work Bkdw Structure 1	J A			Quantity	Unit	Labor			Material		Const Equip		Sub Contract Cost	Item Direct Cost
		Trd	b	c			Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
1367	E2S11	0	2	CCTV/ILLUMINATION/ BAR CODE READER (QUOTE)	1.0	EA		0.00	0.	0.00	0.	0.00	0.	100000.	100000.
1373	E2S11			MATERIAL X-FER AIRLOCKS-BASEMENT											
1374	E2S11	0	2	MATERIAL X-FER EQUIPMENT	1.0	EA		0.00	0.	0.00	0.	0.00	0.	50000.	50000.
1380	E2S11			CONTAINER BASKETS											
1381	E2S11	0	2	CONTAINER BASKETS (WITH EXTRAS) \$750EA SEE BACK UP QUOTE	1100.0	EA		0.00	0.	0.00	0.	0.00	0.	825000.	825000.
1382	E2S11			ALUMINIZED STEEL STORAGE DRYWELLS											
1383	E2S11	0	2	18" DIA X 17'-1"X 1/2" TK (QUOTE)	515.0	EA		0.00	0.	775.00		0.00		0.	399125.
1384	E2S11	85	0	2 FLANGES - 1"X2"X18 I.D. WELDED TO DRYWELL	507.0	EA	3.000	32.28	49098.	20.00	10140.	12.00	6084.	0.	65322.
1385	E2S11	45	0	2 SOCKETS/PINS & FASTE N TO FLOOR	515.0	EA	0.500	17.29	4452.	75.00	38625.	1.56	803.	0.	43881.
1386	E2S11	0	2	CONC SHIELDED PLUGS (800#/EA) SEE BREAKDOWN	515.0	EA		0.00	0.	225.00	115875.	0.00	0.	0.	115875.
1387	E2S11	85	0	2 INSTALL DRYWELL	515.0	EA	0.250	32.28	4156.	0.00		5.00	2575.	0.	6731.
1388	E2S11	85	0	2 WELD/FASTEN DRYWELL TO DECK	515.0	EA	3.000	32.28	49873.	3.00	1545.	12.00	6180.	0.	57598.
1517	E2S11	69	0	2 24" NEOPRENE GASKETS	507.0	EA	2.000	33.56	34030.	162.00	82134.	0.00	0.	0.	116164.

[Items with '*' have been adjusted by Job Factor and/or Equip Factor]

Item	Work Bkdw Structure 1	J A		Take-Off Item Description	Quantity Unit	Labor		Material Rate Ext'd Cost	Const Equip Rate Ext'd Cost	Sub Contract Cost	Item Direct Cost
		Trd ID	o c b F			Factor	Rate Ext'd Cost				
1535	E2S11	05	0 2	FABRICATE DRYWELL	515.0 EA	8.000	32.28 132994.	50.00 25750.	80.00 41200.	0.	199944.
1536	E2S11	05	0 2	INSPECT DRYWELL	515.0 EA	4.000	32.28 66497.	0.00 0.	0.00 0.	0.	66497.
1537	E2S11	05	0 2	DOCUMENTATION TESTING FOR DRYWELL	515.0 EA	4.000	32.28 66497.	0.00 0.	0.00 0.	0.	66497.
E2S11 Category Direct Cost							774126.	1648917.	282447.	2851000.	5556491.
345	E2S12			STAGING & UNPACKING AREA							
350	E2S12		0 4	STAGING AREA MANUAL DOLLIES (QUOTE)	12.0 EA	1.000	0.00 0.	0.00 0.	0.00 0.	8400.	8400.
351	E2S12		0 4	MISC. CARTS (QUOTE)	3.0 EA		0.00 0.	900.00 2700.	0.00 0.	0.	2700.
353	E2S12		0 4	UNPACKING AREA SHIELD WALL ASSY. (QUOTE)	1.0 EA	1.000	0.00 0.	0.00 0.	0.00 0.	65000.	65000.
354	E2S12		0 4	UNPACKING AREA MANIPULATOR (QUOTE)	1.0 EA	1.000	0.00 0.	0.00 0.	0.00 0.	200000.	200000.
355	E2S12		0 4	UNPACKING AREA CCTV SYSTEM (QUOTE)	1.0 EA	1.000	0.00 0.	0.00 0.	0.00 0.	4000.	4000.
356	E2S12		0 4	DRUM HANDLER (QUOTE)	3.0 EA		0.00 0.	350.00 1050.	0.00 0.	0.	1050.
357	E2S12		0 4	DRUM CRADLES (QUOTE)	3.0 EA		0.00 0.	90.00 270.	0.00 0.	0.	270.

(Items with '*' have been adjusted by Job Factor and/or Equip Factor)

Item	Work Brkdwn Structure 1	J Trd ID	A b F	c t Tag	Contract Markup Description	Quantity Unit	- - - L a b o r - - -			Material		Const Equip		Sub Contract Cost	Item Direct Cost
							Factor	Rate	Ext'd Cost	Rate	Ext'd Cost	Rate	Ext'd Cost		
358	E2S12			0	4 DRUM DOLLIES (QUOTE)	3.0 EA			0.00 0.	75.00 225.		0.00 0.		0.	225.
1476	E2S12			0	2 JIB CRANE (FRAME) (QUOTE)	2.0 EA			0.00 0.	1300.00 2600.		0.00 0.		0.	2600.
1477	E2S12			0	2 1 TON ELECT HOIST (QUOTE)	2.0 EA			0.00 0.	1300.00 2600.		0.00 0.		0.	2600.
1478	E2S12			0	2 TROLLEY (QUOTE)	2.0 EA			0.00 0.	200.00 400.		0.00 0.		0.	400.
1479	E2S12	85		0	2 INSTALL JIB CRANE & ASSEMBLE FRAME	2.0 EA	16.000	32.28	1033.	100.00 200.		0.00 0.		0.	1233.
1480	E2S12	65		0	2 POWER TO JIB CRANES	2.0 EA	16.000	32.96	1055.	500.00 1000.		0.00 0.		0.	2055.
E2S12						Category Direct Cost			2088.	11045.	0.	277400.	290533.		
1328	E2S14	65		0	4 HELIUM DETECTION ALARM AT STORAGE VAULTS	1.0 EA			0.00 0.	0.00 0.		0.00 0.		15000.	15000.
E2S14						Category Direct Cost			0.	0.	0.	15000.	15000.		
344	E2S15				LOADING DOCKS										
347	E2S15			0	4 LOADING DOCK LIFT TABLE 10,000 LB CAP (QUOTE)	1.0 EA	1.000	0.00	0.00 0.	0.00 0.		0.00 0.		10453.	10453.
348	E2S15			0	4 LOADING DOCK FORK LIFT 6,000 LB CAP (QUOTE)	1.0 EA	1.000	0.00	0.00 0.	0.00 0.		0.00 0.		39900.	39900.
E2S15						Category Direct Cost			0.	0.	0.	50353.	50353.		
Project Direct Cost									4222969.	5692639.	738473.	8828222.	19482098.		

Character String	Brkdown Category Title	Rates				Category Direct Cost	Category Cntrct Markup	Escl	PM	Project Markups		Category Total Cost	
		Escl	PM	ED&I	Cont					Subtotal	ED&I	Cont	
12C15	FACILITY MONITORING CONTROL SYS MECH	0.1144	0.0000	0.0000	0.2500	73678.	24671.	11251	0	109600.	0	27400	137000.
12C16	FACILITY MONITORING CONTROL SYS ELECT	0.1144	0.0000	0.0000	0.2500	171636.	57404.	26179	0	255019.	0	63755	318774.
12L13	MATERIAL HANDLING NO A/STORAGE VAULT	0.1144	0.0000	0.0000	0.2000	4600000.	339745.	565107	0	5504852.	0	1100970	6605822.
12S11	SPEC FAC EQUIPMENT STRG ARRAY HARDWARE	0.1144	0.0000	0.0000	0.2500	5556491.	1860549.	848509	0	8265549.	0	2066387	10331936.
12S12	SPEC FAC EQUIPMENT STRG ARRAY COOLING	0.1144	0.0000	0.0000	0.2500	290533.	23777.	35957	0	350267.	0	87567	437834.
12S14	SPEC FAC EQUIPMENT STRG ALARM SYSTEMS	0.1144	0.0000	0.0000	0.2500	15000.	1108.	1843	0	17951.	0	4488	22439.
12S15	SPEC FAC EQUIPMENT STRG MECH SYSTEMS	0.1144	0.0000	0.0000	0.2500	50353.	3719.	6186	0	60258.	0	15065	75323.
						19482097.	4817787.	2665148	2487315	29452347.	4843735	7949231	42245313.
Project Total Cost													

PF File: 056dsbld.PR
TO File: 056dsbld.TA

ICF Kaiser Engineers
Los Alamos, NM
GENERAL COST SUMMARY

Sorted by WBS 1 Summarized on 5 Characters
Secondary Subtotals on 0 Characters

Job Number: 41552-056

Change Order Number:

10: 7:21

6/30/95

Project Title: MMSF DESIGN AND BUILD

Checked By:

Location: TA-55 PF41

Estimator: ICF KAISER

Abbrev:

Character String	Brkdw Category Title	Escal	PM	ED&I	Cont	Category Direct Cost	Category Contract Markup	Eccl	PM	Project Markups Subtotal	ED&I	Cont	Category Total Cost
11F01	PROJECT MANAGEMENT	0.0000	*****	0.0000	0.2000	1.	0.	0	1151888	1151888.	0	230378	1382267.
12F01	CONSTRUCTION MANAGEMENT	0.0000	*****	0.0000	0.2000	1.	0.	0	1335427	1335428.	0	267086	1602514.
12F01	ED&I FAC. TITLE II	0.0000	0.0000	*****	0.2500	1.	0.	0	0	1914754	478689	1.	2393444.
12S01	ED&I SFE TITLE II	0.0000	0.0000	*****	0.2500	1.	0.	0	0	383392	95848	1.	479241.
13F01	ED&I FAC TITLE III	0.0000	0.0000	*****	0.2500	1.	0.	0	0	1551416	387854	1.	1939271.
13S01	ED&I SFE TITLE III	0.0000	0.0000	*****	0.2500	1.	0.	0	0	126233	31559	1.	157793.
14M01	LABORATORY PROCUREMENT	0.0000	0.0000	*****	0.2500	1.	0.	0	0	867940	216985	1.	1084926.
10011	FIELD OVERHEAD(SEE L OTUS WORKSHEET)	0.1007	0.0000	0.0000	0.1500	918552.	148263.	107428	0	1174243.	0	176136	1350379.
11C02	CONVENT. DEMOLITION	0.0841	0.0000	0.0000	0.1800	91631.	20951.	9668	0	122050.	0	21969	144019.
11C03	CONCRETE DEMOLITION	0.0841	0.0000	0.0000	0.1800	290715.	47635.	28455	0	366805.	0	66025	432830.
11C05	STRUCT. DEMOLITION	0.0841	0.0000	0.0000	0.1800	57349.	8754.	5559	0	71662.	0	12899	84561.
11C15	MECH. DEMOLITION	0.0841	0.0000	0.0000	0.1800	42784.	14326.	4803	0	61913.	0	11144	73057.
11C16	ELECT. DEMOLITION	0.0841	0.0000	0.0000	0.1800	73993.	24776.	8306	0	107075.	0	19273	126348.
11S	SPECIAL SECURITY CONSTRUCTION	0.0841	0.0000	0.0000	0.2500	421502.	141137.	47318	0	609957.	0	152489	762446.
12	SITWORK	0.0841	0.0000	0.0000	0.2000	20000.	10973.	2605	0	33578.	0	6716	40294.
13A02	BASEMENT EXCAVATION	0.1007	0.0000	0.0000	0.2500	424031.	141984.	56998	0	623013.	0	155753	778766.
13A03	STRUCTURAL CONCRETE	0.1007	0.0000	0.0000	0.2500	865270.	289651.	116301	0	1271222.	0	317806	1589028.

Character String	Bkldm Category Title	Escl	PM	ED&I	Cont	Category Direct Cost	Category Contct Markup	Escl	PM	Project Markups (ED&I)	Cont	Category Total Cost
C3A04	STRUCTURAL MASONRY	0.1007	0.0000	0.0000	0.2500	17485.	2822.	2045	0	22352.	0	27940.
C3A05	METALS	0.1007	0.0000	0.0000	0.2500	299494.	100283.	40258	0	440035.	0	550044.
C3A06	WOODS AND PLASTICS	0.1007	0.0000	0.0000	0.2500	1459.	488.	196	0	2143.	0	2679.
C3A07	ROOFING AND SIDING	0.1007	0.0000	0.0000	0.2500	47717.	15978.	6414	0	70109.	0	87636.
C3A08	DOORS AND WINDOWS	0.1007	0.0000	0.0000	0.2500	194150.	65010.	26097	0	285257.	0	356571.
C3A09	FINISHES	0.1007	0.0000	0.0000	0.2500	635212.	212598.	85374	0	933184.	0	1166480.
C3A10	SPECIALITIES	0.1007	0.0000	0.0000	0.2500	15641.	2525.	1829	0	19995.	0	24994.
C3A15	MECHANICAL SYSTEMS	0.1116	0.0000	0.0000	0.2500	1762440.	589380.	262463	0	2614283.	0	3267854.
C3A16	ELECTRICAL SYSTEMS	0.1062	0.0000	0.0000	0.2500	608985.	207911.	86754	0	903650.	0	1129563.
C3B02	UTILITY BLDG SITE WD RK & GRADING	0.1116	0.0000	0.0000	0.2500	4574.	1532.	681	0	6787.	0	8484.
C3B03	UTIL BLDG STRUCTURAL CONCRETE	0.1116	0.0000	0.0000	0.2500	8740.	1411.	1133	0	11284.	0	14105.
C3B04	UTIL BLDG STRUCTURAL MASONRY	0.1116	0.0000	0.0000	0.2500	11827.	1909.	1533	0	15269.	0	19086.
C3B05	UTIL BLDG METALS	0.1116	0.0000	0.0000	0.2500	4935.	1653.	735	0	7323.	0	9154.
C3B06	UTIL BLDG DOORS & WI DOORS	0.1116	0.0000	0.0000	0.2500	1655.	267.	214	0	2136.	0	2670.
C3B09	UTIL BLDG FINISHES	0.1116	0.0000	0.0000	0.2500	1248.	417.	186	0	1851.	0	2314.
C3B16	UTIL BLDG ELECT. SYS TENS	0.1116	0.0000	0.0000	0.2500	17246.	5775.	2569	0	25590.	0	31988.
C3C05	MECH. PENTHOUSE ME7A LS	0.1116	0.0000	0.0000	0.2500	33783.	11312.	5033	0	50128.	0	62660.
C3C06	MECH. PENTHOUSE DOOR S & WINDOWS	0.1116	0.0000	0.0000	0.2500	893.	299.	133	0	1325.	0	1656.
C5D15	NATURAL GAS PIPING OUTSIDE OF BUILDING	0.0841	0.0000	0.0000	0.2000	11477.	3844.	1288	0	16609.	0	19931.
C5E15	FIRE PROTECTION OUTS IDE OF BUILDING	0.0841	0.0000	0.0000	0.2000	41435.	13874.	4651	0	59960.	0	71952.
C5F15	RAH/ACID WASTE LINE OUTSIDE OF BLDG.	0.0841	0.0000	0.0000	0.2000	5166.	1730.	580	0	7476.	0	8971.
C5G15	WATER PIPING OUTSIDE OF BUILDING	0.0841	0.0000	0.0000	0.2000	4427.	1482.	497	0	6406.	0	7687.
E20	SECURITY SYSTEMS EQUIPMENT	0.1144	0.0000	0.0000	0.2000	816025.	90143.	103666	0	1009834.	0	1211801.
E2C11	FACILITY MONITORING CONTROL SYS EQUIP	0.1144	0.0000	0.0000	0.2500	972758.	325721.	148546	0	1447025.	0	1808781.

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A. QUOTE ON SPC COATING

PLANT LOCATION
2815 SAN JUAN BLVD. • FARMINGTON, N.M. 87401 P. O. BOX 2014 • FARMINGTON, N.M. 87424
PHONE (505) 327-4947 — FAX (505) 326-0305

March 11, 1992

L.A. Labs
P.O. Box 1663
Engineering - 4
Mail Stop 704
Los Alamos, New Mexico 87545

Attn: Phillip Sena

RE: NUCLEAR MATERIALS STORAGE FACILITY

As per our phone conversation, we are hereby submitting the following as some budgetary estimates for the above referenced project.

Our estimated square footage of the areas to be redone is as follows:

A)	Walls	Gypsum Board	6,488 square feet
		Concrete	44,618 square feet
B)	Ceiling	Gypsum Board	2,520 square feet
		Concrete	19,468 square feet
C)	Floor	Concrete	29,144 square feet

NOTE: Per our set of plans, the above square footage will be required to have the Plasite Coating System because of possible contamination if spills were to occur.

We have broken down the estimated cost of each process that will occur to recoat areas as required to meet regulations.

CONCRETE WALLS AND CEILING:

- 1) Use of a needle gun to remove the existing coating - this is to control the dust. Also it will protect from over blasting the concrete walls.

COST PER SQUARE FOOT \$1.05

- 2) Vacuum blast will be used to remove any coating left after the needle gunning and to provide the proper surface profile.

COST PER SQUARE FOOT \$1.00

PLANT LOCATION
2615 SAN JUAN BLVD. • FARMINGTON, N.M. 87401 P. O. BOX 2014 • FARMINGTON, N.M. 87499
PHONE (505) 327-4947 — FAX (505) 325-0303

- 3) After the walls have been prepped, we will need to spot in honey-comb areas with a trowel coat of 9028ML. We estimate approximately 6,300 square feet of wall and ceiling area that will require this work.

COST PER SQUARE FOOT \$2.85

- 4) Trowel apply one (1) coat of 9028M1 to all surfaces.

COST PER SQUARE FOOT \$1.71

- 5) Apply one (1) coat of 902M2 with a roller.

COST PER SQUARE FOOT \$0.70

- 6) Apply two (2) coats of Plasite 7122 by airless spray equipment.

COST PER SQUARE FOOT \$1.32

GYPSUM BOARD WALLS AND CEILINGS:

- 1) Prep by disc sanding to roughen up the surface for the proper profile.

COST PER SQUARE FOOT \$0.40

- 2) Apply two (2) coats of Plasite 7122 by airless spray equipment.

COST PER SQUARE FOOT \$1.32

CONCRETE FLOOR:

- 1) Use needle gun to remove existing floor coating.

COST PER SQUARE FOOT \$0.87

- 2) Vacuum blast the floor area to achieve the proper surface profile.

COST PER SQUARE FOOT \$0.77

PLANT LOCATION
2815 SAN JUAN BLVD. • FARMINGTON, N.M. 87401 P.O. BOX 2014 • FARMINGTON, N.M. 87499
PHONE (505) 327-4947 - FAX (505) 328-0305

- 3) Roll two (2) coats of Plasite 9028M2 as a primer and fill coat.

COST PER SQUARE FOOT \$1.53

- 4) Roll one (1) coat of Plasite 7122 and then one (1) coat of 7122HARAS as a finish system.

COST PER SQUARE FOOT \$1.70

CONCRETE WALLS AND CEILINGS:

64,086 square feet X \$5.78 = \$370,417.08

Patch with 9028

6,300 square feet X \$2.85 = \$ 17,955.00

GYPSUM BOARD WALLS AND CEILINGS:

9,008 square feet X \$1.72 = \$ 15,493.76

CONCRETE FLOOR:

29,144 square feet X \$4.87 \$141,931.28

BUDGET ESTIMATE \$545,797.12

The above prices are for budgetary estimates only and does not include any specialty equipment, mobilization, demobilization, and price increases - there are a lot of variables with this job that could effect pricing either way. We have not been given any type of work scope as of this letter. We can supply such things as generators, fans and etc. for this job. If there are things that you might be able to provide to help keep the costs down, please let us know.

We have applied this system many times for power plants and Sandia Labs in Albuquerque, New Mexico, so we are knowledgeable on the application procedures.

ESCALATE BUDGET ESTIMATE TO PRESENT

1993 1994 1995
3% 3% 3%

$$(1.03)(1.03)(1.03) = 1.093$$

$$(1.093)(545,797.12) = \underline{\$596,556}$$

PLANT LOCATION
2615 SAN JUAN BLVD. • FARMINGTON, N.M. 87401 P. O. BOX 3014 • FARMINGTON, N.M. 87499
PHONE (505) 327-4947 - FAX (505) 326-0305

If you have any questions, please feel free to call me at 505-327-4947
for my immediate attention.

Sincerely,

Ralph S. Doolin
Senior Estimator

RSD/db
rsd20

**B. CONTAINER HANDLING MACHINE
AND OTHER SFE - QUOTES AND
MISC INFO**

ICF KAISER

ICF KAISER ENGINEERS, INC.
1900 DIAMOND DRIVE
LOS ALAMOS, NM 87544
505/661-5200
FAX: 505/661-5222

FAX MEMORANDUM

FAX NUMBER: (303) 790-7757

NO. PAGES: 2

CONFIRMED
QUOTE w/ CLIFF NOW
FW ON 2/14/95

Date: February 7, 1995

To: Cliff Noll, Foster Wheeler

From: David O'Flynn, (505) 661-5274

Subject: TUBE HANDLING MACHINE

Copies To: File

41552-056-00

We are making painful progress on the CDR, but are moving forward and hope to be done soon. I think we got the criticality and thermal issues solved. I am moving into the estimating phase and am also describing the special facilities equipment.

I would like to get a quote (informal, but something in writing to provide credibility) from FW on a tube handling machine. The tube handling machine should be capable of:

1. Neutron Shielding - I will find out specifics if you need, but it has to be a hydrated material (polyurethane, polyethylene?) equivalent to 3 ft. of concrete supplemented with about 4-1/2% boron 10.
2. Has to operate remotely and also from a pendant.
3. Will be supported and moved via a bridge crane (capacity of crane will be determined when weight of tube handling machine is finalized).
4. Has to haul up a basket with 5 containers, total length of assembly on the order of 7'-6". The diameter of the basket, will be about 17".
5. The machine can be bolted to the charge face deck
6. Provide a shielding valve on the bottom.
7. The maximum headroom in the Hall is 16'-9". I will need room for the crane (say 5 ft.) and room for a shield valve (2'-6"7"), so that leaves about 9'-3" for the machine. I can adjust the dimensions somewhat. I can also provide 3'-5" from the centerline

of the drywell to the face of the interior walls.

Please also provide pricing for the following options:

1. Airtight shielding valve on the bottom of the machine. (INCLUDED.)
2. CCTV, low level illumination, and barcode reader on the inside. \$100K - 200K
3. Shielding valves and plug pullers, similar to what I saw at Ft. St. Vrain.
VALVE = 300K - 400K, 7/8" 4 PULLER
4. HEPA filter on the machine to pressurize the drywell. \$25K - 50K
\$20,000

As I mentioned, I am not looking for to the penny numbers, but something I can be relatively confident in for LANL to establish a budget. If you have doubts, please add contingency. If possible, please provide this information by February 15, 1995.

Thanks. Call me with any questions.

NOTE: FROM CLIFF NOW, FW:

- ALL PRICES ARE CONSERVATIVE AND INCLUDE CONTINGENCY.
- PRICE COULD COME DOWN WHEN MORE SPECIFICS ARE KNOWN.

C. CRANE QUOTES AND INFORMATION

ICF KAISER ENGINEERS, INC.
1900 DIAMOND DRIVE
LOS ALAMOS, NM 87544
505/661-5200
FAX: 505/661-5222

MEMORANDUM

Date: April 6, 1995

To: Manesman Demag
Richard Burkhardt
Fax 216-248-3086
Phone 216-349-8223
Quote Number 41006395

From: David O'Flynn, (505) 661-5274

Subject: CRANE FOR NMSF

Copies To: File

Per our conversation, I would like to get a quote on a bridge crane. The quote will be used for a budget estimate for a Conceptual Design Report. The detailed design has not started yet, but is expected to in October 1996.

BACKGROUND:

This crane will be used to extract nuclear materials from storage tubes in an enclosed facility. The dimensions of the Charge Deck are about 150 ft. long by 30 ft. wide.

REQUIREMENTS:

1. Vertical Hook Travel: 35 ft.
2. Height of Crane above deck: 20 ft.
3. Capacity: 20 tons
4. 30 ft. span
5. Variable speed, micro positioning
6. Operated from a remote terminal, therefore needs to be programmable.

7. Need emergency pendant override on crane.
8. Auxiliary Hook - 5 ton.
9. Radiation exposure - 1,000,000 RAD for a 40 year service life
10. Minimum maintenance
11. Festooning system
12. Need video cameras on crane to facilitate positioning and monitoring.
13. Lights mounted on crane.
14. 480 v, 3 phase power
15. Need wheel locks to secure trolley during hoisting operations.
16. Installation in June 1999.

Please fax me a quote as soon as possible. Since this is a conceptual design, we are not expecting a price that's down to the penny, but one that is reliable.

MANNESMANN

Demag Material Handling

ICP Kaiser Engineers, Inc.
1900 Diamond Dr.
Los Alamos, NM 87544

May 15, 1995

Attn: David O' Flynn

Subject: Quote No. 410 063 95

Dear Mr. O'Flynn,

Thank you for your interest in Mannesmann Demag Material Handling equipment.

We are herein quoting the following budget price for the subject job.

CRANE FOR NMSP:

One (1) 20/5 ton capacity, 30'-0" span, ZKKE Crane
Lift 35'-0"

Hoist # 1 Speed 21 FPM, DC, Variable Speed

Hoist # 2 Speed 32/ 3.2 FPM

Trolley Speed 50 FPM, DC, Variable Speed

Bridge Speed 100 FPM, DC, Variable Speed

Full automatic operation with radio as manual backup, walkway second hold break, video camera, weight overload device, full auto travel positioning (+ or - 3/4 in.) all motions, anti-sway controls, yoyo for vertical positioning, all controls remote with console, runway festoon system, guide rollers on one bridge and one trolley endtruck, cable reel on trolley for customer grab, Allen Bradley PLC #5, console with crt behind window, encoders for travel positioning (1)- trolley and (2) - bridge, computer and software for automation.

TOTAL BUDGET PRICE.....\$ 1,100,000.00
(Budget)
FOB: Solon, OH.

Should you have any questions or require additional information please contact us.

Very truly yours,

Mannesmann Demag Corporation

John M. Melin
District Manager

EXED	
TO: David O'Flynn	
FROM: John Melin	
DATE: 5-15-95	
# OF PAGES: 1	

MANNESMANN DEMAG CORP.

RECEIVED

TO: ICF Kaiser / David O'Finn
 FROM: John Melin
 DATE: 4-18-98
 # OF PAGES: 2

Application oriented quote
Request for Automatic Crane

Before you answer these questions please consider that the proposed price will reflect and will change with the requested positioning tolerances and with the requested degree of automatization.

The customer has already gross introduction to the cost of Automatization.

Yes Under \$ 50,000 No
Over \$ 50,000
Over \$100,000
Over \$200,000

1. The purpose or use of Automatic System

Coal Bunker Transport of Spools Pallet Handling
Refuse Burn Rolls Manufactg. Cell
Coil Transport Struct. Plate Transport Auto Body Trans
Paper roll Transport Struct. Shape Transport Pickling
Others, specify Scrap Handling Operation

SEE MEMO.

2. Requirements for Load Lifting Attachments

Magnet (with/Loadbeam) Vacu-Lift Unit Scissor type
Grab Stacker Forks Attachment
If a certain manufacturer requested, provide details:
Is the load lifting attachment existing?
Should the load lifting attachment be quoted?

3. Should the an including the Lifting Attachment be secured at the highest position of the lift during horizontal movements? Yes No
In case of NO, should the control system provide anti-collision features? YES NO

4. Technical Data:

	Dist. (Ft.)	No of positions	Stepping Toler. (Inch.)			Speed RPM		Speed Regul. Required ?	
			.125	.375	.75	min.	max.	Yes	No
Hoist	25 ft								
Bridge	25 ft								
Trolley									
Rotation									

Motor Tunn: 1) on C 1.4:Camp, 2) U.C. 1.4:Camp, 3) 22.5: with inverter
 4) U.C., 5) Servo

Notes: Please note if accuracy is required at the floor or at runway level.

5. Is it possible to drive the load to a coarse position than fine position with mechanical locating devices? Yes No

6. Customer request method of positioning? Yes No
In case of Yes, what type, resolver/encoder, proximity switches, photoelectric?

To: ICF Kaiser / David O' Flynn
From: John Melin

FAXED	
TO:	
FROM:	
DATE:	4/17/95
# OF PAGES:	3

David,

Sendma "Crane Classifications"
from the CMAA Crane Builders
Specifications # 70

Any Questions, Please Call

Resuds,

John

**MANNESMANN
DEMAG**

San Bernardino Facility
(800) 880-8800

70-2 CRANE CLASSIFICATIONS

- 2.1 Service classes have been established so that the most economical crane for the installation may be specified in accordance with this specification.

The crane service classification is based on the load spectrum reflecting the actual service conditions as closely as possible.

Load spectrum is a mean effective load, which is uniformly distributed over a probability scale and applied to the equipment at a specified frequency. The selection of the properly sized crane component to perform a given function is determined by the varying load magnitudes and given load cycles which can be expressed in terms of the mean effective load factor.

$$k = \sqrt[3]{W_1^3 P_1 + W_2^3 P_2 + W_3^3 P_3 + \dots + W_n^3 P_n}$$

Where W = Load magnitude; expressed as a ratio of each lifted load to the rated capacity. Operation with no lifted load and the weight of any attachment must be included.

p = Load probability; expressed as a ratio of cycles under each load magnitude condition to the total cycles. The sum total of the load probabilities p must equal 1.0.

k = Mean effective load factor. (Used to establish crane service class only)

All classes of cranes are affected by the operating conditions, therefore for the purpose of the classifications, it is assumed that the crane will be operating in normal ambient temperature 0° to 104°F (-17.7° to 40°C) and normal atmospheric conditions (free from excessive dust, moisture and corrosive fumes).

The cranes can be classified into loading groups according to the service conditions of the most severely loaded part of the crane. The individual parts which are clearly separate from the rest, or forming a self-contained structural unit, can be classified into different loading groups if the service conditions are fully known.

2.2 CLASS A (STANDBY OR INFREQUENT SERVICE)

This service class covers cranes which may be used in installations such as powerhouses, public utilities, turbine rooms, motor rooms and transformer stations where precise handling of equipment at slow speeds with long, idle periods between lifts are required. Capacity loads may be handled for initial installation of equipment and for infrequent maintenance.

2.3 CLASS B (LIGHT SERVICE)

This service covers cranes which may be used in repair shops, light assembly operations, service buildings, light warehousing, etc., where service requirements are light and the speed is slow. Loads may vary from no load to occasional full rated loads with two to five lifts per hour, averaging ten feet per lift.

2.4 CLASS C (MODERATE SERVICE)

This service covers cranes which may be used in machine shops or papermill machine rooms, etc., where service requirements are moderate. In this type of service the crane will handle loads which average 50 percent of the rated capacity with 5 to 10 lifts per hour, averaging 15 feet, not over 50 percent of the lift at rated capacity.

2.5 CLASS D (HEAVY SERVICE)

This service covers cranes which may be used in heavy machine shops, foundries, fabricating plants, steel warehouses, container yards, lumber mills, etc., and standard duty bucket and magnet operations where heavy duty production is required. In this type of service, loads approaching 50 percent of the rated capacity will be handled constantly during the working period. High speeds are desirable for this type of service with 10 to 20 lifts per hour averaging 15 feet, not over 65 percent of the lifts at rated capacity.

2.6 CLASS E (SEVERE SERVICE)

This type of service requires a crane capable of handling loads approaching a rated capacity throughout its life. Applications may include magnet, bucket, magnet/bucket combination cranes for scrap yards, cement mills, lumber mills, fertilizer plants, container handling, etc., with twenty or more lifts per hour at or near the rated capacity.

2.7 CLASS F (CONTINUOUS SEVERE SERVICE)

This type of service requires a crane capable of handling loads approaching rated capacity continuously under severe service conditions throughout its life. Applications may include custom designed specialty cranes essential to performing the critical work tasks affecting the total production facility. These cranes must provide the highest reliability with special attention to ease of maintenance features.

2.8 CRANE SERVICE CLASS IN TERMS OF LOAD CLASS AND LOAD CYCLES

The definition of CMAA crane service class in terms of load class and load cycles is shown in Table 2.8-1.

TABLE 2.8-1
DEFINITION OF CMAA CRANE SERVICE CLASS
IN TERMS OF LOAD CLASS AND LOAD CYCLES

LOAD CLASS	Load Cycles				K = MEAN EFFECTIVE LOAD FACTOR
	N ₁	N ₂	N ₃	N ₄	
L ₁	A	B	C	D	0.35 -0.53
L ₂	B	C	D	E	0.531-0.67
L ₃	C	D	E	F	0.671-0.85
L ₄	D	E	F	F	0.851-1.00
	Irregular occasional use followed by long idle periods	Regular use in intermittent operation	Regular use in continuous operation	Regular use in severe continuous operation	

LOAD CLASSES:

- L₁ = Cranes which hoist the rated load exceptionally and, normally, very light loads.
- L₂ = Cranes which rarely hoist the rated load, and normal loads of about one third of the rated load.
- L₃ = Cranes which hoist the rated load fairly frequently and normally, loads between $\frac{1}{3}$ and $\frac{2}{3}$ of the rated load.
- L₄ = Cranes which are regularly loaded close to the rated load.

LOAD CYCLES:

- N₁ = 20,000 to 200,000 cycles
- N₂ = 200,000 to 600,000 cycles
- N₃ = 600,000 to 2,000,000 cycles
- N₄ = Over 2,000,000 cycles

FAX TRANSMISSION SHEET

ICF KAISER
ENGINEERS

ICF KAISER ENGINEERS, INC.
FOUR GATEWAY CENTER
PITTSBURGH, PENNSYLVANIA 15222-1207
(412) 487-8000
TELEDC 199121
FAX: 412/487-8212

FAX NO:

505-661-5222

DATE:

4-18-95

ICE REF:

41552-056-00

PAGE

2

OF

6

COMPANY/LOCATION:

ICFKE, LOS ALAMOS, N.M.

ATTENTION:

Chris Ehrsam

FROM:

R. Tripson

DEPT:

MECH.

** PLEASE NOTIFY RECEPTIONIST IF TRANSMISSION IS INCOMPLETE/ILLEGIBLE. **

MESSAGE

We will send you a hard copy of the
J.B. Sales Corp submittal when we receive
it from them.

RUT.

J.B. SALES CORPORATION

PO BOX 1184 • 4100 WASHINGTON ROAD
McMURRAY, PA 15317
PHONE (412) 941-1433 • FAX (412) 941-9784

Manufacturers Representative

Established 1962
Cranes, Hoists, Winches
Crane Accessories

FAX TRANSMITTAL SHEET**TIME SENT:****REROUTED:****DATE:** 5-26-95**YOUR FAX NUMBER:** 505-661-5222**TO:** J.C. Kacik**ATTENTION:** Chris Chasen**FROM:** J. B. SALES CORPORATION**REFERENCE:** see attached**NUMBER OF PAGES:**
(including this one) 2**OUR FAX NUMBER:** (412) 941-9784**MEMO:**

Per your request

SENT BY: Whiting Corporation ; 4-17-95 ; 2:18PM ;

8102639413-

14123419784: 2/ 3

◆ ICF KAISER

FAX TRANSMISSION SHEET

ICF KAISER ENGINEERS, INC.
FOUR GATEWAY CENTER
PITTSBURGH, PENNSYLVANIA 15222-1207
TELEPHONE: 412/497-0000
TELEFAX: 199231
FAX: 412/497-0112

FAX NO: (412) 941-9784

DATE: APR 17, 1995

TO: LOS ALAMOS CRANE

PAGE 1 OF 1

COMPANY/LOCATION: J.B. SALES CORPORATION - McMURRAY, PA.

ATTENTION: MR. JOHN BARNEY

FROM: HARRY BOGE

SUBJECT: MECHANICAL

PLEASE NOTIFY RECEPTIONIST IF TRANSMISSION IS INCOMPLETE/ILLEGIBLE.

MESSAGE

WE HAVE RECEIVED A REQUEST FOR HELP IN OBTAINING A BUDGET (± 15%) PRICE FOR A TOP RUNNING BRIDGE CRANE FROM OUR LOS ALAMOS, NEW MEXICO OFFICE. THEY NEED THE PRICE BY THE END OF THE DAY TOMORROW (4/18/95) IF POSSIBLE. THE FOLLOWING IS ALL WE HAVE BEEN ABLE TO DETERMINE FOR APPLICATION DATA SINCE THE PRICE WILL BE USED FOR A BUDGET ESTIMATE FOR A CONCEPTUAL DESIGN REPORT. THE CRANE WILL BE USED TO EXTRACT NUCLEAR MATERIALS FROM STORAGE TUBES IN AN ENCLOSED FACILITY. THE DIMENSIONS OF THE CHARGE DECK ARE ABOUT 30 FEET WIDE BY 150 FEET LONG.

- 1) CAPACITY: 20 TONS MAIN HOOK AND 5 TONS AUXILIARY HOOK
- 2) VERTICAL HOOK TRAVEL: 35 FEET
- 3) HEIGHT OF CRANE ABOVE DECK: 20 FEET
- 4) SPAN: 30 FEET
- 5) VARIABLE SPEED, MICRO POSITIONING
- 6) OPERATED FROM A REMOTE TERMINAL, THEREFORE NEEDS TO BE PROGRAMMABLE
- 7) NEED EMERGENCY PENDANT OVERRIDE ON CRANE
- 8) RADIATION EXPOSURE: 1,000,000 RAD FOR A 40 YEAR SERVICE LIFE
- 9) MINIMUM MAINTENANCE
- 10) POWER AND CONTROL BY FESTOONING SYSTEM
- 11) NEED VIDEO CAMERAS ON CRANE TO FACILITATE POSITIONING AND MONITORING
- 12) NEED LIGHTS MOUNTED ON CRANE
- 13) POWER: 480V, 3 PHASE
- 14) NEED WHEEL LOCKS TO SECURE TROLLEY DURING HOISTING OPERATIONS
- 15) INSTALLATION WILL BE IN JUNE 1999

THANK YOU IN ADVANCE FOR YOUR HELP AND IF YOU HAVE ANY QUESTIONS THAT I CAN GET ANSWERED CONTACT ME AT (412) 497-2197. PLEASE RESPOND WITH PRICE BY FAX TO THE NUMBER ABOVE.

COPY: A. TRAPSON
FILE

\$500,000 per All of The Above

EDERER INCORPORATED

VIA FAX: 505-661-5222

E CRANE
U CRANE
S CRANE

14 April 1995

IFC Kaiser Engineers, Inc.
1900 Diamond Drive
Los Alamos, NM 87544

Attention: Chris Ehlers

Subject: 20/5 Ton Crane for NMSF

Thank you for your inquiry. We are pleased to provide budgets based on the requirements of your 06 April 1995 fax, plus additional assumptions based on our experience with in cell remote operated critical lift cranes.

- Single failure proof critical lift crane with remote operation
Budget: \$650,000
- 2 or 3 CCTV's and position reporting
Add approximately: \$100,000
- Automatic positioning
Add: \$50,000 to \$150,000
- Emergency Crane Retrieval
Add: \$20,000 to \$50,000

\$820,000

Installation, start up and test for such a system in an existing facility is next to impossible to estimate at this stage. We suggest you start with \$200,000 and recognize that it can vary widely.

The following is enclosed via mail for your reference;

USE \$100,000

1. Drawing PA-1868 rev C: This is of an Ederer in cell crane for critical lifts in a nuclear dry cell facility. See F-2411 and F-2412 on enclosed Special Purpose Users List.
2. PA-1569 sheets 1 and 2: These are of an Ederer multi crane radwaste storage system. See F-1901 through F-1904 on enclosed Special Purpose Users List.

We see your requirements as a combination of the above projects.

3. Special Purpose Users List
4. Ederer General Brochure

2925 FIRST AVENUE SOUTH, SEATTLE, WA 98134 • POST OFFICE BOX 24708, SEATTLE, WA 98124
TEL: (206) 822-4421 • FAX: (206) 823-8583

IFC Kaiser Engineers, Inc.
Chris Ehrsam
14 April 1995

Page two

5. Ederer X-SAM™ brochure
6. Ederer X-SAM™ video
7. Paper entitled "Why Cranes Drop Loads".

Ederer has been involved in critical lift applications for almost 20 years. We have implemented our X-SAM hoist system in applications ranging from nuclear fuel to weapons to rockets and satellites.

We look forward to working with you further as your concept develops.

Best regards,

EDERER INCORPORATED

Brian Kennon
Sales Engineer

BK/dt

enclosures: (8)

COST ESTIMATING TAKEOFF FORM

JOB TITLE: NMSE RENOVATION

NAME: DVD P

DATE: 3/95

ESTIMATE DESCRIPTION: BRIDGE CRANE NSPM.

JOB #: 4-552-056-00

ICF KAISER ENGINEERS

[illegible]

ITEM #	CSI WBS	DESCRIPTION	QTY.	UNITS	MATERIALS (COST/UNIT)	MAN HRS PER UNIT	LABOR ID	EQUIP. RENTAL
		WEST SIDE BRIDGE CRANE BEAM						
1.	EW11	INSTALL CRANE BEAMS HORIZONTAL BRACE 2 - W 27x 14's (INSTEAD (WEST WALL) OF x 27)	260	LF	58.50	1.50	85/29.62	2.50
2		1 - W 24x 131 BEAM (130LF)	130	LF	67.00	1.50	85/29.62	2.50
3		1 - 60" RAIL (130LF)	260	LF	15.00	0.50	85/29.62	1.00
4.		W 24x 131 (EAST WALL)	130	LF	67.00	1.50	85/29.62	2.50
5.		INSTALL BRACKETS	56	ea.	100.00	6.00	85/29.62	1.00
6.		CRANE INSTALLATION PER VENDOR QUOTE	1	ea.	100,000			

COMMENTS:

BRIDGE CRANE SUPPORT

- REFERENCE STRUCTURAL/SGPMIR CALCULATIONS
- LOCATED IN CHARGE HALL
- REVISE BEAM SIZES ASSUMING DESIGN WILL BE REFINED.

WEST WALL

EAST WALL

D. FACILITY MONITORING SYSTEM

ESTIMATE NOTES

P = PRICE LIST
 E = ESTIMATE
 M = MERICK+6%
 A = ALLOWANCE

LANL NSF CDR
 Instrumentation and Control
 Cost Estimate

3/5/95

DESCRIPTION	QTY	UNIT	MATERIAL / EQUIPMENT UNIT PRICE	EQUIP. EXT'D TOTAL	ESTIMATE BASIS	HOURS	LABOR RATE	EXT'D COST	TOTAL COST
FMS PLC SYSTEM									
- PLC CARDS (61)	1	LOT	56944	56944	P	0	NA		56944
- PLC RACKS (5)	1	LOT	10880	10880	P	0	NA		10880
- PLC PROCESSORS (2)	1	LOT	23052	23052	P	0	NA		23052
- PLC ENCLOSURE	4	LOT	5000	20000	E	16	ELEC	#VALUE!	#VALUE!
- PLC LADDER LOGIC PROGRAMMING	480	HRS	65	31200	E	0	NA		31200
- PLC PORT. TERMINAL	1	EA	5911	5911	P	0	NA		5911
- PLC PROGRAM / DOC. PACKAGE	1	EA	2500	2500	P	0	NA		2500
- PLC TERMINATION	2400	EA	0	0	E	480	ELEC	#VALUE!	#VALUE!
FMS COMPUTER SYSTEM									
- IBM INDUSTRIAL (OP. ST.)	8	EA	7955	63840	P	2	ELEC	#VALUE!	#VALUE!
- IBM SERVER	2	EA	0	0	P	8	ELEC	#VALUE!	#VALUE!
- TAPE DRIVE	8	EA	700	5600	P	0	NA		5600
- E-NET Card	16	EA	100	1600	P	0	NA		1600
- PRINTER	8	EA	686	5480	P	2	ELEC	#VALUE!	#VALUE!
- OS/2 V. 3.x	8	EA	325	2600	P	0	NA		2600
- TAPES/DISK	1	EA	500	500	A	0	NA		500
- DOCUMENTATION	1	EA	500	500	A	0	NA		500
- SERVER NETWORK SOFTWARE	2	EA	1800	3600	E	0	NA		3600
- STATION NETWORK SOFTWARE	8	EA	295	2360	E	0	NA		2360
- ICOMMI	7	EA	6000	42000	P	0	NA		42000
- ICOM BASE	1	EA	9500	9500	P	0	NA		9500
- CONFIGURATION	240	HRS	65	15600	E	0	NA		15600
- PROGRAMMING	2000	HRS	65	130000	E	0	NA		130000
BREATHING AIR MONITORING									
- FLOW MONITORS	2	EA	2120	4240	M	8	ELEC	#VALUE!	#VALUE!

*Units Hours
For Unit*
*ELEC. or Fitter
Rate*
*UNITS x Hours
x Rate*

26

54

Legend

P = PRICE LIST

E = ESTIMATE

N = MERICK+8%

A = ALLOWANCE

LANL ~~Hard~~ CDR
Instrumentation and Control
Cost Estimate

J8/95

PRESSURE MONITORS	2	EA	2120	4240	M	8	ELEC	#VALUE!	#VALUE!
CO2 MONITORS	2	EA	3180	6360	M	8	ELEC	#VALUE!	#VALUE!
REMOTE AREA MONITORS									
REMOTE AREA MONITOR	1	LOT	10600	10600	M	0	NA		10600
CONTINUOUS AIR MONITOR									
CONTINUOUS AIR MONITOR	40	EA	7420	296800	M	8	ELEC	#VALUE!	#VALUE!
OW/S	5	EA	4240	21200	M	12	ELEC	#VALUE!	#VALUE!
PERSONNEL COMPUTERS	2	EA	4240	8480	M	8	ELEC	#VALUE!	#VALUE!
SOFTWARE	1	EA	10600	10600	M	0	NA		10600
FIXED AIR SAMPLER									
FIXED AIR SAMPLER	50	EA	212	10600	M	1	PIPEFITTER	#VALUE!	#VALUE!
VACUUM EXHAUSTER	2	EA	31800	63600	M	160	PIPEFITTER	#VALUE!	#VALUE!
CRIT. MONITOR AND ALARM SYSTEM									
CRITICALITY HEAD	6	EA	1590	9540	M	10	ELEC	#VALUE!	#VALUE!
ALARM SYSTEM	1	EA	21200	21200	M	100	ELEC	#VALUE!	#VALUE!
UPS SYSTEM	1	EA	6360	6360	M	16	ELEC	#VALUE!	#VALUE!
STACK MONITORING SYSTEM									
STACK MONITORING SYSTEM	4	EA	7420	29680	M	20	ELEC	#VALUE!	#VALUE!
UPS	4	EA	1060	4240	M	10	ELEC	#VALUE!	#VALUE!
PUMP	4	EA	1060	4240	M	10	ELEC	#VALUE!	#VALUE!
FLOW SENSOR	2	EA	2120	4240	M	8	PIPEFITTER	#VALUE!	#VALUE!
CONTROL SYSTEM MECH									
1 1/2" COPPER TUBING	4000	LF	4.2718	17087.2	M	0.2	PIPEFITTER	#VALUE!	#VALUE!
1/2" COPPER TUBING	900	LF	1.3568	1221.12	M	0.13	PIPEFITTER	#VALUE!	#VALUE!
5/8" TYGON TUBING	340	LF	0.371	126.14	M	0.07	PIPEFITTER	#VALUE!	#VALUE!
CONTROL SYSTEM VALVES									

LANL

P = PRICE LIST

E = ESTIMATE

M = MERICK+6%

A = ALLOWANCE

LANL COR
Instrumentation and Control
Cost Estimate

JG/95

1/2" BALL VALVES	88	EA	35	3080 E	0.5	PIPEFITTER	#VALUE!	#VALUE!
VACUUM EXH. PIPE	1	LOT	12720	12720 M	160	PIPEFITTER	#VALUE!	#VALUE!
CONTROL SYSTEM WIRE								
TV SH PAIR	3000	LF	1.3	3900 E	0.08	ELEC	#VALUE!	#VALUE!
#14 WIRE	22000	LF	0.0424	932.8 M	0.08	ELEC	#VALUE!	#VALUE!
#12 WIRE	7000	LF	0.0646	593.6 M	0.08	ELEC	#VALUE!	#VALUE!
CONTROL SYSTEM CONDUIT								
3/4" CONDUIT	10000	LF	1.6542	16542 M	0.13	ELEC	#VALUE!	#VALUE!
SUBTOTAL				\$ 283,048			#VALUE!	#VALUE!

28

56

ICF KAISER ENGINEERS INC.
FOUR GATEWAY CENTER
PITTSBURGH, PENNSYLVANIA 15222-1207
TELEPHONE: 412/497-3800
TELEX: 199131
FAX: 412/497-2212

FAX NO: 505-661-5222
DATE: 3-6-95
REF: 41552-056-02
PAGE 1 OF 4

COMPANY/LOCATION: ICF K&S LOS ALAMOS

ATTENTION: DAVID O'FLYNN

FROM: BILL LITTON DEPT: _____

*** PLEASE NOTIFY RECEPTIONIST IF TRANSMISSION IS INCOMPLETE/ILLIBLE. ***

MESSAGE

ATTENTION IS HARD COPY OF
INSTR. & CONTROL BKT. 1 E-MAILED
THIS AFTERNOON

CALL IF ANY QUESTIONS OR
PROBLEMS,

NMSEF

JOB NO. 41552-056

SHEET 58 OF 58

DESIGNED BY WDF DATE 2/95

CHECKED BY DATE

HEALTH & SAFETY MONITORS (PERSONNEL)

(SEE JIM BRAND DWG 2/23/95
E&A 12, 665-7643)

<u>EQUIPMENT</u>	<u>LOCATION</u>	<u>TOTAL</u>
PCM	MEN'S CONTROLLED	1
	WOMEN'S CONTROLLED	1
1/2 PCM	HALLWAY FROM AIR LOCK	1
	HALLWAY TO OPS AREA	1
FRISKER	PACK/UNPACK	1
	LOADING DOCK	1
HEPA SLOTTED HOOD	PACK/UNPACK AREA	1

NO MONITORS NEEDED ON BASEMENT
OR SECOND FLOOR LEVELS.

E. QUOTES ON DRYWELL MATERIAL

VENDOR QUOTE

47

JOB TITLE: 1 INSE

DISCIPLINE: STORAGE ARRAY

NAME: CRAIG H.

DATE: 3/13/95

VENDOR: LARGE PIPE & STEEL CO.

NAME: MIKE KELLEY

PHONE: (800) 522-2743

DESCRIPTION:

ITEM:

COST: (\$)

10" ϕ x 1/4" ASTM 53, 515 @ 17'3" = 375 ea = \$21.74/LF

\$21.74/LF

10" ϕ x 1/2" ASTM 53, 515 @ 17'3" = 782 ea = \$45.33/LF

\$45.33/LF

COMMENTS:

1/4" WALL FROM ALABAMA OR ST. LOUIS

1/2" WALL FROM ST. LOUIS

ICF KAISER ENGINEERS

1900 Diamond Drive
Los Alamos, New Mexico 87544

DEF 26
7/13/94
41552-044-0

VENDOR QUOTE -

SS TUBES OR $\phi 3/8$

VMI, INC. ARBO NY.
1-800-234-7675.

- SS $\phi 3/8$ \$1.65/# TO \$1.90/#

- TUBE SHOULD NOT BE MUCH MORE
EXPENSIVE.

- SCH. 10 IS $1/4"$ WALL.

- WILL SEND QUOTE VIA FAX.

F. QUOTES ON CONTAINER BASKETS

Att Chris Ehrsman

DIRECT MACHINE

DM

820 S. EUCLID AVE
TUCSON, AZ 85719

PHONE: (520) 834-8086
FAX: (520) 834-9484

COMPANY NAME *J.C.F. KAISER ENGINEERS INC.*
ATTENTION *CHRIS EHRSMAN*
FROM *Randy Mabeck*
OF PAGES W/ COVER *2* DATE *5-19-95* TIME *8:45 AM*
ORIGINALS MAILED UPON REQUEST.

"LARGE CAPACITY FABRICATION AND MACHINING"

Direct Machine
820 South Euclid
Tucson Arizona 85719

date 5-19-95
RE: Quotation (1100 Baskets)
Quote #95-128

ICF Kaiser Engineers, Inc.
1900 Diamond Drive
Los Alamos, NM 87544

$\frac{835,000}{1100} = \$759/ea.$

Att: Chris Engram

Dear Customer:

We propose to furnish materials & labor to complete project mentioned above for a lot price of \$835,000.00.

QUALIFICATIONS

- 1) All material A36, mild steel.
- 2) Expanded metal to form to the inside frame & tack weld.
- 3) Seat Ring fabricated using 1/4" thick angle.
- 4) Excludes Paint
- 5) No Tax included
- 6) Includes 1/2" bolts for bolting doors.
- 7) Terms: Net 30 with approved credit. Partial progressive billings.
- 8) Proposal good for 30 days.
- 9) Freight included FOB Los Alamos, NM.
- 10) Exception was taken to open bevel weld shown for 3-1/2" pipe & replaced with a fillet weld.

Thank you for considering Direct Machine for this project. During bid estimate, I noticed that a few minor design changes can save money. Looking forward to working with you.

Sincerely,

Estimator, Project Manager

TIW Fabrication & Machining, Inc.

P.O. Box 12156, 87195
1255 Coors Rd. S.W.
Albuquerque, New Mexico 87121
(505) 242-5251

Quote Number 11613

May 15, 1995

ICF Kaiser Engineers
1900 Diamond Drive
Los Alamos NM 87544

Attention: Chris Ehrsam

Reference: Your fax dated 5/11/95

Ms. Ehrsam,

In response to your inquiry, we submit the following budgetary quotation:

EQUIPMENT DESCRIPTION

1100 expanded metal baskets. Each basket consists of seven compartments and seven doors.

SCOPE OF WORK

Fabricate, inspect, package and deliver baskets as shown on the above referenced preliminary drawings.

NOTE: This pricing is for budgetary purposes only and is based on present material and labor costs. The final pricing submitted will be based on schedule time and steel mill pricing.

It is anticipated that a cost savings can be recognized for this project by utilizing a production line approach.

PRICE: \$950.00 each, times 1100 = \$1,045,000.00, plus tax as applicable

TERMS: Net 30 days

COMPLETION: 10 months, subject to prior sales of the production schedule.

F.O.B.: Delivered to Los Alamos, prepaid

We wish to thank you for this preliminary inquiry and we look

forward to the opportunity to bid on this solicitation when it becomes available.

Sincerely,

Tom McLellan,
VP/GM

G. SHIELD PLUG ESTIMATE DATA

NWSE

JOB NO. 41552-086

SHEET 36 OF

DESIGNED BY NWSE

DATE 3/95

CHECKED BY

DATE

SHIELD PUG ESTIMATE

<u>ITEM</u>	<u>MAT'L</u>	<u>LAB</u>	<u>EQUIP</u>	<u>TOTAL</u>
a.) BUILD FORM	1000 ^{sq}	1340.64	700 ^{sq}	3040.64
b.) CONDUIT	4125 ^{sq}	3840.38	0	7965.38
c.) REINF.	16,500 ^{sq}	0	0	16500.00
d.) FAB REINF	0	1536.50	2750 ^{sq}	18,111.50
e.) INSERT	27,300	0	0	27,500
f.) INSTALL INSERT	550 ^{sq}	7680.75	0	8230.75
g.) ALIGN/CHECK	0	7680.75	0	7680.75
h.) OIL	550 ^{sq}	1468.89	0	2018.89
i.) POUR	8230 ^{sq}	6028	0	14,278
j.) STRIP	550 ^{sq}	4370.25	0	4870.25
k.) GRIND	0	6028	550	6578
l.) LOAD	0	864.05	0	864.05
				<u>\$ 117,638.24</u>

NHSE

JOB NO. 41552-056

SHEET 37 OF

DESIGNED BY DDE DATE 3/95

CHECKED BY _____ DATE _____

TOTAL SHIELD PLUG ESTIMATE ?

\$117,638.21

UNIT COST = $\frac{\$117638.21}{550}$

= \$214 / UNIT

USE \$225 ea.

1 of 2

NAME: DELF

DATE: 3/5/95

ICF KAISER ENGINEERS

JOB #: 4552-056-00

1907 Diamond Fund
Los Angeles, Santa Monica, etc.

45**COMMENTS:**

ASSUMES THAT PLUGS ARE FABRICATED IN A SHOP & PRECAST.

49

COST ESTIMATING TAKEOFF FORM

2 OF

JOB TITLE: NWSE

NAME: DKOP

DATE: 3/5/95

ESTIMATE DESCRIPTION: SPE MAT'L HANDLING

JOB #: 4552-090

ICF KAISER ENGINEERS 1502 Damore Drive
Los Angeles, New Mexico 87544

ITEM #	CSI WBS	DESCRIPTION	QTY.	UNITS	MATERIALS (COST/UNIT)	MAN HRS PER UNIT	LABOR ID	EQUIP. RENTAL
	g.	ALIGN, CHECK, AND ADJUST INSERT, CONDUIT & REINFORCING	550	ea	—	0.50	85/21.93	0
	h.	OIL FORM. SPRAY ON BOND BREAKER	90	ea	1.00	0.17	45/15.71	0
	i.	POUR & FINISH CONCRETE (5000 PSI CONC. ~ 0.20 CY)	110	cy	75 ⁰⁰	2.50	61/21.92	0
	j.	STRIP FORM & CLEAN	550	ea	1.00	0.50	45/15.71	0
	k.	RUB/GRIND OFF SURF & ROUGH EDGES.	550	ea	—	0.50	61/21.92	1.00
	l.	LOAD ON TRUCK. (USE HOIST IN SHOP)	550	ea	—	0.10	45/15.71	—

COMMENTS:

H. MATERIAL QUOTE
STEEL PLATE FOR CHARGE DECK

VENDOR QUOTE

25

JOB TITLE: NMHF RENOVATION

DISCIPLINE: SFE - CHARGE DECK

NAME: DDP DATE: 3/95

VENDOR: USX (US STEEL)

NAME: NANCY PARKS

PHONE: 219-888-7250

GARY WORKS

DESCRIPTION:

ASTM A36 STEEL PLATE ~ 1" THICK
IN 9'-0" WIDE SECTIONS x 28' LONG.

ITEM:

COST: (\$)

ASTM A36 PLATE

\$10.235/

WILL COME W/ CERTS &
PEDIGREE

LB

COMMENTS:

ADD \$ 0.20/LB FOR FABRICATION - CUT &
PUNCH HOLES - BASED ON MEANS
FABRICATE PRICE OF 0.150/LB - HOWEVER
PLATE WILL BE EASIER - ELDON
OF SCALE

ADD \$ 0.10/LB FOR NQA-1 CERTS AS
A CONTINGENCY - UNKNOWN.

ICF KAISER ENGINEERS

1900 Damond Drive
Los Alamos, New Mexico 87544

I. NDA EQUIPMENT ESTIMATE INFORMATION

ICF KAISER ENGINEERS, INC.
1900 DIAMOND DRIVE
LOS ALAMOS, NM 87544
505/661-5200
FAX: 505/661-5222

MEMORANDUM

Date: May 25, 1995

To: Leroy Martinez, FSS-6

From: David O'F, nn, 661-5274 *[Handwritten signature]*

Subject: NDA EQUIPMENT - NMSF

Copies To: Terry Cremers, NMT-4
Tom Sampson, NIS-5

I met with Terry Cremers Monday, May 22, 1995 regarding the NDA equipment for the project. I had originally intended to ask her for detailed specification data so that I could get quotes from Canberra or similar companies.

She said she would need more time to come up with a list of specifications.

Terry indicated that she did not have much confidence in Canberra Instruments. She said there are machines at Rocky Flats and Hanford manufactured by Canberra, recently put into service, that are not working and when they are functional, are not reliable and do not produce good data. She indicated that NIS-5 equipment was better, and that they developed the hardware and software, which was then transferred to Canberra.

Terry listed the following reasons why it would be best if we could use NIS developed and fabricated equipment:

1. NIS equipment has credibility with DOE MC&A auditors.
2. NMT-4 routinely measures unique items, and thus requires constant support from NIS for software and hardware modifications. Proximity and familiarity is a key to keeping up with special demands.
3. Unique materials require constant and different calibrations.
4. Capability to provide timely and useful support is not available with an outside vendor.

I also spoke with Tom Sampson of NIS-5 on May 25, 1995 regarding the pricing of the equipment. The prices he faxed to me (attached) are based on experience. He will develop more detailed cost

data in the coming couple of weeks. He said he will get in touch with Vickie Longmire (NMT-4) to discuss this.

He is confident that the prices are close enough, especially considering that the equipment won't be fabricated or developed for a couple of years, and technology will change.

Los Alamos
National Laboratory

Safeguards Assay Group (N-1)

FAX Transmittal Cover Sheet
Informal Correspondence

Date 5/25/94
Number of Pages 2
(Including cover sheet)

☐ GTDA/Correspondence

FROM:	TO:
Sending Station	Receiving Station
Name: <u>Tom Simpson</u>	Name: <u>David Flynn</u>
Company: Safeguards Assay Group N-1 P.O. Box 1683 MS E548 Los Alamos National Laboratory Los Alamos, NM 87545 USA	Company: _____ _____ _____
Phone Number: _____	Phone Number: _____
FAX Number: (505) 665-4433	FAX Number: <u>661 5222</u>
Confirm Number: (505) 667-2448	Confirm Number: _____
Subject: _____ _____	
Remarks/Special Instructions	

N-1 Distribution:

NDA Equipment Costs for Storage Facility

System/Instrument	Approx. Total Cost (\$)	Floor Space (ft ²)	Approx. Wt. (lbs)
Calorimeters (3)	1,000,000 *	100	3000
Shuffler	1,200,000 *	80	20,000
Neutron Multiplicity Counter	800,000 *	40	10,000
Gamma Isotopes	450,000 *	50	2,000
Host Computer/Network	350,000 *	25	200
Integrate with MASS	200,000 *		
Robotics *	600,000	?	?
Totals	4,600,000		

Additional support from facility robotics also needed

NDA EQUIPMENT ESTIMATE
 PER TOM SAMPSON NIS-5 PH 667-6968
 DATE: 5/30/95

NDA MACHINE:

GANTRY ROBOT

CATEGORY	UNIT COST	QTY	UNIT	TOTAL
STAFF NEEDS - DEVELOP & FABRICATE				
SCIENTIST	\$25,000	6	MAN MTHS	\$150,000
TECHNICIAN				
ADMINISTRATIVE				
MATERIALS				
MAJOR COMPONENTS				
HARDWARE	\$200,000	1	LOT	\$200,000
MINOR COMPONENTS				
SOFTWARE DEVELOPMENT				
STAFF MEMBER	\$25,000	6	MAN MTHS	\$150,000
TESTING AND CERTIFICATION				
STAFF MEMBER	\$25,000	1.04	MAN MTHS	\$26,000
TECHNICIAN	\$15,000	0.6	MAN MTHS	\$9,000
STARTUP AND TURNOVER SUPPORT				
STAFF MEMBER	\$25,000	2	MAN MTHS	\$50,000
TECHNICIAN	\$15,000	1	MAN MTHS	\$15,000
TOTAL				\$600,000

NDA EQUIPMENT ESTIMATE
 PER TOM SAMPSON NIS-5 PH 667-6968
 DATE: 5/30/95

NDA MACHINE:

CALORIMETERS (3)

CATEGORY	UNIT COST	QTY	UNIT	TOTAL
STAFF NEEDS - DEVELOP & FABRICATE				
SCIENTIST	\$25,000	0.5	MAN MTHS	\$12,500
TECHNICIAN				
ADMINISTRATIVE				
MATERIALS				
MAJOR COMPONENTS				
Pu STORAGE CONTAINER CALORIMETERS (PURCHASE ITEM)	\$293,750	2	EA	\$587,500
AT-400 CONTAINER CALORIMETER (PURCHASE ITEM)	\$400,000	1	EA	\$400,000
MINOR COMPONENTS				
SOFTWARE DEVELOPMENT				
TESTING AND CERTIFICATION				
INCLUDED IN THE COST OF CALORIMETER				
STARTUP AND TURNOVER SUPPORT				
INCLUDED IN THE COST OF CALORIMETER				
TOTAL				\$1,000,000

NDA EQUIPMENT ESTIMATE
 PER TOM SAMPSON NIS-5 PH 667-6968
 DATE: 5/30/95

NDA MACHINE:

SHUFFLER (CUSTOM BUILT BY LANL)

CATEGORY	UNIT COST	QTY	UNIT	TOTAL
STAFF NEEDS - DEVELOP & FABRICATE				
SCIENTIST	\$25,000	14	MAN MTHS	\$350,000
TECHNICIAN	\$15,000	20	MAN MTHS	\$300,000
ADMINISTRATIVE				
MATERIALS				
MAJOR COMPONENTS				
NEUTRON DETECTORS	\$200,000	1	LOT	\$200,000
MINOR COMPONENTS				
MATERIALS (STEEL & POLYETHYLENE)	\$100,000	1	LOT	\$100,000
SOFTWARE DEVELOPMENT				
STAFF MEMBER	\$25,000	3	MAN MTHS	\$75,000
TECHNICIAN	\$15,000	2	MAN MTHS	\$30,000
TESTING AND CERTIFICATION				
STAFF MEMBER	\$25,000	2	MAN MTHS	\$50,000
TECHNICIAN	\$15,000	2	MAN MTHS	\$30,000
STARTUP AND TURNOVER SUPPORT				
STAFF MEMBER	\$25,000	2	MAN MTHS	\$50,000
TECHNICIAN	\$15,000	1	MAN MTHS	\$15,000
TOTAL				\$1,200,000

NDA EQUIPMENT ESTIMATE
 PER TOM SAMPSON NIS-5 PH 667-6968
 DATE: 5/30/95

NDA MACHINE:

SHUFFLER (PROCUREMENT)

CATEGORY	UNIT COST	QTY	UNIT	TOTAL
STAFF NEEDS - DEVELOP & FABRICATE				
SCIENTIST	\$25,000	2	MAN MTHS	\$50,000
TECHNICIAN				
ADMINISTRATIVE				
MATERIALS				
MAJOR COMPONENTS				
SHUFFLER (PURCHASED ITEM)	\$800,000	1	EA	\$800,000
MINOR COMPONENTS				
SOFTWARE DEVELOPMENT				
STAFF MEMBER	\$25,000	2	MAN MTHS	\$50,000
TESTING AND CERTIFICATION				
STAFF MEMBER	\$25,000	1	MAN MTHS	\$25,000
TECHNICIAN	\$15,000	1	MAN MTHS	\$15,000
STARTUP AND TURNOVER SUPPORT				
STAFF MEMBER	\$25,000	2	MAN MTHS	\$50,000
TECHNICIAN	\$15,000	1	MAN MTHS	\$15,000
TOTAL				\$1,005,000

NDA EQUIPMENT ESTIMATE
 PER TOM SAMPSON NIS-5 PH 667-6968
 DATE: 5/30/95

NDA MACHINE:

NEUTRON MULTIPLICITY COUNTER

CATEGORY	UNIT COST	QTY	UNIT	TOTAL
STAFF NEEDS - DEVELOP & FABRICATE				
SCIENTIST	\$25,000	10	MAN MTHS	\$250,000
TECHNICIAN (FABRICATE & ASSEMBLE)	\$15,000	10	MAN MTHS	\$150,000
ADMINISTRATIVE				
MATERIALS				
MAJOR COMPONENTS				
NEUTRON DETECTORS	\$150,000	1	LOT	\$150,000
MINOR COMPONENTS				
MATERIALS (STEEL & POLYETHYLENE)	\$70,000	1	LOT	\$70,000
SOFTWARE DEVELOPMENT				
STAFF MEMBER	\$25,000	3	MAN MTHS	\$75,000
TESTING AND CERTIFICATION				
STAFF MEMBER	\$25,000	1	MAN MTHS	\$25,000
TECHNICIAN	\$15,000	1	MAN MTHS	\$15,000
STARTUP AND TURNOVER SUPPORT				
STAFF MEMBER	\$25,000	2	MAN MTHS	\$50,000
TECHNICIAN	\$15,000	1	MAN MTHS	\$15,000
TOTAL				\$800,000

NDA EQUIPMENT ESTIMATE
 PER TOM SAMPSON NIS-5 PH 667-6968
 DATE: 5/30/95

NDA MACHINE:

GAMMA ISOTOPICS (2)

CATEGORY	UNIT COST	QTY	UNIT	TOTAL
STAFF NEEDS - DEVELOP & FABRICATE				
SCIENTIST	\$25,000	6	MAN MTHS	\$150,000
TECHNICIAN (DESIGN & FABRICATION)	\$42,500	2	SYSTEMS	\$85,000
ADMINISTRATIVE				
MATERIALS				
MAJOR COMPONENTS				
ELECTRONICS & COMPUTERS	\$60,000	2	SYSTEMS	\$120,000
MINOR COMPONENTS				
SCAN TABLE	\$2,500	2	SYSTEMS	\$5,000
SOFTWARE DEVELOPMENT				
STAFF MEMBER	\$25,000	1	MAN MTHS	\$25,000
TESTING AND CERTIFICATION				
STAFF MEMBER	\$25,000	1	MAN MTHS	\$25,000
STARTUP AND TURNOVER SUPPORT				
STAFF MEMBER	\$25,000	1	MAN MTHS	\$25,000
TECHNICIAN	\$15,000	1	MAN MTHS	\$15,000
TOTAL				\$450,000

NDA EQUIPMENT ESTIMATE
 PER TOM SAMPSON NIS-5 PH 667-6968
 DATE: 5/30/95

NDA MACHINE:

COMP./NETWORK INTEGRATE WITH MASS

CATEGORY	UNIT COST	QTY	UNIT	TOTAL
STAFF NEEDS - DEVELOP & FABRICATE				
SCIENTIST	\$25,000	4	MAN MTHS	\$100,000
ADMINISTRATIVE				
MATERIALS				
MAJOR COMPONENTS				
MINOR COMPONENTS				
SOFTWARE DEVELOPMENT				
STAFF MEMBER	\$25,000	18	MAN MTHS	\$450,000
TESTING AND CERTIFICATION				
STARTUP AND TURNOVER SUPPORT				
TOTAL				\$550,000

J. SMALL JIB CRANES AND HOISTING ESTIMATE DATA

[illegible]

14

ELECTRIC CHAIN HOISTS AND TROLLEY

MATERIAL
HANDLING

1/2, 1, 2-TON ELECTRIC CHAIN HOISTS

Dayton

1/2 and 1-Ton
Models Feature
Single Chain Lift

2-Ton Models
Equipped with
Double Chain Lift

- Lubricated for life
- Case-hardened steel chain
- Latch-type hooks on top and bottom
- 24V pushbutton control
- Motors available in 1/2 or 1-HP and single or 3-phase

These hoists have construction features usually found only in the most expensive industrial models. Overload limiting clutch. Totally enclosed motors meet rigid hoist requirements. Quick connect terminals and wiring diagrams enable easy voltage change. Housing and frame of tough die-cast aluminum alloy constructed in sections to permit easy access to electrical controls. Oil-filled transmission provides optimum lubrication and heat dissipation. Dayton brand.

CAUTION: Hoists listed below are not to be used for lifting, supporting or transporting people, or lifting loads over people.

Capacity	Motor		Voltage 60 Hz	Amperage at 100% Voltage	Chain Lift	Lift Speed Ft./Min.	Control Cord	Min. Dist. Between Hooks	Passing Dimensions W H C			Stock No.	List Each	Ship. Wt.	
	HP	Phase							L	W	C				
1/2 Ton	1/2	1	115/230	9.8	10 Ft.	16	6 Ft.	18"	21 3/4"	8 3/4"	7 1/4"	32270	\$1150.73	\$878.18	77.0
1/2	1/2	1	115/230	9.8	15	16	11	18	21 3/4"	8 3/4"	7 1/4"	32273	1296.30	1090.09	80.0
1/2	1	1	115/230	9.8	20	16	14	18	21 3/4"	8 3/4"	7 1/4"	32274	1321.97	1122.80	83.0
1/2	1	3	115/230	16.0	10	32	6	18	23 1/4"	8 3/4"	7 1/4"	32275	1215.26	1131.88	88.0
1	1	1	115/230	16.0	10	16	6	18	23 1/4"	8 3/4"	7 1/4"	32272	1308.63	1107.48	91.0
	1	3	115/230	16.0	15	16	11	18	23 1/4"	8 3/4"	7 1/4"	32273	1461.06	1239.48	96.0
	1	3	115/230	16.0	20	16	14	18	23 1/4"	8 3/4"	7 1/4"	32274	1531.16	1299.28	101.0
	1	3	230/460	3.3	19	16	6	18	21 3/4"	8 3/4"	7 1/4"	32277	1308.63	1107.48	80.0
	1	3	230/460	3.3	15	16	11	18	21 3/4"	8 3/4"	7 1/4"	32278	1461.06	1239.48	84.0
2	2	1	115/230	16.0	10	8	6	22	23 1/4"	8 3/4"	7 1/4"	32276	1601.06	1281.00	100.0
	2	3	115/230	16.0	15	8	11	22	23 1/4"	8 3/4"	7 1/4"	32279	1915.26	1623.00	106.0
	2	3	115/230	15.0	20	8	12	22	23 1/4"	8 3/4"	7 1/4"	32280	2032.19	1741.49	110.0
	2	3	230/460	3.3	10	8	6	22	21 3/4"	8 3/4"	7 1/4"	32279	1601.06	1281.00	90.0
	2	3	230/460	3.3	15	8	11	22	21 3/4"	8 3/4"	7 1/4"	32280	1915.26	1623.00	98.0

* 3-phase hoists are wired for 115V, 60 Hz operation; three phase hoists for 460V, 60 Hz operation. Hoist easily reconverts for use at 230VAC.

FREE WHEELING TROLLEYS FOR HOISTS

Dayton

- Adjustable to fit standard dimension I-beams
- Wheels are smooth running and resist wear

Dayton low headroom trolleys are designed for use with electric, air, and manual overhead hoists. Hardened pressed steel wheels have carburized treads to resist wear. Wheels run on ball bearings for smooth operation. Side plates extend beyond wheels to act as bumpers. Adjustable to fit standard dimension I-beams, refer to dimensions below. Dayton brand.

FREE WHEELING TROLLEY SPECIFICATIONS AND ORDERING DATA

Capacity Ton	Channel Dimensions in Inches									Fit I-Beam		Min. Radius	Stock No.	List	Each	Ship Wt.
	A	B	C	D	E	F	G	H Dia	M	Vert. H	Flange W					
1/2	4 1/4"	6"	4 1/4"	3 1/2"	3 1/2"	1 1/2"	3 1/4"	7 1/2"	9 1/4"	4-10"	2.00-4.00"	32	22615	122.43	\$88.88	20.0
1	5 1/4"	6 1/2"	5"	4 1/2"	4 1/2"	2 1/2"	4 1/4"	8 1/2"	11 1/4"	5-12"	3.00-5.00"	34	22616	132.41	114.84	30.0
2	6 1/4"	7 1/4"	5 1/4"	5 1/2"	5 1/2"	3 1/4"	5 1/4"	10 1/2"	13 1/4"	6-18"	3.33-6.00"	40	22617	191.06	168.06	44.0

SEE WARRANTY INFORMATION ON PAGE OPPOSITE INSIDE BACK COVER

1233

Dayton 300 AND 500 LB ELECTRIC CHAIN HOISTS

Motor
1/6 HP, 3.0 Amp,
3300 RPM,
115V, 60 Hz,
Ball Bearing,
Permanent Split
Capacitor

**90-DAY DAYTON
LIMITED
WARRANTY**
Text of warranty available on request. See
"Warranty" section on page
opposite inside back cover.

**No. 42358
500 Lb
Capacity**

- Standard 10 ft lift
- Intermittent duty—10% duty cycle
- Upper and lower limit switches
- Pushbutton control with 6 ft control cord
- 7/32" steel chain
- Latch-type swivel hooks
- Overall dimensions: 6W x 4H x 12L

Dayton Compact Multi-Purpose Electric Chain Hoists are suitable for rapid lifting and spotting of dies, castings, heavy pa assemblies, and other loads. 500 lb model is double-chain 115V, 60 Hz pushbutton switch for controlling "UP-OFF-DOWN" operation. Reliable disc brake. 10% duty cycle provide minutes "ON" time per hour of use. Headroom requirement 14 1/2" for No. 42358, and 16" for No. 42311. Includes 12' conductor cord for simple plug-in installation to 115V, 60 outlets. Made in USA. UL Listed (SA5495). Dayton brand.

Load Rating	Full-Load Lift Speed Ft./Min.	Min. Dist. Between Hooks	Stock No.	Unit	Each	1
300 lbs	16	14 1/2"	42358	542.71	5438.20	2
500	8	16	42311	634.21	637.47	3

Dayton 500 LB ELECTRIC WIRE ROPE HOIST

**PARTS AVAILABLE
CALL
1-800-521-6229**

- Lightweight, compact 1/2" steel wire rope
- 115V, 60 Hz, 1/6 HP motor and disc brake
- 10 ft lift with 10 ft/min lift speed
- Upper travel limit switch
- Intermittent duty—10% duty cycle
- Permanent split capacitor motor

**90-DAY DAYTON
LIMITED WARRANTY**
Text of warranty available on request. See
"Warranty" section on page
opposite inside back cover.

Dayton Electric Wire Rope Hoist handles a variety of shop loads with cost effective ease. Needs only 14 1/2" headroom. Includes 12' power cord and 3-prong plug for simple installation. Totally protected, 3300 RPM, ball bearing, permanent split capacitor motor draws only 3 amps under full load. Intermittent duty rated at a maximum of 6 minutes "ON" time per hour. Standard features include: top and bottom latch-type sw hooks; 10-ft lift with 6-ft control cord; 115V, 60 Hz pushbutton switch for controlling "UP-OFF-DOWN" operation. Made in USA. UL Listed (SA5495). Dayton brand.

SPECIFICATIONS

Load Rating	Type Lift	Full-Load Lift Speed Ft./Min.	Lift Feet	Min. Dist. Between Hooks	Motor HP
500 lbs	1/2" Steel wire rope	10 ft/min	10	14 1/2"	1/6

WIRE ROPE HOIST ORDERING DATA

Load Rating	Dimensions L x W x H	Stock No.	Unit	Each
500 lbs	12 1/2" x 8" x 4 1/2"	22668	550.03	5482.23

CAUTION: Hoists listed above are not to be used for supporting or transporting people or lifting over people.

For Use with Dayton
1/2, 1, & 2-Ton
Electric Chain Hoists
Listed on Page 1232.

Keeps Surplus Chain
Away from Work Area

Suspended from
Bottom of Hoist

Dayton COIL CHAIN CONTAINERS

Bucket Height	Recommended For Use With Chain Link Capacity	Chain Link in Feet	Stock No.	Unit	Each
13 1/4"	1/2-Ton 1-Ton 2-Ton	10-15-20-25 10-15-20 10	22618	37.23	328.64
18 1/4"	1-Ton 2-Ton	25 15	22619	41.10	31.61
27"	2-Ton	20-25	22620	80.05	61.88

VENDOR QUOTE

44

JOB TITLE: NM5F

DISCIPLINE:

NAME: CRAIGER

DATE: 3/13/95

VENDOR: NCCI

NAME: RON IVORY

PHONE: 1-800-366-9560

DESCRIPTION:

11B CRANE

ITEM:

COST: (\$)

11B CRANE 1TON, 8' REACH.

1,292.00

COMMENTS:

SEE ATTACHED FAX

ICF KAISER ENGINEERS1900 Diamond Drive
Los Alamos, New Mexico 87544

SERVING YOU WORLDWIDE

NORTH AMERICAN HEADQUARTERS
NATIONAL CRANE AND COMPONENTS INC.

7848 COMMERCE DRIVE
PO. BOX 478
MENTOR, OH 44061 USA
TEL 216-875-8080
TOLL FREE 1-800-356-8080
TELEFAX 216-871-4334

DATE: 3-13-95
COMPANY: KISER ENG
FAX NUMBER: 505-661-5222
NUMBER OF PAGES (including This Page): 3
PLEASE FORWARD THIS MESSAGE TO: MR HERLEY

MESSAGE: AS REQ

3802-ORID @ 1292.00 FOR FRT COLLECT MENTOR, OH
2 WEEKS A.R.O.

FROM:

Ron Ivory

"SERVING YOU WORLDWIDE"

NATIONAL CRANE AND COMPONENTS INC.

JIB CRANES MODEL 360-B

NORTH AMERICAN HEADQUARTERS

7249 COMMERCE DRIVE

P.O. BOX 479

MENTOR, OHIO 44061 U.S.A.

NATIONAL CRANE AND COMPONENTS, INC.

SCALE:

APPROVED BY

DRAWN BY

DATE:

JIB CRANE CONCRETE FOUNDATION

USED ON 3802-0810

DESIGNED BY/NOTED

K. DRUM HANDLING EQUIPMENT
CATALOG PRICES

NMSF MATERIAL HANDLING EQUIPMENT
100% COST ESTIMATE

LINE ITEM ESTIMATE ACTIVITY

STAGING AREA:

MANUAL DOLLIES: NUMEROUS GRANGER MODELS WOULD WORK, #750-
#1000 CAP. APPROX. \$700.00 EACH/12 EACH REQUIRED MINIMUM.

UNPACK AREA:

SHIELD WALL ASSEMBLY. REINFORCED CONCRETE OR BISCO WALL W/
LEADING WINDOW. DESIGN \$10K, WINDOW \$20K, STRUCTURE \$35K:
ESTIMATED COST \$65,000 COMPLETE.

MANIPULATOR. SCHILLING TITAN MODEL, \$200,000 EACH.

CCTV SYSTEM B/W CAMERA SYSTEM W/ VCR, PAN/TILT/ZOOM,
MONITOR. NO SPECIAL SHIELDING OR ENCLOSURES. GRANGERS
\$4000.00.

FROM K. HOGAN @ FSS-6
(505) 667-4530

FOLDABLE PLATFORM AND HAND TRUCKS

MATERIAL
HANDLING

SUPER FOLDAWAY PLATFORM TRUCK

Used by salesmen, delivery and repair people, and frequent travelers. 300 lb capacity. Telescoping aluminum frame has a dual length platform: closed 20L x 18" W or open 28L x 18" W. 32" high handle. Vinyl corner bumpers. Transports computers, copiers, tools, samples, and luggage completely supported. Easy steering with 4" rubber casters, two rigid and two swivel. Folded dimensions of 20L x 18W x 9 1/2"H allow the truck to fit into any vehicle. Shipped partially assembled. Wesco International brand (272020).

No. SW684, Super Foldaway Platform Truck. Shpg. wt. 19 lbs. List \$150.00. Each \$108.31

FOLDING HANDLE PLATFORM TRUCK

Move supplies, forms, files, office equipment or almost anything around the office or shop. Compact size is also ideal for use on delivery vehicles. All-steel platform truck has vinyl perimeter bumper to protect walls and furniture. Vinyl covered platform keeps load from sliding. Easy locking 33 1/2" high handle fold flat against platform for compact storage or transporting. Equipped with easy rolling rubber casters: two rigid, two swivel. Shipped partially assembled. Sand color enamel with blue vinyl. Wesco International brand.

Load Capacity	Deck Size W x L	Caster Size	Wesco Model	Stock No.	List	Each	Shpg. Wt.
400 lb	18" x 28"	4"	272019	SW687	\$95.50	\$75.86	25.0
800 lb	20" x 35"	5"	272035	SW688	105.00	127.53	41.0

SUPER COLLAPSIBLE HAND TRUCK

For salesmen, traveling stockers, and servicemen who carry material from vehicle to building. Strong, yet lightweight and easy to load inside any vehicle. 200 lb capacity. Welded tubular steel construction. Handle folds from 43 1/4" to 23 1/4". Foldable nose plate is 6" deep x 14" wide. Folding nose extension increases nose length from 6 to 15" to accommodate larger packages and improve stability under load. Equipped with long wearing 5" diameter x 1 1/4" wide polyolefin wheels and channel stairclimbers. Bicycle type plastic hand grip. Folded dimensions 23 1/4"H x 18W x 7D; fully extended overall dimensions 43 1/4"H x 18W x 21D. Shipped partially assembled. Blue enamel. Wesco Mfg. brand (CT-401).

No. 2W669, Super Collapsible Hand Truck. Shpg. wt. 20 lbs. List \$90.60. Each \$72.48

BAGGAGE CADDY AND CASE TRUCK

Designed for travelers, flight attendants, salesmen, or anyone who needs to transport luggage, cartons, and cases between the office, airports, hotels, customers. This rugged, lightweight truck has a 110 lb capacity and is made of durable aluminum and high impact plastic. Compact truck is only 20 x 10 1/4 x 3" deep when folded. Fits in any car trunk, under any airline seat, or overhead compartment. Telescopic handle locks open at 37 1/4" high. Nonload nose is 10 1/4" wide x 8 1/4" deep. 2 1/2" diameter wheels are covered on top and front to prevent bags from rubbing, and have an open back for easy stair climbing. Special "Y" design nylon strap holds load better than an elastic cord and is permanently attached to truck nose. Post-lock strap adjusts easily to any load size and quickly secures load to truck. Gray/silver color. Wesco International brand (272120).

No. 4W013, Baggage Caddy and Case Truck. Shpg. wt. 4.5 lbs. List \$85.00. Each \$47.37

NEED STORAGE EQUIPMENT?

We have pallet racks, bulk storage racks, open and closed shelving, cabinets, parts bins, nesting contain-

ers, tote boxes, and commercial and industrial lockers. Refer to Index at back of catalog for page listings.

SEE WARRANTY INFORMATION ON PAGE OPPOSITE INSIDE BACK COVER

1267

HYDRAULIC PALLET TRUCKS

MATERIAL
HANDLING

4500 LB CAPACITY HYDRAULIC PALLET TRUCK

DAYTON LIMITED WARRANTY

Dayton Electric Mfg. Co. warrants hydraulic unit, frame, and mechanical components for 3 years. Wheels, bearings, and bushings are warranted for 90 days. Text of warranty available on request. See "Manufacturer's Warranties" on page opposite inside back cover.

- 4500 lb capacity
- Maneuvers easily in cramped areas

Dayton hydraulic lift pallet truck rolls easily, handles solidly, and maneuvers in cramped areas. All steel frame has reinforced forks with tapered ends and rugged slides for easy entry and exit from pallets.

Steering handle operates hydraulic lift. Foot pedal selects up or down direction. Hydraulic system has hard chrome pump piston and lift ram with polyurethane seals.

Suspension system has heavy-duty thrust bearings. Adjustable push rods. Sealed, permanently lubricated ball bearings throughout. Polyurethane molded-on wheels. Red enamel finish. Dayton brand.

PALLET TRUCK SPECIFICATIONS AND ORDERING DATA

Load Capacity	Height of Forks Lowered Raised	Width Across Forks	Between Forks	Fork Width Length	Forker Dia	Wheel Dia	Fork Angle	Overall Length	Steel No.	List	Each	Ship. Wt.
4500 Lbs	3 1/4" 7 1/4"	27"	14 1/4"	8 1/4" 48"	2 1/4"	6"	200°	60"	3W034	\$831.95	\$943.82	250.0

4500 LB CAPACITY HYDRAULIC HAND PALLET TRUCK

BT LIMITED WARRANTY

BT warrants hydraulic unit and fork frame against defective workmanship or workmanship for 2 years. Wheels, axles, and bearings are warranted for 90 days. Text of warranty available on request. See "Manufacturer's Warranties" on page opposite inside back cover.

- 2 1/4" lowered height of forks for easy pallet entry
- Handle mounted control lever
- Comes fully assembled

BT Hand Pallet Truck is designed and built for rugged use. Durable pressed steel fork frame and easy rolling poly wheels. Features nylon exit vent rollers for easy pallet placement, and unique safety handle with lower and neutral control lever for fingertip lift and greater security since both feet are always on the ground.

Only minimum maintenance required due to solid steel push rods which need no adjusting. Eight grease fittings prolong truck life. Hydraulic system incorporates the seal in the cylinder not the piston for more reliable operation. Pallet truck is light enough to reduce operator fatigue yet strong enough to handle most loads up to 4500 lbs. Polyurethane wheels. Powder painted safety orange finish. BT brand (BTL2000).

PALLET TRUCK SPECIFICATIONS AND ORDERING DATA

Load Capacity	Height of Forks Lowered Raised	Width Across Forks	Between Forks	Fork Width Length	Forker Dia	Wheel Dia	Fork Angle	Overall Length	Steel No.	List	Each	Ship. Wt.
4500 Lbs	2 1/4" 7 1/4"	27"	14 1/4"	8 1/4" 48"	2 1/4"	6"	180°	60"	6W060	\$559.00	\$689.88	163.0

MANY BRANDS OF OFFICE EQUIPMENT AVAILABLE

SHARP

OMNIFAX

SEE INDEX AT BACK OF CATALOG FOR COMPLETE LISTINGS

SEE WARRANTY INFORMATION ON PAGE OPPOSITE INSIDE BACK COVER

1269

HYDRAULIC LIFT TABLES

No. 3W488

No. 3W489

No. 3W490

No. 4W478

WESCO

Four operated hydraulic lift tables for heavy-duty shop functions such as lifting dies and castings, transporting machine parts, positioning welder's work, leveling feed material for punch presses, conveyors and press brakes, and similar material handling jobs. 200, 500, and 1000 lb capacity models have table and base constructed of 7-gauge steel; 6000 lb capacity models have 1/4" thick steel table and base construction. All models reinforced at critical points for maximum strength. Foot operated hydraulic jack raises platform with each downstroke of the pedal. Hand operated lever releases jack and controls rate of descent. Casters, included, have been selected to match load capacity and provide good mobility for moving heavy loads. Blue enamel finish. Westco Mfg. brand.

No. 3W488 200 Lb Capacity Table. Table top revolves 360° allowing loads to be positioned easily and accurately. Includes four 3" polyolefin chemical-resistant swivel casters. Shipped disassembled in components.

No. 3W489 and 3W490, 500 and 1000 Lb Capacity Tables. Have two telescoping posts which help stabilize and support loads during operation. Includes bar handle and four 4" phenolic resin roller bearings.

ing casters, two rigid and two swivel. Foot operated floor lock holds table in position. Shipped fully assembled.

No. 4W478 and 4W479, 6000 Lb Capacity Tables. Have four telescoping posts which help stabilize and support heavier loads. Includes bar handle and four 6" phenolic resin roller bearings, two rigid and two swivel. Foot operated floor lock holds table in position. Shipped fully assembled.

Load Capacity	Height Range Lowered Raised	Table Top L W	Wesco Model	Stock No.	List	Each	Ship. Wt.
200 lb	28 1/2" 47"	18" 18"	LT-02-3614	3W488	\$259.00	\$259.79	45.0
500	30 1/2" 48 1/2"	18" 18"	LT-05-1818	3W489	601.00	429.72	134.0
1000	30 1/2" 48 1/2"	36" 18"	LT-10-1836	3W490	819.00	588.33	158.0
6000	37" 60"	36" 24"	LT-60-2436	4W478	1355.00	962.08	330.0
6000	37" 60"	48" 32"	LT-60-3248	4W479	1325.00	1062.75	435.0

ROLLER KITS

No. 4W041
3-Ton Capacity
Roller Kit

- Low height, low friction
- Triple strength chain rollers around center-load plate
- Swivel turntables have corrosion-resistant Teflon bearings. No. 4W043 kit has chrome ball bearings.

No. 4W043
40-Ton Capacity
Roller Kit

Easy, safe, and economical way to move heavy equipment. Chain action roller permits continuous movement over imperfect floor surfaces, and requires only nominal maintenance. High quality steel construction. Padded top eliminates need for separate pads on steel rollers. Provides a nonslip surface, and acts as a shock absorber when going over uneven surfaces. Pads on 40-ton unit are made of 1/2" thick neoprene; rubber belting on 3 and 8-ton units. All kits include four swivel rollers, two steering handles, and a rugged steel carrying case. Hilman brand.

No. 4W041 3-Ton Capacity Roller Kit. 14" steering handles.

No. 4W042 8-Ton Capacity Roller Kit. 30" steering handles come unassembled in two pieces for easy handling and storage. Can handle majority of contractor applications and light industrial duty jobs.

No. 4W043 40-Ton Capacity Roller Kit. Two piece steering handles are 48" long. Assemble quickly and easily. Swivel rollers feature a locking device which provides choice of swivel for turns or rigid for straight line moving and locks into place every 45°. Carrying case has skids for transporting with a forklift.

Load Capacity	Capacity Per Roller	Roller Dimensions L W H	Hilman Model	Stock No.	List	Each	Ship. Wt.
3 Ton	3/4 Ton	8 1/2" 3 1/2" 3 1/2"	KRS-3	4W041	\$623.50	\$648.18	38.0
8	2	8 1/2" 3 1/2" 3 1/2"	KRS-4	4W042	739.00	759.85	85.0
40	10	18 1/2" 5 1/2" 5 1/2"	KRS-40-SLP	4W043	1355.00	1210.18	219.0

MATERIAL HANDLING

DRUM EQUIPMENT

VERTICAL DRUM LIFTERS/DISPENSERS

- Lift, transport, and pour from open and closed head drums
- Models for steel and fiber drums

WESCO

Economical drum lifters are suited for transporting both open and closed head drums for dumping and pouring operations. One man operation saves time, reduces spilling waste, and improves productivity. Simply attach or hang lifter on hook from an overhead hoist or crane, cinch saddle around drum and raise to desired height and position. Capacity for all models is 800 lbs full drum or 500 lbs half-full drum. All lifters/dispensers come fully assembled. 30H x 28 1/2W x 8"D. Orange color. Wesco Mfg. brand.

Manual models for low level pouring and dumping operations. Positive lift locks on either side of drum saddle to hold drum upright in transit; when released operator can manually tilt drum to control pouring. Locks also hold drum in the horizontal position. When released, drum can be rotated 360 degrees in either direction.

Gearred models for remote pouring operations. Gearred chain control, low effort feature make lifter/dispensers usable at any height, and ideal for remote controlled dispensing and dumping. 8 foot control chain can be locked to secure drum in any position during transit and dispensing.

Drum Type	Lifter Type	Wesco Model	Stock No.	Unit	Each	Shpg. Wt.
55-Gallon Steel	Manual	DL-55	3W390	\$199.80	\$141.38	45.0
21-23" Diameter Fiber & Steel	Manual	DL-55FL	4W461	238.20	182.92	44.0
55-Gallon Steel	Gearred	DGL-55	4W462	493.10	381.23	70.0
21-23" Diameter Fiber & Steel	Gearred	DGL-55FL	4W463	531.60	409.33	80.0

VERTICAL DRUM LIFTER

Automatic drum lifter picks up vertical standing 55-gallon closed steel drums and sets them down without operator at pickup or delivery point. Lifter works with operator's overhead hoist or crane. Lift hook from crane engages lifter; grabs and holds drum securely until drum is set down in place. Lifter can be maneuvered over stacked drums and around obstacles to a selected drum, grab it, pick it up, and carry it to another location with the operator safely out of the way. Simple grab hook mechanism. Grip pads help align on drum chime for secure operation. Comes fully assembled. 18 1/2H x 33W x 8"D. Orange enamel finish. Wesco Mfg. brand (DL-11).

No. 3W391. Shpg. wt. 50.6 lbs. List \$170.10. Each \$125.47

WESCO

- Handles 55-gallon closed steel drums weighing up to 1000 lbs
- Use with overhead hoist or crane

FORK MOUNTED DRUM GRABS

- Automatic—No hydraulic or electrical connections

Enable forklift operator to singlehandedly lift, transport and deposit closed head steel drums. Drum grabs may be utilized for open head steel drums which are not out of round or damaged, or that contain materials that can spill. Driver simply approaches drum, lifts, transports, sets down, and backs truck away. Weight of drum holds grab jaws, preventing slippage. Mounts easily on forks of forklift. All welded construction. Jaws are formed from steel bar. Safety orange enamel finish. Wesco Mfg.

30/55-Gallon Drum Grabs adjust easily without tools to handle 30 or 55-gallon steel open or closed head drums. 1500 lb capacity units are secured to forks with hand-tightened lock screws mounted on each fork pocket. Fork pockets 22" center to center. Two drum model to be used only with two same size drums.

Standard 55-Gallon Drum Grabs. 1500 lb capacity per drum. Choose from single or double drum models. Both are secured to forks with hand-tightened lock screws mounted to each fork pocket. Fork pockets 22" center to center.

Drum Grab Type	No.	Drum Capacity	Diameter	Fork Pocket Size	Wesco Model	Stock No.	Unit	Each	Shpg. Wt.
Standard	1	55	30 1/4"	5 1/2" x 2"	DJ-55	4W463	\$394.70	\$274.06	127.0
Standard	2	55	22 1/4"	7" x 2 1/4"	DJ-255	4W464	\$14.20	\$11.44	22.0
Adjustable	1	30-55	18-22 1/4"	5 1/2" x 2"	ADJ-55	4W467	\$40.00	\$31.84	15.0
Adjustable	2	30-55	18-22 1/4"	7" x 2 1/4"	ADJ-255	4W468	\$30.50	\$23.20	11.0

1274

NET WHOLESALE PRICES—W.W.GRAINGER, INC.

Industrial & drum handling. Easy to maneuver. Low location or with 800 lb raised position. Caution: polyolefin are adjustable vertical and horizontal. Orange Wesco No. 3W391. No. 4W460.

Over Capacity & 10-2000 Super 11-21" Dia. Fire

- See 55-gal
- 700 lb lift

Vertical drum steel through 1 1/2" in rolled 3" spacing with brand (EDL) No. 5W483. Each

No. 1761

DRUM EQUIPMENT

MATERIAL HANDLING

INDUSTRIAL DRUM CARRIERS

Industrial drum carrier enables one operator to perform five drum handling operations: lift, transport, tilt, rotate, and drain. Easy to maneuver and operate. Operator secures saddle around drum. Lowers handle to lift drum, then can roll load to new location or tilt drum for dispensing. Drum carrier can be used with 800 lb full or 500 lb half full drums. Two sets of locks provided for safe operation. Lift locks hold drum securely in raised position. Tilt lock holds drum in horizontal or vertical position. Carrier rolls on two 8" polyolefin load wheels and one 4" polyolefin swivel caster. Transporting and dispensing heights are adjustable to a maximum drum-to-floor clearance of 11 1/4" vertical and 18" horizontal drain height. All steel welded construction. Shipped partially assembled. 41 1/2"H x 35W x 37"D. Orange. Wesco Mfg. brand.

No. 3W398 is for 55-gallon steel drums.

No. 4W460 is for large 21 to 27" diameter fiber and steel drums.

DRUM CARRIER ORDERING DATA

Drum Capacity & Type	Wesco Model	Stock No.	List	Each	Shpg. Wt.
55-Gallon Steel	ML-35	3W398	\$474.30	\$243.23	105.0
21-27" Dia Fiber & Steel	ML-37FL	4W460	\$10.00	\$68.04	300.0

• For 55-gallon steel and large fiber drums

WESCO

FORK MOUNTED DRUM LIFTER/DISPENSER

- For 55-gallon steel or 21-27" diameter fiber and steel drums
- 800 lb full, 500 lb half full drum capacity

Turns your fork truck into a safe, easy drum lifter/dispenser. Geared design and 10 ft chain drop allow operator to remotely control dispensing and dumping of open and closed head drums without leaving fork truck. Simple operation: mount to lift truck by sliding forks into 5 1/2 x 2" fork pocket and tightening screw locks: each saddle around drum. Capacity 800 lbs full drum, 500 lbs half full. Minimum inside width between forks, 24 1/2" overall. 20 1/2"H x 38W x 32 1/2"D. Orange. Wesco Mfg. brand.

DRUM LIFTER/DISPENSER ORDERING DATA

Drum Capacity & Type	Wesco Model	Stock No.	List	Each	Shpg. Wt.
55-Gallon Steel	DGF-55	4W464	\$736.30	\$381.06	100.0
21-27" Dia Fiber & Steel	DGF-37FL	4W466	\$72.00	\$16.51	170.0

No. 4W464

ECONOMY DRUM LIFTER

- For 55-gallon closed head steel drums
- 700 lb lifting capacity

Vertical drum lifter is safe and simple to use on 55-gallon closed head steel drums. Attach hook of any overhead crane or hoist through 1 1/2" diameter lifting eye mounted on top of four 1/4 x 1" hot rolled steel supports. Safety lock pin prevents accidental opening while transporting drums up to 700 lbs. Wesco Mfg. brand (EDL-5).

No. 5W462, Economy Drum Lifter. Shpg. wt. 15.0 lbs. List \$114.40. Each \$44.54

WESCO

No. 5W462

ROTARY DRUM PUMPS

Hand operated drum pumps for dispensing and transfer pumping fuel oil, lubricating oil, gasoline, anti-freeze. No. 1P893 delivers up to 10 gallons of fluid per 100 revolutions. Includes 22 to 40" telescoping suction pipe and 2" bung adapter. Pump body has 1" inlet and 3/4" outlet. No. 2P003 delivers 10 GPM at 135 RPM. 1" NPT inlet and 3/4" NPT discharge port. Bung adapter included. Requires 1" NPT pipe section tube. For complete listings, see pages 1945 and 1946 respectively.

No. 2P003

No. 1P893

SEE WARRANTY INFORMATION ON PAGE OPPOSITE INSIDE BACK COVER

1275

HYDRAULIC HAND TRUCKS

MATERIAL HANDLING

WESCO

No. 4W474
Superlight Lifter

No. 3W219
Standard Lifter

No. 3W220
Deluxe Lifter

No. 3W223
Heavy-Load Platform

No. 4W476
Standard Steel Fork

WESCO LIMITED WARRANTY

Wesco Mfg. Co. warrants steel trucks for two years, hydraulic and foot pedal for one year. Test of warranty available on request. See "Manufacturer's Warranties" on page opposite this one.

Enable one person to handle many difficult lifting and moving jobs. Save time and manpower in the shop, warehouse, stockroom, receiving department and throughout the plant, wherever aisles and congested areas prevent use of larger equipment. Loads up to 1000 lbs. can be moved with platform in lowered position. Platform can be hydraulically lifted up to 60" above floor. Footpedal downstroke raises platform 1 1/4"; foot operated release valve controls lowering. Provide stability, mobility, and load balance. Welded steel construction. Orange enamel finish on all models except No. 4W474. Push handles. Wesco Mfg. brand.

No. 4W474 Superlight Lifter has platform which lowers to floor. Magnesium frame and heavy gauge aluminum platform construction. 6 x 1 1/4" wheels.

Nos. 3W219 and 4W472 Standard Lifters have platform which lowers to floor. 6 x 2" ball bearing molded-on wheels.

Nos. 3W220 and 4W473 Deluxe Lifters have two 3" swivel casters in front, two 8 x 2" ball bearing molded-on wheels in back. Loads can be pushed horizontally on a level plane or tipped back; platform can be lowered within 5 1/4" from floor.

Nos. 3W223 and 4W475 Heavy-Load Platform models have 5" ball bearing phenolic wheels in front and two 4" swivel casters in back. Designed to roll horizontally at all times, platform and load cannot be tipped back. Platform is 34" and can be lowered within 5 1/4" from floor.

No. 4W476 Standard Steel Fork model has 34" thick x 3" wide x 16" long adjustable span forks. Maximum outside fork span is 25". Tips of forks will touch the ground with back of forks 2 1/2" from ground.

Nos. 4W475 and 4W477 Heavy-Load Fork models have 1" thick x 3" wide x 30" long adjustable span forks with 25" maximum span. Base leg span is 25 1/4" inside and 32" outside.

HYDRAULIC HAND TRUCK SPECIFICATIONS AND ORDERING DATA

Designation	Load Capacity	Maximum Lift	Platform L x W	Overall W x H	Wheel Size	Wesco Model	Stock No.	List	Each	Shpg. Wt.
Superlight Standard	400 lbs.	54"	20" x 22"	22" x 22"	30"	MPL-54-2022	4W474	\$252.00	\$266.92	84.0
Steel Standard	750	54	22" x 22"	22 1/4" x 30"	30"	PL-54-2222	3W219	1007.00	1066.92	182.0
	750	54	22" x 22"	22 1/4" x 30"	30"	PL-54-2220	4W472	1008.00	1067.29	182.0
Steel Deluxe	750	54	22" x 22"	22 1/4" x 30"	37"	DPL-54-2222	3W220	1063.00	1066.47	172.0
	750	54	22" x 22"	22 1/4" x 30"	37"	DPL-54-2220	4W473	1159.00	1248.94	172.0
Heavy-Load Platform	1000	60"	24" x 24"	24" x 24"	38"	ESPL-60-2424	3W223	1159.00	1248.29	228.0
	1000	60"	24" x 24"	24" x 24"	38"	ESPL-60-2424	4W475	1204.00	1293.94	228.0
Standard Steel Fork	750	54"	Fork	22 1/4" x 22"	30"	FL-54-F	4W476	1040.00	1044.39	186.0
Heavy-Load Fork	1000	74"	Fork	22" x 22"	48"	ESFL-74-305	4W477	1602.00	1699.42	222.0

SEE WARRANTY INFORMATION ON PAGE OPPOSITE INSIDE BACK COVER

1271

TELESCOPING FORK TRUCK BOOM, PALLET PULLERS AND PRY BAR

MATERIAL HANDLING

TELESCOPING FORK TRUCK BOOM

No. 52153

- Extends up to 12 ft with 9 different hook positions
- Travel-limiting device prevents over-extension

MAXIMUM SINGLE HOOK LOAD CAPACITIES* IN LBS

HOOK POSITION								
A	B	C	D	E	F	G	H	I
3750	3450	3150	2850	2550	2450	2100	1800	1500
1200								

* Attaining maximum capacities depends on the size and fork capacity of the lift truck used.

Fork lift truck attachment expands versatility of the fork lift's carrying ability for moving long and awkward loads or rounded and odd-shaped loads, working in narrow aisles, or reaching over immovable barriers.

Telescopic boom extends forward up to 12 ft with nine different hook positions on 12" centers. Drop-forged, hardened steel locking pin with two-way, spring-loaded design. Locks in the "out" position for one-man adjustments and locks "in" to safely hold the boom in position. Safety latch swivel hooks and a travel-limiting device prevent over-extension or unexpected disassembly. Fork pockets are 7 1/2 x 2 1/4 x 24" centers. T & S brand (LMI-EBT).

No. 52153, Shpg. wt. 375.0 lbs. List \$702.65, Each \$583.79

LIFTING CAPACITY GUIDELINES

Fork Truck Capacity*	Distance from Mast Face to Load Center			
	6 Ft	8 Ft	10 Ft	12 Ft
2000	590 lbs	500 lbs	410 lbs	325 lbs
3000	925	800	675	530
4000	1400	1200	1000	800
5000	1725	1500	1275	1080
6000	2125	1850	1575	1300
7000	2525	2225	1825	1550
8000	3000	2600	2200	1800
9000	3350	2900	2450	2000
10,000	3900	3400	2900	2400

* Consult your fork truck owner's manual to verify that truck meets or exceeds capacity listed.

PALLET PULLERS

No. 2A093

No. 3W663

Pallet pullers are used to pull pallets away from inaccessible areas such as narrow aisles and unblocked trailers, into areas where forks of a forklift truck can be used. These pullers are designed for stringers up to 4 1/2" (No. 2A093) and 4" (No. 3W663) thick. Rugged galvanized steel construction. 2 3/4" high heads are self-cleaning and unaffected by wood particles, paint or grease. 1/4" proof coil chain included for attaching pull chain. Recommended load is 1250 lbs. T & S brand.

No. 2A093. One-piece curved heads have integral spurs for gripping pallet stringers. Scissor action 30" long, 30" chain.

No. 3W663. Cammed closing action provides maximum grip strength and reduced pinch points. Safety handle enables easier positioning and removal of separated heads. Grip both metal and wood with biting action. 15 1/2" long. Chain is 7 1/4" long.

Description	Length	T&S Model	Stock No.	Unit	Each	Shpg. Wt.
Scissor Action	30"	PAL-21	2A093	\$70.00	\$51.47	21.0
Cammed Action	15 1/2"	PAL-14	3W663	\$55.00	\$42.40	14.0

PRY BAR

- 72" long hardwood handle
- 4250 lb overall capacity

Provides dock workers, riggers, and freight handlers with the leverage to get underneath heavy objects for lifting with fork lift, hand truck, or other types of trucks. Hot rolled steel beveled nose plate is bolted to 72" long hardwood handle. Pry bar has 4250 lb overall capacity. Polyurethane wheels for long life. Beveled nose plate is painted yellow. T & S brand (PDL-72).

No. 4W944, Pry Bar, Shpg. wt. 34.0 lbs. List \$34.00, Each \$27.72

SEE WARRANTY INFORMATION ON PAGE OPPOSITE INSIDE BACK COVER

1299

DRUM EQUIPMENT

MATERIAL HANDLING

55-GALLON DRUM CRADLES

No. 2W472

WESCO

No. 4W453

For manually handling 55-gallon drums. Simplifies storage, loading and unloading, and on-the-job dispensing operations. Four easy steps enable one operator to handle fully loaded drums: (1) Position cradle next to drum (2) Hook tipping lever on drum chime (3) Tip load on the curved rails (4) Move loaded cradle on its wheels to new location. Cradle frame is box channelled steel, cross-braced for rigidity. Nonsparking, oil and chemical-resistant wheels standard on both models. Load capacity 600 lbs. drum height 19". 33 1/2" L x 19 1/2" W. Orange color. Shipped disassembled. Wesco Mfg. Brand.

No. 2W472 has four 2 1/4" rigid polyolefin wheels mounted inside the frame.

No. 4W453 has two 2 1/4" rigid polyolefin wheels and two 3" polyolefin swivel casters for easy steering.

Wheels	Casters	Wesco Mfg. Model	Stock No.	List	Each	Lot 3	Shpg. Wt.
4	—	CW-10	2W472	\$89.00	\$72.04	\$48.44	30.0
2	2	CW-10	4W453	119.70	\$7.33	\$2.98	37.0

30 AND 55-GALLON INDUSTRIAL DRUM CRADLE

WESCO

Drum cradle enables one operator to tip, move, rotate, drain, and store industrial drums weighing up to 1000 lbs. Handles either 30 or 55-gallon metal industrial drums with ease. Two hardwood retractable handles extend from 42 to 64", giving operator leverage and safety when tipping drum down for draining. Horizontal position is 20" above floor surface. Polyolefin rollers enable drum to be rotated for positioning. Drum hook and beveled toes are made of long wearing carbon steel. Cradle moves on four 4" polyolefin wheels that resist reaction with oils, oil, and chemicals. Unit comes partially assembled. Top section has welded steel construction that bolts to the uprights. 25 1/2" H x 19" W. Orange. Wesco Mfg. Brand (CW-20).

No. 3W399. Shpg. wt. 54.0 lbs. List \$175.00. Each \$124.50

DRUM DOLLIES

- Four models fit standard 30, 45, and 55-gallon steel or plastic drums and support 500, 840, and 1400 lb. loads.

Wagner

No. 2W245, 3W039, & 3W040

No. 3W342

Add mobility to heavy industrial drums and enable reusable drums to serve as convenient containers for scrap metal, liquids, parts, and refuse.

No. 3W563 is of structural foam which will not rust or bend, has a solid bottom, and comes with five heavy-duty casters. Nos. 2W245, 3W039, and 3W040 have a circular frame of welded steel, with cross-bracing on the bottom, and four heavy-duty dual-level ball bearing swivel casters. Rubbermaid and Wagner brands.

SPECIFICATIONS

Dolly Capacity	Drum Size (in. Dia)	Ht.	Size	Caster Type
500 lbs	24 1/2"	23 1/2"	7 1/4"	3 x 1 1/4" Rubber/Steel Plate
840	20 1/4"	18 1/4"	6 1/4"	3 x 1 1/4" Molded Plastic
840	23 1/4"	21 1/4"	6 1/4"	3 x 1 1/4" Molded Plastic
1400	23 1/4"	23 1/4"	6 1/4"	3 x 1 1/4" Phenolic Resin

DRUM DOLLY ORDERING DATA

Dolly Capacity	For Drum Size	Qty. x Model	Stock No.	List	Each	Lot 3	Shpg. Wt.
500 lbs	Up to 55 gal.	2050*	3W563	\$78.12	\$62.50	\$59.37	17.0
840	30	4000*	2W245	51.10	44.28	41.20	14.2
840	45, 55	4000*	3W039	57.05	48.37	44.98	18.5
1400	45, 55	4000*	3W040	82.17	61.38	54.32	29.0

(*) Rubbermaid brand. (r) Wagner brand.

PAIL DOLLY

For use with 5, 6, and tapered 15 gallon pails. Dual wheel swivel stem casters. Designed for industrial, commercial, or household use with items such as cooking products, cleaning agents, paints, construction compounds, and lubricants. Dishwasher safe for cleaning. Inside diameter is 11"; overall diameter is 18". Beige color. Nameco brand (NAM-315).

No. 3W061. Shpg. wt. 2.0 lbs. List \$24.95. Each \$24.20

SEE WARRANTY INFORMATION ON PAGE OPPOSITE INSIDE BACK COVER

1273

1W032

the best
ks avail-
suitable
floating
excellent
drums
me hook
steel bar,
1" roller
restand,
iles, 18 1/2"
g. brand

\$228.43

lows one
1000 lbs
drums to
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\$253.11

Shpg. Wt.

13.8

83.0

55-GALLON STEEL DRUM HAND TRUCKS

NO. 3W393 55-GALLON DRUM TRUCK/DISPENSER. Four wheel barrel truck enables one man to transport steel industrial drums weighing up to 1000 lbs. Specially designed undercarriage allows one operator to tilt and lower a full drum to its horizontal position for dispensing or storage. Four polyolefin rollers simplify rotating drum for positioning faucet over a container (not included). Long wearing beveled steel nose prongs and an adjustable slide hook hold drum in place by its top rim. Wheels are made of oil and chemical resistant polyolefin, 10 x 2 1/4" front and 6 x 2" rear. Frame is structural steel pipe 5 3/4" high, 24" wide at the handles, and 16 1/2" wide at the nose. Orange enamel finish. Wesco Mfg. brand (30BTW).

No. 3W393. Shpg. wt. 63.0 lbs. List \$210.50. Each.....\$149.41

NO. 3W371 DRUM HAND TRUCK. For manually transporting upright 55-gallon steel barrels and drums up to 1000 lbs. Saves time and manpower, plus maneuvers easily in space too small for power driven forklifts. Especially useful on loading and receiving docks, industrial storerooms, warehouses, and distribution centers. Specially designed steel frame has double forks, adjustable chime hook, and wide spread handle bars for leverage and handling ease. Steel kickstand holds truck upright. 10 x 2 1/4" molded rubber tires on cast iron wheels. 16 1/2" wide nose. Overall dimensions: 62" high x 24" wide. Orange color. Wesco Mfg. brand (5BT).

No. 3W371. Shpg. wt. 70.0 lbs. List \$213.70. Each.....\$144.67

NO. 3W372 EASY HANDLING DRUM TRUCK. One of the best designed, easiest handling 55-gallon steel drum trucks available. Heavy-duty industrial design and construction is suitable for the shop, warehouse or on the dock. Spring loaded floating replaceable axle helps absorb heavy loads. Provides excellent balance enabling one man to handle 55-gallon steel drums weighing up to 1000 lbs. Adjustable self-storing chime hook. Replaceable hard faced nose prongs machined from a steel bar. Heavy-duty mold-on rubber wheels are 10 x 2 1/4" with 1" roller bearings. Upright truck can stand alone without kickstand. Frame is structural steel pipe 6 1/2" high, 22" wide at handles, 16 1/2" wide at the nose. Orange enamel finish. Wesco Mfg. brand (20BT).

No. 3W372. Shpg. wt. 74.0 lbs. List \$297.50. Each.....\$221.41

NO. 4W332 FOUR-WHEEL SAFETY DRUM TRUCK allows one man to handle 55-gallon steel drums weighing up to 1000 lbs. safely and easily. Rear wheels also simplify moving drums to and from pallets. Heavy-duty steel frame has adjustable self-storing chime hook, replaceable hardened nose prongs, kickstand for upright storage, and combination handle for easy operator control. Truck is equipped with two 10 x 2 1/4" molded rubber front wheels and two 6 x 1 1/2" molded rubber rear wheels. Overall dimensions: 61H x 23W at handle, 16 1/2W at nose. Orange. Wesco Mfg. brand (15BT).

No. 4W332. Shpg. wt. 79 lbs. List \$324.50. Each.....\$253.17

55-GALLON POLY DRUM TRUCKS AND DISPENSER

Enable one man to handle 55-gallon polyplastic drums weighing up to 1000 lbs or 21 to 22" diameter fiber drum with minimum height of 30". Nose pads pick up drums without danger of punctures and provide a large support area to fit any drum configuration. Drum is secured to truck with easy-to-use, one-way safety belt system. Belt is placed around drum and tightened by an easy pull on oversized handle. Belt slides easily through one-way belt lock securing drum to truck. Drum is released by depressing release side of belt lock. Belt is stored on hooks behind handles. Orange enamel finish. Wesco Mfg. brand.

No. 4W011 Poly Drum Truck. Heavy-duty structural steel pipe truck is 61H x 23 1/4W x 23 1/4D. Spring loaded floating replaceable axle helps absorb load and provides excellent balance. Oversized nose pads are replaceable. Heavy-duty mold-on rubber wheels are 10 x 2 1/4" with 1" roller bearings. Upright truck can stand alone without kickstand.

No. 4W012 Poly Drum Truck/Dispenser. Four wheel barrel truck has large, welded nose pads. Specially designed undercarriage allows one operator to tilt and lower a full drum for dispensing or storage. Wheels are mold-on rubber with 1" roller bearings. 10 x 2 1/4" front and 6 x 1 1/2" rear. Frame is structural pipe 57 1/2 x 24W at handles x 24 1/2D. Comes with kickstand for easy upright storage.

Description	Wesco Model	Stock No.	List	Each	Shpg. Wt.
Drum Truck	4W011	4W011	\$253.60	\$204.37	130.0
Drum Truck/Dispenser	4W012	4W012	\$313.30	\$277.21	130.0

L. BREAKDOWN ON TEMPORARY SECURITY SYSTEM

COST ESTIMATING TAKEOFF FORM

JOB TITLE: NMSE

NAME: D. BASILE DATE: 5-20-95

ESTIMATE DESCRIPTION:	SECURITY	DW6	CE
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ICF KAISER ENGINEERS 9115 Highland Drive
Los Angeles, Calif. 90045 (213) 850-1000

JOB #: 41552 -056 Fix Temp SECURITY TEL

[illegible]

COMMENTS:	ITEM	①	DWB	C	3	TOTALS	\$ 14,625	43 HAS	\$7,960
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COST ESTIMATING TAKEOFF FORM

JOB TITLE: NMSF

NAME: D. BASILE DATE: 5-20-95

ESTIMATE DESCRIPTION: SECURITY DWG C3

ICF KAISER ENGINEERS

 MUST INCLUDE 1%
 FOR MATERIALS FROM MARCH 1994

JOB #: 41552 - 058

ITEM #	CSI WBS	DESCRIPTION	QTY.	UNITS	MATERIALS (COST/UNIT)	MAN HRS PER. UNIT	LABOR ID	EQUIP. RENTAL
		ITEM (8) 3/4" Ø WIRE ROPE VERT. BAR	700	LF	\$3,015	485		580
		WIRE ROPE STEEL COAT			3.10	.3		
		UTBOLT CLAMPS & INSTALLATION			.30	.3		
		CONC. ANCHOR BLES 6 TOTAL			LUMP 600	LUMP 30		LUMP 580
		TUANGULKS			.05	.05		
		ITEM (9) NEW VERT. GATE 20'	2	ea	\$1,450	88		\$860
					725	44		130
		ITEM (10) 4 FT PEDESTALIAN GATE W/AUTOCLOSE	1	ea	\$445	8		150
		GATE			775	3.6		100
		AUTOCLOSE BAR			170	4.4		50
		ITEM (11) 4 FT PEDESTALIAN GATE	1	ea	\$275	3.6		100
		ITEM (12) UPGRADE LIGHTING	3	ea	\$2,163	51		
		250 W MERCURY VAPOR FLOODLT.			291	8.5		
		250 W HIGH PRESSURE SODIUM FLOOD			430	8.5		

COMMENTS: ITEM (8) → (12) TOTALS → \$7,348 635.6 MH \$1,690

COST ESTIMATING TAKEOFF FORM

 JOB TITLE: NMSF

 NAME: D. BASILE DATE: 5-20-95

 ESTIMATE DESCRIPTION: SECURITY DWG C3
ICF KAISER ENGINEERS
1000 Eastman Drive
Los Angeles, CA 90015-2144

 JOB #: 41552-056

ITEM #	CSI WBS	DESCRIPTION	QTY.	UNITS	MATERIALS (COST/UNIT)	MAN HRS PER UNIT	LABOR ID	EQUIP. RENTAL
		ITEM (13) FIBEROPTIC SENSOR CABLES	12000	LF	\$119,840	1500		\$1,920
		FIBER CABLE (3 CORE)			\$9.80	.02		.1
		FIBER OPTIC CONNECTOR			.02	.005		.01
		EXCAVATE & PLACE CABLE IN ZONE				.1		.05
		ITEM (14) ALARM SIGNAL FIBEROPTIC	6000	LF	\$71,400	750		\$960
		FIBER CABLE 12 CONDUCT			11.90	.02		.1
		FIBER CONNECTORS			0.05	.005		.01
		PULL FIBEROPTIC CABLE IN CONDUIT			0.05	.1		.05
18		ITEM (15) 3# 6 POWER CABLE	1400	LF	\$1,170	536		\$180
		IF UNDERGROUND POWER RATED 6-3			0.85	0.032		.1
		ITEM (16) MICROWAVE SENSOR POLES	7	ea	\$33,938	76.3		\$1,400
		10X10X4 JUNCTION BOX			29	1.6		
		8' STEEL POLE 11/4" DIA			585	2.1		210
		MICROWAVE UNITS "375C" 320			\$220	5.2		
		ITEM (17) REMOVE PIV GUMAD POSTS	2	ea	\$200	24		\$300
		ITEM (18) BUTTERFLY BRACKET & NUTS	150	LF	\$300	45		\$200
		ITEM (19) RINGDOWN STATION FOR PF142	1	ea	\$350	6		
COMMENTS: ITEMS (13) → (19) TOTALS →					\$225,098	1,459.9 MH		\$4,960
ITEM (1) → (19) GRAND TOTAL →					\$276,871	3929.5 MH		\$75,098

M. BREAKDOWN ON MAA

ENTRY POST

Page 83 left intentionally blank.

N. QUOTE FOR DEIONIZED WATER SYSTEM

SOUTHWEST WATER CONDITIONING, INC.

Culligan.

CULLIGAN WATER CONDITIONING
 7801 Monard Blvd., N.E.
 Albuquerque, New Mexico 87110
 1 (505) 299-9581
 N.M. 1 (800) 545-4139

DATE

5/16/95

TELECOPIER TRANSMITTAL SHEET

TRANSMITTED TO TELECOPIER #:

505-661-5222

COMPANY:

KISER ENGINEERING CO.

PERSON:

Chris Quattieri

TOTAL PAGES:

TRANSMITTED FROM:

NOTE:

Infor on DF System

SOUTHWEST WATER CONDITIONING INC. DBA CULLIGAN

PERSON:

Allen R. Linares

FAX NUMBER: 505-299-9584

IF YOU HAVE TROUBLE RECEIVING THIS TRANSMISSION PLEASE CALL
 (505) 299-9581.

Equipment

cost:

1- RRI conductivity
 1- 12" CATROL - 1" NPT Connectors
 1- 12" ANION - 1" NPT "
 1- 12" MIXED BED 1" NPT "
 connectors for DF system

Equipment cost: \$4,080.00

COST ESTIMATING TAKEOFF FORM

JOB TITLE: NMSE

NAME: C. QUARTIL DATE: 5/17/95

ESTIMATE DESCRIPTION: DE-IONIZED WATER SYSTEM

ICF KAISER ENGINEERS

1900 Diamond Drive
Los Alamos, New Mexico 87544

JOB #: 41552-056

[illegible]

COMMENTS:

O. QUOTE FOR DEIONIZED WATER SUMP SYSTEM

RYAN HERCO PRODUCTS

U.C. LOS ALAMOS SCI. LAB.
 ACCOUNTS PAYABLE M/S P-240
 P O BOX 1463
 LOS ALAMOS, NM
 ZIP 87545

Ryan Herco - Albuquerque
 5511 MIDWAY PARK PLACE NE
 ALBUQUERQUE, NM
 Telephone: 505-884-1141
 ZIP 07109

RYAN HERCO PRODUCTS
 MAY.17 '95 9:10AM

/17/95 Bid ID: 5022353 WASTE STATION / PVC PIPE

Page 1

Quantity	Sell Per	Description	Price Per	Unit Price	Extended Price
1	EA	DUPLEX PUMPING STATION, 32 GAL. (1.0000 EA Per EA) EA PER ATTACHED SPECS, COST BREAK- DOWN AS FOLLOWS: 2 PUMPS (3/4 HP VERT. CENTRIFICAL---CFVC---EACH PUMP 26 GPM @ 30' HEAD---SERIES #886---RYAN HERCO #6531.060) @ TOTAL OF \$1440.00; 4 RADIO FREQ. CAPACITANCE LEVEL SENSORS-- ---RYAN HERCO#6907.120 W/ 2 DUAL INPUT CONTROLLERS---RYAN HERCO# 6908.003---@ TOTAL OF \$1137.00 /BEN600133083		3,022.90000	3,022.90
100	EA	PVC PIPE 1" SCHED 80 (1.0000 EA Per EA) EA 3905.010		.20000	20.00

COST ESTIMATING TAKEOFF FORM

JOB TITLE: *NMSF*

NAME: COLUAKTIERI DATE: 5/17/95

ESTIMATE DESCRIPTION: DUPLEX PUMPING STATION

ICF KAISER ENGINEERS 1900 Chicago Blvd
Los Alamos, New Mexico 87544

JOB #: 41552-056

[illegible]

COMMENTS:

**P. QUOTE FOR CONTAINER BASKET
ASSEMBLY**

ITEM NO. A.	DESCRIPTION	WBS	QUANTITY	UNITS	LABOR FACTOR	LABOR RATE	MATERIAL COST	EQUIP RENTAL	COST SUBTOTAL
	CONTAINER BASKET ASSEMBLY (1100)								
1	1/2" PLx 8 1/2" O	050	15.60	LB.	0.011	32.24	1.44	0.03	34.31
2	3 1/2" PIPE	050	1.48	LB.	0.078	32.28	1.60	0.22	6.78
3	SEAT ANGLE 2 1/2"x1 1/2"x5/16"	050	12.14	LB.	0.000	32.28	0.33	0.00	3.65
4	CUTTING AND ROLLING	050	5.40	LF.	0.110	32.28	0.45	1.11	27.60
5	WELDING	050	5.00	LF.	0.033	32.28	0.09	0.32	7.38
	SHELF PL. ASSEMBLY								
6	PLATE 16.25" DIA. x 1/4"	050	109.24	LB.	0.000	32.28	0.34	0.00	28.80
7	CUTTING AND ROLLING	050	32.00	LF.	0.110	32.28	0.45	1.11	163.55
8	WELDING	050	32.00	LF.	0.033	32.28	0.09	0.32	47.21
	EXPANDED METAL CAGE								
9	8"x4.2"x1/8"	050	29.47	SF.	0.034	32.28	2.70	0.20	321.61
10	CUTTING AND ROLLING	050	22.42	LF.	0.110	32.28	0.45	1.11	114.58
11	WELDING	050	22.42	LF.	0.033	32.28	0.09	0.32	33.07
	DOOR STIFFNER BARS								
12	1/2" PLATE	050	16.30	LB.	0.000	32.28	0.34	0.00	3.47
13	CUTTING AND ROLLING	050	1.00	LF.	0.110	32.28	0.45	1.11	5.11
14	WELDING	050	13.00	LF.	0.033	32.28	0.09	0.32	19.36
	HINGE								
15	3/16" DIA.	050	5.33	LB.	0.000	32.28	0.77	0.00	6.25
16	CUTTING AND ROLLING	050	0.50	LF.	0.110	32.28	0.45	1.11	2.58
17	WELDING	050	1.50	LF.	0.033	32.28	0.09	0.32	1.48
18	CLASP	050	1.00	EA.	0.250	32.28	2.00	0.01	10.08
	VERT. STIFF BARS								
19	1 1/2"x 1/4"	050	28.86	LB.	0.000	32.28	0.34	0.00	9.14
20	CUTTING AND ROLLING	050	1.00	LF.	0.110	32.28	0.45	1.11	5.11
21	WELDING	050	42.00	LF.	0.033	32.28	0.09	0.32	61.66
	TOTAL COST								715.15

Q. QUOTE FOR 10 KVA UPS SYSTEM

VENDOR QUOTE

JOB TITLE: NMSF CDR

DISCIPLINE: *Elec.*

VENDOR: *Cleveland Enterprises*

NAME: Dwight Velarde DATE: 5/11/15

NAME: John Cleveland

PHONE: 345-7751

DESCRIPTION: UPS, 10 kVA, 3p, with 24 hour back up

ITEM:

COST: (\$)

UPS w/ batteries

54,000

COMMENTS:

ICF KAISER ENGINEERS

1900 Diamond Drive
Los Alamos, New Mexico 87544

R. QUOTE FOR HVAC CONTROLS

JOHNSON
CONTROLS

FAX COVER PAGE

To: CHRIS QUARTIERI

For Information Call: (505) 343-4055

From: Steve Alschuler

At: Johnson Controls

Pages: 1

Fax Number: (505) 345-6779

Chris:

Based on the information you told me over the phone on 5/4/95, I would suggest using the following pricing as a budgetary guideline:

DDC Controls per Air Handler \$10,000 (VFDs not included)

DDC Control for Physical Plant (2 Boilers 2 Chillers) \$10,000

DC Operator Workstation with Graphics \$15,000

This would include product, installation, and professional services such as software generation, autocadd submittals, etc.

If you have additional questions, just call

Steve Alschuler

Sales Engineer
Johnson Controls

TOTAL AIR HANDLER (\$10,000) (6 UNITS) = \$60,000
TOTAL BOILERS (10,000) (2 UNITS) = \$20,000
TOTAL CHILLERS (10,000) (2 UNITS) = \$20,000
OPERATOR WORKSTATION (15,000) (1 UNIT) = \$15,000
TOTAL COST = \$115,000

S. BREAKDOWN FOR FIRE PROTECTION

FIRE PROTECTION ESTIMATE FOR THE NMSF

Preaction sprinkler system, \$2.05 a sq. ft. (materials and installation costs)
3 floors, covers about 90% of building area (hardened area)

Wet sprinkler system, \$ 1.75 sq. ft. (materials and installation costs)
ground floor, covers about 10% of building

Deluge system for the HEPA filter units.

\$26,000 for each HEPA unit with a cross section area 16 sq. ft. or greater
(materials and installation costs)

2 UNITS \$52,000

Sprinkler system risers

Need six risers at \$6,000 each (materials and installation costs)

Fire main

????? ft at \$18 a foot (materials and installation costs)

Two fire hydrants at \$1,000 each installed

Nine PIVs at \$1,000 each installed

Fire alarms control panel

\$3,000 to reinstall panel

6000 ft. of wire and conduit (\$0.50 a foot plus 0.1 man hours a ft to install)
cost per foot

60 detectors (\$35 each plus 1.0 man hours to install) cost per unit

Fire alarm reporter box

\$2,500 to reinstall box

Connections of the PIV supervisor switches

400 ft. of conduit (\$0.65 a foot and 0.2 hours to install) cost per foot plus
nine switches at \$25 each

T. QUOTE FOR HEPA FILTER AND HOUSINGS

VENDOR QUOTE

JOB TITLE: NMSF

DISCIPLINE: MECHANICAL

NAME: C. DIAZ

DATE: 8/5/95

VENDOR: FLANDERS

NAME: GLENMOORE

PHONE:

DESCRIPTION:

HEPA FILTER TRAIN QUOTE

ITEM:

COST: (\$)

ISOLATION DAMPERS

\$ 2890⁰⁰

HEPA FILTERS / 1000 CFM

\$ 750⁰⁰

PRE-FILTERS / 1000 CFM

\$ 10⁰⁰

PRE-FILTER HOUSING & TEST SECTION / 1000 CFM

\$ 2540⁰⁰

HEPA FILTER HOUSING / 1000 CFM

\$ 2050⁰⁰

TEST SECTION / 1000 CFM

\$ 1600⁰⁰

COMMENTS: USED THESE COMPONENTS TO ~~EST~~ ESTIMATE A COST PER FILTER PLENUM FOR ESTIMATE

ICF KAISER ENGINEERS

1900 Diamond Drive
Los Alamos, New Mexico 87544

100

NAME: C. DIANTER DATE: 6/15/95

ICF KAISER ENGINEERS 10001 Diamond Drive
 Los Angeles, CA 90024

ICF KAISER ENGINEERS 10001 Diamond Drive
Los Angeles, CA 90024

COMMENTS:

COST ESTIMATING TAKEOFF FORM

JOB TITLE: NMSE RETURN AIR PLenum 5X4 3 STAGE NAME: C. QUANTON DATE: 6/15/95

ESTIMATE DESCRIPTION: *COST PRG ITEM # 93*

JOB #: 41552-0516

ICF KAISER ENGINEERS

PHF Channing House
14th Street, New Mexico House

[illegible]

COMMENTS:

COST ESTIMATING TAKEOFF FORM

JOB TITLE: NMSR HEDA BDL PACK/UNPACK & CHANGE

NAME: C. D. HARTMAN / DATE: 5/15/95

ESTIMATE DESCRIPTION: Room Cost Pro Item # 94

ICF KAISER ENGINEERS

WILLIAM CHRISTOPHER BROWN
1415 Atlantic Avenue, Boston, MA 02114

JOB #:

[illegible]

COMMENTS:

**U. OPC STAFFING PLAN
FOR ACCEPTANCE AND TURNOVER**

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DR. PETER B. BROWN

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Q/A	1 @ 25%	100
H/S	1 @ 50%	200
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UNIVERSITY OF CALIFORNIA
405 HARMON DRIVE, LAWRENCE
BERKELEY, CALIF. 94720-1780

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 10/10/10

V. LABOR CRAFT RATE ANALYSIS

[illegible]

Johnson Controls World Services Inc.

Cost Distribution Rate Schedule

12/21/94

Labor Distribution Rates - Table I

Trade ID Code	Daily - Bacon Crafts	Hourly Rate	Overtime Rate (1.50)	Premium Rate (1.10)
145	Laborer	\$ 14.25	\$ 21.38	\$ 15.68
148	Teamster	\$ 16.35	\$ 24.53	\$ 17.38
153	Oper.Engineer	\$ 18.25	\$ 27.38	\$ 20.08
157	Painter	\$ 20.00	\$ 30.00	\$ 22.00
161	Cement Mason	\$ 18.25	\$ 27.38	\$ 20.08
165	Electrician	\$ 33.00	\$ 49.50	\$ 36.30
169	Pipefitter	\$ 34.30	\$ 51.45	\$ 37.73
173	Carpenter	\$ 22.00	\$ 34.20	\$ 25.08
177	Roofer	\$ 14.10	\$ 21.15	\$ 16.51
181	Insulator	\$ 33.30	\$ 49.95	\$ 36.63
185	Ironworker	\$ 18.45	\$ 27.68	\$ 21.40
189	Sheetmetal Worker	\$ 31.20	\$ 46.80	\$ 34.32

Labor Distribution Rates - Table II

Trade ID Code	Maintenance Crafts	Hourly Rate	Overtime Rate (1.50)	Premium Rate (1.10)
144	Laborer	\$ 17.05	\$ 25.58	\$ 18.76
148	Teamster	\$ 18.10	\$ 27.15	\$ 19.91
153	Oper.Engineer	\$ 18.35	\$ 28.03	\$ 21.09
156	Painter	\$ 24.00	\$ 36.00	\$ 26.40
160	Cement Mason	\$ 21.40	\$ 32.10	\$ 23.64
164	Electrician	\$ 30.60	\$ 45.75	\$ 33.66
168	Pipefitter	\$ 31.10	\$ 46.65	\$ 34.21
172	Carpenter	\$ 30.00	\$ 45.00	\$ 33.00
176	Roofer	\$ 20.20	\$ 30.30	\$ 22.22
180	Insulator	\$ 28.45	\$ 42.68	\$ 31.30
184	Ironworker	\$ 32.80	\$ 49.20	\$ 36.30
188	Sheetmetal Worker	\$ 31.40	\$ 47.10	\$ 34.54

Labor Distribution Rates - Table III

Trade ID Code	Supervisor Rates	Hourly Rate
130	Construction Project Supervisor	\$ 27.20
131	Safety & Health Inspector	\$ 23.35
132	Engineering	\$ 27.47
133	Materials Controller	\$ 18.43
134	Estimator	\$ 23.60
135	Field Supervisor	\$ 28.85
137	Scheduler	\$ 17.17
138	Surveyor	\$ 17.18
139	Materials Tester	\$ 20.48
140	Environ. Inspector/Supervisor	\$ 26.83

Overhead Distribution Rate Table

<u>Overhead</u>	<u>Rates %</u>
<u>Labor Loading</u>	38.1%
<u>General & Administrative</u>	18.1%
<u>Overhead Expense Tax</u>	5.0%
<u>Materials Handling</u>	18.0%
JCWS Material Handling (18.0%)	
(Separate Material Handling (18.0%))	
ILAM Stone Material Handling (18.0%)	

W. PROCUREMENT RECHARGE RATES
(MAT TAX)

r.e.miller

Los Alamos National Laboratory
Procurement Recharge Rates
(not tax)

5/3/95
2:57 PM
PROCTAX.XLS

<u>Expense Projects</u>		<u>FY-94</u>	<u>FY-95</u>
Contracts:	less than \$1,000,000	7.86%	7.10%
	\$1,000,000 to \$4,000,000	2.275%	2.275%
	greater than \$4,000,000	1.875%	1.875%

GPP and Line Item Projects

Contracts:	Construction Contracts	3.25%	3.25%
	A/E Service Contracts	3.25%	3.25%

Notes: Rates are in effect on FY-94 - GPPs

Rates are in effect on FY-95 - Line Item and Expense Projects

not tax

X. SECURITY ALARM & VIDEO
BREAKDOWN WITHOUT ENTRY POST

COST ESTIMATING TAKEOFF FORM

SHEET 1 OF 3

JOB TITLE: NMSF

NAME: D. BASILE

DATE: 5-21-95

ESTIMATE DESCRIPTION: SECURITY ALARM

SEE DWG 4-15

ICF KAISER ENGINEERS

7903 Diamond Drive
Los Angeles, New Mexico 87504

JOB #: 41552-056 Cost Pad Item # 1313

ITEM #	CSI WBS	DESCRIPTION	QTY.	UNITS	MATERIALS (COST/UNIT)	MAN HRS PER UNIT	LABOR ID	EQUIP. RENTAL
		DOOR ALARMS	5	TOTAL	\$ 6,690	680		
		BALANCED MAGNETIC SWITCH # 2907		EA	300	25		
		FOR EACH SWITCH:						
		↑ 1-INCH GALV. CONDUIT (HARD RUN) @ 300 FT/100		FT	1.70	0.15		
		5/C #18 GA. CABLE @ 300 FT/100		FT	0.36	0.12		
		↓ CONDUIT INSTALLATION/CABLE PULLING/TWIST 180°		FT	1.40	0.1		
		AREA ALARMS MOTION DETECTION	6	TOTAL	\$ 5,352	746		
		RM-B3	4	EA	200	4		
		AM-M3	2	EA	200	4		
		EACH ROOM REQUIRES:						
		↑ 1-INCH GALV. CONDUIT (HARD RUN) @ 300 FT/100		FT	1.70	0.15		
		5/C #18 GA. CABLE @ 300 FT/100		FT	0.36	0.12		
		↓ CONDUIT INSTALLATION/CABLE PULLING/TWIST 180°		FT	1.40	0.1		

COMMENTS:

TOTALS →

\$ 12,042

926

SHT 2 VF3

NAME: D. B. SILE DATE: 5-21-95

SFB DWL A-16

1902 Diamond Creek
1000 Acres, New Mexico 87544

ITEM #	CSI WBS	DESCRIPTION	QTY.	UNITS	MATERIALS (COST/UNIT)	MAN HRS PER UNIT	LABOR ID	EQUIP. RENTAL
		DOOR ALARMS	8	TOTAL	\$ 9,320	940		
		BALANCED MAGNETIC SWITCH *2907		EA	300	25		
		FOR EACH SWITCH:						
		↑ 1-INCH GALV. CONDUIT (HORE RUN) 250 FT		FT	1.70	0.15		
		↓ 5/C #18 GA CABLE 250 FT AWG		FT	0.36	0.12		
		↓ CONDUIT INSTALLATION/CABLE PULLING/ STRAIGHT BOX		FT	1.40	0.1		
		ARENA ALARMS - MOTION DETECTION	14	TOTAL	\$ 4,976	278		
		ROOM M2	12	EA	200	4		
		ROOM M3	2	EA	200	4		
		EACH ROOM ACQUIRES:						
		↑ 1-INCH GALV. CONDUIT (HORE RUN) 300 FT		FT	1.70	0.15		
		↓ 5/C #18 GA CABLE 300 FT AWG		FT	0.36	0.12		
		↓ CONDUIT INSTALLATION/CABLE PULLING/ STRAIGHT BOX		FT	1.40	0.1		

12/8

COST ESTIMATING TAKEOFF FORM

SHT 3 OF 3

JOB TITLE: NMSE

NAME: D. BASILE DATE: 5-21-95

ESTIMATE DESCRIPTION: SECURITY ALARM SEE DWG A17

JOB #: 41552-056

ICF KAISER ENGINEERS 1500 Diamond Drive
1000 Alameda, New Haven, CT 06511

ITEM #	CSI WBS	DESCRIPTION	QTY.	UNITS	MATERIALS (COST/UNIT)	MAN HRS PER UNIT	LABOR ID	EQUIP. RENTAL
		DOOR ALARMS	14	TOTAL	\$ 43,888	7036		
		BALANCED MAGNETIC SWITCH #2907		ea	300	25		
		1-INCH HOME-RUN CONDUIT @ 200 FT AVG.		FT	1.70	0.15		
		5/C #18 AWG CABLE @ 3200 FT AVG.		FT	0.36	0.12		
		CONDUIT INSTALLATION/CABLE PULLING/TIE BOX		FT	1.40	0.1		
		AREA ALARMS (MOTION DETECTION)	20	TOTAL	\$ 10,920	820		
		ROOM 136	4	ea	200	4		
		ROOM 134	2	ea	200	4		
		ROOM 133	12	ea	200	4		
		ROOM 132	2	ea	200	4		
		1-INCH HOME-RUN CONDUIT @ 500 FT AVG.		FT	1.70	0.15		
		5/C #18 AWG CABLE @ 500 FT AVG.		FT	0.36	0.12		
		CONDUIT INSTALLATION/CABLE PULLING/TIE BOX		FT	1.40	0.1		

COMMENTS:

TOTALS →

\$ 24,908

1856

TOTAL MAN HOURS FOR SECURITY ALARM: $926 + 1218 + 1856 = 4000$ MHA

TOTAL MATERIAL FOR SECURITY ALARM: $12,042 + 19,196 + 24,860 = 56,098$

54E 10F3

NAME: D. BASILE DATE: 5-21-95

ICF KAISER ENGINEERS WDH 13-00000 14-0
105 ALPINE NEW MEXICO 87514

ICF KAISER ENGINEERS WDH 13-00000 14-0
105 ALPINE NEW BRIDGE 87544

321

TOTAL

\$ 23,850

342

SHT 2 OF 3

NAME: D. BASILE DATE: 5-21-95

ICF KAISER ENGINEERS 1924 Hammond Blvd
Los Alamos, New Mexico 87544

ICF KAISER ENGINEERS 1924 Hammond Blvd
Los Alamos, New Mexico 87544

COMMENTS:	TOTAL	\$ 13,250	170
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170

SHT 30 F 3

NAME: D. BASILE DATE: 5-21-95

SEE PAGE A-15

ICF KAISER ENGINEERS

THE UNIVERSITY OF TEXAS
AT AUSTIN

JOB #: 41552-056

21

FOR 123 — 5

\$10,600

152

TOTAL MAN HOURS FOR SECURITY VIDEO = 24277707152 = 664 MH

1072 MATERIAL FOR SECURITY VIDEO = $350 + 13,250 + 10,600 = 47,100$

Y. ESCALATION RATE ANALYSIS

LOS ALAMOS NATIONAL LABORATORY

ESCALATION RATE ANALYSIS - FORECAST

DATA ENTRY

=====

CURRENT YEAR: 1995

FORECAST THRU: 2006

DRI REF #: FSS-6 / 95 REV.: '95 Jan.

ESCALATION RATES

TYPE ESCALATION General Construction

File Name escl1_95.xls

FY ESCALATION
RATE

1994	0.0%
1995	2.6%
1996	3.0%
1997	3.1%
1998	3.1%
1999	3.0%
2000	3.0%
2001	3.0%
2002	3.0%
2003	3.0%
2004	3.0%
2005	3.0%
2006	3.0%
2007	3.0%

Z. COMPACTED FILL STOCKPILE AND LOAD BREAKDOWN

COST ESTIMATING TAKEOFF FORM

JOB TITLE: NMSE CDR

NAME: DKOF

DATE: 6/1/95

ESTIMATE DESCRIPTION: EXCAVATION item# 4164

ICF KAISER ENGINEERS 1000 Diamond Drive
Los Alamos, New Mexico 87544

JOB #: 41552-056-00

ITEM #	CSI WBS	DESCRIPTION	QTY.	UNITS	MATERIALS (COST/UNIT)	MAN HRS PER UNIT	LABOR ID	EQUIP. RENTAL
		STOCKPILE DIRT & LOAD ONTO DUMP TRUCKS ASSUME 2, 10 CY TRUCKS FIXED TO 8 CY BUT W/ A 15% SURGE FACTOR $3300 \times 1.15 = 3800 / 2 = 475$						
1	020	DRIVE TIME (2 TRUCKS)	475	RT	0.00	1.00	49/1820	75
2	020	STOCKPILE DIRT & LOAD TRUCKS (2 CY/100 HP)	45	DAYS	0.00	8.00	53/2314	440
3	020	LABOR - DIRECT TRUCK TRAPPING; RECORDS; MISC DUTIES - PART TIMES	30	DAYS	0.00	6.00	45/17.29	00
TOTAL EQUIPMENT		TOTAL LABOR						
				3112.20				
				24,300				
				8438.40				
				35,625				
				9120				

COMMENTS: 39,925

20,671

= 180,586